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VNMIX1 04/2017-IXG

Panasonic

General Catalogue 2017

Panasonic

General Catalogue 2017-

Electrical Construction Materials

To the next stage.

Panasonic has been present in the Vietnam market over many years. During all this time, our customers have come to appreciate Panasonic and our extensive range of products from Home Appliances to Wiring Devices. Playing a key role in Panasonic company history since 1918, Panasonic has established a reputation for safety, durability and comfort around the world. As Panasonic continues to develop new product technologies along with highly advanced manufacturing abilities, our concepts regarding safety and comfort continue to evolve. Panasonic's uncompromising commitment makes it possible to offer our Vietnam customers a higher level of satisfaction with any of our diverse product categories.

Panasonic Original Product
1918
Attachment plug

P16 HALUMIE

P20 GEN X

P24 ~~COSMO ART SERIES~~

P28 FULL-COLOR WIDE SERIES REFINA

P34 FULL-COLOR WIDE SERIES REFINA BS-TYPE

P38 FULL-COLOR WIDE SERIES

P44 FULL-COLOR SERIES

P49 INDUSTRIAL SOCKET

P61 EXTENSION CORD WITH SAFETY SHUTTER & BREAKER

P62 FLOOR OUTLET SERIES

P66 PASSIVE INFRARED SENSOR

P68 SMOKE DETECTOR

P69 ~~DOOR PHONE~~

P71 AUTOMATIC TIME SWITCH

P75 MCB/RCBO-DIN TYPE

P77 ELB BREAKER

P79 GD BREAKER

P87 WHITE CONDUIT

P91 FULL 2 WAY

P93 FACTORY LINE SYSTEMS

P97 PHOTOVOLTAIC MODULE HIT®

P98 AUTO DOOR

P107 VENTILATING FAN

P126 RANGE HOOD

P129 HAND DRYER

P131 AIR CURTAIN

P133 AIR MOVING EQUIPMENT

P136 CEILING FAN

P144 WALL FAN

P156 HEATER VENTILATING

P161 AIR PURIFIER

P162 PUMP

Company Profile

Since the Panasonic Corporation was founded in 1918, it has based corporate activities on a Basic Management Objective. Through its business activities, Panasonic strives to help society progress and develop so as to improve the well-being of people throughout the world. By keeping focused on people, we intend to enrich their lifestyles as we move forward together with our customers.

Panasonic Eco Solutions Company handles diverse businesses. The Energy Systems Business supplies everything from wiring devices and distribution switchboards to photovoltaic modules, storage battery systems and energy management devices. The Lighting Business innovates illumination in an energy-efficient manner with LED lighting bulbs, fixtures and other devices. The Housing Systems Business's comprehensive range of residential equipment and building materials create comfortable living environments. The Environmental Systems Business helps to reduce environmental impact by maintaining good air quality and by purifying contaminated water and soil.

We are helping to create an environment in which people around the world can live in comfort while minimizing environmental harm. Harmoniously combining ecology and comfort is our vision. We seek to achieve this by creating solutions in residential and non-residential (buildings and public facilities) fields, leveraging Panasonic Group's extensive product lines. As we address issues our worldwide customers face with Panasonic solutions, we contribute to realizing a sustainable society.

Panasonic — dedicated to eco-conscious manufacturing.

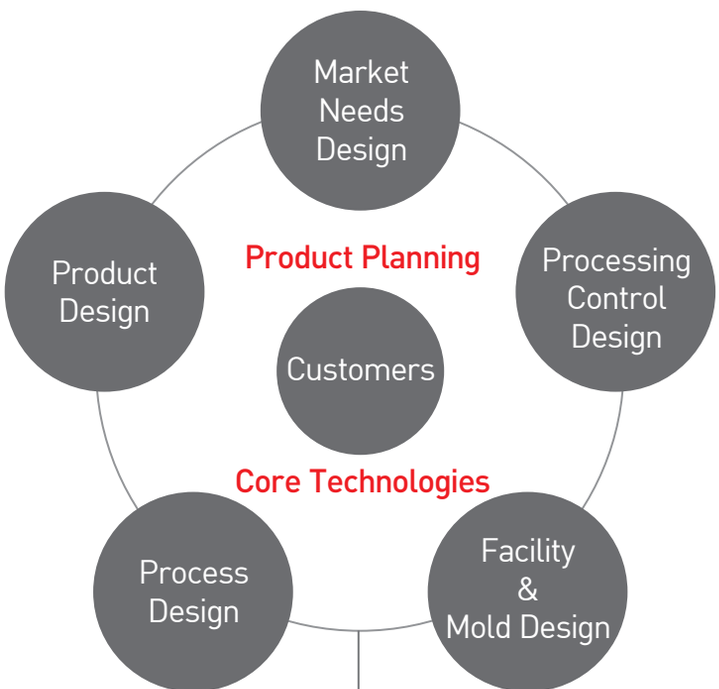
Manufacturing eco-conscious products that do not harm humans and the environment have always been a priority for Panasonic. Conforming to the RoHS directive originating from the EU, Panasonic restricts the usage of hazardous substances that might adversely affect the environment and humans such as lead, cadmium, chromium, mercury, etc. Panasonic contributes to creating a greener environment with lead-free welding, cadmium-free contacts and hexavalent chromium-free plating.

Panasonic Eco Solutions Company (Osaka, Japan)

Products Concept

Panasonic's "Five-Elements" Design Concept

The integrated system that our product development process is based on makes it possible to produce consistently high-quality products. It begins with assessing market needs accurately goes on to develop advanced basic technologies and extends to product planning, design and production, all the way to sales and after-sales activities.



Product Technologies

- Sensing technology
- Mechanism technology
- Sound technology
- Information and Telecommunication technology
- Imaging technology
- Wireless technology
- Semiconductor technology

Evaluation Technologies

- Durability evaluation technology
- User interface evaluation technology
- Offending evaluation technology
- Substance analysis technology

Manufacturing Technologies

- Component processing technology
- Assembly technology
- Environmental compatibility technology
- Process development technology
- Measurement technology

Panasonic's products will continue to work in diverse settings all around the world.

Home and lifestyle environments, as well as business environments which evolve every day.
The Panasonic group has made available to you safe and secure products which you can use in various places, whether it is your home, or office, or in various institutions or public areas.
Our rich and varied product range offers true value to our customers.
We shall continue to offer you the best in smart living.

Home

- HALUMIE
- GEN X
- VENTILATING FAN
- CEILING FAN
- WALL FAN
- AIR PURIFIER
- PUMP
- DOOR PHONE
- MCB/RCBO

Condominium

- HALUMIE
- VENTILATING FAN
- CEILING FAN
- MCB/RCBO/GD BREAKER

Office

- HALUMIE
- FULL-COLOR WIDE SERIES
- PASSIVE INFRARED SENSOR
- EXTENSION CORD
- FLOOR OUTLET SERIES
- FULL-2WAY REMOTE LIGHTING CONTROL SYSTEM
- MCB/RCBO/GD BREAKER

Factory

- FULL-COLOR WIDE SERIES
- INDUSTRIAL SOCKET
- PASSIVE INFRARED SENSOR
- FACTORY LINE SYSTEMS
- AUTOMATIC TIME SWITCH
- FLOOR OUTLET SERIES
- PHOTOVOL TAIC MODULE HIT®
- VENTILATING FAN
- MCB/RCBO/GD BREAKER

Shopping Center

- FULL-COLOR WIDE SERIES
- TWIST LOCK
- AUTOMATIC TIME SWITCH
- FLOOR OUTLET SERIES
- VENTILATING FAN
- AIR CURTAIN
- AUTO DOOR
- MCB/RCBO/GD BREAKER

True Notion of Safety and Reliability.

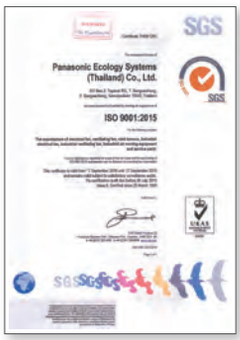
Applying advanced technologies that truly make life better, we live by an unparalleled commitment to product quality. Our approach to product development originates in the DNA of Japanese craftsmanship. Panasonic is building on the Japanese tradition of uncompromising quality control worldwide, developing and manufacturing fine products and delivering them to customers everywhere.

WORLDWIDE STANDARDS

Safety design conforming to IEC standards

Switches conform to the IEC60669-1 standard (16A 250V~). Socket Outlets conform to the IEC60884-1 standard. MCB/RCBO conform to the IEC60898, IEC60947-2, IEC601009 standard. All devices guarantee protection against electric shock and are designed for endurance, service longevity and safety.

Based on Internationally Accepted Standards



Manufactured based on the industrial norms for environmental conservation and quality assurance prescribed by ISO. We undertake the manufacture of products using processes with high quality and high safety which have cleared the IEC.

Examination and registration card.

ISO9001 ISO9001 ISO9001

Panasonic now comforms with Conformity Regulation (CR) mark

All Panasonic fans are borne CR mark issued by Vietnam Certification Center (Quacert) in comply with QCVN 4:2009/BKHCN

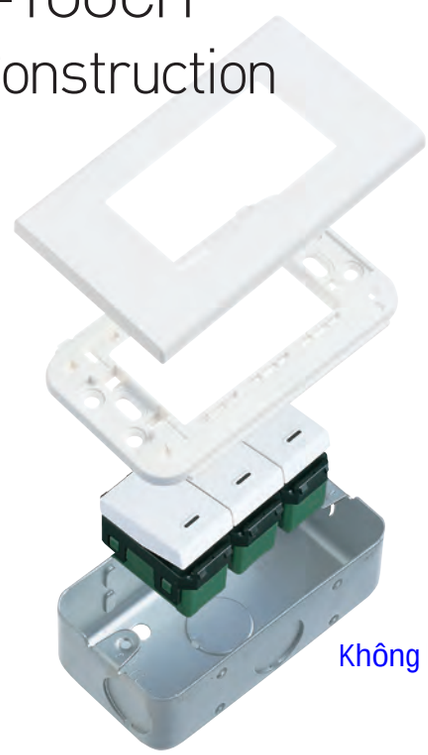
Electrical Construction Materials

Easy To Install

Panasonic-designing one-touch action products that are easy to install.

The All One-Touch Action design concept that attaches devices to body plates and plate bodies to the plate covers makes the installation process easier than ever, savivg both time and labor.

1-TOUCH Construction



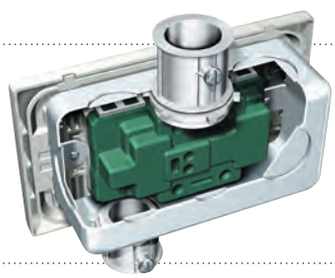
Không bán

■ Device & Plate Body

■ Plate Body &Plate Cover

Highly efficient, because of improvements in the utility box.

Sufficient space has been provided to house the connectors, and this has resulted in a higher efficiency than ever before.



Various Terminals Available

We offer a wide range of terminals to suit the electrical cabling requirements of every country.

Panasonic has made available various terminals to suit the cabling environment anywhere in the world. With a structure which can be handled with more safety than ever before. Connections can be smoothly made, which leads to labor saving.

■ **Types of Electrical Cables and Terminals**

Terminal	ICON	APPLICABLE WIRE
Quick Connect Terminal	Quick & Safety Solid Wire only 1.5-2.5mm²	Solid OK
	Ⅱ Solid Wire : 1.5-2.5mm² Stranded Wire : 1.5-2.5mm²	Solid Stranded OK

Terminal	ICON	APPLICABLE WIRE
Global Terminal	Solid Wire : 1.5-4.0mm² Stranded Wire : 1.5-4.0mm²	Solid Stranded OK
Pillar Terminal Ⅱ	★ 1.5-4.0mm² Solid, Stranded and Flexible wire	Flexible OK

Safety

Safety design conforming to IEC standards

Switches conform to the IEC60669-1 standard(16A 250V~). Socket Outlets conform to the IEC60884-1 standard. All devices guarantee protection against electric shock and are designed for endurance, service longevity and safety.

Switches

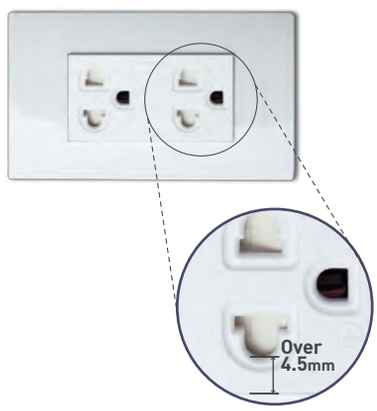
- Designed for long service life (compliant with IEC standard) with 40,000 testing operations at 16A 250V~ full rating.
- Heat-resistant, highly conductive material used for the terminal plate reduces temperature increases in the terminal section.

■Terminal Section Temperature rise

IEC60669-1 Standard value		Conditions
Initial	45K max.	20A current
Use as 40,000 testing operations		16A current

Socket Outlets

- Wide socket outlet secures insulation distance between contacts and external metal parts improving safety. (Compliant with IEC standard which requires insulation distance over 4.5mm)
- Long-life design, capable of 10,000 strokes at 16A 250V ~ full rating.
- Heat-resistant, highly conductive material is used for the blade sockets and terminal point to reduce temperature increase.



■Terminal Section Temperature Rise

IEC60884-1 Standard value		Conditions
Initial	45K max.	20A current
After 10,000 Strokes		16A current

■Insulation Resistance

EC60884-1 Standard value	
Initial	5M Ω min.
After 10,000 Strokes	

■Withdrawal Forces

IEC60884-1 Standard value		
After 10,000 Strokes	3 blades	54N max.
	2 blades	50N max.
	Single blades	2N min.

■Electric Strength

IEC60884-1 Standard value	
Initial	2,000V 1 min.
After 10,000 Strokes	1,500V 1 min.

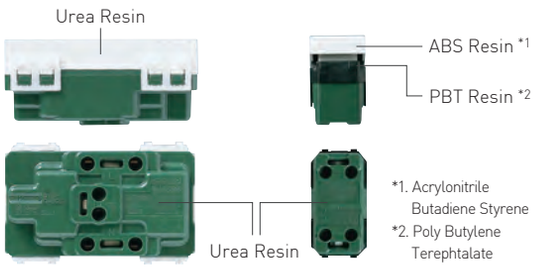
Security And Comfort

1 Flame-retardant Material
Urea Resin

Vật liệu chống cháy

Utilizing urea resin improves flame resistance and outstanding anti-tracking prevents electric shocks.

Completely Insulated Construction



*1. Acrylonitrile Butadiene Styrene
*2. Poly Butylene Terephtalate

■ Protection Against Electric shock

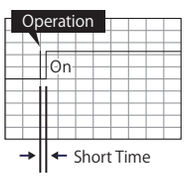
Enclosure Material Characteristics (Reference)

	Urea	PBT	Polycarbonate
Tracking Performance	**Excellent**	Good	Poor
Heat Deformation	**Good**	Good	Fair
Self-Extinguishment	**Good**	Good	Good

2 Durable & Smooth Operations
Direct Driving Mechanism

Panasonic' s proprietary method helps stabilizing the pressure applied to the contacts to ensure low heat and minimalize the arc energy.
This process reduces the risk of contact fuse and provides longer lasting resistance.

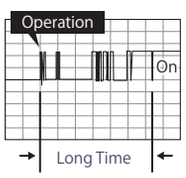
■ Direct Driving Mechanism



Since the bound time of the contact is short when it is switched "ON", low arc energy is produced.

The contact does not fuse easily, and therefore its consumption is low.

■ Seesaw Type of Switching System



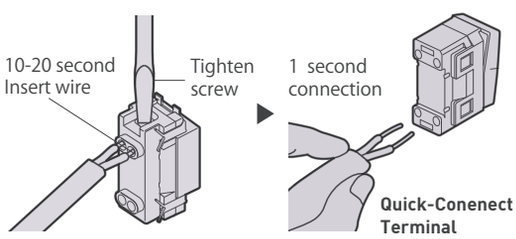
Since the bound time of the contact is long, a considerable amount of arc energy is produced.

The contact fuses easily, creating high consumption.

3 Quick & Secure Connection
Quick-Conenect Terminal

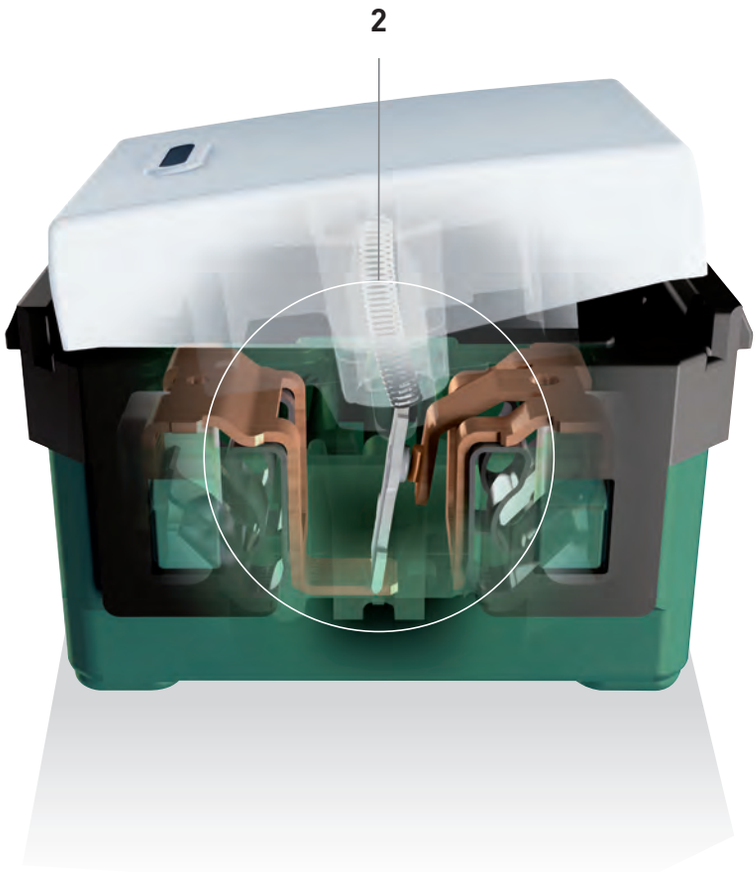
These terminals improve site construction quality since fewer tightening screws are required, simplifying connections.

Reduces the execution time considerably

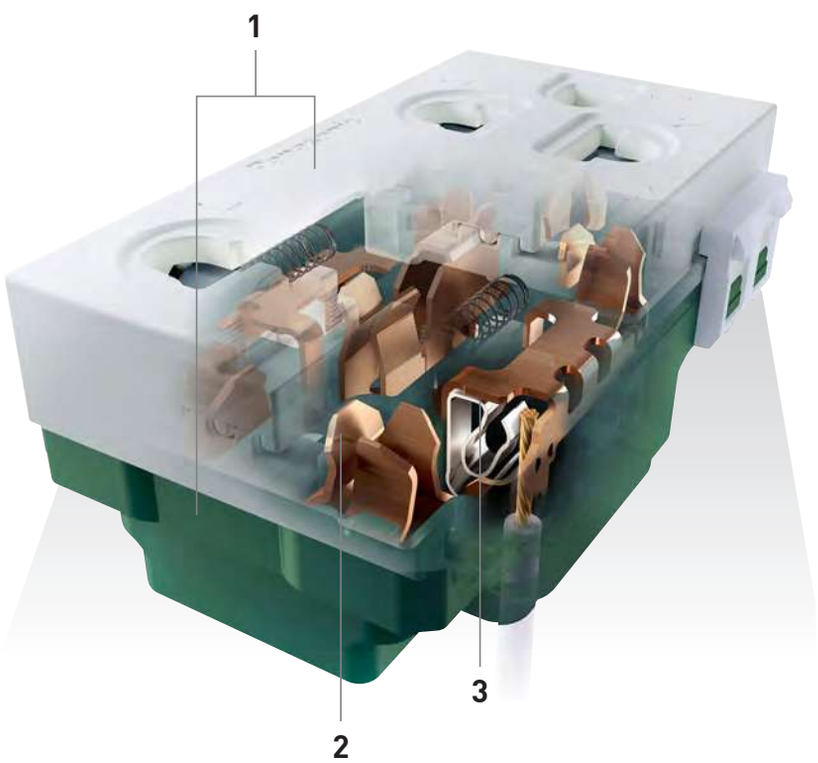


■ Tensile strength after connection

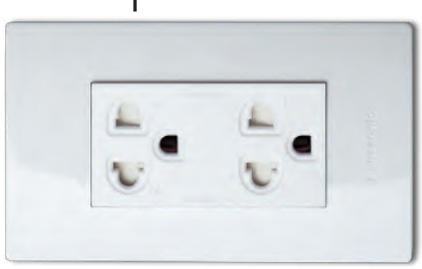
IEC60669-1 IEC60884-1 Standard Value	FULL-COLOR WIDE SERIES / Halumie	
IEC Standard	Wire	Strength
30N min.	1.5 mm² 4.0 mm²	30N min. or more



Switch

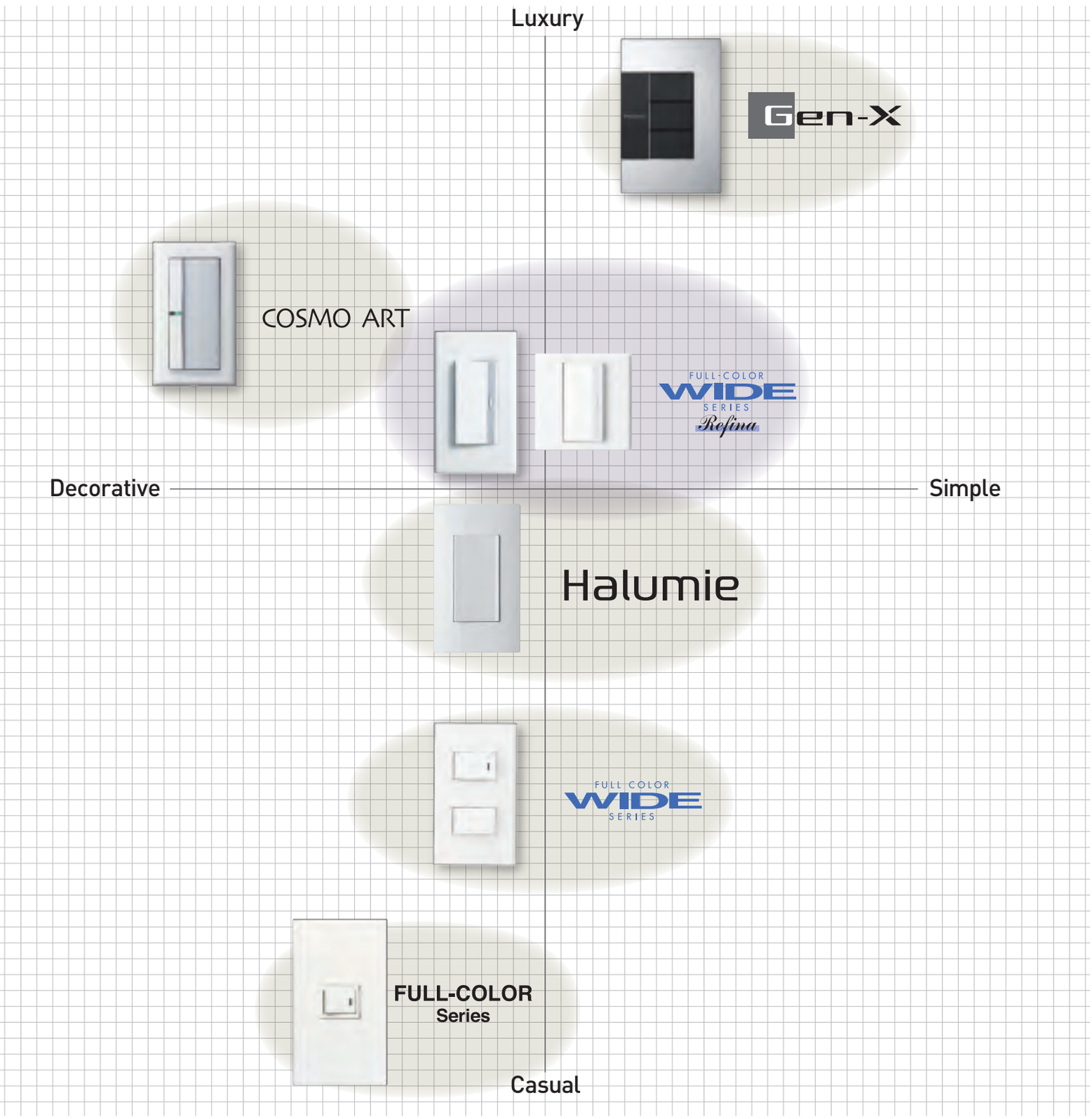


Receptacle



Product Positioning
(Series of Wiring Devices)

Whether living room, office, public space or any other facility, Panasonic enhances its appearance.
A wide range of switch and socket product series, each with its distinctive designs, color variations and operational ease is offered to ideally match installation requirements.



NEW
HALUMIE

Halumie designs to harmonize with any living space

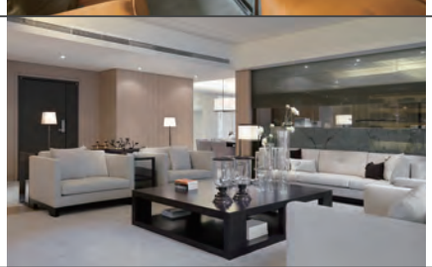
Slimmer and easier-to-use setting the standard
for advanced wiring device designs.

GEN X

Flat panel with ultrathin design

Perfect asymmetric design of 2mm thick high quality aluminum plate. GEN X represents the top Panasonic wiring devices series.

COSMOART



Exceptional appearance and easy use

This high quality series features a striking appearance with maximum ease-of-use, adding a beautiful touch to modern interiors.

FULL-COLOR WIDE SERIES REFINA

Wide color range suits modern interiors

The many colors available are perfect to match with wall colors and textures. From grainy-textured wood type finishes to sophisticated colors, this series adds a stylish touch anywhere, whether living, dining, study or bedroom.

FULL-COLOR WIDE SERIES

The beauty of simplicity

Elegant and aesthetically pleasing, this popular series is sure to complement any interior scheme.

FULL-COLOR SERIES

The standard of excellence for any installation

This versatile series is right for residential as well as office and commercial applications.

New slim designs to harmonize with any living space

Slimmer and easier-to-use setting the standard for advanced wiring device designs

NEW

Halumie

DESIGNS IN HARMONY WITH LIVING SPACES

Simple and elegant design matches any room interior.

ALWAYS PLEASANT TO THE TOUCH

Advanced mechanism allows smoother ON/OFF switching. Designed for easiest possible operation.

ALWAYS RELIABLE AND BEAUTIFUL

Made of a material that resists color fading even when constantly bathed in room light or sunlight.

Switches

WEVH5511
Switch"B" Single Pole
16AX 250V~

WEVH5521
Switch"B" Single Pole
16AX 250V~

WEVH5531
Switch"B" Single Pole
16AX 250V~

WEVH5512
Switch"C" 3Way
16AX 250V~

WEVH5522
Switch"C" 3Way
16AX 250V~

WEVH5532
Switch"C" 3Way
16AX 250V~

WEVH5003
Switch"D" Double Pole
16AX 250V~

WEVH5004
Switch"E" 4Way
16AX 250V~

WEVH5151-51
Illuminated Switch"B"
Single Pole
16AX 250V~

WEVH5152-51
Illuminated Switch"C"
3Way
16AX 250V~

Switches (Pillar Terminal)

WEVH5511-7
Switch"B" Single Pole
16AX 250V~

★

WEVH5521-7
Switch"B" Single Pole
16AX 250V~

★

WEVH5531-7
Switch"B" Single Pole
16AX 250V~

★

WEVH5512-7
Switch"C" 3Way
16AX 250V~

★

WEVH5522-7
Switch"C" 3Way
16AX 250V~

★

WEVH5532-7
Switch"C" 3Way
16AX 250V~

★

WEVH5151-7
Illuminated Switch"B"
Single Pole
16AX 250V~

★

WEVH5152-7
Illuminated Switch"C"
3Way
16AX 250V~

★

WEVH5033-7
Glow Switch"D" Double Pole
20A 250V~

★

WEVH5542-7
Twin Switch"C" 3Way
10AX 250V~

★

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

Quick Connect Terminal
Solid Wire Only: 1.5-2.5mm²

★ **Pillar Terminal Ⅱ**
Solid, Stranded and Flexible Wire: 1.5-4mm²

Receptacles and Accesories

WEV1081SW
WEV1081-7SW ★
Universal Receptacle
with Safety Shutter
16A 250V~

WEV1091SW
Universal Receptacle
16A 250V~

WEV1181SW
WEV1181-7SW ★
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

WEV1582SW
WEV1582-7SW ★
Grounding Duplex Universal
Receptacle with Safety Shutter
16A 250V~

WEV24886SW
CAT6 Data Modular Jack

WEV2488SW
CAT5E Data Modular Jack

WEV2364SW
Telephone Modular Jack
(6P 4C)

WEV2501SW
DIN Type Television Terminal

WEG3023SW
Telephone Wire Chip
for 9mm Diameter 16mm Diameter

WEG3020SW
Blank Chip

WEVH5401-011
Entrance Bell
10A 250V~

Dimmer Switch

WEG575151SW
Dimmer Switch
(Incandescent Light Control)
500W 220V~
※Off Function Type

Plates

WEVH68010
1 gang - 1 device plate

WEVH68020
1 gang - 2 devices plate

WEVH68030
1 gang - 3 devices plate

WEVH680290
1 gang - 1 device plate for
WEV1181SW/ WEV1191SW/ 2P MCB only

WEVH68910
Single cover plate

WEVH8061
1 gang plate for HB breaker

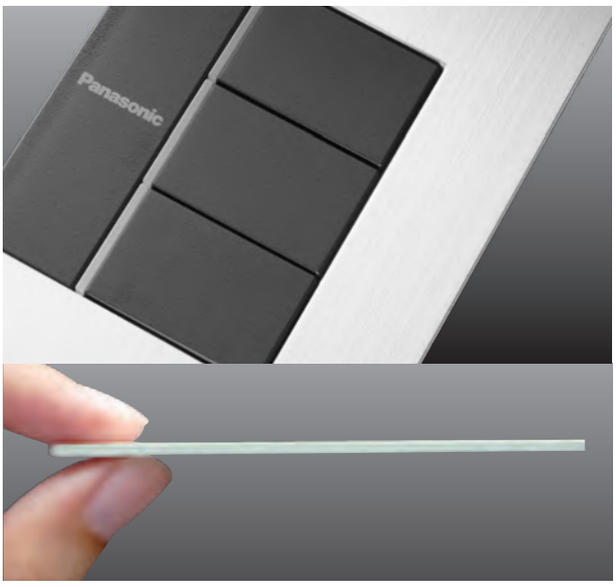
WEVH68040
2 gangs - 4 devices plate

WEVH68060
2 gangs - 6 devices plate

Flat panel with ultrathin design

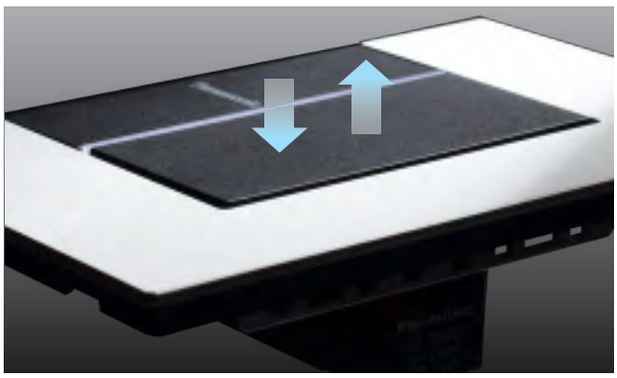
Exclusive switch series with ultrathin panel and refined appearance adding elegance to your interiors.

Gen-X



SOPHISTICATED SURFACE WITH A SUPER-SLIM DESIGN

Ideal asymmetric design using
2mm-thick, high-quality aluminum plate.

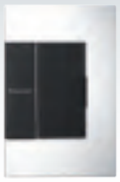


HEAT-RESISTANT, EASY-TO-USE LATEST SWITCH MECHANISM

On/Off with just a soft push of the switch. Built
for trouble-free operation.

Switches

WTEGP51552S-1-G
A type
Illuminated Switch "C" 3 Way
1-Device with Plate
16AX 250~
(Neon Lamp: 220V~)



WTEGP52562S-1-G
A type
Illuminated Switch "C" 3 Way
2-Device with Plate
16AX 250~
(Neon Lamp: 220V~)

WTEGP53572S-1-G
A type
Illuminated Switch "C" 3 Way
3-Device with Plate
16AX 250~
(Neon Lamp: 220V~)

WTEGP54562S-1-G
A type
Illuminated Switch "C" 3 Way
4-Device with Plate
16AX 250~
(Neon Lamp: 220V~)

WTEGP55582S-1-G
A type
Illuminated Switch "C" 3 Way
5-Device with Plate
16AX 250~
(Neon Lamp: 220V~)

WTEGP56572S-1-G
A type
Illuminated Switch "C" 3 Way
6-Device with Plate
16AX 250~
(Neon Lamp: 220V~)

Receptacles and Accessories

WEG15829B-G
Grounding Duplex Universal
Receptacle with Safety Shutter
16A 250V~

WEV2364B
Telephone Modular Jack
(6P 4C)

WEV2488B
CAT5E Data Modular Jack

WEV2501B
DIN Type Television Terminal

WEG3020B-G
Blank Chip

WEG1181BK-G
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

Quick Connect Terminal Ⅱ
Solid Wire: 1.5-2.5mm²
Stranded Wire: 1.5-2.5mm²

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

Dimmer Switches

WEG57813B-1-G
Dimmer Switch
(Incandescent and Low
Voltage Halogen with
Transformer 12V Light Control)
220 VAC 300W

WEG57816B-1-G
Dimmer Switch
(Incandescent and Low
Voltage Halogen with
Transformer 12V Light Control)
220 VAC 500W

Plates

WTFB6503S-1-G
1 gang, 3 devices plate

WTEG6506S-1-1-G
2-Gang 6-Device

WTEG6506S-G
2-Gang 6-Device

WTEG6503S-1-G
1-Gang 3-Device

Switches

WTFBP51552S-1-G
BS type
Illuminated switch "C",
3 ways, 1 device with plate

WTFBP52562S-1-G
BS type
Illuminated switch "C",
3 ways, 2 devices with plate

WTFBP53572S-1-G
BS type
Illuminated switch "C",
3 ways, 3 devices with plate

EGG331
Weather Proof Push Bottom for
Door Chime
1A 220V~

EGG335
Weather Proof Push Bottom for
Door Chime
Dark Brown
1A 220V~

EBG888
Door Chime
220V~ Two Tone 9.5W, 50 Hz.
Easy-to-Hear 82 dB Chime

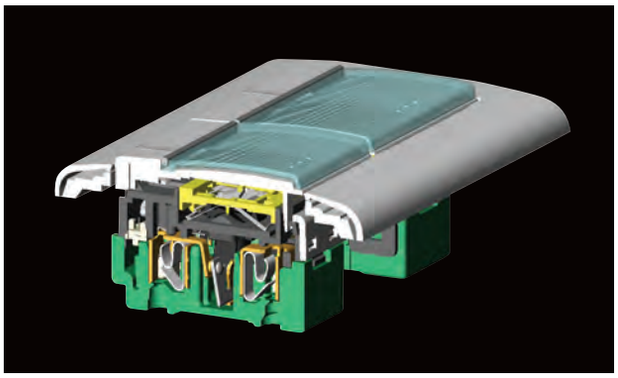
Exceptional appearance and easy use

Sophisticated modern design and superb ease-of-use

COSMO ART

CREATES A MODERN, APPEALING LOOK WHEN INSTALLED

European design sensibility meets Japanese craftsmanship for a finish that stands by itself.



HEAT-RESISTANT, EASY-TO-USE LATEST SWITCH MECHANISM

On/Off with just a soft push of the switch.
Built for trouble-free operation.

Switches

WTAG7152CHSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR G R A Y

WTAG7152CLSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR B L U E

WTAG7152CDSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR GREEN

WTAG7252CHSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR G R A Y

WTAG7252CLSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR B L U E

WTAG7252CDSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR GREEN

WTAG7352CHSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR G R A Y

WTAG7352CLSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR B L U E

WTAG7352CDSW
Illuminated Switch "C" 3Way
16AX 250V~(Neon Lamp 220V~)
WTAG6101SW(Plate)
1-Gang 3-Device

CLEAR GREEN

Receptacles and Accesories

WEV1081SW
Universal Receptacle
With Safety Shuttler
16A 250V~

WEV1091SW
Universal Receptacle
16A 250V~

WEG1001SW
Receptacle
16A 250V~

Dimmer Switches

WEG575151SW
Dimmer Switch
(Incandescent Light Control)
500W 220V~
※ Off Function Type

WEG575181
Dimmer Switch
(Incandescent Light Control)
800W 220V~
※ Off Function Type

Quick Connect Terminal
Solid Wire Only: 1.5-2.5mm²

Quick Connect Terminal Ⅱ
Solid Wire: 1.5-2.5mm²
Stranded Wire: 1.5-2.5mm²

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

★ **Pillar Terminal Ⅱ**
Solid, Stranded and Flexible Wire: 1.5-4mm²

WEG1090SW
Round Pin Receptacle
16A 250V~

WEV1181SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

WEV1582SW
Grounding Duplex Universal Receptacle
with Safety Shutter
16A 250V~

WEV24886SW
CAT6 Data Modular Jack

WEV2488SW
CAT5E Data Modular Jack

WEV2364SW
Telephone Modular Jack
(6P 4C)

WEV2501SW
DIN Type Television Terminal

WTNG4101W
Audio Srew Terminals
(Single)

WTNG4102W
Audio Srew Terminals
(Double)

EGG331
Weather Proof Push Bottom for
Door Chime
1A 220V~

EGG335
Weather Proof Push Bottom for
Door Chime
Dark Brown
1A 220V~

EBG888
Door Chime
220V~ Two Tone 9.5W, 50 Hz.
Easy-to-Hear 82 dB Chime

Portable Card Switch

WTC5631WK-8
Portable Card Switch
(2-channel) 2A 220V~

Receptacles (Pillar Terminal)

WEV1081-7SW
Universal Receptacle
with Safety Shutter
16A 250V~

★

WEV1181-7SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

★

WEV1582-7SW
Grounding Duplex Universal
Receptacle with Safety Shutter
16A 250V~

★

Plates for Receptacles

WTAG6803SW
1-Gang 3-Device

Plates for Switches

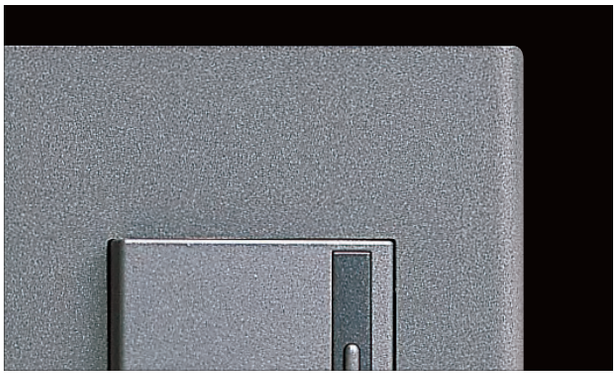
WTAG6101SW
1-Gang 3-Device

WTAG6102SW
2-Gang 6-Device

Wide color range suits modern interiors

Subtle and stylish color coordination
enhancing your living environments

FULL-COLOR
WIDE
SERIES
Refina



WIDE COLOR PALETTE TO PERFECTLY MATCH LIFESTYLE INTERIORS

Luxurious appearance with wide color variations creating attractive living spaces.

HEAT-RESISTANT, EASY-TO-USE LATEST SWITCH MECHANISM

Simple switch mechanism made trouble-free.

Various Combination : 7 Plate Colors × 7 Switch Colors

Metallic Pearl White	Metallic White	Metallic Gray	Metallic Black	Metallic Gold	Metallic Brown	Metallic Dark Brown
MWZ	MW	MH	MB	MY	MF	MA

The last 2 characters in □□ of Refina product numbers show the item color.

Switches

WEG5511 MH
Switch"B"
Single Pole
16AX 250V~

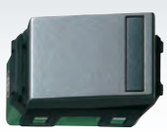
WEG5521 MH
Switch"B" Single Pole
16AX 250V~

WEG5531 MH
Switch"B" Single Pole
16AX 250V~

WEG5512 MH
Switch"C" 3Way
16AX 250V~

WEG5522 MH
Switch"C" 3Way
16AX 250V~

WEG5532 MH
Switch"C" 3Way
16AX 250V~



WEG5551 MH
Illuminated
Switch"B"
Single Pole
16AX 250V~
(Neon Lamp:
220V~)

WEG5561 MH
Illuminated Switch"B" Single Pole
16AX 250V~ (Neon Lamp: 220V~)

WEG5571 MH
Illuminated Switch"B" Single Pole
16AX 250V~ (Neon Lamp: 220V~)

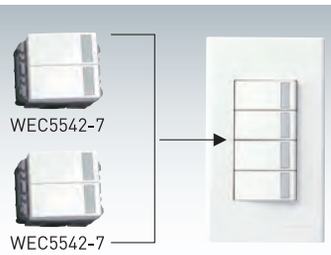
WEG5552 MH
Illuminated Switch"C" 3Way
16AX 250V~ (Neon Lamp: 220V~)

WEG5562 MH
Illuminated Switch"C" 3Way
16AX 250V~ (Neon Lamp: 220V~)

WEG5572 MH
Illuminated Switch"C" 3Way
16AX 250V~ (Neon Lamp: 220V~)

WEV55337SW
Glow Switch "D"
Double Pole 3-Device
20A 250V~

WEC5542-7SW
Twin Switch "C" 3Way
10AX 250V~



Outlet with Switches NEW

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

★ **Pillar Terminal Ⅱ**
Solid, Stranded and Flexible Wire: 1.5-4mm²

WEGP1282

Grounding Duplex Universal Receptacle with Safety Shutter and Switch

Metallic White
WEGP1282MW

Metallic Gray
WEGP1282MH

Metallic Brown
WEGP1282MF

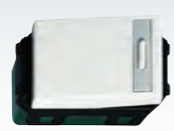
Metallic Black
WEGP1282MB

- Metallic White [M][W]
- Metallic Gray [M][H]
- Metallic Brown [M][F]
- Metallic Black [M][B]
- MetallicPearl White [M][W][Z]
- Metallic Dark Brown [M][A]
- MetallicGold [M][Y]

WEV5511SW
Switch"B"
Single Pole
16AX 250V~

WEV5521SW
Switch"B" Single Pole
16AX 250V~

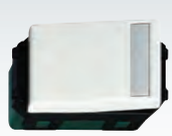
WEV5531SW
Switch"B" Single Pole
16AX 250V~



WEV5512SW
Switch"C" 3Way
16AX 250V~

WEV5522SW
Switch"C" 3Way
16AX 250V~

WEV5532SW
Switch"C" 3Way
16AX 250V~



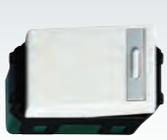
WEV5511-7SW
Switch"B"
Single Pole
16AX 250V~

★

WEV5521-7SW
Switch"B" Single Pole
16AX 250V~

★

WEV5531-7SW
Switch"B" Single Pole
16AX 250V~



★

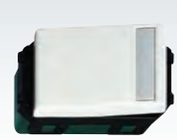
WEV5512-7SW
Switch"C" 3Way
16AX 250V~

★

WEV5522-7SW
Switch"C" 3Way
16AX 250V~

★

WEV5532-7SW
Switch"C" 3Way
16AX 250V~



★

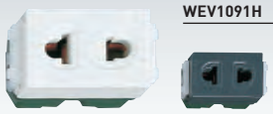
Receptacles

WEV1081SW
Universal Receptacle
with Safety Shutter
16A 250V~

WEV1081H

WEV1091SW
Universal Receptacle
16A 250V~

WEV1091H



WEG1001SW
Receptacle
16A 250V~

WEV1001H

WEG1090SW
Round Pin Receptacle
16A 250V~

WEV1090H

WEV1181SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

WEV1181H

WEV1582SW
Grounding Duplex Universal Receptacle
with Safety Shutter
16A 250V~

WEV1582H

Pillar Terminal

WEV1081-7SW
Universal Receptacle
with Safety Shutter
16A 250V~

WEV1081-7H

★

WEV1181-7SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

WEV1181-7H

★

WEV1582-7SW
Grounding Duplex Universal Receptacle
with Safety Shutter
16A 250V~

WEV1582-7H

★

Accessories

WEV24886SW
CAT6 Data Modular Jack

WEV24886H

WEV2488SW
CAT5E Data Modular Jack

WEV2488H

WEV2364SW
Telephone Modular Jack

WEV2364H

WEV2501SW
DIN Type Television Terminal

WEV2501H

EGG331
Weather Proof Push Bottom for
Door Chime
1A 220V~

EGG335
Weather Proof Push Bottom for
Door Chime
Dark Brown
1A 220V~

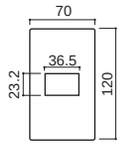
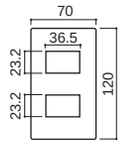
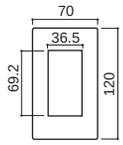
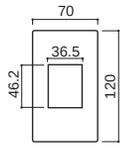
EBG888
Door Chime
220V~ Two Tone
9.5W, 50 Hz.
Easy-to-Hear 82
dB Chime

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

★ Pillar Terminal Ⅱ
Solid, Stranded and Flexible Wire: 1.5-4mm²

Plates

Unit: mm

FULL-COLOR WIDE SERIES Refina A-TYPE		 Plastic Plate 1-Gang 1-Device	 Plastic Plate 1-Gang 2-Device	 Plastic Plate 1-Gang 3-Device	 Plastic Plate 1-Gang Center 2-Device
Snow White		WEV68010SW	WEV68020SW	WEV68030SW	WEV680290SW
Metallic Pearl White	MWZ	WEG68010MWZ	WEG68020MWZ	WEG68030MWZ	WEG680290MWZ
Metallic White	MW	WEG68010MW	WEG68020MW	WEG68030MW	WEG680290MW
Metallic Gray	MH	WEG68010MH	WEG68020MH	WEG68030MH	WEG680290MH
Metallic Black	MB	WEG68010MB	WEG68020MB	WEG68030MB	WEG680290MB
Metallic Gold	MY	WEG68010MY	WEG68020MY	WEG68030MY	WEG680290MY
Metallic Brown	MF	WEG68010MF	WEG68020MF	WEG68030MF	WEG680290MF
Metallic Dark Brown	MA	WEG68010MA	WEG68020MA	WEG68030MA	WEG680290MA

The last 2 or 3 characters □□ in of Refina product number show the item color.

Receptacles and Accesories

WEV1081-7H
Universal Receptacle
with Safety Shutter
16A 250V~
WEB7811 M W (Plate)
1-Gang 1-Device

★

WEV1081H
Universal Receptacle
with Safety Shutter
16A 250V~
WEB7812 M W (Plate)
1-Gang 2-Device

WEV1181H
Grounding Universal Receptacle
with Safety Shutter
16A 250V~
WEB7812 M W (Plate)
1-Gang 2-Device

WEV1582-7H
Grounding Duplex Universal
Receptacle with Safety Shutter
16A 250V~
WEB7813 M W (Plate)
1-Gang 3-Device

★

WEV1191H
Grounding Universal Receptacle
16A 250V~
WEG5151-51HK
Illuminated Switch "B" Single Pole
16AX 250V~(Neon Lamp 220V~)
WEB7813 M W (Plate)
1-Gang 3-Device

WEV2501H
DIN Type Television Terminal
16A 250V~
WEV2364H
Telephone Modular Jack (6P 4C)
WEB7812 M W (Plate)
1-Gang 2-Device

WEV2501H
DIN Type Television Terminal
WEB7811 M W (Plate)
1-Gang 1-Device

WEV2364H
Telephone Modular Jack (6P 4C)
WEB7811 M W (Plate)
1-Gang 1-Device

WEV2488H
CAT5E Data Modular Jack
WEB7811 M W (Plate)
1-Gang 1-Device

WEV24886H
CAT6 Data Modular Jack
WEB7811 M W (Plate)
1-Gang 1-Device

WEG575181H
Dimmer Switch
(Incandescent Light Control)
800W 220V~
WEB7812 M W (Plate)
1-Gang 2-Device

Quick Connect Terminal
Solid Wire Only: 1.5-2.5mm²

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

★ **Pillar Terminal Ⅱ**
Solid, Stranded and Flexible Wire: 1.5-4mm²

WEV1081-7SW
Universal Receptacle with Safety Shutler 16A 250V~

WEB7811SW (Plate)
1-Gang 1-Device

★

WEV1081-7SW
Universal Receptacle with Safety Shutler 16A 250V~

WEB7812SW (Plate)
1-Gang 2-Device

★

WEV1081-7SW
Universal Receptacle with Safety Shutler 16A 250V~

WEV1181-7SW
Grounding Universal Receptacle with Safety Shutter 16A 250V~

WEB7813SW (Plate)
1-Gang 3-Device

★

WEV1582-7SW
Grounding Duplex Universal Receptacle with Safety Shuttler 16A 250V~

WEB7813SW (Plate)
1-Gang 3-Device

★

WEV1081-7SW
Universal Receptacle with Safety Shutler 16A 250V~

WEV5531-7SW
1Way SP Switch"B" 16AX 250V~

WEB7812SW (Plate)
1-Gang 2-Device

★

WEV2501SW
DIN Type Television Terminal

WEV2364SW
Telephone Modular Jack (6P 4C)

WEB7812SW (Plate)
1-Gang 2-Device

WEV2501SW
DIN Type Television Terminal

WEB7811SW (Plate)
1-Gang 1-Device

WEV2488SW
CAT5E Data Modular Jack

WEB7811SW (Plate)
1-Gang 1-Device

WEV24886SW
CAT6 Data Modular Jack

WEB7811SW (Plate)
1-Gang 1-Device

WEV2364SW
Telephone Modular Jack (6P 4C)

WEV2488SW
CAT5E Data Modular Jack

WEB7812SW (Plate)
1-Gang 2-Device

WEG575181
Dimmer Switch
(Incandescent Light Control)
800W 220V~

WEB7812SW (Plate)
1-Gang 2-Device

WEG5151-51SWK
Illuminated Switch "B" Single Pole

WEB7811SW (Plate)
1-Gang 1-Device

WEV5001-7SW
Switch "B" Single Pole
16AX 250V~

WEB7813SW (Plate)
1-Gang 3-Device

★

WEG5401-7SW
Push Bottom "B" Single Pole
10A 250V~

WEB7811SW (Plate)
1-Gang 1-Device

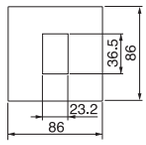
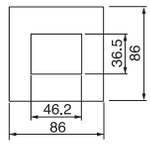
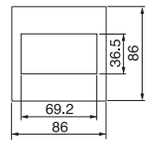
Switches (with plate)

COLOR	1-Gang 1Way SP Switch "B" 16AX 250V~ ★	2-Gang 1Way SP Switch "B" 16AX 250V~ ★	3-Gang 1Way SP Switch "B" 16AX 250V~ ★	1-Gang 2Way SP Switch "C" 16AX 250V~ ★	2-Gang 2Way SP Switch "C" 16AX 250V~ ★	3-Gang 2Way SP Switch "C" 16AX 250V~ ★
Snow White	WEBP515117SW	WEBP525217SW	WEBP535317SW	WEBP515127SW	WEBP525227SW	WEBP535327SW
Metallic Pearl White MWZ	WEBP515117MWZ	WEBP525217MWZ	WEBP535317MWZ	WEBP515127MWZ	WEBP525227MWZ	WEBP535327MWZ
Metallic White MW	WEBP515117MW	WEBP525217MW	WEBP535317MW	WEBP515127MW	WEBP525227MW	WEBP535327MW
Metallic Gray MH	WEBP515117MH	WEBP525217MH	WEBP535317MH	WEBP515127MH	WEBP525227MH	WEBP535327MH
Metallic Black MB	WEBP515117MB	WEBP525217MB	WEBP535317MB	WEBP515127MB	WEBP525227MB	WEBP535327MB
Metallic Gold MY	WEBP515117MY	WEBP525217MY	WEBP535317MY	WEBP515127MY	WEBP525227MY	WEBP535327MY
Metallic Brown MF	WEBP515117MF	WEBP525217MF	WEBP535317MF	WEBP515127MF	WEBP525227MF	WEBP535327MF
Metallic Dark Brown MA	WEBP515117MA	WEBP525217MA	WEBP535317MA	WEBP515127MA	WEBP525227MA	WEBP535327MA

The last 2 characters in □□ of Refina product numbers show the item color.

Plates

Unit: mm

FULL-COLOR WIDE SERIES Refina BS-TYPE	 1-Gang 1-Device	 1-Gang 2-Device	 1-Gang 3-Device
Snow White	WEB7811SW	WEB7812SW	WEB7813SW
Metallic Pearl White MWZ	WEB7811MWZ	WEB7812MWZ	WEB7813MWZ
Metallic White MW	WEB7811MW	WEB7812MW	WEB7813MW
Metallic Gray MH	WEB7811MH	WEB7812MH	WEB7813MH
Metallic Black MB	WEB7811MB	WEB7812MB	WEB7813MB
Metallic Gold MY	WEB7811MY	WEB7812MY	WEB7813MY
Metallic Brown MF	WEB7811MF	WEB7812MF	WEB7813MF
Metallic Dark Brown MA	WEB7811MA	WEB7812MA	WEB7813MA

The last 2 characters in □□ of Refina product numbers show the item color.

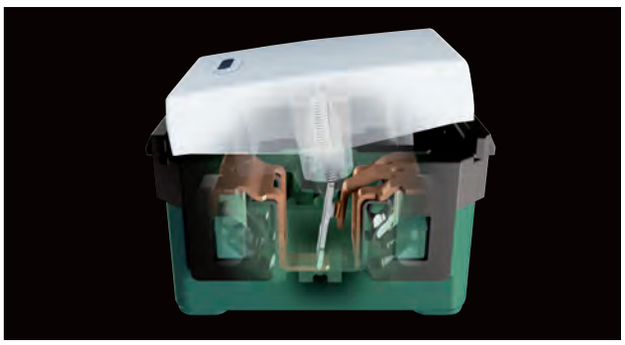
The beauty of simplicity

Clean lines result in a sharp-looking design
adding an attractive touch to your living room and office

FULL COLOR WIDE SERIES

ELEGANTLY SIMPLE SQUARISH DESIGN

Add a refreshing accent to any room. Bold, modern plates with square shapes available in various configurations to suit residential and commercial requirements.



HEAT-RESISTANT, EASY-TO-USE LATEST SWITCH MECHANISM

Panasonic's standard design wiring device with simple, trouble-free switch mechanism.

Switches

WEV5001SW
Switche"B" Single Pole
16AX 250V~

WEV5001H

WEV5002SW
Switche"C" 3 Way
16AX 250V~

WEV5002H

WEG5003KSW
Switche"D" Double Pole
16AX 250V~

WEV5003HK

WEG5004KSW
Switche"E" 4 Way
16AX 250V~

WEG5004HK

WEG5151-51SWK
Illuminated Switche"B" Single Pole
16AX 250V (Neon Lamp: 220V~)

WEG5151-51HK

WEG5152-51SWK
Illuminated Switche"C" 3Way
16AX 250V (Neon Lamp: 220V~)

WEG5152-51HK

WEG5141SW
Glow Switch "B" Single Pole
2 Wire 6AX 250V~

WEG5141H

WEG5341SW
Glow Switch "B" Single Pole
3 Wire 6AX 250V~

WEG5341H

Switches (Pillar Terminal)

WEV5001-7SW
Switch " B" Single Pole
16AX-250V~

WEV5001-7H

★

WEV5002-7SW
Switch " C" 3 Way
16AX-250V~

WEV5002-7H

★

WEG5151-7SW
illuminated Switche"B" Single Pole
16AX 250V (Neon Lamp: 220V~)

WEG51517-7H

★

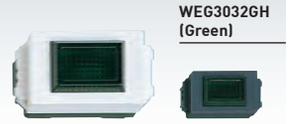
WEG5152-7SW
lluminated Switche"C" 3Way
16AX 250V (Neon Lamp: 220V~)

WEG51527-7H

★

Receptacles and Accessories

WEG3032GSW (Green)
Pilot Lamp
220V~

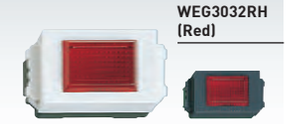


WEG3032GH (Green)

WEG3032SW (White)
Pilot Lamp
220V~

WEG3032WH (White)

WEG3032RSW (Red)
Pilot Lamp
220V~



WEG3032RH (Red)

WEG5400-7
llPush Bottom NC Contact Type
10A 250V~

WEG3023SW
Telephone Wire Chip
for 9mm Diameter 16 Diameter

WEG3023H

WEG3020SW
Blank Chip

WEG3020H

WEV5033-7SW
Glow switch (2 poles)
250VAC - 20A

Quick Connect Terminal
Solid Wire Only: 1.5-2.5mm²

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

★ **Pillar Terminal Ⅱ**
Solid, Stranded and
Flexible Wire: 1.5-4mm²

WEV1081SW
Universal Receptacle
with Safety Shutter
16A 250V~

WEV1091SW
Universal Receptacle
16A 250V~

WEG1001SW
Receptacle
16A 250V~

WEG1090SW
Round Pin Receptacle
16A 250V~

WEV1181SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

WEV1582SW
Grounding Duplex Universal
Receptacle with Safety Shutter
16A 250V~

WEV24886SW
CAT6 Data Modular Jack

WEV2488SW
CAT5E Data Modular Jack

WEV2364SW
Telephone Modular Jack
(6P 4C)

WEV2501SW
DIN Type Television Terminal

WEG5401-7SW
Push Bottom "B" Single Pole
10A 250V~

EGG331
Weather Proof Push Bottom for
Door Chime
1A 220V~

EGG335
Weather Proof Push Bottom for
Door Chime
Dark Brown
1A 220V~

EBG888
Door Chime
220V~ Two Tone 9.5W, 50 Hz.
Easy-to-Hear 82 dB Chime

Receptacles (Pillar Terminal)

WEV1081-7SW
Universal Receptacle with Safety Shutler
16A 250V~

★

WEV1181-7SW
Grounding Universal Receptacle
with Safety Shutter
16A 250V~

★

WEV1582-7SW
Grounding Duplex Universal
Receptacle with Safety Shuttler
16A 250V~

★

Dimmer Switches

WEG575151SW
Dimmer Switch
(Incandescent Light Control)
500W 220V~
※Off Funtion Type

WEG575151H

WEG575181
Dimmer Switch
(Incandescent Light Control)
800W 220V~
※Off Funtion Type

WEG575181H

WEG5002SWK-021
Hotel Use Switch "C" for Indication
"Don't Disturb"
16AX 250V~

WEB1051W
Shaver Receptacle (white)
Input: 16A 220V~
Output: 240V/110V-20VA

WEB5781WK
Electronic Key Card Switch (White)
16AX 220V~

WEG5001SWK-031
Hotel Use Switch "B" for
Indication " Make up Room"
16AX 250V~

WEG5401-011SW
Entrance Bell
10A 250V~

WEV2488SW
CAT5E Data Modular Jack

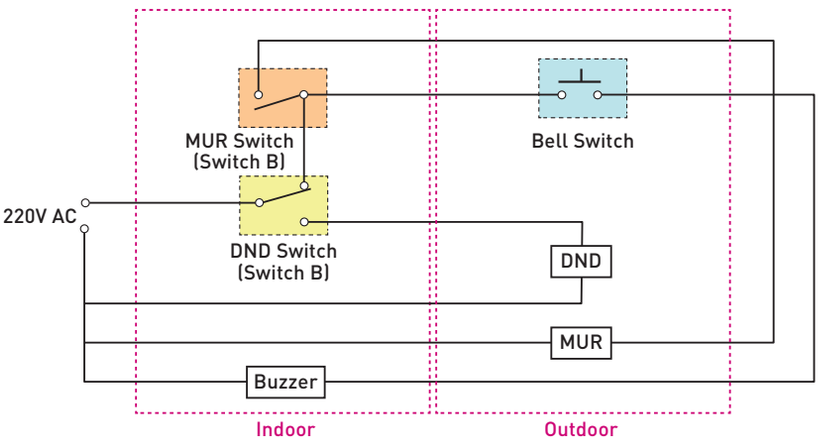
WEV2364SW
Telephone Modular Jack (6P 4C)

WEV2501SW
DIN Type Television Terminal

WEG3032G-031
Pilot Lamp for Indication
"Make up Room"Green 220V~

WEG3032R-021
Pilot Lamp for Indication " Don't Disturb"
Red 220V~

Wiring diagram - "Don't Disturb" - Make up Room" - Bell Switch"



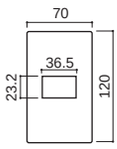
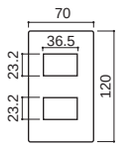
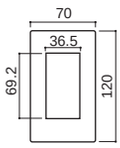
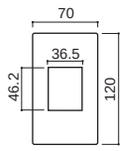
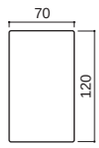
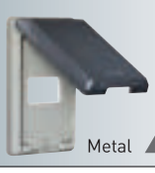
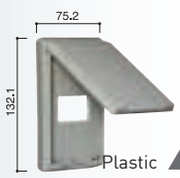
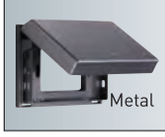
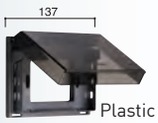
Quick Connect Terminal
Solid Wire Only: 1.5-2.5mm²

Quick Connect Terminal Ⅱ
Solid Wire: 1.5-2.5mm²
Stranded Wire: 1.5-2.5mm²

Global Terminal
Solid Wire: 1.5-4mm²
Stranded Wire: 1.5-4mm²

Plates

Unit: mm

FULL-COLOR WIDE SERIES	 Plastic Plate 1-Gang 1-Device	 Plastic Plate 1-Gang 2-Device	 Plastic Plate 1-Gang 3-Device	 Plastic Plate 1-Gang Center 2-Device	 Plastic Plate 1-Gang Cover
Standard plate Snow White	WEV68010SW	WEV68020SW	WEV68030SW	WEV68290SW	WEV68910SW
Metal plate Alumunum Stainless	WEG6501-1	WEG6502-1	WEG6503-1	WEG65029-1	WEG6591-1
	WEG6601-1	WEG6602-1	WEG6603-1	WEG66029-1	WEG6691-1
Metallic Metallic Pearl White Metallic White	WEG68010MWZ	WEG68020MWZ	WEG68030MWZ	WEG680290MWZ	
	WEG68010MW	WEG68020MW	WEG68030MW	WEG680290MW	
Metallic Gray Metallic Black	WEG68010MH	WEG68020MH	WEG68030MH	WEG680290MH	
	WEG68010MB	WEG68020MB	WEG68030MB	WEG680290MB	
Metallic Gold Metallic Brown	WEG68010MY	WEG68020MY	WEG68030MY	WEG680290MY	
	WEG68010MF	WEG68020MF	WEG68030MF	WEG680290MF	
Metallic Dark Brown	WEG68010MA	WEG68020MA	WEG68030MA	WEG680290MA	
Weather proof plates  Metal IPX3  Plastic IP55	Metal WEG7801	Metal WEG7802	Metal WEG7803	Metal WEG78029	
	Plastic WEG7901	Plastic WEG7902	Plastic WEG7903	Plastic WEG79029	
Weather proof cover plates (Horizontal Type)  Metal IP55  Plastic IP55			Metal WEG8881		
			Plastic WEG8981		

*IP=Ingress Protection (when flap is closed).

The standard of excellence for any installation

Simple design compatible with any interior plan.

FULL-COLOR SERIES

WIDE RANGE OF COLORS TO SELECT FROM FOR PERFECT COLOR COORDINATION.

Designed for compatibility with any international wiring standards and installation requirements.

HEAT-RESISTANT, EASY-TO-USE LATEST SWITCH MECHANISM

A basic Panasonic wiring device with simple, trouble-free switch mechanism.

Switches

WNV5001-7W
Switch "B" Single Pole
16AX-250V~

WNG5061-701W
Appellation Switch "B" Single Pole
16AX 250V~

WNG5021W-7
Twin Switch "B" Single Pole
10AX 250V~

WNV5002-7W
Switch "C" 3 way
16AX-250V~

WNG5003W-7
Switch "D" Double Pole
10AX-250V~

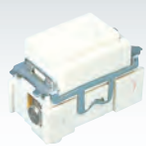
WNG5004W-7
Switch "E" 4 way
10AX-250V~

WNS241W-801
Appellation Glow
Switch "B"
Single Pole
4A 300V~

WNG5051W-751
Illuminated Appellation
Switch "B" Single Pole
16AX 250V
(Neon Lamp: 220V)~

WNG5052W-751
Illuminated Appellation
Switch "C" 3 Way
16AX 250V
(Neon Lamp: 220V)~

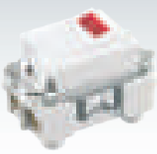
WNG5401W-7K
Push Bottom "B" Single Pole
10A 300V~



WNG5343W-761
Glow Switch "D" Double Pole
for Water Heater
20AX 250V~

WBG5408699W
Glow Switch "D" Double Pole
45A-250V~

WBG5414699W-SP
Glow Switch "D" Double Pole
20AX-250V~



WBG5414699W
Glow Switch "D" Double Pole
for A/C
20AX-250V~

WNH5611-801
Tablet Switch
10A 250V~

Dimmer Switches

WNGP575152
Dimmer Switch with
Blank Chip and Modern Plate
(Incandescent Light Control)
500W 220-240V~

WNGP575283W
Dimmer Switch with
Modern Plate
(Incandescent Light Control)
800W 220-240V~

Receptacles and Accessories

WNV1081-7W
Universal Receptacle with Safety Shutter
16A-250V~

WNV1091-7W
Universal Receptacle
10A-250V

WN1090-7K-W
Round Pin Receptacle
10A-250V~

WN1001-7K-W
Receptacle
10A 250V~

WN1101-7W
3 Wire Grounding Receptacle
10A-250V~

WNG15923-7W
Grounding Duplex Universal Receptacle
16A 250V~

NR3170W-8
CAT6 Data Modular Jack

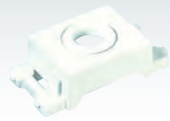
NRV3160W
Enhanced CAT5E Data Modular Jack

WNTG15649W
Telephone Modular Jack
(6P 4C)

WZV1201W
Television Terminal
(Current Passing Type)

WN3020W
Blank Chip

WN3023W
Telephone Wire Chip



Switches

WSG3001
Surface Mounting Switch "B"
Single Pole
10A 300V~

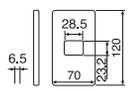
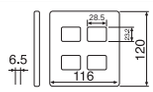
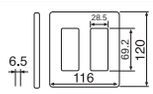
Receptacles

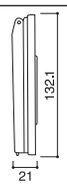
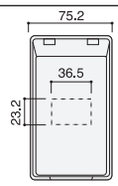
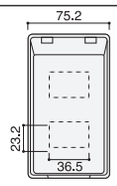
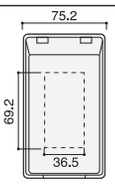
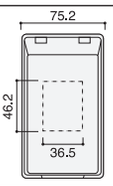
WKG1092-250
Surface Mounting Universal Duplex Receptacle
10A 250V~

WKG1091-250
Surface Mounting Universal Receptacle
10A 250V~

Plates

Unit: mm

FULL-COLOR SERIES A-TYPE	Modern Plate	Aluminum Plate		Stainless Plate
		Screw Visible	Screw Invisible	Screw Visible
	Without Mounting Strap	With Mounting Strap	With Mounting Strap	With Mounting Strap
 1-Gang 1-Device	WZV7841W	WN7501-8	WN6501K-8	WN7601-8
1-Gang 2-Device	WZV7842W	WN7502-8	WN6502K-8	WN7602-8
1-Gang 3-Device	WZV7843W	WN7503-8	WN6503K-8	WN7603-8
 2-Gang 4-Device	WZV7844W	WN7504-8	WN6504K-8	WN7604-8
 2-Gang 6-Device	WZV7846W	WN7506-8	WN6506K-8	WN7606-8
1-Gang Cover	–	WN7591-8	–	WN7691-8
1-Gang for HB	WZV7061W	–	–	–
1-Gang for HB Snow White	WEV7061SW	–	–	–

Weather Proof Plates IPX3					
Metal	WN7801K-8	WN7802K-8	WN7803K-8	WN7821K-8
Plastic	WN7901-8	WN7902-8	WN7903-8	WN7921-8

*IP=Ingress Protection (when flap is closed).

INDUSTRIAL SOCKET

Locking Receptacles and Weather Proof Locking Receptacles

NOTE
Note: For locking flush mounting receptacles (20A and 30A) indicated by a※1 mark, because no more than one plug can be plugged in at the same time if the receptacles are installed in a multi-receptacle plate, use single plates and install the number needed.

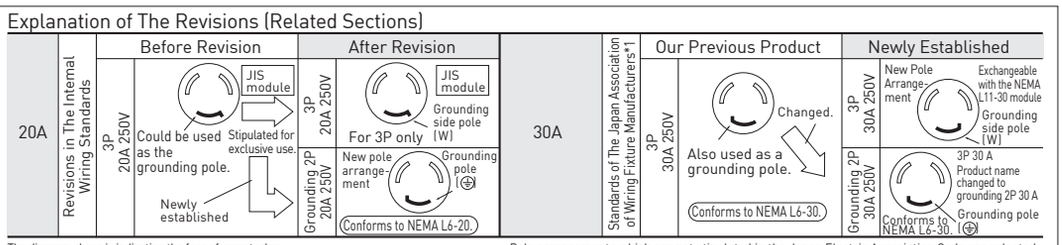
Form		Rating		Locking Flush Mounting Receptacles (WF2420BK) Black	Locking Flush Mounting Receptacles Milky White	Locking Surface Mounting Receptacles (WK2315K) Black	Locking Surface Mounting Receptacles Milky White	Weather Proof Locking Receptacles (JIS Weather Proof Type) (WK6430, Cover)	Applicable Electrical Wire
2P		15A	125V	WF2215BK	WF2215WK	WK2215	WK2215W	—	Ø1.6,Ø2 2mm²,3.5mm²
		20A	250V	WF2220BK※1	WF2220WK※1	WK2220K	—	—	Ø2,Ø2.6 3.5mm²,5.5mm²
3P		20A	250V	WF2320BK※1	WF2320WK※1	WK2320K	WK2320W	WK6320	Ø2,Ø2.6 3.5mm²,5.5mm²
		30A	250V	WF2331B※1	WF2331W※1	WK2331B	WK2331W	WK6331	Ø2.6,Ø3.2 5.5mm²,8mm²
		60A	250V	WF2360B	WF2360W	—	—	—	8mm²,14mm²
Grounding 2P (Previously 3P)		15A	125V	WF2315BK	WF2315WK	WK2315K	WK2315W	WK6315	Ø1.6,Ø2 2mm²,3.5mm²
		20A (L6-20)	250V	WF2520B※1	WF2520W※1	WK2520B	WK2520W	WK6520	Ø2,Ø2.6 3.5mm²,5.5mm²
		30A (L6-30)	250V	WF2330B※1	WF2330W※1	WK2330	WK2330W	WK6330	Ø2.6,Ø3.2 5.5mm²,8mm²
Grounding 3P (Previously 4P)		20A	250V	WF2420BK※1	WF2420WK※1	WK2420K	—	WK6420	Ø2,Ø2.6 3.5mm²,5.5mm²
		30A ★(L15-30)	250V	WF2430B※1	WF2430W※1	WK2430	—	WK6430	Ø2.6,Ø3.2 5.5mm²,8mm²
		60A	250V	WF2460B	WF2460W	—	—	—	8mm²,14mm²

★The 3P 30A and the grounding 3P 30A receptacles conform to NEMA standards and are not exchangeable with some of the receptacles used domestically in Japan.
★★"Multi-Level Weather Proof Valve"is adopted
Numbers indicated by a [ ] mark are the NEMA standard number.

Features

The Japan Electric Association Code has been revised (8001–1990), with the distinction between grounding poles and grounded-side pins clearly identified. In addition, although not stipulated in the Japan Electric Association Code, these receptacles have been established by the standards of the Japan Wiring Devices Association.

Explanation of The Revisions (Related Sections)

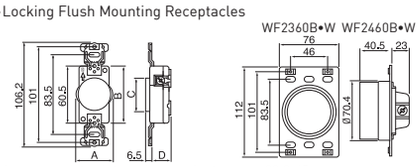


The diagram above is indicating the face of receptacles.

Pole arrangements which are not stipulated in the Japan Electric Association Code are selected according to the standards of the Japan Wiring Devices Association.

Dimensions (units: mm)

• Locking Flush Mounting Receptacles



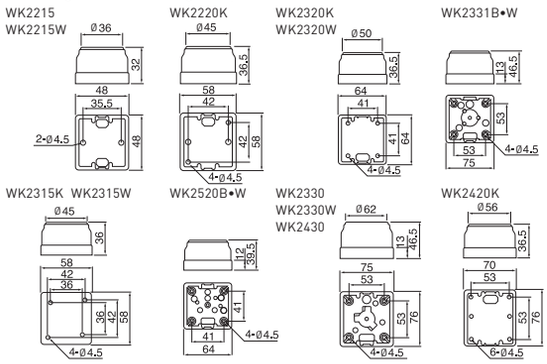
* for appropriate plates, please refer to pages 39 & 45

	Model No.	Dimension A	Dimension B	Dimension C (φ)	Dimension D
2P	WF2215BK•WK	36.5	59	34.5	19.8
	WF2220BK•WK	36.5	59	34.5	25.5
3P	WF2320BK•WK	38.8	59.5	34.5	25.5
	WF2331B•W	42.6	67.7	40.5	27.7
Grounding 3P (Previously 3P)	WF2315BK•WK	37.7	59	34.5	24
Grounding 2P	WF2520B•W	38.9	59.5	34.5	25.5
	WF2330B•W	42	69.1	40.5	30
Grounding 3P (Previously 4P)	WF2420BK•WK	43	61	40.5	25.5
	WF2430B•W	42	67	40.5	30

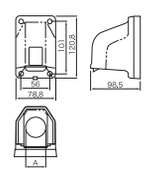
Applicable Box for WF2360•WF2460

Applicable box
Use a medium deep-type square receptacle box together with a square double switch cover (inner square 13 mm)

• Locking Surface Mounting Receptacle



• Weather Proof Locking Receptacle



	Model No.	Dimension A
3P	WK6320	34.5
	WK6331	40.5
Grounding 2P (Previously 3P)	WK6315	34.5
	WK6520	34.5
	WK6330	40.5
Grounding 3P (Previously 4P)	WK6420	40.5
	WK6430	40.5

All products have entirely the same specifications as those sold in Japan.

Locking Weather Proof Rubber Cord Connectors, Plugs, Bodies, Locking Plugs, and Locking Cord Connectors

Applicable Wire Types: Rubber Cabtire Cable (Type 2 or less), Round Rubber Cabtire Cord, Vinyl Cabtire Cable, and Round Vinyl Cabtire Cord

Locking Plugs WF6420		Tough Plugs WF62153B		Flush Cord Locking Corner Plugs "Horizontal Type" WF3424	Applicable Electrical Wire	Locking Water Proof Rubber Cord Connector Plugs and Cord Connector Bodies (JIS Weather Proof Type)			
						Plug WF8420K	Body WA5429K	Set WA5420K Multi-Level Weather Proof Valve Improves cord insertability without loosing weatherproofing performance.	
Locking Plugs		Tough Plugs		Flush Cord Locking Corner Plugs "Horizontal Type"		Plugs	Bodies	Set	Applicable Electrical Wire's Outer Diameter (Ø)
Black	Milky White	Black	Milky White			Black	Black	Black	
WF6215	WF6215W	—	—	—	1.25mm² 2mm²	WF8215K ★★	WA5219K ★★	WA5215K ★★	9.6~12
—	—	WF62153B	WF62153W		1.25mm² 2mm²~5mm²				
WF6220	WF6220W	—	—	—	2mm² 3.5mm²	WF8220K ★★	WA5229K	WA5220K	10.5~13.5
WF6320	WF6320W	—	—	—	2mm² 3.5mm²	WF8320K ★★	WA5329K ★★	WA5320K ★★	11~14.5
—	—			WF3324 (Horizontal Type)					
WF6331B	WF6331W	—	—	—	3.5mm² 5.5mm²	WF8331 ★★ ★(L11-30)	WA5338 ★★ ★(L11-30)	WA5331 ★★ ★(L11-30)	13~16
—	—	—	—	—	8mm² 14mm²	WF8360	WA5369	WA5360	17.5~22
WF6315	WF6315W	—	—	—	1.25mm² 2mm²	WF8315K ★★	WA5319K ★★	WA5315K ★★	10.5~13
—	—	WF3315B	WF3315W	—					
—	—	—	—	WF3314 (Horizontal Type)					
—	—	—	—	WF3524 (Horizontal Type)	2mm² 3.5mm²	WF8520 ★★	WA5529 ★★	WA5520 ★★	11~14.5
WF6330	WF6330W	—	—	—	3.5mm² 5.5mm²	WF8330	WA5339	WA5330	13~16
—	—			WF3334 (Horizontal Type)					
WF6420	WF6420W	—	—	—	2mm² 3.5mm²	WF8420K ★★	WA5429K ★★	WA5420K ★★	12~16
—	—			WF3424 (Horizontal Type)					
WF6430	WF6430W	—	—	—	3.5mm² 5.5mm²	WF8430	WA5439	WA5430	14~17.5
—	—			WF3434 (Horizontal Type)					
—	—	—	—	—	8mm² 14mm²	WF8460	WA5469	WA5460	19.5~24

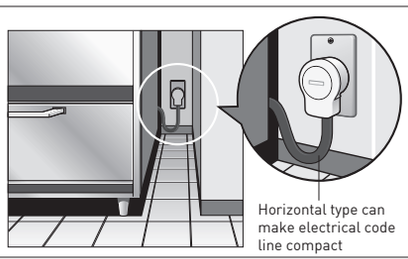
Note:
- For outdoor wiring exposed to rain, use either rubber cabtire cable or vinyl cabtire cable.
- For indoor locations exposed to moisture or high humidity, use rubber cabtire cable.
- If you use stranded wire on screw terminal, please don't solder up the copper wires at the terminal. There is a possibility that heating will occur since long time use may bring about oxidizing on surface of solder and make the contact between terminal and solder defective.

Features

Locking corner plugs are suitable for large kitchen equipment and other electrical equipment.

- Horizontal type can make electrical code line compact
- Even if in the narrow space, you can arrange equipment in order .

WF3424


Horizontal type can make electrical code line compact

For the connection of the power supply to electrical equipment in factories, etc. 2P 15A locking weatherproof rubber cord connector. (Locking flat plugs + weatherproof constructoin + compact size)

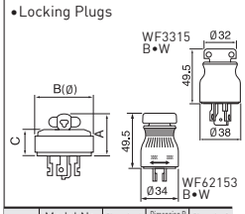
Applicable wire :1.25-2mm² (outer diameter 9.6 -12mm)

WF8715
2P 15A Locking weatherproof rubber plug 15A 125V

WA6219
2P 15A Locking weatherproof rubber cord connector body 15A 125V

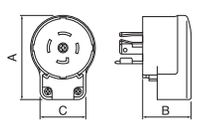
WA6215
2P 15A Locking weatherproof rubber cord connector (set) 15A 125V

- Locking Plugs



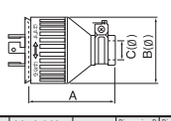
	Model No.	Dimension A	Dimension B (g)	Dimension C
2P	WF6215•W	34	34	19
	WF6220	36	41	21
3P	WF6320	38	46	23
	WF6331B	57.5	62.5	44
Grounding 3P (Previously 4P)	WF6315•W	36	38.5	21
	WF3315B•W	49.5	38	—
	WF6330•W	57.5	62.5	44
Grounding 3P (Previously 4P)	WF6420•W	40	56	25
	WF6430•W	57.5	62.5	44

- Flush Cord Locking Corner Plugs "Horizontal Type"



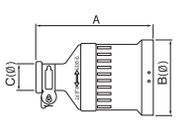
	Model No.	Dimension A	Dimension B	Dimension C
Grounding 2P	WF3314	52	32	38
	WF3524	63	37	46
	WF3334	73.25	43	56.5
3P	WF3324	63	37	46
Grounding 3P	WF3424	73.25	43	56.5
	WF3434	73.25	43	56.5

- Locking Water Proof Rubber Plugs



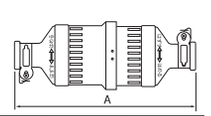
	Model No.	Dimension A	Dimension B (g)	Dimension C (g)
2P	WF8215K	62	41	12
	WF8220K	66	47.2	13.5
3P	WF8320K	68.8	53	14.5
	WF8331	93.5	69.5	16
	WF8360	178	80.5	22
Grounding 2P (Previously 3P)	WF8315K	64.5	46	13.5
	WF8520	78.2	46	14.5
	WF8330	93.5	69.5	16
Grounding 3P (Previously 4P)	WF8420K	79	63.6	16
	WF8430	93.5	69.5	17.5
	WF8460	178	80.5	24

- Locking Water Proof Rubber Bodies



	Model No.	Dimension A	Dimension B (g)	Dimension C (g)
2P	WA5219K	89	44	12
	WA5229K	98	51.5	13.5
3P	WA5329K	103.5	56.5	14.5
	WA5338	118.5	74.5	16
	WA5369	171.5	74	22
Grounding 2P (Previously 3P)	WA5319K	97	49	13
	WA5529	112	53.5	14.5
	WA5339	118.5	74.5	16
Grounding 3P (Previously 4P)	WA5429K	112	67.5	16
	WA5439	118.5	74.5	17.5
	WA5469	171.5	74	24

- Locking Water Proof Rubber Cord Connectors (Complete Set)



	Model No.	Dimension A
2P	WA5215K	148.5
	WA5220K	161
3P	WA5320K	169.1
	WA5331	208.5
	WA5360	320
Grounding 2P (Previously 3P)	WA5315K	159
	WA5520	183.8
	WA5330	208.5
Grounding 3P (Previously 4P)	WA5420K	187.5
	WA5430	208.5
	WA5460	320

All products have entirely the same specifications as those sold in Japan.

High-Capacity Flush Mounting Receptacles, Surface Mounting Receptacles, Plugs, and Cord Connectors

Applicable Wire Types: Rubber Cabtire Cable (Type 2 or less), Round Rubber Cabtire Cord, Vinyl Cabtire Cable, and Round Vinyl Cabtire Cord

Note
Note: For models (WF1220BK/WK, WF1230BK/WK, WF1320BK/WK, WF1420BK/WK) indicated by a ※1 mark, due to the size of the plugs, no more than one plug can be plugged in at the same time if the receptacles are installed in a multi-receptacle switch box. Therefore, if two or more circuits are to be used at the same time, use single switch boxes and install the number needed.

WF1220BK

WK36301B

WF5420

WF52153B

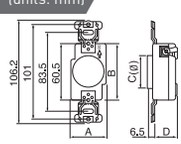
WF56301B

Form		Rating		Flush Mounting Receptacles Black	Flush Mounting Receptacles Milky White	Surface Mounting Receptacles Black	Surface Mounting Receptacles Milky White	Applicable Electrical Wire	Plugs Black	Plugs Milky White	Tough Plugs Black	Tough Plugs Milky White	Plugs "Horizontal Type" Black	Plugs "Horizontal Type" Milky White	Applicable Electrical Wire
2P		15A	125V	—	—	—	—	—	WF5215	WF5215W	—	—	—	—	1.25mm², 2mm²
									—	—	WF52153B	WF52153W			1.25mm², 2mm², 3.5mm²
		15A	250V	—	—	—	—	—	—	—	—	—	—	—	—
		20A	250V	WF1220BK ※1	WF1220WK ※1	WK1220B	WK1220W	Ø2, Ø2.6 3.5mm², 5.5mm²	WF5220	WF5220W	—	—	—	—	2mm², 3.5mm²
									WF52201 Compact Type						
		30A	250V	WF1230BK ※1	WF1230WK ※1	WK1230	—	Ø2.6, (Ø3.2), 5.5mm², (8mm²)	WF5230	WF5230W	—	—	—	—	3.5mm², 5.5mm²
3P		15A	250V	WF1315BK	WF1315WK	WK1315	—	Ø1.6, Ø2 2mm², 3.5mm²	WF5315	WF5315W	—	—	—	—	1.25mm², 2mm²
		20A	250V	WF1320BK ※1	WF1320WK ※1	WK1320	—	Ø2, Ø2.6 3.5mm², 5.5mm²	WF5320	WF5320W	—	—	—	—	2mm², 3.5mm²
		30A	250V	WF1330BK	WF1330WK	WK1330	—	Ø2.6, (Ø3.2), 5.5mm², (8mm²)	WF5330	WF5330W	—	—	—	—	3.5mm², 5.5mm²
Grounding 2P		15A	125V	—	—	—	—	—	WF7002	WF7002W	—	—	—	—	1.25mm², 2mm²
									—	—	WF5015B	WF5015W			
		15A	250V	—	WF3012WK (Cream)	—	—	Ø1.6, Ø2 2mm², 3.5mm²	WF7011	WF7011W	—	—	—	—	1.25mm², 2mm²
									—	—	WF5115B	WF5115W	—	—	
		30A	250V	WF3630B	WF3630W	WK3630	—	Ø2.6, (Ø3.2), 5.5mm², (8mm²)	WF5630	WF5630W	—	—	—	—	3.5mm², 5.5mm²
						WK36301B Thin Type	WK36301W Thin Type		—	—	—	—	WF56301B Horizontal Type	WF56301W Horizontal Type	
				—	—	WK3730B Thin Type	WK3730W Thin Type		—	—	—	—	WF5730B Horizontal Type	WF5730W Horizontal Type	
						Please choose a receptacle after checking the shape of the plug							Please choose a receptacle after checking the shape of the plug		
Grounding 3P (Previously 4P)		15A	250V	WF1415BK	WF1415WK	WK1415	—	Ø1.6, Ø2 2mm², 3.5mm²	WF5415	WF5415W	—	—	—	—	1.25mm², 2mm²
		20A	250V	WF1420BK ※1	WF1420WK ※1	WK1420	—	Ø2, Ø2.6 3.5mm², 5.5mm²	WF5420	WF5420W	—	—	—	—	2mm², 3.5mm²
		30A	250V	WF1430BK	WF1430WK	WK1430	—	Ø2.6, (Ø3.2), 5.5mm², (8mm²)	WF5430	WF5430W	—	—	—	—	3.5mm², 5.5mm²

Note: Electrical wire indicated in parentheses ( ) cannot be used for surface mounting receptacles.

Dimensions (units: mm)

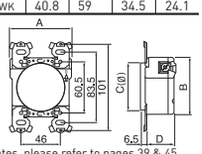
Flush Mounting Receptacles
WF1220BK•WK
WF1320BK•WK
WF1230BK•WK
WF1415BK•WK
WF1315BK•WK
WF1420BK•WK
WF3012EK



* for appropriate plates, please refer to pages 39 & 45

	Model No.	Dimension A	Dimension B	Dimension C (Ø)	Dimension D
2P	WF1220BK•WK	38.8	60	34.5	24.1
	WF1230BK•WK	42	64.8	40.5	35.3
3P	WF1315BK•WK	37.7	59.5	34.5	21
	WF1320BK•WK	37.6	60	34.5	24.1
Grounding 2P	WF3012WK	38	—	34.5	19.5
Grounding 3P (Previously 4P)	WF1415BK•WK	40.4	59	34.5	21
	WF1420BK•WK	40.8	59	34.5	24.1

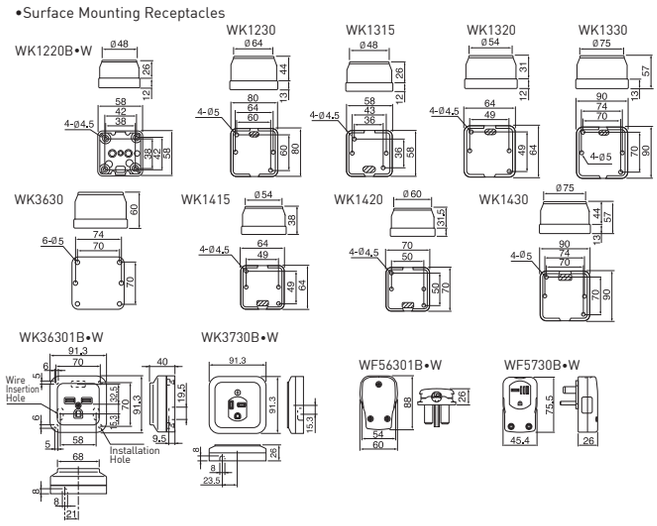
WF1330BK•WK
WF1430BK•WK
WF3630B•W



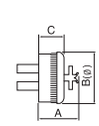
* for appropriate plates, please refer to pages 39 & 45

	Model No.	Dimension A	Dimension B	Dimension C (Ø)	Dimension D
3P	WF1330BK•WK	72.8	70	57	35.3
Grounding 3P	WF1430BK•WK	68			
Grounding 2P	WF3630B•W	72.8			

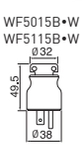
•Surface Mounting Receptacles



•Plugs



WF5015B•W
WF5115B•W



WF52153B•W

	Model No.	Dimension A	Dimension B (Ø)	Dimension C
2P	WF5215•W	34.2	34	20
	WF5220•W	41.2	53	27
	WF52201	38.2	45.5	24
	WF5230•W	50.9	63	33
3P	WF5315•W	35.2	46	21
	WF5320•W	41.2	53	27
	WF5330•W	50.9	68	33
Grounding 2P	WF7002•W	35.2	39	21
	WF7011•W	35.2	39	21
	WF5630•W	61.5	63.5	47.5
Grounding 3P (Previously 4P)	WF5415•W	35.2	46	21
	WF5420•W	41.2	53	27
	WF5430•W	50.9	73	33

All products have entirely the same specifications as those sold in Japan.

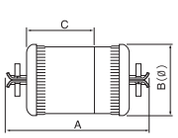
Locking Weather Proof Rubber Cord Connectors, Plugs, Bodies, Locking Plugs, and Locking Cord Connectors

Applicable Wire Types: Rubber Cabtire Cable (Type 2 or less), Round Rubber Cabtire Cord, Vinyl Cabtire Cable, and Round Vinyl Cabtire Cord

				Weather Proof Rubber Cord Connector Plugs and Cord Connector Bodies (JIS Rain-Proof Type)				Rubber Plug (non-Weather Proof Type)	Applicable Electrical Wire	Cord Connectors (Body)	Cord Connectors (Complete Sets)	Applicable Electrical Wire
				Plug (WF7420K)	Body (WA3429K)	Set (WA3420K) Improves cord insertability without loosing weatherproofing performance.		WF7005K		WA1219	WA1215	
Form		Rating		Plugs	Cord Connector Body	Complete Set	Applicable Wire Outer Diameter	Plugs		Black	Black	
2P		15A	125V	WF7215K	WA3219K	WA3215K	9.6~12	WH4007 WF4215	1.25mm², 2mm²	WA1219	WA1215 (Body WA1219 / Plug WF5215)	1.25mm², 2mm²
2P		15A	250V	—	—	—	—	WF4212	1.25mm², 2mm²	—	—	
2P		20A	250V	WF7220	WA3229	WA3220	10.5~13.5	WF4220	2mm², 3.5mm²	WA1229	WA1220 (Body WA1229 / Plug WF5220)	2mm², 3.5mm²
2P		30A	250V	WF7230	WA3239	WA3230	12~15	WF4230	3.5mm², 5.5mm²	—	—	
3P		15A	250V	WF7315	WA3319	WA3315	10.5~13	WF4315	1.25mm², 2mm²	WA1319	WA1315 (Body WA1319 / Plug WF5315)	1.25mm², 2mm²
3P		20A	250V	WF7320	WA3329	WA3320	11~14.5	WF4320	2mm², 3.5mm²	WA1329	WA1320 (Body WA1329 / Plug WF5320)	2mm², 3.5mm²
3P		30A	250V	WF7330	WA3339	WA3330	13~16	WF4330	3.5mm², 5.5mm²	—	—	
Grounding 2P		15A	125V	WF75159	WA3519K	WA35159	10.5~13	WF7005K	0.75mm²~2mm²	WA1519	WA1515 (Body WA1519 / Plug WF7002)	1.25mm², 2mm²
								WF7004	1.25mm², 2mm²			
Grounding 2P		15A	250V	WF7615	WA3619	WA3615	10.5~13	WF7013	1.25mm², 2mm²	WA1619	WA1615 (Body WA1619 / Plug WF7011)	1.25mm², 2mm²
Grounding 2P		30A	250V	WF7630	WA3639	WA3630	13~16	WF4630	3.5mm², 5.5mm²	—	—	
Grounding 2P		30A	250V	—	—	—	—	—		—	—	
Grounding 3P (Previously 4P)		15A	250V	WF7415	WA3419	WA3415	11.5~14	WF4415	1.25mm², 2mm²	WA1419	WA1415 (Body WA1419 / Plug WF5415)	1.25mm², 2mm²
Grounding 3P (Previously 4P)		20A	250V	WF7420K	WA3429K	WA3420K	12~16	WF4420	2mm², 3.5mm²	WA1429	WA1420 (Body WA1429 / Plug WF5420)	2mm², 3.5mm²
Grounding 3P (Previously 4P)		30A	250V	WF7430	WA3439	WA3430	14~17.5	WF4430	3.5mm², 5.5mm²	—	—	

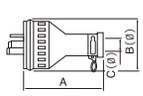
Note:
- For outdoor wiring exposed to rain, use either rubber cabtire cable or vinyl cabtire cable.
- For indoor locations exposed to moisture or high humidity, use rubber cabtire cable.
- If you use stranded wire on screw terminal, please don't solder up the copper wires at the terminal.
  There is a possibility that heating will occur since long time use may bring about oxidizing on surface of solder and make the contact between terminal and solder defective.

•Cord Connectors



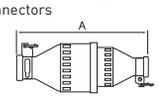
	Model No.	Dimension A	Dimension B (ø)	Dimension C
2P	WA1215	87.5	34	39
	WA1220	107.5	53	52
3P	WA1315	91.5	45	42
	WA1320	107.5	53	52
Grounding 2P	WA1515	91.5	39	42
	WA1615	91.5	39	42
Grounding 3P (Previously 4P)	WA1415	91.5	46	42
	WA1420	107.5	53	52

•Weather Proof Rubber Plugs



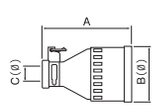
	Model No.	Dimension A	Dimension B (ø)	Dimension C (ø)
2P	WF7215K	60	39	12
	WF7220	90	54	13.5
	WF7230	120	69.5	15
3P	WF7315	78	48	12.5
	WF7320	90	54	14.5
	WF7330	120	69.5	16
Grounding 2P	WF75159	60	39	13
	WF7615	78	48	12.5
	WF7630	102	73	16
Grounding 3P (Previously 4P)	WF7415	78	48	14
	WF7420K	91	61	16
	WF7430	120	69.5	17.5

•Weather Proof Rubber Cord Connectors



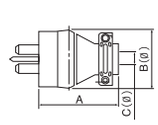
	Model No.	Dimension A
2P	WA3215K	123
	WA3220	197
	WA3230	264
3P	WA3315	170.5
	WA3320	197
	WA3330	264
Grounding 2P	WA35159	126
	WA3615	169.5
	WA3630	229
Grounding 3P (Previously 4P)	WA3415	170.5
	WA3420K	193
	WA3430	264

•Weather Proof Rubber Cord Connector Bodies



	Model No.	Dimension A	Dimension B (ø)	Dimension C (ø)
2P	WA3219K	74	46	12
	WA3229	120	67	13.5
	WA3239	160	85	15
3P	WA3319	105	58	13
	WA3329	120	67	14.5
	WA3339	160	85	16
Grounding 2P	WA3519K	75	46	13
	WA3619	105	58	13
	WA3639	143	83	16
Grounding 3P (Previously 4P)	WA3419	105	58	14
	WA3429K	120	73	16
	WA3439	160	85	17.5

•Rubber Plugs



	Model No.	Dimension A	Dimension B (ø)	Dimension C (ø)
2P	WH4007	53	34	10.5
	WF4215	50	32	13
	WF4212	54	39	12
	WF4220	68	50	13.5
	WF4230	90	68.2	15
3P	WF4315	60	45.2	13
	WF4320	68	50.2	14.5
	WF4330	90	68.2	16
Grounding 2P	WF7005K	50	32	13
	WF7004	50	39	10
	WF7013	50	39	10
	WF4630	100	69.5	16
Grounding 3P (Previously 4P)	WF4415	60	45.2	14
	WF4420	70	52.2	16
	WF4430	90	68.2	17.5

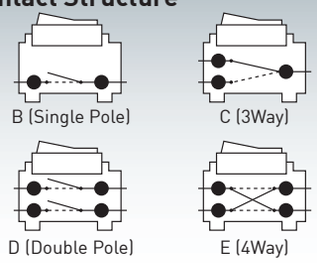
•Rubber Cord Connectors (Non-Weather Proof) 15A 125V

Complete Set, Plug, Cord Connector Body
WA2215(Set)
WF4215(Plug)
WA2219 (Cord Connector Body)
Applicable Wire 1.25mm²~2mm²

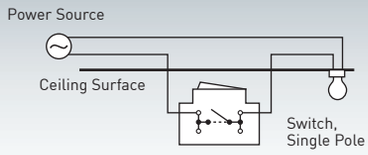
All products have entirely the same specifications as those sold in Japan.

Switches

Contact Structure



Switch, Single Pole

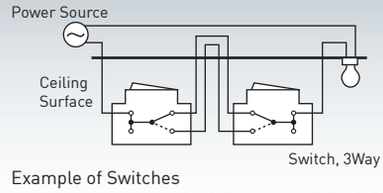


Example of Switches

WEV5001SW **WNV5001-7W** **WEVH5511**
WNG5051W-751 **WEV5001-7SW** **WEVH5511-7**
WEG5151-7SW

Switch, 3Way

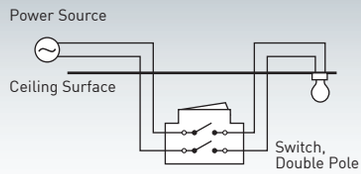
Operation of one fixture 2 locations.



Example of Switches

WEV5001SW **WNV5002-7W** **WEV5002-7SW**
WNG5052W-751 **WEG5152-51KSW** **WEG51527SW**
WEVH5512 **WEVH5512-7**

Switch, Double Pole

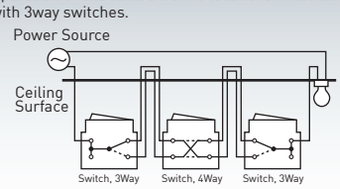


Example of Switches

WEG5003KSW **WEVH5003**
WNG5003W-7

Switch, 4Way

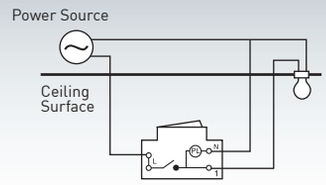
Operation of one fixture from 3 locations in combination with 3way switches.



Example of Switches

WEG5004KSW **WEVH5004**
WNG5004W-7

Glow Switch(3Way)

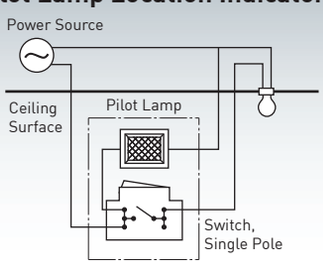


Example of Switches

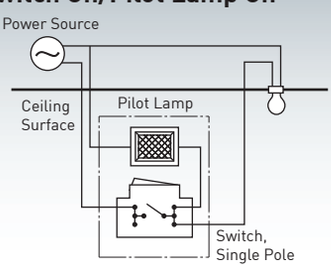
WEG5341

Wiring Instructions(Combination with Pilot Lamp)

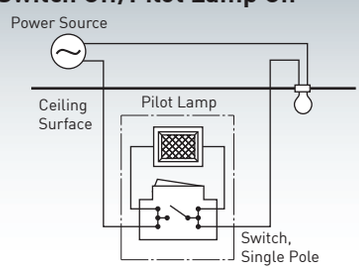
Pilot Lamp Location Indicator



Switch On/Pilot Lamp On

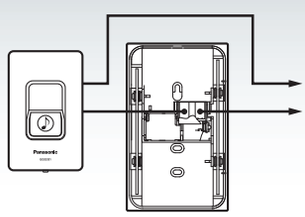


Switch Off/Pilot Lamp On



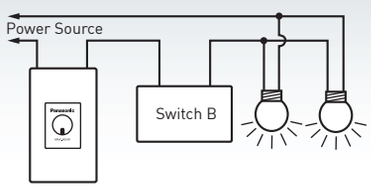
Door Chime

EGG331/EGG335/EBG888



Dimmer Unit

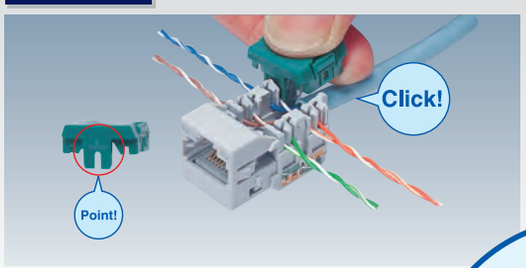
WEG575151SW **WNGP575253**
WEG575181 **WNGP575283**



Easy Installation (WEV2488SW/WEV2488H/WEV24886SW/WEV24886H)

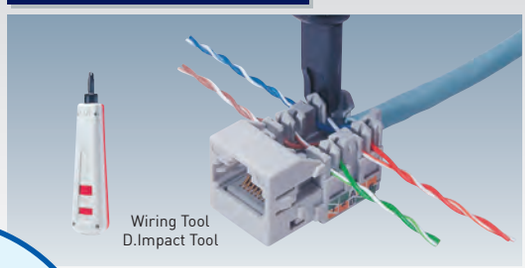
1 2Way Connection

Toolless Wire Connection by Using Captip

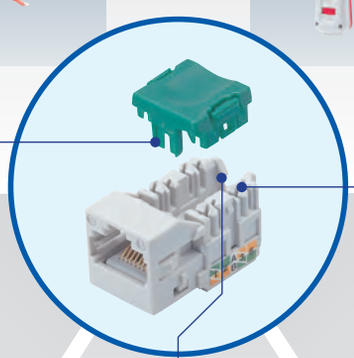


- Use tool when connecting wires 0.65mm
- Cut the excess wires with nippers after connection

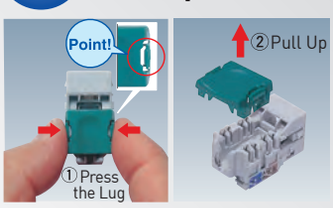
Using Wiring Tool



- Excess wires can be cut with the blade edge of the tool



2 Easy to Remove the Cap

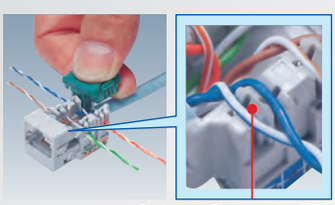


- After connecting the core wires, press the cap down until you hear a click.

3 Cable Fixing System

- Fix the cable steadily during installation.
- Prevent overpeeling of the Sheath of the cable to avoid failures/malfunctions

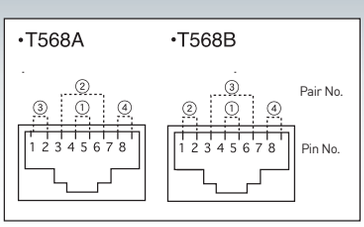
4 No Need to Untwist the Wires



Projection Between the Slots

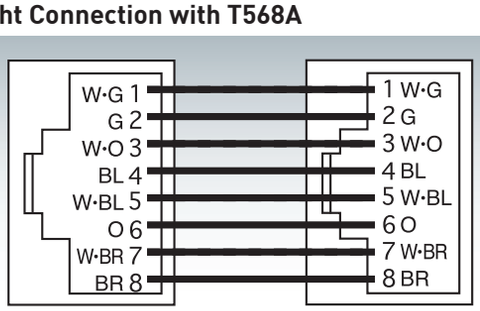
- No need to untwist the wires on setting to the slots.
- Minimum untwisting makes uniform installation quality & transmission performance.

Pin/Pair Assignment

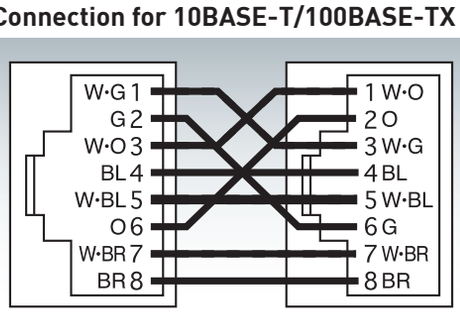


		T568A	T568B
①	W・BL	5	5
	BL	4	4
②	W・O	3	1
	O	6	2
③	W・G	1	3
	G	2	6
④	W・BR	7	7
	BR	8	8

Straight Connection with T568A



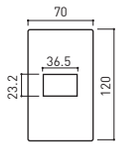
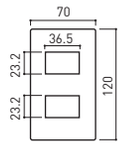
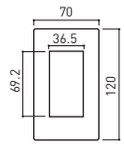
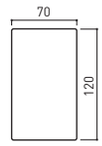
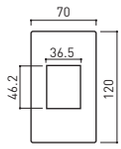
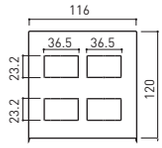
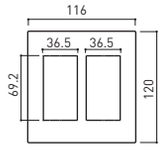
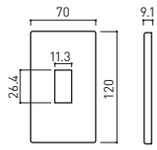
Cross Connection for 10BASE-T/100BASE-TX



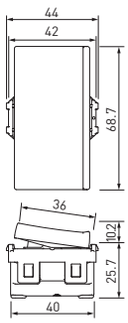
Halumie

Plates

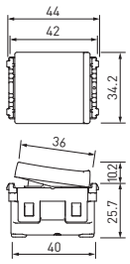
Unit: mm

HALUMIE	 Plastic Plate 1-Gang 1-Device	 Plastic Plate 1-Gang 2-Device	 Plastic Plate 1-Gang 3-Device	 Plastic Plate 1-Gang Cover
	WEVH68010	WEVH68020	WEVH68030	WEVH68910
	 Plastic Plate 1-Gang Center 2-Device	 Plastic Plate 2-Gang 4-Device	 Plastic Plate 2-Gang 6-Device	 Plastic Plate 1-Gang for HB Breaker
	WEVH680290	WEVH68040	WEVH68060	WEVH8061

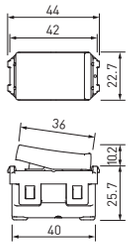
WEVH5511



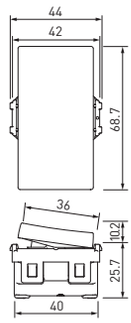
WEVH5521



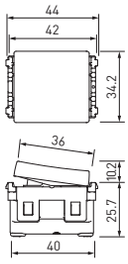
WEVH5531



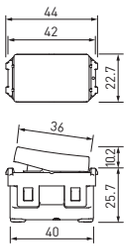
WEVH5512



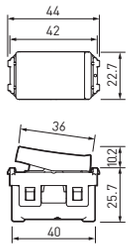
WEVH5522



WEVH5532



WEVH5003



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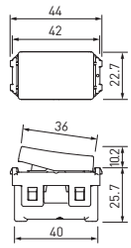
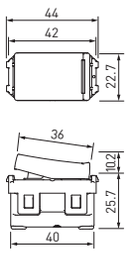
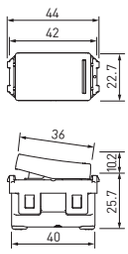


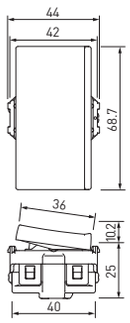
WEVH5151-51



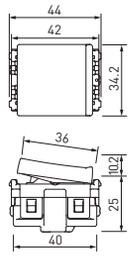
WEVH5152-51



WEVH5511-7



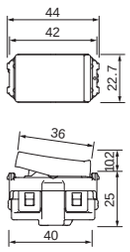
WEVH5521-7



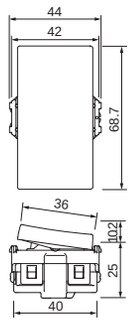
Halumie

Unit: mm

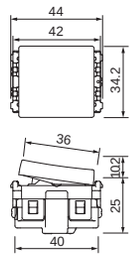
WEVH5531-7



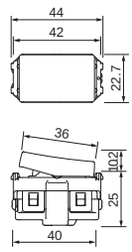
WEVH5512-7



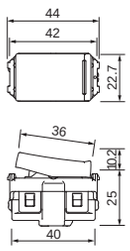
WEVH5522-7



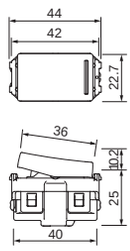
WEVH5532-7



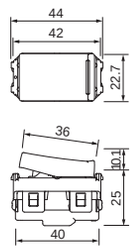
WEVH5151-7



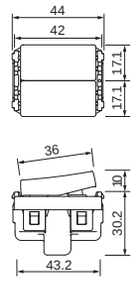
WEVH5152-7



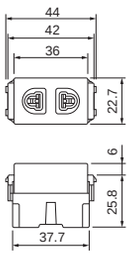
WEVH5033-7



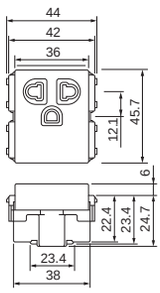
WEVH5542-7



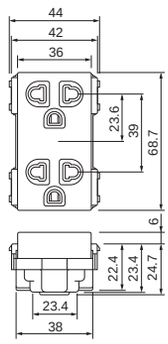
WEV1081SW
WEV1091SW
WEV1081-7SW



WEV1181SW
WEV1181-7SW



WEV1582SW
WEV1582-7SW



WEV24886SW
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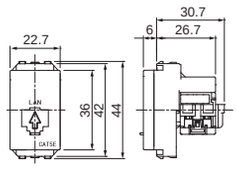
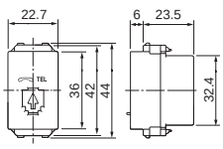
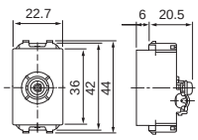


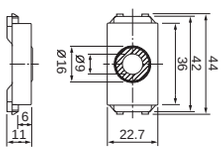
WEV2364SW



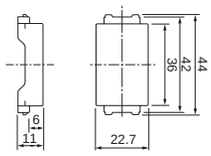
WEV2501SW



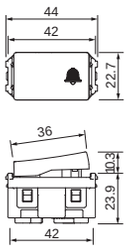
WEG3023SW



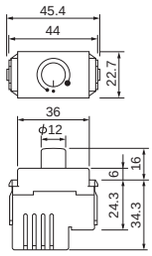
WEG3020SW



WEVH5401-011

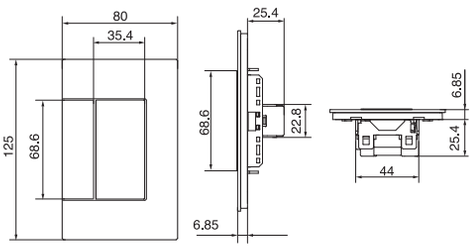


WEG575151SW

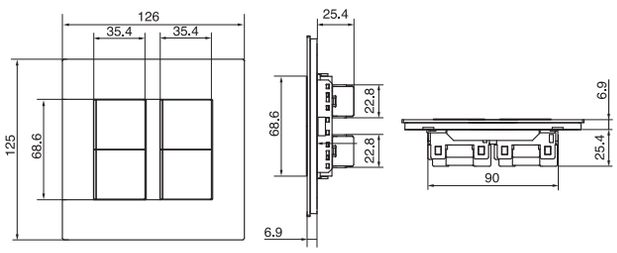


Unit: mm

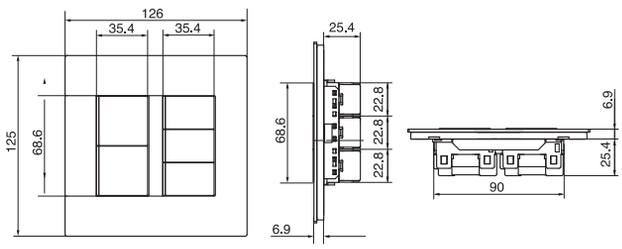
WTEGP51552S-1-G



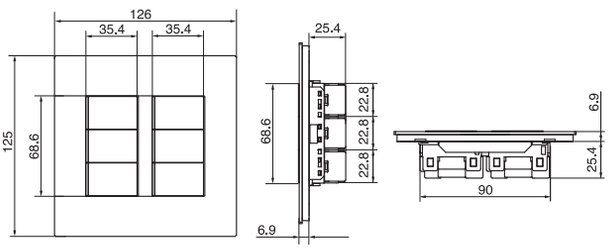
WTEGP54562S-1-G



WTEGP55582S-1-G

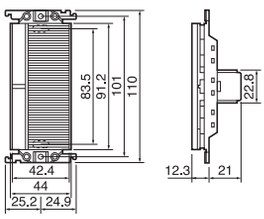


WTEGP56572S-1-G

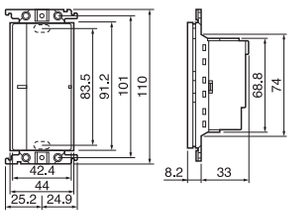


COSMO ART

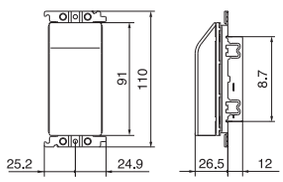
WTAG7152



WTC5631WK-8



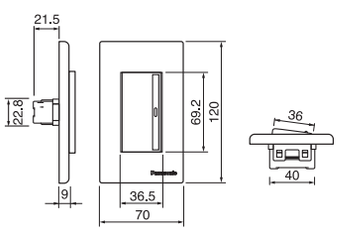
WTNG4101W/WTNG4102W



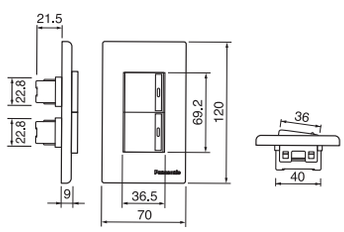
*For receptacles & accessoriesplease see FULL- COLOR WIDE series.

FULL-COLOR WIDE SERIES Refina

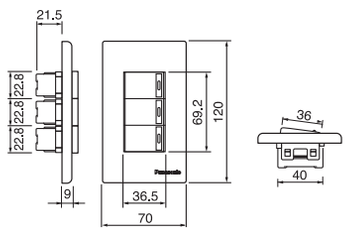
WEV5511SW



WEV5521SW



WEV5531SW

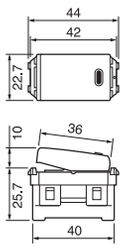


DIMENSION OF WIRING DEVICES

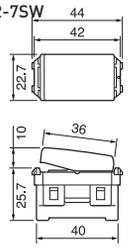
FULL COLOR WIDE SERIES

Unit: mm

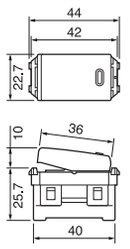
WEV5001SW
WEG5003KSW
WEV5001-7SW



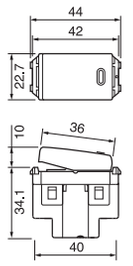
WEV5002SW
WEG5004KSW
WEV5002-7SW



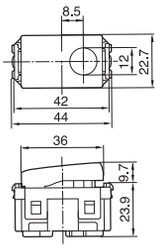
WEG5151-51SWK
WEG5152-51SWK
WEG5341SW
WEG51517-7SW
WEG51527-7SW



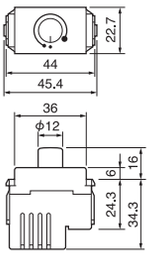
WEG5141SW



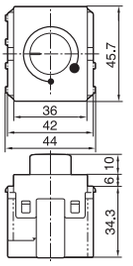
WEG5400-7SW
WEG5401-7SW



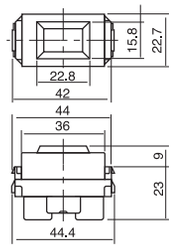
WEG575151SW



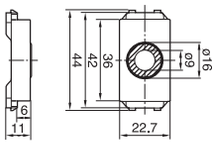
WEG575181



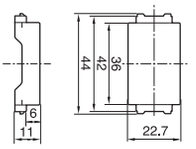
WEG3032SW(White)
WEG3032RSW(Red)
WEG3032GSW(Green)



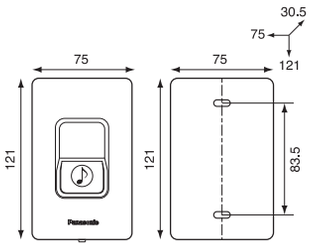
WEG3023SW



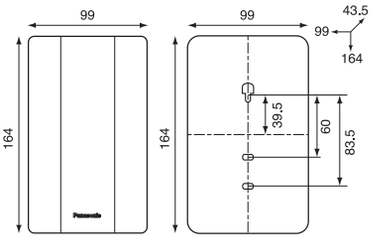
WEG3020SW



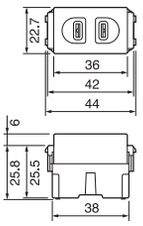
EGG331/EGG335



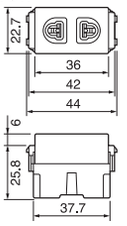
EBG888



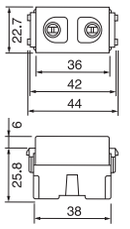
WEG1001SW



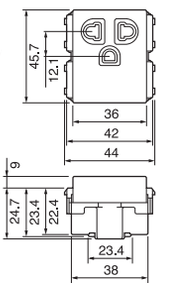
WEV1081SW
WEV1091SW
WEV1081-7SW



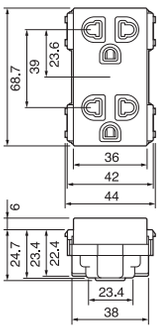
WEG1090SW



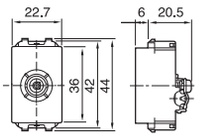
WEV1181SW
WEV1191SW
WEV1181-7SW



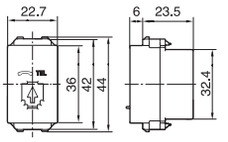
WEV1582SW
WEV1592SW
WEV1582-7SW



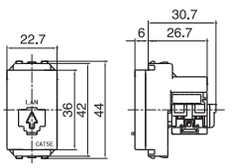
WEV2501SW



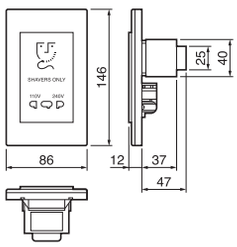
WEV2364SW



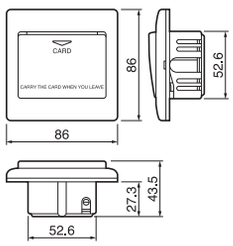
WEV24886SW
WEV2488SW



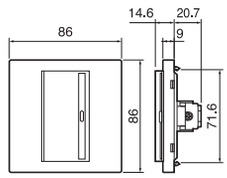
WEB1051W



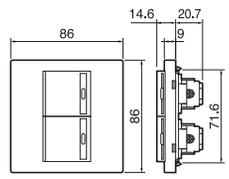
WEB5781WK



WEB5151-7SW □□



WEB5252-7SW □□



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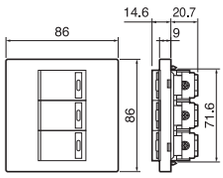

The last 2 characters in □□ of Refina product numbers show the item color.

FULL-COLOR SERIES

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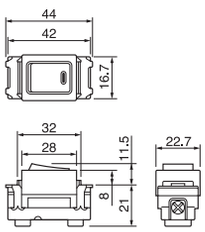

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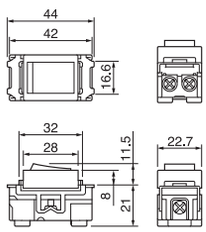

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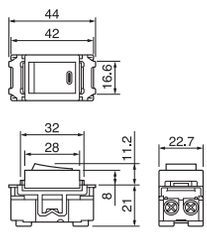

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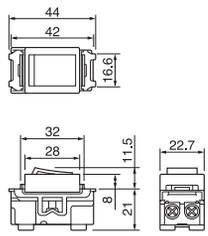

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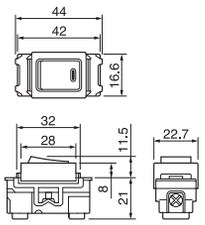

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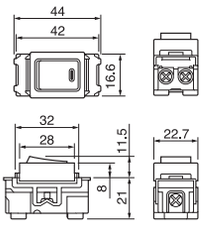

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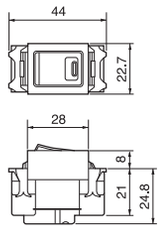

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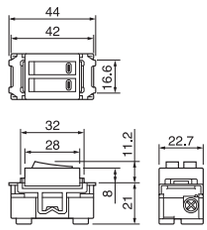

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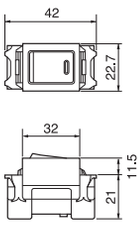

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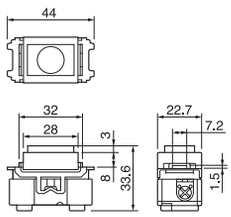

DIMENSION OF WIRING DEVICES

Unit: mm

FULL-COLOR SERIES

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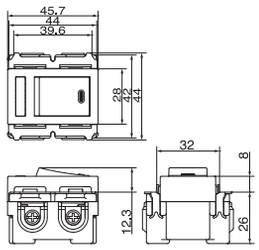

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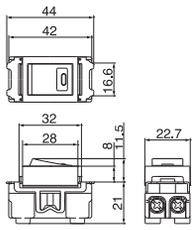

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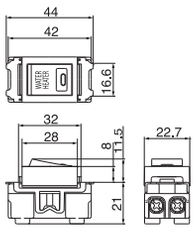

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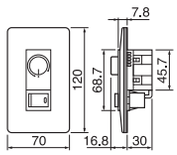

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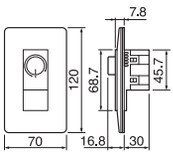

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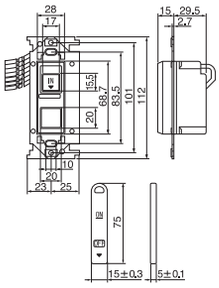

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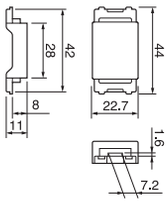

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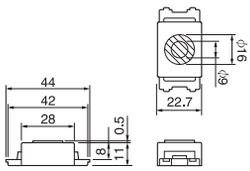

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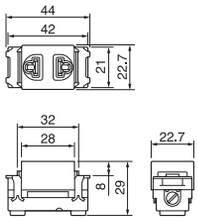

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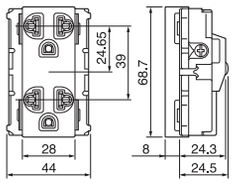

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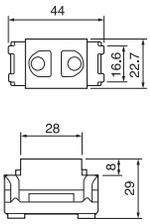

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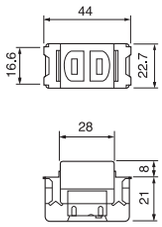

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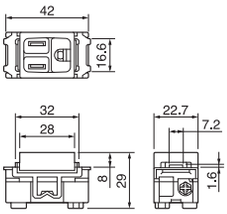

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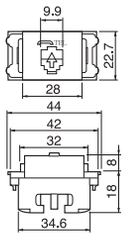

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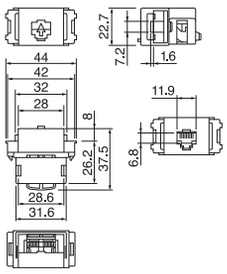

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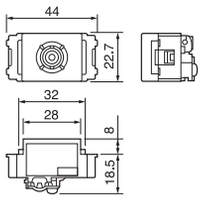

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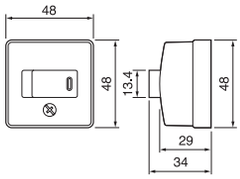

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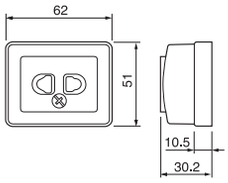

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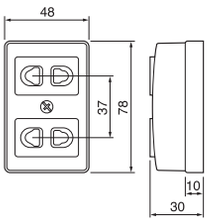


High safety that comply with Thai industrial standard (TIS) and civilized design in Japan

EXTENSION CORD with Safety Shutter & Breaker

CERTIFIED
Product Safety
License No.Q-1169

5M CORD LENGTH

Flexible Cord Terminal
Is able to distort 10,000 times at 45 angles and 100 times at 60 N to protect copper inside from being twisted.

Glow Switch
Durable built in switch for Power ON Indication.

Switch Cover
Embedded style switch with cover to protect from unintended switching.

Highly Insulated Flexible Wire
1.50 mm².

1.5 mm² PVC type flexible wire with thick insulation.

Box Cover
ABS Resin

Made of ABS Resin which is heat resistant UI 94 std., is sturdy and durable.

Round Pin Type Receptacle with Shutter&Ground
UREA Resin

- Copper clad is produced by piece to piece, without connecting point. That leads to be a good conductor.
- Receptacle is made of Urea Resin. Urea Resin property are sturdy, high heat resistant and inflamable.
- Durable socket can be plugged in more than 10,000 times.
- Twin Safety Shutter springs prevent electric shock (Shutter will not open unless both are pressed). Easy to plug in both Flat pin type, even with heavy weight.

Full Rating
16A 3500W

Total electric power which can applied to thisproduct is 3,500 watts, 16A/250V

Safe Connection
- Flat pin with Grounding type of plug.
- High strength material cannot be easily deformed by frequent plugging.

Circuit Breaker
NO FUSE

- Electric can be cut off automatically when overload of electric power (white button will protrude instantly).
- Easy to re-preform by pressing the circuit breaker (No need any replaced fuse).
- Circuit breaker is designed to be underneath to protect from accidental touch.

Specification

- Electrical outlet conform with IEC 608841-1 which be able to plug insert at lease 10,000 strokes
- Full rating 16A 250V, 3,500 watts
- 3 main plug in, 5 main plug in, 6 main plug in,1.5 mm² wire size for 16A 250V with 5 m of wire length
- Circuit Breaker can cut electric off automatically when overload of 3,500 watts and re-perform easily by press the reset button (After adjust to proper electric power)
- Switch with glow status, endurable and can be on/off for over 40,000 strokes

WCHG 28334
Extension Cord (3 Sockets)

WCHG 28352
Extension Cord (5 Sockets)

WCHG 2836
Extension Cord (6 Sockets)

Nice Appearance and Safety Design for Floor Management

FLOOR OUTLET SERIES

POP-UP FLOOR OUTLET IP-44

DU5983LT9-1
Grounding Duplex Universal with Safety Shutter with Outlet Box and Box Protector
16A 250V~

DU5993LT9-1
Grounding Duplex Universal with Outlet Box and Box Protector
16A 250V~

DU5990LT9-1
Grounding Duplex Universal with Outlet Box and Box Protector
16A 250V~

DU6993LT9-1
Duplex Telephone Modular Jack 6P4C with Outlet Box and Box Protector

DU6935LT9-1
Telephone Modular Jack 6P 4C and CAT5E Modular Jack with Outlet Box and Box Protector

DU6955LT9-1
Duplex CAT5E Modular Jack with Outlet Box and Box Protector

DU59833LT9-1
Grounding Universal with Safety Shutter 16A 250V~ and Telephone Modular Jack 6P4C with Outlet Box and Box Protector

DU59835LT9-1
Grounding Universal with Safety Shutter 16A 250V~ and CAT5E Modular Jack with Outlet Box and Box Protector

DU6966LT9-1
Duplex CAT6 Modular Jack with Outlet Box and Box Protector

FLOOR OUTLET (Aluminum Diecast) IP-44

DUF1260LTK-1
Grounding Duplex Universal with Safety Shutter with Outlet Box and Box Protector
16A 250~

DUF1270LTK-1
Grounding Duplex Universal with Outlet Box and Box Protector
16A 250~

DUF3221LTK-1
Grounding Universal with Safety Shutter 16A 250~ and Telephone Modular Jack 6P4C with Outlet Box and Box Protector

DUF1200LTK-1
Blank with Outlet Box and Box Protector
This Floor Outlet can be supplied without Socket

DUF2229LTK-1
Duplex Telephone Modular Jack 6P4C
with Outlet Box and Box Protector

DUF2214LTK-1
Telephone Modular Jack 6P4C and
CAT5E Modular Jack with Outlet Box
and Box Protector

DUMF3200LT-1
Double Duplex without Inside
Wiring Devices for Full Color WIDE Series

DUF3234LTK-1
Grounding Universal with Safety Shutter 16A 250V~
And CAT5E Modular Jack with box Protector and Outlet Box

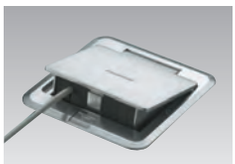
DUF5200LT-1
Floor Outlet blank (without socket outlet)
With cover unit and outlet box

DUF2259LTK-1
Duplex CAT5E Modular Jack
with Outlet Box and Box Protector

*Installed Receptacles have Full Color Wide Series

Safety

Safety constructed
conforming to the
IEC 60884-1



IP 4 4

This product conforms the water and dust protection level IP44 (IEC60529) by the cover are closed.
Harmful ingress of water ; Level 4 Protection against liquid spills (No damage by water splash from any direction)
Harmful ingress of solid obstacles ; Level4
Protection against substance bigger than 1.0mm. (Hard to enter substances such as cable, cloth, paper, board pieces)

FLOOR OUTLET SINGLE IP-24

DU8102HTC-1
Grounding Universal with Safety
Shutter with Cover Unit
16A 250~

DU8100HTC-1
Grounding Duplex Universal
with Cover Unit
16A 250V~

DU5102HTC-1
Grounding Single Parallel
with Cover Unit
16A 250~

DU61233HTC-1
Duplex Telephone Modular
Jack 6P4C Cover Unit

DU61223HTC-1
Telephone Modular Jack 6P4C
and TV Terminal Cover Unit

DU7199HTC-1*
GFloor Outlet Blank for Double Device
with Cover Unit

FLOOR OUTLET DUPLEX IP-24

DU8183HTK-1-1
Grounding Duplex Universal with
Safety Shutter with Outlex Box and Box Protector
16A 250~

DU81931HTK-1
Grounding Duplex Universal
with Outlex Box and Box Protector
16A 250~

DU5103HTK-1
Grounding Duplex Parallel
with Outlex Box and Box Protector
16A 250~

DU81835HTK-1
Grounding Universal with Safety
Shutter and CAT5E Modular Jack
with Outlex Box and Box Protector
16A 250~

DU61233HTK-1
Duplex Telephone Modular Jack
6P4C with Outlex Box and Box Protector
16A 250~

DU61235HTK-1
Telephone Modular Jack 6P4C and
CAT5E Modular Jack with
Outlex Box and Box Protector

DU61355HTK-1
Duplex CAT5E Modular Jack with
Outlex Box and Box Protector

DU61466HTK-1
Duplex CAT6 Modular Jack
with Outlex Box and Box Protector

DU8199HTK-1*
Floor Outlex, Blank for Triple Device
with Cover Unit

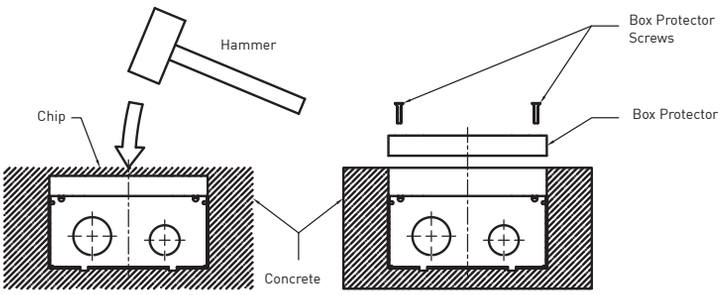
*Installed Receptacles have PS mark.

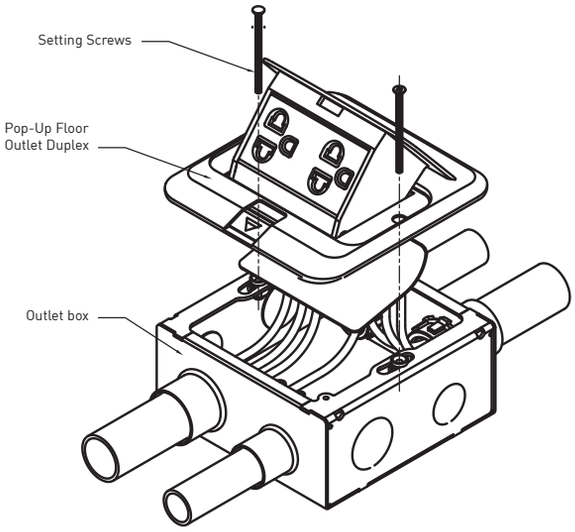
How to mount

After putting the concrete on, make the hole to install the product.

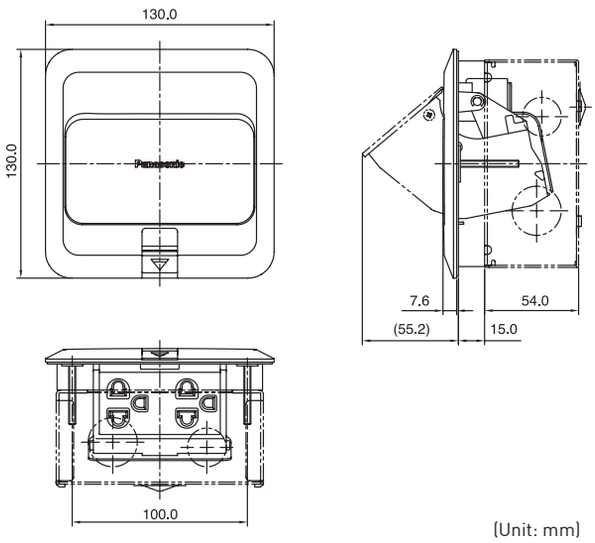
(1) Hammer the center part of where the box is installed and make the hole for installation.

(2) After chipping the concrete away, loosen cover unit screws and take the box protector off.



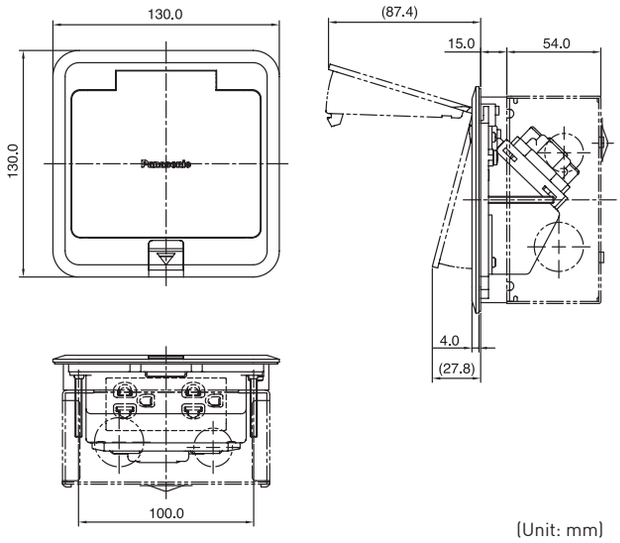


Pop-up floor outlet duplex dimension



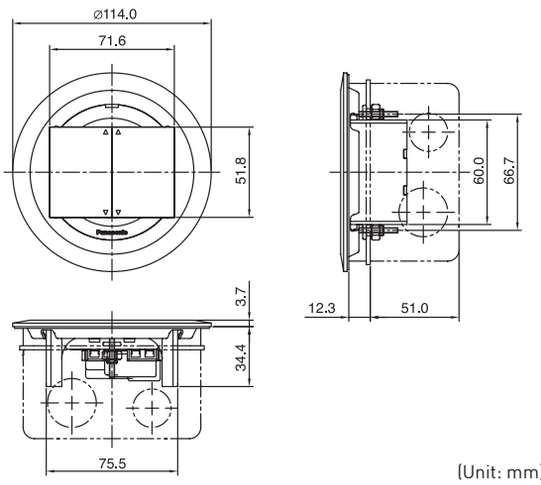
(Unit: mm)

Floor outlet (Aluminum Diecast) dimension



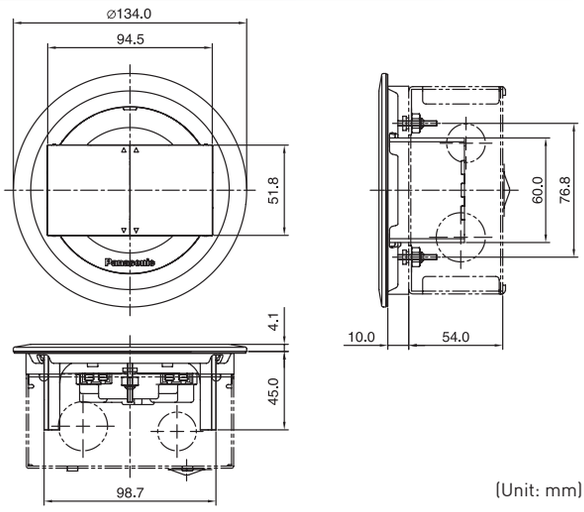
(Unit: mm)

Floor outlet single dimension



(Unit: mm)

Floor outlet duplex dimension



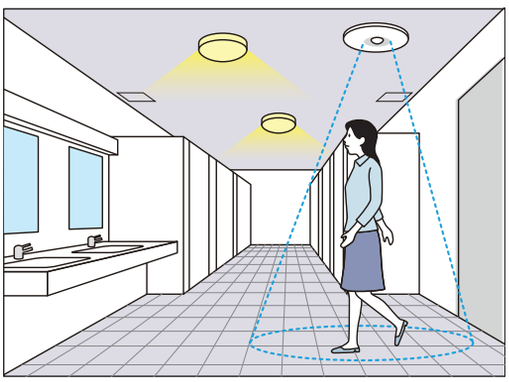
(Unit: mm)

New innovation with
New energy-saving lighting control

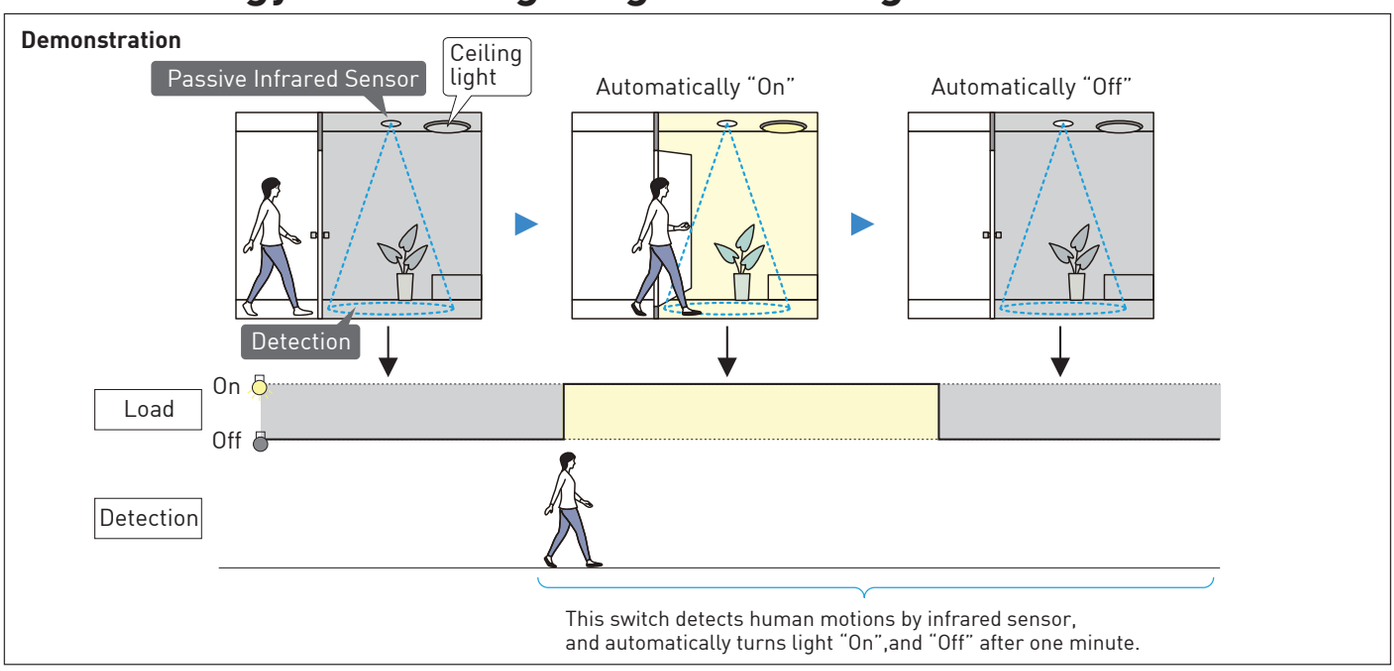
PASSIVE INFRARED SENSOR

FULL-COLOR WIDE SERIES

Looks Slim with The Compact Plate



Saves Energy Preventing Forgotten on Lights



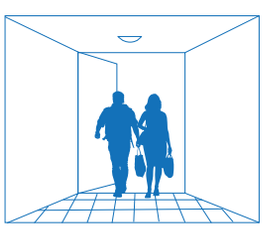
Features

1) High sensitive detection with sensor
2) Long life 100,000 On/Off
3) Safety and Easy with Quick Connect Terminal
4) Stand by power consumption less than 2W

Applicable locations :

Corridor

Restroom


Entrance hall

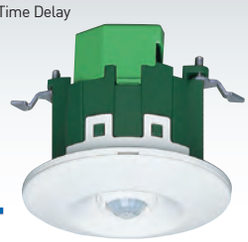
Locker

Quick Connect Terminal Ⅱ
Solid Wire: 1.5-2.5mm²
Stranded Wire: 1.5-2.5mm²

Stand-alone Type

WTKG2311
Passive Infrared Sensor
(Ceiling Surface Mount Type)
3A 220-240V~
10 sec – 30 mins. Time Delay
Day Light Sensor

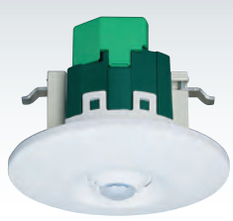
WTKG2310
Passive Infrared Sensor
(Ceiling Flush Mount Type)
3A 220-240V~
1 min Time Delay



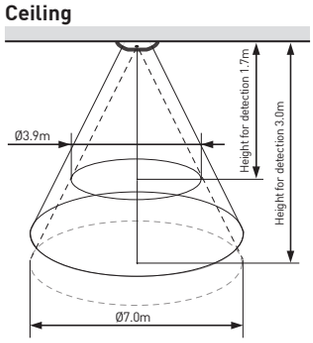
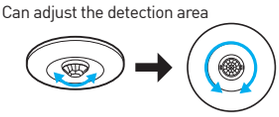
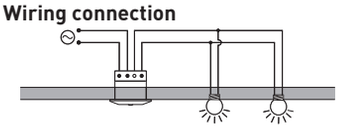
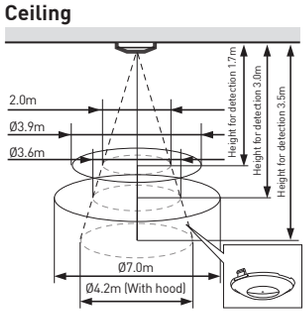
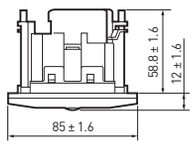
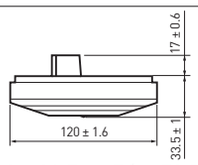
Interconnectable Type

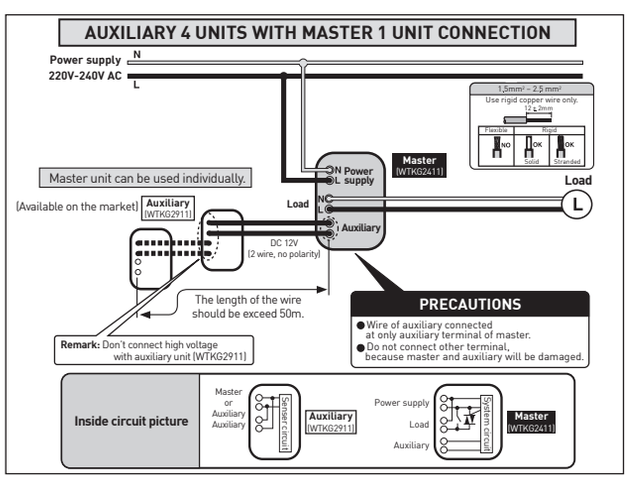
WTKG2411 Master
Passive Infrared Sensor
(Master Unit)
3A 220-240V~

WTKG2911 Auxiliary
Passive Infrared Sensor
(Auxiliary Unit)
DC12V

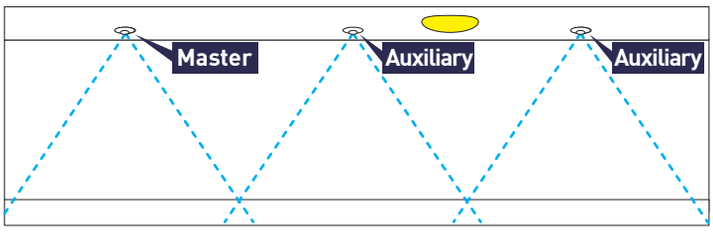


Specifications

Model no.		WTKG2310/WTKG2411/WTKG2911	WTKG2311
Detectable scope		**Ceiling**  	**Adjusting method of detection area** Can adjust the detection area  Angle adjustment (Maximum 15°) Turn the lens to the area which you want to detect (Maximum 360°) **Wiring connection** 
Supplementary of Detect scope by hood		None	**Ceiling** 
Dimension		 Ø85 x 12 + 58.8 (L=70.8mm)	 Ø 120 x 33.5 + 17 (L=50.5mm)
Rating		3A 220-240V~	
Rated Power Consumption		Less than 2W	
Load Capacity		Incandescent Lamp 660W	
		Fluorescent Lamp 330W	
Applicable Standard		IEC60669 – 2 – 1	
Ambient Temperature		-10°C to +40°C	
Wiring Connection		Quick Connect Terminal	
Size of Installation Hole (cm)		7.0 (+0.5)	7.2 (+0.5)
Applicable Wire		1.5mm² - 2.5mm² Rigid Copper Wire Only	
Applicable Boxes	Square Box	2 inch or more	1.5 inch or more
	Octagon Box	2 inch or more	1.5 inch or more
Time-Out Delay		Fixed 1min	Adjustable 10 sec. – 30 min
Detectable Movement Speed		0.3 m/s – 1.0m/s	



Demonstration



(up to 4 auxiliary units can be connected with 1 master unit)

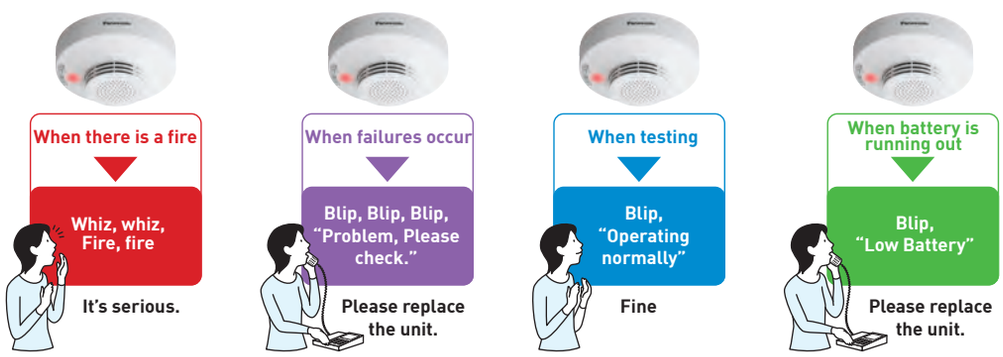
Provides prompt notification in the event of a fire

SLIM SMOKE & VOICE ALARM WITH LONG-LIFE-BATTERY

Rapid indication with a clear "alarm sound" and a "voice" easy to understand.

Approx. 87dB at 1m distance from equipment (at peak value) (measured by our company based on corporate judgment standard)
For alarm sound "Whiz, whiz", a wide frequency band from 0.3 kHz to 4.0 kHz is adopted for easy catching even by old people and children.

Immediately understands what happened.



Model No.		SH28455911
Power Supply		Dedicated Lithium Battery (3V)x1
Battery Life		Approximately 10 years (*)
Detecting Method		Smoke Type (Photoelectric Method)
Class		Type2
Alarm Sound/ Voice Alarm	Fire	Whiz, whiz, fire, fire!
	Low Battery	"Blip, Low Battery!" x 3 times. "Blip, approx., every 40 seconds after that.
	Trouble	"Blip, blip, blip, Problem, Please check" x 3 times. "Blip, blip, blip," approx., every 40 seconds after that.
Alarm Volume		84 dB or more at 1m distance from equipment
Dimension		Approx. Ø100 mm x 44 mm (Including attachment base)
Weight (Including Dedicated Lithium Battery)		Approx. 140g.
Operating Temperature		0 ∞ C to + 50 ∞ C
Installation Location		Ceiling/Wall Surface

Signal Transmission Contact (No-Voltage)	—

*It may be shorter depending on usage environment.

	Mode	Voice Alarm	Indication
Function	Normal	—	OFF
	Alarm	Whiz Whiz Fire Fire	Blink
	Silent	—	OFF
	Trouble #1	Blip, Blip, Blip, Problem please check	Blink
	Trouble (Silent)	—	Blink
	Low Battery #2	Blip, Low Battery	Blink every 8 seconds
	Low Battery (Silent)	—	Blink every 8 seconds

DOOR PHONE

SMARTPHONE CONNECT MODEL NEW
Video Intercom System

VL-SVN511VN

* Easy installation by simply replacing existing doorbell unit Nonpolar 2-wire system.

Smartphone Connect*1

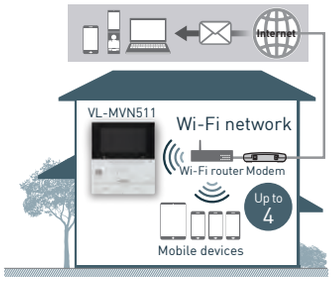
You can use your smartphone or tablet as a sub monitor to respond to visitors and unlock electric locks no matter where you are in the home.
You can also monitor doorphone images when you want to check the door entrance.

Answer Visitors and Unlock the Electric Locks

Monitoring

Wi-Fi Connection

In addition to smartphones/tablets, the main monitor can also wirelessly connect to the Wi-Fi router for easy connections without a cable.
You can configure Wi-Fi settings using a simplified method (called WPS) .



E-mail Notification*2

The main monitor can send e-mail with a time stamp and image of visitors to e-mail addresses registered in advance, enabling you to check who has visited when you are outside the house (even when you are overseas).

Other Features

- Supports iOS and Android™ (free application)*
  - iPhone 5 and later, iPad (iOS 7.0 or later)
  - Android smartphones and tablets (Android 4.0 or later)
- Electric Lock Release Support: VL-RLY1 (12 V AC/DC, less than 1 A)
- Picture Recording
  (Up to 400 images/50 visitors (8 shots per visitor))
- Night Vision (white coloured LED lights)
- Voice Changer

* Some mobile devices may not be compatible.
* For the latest information about the app and compatible devices, visit the following website.

http://panasonic.net/pcc/support/intercom/smartphone/

Options

Door Station (Doorphone)
VL-V555 (Surface mount)
CMOS 0.3 M pixels
Up to 2

Door Station (Doorphone)
VL-V554 (Surface mount)
CMOS 1.0 M pixels
Up to 2

Door Station (Doorphone)
VL-V522L (Surface mount)
Up to 2

Lobby Station
VL-V590

Up to 20 main monitors can be connected.

PBX

This image shows the KX-NS500.

Connectable PBX Model Numbers
KX-TDA30/100/100D/200/600 series
KX-TDE100/200/600 series
KX-NS300/500/700/1000 series

Please consult your dealer when connecting with a PBX.

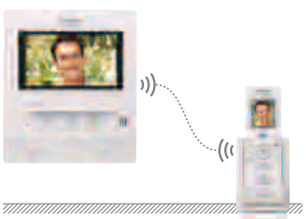
*1 The main monitor must be on the same home Wi-Fi network as a smartphone/tablet (with the dedicated app installed).
It is also necessary to run the dedicated app in order to receive visitor's calls on a smartphone/tablet.
*2 To use this function, a main monitor with e-mail sender information registered must be connected to the internet.
E-mail may not be able to be sent, depending on the condition of the network.

WIRELESS STANDARD MODEL
Wireless Video Intercom System
VL-SW251VN

* Easy installation by simply replacing existing doorbell unit Nonpolar 2-wire system.

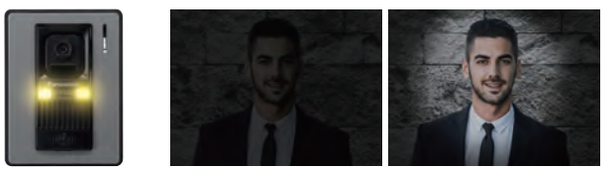
Wireless Handset
(2.4 GHz)

Check visitors and respond promptly from everywhere in the home and even while you are doing something else, by wireless handset.



Night Vision
(LED Light)

Door Station is equipped with LED lights (illumination lamp). It enables the colour display of visitors at a distance of about 50 cm at night.



Conventional

Equipped with LED light

Picture Recording
(8 Consecutive recorded images each)

Eight consecutive still images of visitors are automatically recorded. (Up to 50 times, 400 images in total) This ensures that you will see every person visiting your home. Images can also be displayed frame-by-frame.

Other Features

- Electric Lock Release Support : AC30V-1A / DC24V-1A (Door Opener)
- Voice Changer
- Intercom Call (between main monitor and sub monitor)

Options

Door Station (Doorphone)
VL-V522L
Up to 2

Wireless Monitor Station (Sub Monitor)
VL-W605
Up to 4

Lobby Station
VL-V590

Up to 20 main monitors can be connected.

Repeater for Wireless Monitor
VL-FAN1/VL-FAN2*
Up to 2

* for India

PBX

This image shows the KX-NS500.

Connectable PBX Model Numbers
KX-TDA30/100/100D/200/600 series
KX-TDE100/200/600 series
KX-NS300/500/700/1000 series

Please consult your dealer when connecting with a PBX.

Available in a wide variety of models to suit a multitude of environmental and weather conditions.

AUTOMATIC TIME SWITCH

What's an Automatic Time Switch?

An automatic time switch automatically controls the use of electricity according to time. It's a device that lowers both electrical and labour costs.

Automatically Turns the Power On and Off

The Time Switch combines a clock with a switch to automatically turn power on or off at preset times. It is generally built into a lightboard or distribution panel, and controls electricity on a 24-hour or weekly basis. It makes it possible to replace conventional manual control with automated, reliable ON/OFF time management.

Eliminating Electrical Waste Is Also Ecological

Because the power is reliably turned on and off according to a preset time schedule, the amount that was wasted by extended use is saved, and electric bills are effectively lowered.

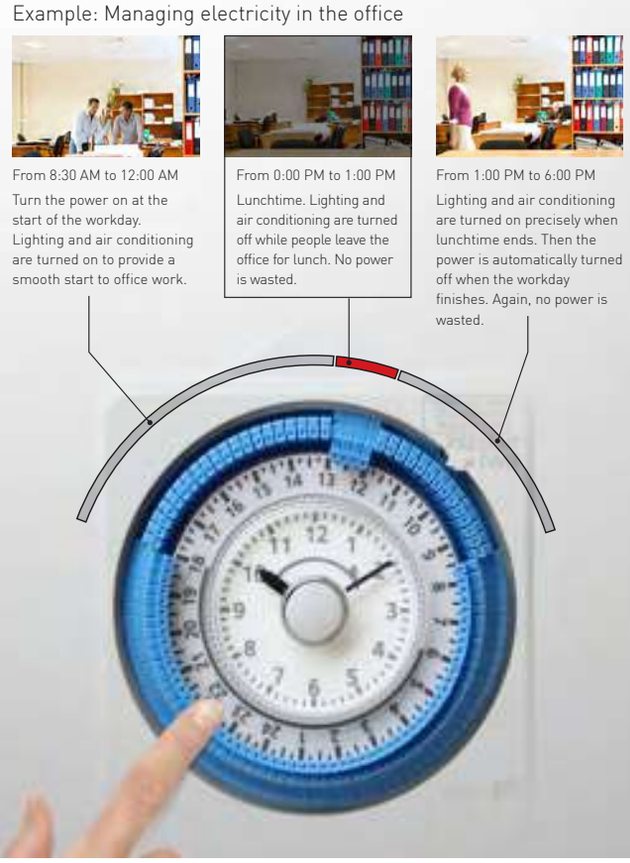
Cutting Labour Costs Is Also Efficient

Since the job of turning the power on and off is done automatically instead of manually, you can assign your valuable human resources to more important jobs. Human error is also eliminated, so power management is more reliable.

Simply Set the Time for ON/OFF Control

Time management consists of simply setting the times to turn the power on and off. A wide range of uses are possible across various operations, such as lighting, air conditioning, water supply, and livestock feeding.

Example: Managing electricity in the office



Uses and Advantage of Panasonic Time Switch

Panasonic, with almost 100 years of expertise forged in the Electrical Construction Material field with its Wiring Devices series, has also established a name for itself in the Time Control Devices market during the past 50 years with its Automatic Time Switch.

Thorough Quality Control

In addition to advanced functions, Panasonic focuses its manufacturing efforts on providing high durability and performance for many years of reliable use, and selects materials with full consideration of the global environment. Certification by third-party institutions and compliance with a wide range of international standards attest to these efforts. This approach is also used with Panasonic's Automatic Time Switches, to allow our customers worldwide to experience a new level of comfort and safety for the control of electric equipment.

Meeting IEC Standards

Panasonic's product design has been recognised and certified by many international organisations worldwide, such as the IEC (International Electrotechnical Commission), the top reference for electrical and electronic safety standards. Our Automatic Time Switch has successfully passed and complies with the IEC730-2-7 directives to provide safer and more comfortable use of our line-up to our customers.

Products Compliant with the RoHS Directive

Panasonic's manufacturing processes are based on management standards for chemical substances by complying with the EU RoHS directive in order to provide all of our customers safer products with less impact on the environment.

Example of Use

Example 1 Factories

Time Switches are at work in a wide variety of applications, including production lines, air conditioning systems, and lighting equipment.

Example 2 Public Infrastructure

The number of people in towns and cities varies depending on the time of day. Time Switches enable waste-free management of lighting and other equipment.

Example 3 Offices, Residences and Commercial Facilities

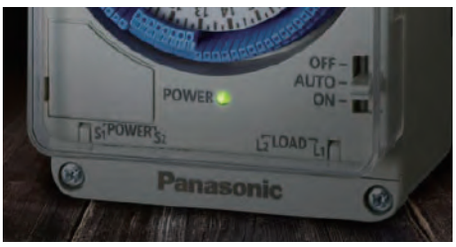
Time Switches can be used to save electricity during the times when lighting and air conditioning are not needed, like at lunchtime and late at night.

Example 4 Agriculture and Livestock

Time Switches can be used to automatically supply food and water at appropriate times each day, to increase working efficiency.

Detailed consideration is given to users in the form of functions that are helpful in ordinary usage, and designs that simplify maintenance.

Easy Operation Check



A power lamp is located on the front panel, so the user can see at a glance whether the unit is operating or not, thus helping to provide safe use.

Easy Battery Replacement

With conventional time switches, the unit must be removed from its installation location, such as in a distribution panel, to replace the batteries. Panasonic's Time Switch lets you easily replace the batteries from the front panel. This makes maintenance considerably easier.

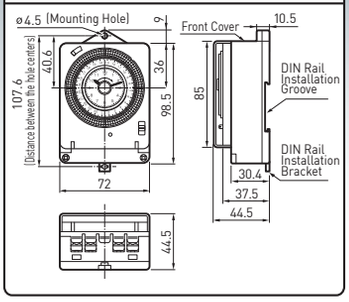
Preventing Entry of Ants and Other Small Insects

Time Switches are sometimes subject to the entry of ants and other small insects, which can cause malfunctions. Panasonic Time Switches have an airtight construction that prevents this problem for long, trouble-free use.

TB35N, TB36N, TB38N, TB39N

Features
(TB35N, TB36N, TB38N, TB39N)
- 24hour program
- Surface and DIN rail mount
- 300 hours reserve battery (TB38N,39N)
  *Battery exchange from the front side.
- 96 operations per day
- Minimum setting interval is 15 minutes

Dimensions (unit:mm)

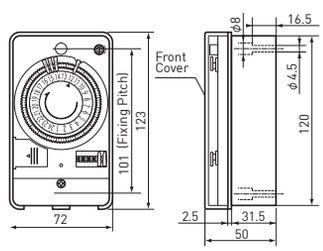


Applicable Installation		Indoor Use			
Type		Daily			
Series		TB35N series	TB36N series	TB38N series	TB39N series
Item No.		TB35809NE5 (220-240V AC 50Hz)	TB36809NE5 (220-240V AC 50Hz)	TB38809NE7 (220-240V AC 50Hz)	TB39809NE7 (220-240V AC 50Hz)
Drive Method		AC Motor		Quartz Motor	
Power Failure Backup Time		———		300 hours	
Time Precision		Same as AC frequency		±15 sec/month(at 25°C)	
Circuit Configuration		Same Circuit	Separate Circuit	Same Circuit	Separate Circuit
Switch Constraction		Single Pole, Single Through (1a Contact)	Single Pole,Double Through (1c Contact)	Single Pole, Single Through (1a Contact)	Single Pole,Double Through (1c Contact)
Load Capacity	Resistive Load	250V AC 20A			
	Incandescent Lamp Load	250V AC 10A			
	Inductive Load(cos ø 0.7→0.6)	250V AC 12A			
	Motor Load(cos ø 0.7→0.6)	220V AC 1500W			
Minimum Setting Interval		15 minutes			
No.of On/Off Operation		96 operations			

TB11N, TB17N

Features (TB11N, TB17N)
- 24hour program
- On/Off operations are set with separated pins
- With a manual On/Off switch
- 300 hours reserve battery(TB11N)
  *Battery exchange from the front side.

Dimensions (unit:mm)

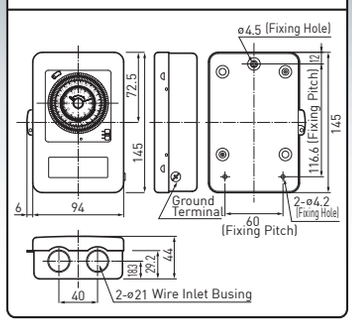


Applicable Installation		Indoor Use	
Type		Daily	
Series		TB17N series	TB11N series
Item No.		TB178NE5 (220-240V AC 50Hz)	TB118NE7 (220-240V AC 50Hz)
Drive Method		AC Motor	Quartz Motor
Power Failure Backup Time		———	300 hours
Time Precision		Same as AC frequency	±15 sec/month(at 25°C)
Circuit Configuration		Same Circuit	
Switch Constraction		Single Pole, Single Through (1a Contact)	
Load Capacity	Resistive Load	250V AC 15A	
	Incandescent Lamp Load	250V AC 15A	
	Inductive Load(cos ø 0.7→0.6)	250V AC 12A	
	Motor Load(cos ø 0.7→0.6)	220V AC 1500W	
Minimum Setting Interval		30 minutes	
No.of On/Off Operation			

TB35N, TB38N Steel Box Type

Features (TB35N, TB38N)
- With robust steel box
- 24hour program
- Surface mount
- 300 hours reserve battery(TB38N)
  *Battery exchange from the front side.
- 96 operations per day
- Minimum setting interval is 15 minutes

Dimensions (unit:mm)

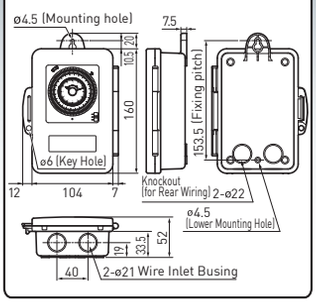


Applicable Installation		Indoor Use	
Type		Daily	
Series		TB35N series	TB38N series
Item No.		TB358NE5 (220-240V AC 50Hz)	TB388NE7 (220-240V AC 50Hz)
Drive Method		AC Motor	Quartz Motor
Power Failure Backup Time		———	300 hours
Time Precision		Same as AC frequency	±15 sec/month(at 25°C)
Circuit Configuration		Same Circuit	
Switch Constraction		Single Pole, Single Through (1a Contact)	
Load Capacity	Resistive Load	250V AC 20A	
	Incandescent Lamp Load	250V AC 10A	
	Inductive Load(cos ø 0.7→0.6)	250V AC 12A	
	Motor Load(cos ø 0.7→0.6)	220V AC 1500W	
Minimum Setting Interval		15 minutes	
No.of On/Off Operation		96 operations	

TB43N Plastic Box Type

Features (TB43N)
- 24hour program
- Surface mount
- Weatherproof type (IP53)
- 300 hours reserve battery (TB43N)
  *Battery exchange from the front side.

Dimensions (unit:mm)

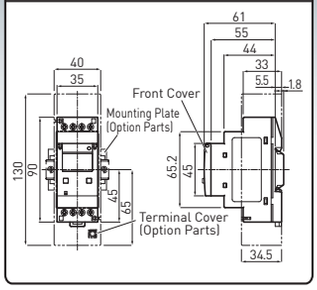


Applicable Installation		Outdoor & Indoor Use
Type		Daily
Series		TB43N Series
Item No.		TB438NE7 (220-240V AC 50-60Hz)
Drive Method		Quartz Motor
Power Failure Backup Time		300 hours
Time Precision		±15 sec/month(at 25°C)
Circuit Configuration		Separate Circuit
Switch Constraction		Single Pole, Single Through (1a Contact)
Load Capacity	Resistive Load	250V AC 20A
	Incandescent Lamp Load	250V AC 10A
	Inductive Load(cos ø 0.7→0.6)	250V AC 12A
	Motor Load(cos ø 0.7→0.6)	220V AC 1500W
Minimum Setting Interval		15 minutes
No.of On/Off Operation		96 operations

TB62 DIN Rail Mount Digital Type

Features (TB62)
- Digital type
- Weekly type
- 6 years reserve battery
- With a manual On / Off button
- Possible to lock the manual button
- Holiday setting function
- Manual ±1 hour changeover function
- DIN 2P module

Dimensions (unit:mm)

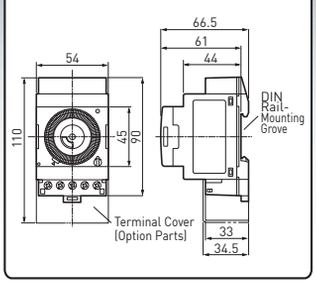


Applicable Installation		Indoor Use	
Type		Weekly	
Series		TB62 series	
Item No.		TB621018A7(1circuit) (220-240V AC 50-60Hz)	TB622018A7(2circuits) (220-240V AC 50-60Hz)
Drive Method		Electronic	
Power Failure Backup Time		6 years	
Time Precision		±15 sec/month(at 25°C)	
Circuit Configuration		Separate Circuit	
Switch Constraction		Single Pole,Double Through (1c Contact)	
Load Capacity	Resistive Load	250V AC 16A	
	Inductive Load(cos ø≧0.6)	250V AC 8A	
Minimum Setting Interval		1 minute	
No.of On/Off Operation		50 operations (On/Off 25 sets)/circuit	

TB556, TB563 DIN Rail Mount Type

Features (TB556, TB563)
- 24hour program (TB556)
- Weekly program (TB563)
- 300 hours reserve battery (TB556,563)
- With robust metal setting pins
- DIN 3P module

Dimensions (unit:mm)

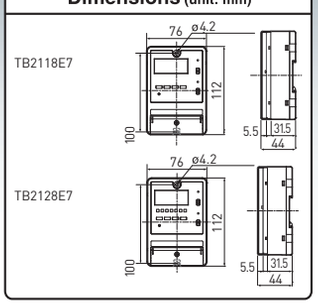


Applicable Installation		Indoor Use	
Type		Daily	Weekly
Series		TB556 series	TB563 series
Item No.		TB5560187N (220-240V AC 50-60Hz)	TB5630187N (220-240V AC 50-60Hz)
Drive Method		Quartz Motor	
Power Failure Backup Time		300 hours(at 25℃)	
Time Precision		±15 sec/month(at 25℃)	
Circuit Configuration		Separate Circuit	
Switch Constraction		Single Pole,Double Through (1c Contact)	
Load Capacity	Resistive Load	250V AC 16A	
	Inductive Load(cos ø≧0.6)	250V AC 3A	
Minimum Setting Interval		15 minutes	2 hours
No.of On/Off Operation		96 operations	84 operations

TB21

Features (TB21)
- Easy setting with a mode change switch
- High capacity
  Resistive load : 30A, Inductive load (cos =0.6):12A
- 24hours program(TB2118) / Weekly program(TB2128)
- Surface and reserve battery
- 5 years reserve battery

Dimensions (unit: mm)

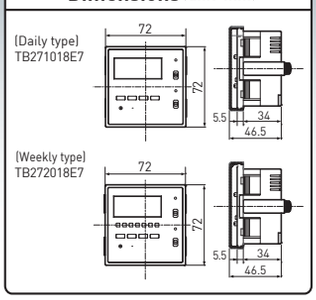


Applicable Installation		Indoor Use	
Type		Daily	Weekly
Series		TB21 series	
Item No.		TB2118E7 (220VAC 50-60Hz)	TB2128E7 (220VAC 50-60Hz)
Drive Method		Electronic	
Power Failure Backup Time		5 years	
Time Precision		±15 sec/month (at 25°C)	
Circuit Configuration		Same circuit (voltage contact output)	
Switch Constraction		Single pole, single through (1a Contact)	
Load Capacity	Resistive Load(cos ϕ=1)	240V AC 30A	
	Inductive Load(cos ϕ=0.6)	240V AC 12A	
Minimum Setting Interval		1 minute	
No.of On/Off Operation		4 operations(On/Off 2sets)	16 operations(On/Off 8sets)

TB27 DIN 72 Panel Mount Type

Features (TB27)
- Easy setting with a mode change switch
- 24hours program(TB271018) / Weekly program(TB272018)
- DIN 72 panel mounting
- 5 years reserve battery

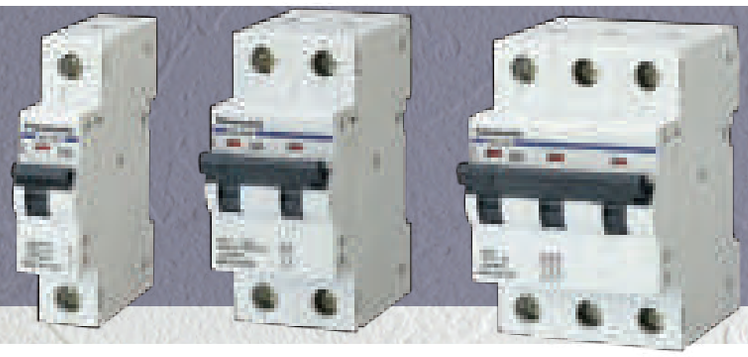
Dimensions (unit:mm)



Applicable Installation		Indoor Use	
Type		Daily	Weekly
Series		TB27 series	
Item No.		TB271018E7 (220VAC 50-60Hz)	TB272018E7 (220VAC 50-60Hz)
Drive Method		Electronic	
Power Failure Backup Time		5 years	
Time Precision		±15 sec/month (at 25°C)	
Circuit Configuration		Separate Circuit (no voltage contact output)	
Switch Constraction		Single Pole,Double Through (1c Contact)	
Load Capacity	Resistive Load(cos ϕ=1)	240V AC 16A	
	Inductive Load(cos ϕ≧0.6)	240V AC 9A	
Minimum Setting Interval		1 minute	
No.of On/Off Operation		4 operations(On/Off 2sets)	16 operations(On/Off 8sets)

Compact and high breaking capacity of Circuit Breaker

MCB/RCBO-DIN TYPE



MCB BD-63R (DIN Type)

Type		BD-63							
Poles & Elements		1P1E		2P2E		3P3E		4P4E	
Instantaneous									
Type	6A	BBD1061CNV	BBD1061DNV	BBD2062CNV	BBD2062DNV	BBD3063CNV	BBD3063DNV	BBD4064CNV	BBD4064DNV
	10A	BBD1101CNV	BBD1101DNV	BBD2102CNV	BBD2102DNV	BBD3103CNV	BBD3103DNV	BBD4104CNV	BBD4104DNV
	16A	BBD1161CNV	BBD1161DNV	BBD2162CNV	BBD2162DNV	BBD3163CNV	BBD3163DNV	BBD4164CNV	BBD4164DNV
	20A	BBD1201CNV	BBD1201DNV	BBD2202CNV	BBD2202DNV	BBD3203CNV	BBD3203DNV	BBD4204CNV	BBD4204DNV
	25A	BBD1251CNV	BBD1251DNV	BBD2252CNV	BBD2252DNV	BBD3253CNV	BBD3253DNV	BBD4254CNV	BBD4254DNV
	32A	BBD1321CNV	BBD1321DNV	BBD2322CNV	BBD2322DNV	BBD3323CNV	BBD3323DNV	BBD4324CNV	BBD4324DNV
	40A	BBD1401CNV	BBD1401DNV	BBD2402CNV	BBD2402DNV	BBD3403CNV	BBD3403DNV	BBD4404CNV	BBD4404DNV
	50A	BBD1501CNV	BBD1501DNV	BBD2502CNV	BBD2502DNV	BBD3503CNV	BBD3503DNV	BBD4504CNV	BBD4504DNV
	63A	BBD1631CNV	BBD1631DNV	BBD2632CNV	BBD2632DNV	BBD3633CNV	BBD3633DNV	BBD4634CNV	BBD4634DNV
Rated Voltage Interrupting Current		AC240/415V 6KA		AC415V 6KA AC240V 10KA		AC415V 6kA		AC415V 6kA	
Weight		6A~32A 0.1kg 40A~63A 0.13kg		6A~32A 0.2kg 40A~63A 0.26kg		6A~32A 0.3kg 40A~63A 0.39kg		6A~32A 0.4kg 40A~63A 0.52kg	

MCB BD-63 Conform to the IEC 60898 standards.

MCB BD-125 (DIN Type)

Type		BD-125							
Poles & Elements		1P1E		2P2E		3P3E		4P4E	
Instantaneous		C	D	C	D	C	D	C	D
Type	80A	BBD108011C	BBD108011D	BBD208021C	BBD208021D	BBD308031C	BBD308031D	BBD408041C	BBD408041D
	100A	BBD110011C	BBD110011D	BBD210021C	BBD210021D	BBD310031C	BBD310031D	BBD410041C	BBD410041D
	125A	BBD112511C		BBD212521C		BBD312531C		BBD412541C	
Rated Voltage Interrupting Current		AC230V 10kA		AC400V 10kA		AC400V 10kA		AC400V 10kA	
Weight		0.18kg		0.36kg		0.54kg		0.72kg	

MCB BD-125 Conform to the IEC 60947-2 standards.

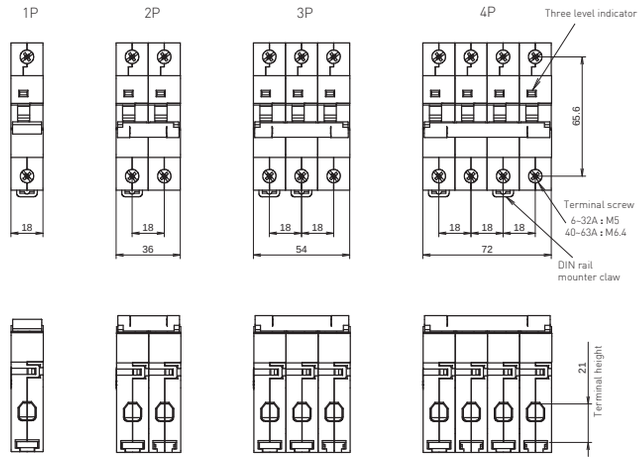
RCBO BDE-63R (DIN Type)

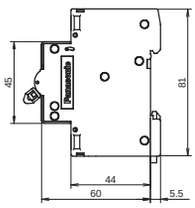
Type	BDE-63R					
Poles & Elements	2P1E					
Instantaneous	C	D	C	D	C	D
6A	BBDE20631CNV	BBDE20631DNV	BBDE20641CNV	BBDE20641DNV	BBDE20651CNV	BBDE20651DNV
10A	BBDE21031CNV	BBDE21031DNV	BBDE21041CNV	BBDE21041DNV	BBDE21051CNV	BBDE21051DNV
16A	BBDE21631CNV	BBDE21631DNV	BBDE21641CNV	BBDE21641DNV	BBDE21651CNV	BBDE21651DNV
20A	BBDE22031CNV	BBDE22031DNV	BBDE22041CNV	BBDE22041DNV	BBDE22051CNV	BBDE22051DNV
25A	BBDE22531CNV	BBDE22531DNV	BBDE22541CNV	BBDE22541DNV	BBDE22551CNV	BBDE22551DNV
32A	BBDE23231CNV	BBDE23231DNV	BBDE23241CNV	BBDE23241DNV	BBDE23251CNV	BBDE23251DNV
40A	BBDE24031CNV	BBDE24031DNV	BBDE24041CNV	BBDE24041DNV	BBDE24051CNV	BBDE24051DNV
50A	BBDE25031CNV	BBDE25031DNV	BBDE25041CNV	BBDE25041DNV	BBDE25051CNV	BBDE25051DNV
63A	BBDE26331CNV	BBDE26331DNV	BBDE26341CNV	BBDE26341DNV	BBDE26351CNV	BBDE26351DNV
Rated Voltage	AC240V 6kA					
Rated Voltage (Application Voltage Range)	187V-264V					
Rated residual operating current	30mA		100mA		300mA	
Rated residual non-operating current	15mA		50mA		150mA	
Weight	6A~32A 0.2kg 40A~63A 0.23kg					

RCBO Conform to the IEC 601009 standards.

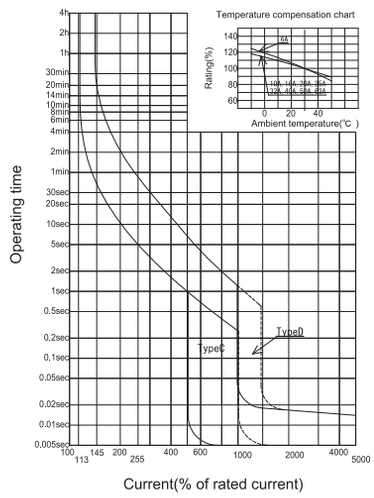
Unit: mm

•MCB (BD-40-63 Series)

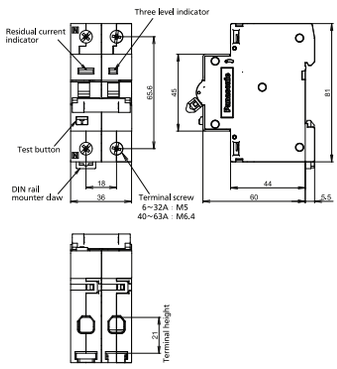




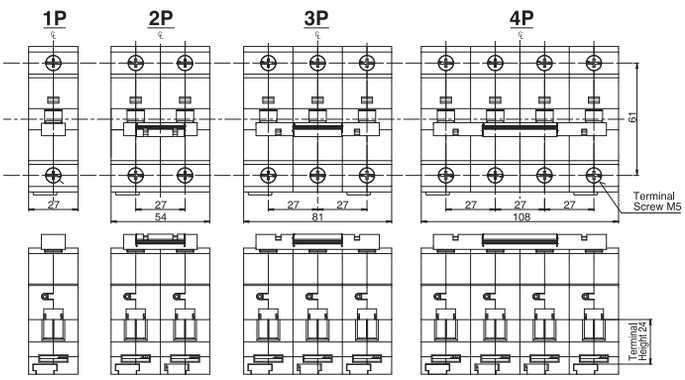
Operating time characteristics curve (Ambient temperature 30°C) (6A~63A)

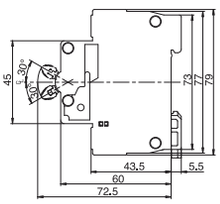


•RCBO (BDE-40-63 Series)

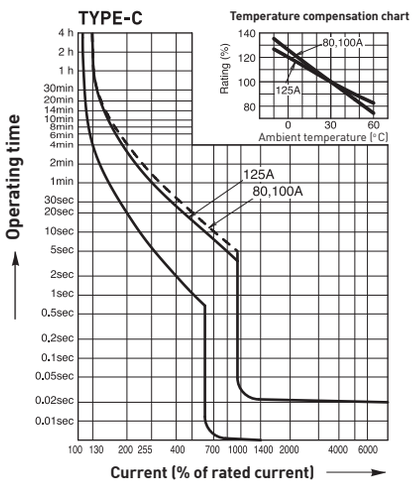


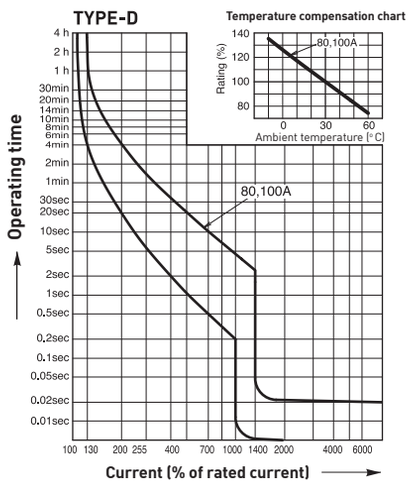
•MCB (BD-125 Series)





Operating time curve (Standard temperature 30°C)

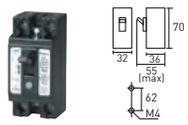




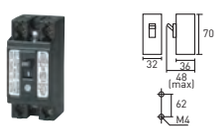
Complete range of products with a compact design.

SAFETY BREAKER
EARTH LEAKAGE BREAKER

Earth Leakage Breaker Small Type

Dimension(mm) Appearance Mounting pitch (unit:mm)	Unit: mm 	
Type	BJS3020NA2	BJS3030NA2
Rated current (A)	30A	
Number of poles & elements	2P0E	
Rated voltage (AC)	AC120-240V	
Residual operating current (mA)	15mA	30mA
Residual non-operation current (mA)	7.5mA	15mA
Rated short-time current	1.5kA	
Phase and wiring configuration	1Ø2W	
Operating time	Within 0.1 sec.	
Handle type	Standard	
Standard Terminal specifications	Solderless terminals (with strap) ø1.6-ø2.6 5.5 - 8 mm² / Note: When using electrical appliance wire or other stranded wire (1.25 - 3.5 mm²) use bar lug terminals. WV2500 1.25 - 2 mm² (WV2501 2.0 - 3.5 mm²) / Tightening torque: 1.6-2.0N·m 16.3-20.4kgf·cm	
Connecting method	For direct installation of electrical wiring	
Weight	0.1kg	
Overload current tripping mechanism	None	
Approval standard	—	

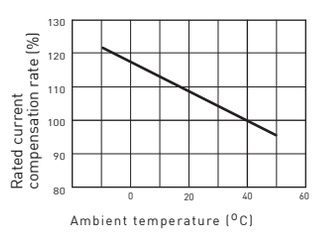
Note: 1. "Rated short-time current" means that although short-circuit protection is not possible, the internal circuitry and conductors can withstand 1.5kA for 0.02 seconds.
2. Ambient temperature rage for usage: -10°C to +50°C.
3. Disconnect electrical wiring before measuring insulation resistance between wires.

Dimension(mm) Appearance Mounting pitch (unit:mm)	Unit: mm 								
Type	BJS1512S	BJS1522S	BJS1532S	BJS2012S	BJS2022S	BJS2032S	BJS3012S	BJS3022S	BJS3032S
Rated current (A)	15A			20A			30A		
Number of poles & elements	2P2E								
Rated voltage (AC)	AC100-240V								
Residual operating current (mA)	10mA	15mA	30mA	10mA	15mA	30mA	10mA	15mA	30mA
Residual non-operation current (mA)	6mA	7.5mA	15mA	6mA	7.5mA	15mA	6mA	7.5mA	15mA
Rated interrupting capacity (Rated short-time current)	1.5kA								
Phase and wiring configuration	1Ø2W, 1Ø3W								
Operating time	Within 0.1 sec.								
Handle type	Long								
Terminal specifications	Solderless terminals (with strap) ø1.6-ø2.6 5.5 - 8 mm² / Note: When using electrical appliance wire or other stranded wire (1.25 - 3.5 mm²) use bar lug terminals. WV2500 1.25 - 2 mm² (WV2501 2.0 - 3.5 mm²) / Tightening torque: 1.6-2.0N·m 16.3-20.4kgf·cm								
Connecting method	For direct installation of electrical wiring								
Weight	0.09kg								
Overload current tripping mechanism	Thermal operation								

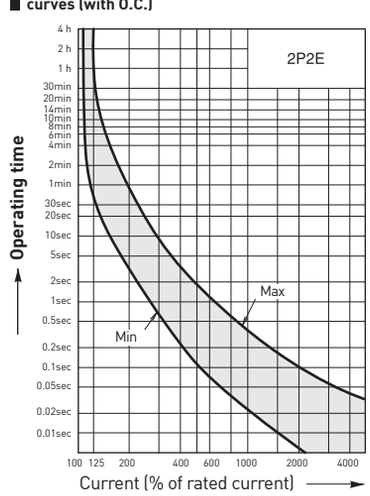
Note: 1. Ambient temperature rage for usage: -10°C to +50°C.
2. Disconnect electrical wiring before measuring insulation resistance between wires.

Small Type

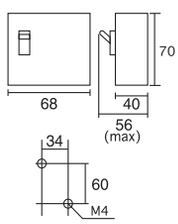
Temperature compensation curves



Operating characteristics curves (with O.C.)



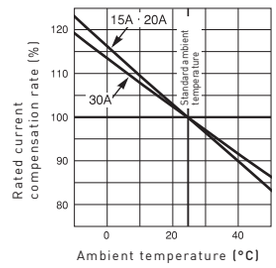
Earth Leakage Breaker J Type

Dimension(mm) Appearance Mounting pitch (unit:mm)							
Type	BJJ230308	BJJ215228	BJJ215328	BJJ220228	BJJ220328	BJJ230228	BJJ230328
Rated current (A)	30A	15A		20A		30A	
Number of poles & elements	2P0E	2P2E					
Rated voltage (AC)	AC120-240V						
Residual operating current (mA)	30mA	15mA	30mA	15mA	30mA	15mA	30mA
Residual non-operation current (mA)	15mA	7.5mA	15mA	7.5mA	15mA	7.5mA	15mA
Rated interrupting capacity (Rated short-time current)	(2.5kA)	1.5kA					
Phase and wiring configuration	1Ø2W	1Ø2W, 1Ø3W					
Operating time	Within 0.1 sec						
Leakage indication method	—	Mechanic button					
Terminal specifications	Solderless terminals (with strap) ø1.6-ø2.6 5.5 - 8 mm²	Note: When using electrical appliance wire or other stranded wire (1.25 - 3.5 mm²) use bar lug terminals WV2500 1.25 - 2 mm² (WV2501 2.0 - 3.5 mm²)			Tightening torque: 1.6-2.0N·m 16.3-20.4kgf·cm		
Connecting method	For direct installation of electrical wiring						
Weight	0.2kg						
Overload current tripping mechanism	—	Thermal operation					

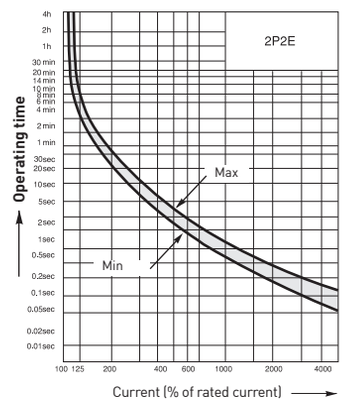
Note: 1. "Rated short-time current" means that although short-circuit protection is not possible, the internal circuitry and conductors can withstand 1.5kA for 0.02 seconds
2. Ambient temperature rage for usage: -10°C to +50°C
3. Disconnect electrical wiring before measuring insulation resistance between wires.

J Type

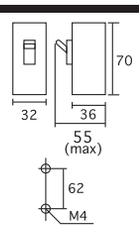
Temperature compensation curves



Operating characteristics curves (with O.C.)



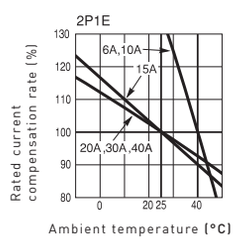
Safety Breaker HB Type

Dimension(mm) Appearance Mounting pitch (unit:mm)			
Number of poles & elements	2P1E		
Type	6A	BS11106TV	
	10A	BS1110TV	
	15A	BS1111TV	
	20A	BS1112TV	
	30A	BS1113TV	
	40A	BS1114TV	
Rated voltage (AC)	AC 240V 1.0kA (6A) AC 240V 1.5kA (10·15·20·30·40A)		
Terminal specifications	Solderless terminals (with strap) ø1.6-ø2.6 5.5 - 8 mm²	Note: When using electrical appliance wire or other stranded wire (1.25 - 3.5 mm²) use bar lug terminals	
Weight	0.07kg		
Structure — Tripping Mechanism	Thermal operation		
Structure — Arc Quenching Method	Natureal Quenching		
Capacity — Interrupting Time	10 ms (100%)		
Capacity — Passage of short	23 X 10^3 A^2 sec (100%)		

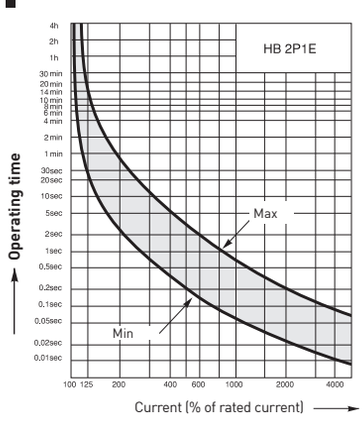
Note: 1. Use 20A for normal branch circuits, and 30A for high capacity dedicated circuits.
2. Use 15A or less for machine protection, after consideration of its characteristic: inrush current and usual current.
3. The data in capacity mentioned above are just for your reference, which are PEW´s experimental ones.

HB Type

Temperature compensation curves



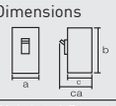
Operating characteristics curves (with O.C.)



HGC electric interrupting technique is power connection safety design.
Small dimension, high rated interrupting capacity.

GD BREAKER

Circuit Breaker BBW Type

Frame Size		30AF						50AF					
Type		BBW-30			BBW-30C			BBW-50			BBW-50S		
Appearance					DIN rail mountable						DIN rail mountable		
Dimensional diagram page													
Number of Poles		2P		3P	2P		3P	2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)		3A	BBW23Y	BBW33Y	3A	BBW23CKY	BBW33CKY	20A	BBW2201Y	BBW3201Y	5A	BBW251SKY	BBW351SKY
		5A	BBW25Y	BBW35Y	5A	BBW25CKY	BBW35CKY	30A	BBW2301Y	BBW3301Y	10A	BBW2101SKY	BBW3101SKY
		10A	BBW210Y	BBW310Y	10A	BBW210CKY	BBW310CKY	40A	BBW240Y	BBW340Y	15A	BBW2151SKY	BBW3151SKY
		15A	BBW215Y	BBW315Y	15A	BBW215CKY	BBW315CKY	50A	BBW250Y	BBW350Y	20A	BBW2201SKY	BBW3201SKY
		20A	BBW220Y	BBW320Y	20A	BBW220CKY	BBW320CKY				30A	BBW2301SKY	BBW3301SKY
		30A	BBW230Y	BBW330Y	30A	BBW230CKY	BBW330CKY				40A	BBW240SKY	BBW340SKY
											50A	BBW250SKY	BBW350SKY
Rated Insulation Voltage (V)	AC	500V			500V			500V			500V		
Rated Interrupting Capacity (sym)	AC 415V	1.5kA			1.5kA			1.5kA			2.5kA		
	AC 200V	2.5kA			2.5kA			2.5kA			10kA		
	AC 100V	2.5kA			2.5kA			2.5kA			10kA		
Dimensions	a	47		70	50		75	47		70	50		75
	b	96			96			96			96		
	c	52			60			52			60		
	ca	67.6			75.6			67.6			75.6		
Weight of Standard Type		0.3kg		0.4kg	0.3kg		0.4kg	0.3kg		0.4kg	0.3kg		0.4kg

Frame Size		60AF						100AF					
Type		BBW-60			BBW-60S			BBW-100			BBW-100S		
Appearance					DIN rail mountable			DIN rail mountable					
Dimensional diagram page													
Number of Poles		2P		3P	2P		3P	2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)		3A	BBW232Y	BBW332Y	60A	BBW260SKY	BBW360SKY	20A	BBW2203KY	BBW3203KY	50A	BBW2501SKY	BBW3501SKY
		5A	BBW252Y	BBW352Y				30A	BBW2303KY	BBW3303KY	60A	BBW2601SKY	BBW3601SKY
		10A	BBW2102Y	BBW3102Y				40A	BBW2402KY	BBW3402KY	75A	BBW275SKY	BBW375SKY
		15A	BBW2152Y	BBW3152Y				50A	BBW2502KY	BBW3502KY	100A	BBW2100SKY	BBW3100SKY
		20A	BBW2202Y	BBW3202Y				60A	BBW2601KY	BBW3601 KY			
		30A	BBW2302Y	BBW3302Y				75A	BBW275KY	BBW375KY			
		40A	BBW2401Y	BBW3401Y				100A	BBW2100KY	BBW3100KY			
		50A	BBW2501Y	BBW3501Y									
		60A	BBW260Y	BBW360Y									
Rated Insulation Voltage (V)	AC	500V			500V			500V			600V		
Rated Interrupting Capacity (sym)	AC 415V	2.5kA			2.5kA			5kA			25kA		
	AC 200V	5kA			10kA			25kA			50kA		
	AC 100V	5kA			10kA			25kA			50kA		
Dimensions	a	47		70	50		75	75			60		90
	b	96			96			96			155		
	c	52			60			60			68		
	ca	67.6			75.6			75.6			86		
Weight of Standard Type		0.3kg		0.4kg	0.3kg		0.4kg	0.5kg		0.5kg	0.8kg		1.2kg

Circuit Breaker BBW Type

Frame Size			150AF			225AF		
Type			BBW-150S			BBW-225		
Appearance Dimensional diagram page								
Number of Poles			2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)			125A	BBW2125SKY	BBW3125SKY	125A	BBW21251KY	BBW31251KY
			150A	BBW2150SKY	BBW3150SKY	150A	BBW21501KY	BBW31501KY
						175A	BBW2175KY	BBW3175KY
						200A	BBW2200KY	BBW3200KY
						225A	BBW2225KY	BBW3225KY
Rated Insulation Voltage (V)	AC		600V			600V		
JIS Rated Interrupting Capacity (sym)	AC	415V	25kA			25kA		
		200V	50kA			50kA		
		100V	50kA			50kA		
Dimensions	a		60		90	105		
	b		155			165		
	c		68			86		
	ca		86			110		
Weight of Standard Type			0.8kg		1.2kg	1.4kg		1.6kg

Frame Size			250AF			400AF		
Type			BBW-250			BBW-400		
Appearance Dimensional diagram page								
Number of Poles			2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)			250A	BBW2250KY	BBW3250KY	250A	BBW22501KY	BBW32501KY
						300A	BBW23001KY	BBW33001KY
						350A	BBW2350KY	BBW3350KY
						400A	BBW2400KY	BBW3400KY
Rated Insulation Voltage (V)	AC		600V			600V		
JIS Rated Interrupting Capacity (sym)	AC	415V	25kA			25kA		
		200V	50kA			50kA		
		100V	50kA			50kA		
Dimensions	a		105			140(148)		
	b		165			260(349)		
	c		86			103		
	ca		110			135		
Weight of Standard Type			1,4kg		1,6kg	4.0kg		4.6kg

Note 1) Install breakers with BBW-30, BBW-30C, BBW-50, BBW-50S, BBW-60, BBW-60S, BBW-100within ±10o of perpendicular.
Note 2) When using 3-pole breaker for 1 Ø 3W, neutral conductor cannot have open-phase protection.
Note 3) Please select conformed wire which suit to rated current.
Note 4) Dimensions with ( ) is the measurement including bar terminal.

Earth Leakage Breaker BKW Type

Frame Size			30AF						50AF		
Type			BKW-30			BKW-30C			BKW-50		
Appearance Dimensional diagram page						DIN rail mountable					
Phase and Wiring Configuration			1Ø2W		3Ø3W 1Ø3W	1Ø2W		3Ø3W 1Ø3W	1Ø2W		3Ø3W 1Ø3W
Number of Poles			2P		3P	2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)		3A	BKW23□Y		BKW33□Y	5A	BKW25□CKY	BKW35□CKY	20A	BKW220□1Y	BKW320□1Y
		5A	BKW25□Y		BKW35□Y	10A	BKW210□CKY	BKW310□CKY	30A	BKW230□1Y	BKW330□1Y
		10A	BKW210□Y		BKW310□Y	15A	BKW215□CKY	BKW315□CKY	40A	BKW240□Y	BKW340□Y
		15A	BKW215□Y		BKW315□Y	20A	BKW220□CKY	BKW320□CKY	50A	BKW250□Y	BKW350□Y
		20A	BKW220□Y		BKW320□Y	30A	BKW230□CKY	BKW330□CKY			
		30A	BKW230□Y		BKW330□Y						
Rated Voltage (AC V)			100-200V Dual use			100-200V Dual use			100-200V Dual use		
High Speed Type	Rated Sensitivity Current (mA)		15,30			15,30		15,30,100	15 (below 30A), 30,100 (above 40A)		
	Thời gian chấp hành (giây)		0.1			0.1			0.1		
Leakage Indication Method			Mechanical button			Mechanical button			Mechanical button		
Rated Interrupting Capacity (sym)	AC	415V	—			—			—		
		200V	2.5kA			2.5kA			2.5kA		
		100V	2.5kA			2.5kA			2.5kA		
Dimensions	a		70			50		75	70		
	b		96			96			96		
	c		52			60			52		
	ca		67.6			75.6			67.6		
Weight of Standard Type			0.4kg		0.5kg	0.4kg		0.5kg	0.4kg		0.5kg

Frame Size			100AF						150AF		
Type			BKW-100			BKW-100S			BKW-150S		
Appearance Dimensional diagram page			DIN rail mountable								
Phase and Wiring Configuration			1Ø2W		3Ø3W 1Ø3W	1Ø2W		3Ø3W 1Ø3W	1Ø2W		3Ø3W 1Ø3W
Number of Poles			2P		3P	2P		3P	2P		3P
Cat. No. & Rated Current (A) (Nominal Ambient Temperature 40oC)		60A	BKW260□1KY		BKW360□1KY	40A	—	BKW340□2SKY	125A	BKW2125□SKY	BKW3125□SKY
		75A	BKW275□KY		BKW375□KY	50A	—	BKW350□2SKY	150A	BKW2150□SKY	BKW3150□SKY
		100A	BKW2100□KY		BKW3100□KY	60A	BKW260□1SKY	BKW360□1SKY			
						75A	BKW275□SKY	BKW375□SKY			
						100A	BKW2100□SKY	BKW3100□SKY			
Rated Voltage (AC V)			100-200V Dual use			100-200V Dual use		100-200V Dual use	100-200V Dual use		100-200V Dual use
High Speed Type	Rated Sensitivity Current (mA)		30,100-200-500			30,100-200-500			30,100-200-500		
	Operating Time (sec.)		0.1			0.1			0.1		
Leakage Indication Method			Mechanical button			Mechanical button			Mechanical button		
Rated Interrupting Capacity (sym)	AC	415V	—			—			—		
		200V	25kA			50kA			50kA		
		100V	25kA			50kA			50kA		
Dimensions	a		75			90			90		
	b		96			155			155		
	c		60			68			68		
	ca		75.6			86			86		
Weight of Standard Type			0.6kg		0.6kg	1.1kg		1.2kg	1.1kg		1.2kg

■Rated Voltage Applicable Range

Rated voltage	Applicable Voltage Range
100–200V dual use	80-242V

■Cat. No. □ Depends on the sensitivity current
2:15mA 3:30mA 4:100mA 9:100-200-500mA Switchover

Earth Leakage Breaker BKW Type

50AF									60AF					
BKW-50C			BKW-50S						BKW-60			BKW-60S		
DIN rail mountable			DIN rail mountable									DIN rail mountable		
1Ø2W		3Ø3W 1Ø3W	1Ø2W			3Ø3W 1Ø3W			1—2W		3—3W 1—3W	1—2W		3—3W 1—3W
2P		3P	2P			3P			2P		3P	2P		3P
15A	BKW215□1CKY	BKW315□1CKY	15A	BKW215□1SKY		BKW315□1SKY	15A	BKW215□Y		BKW315□Y	60A	BKW260□SY		BKW360□SY
20A	BKW220□1CKY	BKW320□1CKY	20A	BKW220□1SKY		BKW320□1SKY	20A	BKW220□Y		BKW320□Y				
30A	BKW230□CKY	BKW330□CKY	30A	BKW230□1SKY		BKW330□1SKY	30A	BKW230□Y		BKW330□Y				
40A	BKW240□CKY	BKW340□CKY	40A	BKW240□SKY		BKW340□SKY	40A	BKW240□Y		BKW340□Y				
50A	BKW250□CKY	BKW350□CKY	50A	BKW250□SKY		BKW350□SKY	50A	BKW250□Y		BKW350□Y				
							60A	BKW260□Y		BKW360□Y				
100-200V Dual use			100-200V Dual use				100-200V Dual use				100-200V Dual use			
15,30			15,30,100 (2P) 100-200-500(3P)				15 (dưới 30A), 30,100 (trên 40A)				30,100 (2P) 100-200-500 (3P)			
0.1			0.1				0.1				0.1			
Mechanical button			Mechanical button				Mechanical button				Mechanical button			
—			—				—				—			
2.5kA			10kA				5kA				10kA			
2.5kA			10kA				5kA				10kA			
50		75	50			75	70				50		75	
96			96				96				96			
60			60				52				60			
75.6			75.6				67.6				75.6			
0.4kg		0.5kg	0.4kg			0.5kg	0.4kg			0.5kg	0.4kg			0.5kg

225AF		250AF		400AF	
BKW-225		BKW-250		BKW-400	
3Ø3W 1Ø3W		3Ø3W 1Ø3W		3Ø3W 1Ø3W	
3P		3P			
125A	BKW3125□1KY	250A	BKW3250□KY	250A	BKW3250□1KY
150A	BKW3150□1KY			300A	BKW3300□1KY
175A	BKW3175□KY			350A	BKW3350□KY
200A	BKW3200□KY			400A	BKW3400□KY
225A	BKW3225□KY				
100-200V Dual use		100-200V Dual use		100-200-415V Dual use	
30,100-200-500		30,100-200-500		30,100-200-500	
0.1		0.1		0.1	
Mechanical button		Mechanical button		Mechanical button	
—		—		25kA	
50kA		50kA		50kA	
50kA		50kA		50kA	
105		105		140 (148)	
165		165		260 (349)	
86		86		103	
110		110		135	
1.8kg		1.8kg		4.8kg	

Note 1) When using 3-pole breaker for 1 ø 3W configuration apply voltage to two end terminal. In this case neutral conductor cannot have open-phase protection.

Note 2) When using on frequency control circuit (inverter) be sure to install breaker on primary side of inverter.

Note 3) Breaker can be connected in reverse. However do not reverse connect 400 when used on a 415V circuit.

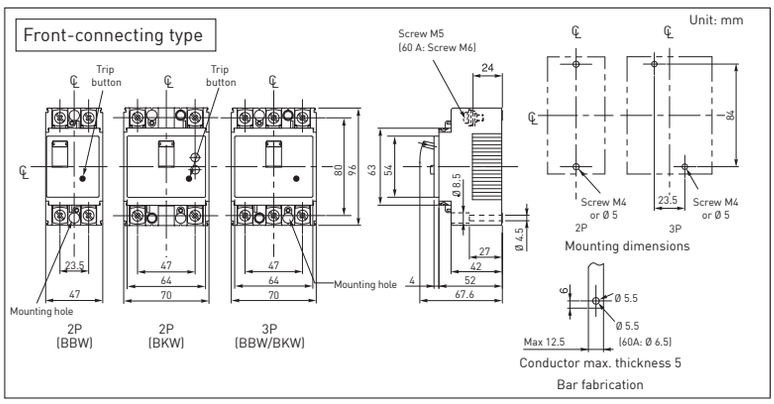
Note 4) Install BKW-30, BKW-30C, BKW-50, BKW-50C, BKW-50S, BKW-60, BKW-60S, BKW-100 within ±10o of perpendicular.

Note 5) Please select conformed wire which suit to related current.

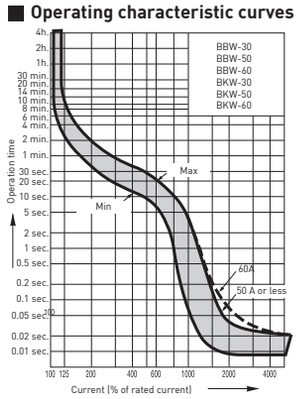
Note 6) Dimensions with ( ) is the measure ment including bar terminal.

Dimensional diagram

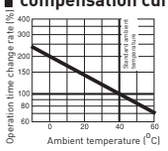
1 BBW-30, BBW-50,BBW-60,BKW-30,BKW-50,BKW-60



Operating characteristic curves



Temperature compensation curve

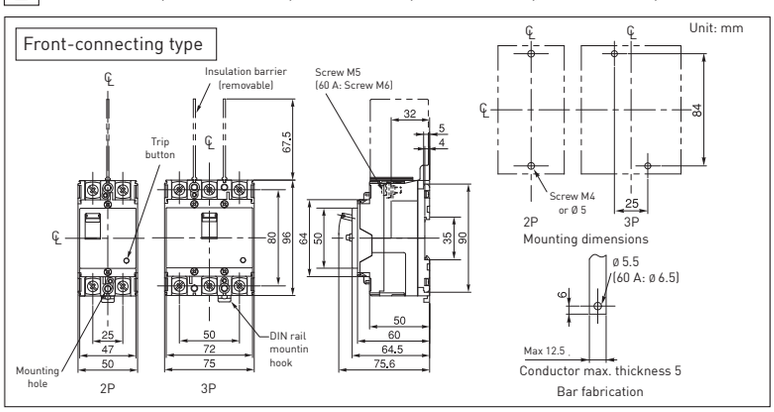


Note: The method used to detect overcurrent is electromagnetic, so temperature compensation takes the form of an increase or decrease relative to the lead-out time and thre is no change in the rated current."

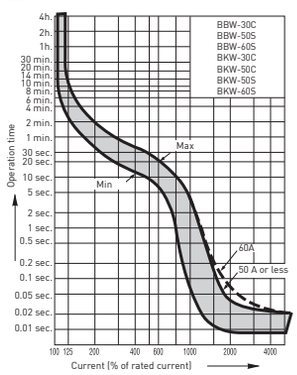
Standard included accessories (frontconnecting type)

Mounting screws	small round-head screws M4 x 0.7 x 35

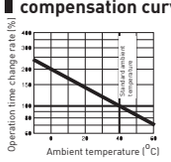
2 BBW-30C, BBW-50S,BBW-60S,BKW-30C,BKW-50C,BKW-50S,BKW-60S



Operating characteristic curves



Temperature compensation curve

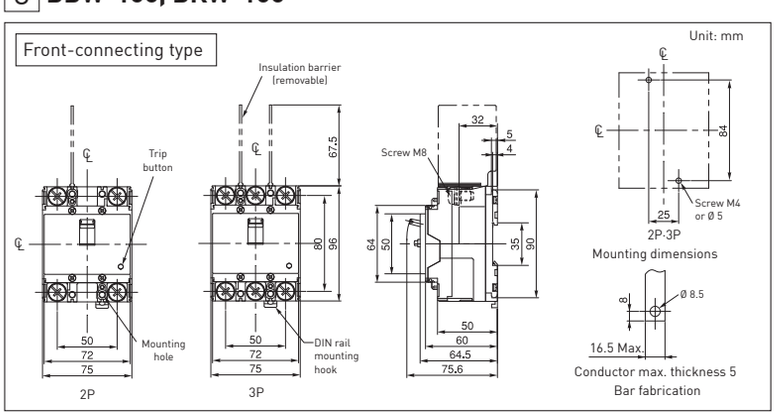


Note: The method used to detect overcurrent is electromagnetic, so temperature compensation takes the form of an increase or decrease relative to the lead-out time and thre is no change in the rated current."

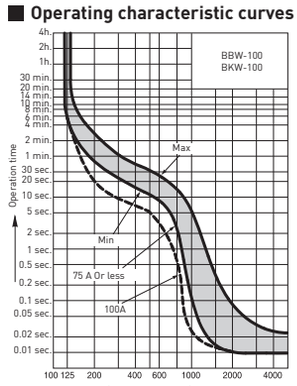
Standard included accessories (frontconnecting type)

Mounting screws	small round-head screws M4 x 0.7 x 54
Insulation barrier	2 pole: 1, 3 pole: 2

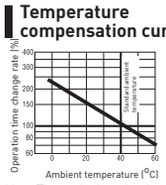
3 BBW-100, BKW-100



Operating characteristic curves



Temperature compensation curve

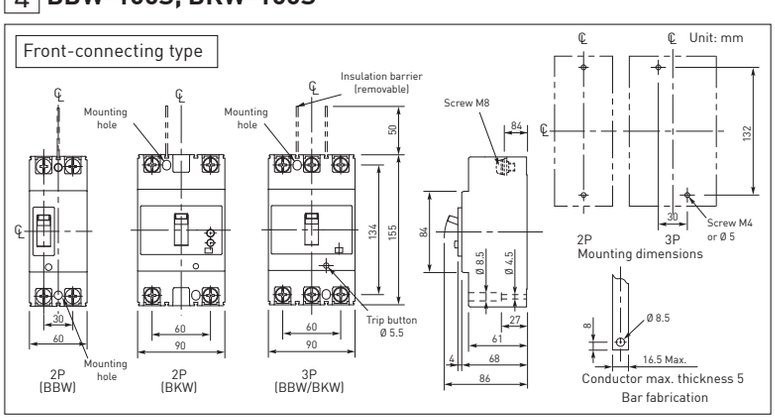


Note: The method used to detect overcurrent is electromagnetic, so temperature compensation takes the form of an increase or decrease relative to the lead-out time and thre is no change in the rated current."

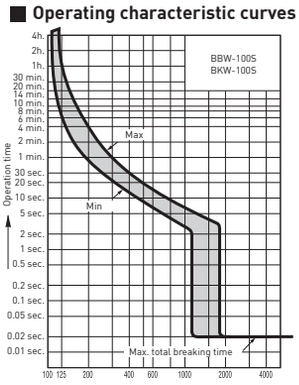
Standard included accessories (frontconnecting type)

Mounting screws	small round-head screws M4 x 0.7 x 54
Insulation barrier	2 pole: 1, 3 pole: 2

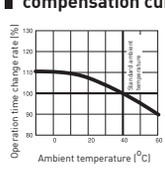
4 BBW-100S, BKW-100S



Operating characteristic curves



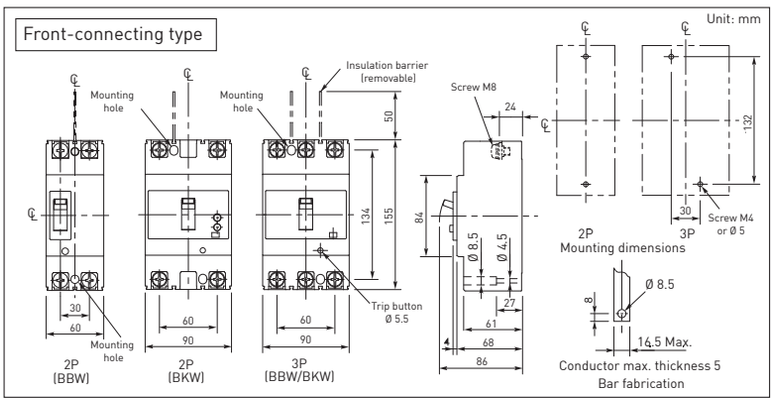
Temperature compensation curve



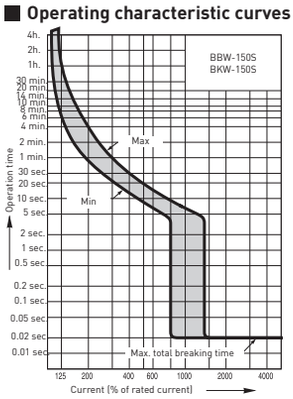
Standard included accessories (frontconnecting type)

Mounting screws	small round-head screws M4 x 0.7 x 35
Insulation barrier	2 pole: 1, 3 pole: 2

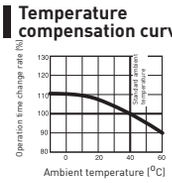
5 BBW-150S, BKW-150S



Operating characteristic curves



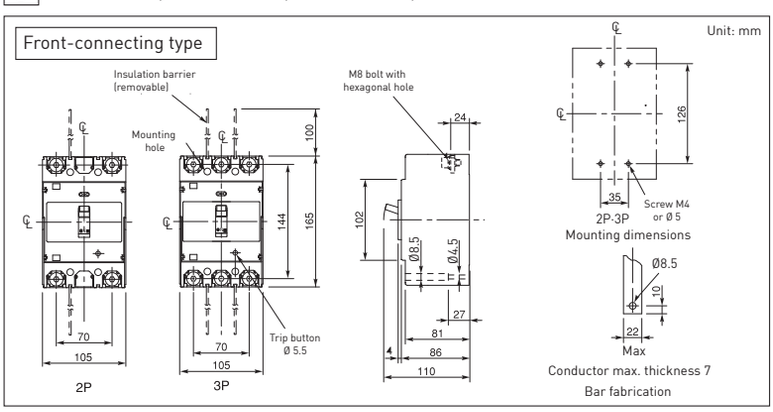
Temperature compensation curve



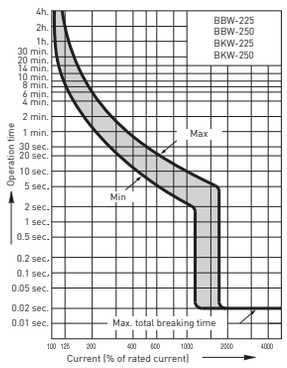
Standard included accessories (front-connecting type)

Mounting screws	small round-head screws M4 x 0.7 x 35
Insulation barrier	2 pole: 1, 3 pole: 2

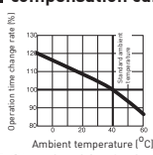
6 BBW-225, BBW-250, BKW-225, BKW-250



Operating characteristic curves

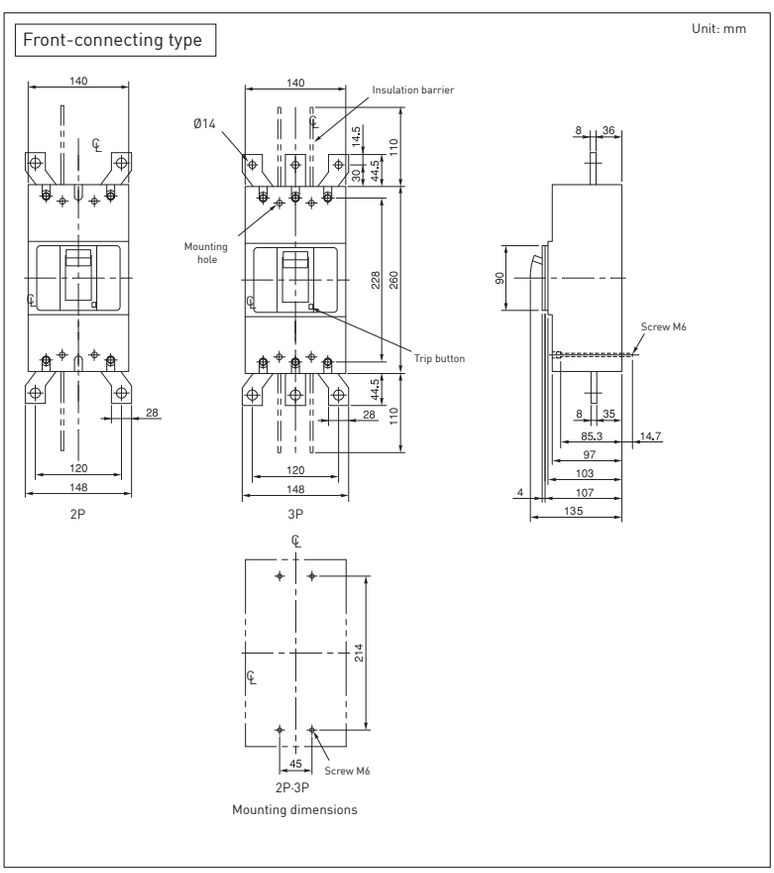


Temperature compensation curve

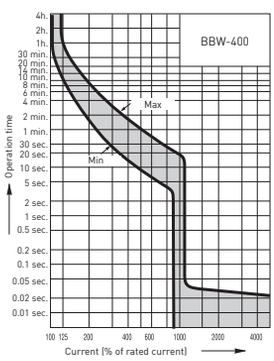


Standard included accessories (front-connecting type)

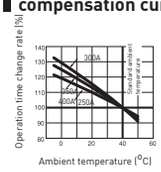
Mounting screws	small round-head screws M4 x 0.7 x 35
Insulation barrier	2 pole: 2, 3 pole: 4



Operating characteristic curves



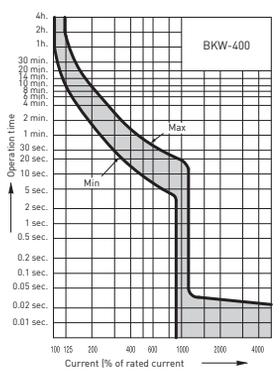
Temperature compensation curve



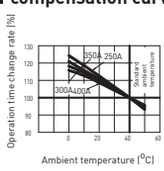
Standard included accessories (front-connecting type)

Mounting screws	small round-head screws M6 x 1.0 x 100
Insulation barrier	2 pole: 2, 3 pole: 4

Operating characteristic curves

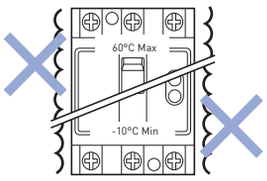


Temperature compensation curve



Cautions for the Use of Breakers

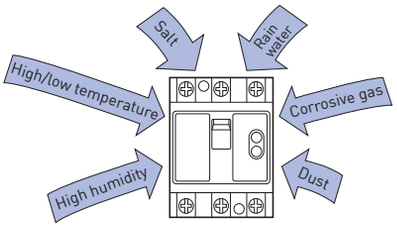
Cautions concerning the operating environment



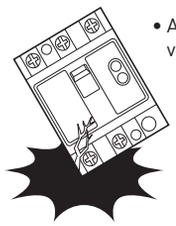
Keep humidity at
or below 85%RH.

Ambient temperature: -10oC to +60oC
Note: Range is -10oC to +50oC for residential panel breakers
Relative humidity: 45% to 85%
Maximum elevation: 2000 m above sea level

- If temperature exceeds 40oC, refer to the current rating table when specifying current rating of the breaker.
- If installed outdoors or in a location exposed to moisture, the breaker must be housed in a suitable enclosure. (Do not use in locations where dew or other condensation will form.)
- It is recommended that the breaker be installed in a location not exposed to direct sunlight, as this can result in incorrect operation.



- The breaker must be installed in a suitable enclosure for usein a location exposed to dirt or dust, etc.
- Avoid installation in locations with acidic or alkaline atmospheres, such as chemical plants or breweries, etc.
- Avoid installation in locations exposed to rainwater or water spray.t.



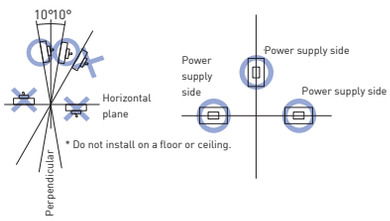
- Avoid installation in locations exposed to vibration, shock, or impact, etc.

Cautions concerning installation

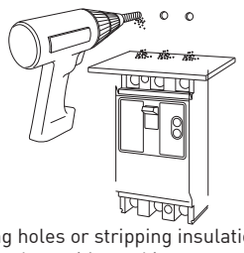
Although perpendicular installation of breakers is recommended, installation is also possible as indicated below.

Overload current tripping method	Magnetic	Within ±10o of perpendicular
	Thermal Thermal and magnetic	No restrictions on installation direction

Installation orientation for breakers with magnetic trip.



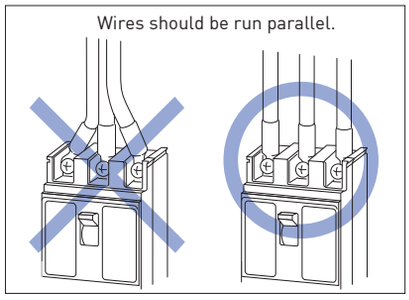
Side view Front view



When drilling holes or stripping insulation, cover the breaker twith masking tape or paper to prevent sawdust and other foreign matter from entering the breaker mechanism.

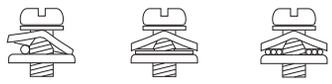
Cautions concerning connections

1. Connection of electrical wires
   - When connecting stranded wire, do not solder or bind the ends of the wire.
   - Tighten the electrical wires securely. If the wires are not connected securely, overheating of terminals could cause a fire. If the neutral pole of a single-phase, three-wire breaker is not connected securely, an incorrect voltage could cause damage to the load.
   - Do not lubricate the screws. Lubrication will reduce the friction of the screws and make it easier for them to come loose, which can result in overheating.
   - Lubricating oil can also cause excessive stress on the screws, even when tightened to the specified torque, thus resulting in damage to the screws.
   - Connect wires so that they run parallel.
   - Select a wire size suitable to carry the rated current of the load.



2. Connection of Full-up terminals
   - When connecting directly to a terminal,insert the single wire or stranded wire straight into the terminal and then tighten to the specified torque. It is also possible to use commercially available lug or bar terminals.

- When connecting stranded wire, separate the strands before inserting them into the terminal.



Single wire Lug terminal Stranded wire

- When connecting two or more wires directly, avoid connecting in any combination other than those listed below. No more than three wires. For stranded wire in particular, use a lug terminal wherever possible. Please use solderless terminal in case of M6.
- Possible wire combinations when connecting two wires.

	Single wire	Stranded wire
M5	ø1.6 & ø1.6 mm	3.5 mm² & 3.5 mm²
	ø1.6 & ø2.0 mm	3.5 mm² & 5.5 mm²
	ø1.6 & ø2.6 mm	3.5 mm² & 8 mm²
	ø2.0 & ø2.0 mm	5.5 mm² & 5.5 mm²
	ø2.0 & ø2.6 mm	5.5 mm² & 8 mm²
	ø2.6 & ø2.6 mm	8 mm² & 8 mm²
		8 mm² & 14 mm²

Maintenance and inspection

After usage of breakers begins, perform regular inspections to maintain rated performance and prevent failures.

Recommended replacement frequency
Wiring breakers: 15 years
Leakage breakers: 15 years
Source: "Investigation related to recommended replacement frequency for low-voltage equipment" Japan Electrical Manufacturers' Association

Regular inspection guidelines

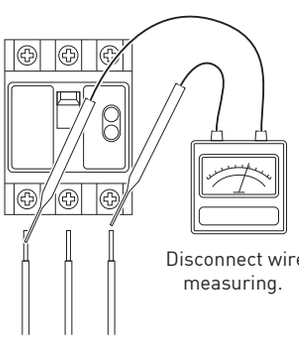
Environment	Regular inspection guideline (10-year period following installation)
Location where air is always clean and dry	Once every 2 to 3 years
Indoor location with little dust and no corrosive gases	Once each year
Location with little dust where air contains impurities (0.1 ppm or greater) such as sulfurous acid, hydrogen sulfide, salt, or high humidity	Once every 6 months

Type	Inspection location	Inspection item	Notes
Common	Top of breaker, power supply side	Check for problems such as dust accumulation and oil buildup.	After confirming that no power supply voltage is being applied, use cleaner to wipe away any dust and then wipe away any remaining grime with a clean, dry rag.
	Exhaust opening	Check for evidence indicating that the breaker has been tripped by overcurrent in the past.	If there is clear evidence of overvoltage, such as black soot or melted metal, replace the breaker with a new.
	Terminals	• Tighten terminal screws to ensure they are not loose. • Check for evidence indicating abnormally high temperatures or damage due to humidity or corrosive gas.	• Apply appropriate torque when tightening. • Sight discoloration of the terminal area is not a problem. If the discoloration is extreme or if the insulation is damaged, however, replace the breaker with a new one.
	Handle	Confirm that the breaker closes and opens smoothly.	If the breaker is normally closed, open and close it a few times to ensure stable contact resistance and prevent overheating.
	Body	Check to make sure that the temperature of the breaker body does not exceed 70oC and no smoke or odor is produced when electrical current is flowing.	If there is anything amiss, replace the breaker with a new one.
ELB	Test button	Use the test button to confirm that the breaker operates properly. (When not testing the breaker, avoid using the test button to switch the handle to the off position.)	• Test the breaker about once each month. • When performing operation inspections, also measure using a leak checker to ensure that the current sensitivity and operation time are normal.

Cautions when measuring insulation resistance

- For the places marked with a triangle (Δ) in the table at right, measuring the insulation resistance will not cause damage, but the insulation resistance meter reading will be approximately zero due to the internal circuit. To measure the insulation resistance between wires, first remove the wires from the terminals.
- For leakage breakers or breakers with leakage alarms equipped with the meg measurement switch as an internal function, measurement is possible if the handle is the off position.
- After reconnecting wires, switch the handle to the on position and press the test button to confirm the breaker is operating properly.

		Insulation resistance measurement (500 V or less)	
Handle position		On	Off
Between charger and groud		○	○
Between left and middle poles and between middle and right poles		○	○
	AA breaker with neutral open-phase protection	△	△
Between left and right poles	Power supply side	△	○
	Load side	△	△
Between power supply and load terminals		–	○



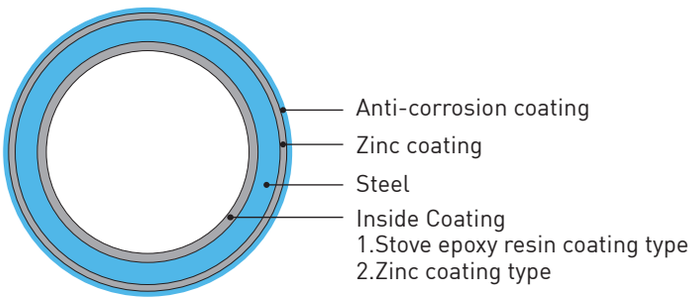
Disconnect wires before measuring.

Great protection against corrosion and high durableness
Labor-saving in installing pipe

WHITE CONDUIT

Superior galvanizing by in-line hot-dip process for greater protection against corrosion.
Finished with durable and clear anti-corrosion coating for higher protection outside and higher grade epoxy coating inside.

CROSS-SECTIONAL VIEW OF Panasonic WHITE CONDUIT



Underwriters
Laboratories Inc.®

Features

1. Easy and accurate bending
Panasonic White Conduit is made of high quality steel and processed by high frequency induction welding to prevent cracking when bend.

2. Easy wire pushing and pulling
The high-grade stove epoxy resin coating on the inside wall makes wire-pulling easy, and protects against corrosion.

3. Easy coupling and fast installation
Precise, sharp threads cut by automated machinery mean fast and easy installation. Precise thread also makes our conduit virtually moisture-tight.

4. High corrosion resistance
Pure zinc coating on the exterior wall and stove epoxy resin finish on the inside protects WHITE CONDUIT from corrosion, even by harsh chemicals and sea air.

5. Uniform quality
Flat steel is rolled, zinc-coated and threaded in one continuous automated process for uniform high quality.

ANSI/UL

EMT (Electrical Metallic Tubing)

Listed by "UL"File No.E-44051

UL 797

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWE012Y	1/2	17.93	1.02	3,048	1.46	10	500
DWE034Y	3/4	23.42	1.18	3,048	2.21	10	300
DWE100Y	1	29.54	1.37	3,048	3.08	5	200
DWE114Y	1-1/4	38.35	1.57	3,048	4.74	5	125
DWE112Y	1-1/2	44.20	1.57	3,048	5.49	5	100
DWE200Y	2	55.80	1.57	3,048	6.99	3	75
DWE212Y	2-1/2	73.03	1.74	3,048	9.80		40
DWE300Y	3	88.90	1.74	3,048	11.99		30
DWE312Y	3-1/2	101.60	1.97	3,048	15.80		20
DWE400Y	4	114.30	1.99	3,048	17.81		20

IMC (Intermediate Metal Conduit)

Listed by "UL"File No.E-62193

UL 1242

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWM012Y	1/2	20.70	1.79	3,030	2.85	10	300
DWM034Y	3/4	26.14	1.90	3,030	3.94	10	250
DWM100Y	1	32.77	2.16	3,025	5.23	5	125
DWM114Y	1-1/4	41.59	2.16	3,025	7.48	3	75
DWM112Y	1-1/2	47.81	2.29	3,025	8.67	3	75
DWM200Y	2	59.93	2.41	3,025	11.65	—	50
DWM212Y	2-1/2	72.56	3.56	3,010	18.71	—	40
DWM300Y	3	88.29	3.56	3,010	22.87	—	30
DWM312Y	3-1/2	100.86	3.56	3,005	26.43	—	20
DWM400Y	4	113.40	3.56	3,005	29.84	—	15

RSC (Rigid Steel Conduit)

Listed by "UL" File No. E-157617

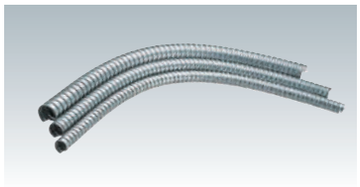
UL 6

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWR012Y/ZY	1/2	21.34	2.64	3,030	3.75	10	300
DWR034Y/ZY	3/4	26.67	2.72	3,030	4.96	10	250
DWR100Y/ZY	1	33.40	3.20	3,025	7.33	5	125
DWR114Y/ZY	1-1/4	42.16	3.38	3,025	9.97	3	75
DWR112Y/ZY	1-1/2	48.26	3.51	3,025	11.94	3	75
DWR200Y/ZY	2	60.33	3.71	3,025	16.00	—	50
DWR212ZY	2-1/2	73.03	4.90	3,010	25.62	—	40
DWR300ZY	3	88.90	5.21	3,010	33.43	—	30
DWR400ZY	4	114.30	5.72	3,005	47.38	—	15
DWR500ZY	5	141.30	6.22	2,995	64.38	—	10
DWR600ZY	6	168.28	6.76	2,995	84.05	—	5

*Note: ZY Items are hot-dip galvanized both inside and outside.

Flexible Conduit

Item No.	Size (inch)	Outside Diameter (mm)	Standard pack (m/Roll)	Weight (kg/pc)
DME012	1/2	21.84 ~ 23.37	30	7.80
DME034	3/4	26.54 ~ 28.07	30	9.70
DME100	1	33.02 ~ 35.05	15	5.80



BS31

Threaded conduit – Medium/Heavy protection (Class 3)
BS31: 1940

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWB0343S	3/4	18.92	1.60	3,048	2.11	10	350
DWB0343L				3,810	2.63	10	350
DWB1003S	1	25.27	1.60	3,048	2.90	10	250
DWB1003L				3,810	3.61	10	250
DWB1143S	1-1/4	31.62	1.60	3,048	3.69	7	210
DWB1143L				3,810	4.59	7	210
DWB1123S	1-1/2	37.96	1.80	3,048	5.00	5	150
DWB1123L				3,810	6.23	5	150
DWB2003S	2	50.66	2.00	3,048	7.49	3	90
DWB2003L				3,810	9.32	3	90

BS4568

Threaded conduit – Medium/Heavy protection (Class 3)
BS4568: Part 1: 1970

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWB0203	20	19.85	1.60	3,750	2.72	10	350
DWB0253	25	24.80	1.60	3,750	3.48	10	250
DWB0323	32	31.80	1.60	3,750	4.54	7	210

Heavy protection (Class 4)
BS4568: Part 1: 1970

Item No.	Size (inch)	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DWB0204	20	19.85	1.60	3,750	2.92	10	350
DWB0254	25	24.80	1.60	3,750	3.71	10	250
DWB0324	32	31.80	1.60	3,750	4.84	7	210

JIS

Plain conduit (Threadless)

JIS C 8305

Item No.	Size	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DW819T	E19	19.1	1.20	3,660	1.94	10	400
DW825T	E25	25.4	1.20	3,660	2.62	10	250
DW831T	E31	31.8	1.40	3,660	3.84	7	175
DW839T	E39	38.1	1.40	3,660	4.64	5	125
DW851T	E51	50.8	1.40	3,660	6.24	3	75
DW863T	E63	63.5	1.60	3,660	8.94	—	50
DW875T	E75	76.2	1.80	3,660	12.09	—	40

Thin wall conduit (Threaded)

JIS C 8305

Item No.	Size	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DW119T	C19	19.1	1.60	3,660	2.53	10	400
DW125T	C25	25.4	1.60	3,660	3.44	10	250
DW131T	C31	31.8	1.60	3,660	4.36	7	175
DW139T	C39	38.1	1.60	3,660	5.27	5	125
DW151T	C51	50.8	1.60	3,660	7.11	3	75
DW163T	C63	63.5	2.00	3,660	11.10	—	50
DW175T	C75	76.2	2.00	3,660	13.40	—	40

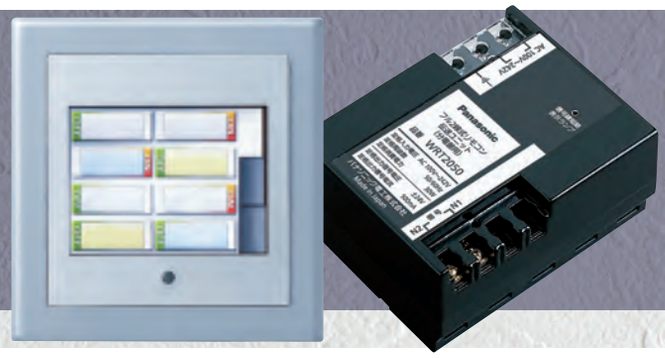
Thick wall conduit (Threaded)

JIS C 8305

Item No.	Size	Outside Diameter (mm)	Nominal Wall Thickness (mm)	Length (mm)	Nominal Weight (kg/pc)	Primary Bundle (pcs)	Master Bundle (pcs)
DW216T	G16	21.0	2.30	3,660	3.88	10	250
DW222T	G22	26.5	2.30	3,660	5.02	10	175
DW228T	G28	33.3	2.50	3,660	6.95	7	125
DW236T	G36	41.9	2.50	3,660	8.89	5	75
DW242T	G42	47.8	2.50	3,660	10.22	3	75
DW254T	G54	59.6	2.80	3,660	14.35	—	50
DW270T	G70	75.2	2.80	3,660	18.30	—	40
DW282T	G82	87.9	2.80	3,660	21.51	—	30
DW392T	G92	100.7	3.50	3,660	30.71	—	20
DW394T	G104	113.4	3.50	3,660	34.72	—	20

For your amenity and energy saving.

FULL-2WAY REMOTE LIGHTING CONTROL SYSTEM



Simple, Efficient Lighting Control That Matches Your Needs

ECOLOGY
Energy-saving while Creating an Efficient Lighting Environment

AMENITY
User-friendly

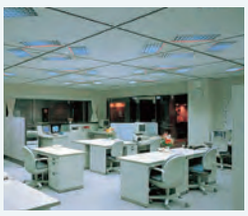
SIMPLE
Simple Design and Labor-saving Installation

CONVENIENCE
Minimal Design, Minimum Maintenance

FLEXIBILITY
Reduced Total Cost

Centralized Monitoring and Control

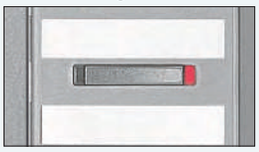
Control and Monitor All Lighting from a Central Location



Functional Display of Lightning Status

LED Displays Lightning Status

•ON: Red Light Is lit



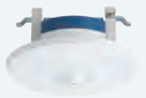
•OFF: Green Light Is lit

Timer and Sensor Control

Connectable with Timer or Sensor Control Equipments for Further Energy Saving

•Program Timer Unit

•Passive Infrared Ceiling Unit

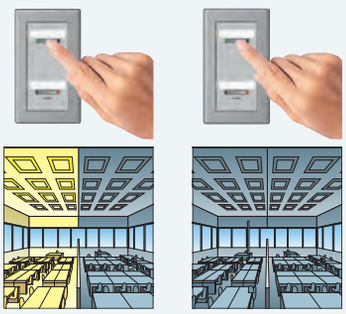


•Daylight Sensor Unit

Group Control

Turn ON All Lights in The Sales Department

Turn OFF All Lights in The Sales Department

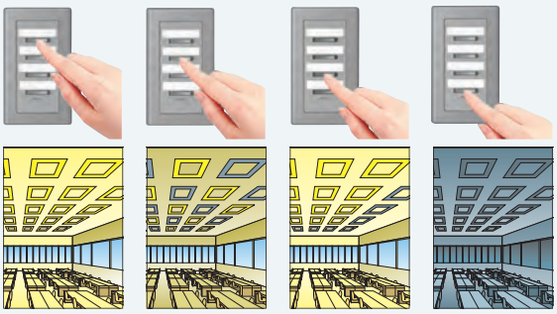


All Lights ON

All Lights OFF

Pattern Control

9:00 AM	Noon to 1:00 PM	2:00 to 3:00 PM	6:00 PM
Work Starts	Lunch Break	Natural Light Come from Outside	Work Finish

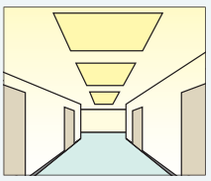


All Lights ON

Some Lights ON

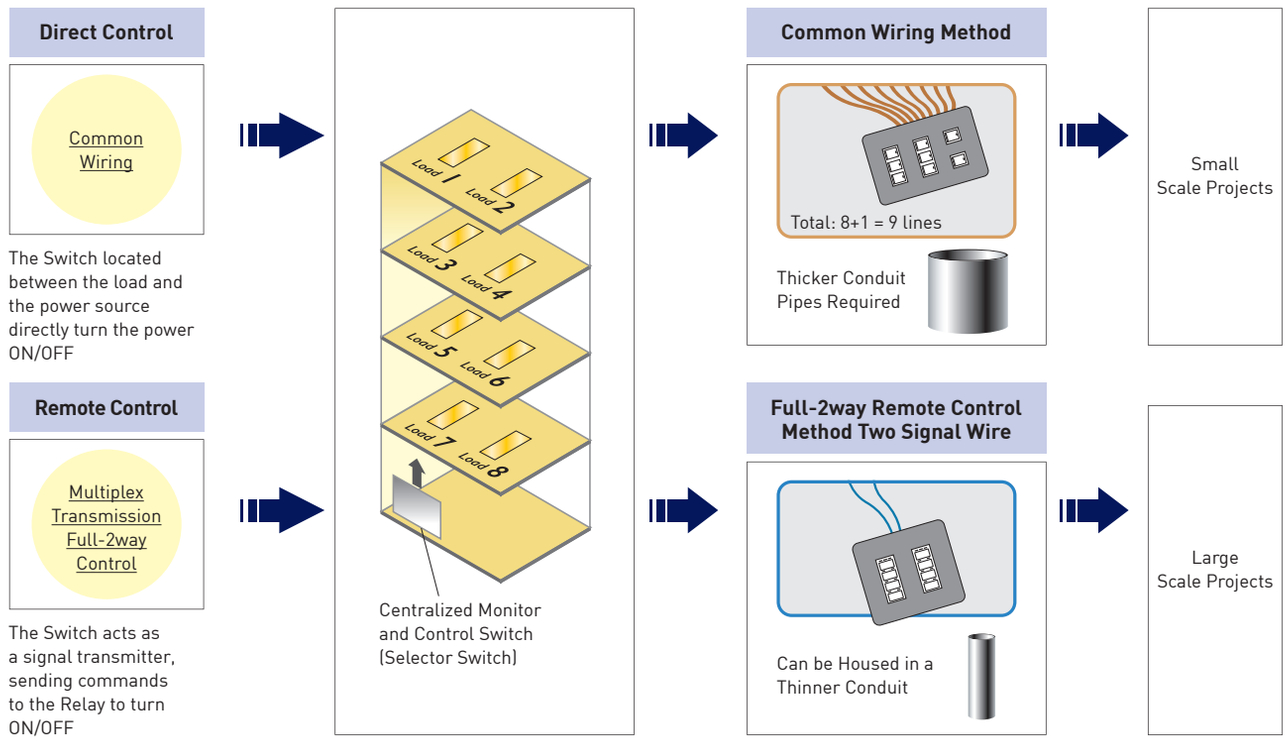
All Lights OFF

Dimmer Control

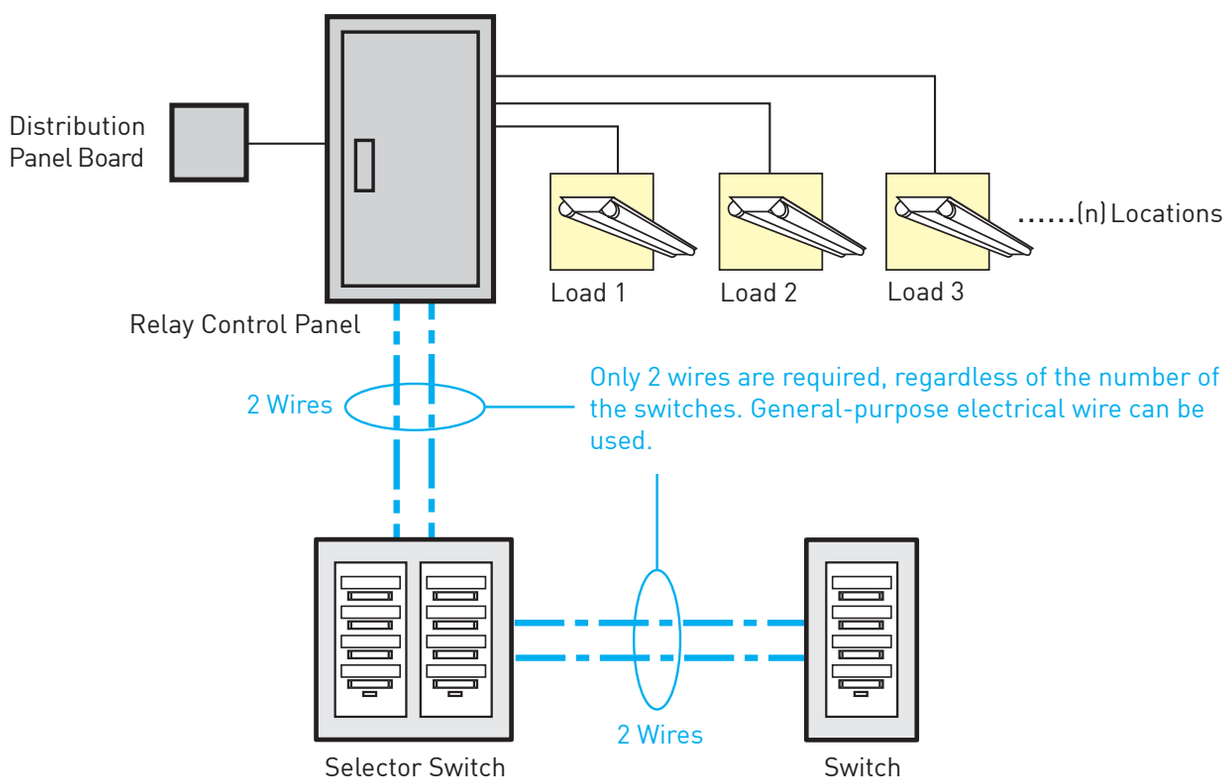


100%

The bigger the building, the more labor-saving the installation.

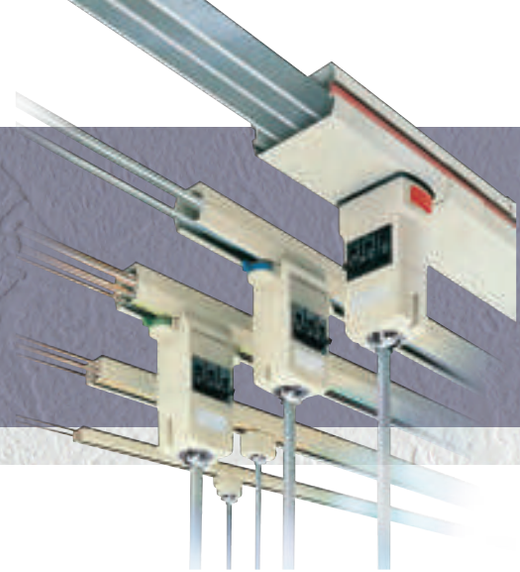


Wiring diagram for Full-2way remote control system



Flexible wiring systems for stationary loads. Select from four types according to the capacity you desire, from single-phase 20A to three-phase 100A.

FACTORY LINE SYSTEMS



Flexible power supply from the ceiling.

Ceiling wiring systems capable of providing power for lighting & driving.
You can change layout simply by reconnecting plugs to the ducts installed at the ceiling – it allows you to reduce time, labor, and cost significantly without major rewiring.

FLEXIBLE
Easy to add or move plugs; suitable for environments where layouts are changed frequently

SAFETY
No more wire across the floor – it prevents tripping & falling.

NICE VIEW
It not only simplifies the wiring & ceiling, but also provides "three-phase and single-phase", or "single-phase two circuits".

FLEXIBLE — No More Wiring-work After Layout Change

Basic advantages

Simple layout change — just re-connect plugs at different positions. You can reduce labor, time & cost.

Additional advantages

You can add, reduce & relocate power supply easily. Just pull down lever, and turn the plugs to remove or connect.

Factory Line 100 / 60

Factory Line 30

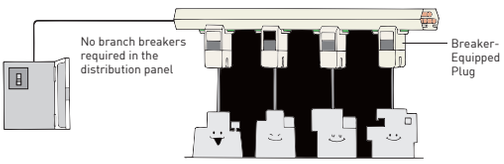
SAFETY — No more tripping over & damaging a cable on the floor.

Basic advantages

Wiring from the ceiling keeps the floor tidy. Plugs with breakers provide safety.

Additional advantages

No need to install breakers with distribution panels — it saves space.



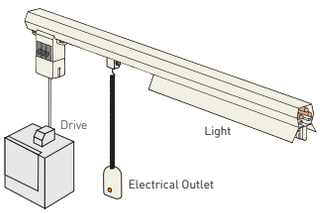
NICE VIEW — It simplifies wiring & appearance. Effective for productivity improvement.

Basic advantages

You can keep ceiling & floor tidy, and appeal to visitors during factory tours.

Additional advantages

One single duct provides three-phase power supply & single-phase power supply — it allows one duct to supply power for machine-driving, conventional sockets and lighting. Factory Line 100/60 simplifies the entire wiring plan.



Wide Lineup

Four types of main duct are available – 100A, 60A, 30A and 20A.
You can combine them to create your own flexible wiring systems for factories.

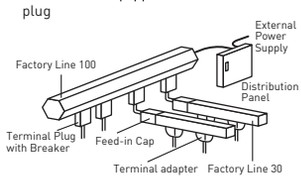
For Main and Branch Lines

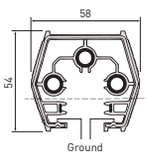
Multi-purpose Factory Flexible wiring System – it provides three-phase & single-phase power supplies at a time.

Factory Line
100

- Three-phase power supply (100A max.)
- Single-phase power supply (20A max.) with breaker-equipped plug

Can be used simultaneously



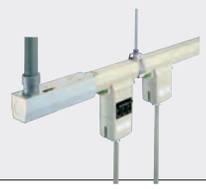


3-Pin, 100-A, 440-V, with ground for direct branching to drive loads or a Factory Line 30.

2-Pin, 20-A, 300-V, with ground for obtaining power supply for small drive loads, electrical receptacle, and lighting.

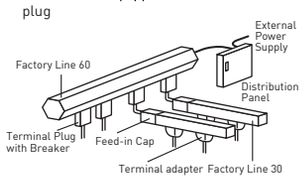
Multi-purpose Factory Flexible wiring System – it provides three-phase & single-phase power supplies at a time.

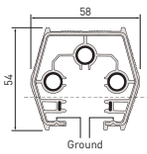
Factory Line
60



- Three-phase power supply (60A max.)
- Single-phase power supply (20A max.) with breaker-equipped plug

Can be used simultaneously

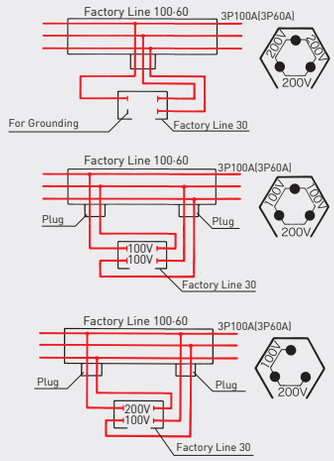




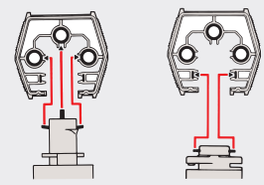
3-Pin, 60-A, 440-V, with Ground for direct branching to a Factory Line 30.

2-Pin, 20-A, 300-V, with Ground for obtaining power supply for small drive loads, electrical receptacle, and lighting.

■ **Branching from the 3 wires of the upper level to Factory Line 30.【The rating in ( ) is of Factory Line 60.】**



- **Branching from The Upper Level**
- **Branching from The Lower Level**



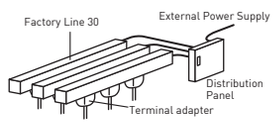
The plugs of Factory Line 30, and 60 & 100 are NOT exchangeable. — they have different ground connection.

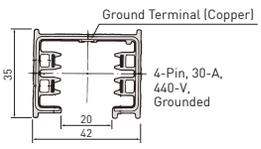
For Branch Lines

Four wire Factory Flexible wiring System – it provides one or the other: three-phase circuit, or two single-phase circuits.

Factory Line
30

- Three-phase power supply, one circuit (30A max.)
- Single-phase power supply, two circuits (30A max.)

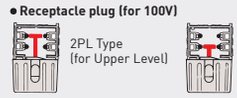




4-Pin, 30-A, 440-V, Grounded

■ **Standard Power Supply Take-Off**

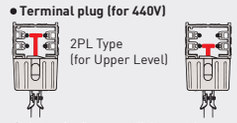
- **Receptacle plug (for 100V)**



2PL Type (for Upper Level)

2PL Type (for Lower Level)

- **Terminal plug (for 440V)**



2PL Type (for Upper Level)

2PL Type (for Lower Level)

(Adapter for fluorecent lights are the same.)

- **Terminal plug (for Three-Phase 440V)**

∗3PL Type

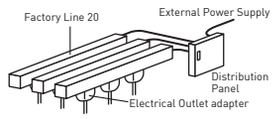
You need a dedicated ground wire. Use 4P type plug, and one conductor in the duct for the ground circuit.

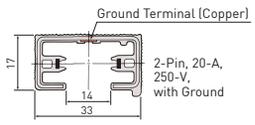
For Small-Scale Branch Lines

Factory Flexible wiring System for small-scale branching – it provides one single-phase power supply circuit.

Factory Line
20

- Single-phase power supply (20A max.)

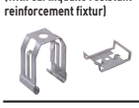




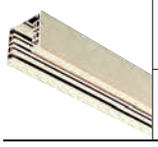
2-Pin, 20-A, 250-V, with Ground

Factory Line 100/60

		Cat. No.	Length ℓ (mm)	Weight (kg)	Rating
Factory Line 100/60 Main Unit (Cream-Gray Finish: Munsell 5Y7.2/1.4)	Factory Line 100	DGHU2411	1,000	3.3	3P 100A 440V + 2P 20A 300V with Ground
		DGHU2412	2,000	6.6	
		DGHU2413	3,000	9.9	
	Factory Line 60	DGHU2311	1,000	3.1	3P 60A 440V + 2P 20A 300V with Ground
		DGHU2312	2,000	6.1	
		DGHU2313	3,000	9.1	

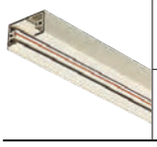
	Cat. No.	Weight (kg)	Rating
Feed-in Cap (Cream-Gray Finish)	DGHU2421	1.1	3P 100A 440V + 2P 20A 300V with Ground
Center Feed-in Joiner (Cream-Gray Finish)	DGHU2422	2.4	
Joiner (Cream-Gray Finish)	DH2431	0.1	2P 20A 300V with Ground
End Cap (Cream-Gray Finish)	DH2423K	0.06	–
Hanger (with Bolt)	DH2451	0.18	–
Terminal adapter A (Cream-Gray Finish)	DGHU2481	0.35	3P 30A 440V with Ground
Terminal adapter B (Cream-Gray Finish)	DH2463	0.08	2P 15A 300V with Ground
Locking adapter receptacle (Cream-Gray Finish)	DH2477	0.07	Ground 2P 15A 125V Locking
Adapter receptacle (Cream-Gray Finish)	DH2461	0.07	Ground 2P 15A 125V
Reel-Type Adapter receptacle (adapter:Cream-Gray Finish. receptacle:Off-White Finish)	DH24621	0.7	for Twin Ground 2P 15A 125V
	DH24641		for Twin Ground 2P 15A 125V Locking
Hanger (with earthquake resistant reinforcement fixtur) 	DH2452K1	0.03	–

Factory Line 30

	Cat. No.	Length ℓ (mm)	Weight (kg)	Rating
Factory Line 30 Main Unit (Cream-Gray Finish: Munsell 5Y7.2/1.4) 	DGHU2711	1,000	1.6	4P 30A 440V with Ground
	DGHU2712	2,000	3.2	
	DGHU2713	3,000	4.8	

	Cat. No.	Name/ Type	Weight (kg)	Rating
Feed-in Cap (Cream-Gray Finish)	DGHU2721	–	0.16	4P 30A 440V with Ground
Center Feed-in Joiner (Cream-Gray Finish)	DGHU2722	–	0.24	
End Cap (Cream-Gray Finish)	DH2723	–	0.01	–
Joiner (Cream-Gray Finish)	DGHU2731	–	0.08	4P 30A 440V with Ground
Terminal Plug (Cream-Gray Finish) ※1	DGHU2781	2PS	0.08	2P 15A 440V with Ground
	DGHU2782	2PL		
	DGHU2783	3P		3P 15A 440V with Ground
	DGHU2784	4P		4P 15A 440V with Ground
Adapter Receptacle (Cream-Gray Finish) ※2	DH2773	S	0.05	Ground 2P 15A 125V
	DH2774	L		
Locking Adapter Receptacle (Cream-Gray Finish) ※2	DH2791	S	0.05	Ground 2P 15A 125V Locking
	DH2792	L		
Reel-Type Adapter Receptacle (Apater: Cream-Gray Finish. Receptacle : Off-White Finish) ※2	DH27751	S	0.73	for Twin Ground 2P 15A 125V
	DH27761	L		
	DH27781	S		for Twin Ground 2P 15A 125V Locking
	DH27791	L		
Hanger (with Bolt)	DH2751	–	0.11	–
Hanger (with earthquake resistant reinforcement fixture)	DH2752K1	–	0.03	–

Factory Line 20

	Cat. No.	Length ℓ (mm)	Weight (kg)	Rating
Factory Line 20 Main Unit (Cream-Gray Finish: Munsell 5Y7.2/1.4) 	DGHU2611	1,000	0.79	2P 20A 250V with Ground
	DGHU2612	2,000	1.58	
	DGHU2613	3,000	2.37	

	Cat. No.	Weight (kg)	Rating
Feed-in Cap (Cream-Gray Finish)	DGHU2621K1	0.11	2P 20A 250V with Ground
Center Feed-in Joiner (Cream-Gray Finish)	DGHU2622K1	0.19	
End Cap (Cream-Gray Finish)	DH2623	0.006	–
Joiner (Cream-Gray Finish)	DGHU2631K1	0.1	2P 20A 250V with Ground
Terminal Plug (with Ground) (Cream-Gray Finish)	DGHU2683	0.05	2P 15A 250V with Ground
Plug Sockets (with Ground) (Cream-Gray Finish)	DH2670	0.04	Ground 2P 15A 125V
Locking Plug Socket (Cream-Gray Finish)	DH2671	0.04	2P 15A 125V with Ground
Locking Plug Socket (with Ground) (Cream-Gray Finish)	DH2684	0.04	Ground 2P 15A 125V Locking
Reel-Type Plug Socket (with Ground) (Plug:Cream-Gray Finish. Socket: Off-White Finish)	DH26751	0.7	for Twin Ground 2P 15A 125V
	DH26771		for Twin Ground 2P 15A 125V Locking
Hanger (with Bolt)	DH2651	0.13	–
Hanger (with Bolt)	DH2652	0.03	–

※1: 2P/3P/4P 15A 300V with Ground, Power Outlet for The Main Unit.
"L" (for the upper 2P conductors) and "S" (for the lower 2P conductors) plug are available in 2P type.

※2: "L" (for the upper conductors) and "S" (for the lower conductors) plug are available.

Factories

You can get power from optimal location quickly even after layout change.

Factory Line 100

Schools

One single duct can supply power for two circuits at a time — it allows you to connect more devices, and keep the floor clean & tidy.

Factory Line 30

Retail Stores

Supplying power for lighting & sockets at a time. Highly functional Factory Line 30, which offers two single phase circuits at a time, allows the store to have power for lighting and extra sockets. It also fits into modern, lightly equipped ceilings — the simple wiring produces spacious environment in the store.

Factory Line 30

[Others]

Research Institutes & Laboratories

One single duct (Factory Line 30) can provide many small capacity power supplies with different voltages & frequencies — it allows many applications.

Data Centers

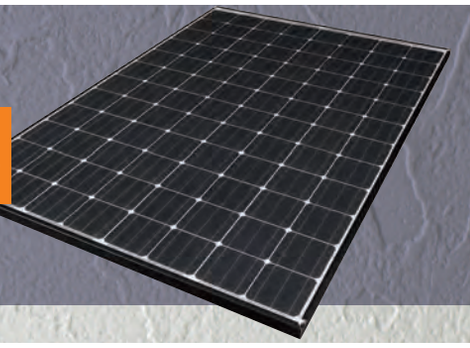
Factory Line 100, 60 and 30 can supply power to both 200V & 100V devices at a time on server racks.
NO NEED FOR WIRING SPACE ON/UNDER FLOOR due to power supply from the ceiling.

Information about Panasonic Factory Line Systems is available at:

www2.panasonic.biz/es/densetsu/haikan/ffs/en/

● Specification drawings, operation and installation manuals can also be downloaded.

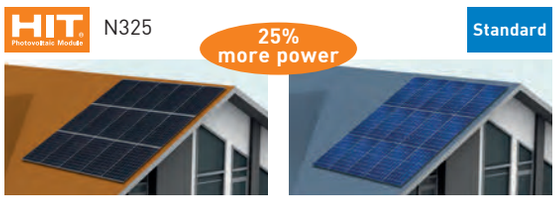
PHOTOVOLTAIC MODULE HIT®



Designed for higher energy production and long-term reliability, Panasonic HIT® ensures you a true peace of mind and satisfaction in your energy management.

1. 19.4% module efficiency

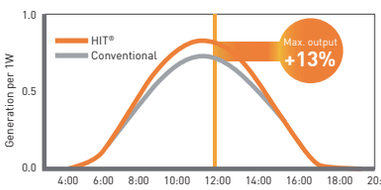
+25% more power from same area



HIT® : 15pcs x 325W = 4.87kW VS Standard*: 15pcs x 260W = 3.90kW

2. High performance at high temperature

Up to **+13%** more generation in the day time

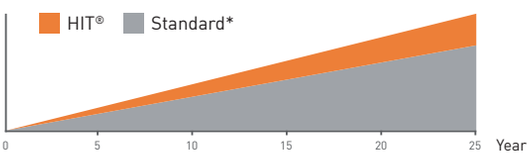


Total yield with a peak module temperature of 85°C, compared with a conventional crystalline module.

Measurement: 8 July 2013, Kaizuka City, Japan

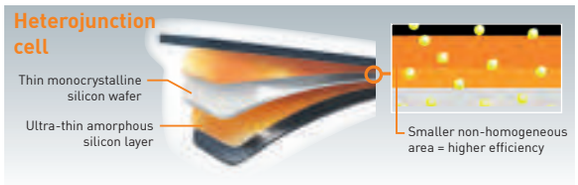
3. More generation, higher profit

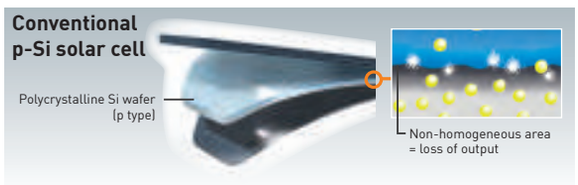
Helping you reach a higher final profit with your PV system

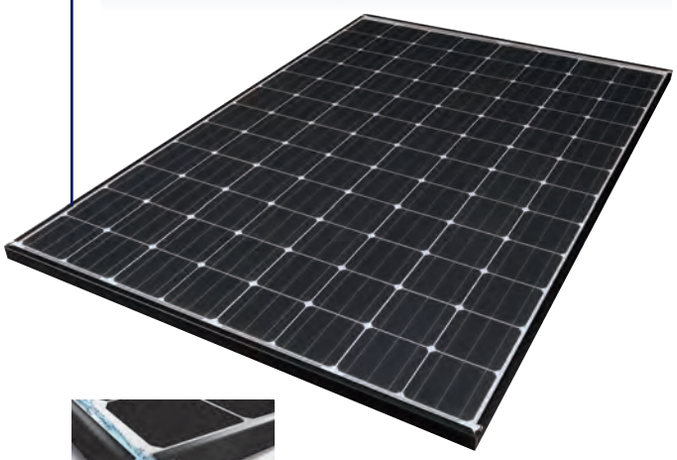


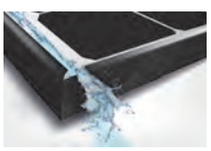
Standard*: Conventional crystalline module with Pmax 260W

Heterojunction technology









Unique water drainage

N325 (VBHN325SJ47)

Cell efficiency	21.8%
Module efficiency	19.4%
Output/m²	194W/m²
Temperature coefficient	0.29%/C

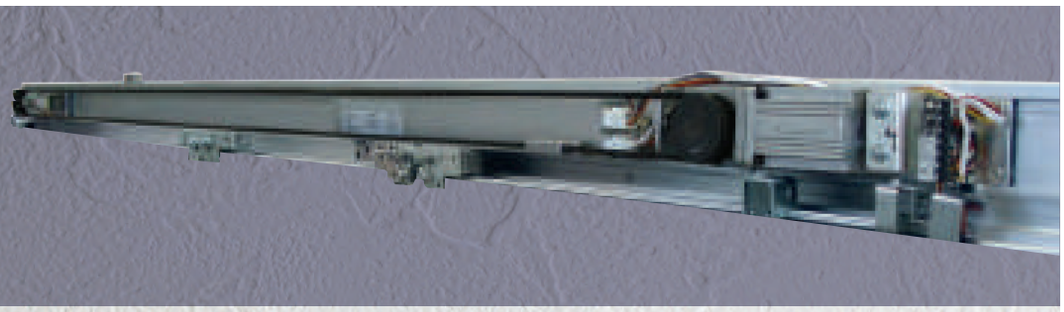
Specification		
Max. Power (Pmax)	[W]	325
Open circuit voltage (Voc)	[V]	69.6
Short circuit current (Isc)	[A]	6.03
Size		Weight
W1,053×H1,590×D35mm		18.5kg

N240 (VBHN240SJ25)

Cell efficiency	21.6%
Module efficiency	19.0%
Output/m²	190W/m²
Temperature coefficient	0.29%/C

Specification		
Max. Power (Pmax)	[W]	240
Open circuit voltage (Voc)	[V]	52.4
Short circuit current (Isc)	[A]	5.85
Size		Weight
W798×H1,580×D35mm		15kg

AUTO DOOR



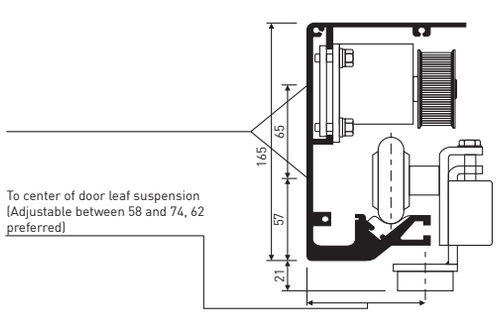
Automatic Sliding Door

This is the most common automatic doors on the market, often used for offices, meeting rooms, a showroom, lobby, restaurants, hospitals, banks, convention centers, airports and many others more...
Remote controller, back-up battery, electric Locks, sensors and access Controllers can be connected if required.
If you connect with a fire alarm, when fire alarm triggers, the door will remain fully open to make it easier to exit.

Model	PS-75	PS-90	PS-120	PS-150	PS-250
Door weight	≤75kg x 2	≤90kg x 2	≤120kg x 2	≤150kg x 2	≤250kg x 2
Opening speed (Adjustable)	14~32 cm/s	14~32 cm/s	14~40 cm/s	14~34 cm/s	10~50 cm/s
Opening speed (Adjustable)	9~30 cm/s	9~30 cm/s	10~38 cm/s	10~34 cm/s	10~50 cm/s
Manual opening (power failure)	44N (4.5 kgf)	36.3N (3.7 kgf)	61.7N (6.3 kgf)	89.2N (9.1 kgf)	150N (15.3 kgf)
Door width	600 ~ 1,250mm				800 ~ 1,500mm
Door hold time	0 ~ 9 s				0~30s
Voltage	AC 200~250V 50/60 Hz				

Air tight doors, Hermetic doors, X-ray shielding doors

The air tight door can effectively prevent dusts in the air from entering the room and avoid bacterial infection, save air-conditioning energy, prevent wind and dust and reduce noise.
V track-shape arc groove design, squeeze inward and downward when closed, rubbers around fit closely with the door frame to ensure excellent sealing effect.
Apply: Medical Treatment, Pharmaceutical, Sensitization, Foodstuff, Biochemistry, Electronics...



Emergency Automatic Door

In the case of normal, the application of Panasonic emergency door is the same as Panasonic general sliding automatic door, while the former has all the functions of the latter, such as operating parameter adjustment and rebound while meeting resistance, etc.
However, when an emergency (e.g. fire) occurs, the evacuation personnel can push the door leaves (flexible or fixed) outwards to 90o, and coincide flexible door leaf to the fixed door leaf, which will greatly increase the evacuation space and be beneficial to the emergency evacuation.
In other special places, such as factory and exhibition hall, where the large scale equipment will be transported from their entrances, the door leaves of emergency door can be pushed outwards to 90o and moved to the two sides for greater passing width and convenience of goods transportation (See Figure 3).

MODEL	
NESR22422R	One wing – Open to right
NESR22422L	One wing – Open to left
NESR224428	Two wings

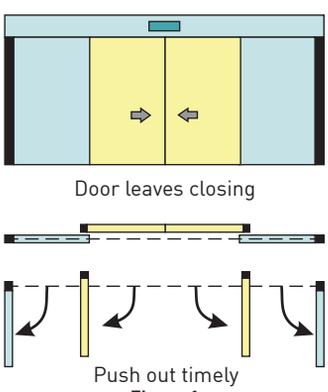


Figure 1

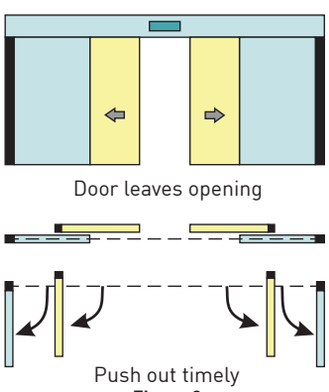


Figure 2

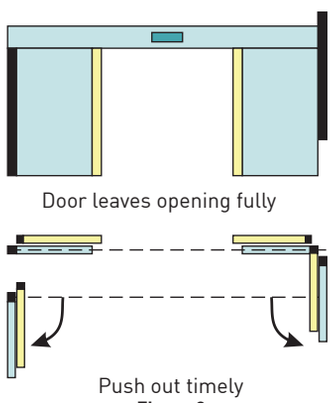


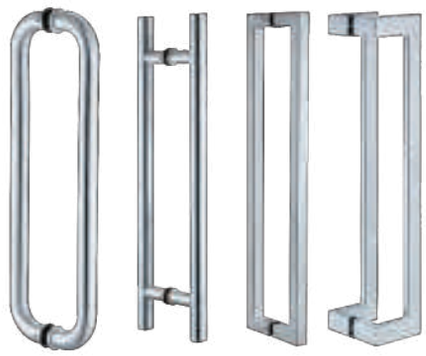
Figure 3

Revolving Automatic Door

Automatic revolving door is designed with luxurious style, a rotation movement should ensure the flow of people streaming big move. Automatic revolving doors are often installed in offices, commercial centers, luxury hotels...
With the highest safety requirements, automatic revolving doors with 32 sensors, the door will automatically rotate counterclockwise when facing an obstacle.

Diameter (mm)	2400	2600	2800	3000	3200	3400	3600	4200	4800
Two wings						PS-A3400-2E	PS-A3600-2E	PS-A4200-2E	PS-A4800-2E
Three wings	NS-A2400-3	NS-A2600-3	NS-A2800-3	NS-A3000-3	NS-A3200-3	NS-A3400-3	NS-A3600-3	NS-A4200-3	NS-A4800-3
Four wings	NS-A2400-4	NS-A2600-4	NS-A2800-4	NS-A3000-4	NS-A3200-4	NS-A3400-4	NS-A3600-4	NS-A4200-4	NS-A4800-4

DOOR HARDWARE
Accessories


Door handle

Glass door lock

Glass hinges

Glass clamp

Door clamp

Hinges

Flush bolt

Floor hinges

Model	Max Door Width	Max Door Weight
S-80	⇖ 900mm	⇖ 80kg
S-100	⇖ 1100mm	⇖ 100kg
S-150	⇖ 1200mm	⇖ 150kg
S-250	⇖ 1250mm	⇖ 250kg

Dust-proof

Security door guard

Door Close

Model	CM-1000H	CM-1000HYS
Max Door Width	1000mm	1000mm
Max Load-bearing	70kg	70kg
Max Opening Angle	180°	
Color	White / Silver	
Style	Exposed	Exposed

Door viewer

Door coordinator

Door Close

	Non hold-open	Hold-open
Model	CM-1050F	
Max Door Width	1050mm	
Max Load-bearing	75kg	
Max Opening Angle	180°	
Color	Silver	
Style	Exposed	

Door stopper

Door bottom seal

Door Close

	Hold-open	
Model	CM-1100F	CM-1100FS
Max Door Width	1100mm	1100mm
Max Load-bearing	80kg	80kg
Max Opening Angle	180°	
Color	Silver	
Style	Exposed	Exposed

Panic exit device

Lock handle

Door Close

	Non hold-open	Hold-open
Model	CY-950	CY-1250T
Max Door Width	950mm	1250mm
Max Load-bearing	60kg	100kg
Max Opening Angle	120°	
Color	Silver	
Style	Concealed, hold-open	

Lock body

Cylinder

VENTILATING FANS & AIR MOVING EQUIPMENTS

Providing you a breath of fresh air

What are the Indoor Air Quality problems existing in your house?

Recently, many reports show that people are in poorer physical condition. It is because of high living density and usage of building or interior material which emit chemical substances in either new-built or reformed house, causing indoor air quality problems.

There are different symptoms, such as eyes / sore throat, nausea, feeling unwell, skin irritation, headache, dizziness, breathing problem and so on. Furthermore, chemical substances like formaldehyde, can lead to the deterioration of allergic illness.

Beware of Curtain, Sofa and Any Other Furniture you brought in

Chemical substances are also released from curtain, sofa and any other furniture you brought in.

Wall and Flooring which Occupied the Most Area, are Big Enemy of Clean Air

Material like adhesive used on wall and/ or flooring, will keep on releasing chemical substances in long period of time.

Floor and Bathroom Sink are good places for Termite to Inhabit

High humidity of bathroom (especially the floor), provides good places for termite to inhabit.

Kitchen with Lots of Water Vapor is the Food Storage for Mold

Water vapor is created when gas is being burnt. Also the dirt after cooking provides nutrition for mold.

Fabric Sofa and Stuffed Doll

Scurf and dander from human beings (and pets) are the favorites of mites. Thus, it is important to be cautious with fabric sofa and stuffed doll.

Bathroom with Heavy Amount of Water Vapor is the Wonderland for Mold

Heavy amount of water vapor can be produced in a short period of time. Wall, flooring & ceiling of bathroom are made by moisture-proof material and thus high temperature is maintained. Please clean your bathroom without leaving any soap residue.

Even Flooring Need to pay attention

Though natural-material-made flooring looks safe, chemical substances like gloss wax may still be emitted.

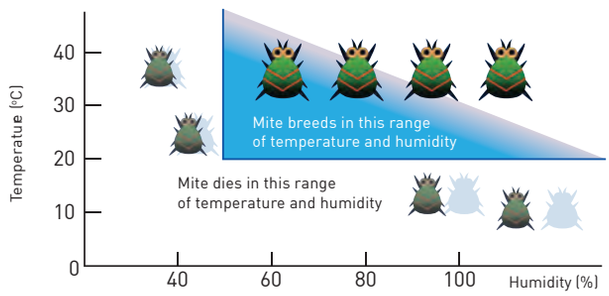
INDOOR AIR PROBLEMS IN YOUR HOUSE

Mites

There are around 30 types of mites found in a home normally. In general, most mites live without causing any harm to human beings. However, sting mites like Cheyletidae, blood-sucking mites like House Mite, and Dust Mite group which can cause allergen also exist.

Temperature and Humidity for Mite Breeding

Mite breeds when temperature is over 20 degrees and humidity is over 60%



(Source: "Information of Residence and Home"; Environment Hygiene Section, Health and Welfare Department, Osaka Prefecture)

Molds

Enlarged Photo of Mold

Mold breeds faster when humidity increases, and nearly everything inside & outside our residence can provide nutrients for it. Not only mold is damaging our home appearance and creating bad smell, it also has bad effects on human body. Furthermore, mold increases during rainy season, and its spores fly around at the end of rainy season.

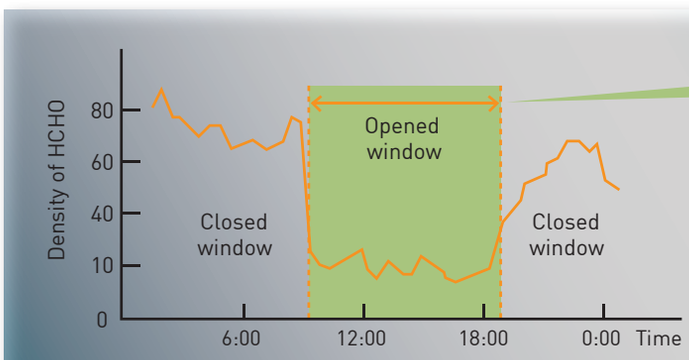
Termite

Volatile organic compounds (VOC) like Formaldehyde which is generated from building material and/or home furniture. It is easily to cause indoor air pollution.

Formaldehyde (HCHO)

Volatile organic compounds (VOC) like Formaldehyde which is generated from building material and/or home furniture. It is easily to cause indoor air pollution.

Indoor Formaldehyde concentration was measured



When window is opened, density decreases rapidly. When window is closed, density then starts to increase again.

(Source: "Information of Health and Residence" , Environment Hygiene Section, Health and Welfare Department, Osaka Prefecture)

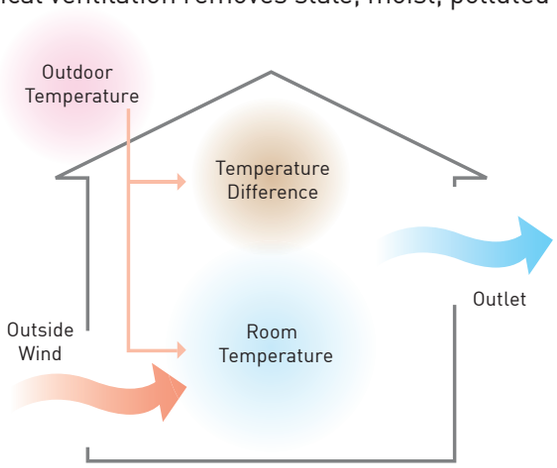
Formaldehyde: It is considered to be the main chemical substance causing the "Sick House Syndrome" - (Main sources: building materials, furniture, heat machines, smoking, etc.)

IMPROVE INDOOR AIR QUALITY

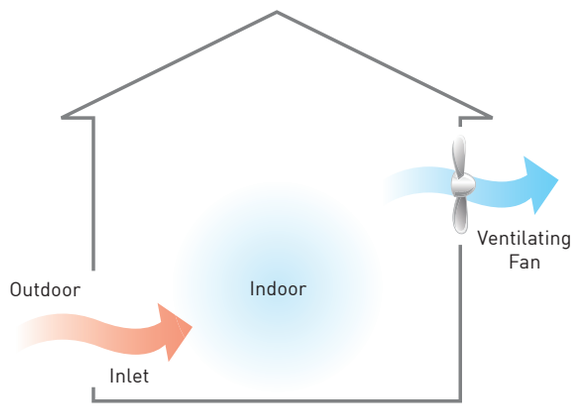
Ways to improve Indoor Air Quality

The first step to improve indoor air quality should reduce or remove the source of the pollutants. Unfortunately, indoor pollutant is virtually impossible to eliminate completely, creating the need for a second step - ventilation. Ventilation is divided into "Natural Ventilation" and "Mechanical Ventilation".

Natural ventilation is neither consistent nor reliable since it relies heavily on wind and weather conditions. Mechanical ventilation removes stale, moist, polluted air and replaces it with fresh outside air by using a fan.



Natural Ventilation
Unstable ventilating capacity

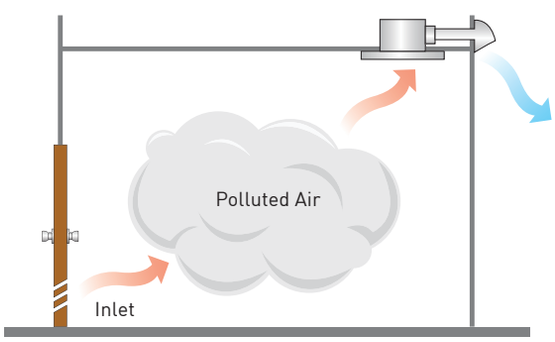


Mechanical Ventilation
Stable ventilating capacity

Two widely used methods in today's building industry are continuous and intermittent ventilation.

Continuous Ventilation

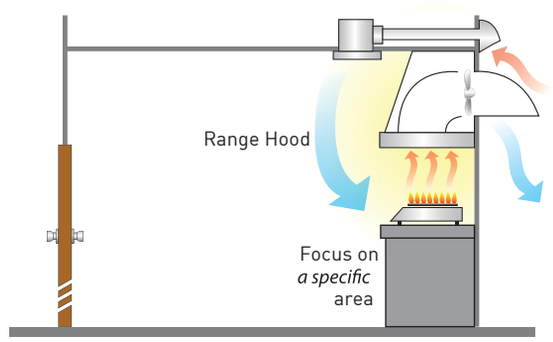
Sometimes referred to as general, central, whole-house or primary ventilation. Continuous ventilation is used to remove stale air and provide fresh air on a slow, continuous basis.



Enhance ventilation in the whole house to replace polluted air with fresh air by ventilation equipment.

Intermittent Ventilation

Sometimes referred to as spot, local or secondary ventilation. Intermittent ventilation is used to capture and remove pollutant quickly at the source. This secondary process exhaust "bad air" from contaminated areas quickly, before it can spread throughout the house.



Enhance ventilation in specific part of a house. (e.g. bathroom, kitchen)

VENTILATION SCHEDULE

The Number of Ventilating Fans Required

$$\frac{\text{(A): Room Size [M}^3\text{] x (B): Necessary Frequency of Ventilation Per Hour}}{\text{(C): Air Volume of Ventilating Fan [M}^3\text{]}}$$

Note: Room size (A) is calculated from the following equation:
(A) = Floor area [sq. m. or sq. ft.] x Room height [m. or ft.]
If the room height exceeds 4 meters (13 feet), use 4 meters (13 feet) in the calculation regardless of the actual room height.

Values for (B) in above equation are given in the table on the below. These values were empirically found by the research scientists.
Value for (C) in the above equation are given in our catalogs.

Ventilation Schedule

I: Type of room		II: Necessary frequency of ventilation per hour
	I	II
Hotel	Dance Hall	8
	Dining Hall	8
	Kitchen	15
	Hallway	5
	Toilet	5
	Lavatory	10
	Boiler Room	20
	Laundry	15
Hospital	Waiting Room	10
	Clinic	6
	Ward	6
	Bathroom	5
	Office	6
	Restaurant	8
	Kitchen	15
	Gallery	5
	Toilet	10
	Boiler Room	10
	Laundry	15
	Operating Room	15
	Disinfecting Room	12
	Room for the Patients Receiving Medical Treatment for the Diseases of Respiratory Organs	10
Public Toilet		20
Vessel	Passenger Room	6
Home	Kitchen	15
	Parlor	6
	Living Room	6
Library	Reading Room	6

	I	II
Photo Studio	Dark Room	10
School	Laboratory	6
	Cooking Room	15
	Auditorium	6
	Gymnasium	8
	Toilet	12
	Library	6
	Classroom	6
Theatre	Auditorium	6
	Hallway	6
	Smoking Room	12
	Toilet	10
	Projection Booth	20
	Workroom	6
	Telephone Switch Board Room	6
Factory	Painting Room	20
	Dynamo Room and Substation	20
	Condenser Room	15
	Office	6
Restaurant & Snack Bar	Restaurant	6
	Kitchen	20
Office Building	Office	6
	Waiting Room	10
	Conference Room	12
	Display Room	10
	Toilet	10
Rooms where poisonous or inflammable gas is produced		more than 20

RECOMMENDED APPLICATION

Panasonic ventilating products can be used in various environment, such as residential house, offices and hotels.

Residence

Ventilating fans installed throughout the home draw indoor pollutants and vent them outside. So, a continuous and balanced ventilation system brings you with fresh air.

Office

Office also needs a good ventilation system to maintain constant and fresh airflow. Panasonic Cabinet Fan definitely provides you with a quiet and comfortable environment.

* Local regulations concerning the installation of ventilation fans should be fulfilled.
* Installation methods please refer to the operation instruction.

CEILING MOUNT TYPE VENTILATING FAN

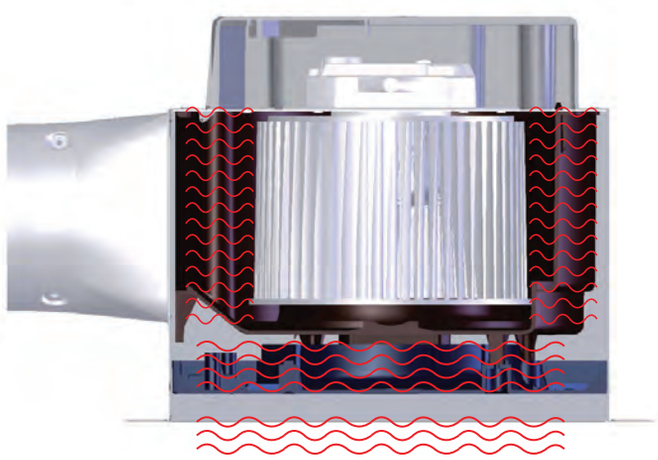
General Features (DC Motor Series, Super Quiet Series & Standard Series)

1 Quiet Operation

These fans adopt distinctive design of "Resonance-Noise-Absorption Structure". It can minimize the transmission of noise from the blower to exterior, reduce the operation noise to incredibly low levels and accordingly create a tranquil and silent environment for you.

By the "Double Orifice" Structure, noise is effectively absorbed and reduced between the double orifice and casing.

* except 38 model



2 Long Life

The unique design of new motor, corporated with well-lubricated ball bearing, temperature rise is reduced that can increase the motor life time and prolong the product durability.

3 High Efficiency

Taper blade design effectively controls the air turbulence surrounding the blade. That achieves the strong and smooth ventilating performance, as well as reduces the noise level, by whole of the blade.

Seam-processed casing ensures strength and hermetic sealing. Reverse flow prevention shutter results in further improvement of air tightness.

4 Energy Saving

The advanced casing design, along with the new motor, improves the fan performance effectively. Energy saving is attained by reducing power consumption down to 35%.

5 Easy Installation

Wiring of power cord to product is pre-installed in factory, just connect the cord to power supply for operation (except 38 model).

Cassette type discharge adaptor facilitates installation of the product, as well as duct connecting work.

6 Easy Maintenance

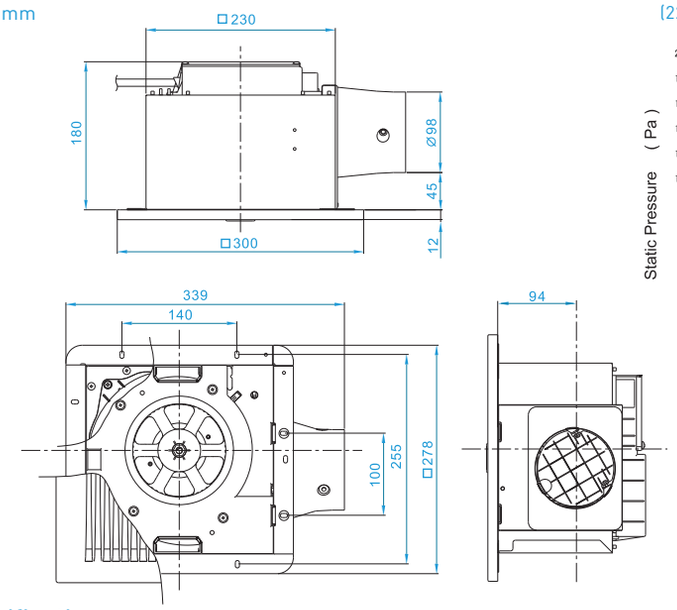
One touch louver allows installation and removal of louver by finger touch.

FV-24JR2 DC Motor Series

- DC motor
- Constant airflow
- Variable air volume
- 15-minute delay timer
- Auto operation by motion sensor
- Resonance-Noise-Absorption Structure
- Taper blade sirocco fan
- Pre-installed power cord

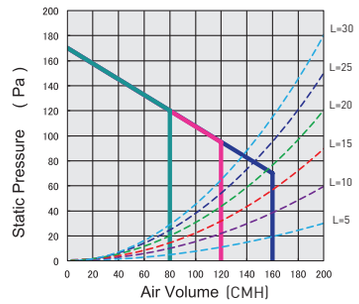
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Air Volume		Power Consumption [W]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
	[CMH]	[CFM]					
FV-24JR2	160	94	8	31	2.9	240 x 240	Ø100
	120	71	5.2	26			
	80	47	3.6	20			

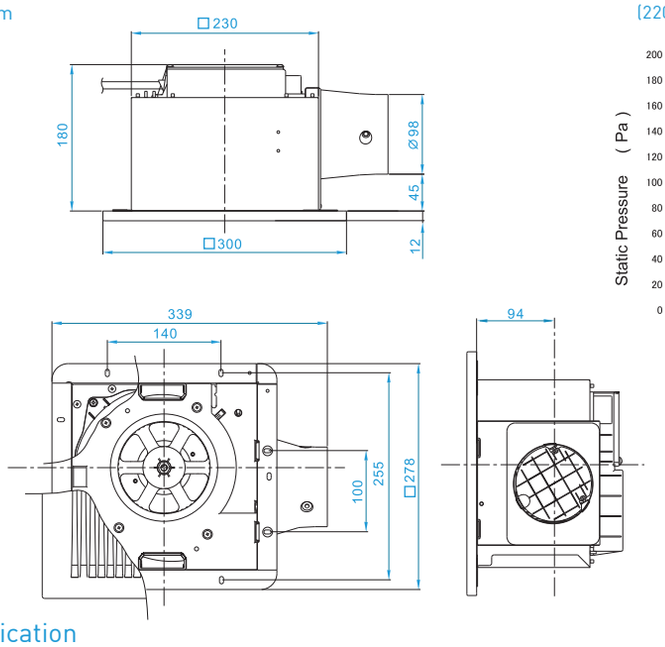
Note: Values in Consumption and Noise are specified at Static Pressure of 0 Pa.

FV-24JA2 DC Motor Series

- DC motor
- Constant airflow
- Variable air volume
- 15-minute delay timer
- Resonance-Noise-Absorption Structure
- Taper blade sirocco fan
- Pre-installed power cord

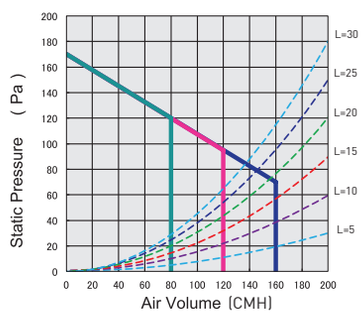
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Air Volume		Power Consumption [W]	Noise [dB(A)]	Weight kg	Installation Space [mm]	Duct Size [mm]
	[CMH]	[CFM]					
FV-24JA2	160	94	8	31	2.9	240 x 240	Ø100
	120	71	5.2	26			
	80	47	3.6	20			

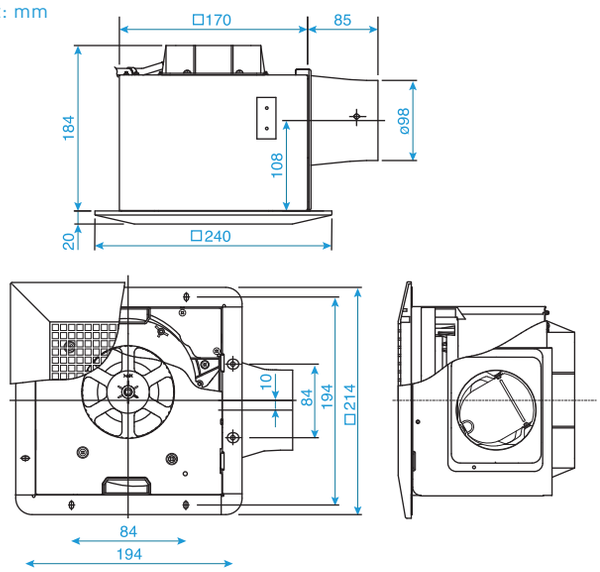
Note: Values in Consumption and Noise are specified at Static Pressure of 0 Pa.

FV-17CU7 Super Quiet Series

- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Pre-installed power cord
- Resonance-Noise-Absorption Structure
- High performance taper blade designed sirocco fan

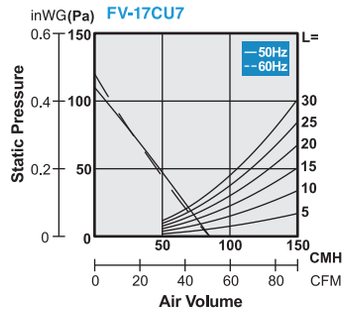
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
FV-17CU7	50	11	790	85	50	26	1.9	177 x 177	Ø100
	60	11	800	85	50	28			

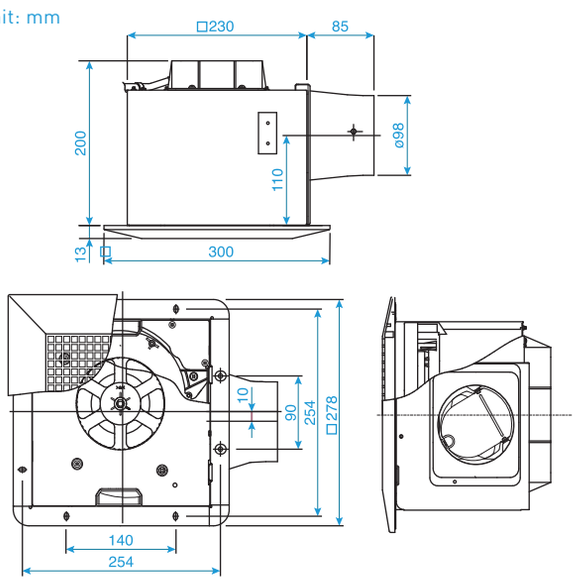
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-24CU7/ FV-24CD7/ FV-24CH7 Super Quiet Series

- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Pre-installed power cord
- Resonance-Noise-Absorption Structure
- High performance taper blade designed sirocco fan

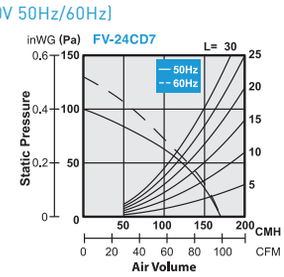
Dimension

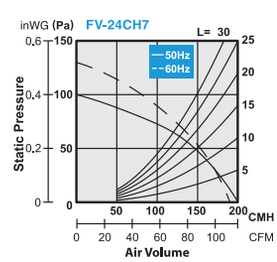
Unit: mm

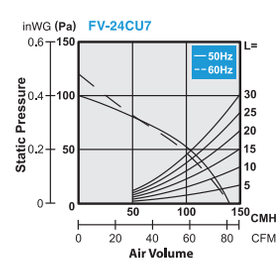


Performance Data

(220V 50Hz/60Hz)







Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
FV-24CU7	50	14	690	140	82	28	2.9	240 x 240	Ø100
	60	16	690	140	82	29			
FV-24CD7	50	17	790	170	100	31	3.0	240 x 240	Ø100
	60	19	805	170	100	33			
FV-24CH7	50	20	870	200	118	35	3.0	240 x 240	Ø100
	60	24	840	190	112	35			

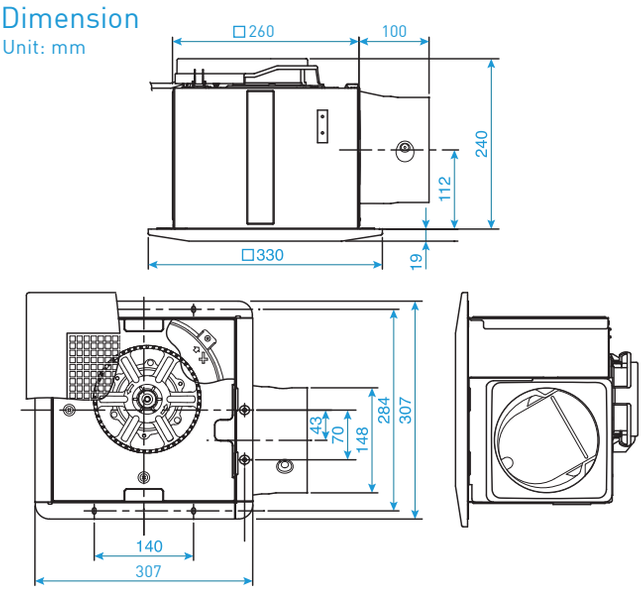
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-27CH9 Super Quiet Series

- High-Low speed selectable
- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Pre-installed power cord
- Resonance-Noise-Absorption structure
- High performance taper blade designed sirocco fan

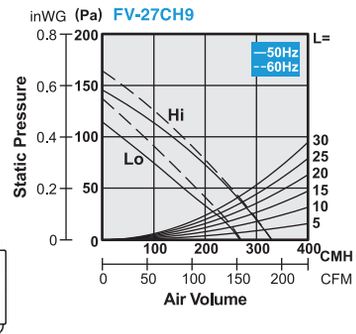
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
FV-27CH9	50	Hi	28	570	330	194	34	4.4	270 x 270	ø150
		Lo	23	480	260	153	30			
	60	Hi	33	570	330	194	34			
		Lo	26	490	270	159	31			

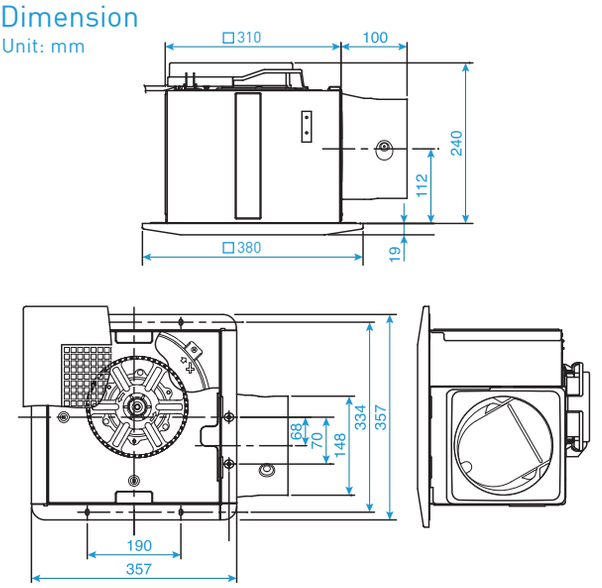
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-32CD9/ FV-32CH9 Super Quiet Series

- High-Low speed selectable
- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Pre-installed power cord
- Resonance-Noise-Absorption structure
- High performance taper blade designed sirocco fan

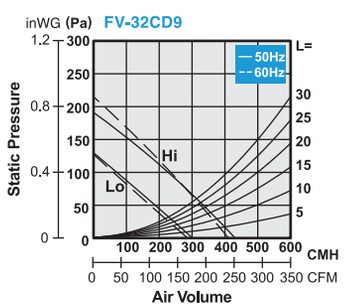
Dimension

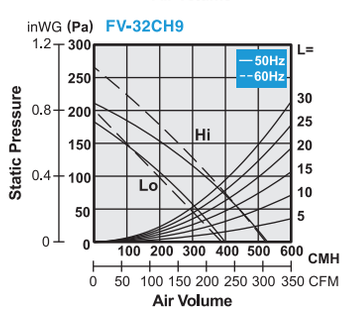
Unit: mm



Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
FV-32CD9	50	Hi	42	590	430	253	36	5.2	320 x 320	Ø150
		Lo	32	460	300	177	28			
	60	Hi	48	580	410	241	36			
		Lo	33	450	285	168	28			
FV-32CH9	50	Hi	55	710	530	312	41	5.6	320 x 320	Ø150
		Lo	45	570	400	235	34			
	60	Hi	61	695	525	309	41			
		Lo	47	540	390	230	33			

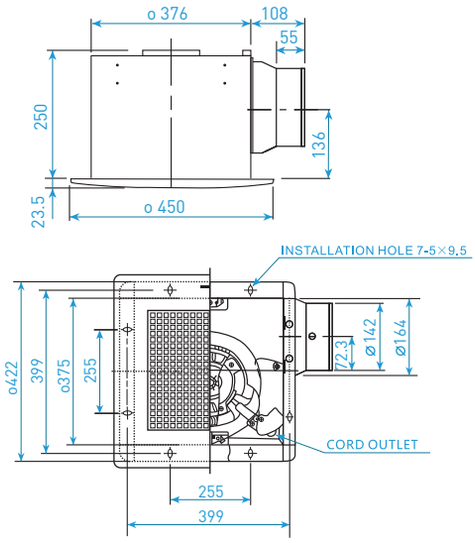
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-38CD8 / FV-38CH8 Standard Series

- High-Low speed selectable
- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- High performance sirocco fan

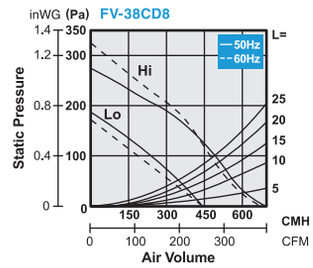
Dimension

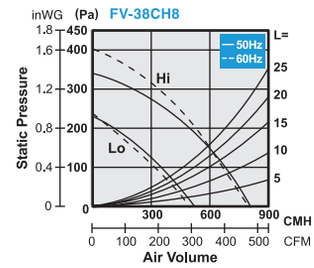
Unit: mm



Performance Data

(220V 50Hz/60Hz)



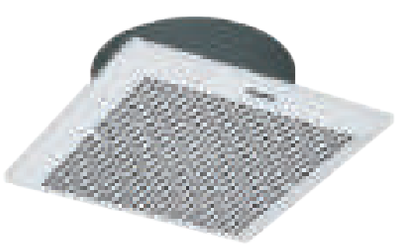


Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]	Duct Size [mm]
FV-38CD8	50	Hi	90	645	640	377	44	9.7	385 x 385	Ø150
		Lo	66	456	430	253	35			
	60	Hi	98	628	630	371	44			
		Lo	66	439	410	241	35			
FV-38CH8	50	Hi	122	790	800	471	50	10.4	385 x 385	ø150
		Lo	89	540	525	309	40			
	60	Hi	138	760	790	465	49			
		Lo	90	509	500	294	39			

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

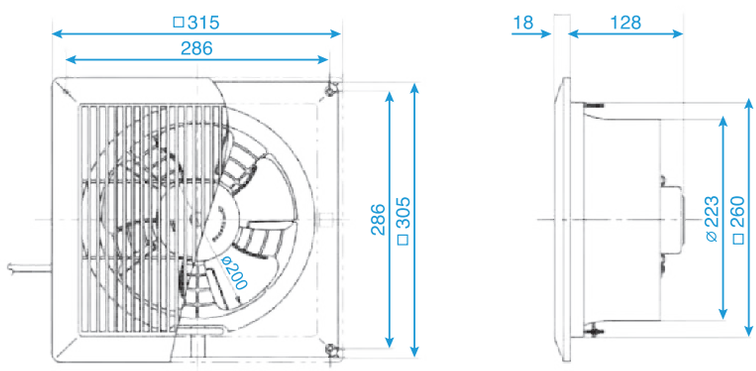
FV-20CUT1 Propeller Series



- High air volume
- Easy installation
- Designed for a long service life with continuous daily operation
- Motor equipped with thermal fuse

Dimension

Unit: mm

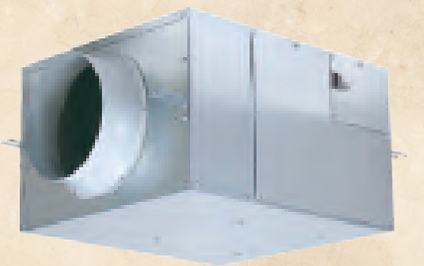


Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation space [mm]
FV-20CUT1	50	22.6	1,153	438	258	40.5	1.8	270 x 270
	60	23.9	1,245	436	257	41.4		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

LOW NOISE TYPE CABINET FAN (In-Line Fan)

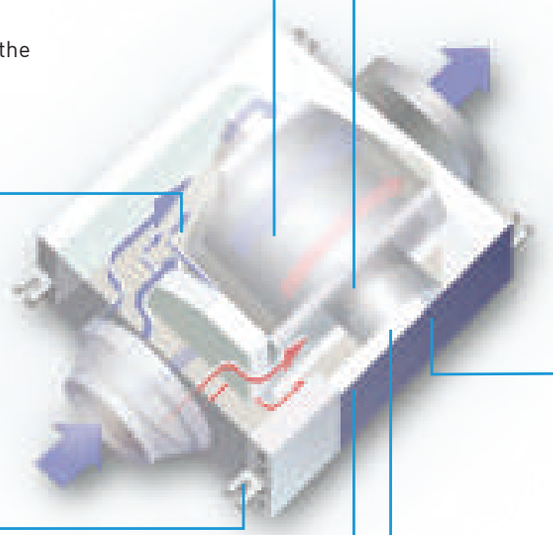


High Performance

- The newly developed twin flow fan achieves large air volume and high static pressure
- The tapered scroll at fan case can minimize the turbulence induced by uneven wind velocity inside the casing

Low Noise

- Noise absorption material adopted for reduction of noise level



Reliability

- Long life condenser motor with thermal cut-off is adopted

Flexibility

- 2-speed selectable enhances flexibility for various usages (for single phase models only)

Easy Installation

- Exclusive U-type grooved hanging brackets provide safety installation
- Able to install upside down for different location of inspection panel

Easy Maintenance

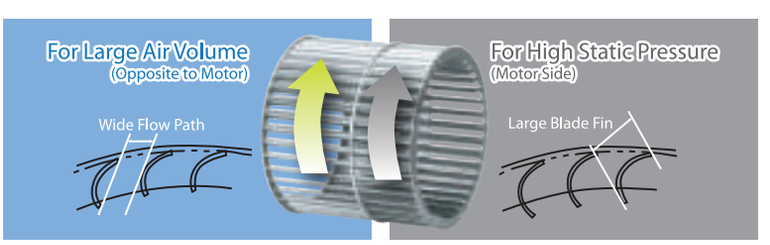
- Detachable inspection panel can be removed easily for maintenance

Compact Size

- Slim and compact design allows installation at narrow ceiling space

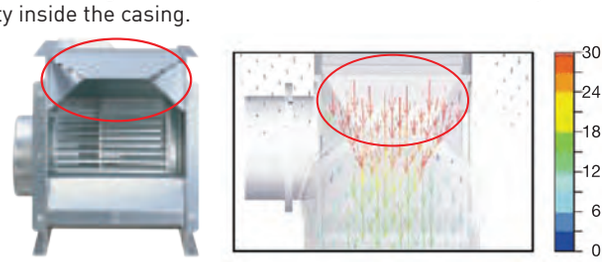
Twin Flow Fan

The newly developed twin flow fan achieves a better airflow inside the fan casing. It is divided into two portions which can generate large air volume and high static pressure respectively.



Tapered Scroll

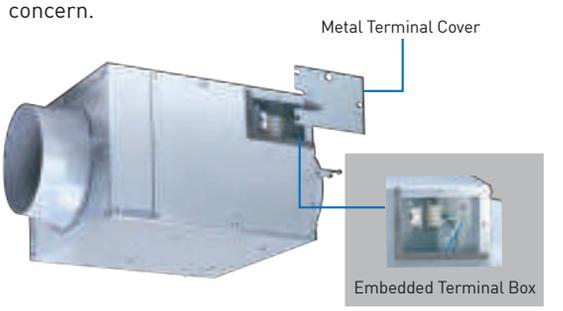
Wind velocity varies according to the shape of fan casing. The tapered scroll at the fan casing can minimize the turbulence induced by uneven wind velocity inside the casing.



Internal Wind Velocity Distribution – Airflow Analysis

Embedded Terminal Box

Terminal boxes of new models are embedded into the product frame. Wiring to power supply is covered with metal enclosure that enhances the durability and safety concern.

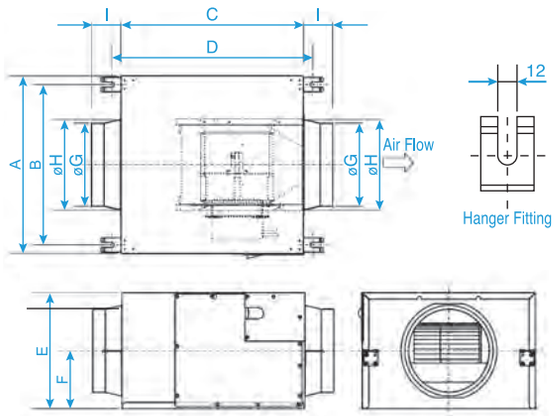


FV-12NS3 / FV-15NS3 Single Phase Series

- Long life condenser motor with thermal cut-off
- Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- Noise absorption material adopted
- Compact size

Dimension

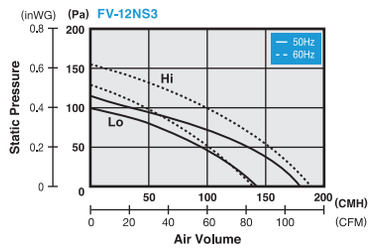
Unit: mm

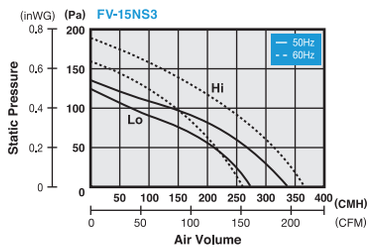


Model No.	A	B	C	D	E	F	G	H	I
FV-12NS3	290	250	291	335	184	92	97	112	51
FV-15NS3	290	250	302	346	206	103	146	163	60

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Phase	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-12NS3	1	50	Hi	18	1,265	180	106	21	5.5	Ø100	128
			Lo	17	1,020	145	85	17			
		60	Hi	23	1,370	190	112	22			
			Lo	19	1,000	145	85	18			
FV-15NS3	1	50	Hi	33	1,270	340	200	25	6.5	Ø150	128
			Lo	29.5	1,100	275	162	22			
		60	Hi	42	1,385	370	218	27			
			Lo	33	1,040	260	153	22			

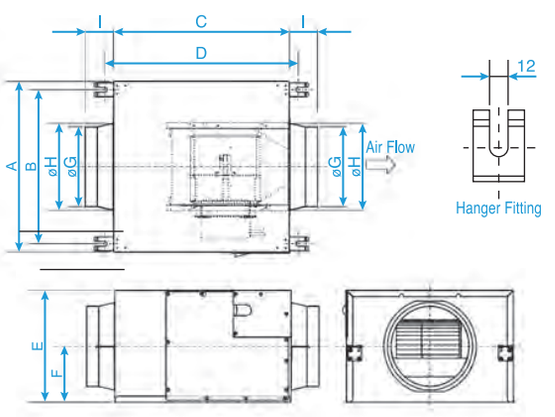
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-18NS3 / FV-18NF3 Single Phase Series

- Long life condenser motor with thermal cut-off
- Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- Noise absorption material adopted
- Compact size

Dimension

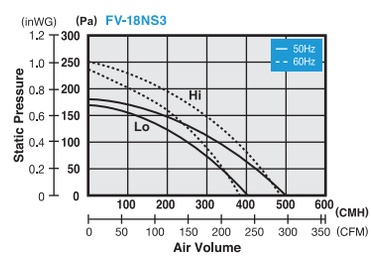
Unit: mm

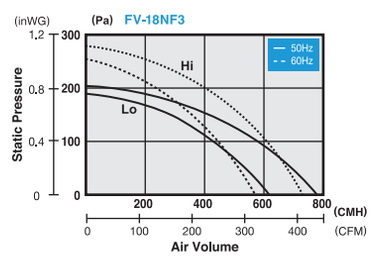


Model No.	A	B	C	D	E	F	G	H	I
FV-18NS3	316	276	338	382	232	116	145	163	60
FV-18NF3	376	336	397	441	254	127	195	211	70

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Phase	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-18NS3	1	50	Hi	60	1,250	500	294	29	8.5	Ø150	158
			Lo	55	1,100	405	238	27			
		60	Hi	73	1,260	490	288	30			
			Lo	62.5	990	385	227	26			
FV-18NF3	1	50	Hi	91	1,190	770	453	31	10	Ø200	158
			Lo	80	1,000	620	365	29			
		60	Hi	119	1,245	760	447	32			
			Lo	87	990	580	341	28			

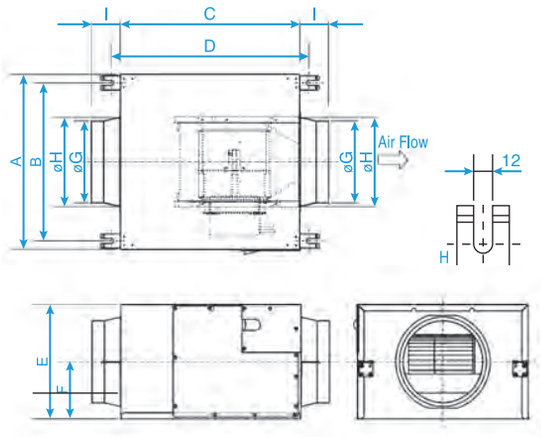
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-20NS3 / FV-23NL3 Single Phase Series

- Long life condenser motor with thermal cut-off
- Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- Noise absorption material adopted
- Compact size

Dimension

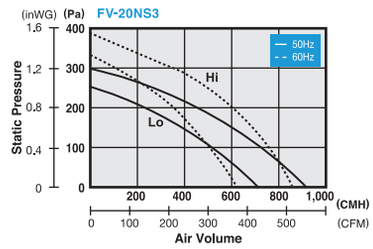
Unit: mm

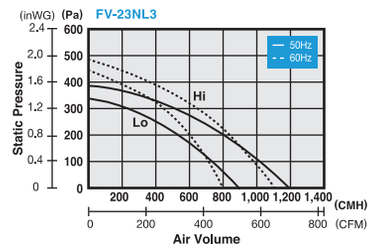


Model No.	A	B	C	D	E	F	G	H	I
FV-20NS3	416	376	441	485	272	136	195	211	70
FV-23NL3	468	424	469	513	298	149	195	211	70

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Phase	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-20NS3	1	50	Hi	120	1,195	920	541	32	14	ø200	178
			Lo	113	1,000	720	424	29			
		60	Hi	159	1,165	860	506	32			
			Lo	128	875	620	365	26			
FV-23NL3	1	50	Hi	230	1,245	1,200	706	40	18	ø200	220
			Lo	170	985	900	530	34			
		60	Hi	310	1,210	1,100	647	40			
			Lo	190	890	800	471	32			

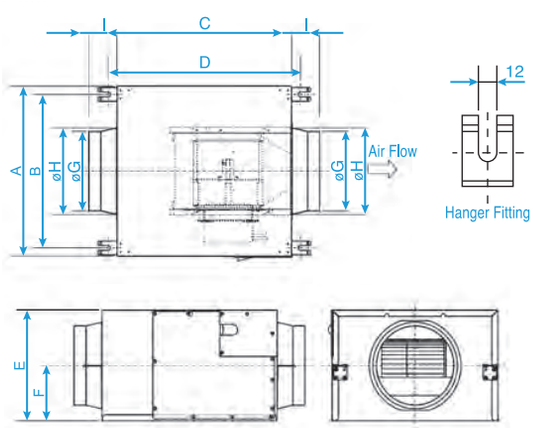
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-25NS3 / FV-25NF3 Single Phase Series

- Long life condenser motor with thermal cut-off
- Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- Noise absorption material adopted
- Compact size

Dimension

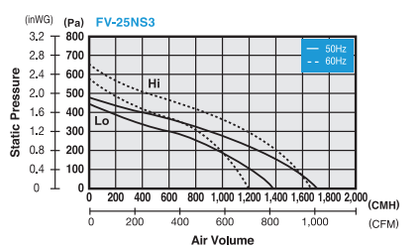
Unit: mm

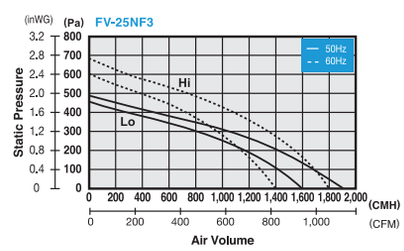


Model No.	A	B	C	D	E	F	G	H	I
FV-25NS3	494	450	505	549	334	167	240	255	85
FV-25NF3	494	450	505	549	334	167	240	255	85

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Phase	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-25NS3	1	50	Hi	345	1,125	1,700	1,001	41	24	Ø250	220
			Lo	265	950	1,380	812	38			
		60	Hi	425	1,100	1,650	971	41			
			Lo	300	890	1,200	706	39			
FV-25NF3	1	50	Hi	390	1,225	1,900	1,118	43	24	Ø250	220
			Lo	325	1,070	1,600	942	40			
		60	Hi	520	1,245	1,810	1,065	42			
			Lo	380	1,000	1,400	824	41			

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

INDUSTRIAL TYPE VENTILATING FAN

Features of High Pressure Series

1 High Static Pressure, Low Power Consumption

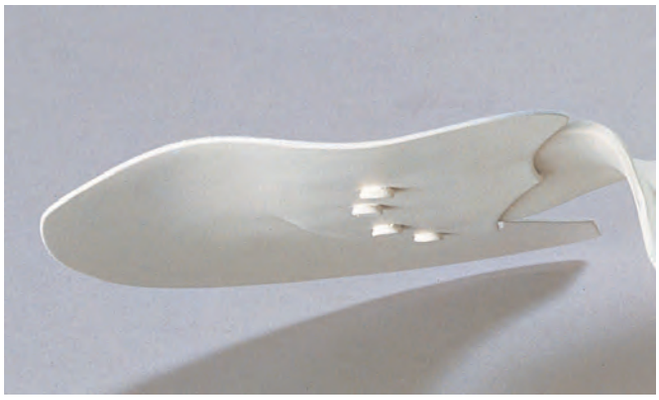
The unique design of wave-shaped blade and bellmouth construction enable better performance in high static pressure and low power consumption.

2 Low Noise Design

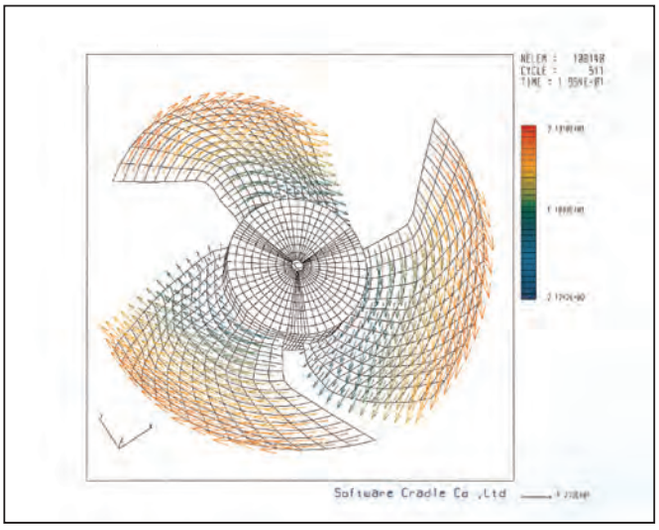
The blade's distinctive wave-shaped is developed by application of hydrodynamic analysis. It can deliver a smooth and turbulence free airflow, meaning the performance in big air volume but with less noise.

3 Improved Durability

Pressure is distributed more uniformly over the surface of the blade, making it more durable. A special polyester resin powder coating give a beautiful color and a highly rust-resistant finishing.



Fans with 3-dimensional wave-shaped cross section blade



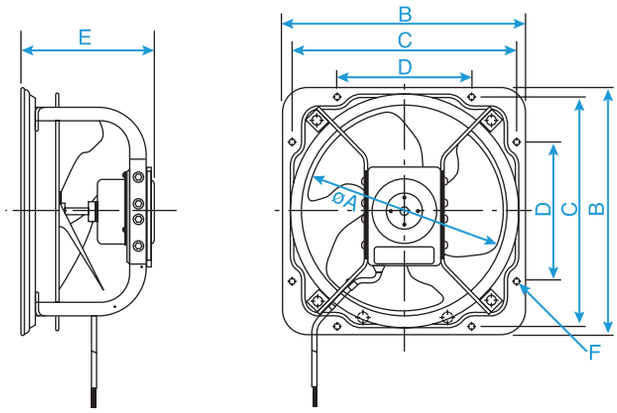
Surface Velocity Vector Diagram

FV-25GS4/ FV-30GS4/ FV-35GS4 High Pressure Series

- Single Phase
- Reversible by adjusting wiring and blade
- Bellmouth construction with distinctive wave-shaped blade
- Durable powder coating
- High performance motor with thermal cut-off
- Able to be used over an ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional guard and shutter available

Dimension

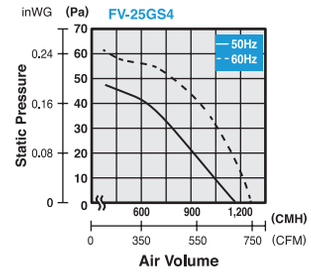
Unit: mm

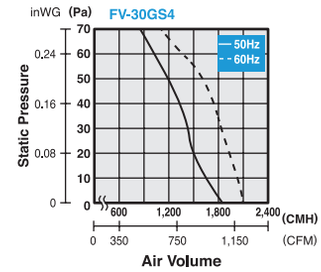


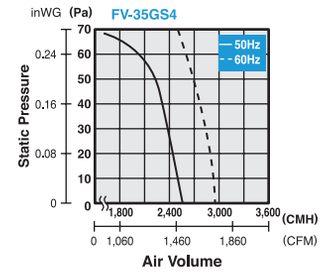
Model No.	A	B	C	D	E	F
FV-25GS4	250	327	298	165	171	10
FV-30GS4	300	378	349	210	200	10
FV-35GS4	350	467	434	250	236	12

Performance Data

(220V 50Hz/60Hz)







Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-25GS4	50	39	1,360	1,150	677	34	4.4
	60	47	1,560	1,250	736	39	
FV-30GS4	50	59	1,360	1,820	1,071	38	6.1
	60	80	1,560	2,080	1,224	42	
FV-35GS4	50	88	1,420	2,560	1,507	44	10.5
	60	127	1,660	2,940	1,730	48	

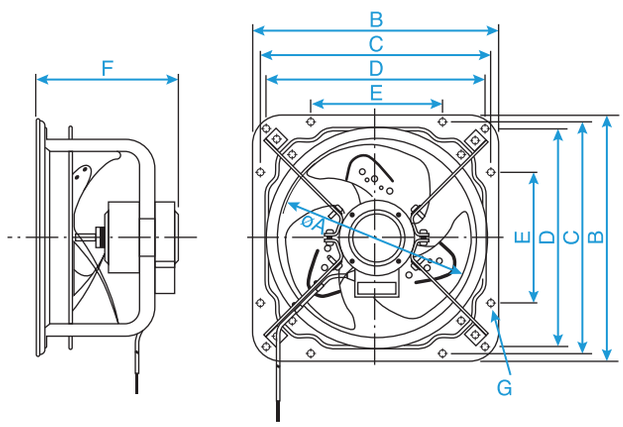
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-40GS4/ FV-45GS4 High Pressure Series

- Single Phase
- Reversible by adjusting wiring and blade
- Bellmouth construction with distinctive wave-shaped blade
- Durable powder coating
- High performance motor with thermal cut-off
- Able to be used over an ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional guard and shutter available

Dimension

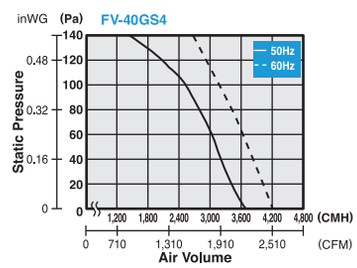
Unit: mm

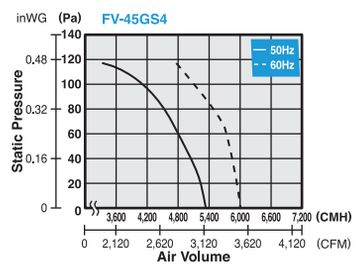


Model No.	A	B	C	D	E	F	G
FV-40GS4	400	518	485	460	280	274	12
FV-45GS4	450	570	540	-	320	297	12

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-40GS4	50	161	1,450	3,610	2,125	47	19
	60	210	1,710	4,240	2,496	51	
FV-45GS4	50	227	1,410	5,200	3,061	51	19
	60	325	1,630	5,970	3,514	54	

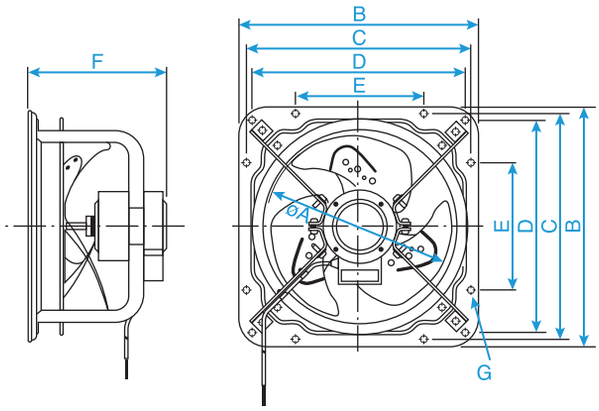
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-50GS4 / FV-60GS4 High Pressure Series

- Single Phase
- Reversible by adjusting wiring and blade
- Bellmouth construction with distinctive wave-shaped blade
- Durable powder coating
- High performance motor with thermal cut-off
- Able to be used over an ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional guard and shutter available

Dimension

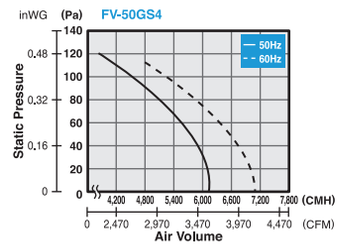
Unit: mm

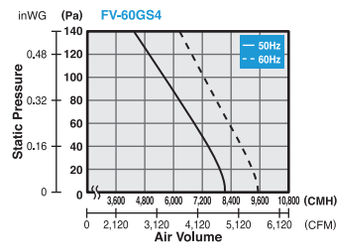


Model No.	A	B	C	D	E	F	G
FV-50GS4	500	659	620	560	355	315	15
FV-60GS4	620	760	720	650	400	320	15

Performance Data

(220V 50Hz/60Hz)





Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-50GS4	50	249	960	6,130	3,608	47	22.5
	60	326	1,130	7,100	4,179	51	
FV-60GS4	50	245	970	8,040	4,732	50	34
	60	361	1,150	9,410	5,539	54	

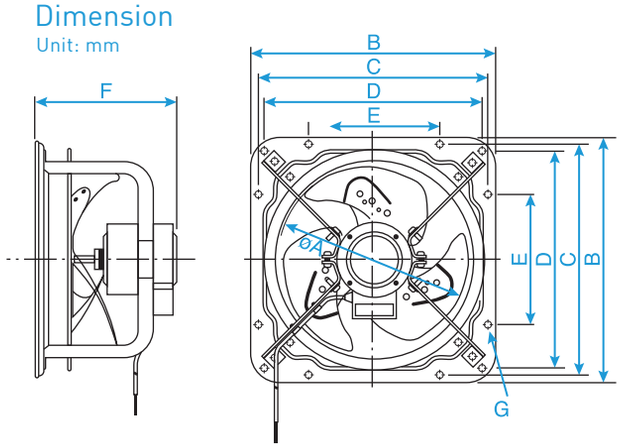
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-45GT4/ FV-50GT4/ FV-60GT4 High Pressure Series

- Three Phase
- Reversible by adjusting wiring and blade
- Bellmouth construction with distinctive wave-shaped blade
- Durable powder coating
- High performance motor with thermal cut-off
- Able to be used over an ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional guard and shutter available

Dimension

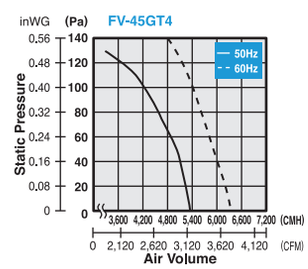
Unit: mm

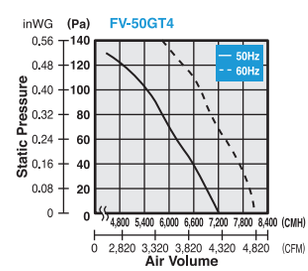


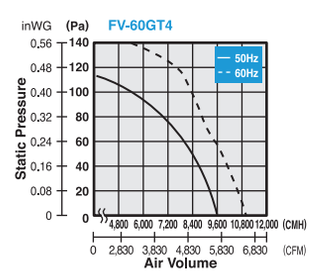
Model No.	A	B	C	D	E	F	G
FV-45GT4	450	570	540	-	320	297	12
FV-50GT4	500	659	620	560	355	304	15
FV-60GT4	620	760	720	650	400	320	15

Performance Data

(220V 50Hz/60Hz)







Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-45GT4	50	220	1,450	5,520	3,249	52	18.5
	60	330	1,690	6,420	3,779	56	
FV-50GT4	50	320	1,400	6,960	4,097	54	28.5
	60	475	1,590	8,010	4,715	58	
FV-60GT4	50	310	940	9,420	5,544	49	34
	60	450	1,070	10,920	6,427	53	

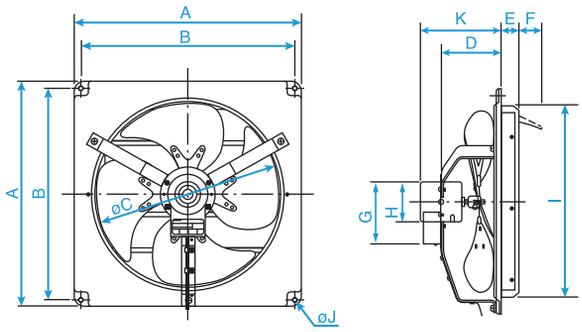
Note: The value in Specification table are representative characteristics value at 380V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-30KUT / FV-40KUT Shutter Series

- Used in factories, warehouses or other locations in where powerful ventilation is necessary
- Metal large blade assembly for abundant air volume
- Powerful, efficient and durable condenser motor
- Able to be used over an ambient temperature range from -10°C to +50°C

Dimension

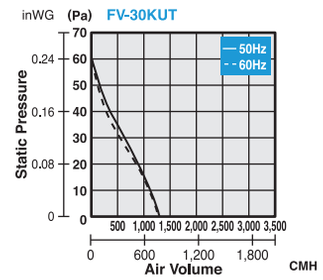
Unit: mm

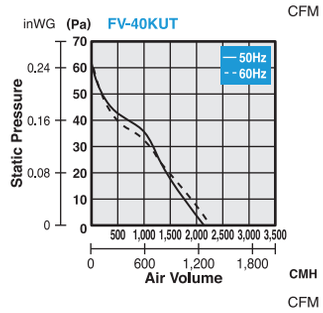


Model No.	A	B	C	D	E	F	G	H	I	J	K
FV-30KUT	420	385	305	116	34	40	141	90	340	10	164
FV-40KUT	510	480	410	133	40	52	141	90	434	10	181

Performance Data

(220V 50Hz/60Hz)





Specification

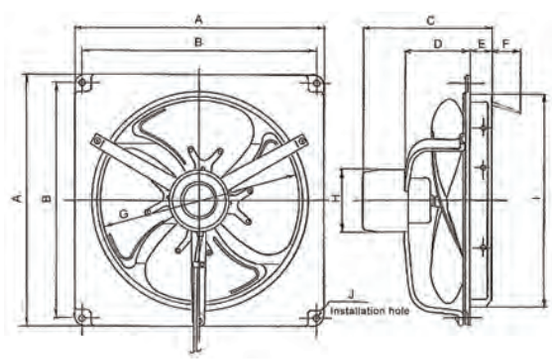
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-30KUT	50	42	1,185	1,220	718	46	4.9
	60	51	1,255	1,270	747	47	
FV-40KUT	50	61	1,175	2,060	1,212	49	6.4
	60	76	1,260	2,190	1,289	51	

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-50AET2 Shutter Series

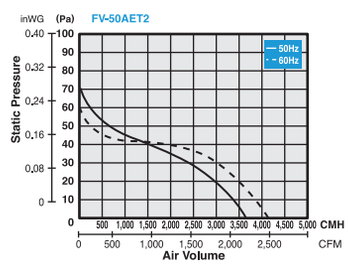
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



- Used in factories, warehouses or other locations in where powerful ventilation is necessary
- Metal large blade assembly for abundant air volume
- Powerful, efficient and durable condenser motor
- Able to be used over an ambient temperature range from -10°C to +50°C

Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]
FV-50AET2	50	108	920	3,630	2,137	54	11.5
	60	130	1,050	4,200	2,472	58	

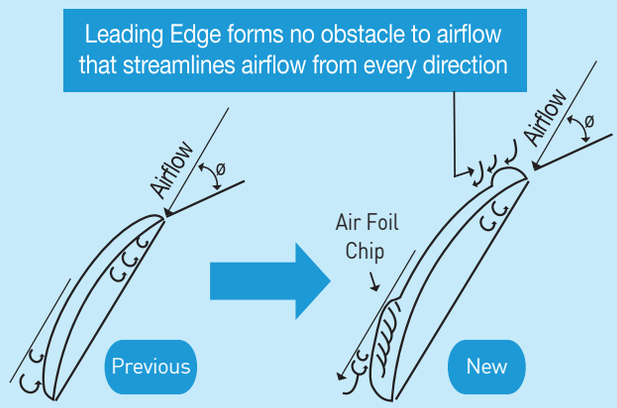
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

WALL MOUNT TYPE VENTILATING FAN

General Features

Advanced Blade Design

New blade design applies advanced aerodynamic principle that minimizes any obstacles against the airflow.



Air Foil Chip is to reduce turbulence at rear edge, and the curvature of the front edge is improved for smooth airflow that minimizes fan noise as well.

HP (Half-Pitch) Motor & Bearing

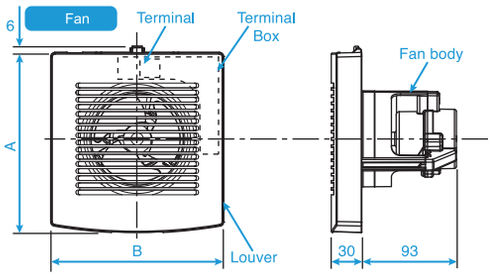
Compared with previous models, new models adopt high performance condenser motor and long life bearing that prolong the product durability, from average 30,000 hours life time to 60,000 hours.

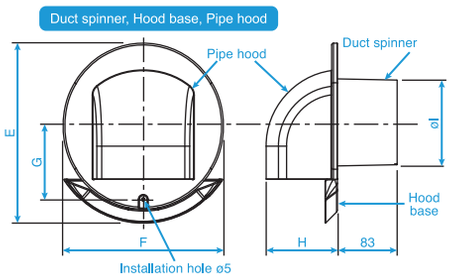
They also enable energy saving by reducing power consumption down to average 13%.

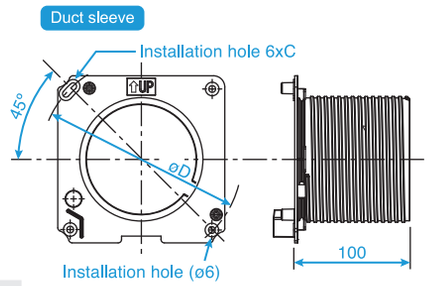
FV-10EGK1/ FV-15EGK1 Bathroom Series

Dimension

Unit: mm







- Pipe Hood Series
- Powerful exhaust of moisture and smell
- Compact and stylish design
- Prevent trace caused by rain water
- All accessories are included for most convenience
- Easy installation
- Wall thickness 100-150mm

Model No.	A	B	C	D	E	F	G	H	I
FV-10EGK1	176	170	9.3	177	250	220	107	99	120
FV-15EGK1	230	220	11.5	230	310	270	142	138	165

Specification

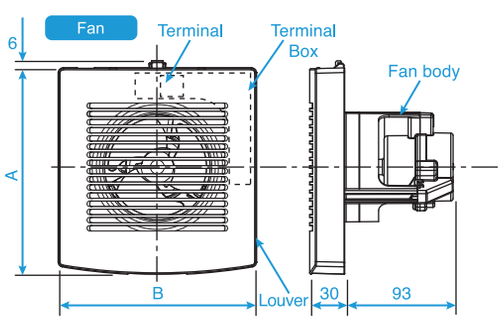
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air VolumE		Noise [dB(A)]	Weight [kg]	Installation Space [mm]
				[CMH]	[CFM]			
FV-10EGK1	50	5.5	2,706	75	44	33	1.2	Ø 135 ± 5
	60	4.4	2,888	80	47	34		
FV-15EGK1	50	6.2	2,329	160	94	34	1.5	Ø 180 ± 5
	60	8.5	2,647	180	106	38		

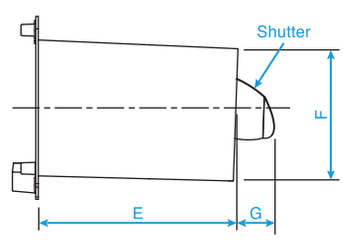
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.
This specifications are specified with duct sleeve, duct spinner and pipe hood.

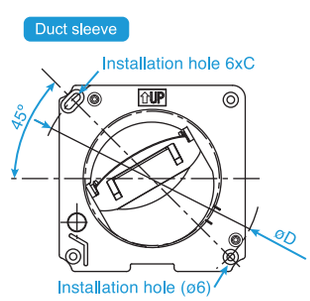
FV-10EGS1/ FV-15EGS1 Bathroom Series

Dimension

Unit: mm







- Shutter Series (for Vertical Shaft)
- Powerful exhaust of moisture and smell
- Compact and stylish design
- Back draft shutter
- All accessories are included for most convenience
- Easy installation

Model No.	A	B	C	D	E	F	G
FV-10EGS1	176	170	9.3	177	160	115	40
FV-15EGS1	230	220	11.5	230	160	160	80

Specification

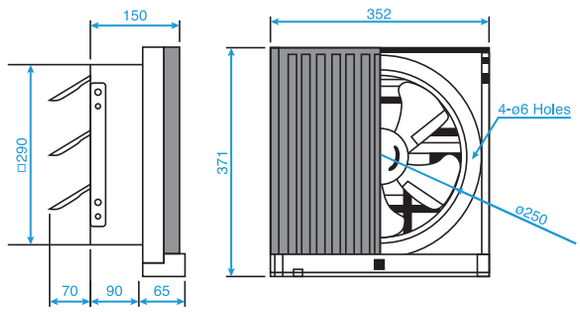
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume		Noise [dB(A)]	Weight [kg]	Installation Space [mm]
				[CMH]	[CFM]			
FV-10EGS1	50	5.5	2,706	75	44	35	0.9	Ø 120 - ø 125
	60	4.4	2,888	80	47	36		
FV-15EGS1	50	6.2	2,329	150	88	36	1.1	Ø 165 - ø 170
	60	8.5	2,647	175	103	40		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.
This specifications are specified with duct sleeve.

FV-25AUF1 Filter Series

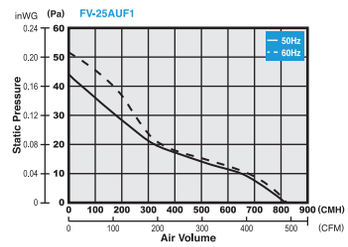
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



- Recommend to use in kitchen
- Automatic Shutter
- Perforated aluminum filter with hydrophobic coating
- Large capacity oil cup
- Oil Indicator on oil cup
- High exhaust air volume under actual usage condition (20Pa)

Specification

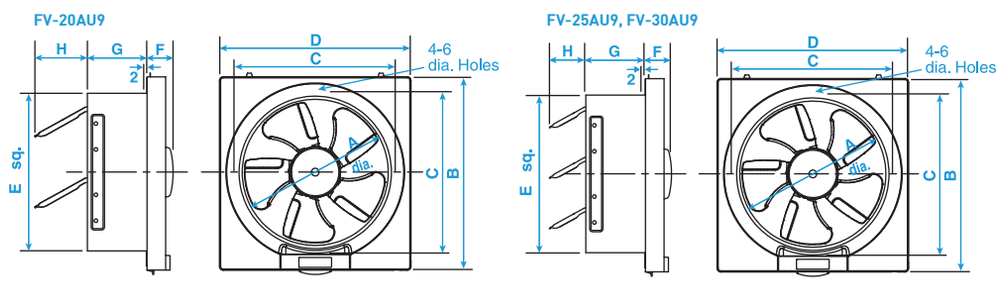
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]
FV-25AUF1	50	34	1,100	835	491	42	2.8	300 x 300
	60	34	1,060	820	483	42		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-20AU9/ FV-25AU9/ FV-30AU9 Automatic Shutter Series

Dimension

Unit: mm



- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30AU9)
- Automatic Shutter
- Single Speed

Model No.	A	B	C	D	E	F	G	H
FV-20AU9	200	306	260	302	240	52	90	80
FV-25AU9	250	356	310	352	290	38	90	63
FV-30AU9	300	406	360	402	340	38	90	78

Specification

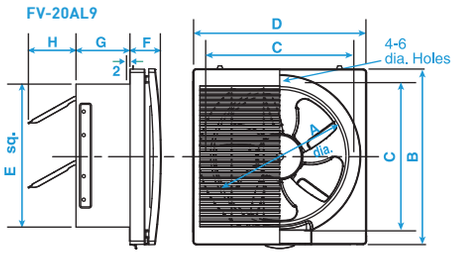
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]
FV-20AU9	50	20	1,190	546	321	40	2.2	250 x 250
	60	24	1,340	600	353	44		
FV-25AU9	50	27	1,060	835	491	43	2.7	300 x 300
	60	36	1,110	846	498	43		
FV-30AU9	50	31	880	935	550	43	3.1	350 x 350
	60	38	880	915	539	43		

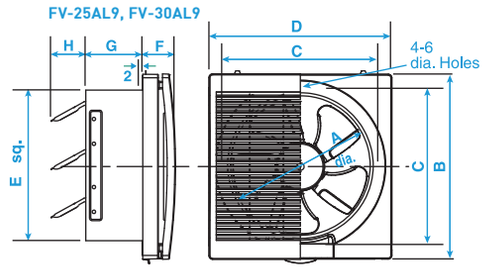
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-20AL9/ FV-25AL9/ FV-30AL7 Automatic Shutter Louver Series

Dimension

Unit: mm





Model No.	A	B	C	D	E	F	G	H
FV-20AL9	200	306	260	302	240	68	90	80
FV-25AL9	250	356	310	352	290	63	90	63
FV-30AL7	300	406	360	402	340	63	90	78

- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30AL7)
- Automatic Shutter
- Single Speed

Specification

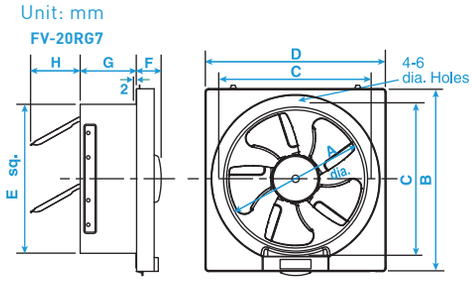
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]
FV-20AL9	50	20	1,190	546	321	40	2.2	250 x 250
	60	24	1,340	600	353	44		
FV-25AL9	50	27	1,060	835	491	43	2.7	300 x 300
	60	36	1,110	846	498	43		
FV-30AL7	50	31	880	935	550	43	3.1	350 x 350
	60	38	880	915	539	43		

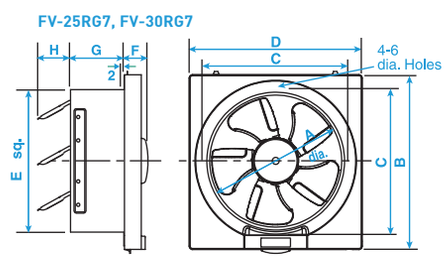
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-20RG7/ FV-25RG7/ FV-30RG7 Reversible Series

Dimension

Unit: mm





Model No.	A	B	C	D	E	F	G	H
FV-20RG7	200	306	260	302	240	52	90	80
FV-25RG7	250	356	310	352	290	38	90	63
FV-30RG7	300	406	360	402	340	38	90	78

- Reversible
- On-off and reverse operated by pull cord switch
- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30RG7)
- Shutter operated by pull cord

Specification

Model No.		Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]
FV-20RG7	Exhaust	50	20	1,260	580	341	36	2.2	250 x 250
		60	24	1,410	630	371	39		
	Intake	50	15	1,150	405	238	46		
		60	17	1,140	355	209	46		
FV-25RG7	Exhaust	50	27	1,090	945	556	38	2.4	300 x 300
		60	31	1,110	950	559	39		
	Intake	50	21	1,010	600	353	45		
		60	23	970	560	330	44		
FV-30RG7	Exhaust	50	31	885	1,165	686	39	2.8	350 x 350
		60	38	800	1,000	589	38		
	Intake	50	24	840	700	412	43		
		60	26	810	680	400	42		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

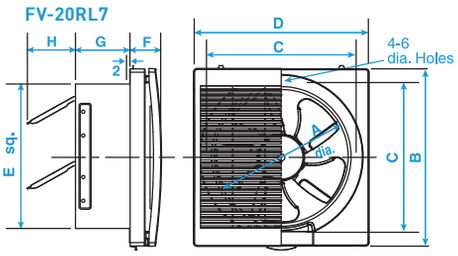
FV-20RL7/ FV-25RL7/ FV-30RL6 Reversible Louver Series

- Reversible
- On-off and reverse operated by pull cord switch
- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30RL6)
- Shutter operated by pull cord

Dimension

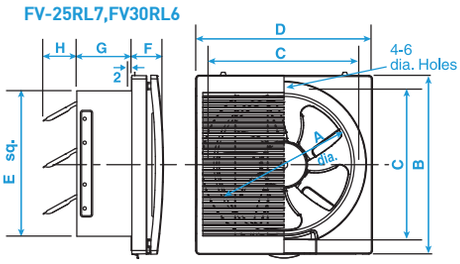
Unit: mm

FV-20RL7



Model No.	A	B	C	D	E	F	G	H
FV-20RL7	200	306	260	302	240	68	90	80

FV-25RL7,FV30RL6

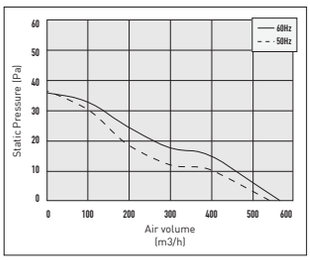


Model No.	A	B	C	D	E	F	G	H
FV-25RL7	250	356	310	352	290	63	90	63
FV-30RL6	300	406	360	402	340	63	90	78

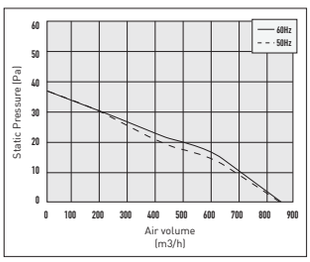
Performance Data

(220V 50Hz/ 60Hz)

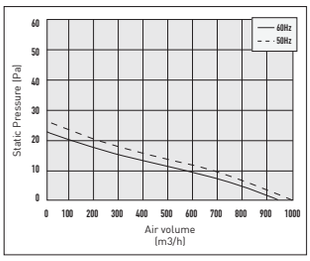
FV-20RL7



FV-25RL7



FV-30RL6



Specification

Model No.		Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Installation Space [mm]
FV-20RL7	Exhaust	50	20	1,240	546	321	39	2.4	250 x 250
		60	24	1,290	570	335	43		
	Intake	50	15	1,190	370	218	46		
		60	17	1,180	340	200	46		
FV-25RL7	Exhaust	50	29	1,100	840	494	43	2.7	300 x 300
		60	33	1,100	835	491	43		
	Intake	50	21	1,035	580	341	45		
		60	23.5	1,035	560	330	44.5		
FV-30RL6	Exhaust	50	31	890	990	583	44	3.1	350 x 350
		60	38	880	945	556	43		
	Intake	50	25	770	600	353	43		
		60	26	770	600	353	44		

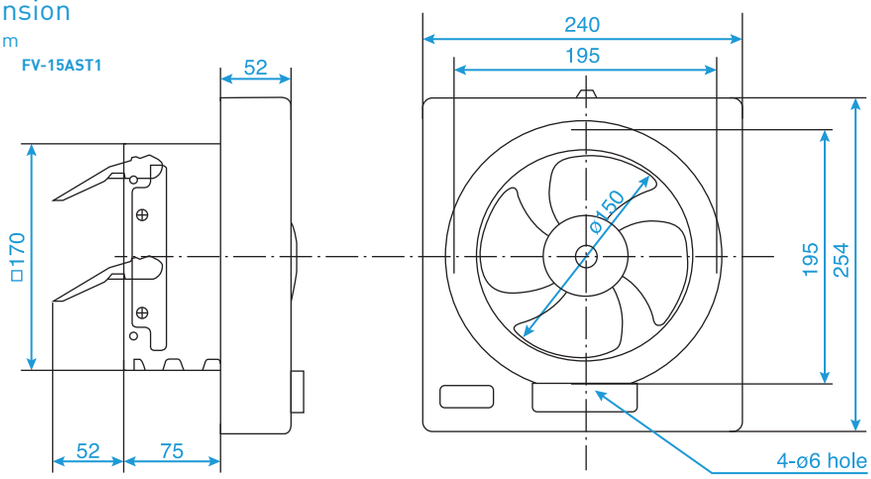
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-15AST1 Automatic Shutter Series

Dimension

Unit: mm

FV-15AST1



- Condenser motor with thermal cut-off
- Lubricated sintered bush for long life operation
- High performance propeller fan adopted
- Automatic shutter with plastic cushions
- Orifice equipped with oil cup

Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume		Noise [dB(A)]	Weight [kg]	Installation Space [mm]
				[CMH]	[CFM]			
FV-15AST1	50	15	1,480	288	170	31	1.4	175 x 175
	60	19	1,560	306	180	34		

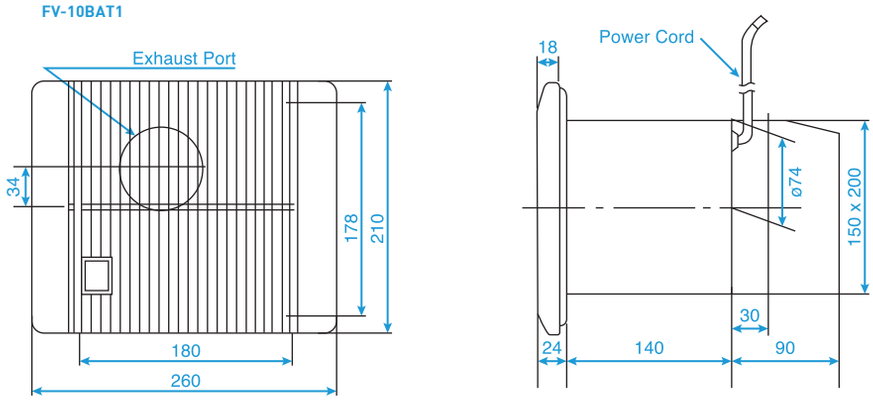
Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

FV-10BAT1 Plastic Series

Dimension

Unit: mm

FV-10BAT1



- Condenser motor with thermal cut-off
- Lubricated sintered bush for long life operation
- Highly efficient sirocco fan
- Front louver with blind shutter
- Plastic frame, blade and louver

Specification

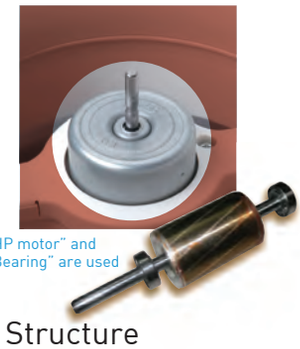
Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume		Noise [dB(A)]	Weight [kg]	Installation Space [mm]
				[CMH]	[CFM]			
FV-10BAT1	50	15	1,250	85	50	40	1.7	155 x 205
	60	17	1,200	76	45	40		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

WINDOW MOUNT TYPE VENTILATING FAN

1 High performance condenser motor with long life bearing

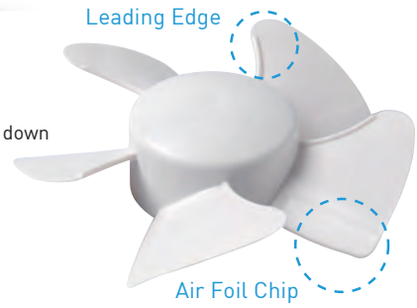
- Low power consumption (50% down VS previous model)
- Low noise level (6% down VS previous model)
- Long life up to 40,000 hours (1.5 time VS previous model)
- Comply with IPX4 (outside)



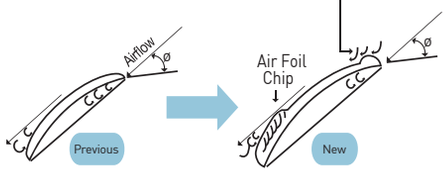
"HP motor" and "Bearing" are used

2 Advanced Blade Design

- High Air Volume
- Low noise level (6% down VS previous model)

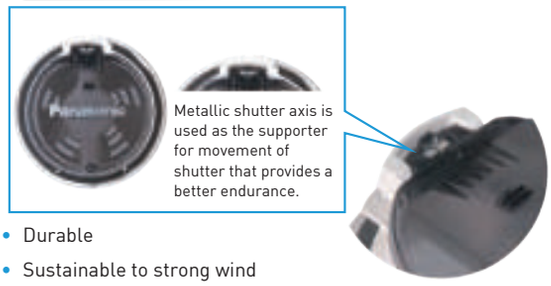


Leading Edge forms no obstacle to airflow that streamlines airflow from every direction



Air Foil Chip is to reduce turbulence at rear edge, and curvature of front edge is improved for smooth airflow that minimizes fan noise as well.

3 Strengthened Shutter Structure



Metallic shutter axis is used as the supporter for movement of shutter that provides a better endurance.

- Durable
- Sustainable to strong wind

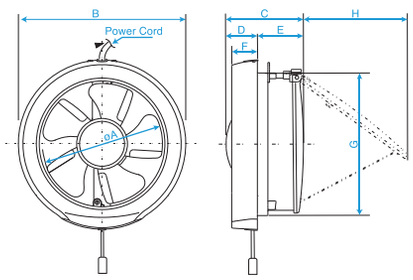
FV-15WU4 / FV-20WU4 Cord-operated Shutter Series

- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design
- Shutter operated by pull cord
- Metallic shutter axis

Dimension

Unit: mm

FV-15WU4,FV-20WU4



Applicable Glass Thickness = 3mm - 7mm

Model No.	A	B	C	D	E	F	G	H
FV-15WU4	150	210	97	43	54	37	177	149
FV-20WU4	200	271	98	36	62	36	237	201

Specification

Model No.	Hz	Consumption [W]	R.P.M. [min⁻¹]	Air Volume		Noise [dB(A)]	Weight [kg]	Installation Space [mm]
				[CMH]	[CFM]			
FV-15WU4	50	8	1,463	210	124	35	0.9	Ø 186 - Ø188
	60	9	1,393	198	117	34		
FV-20WU4	50	16	1,042	360	212	32	1.1	Ø 247 - Ø250
	60	19	1,024	360	212	31		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

RANGE HOOD

Powerful Airflow

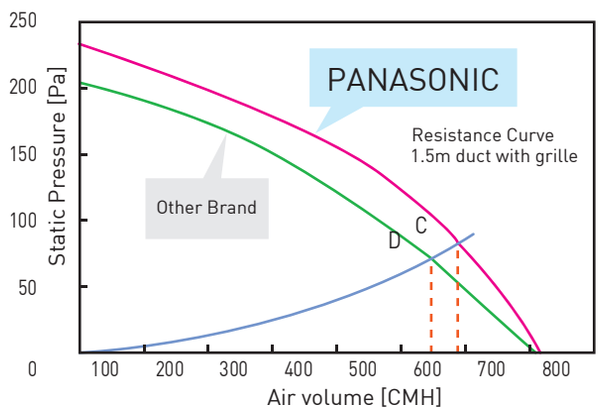
These hoods are enclosed casings equipped with blowers to capture odors and oil fumes from cooking areas.
Most range hoods are installed over the cooking surface in order to maximize exhaust effectiveness.

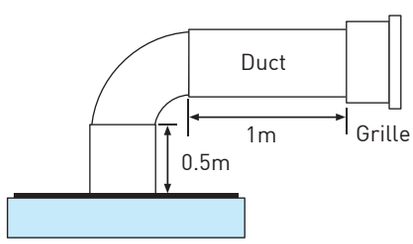
Sirocco Fan

Sirocco Fans are adopted that maintain better performance than turbo fan and keep a low noise level.

A range hood must overcome resistance when pushing air from the inlet, through the duct, to the outside of the building. This resistance is known as static pressure. The amount of static pressure depends on the duct length, type of duct and bending. Longer duct and more bending generate higher static pressure, that result decrease in air volume.

Many installations require long duct and at least one bending. As shown in the figure, duct of 1.5m length and grille are installed (*), static pressure increases to 80Pa. Under this condition (*), air volume of Panasonic rangehood can maintain up to 580 CMH (Point C) while other brands are decreased to 530 CMH (Point D).





Installation of Rangehood
with 1.5m duct and grille.

Comparison of Suction Power	Air Volume [CMH]				
	Without duct	5m duct	10m duct	15m duct	1.5m duct grille (*)
FV-70HQD1 (Super)	730	650	610	560	580 (C)
Other Brand	720	610	540	480	530 (D)

Prolonged Off-Timer

The 8-minute prolonged off-timer design absorbs residual oil vapor after cooking (FV-70HQD1 only).

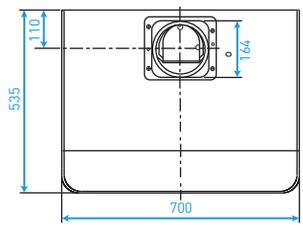
FV-70HQU1 Twin Motor Type

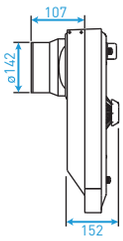
Silver

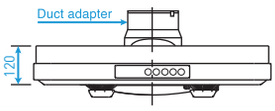
- Equipped with powerful sirocco fan
- 2-speed selection with 2-motor operating individually
- Rocker switch
- Easy detachable for cleaning
- Slim design with only 120mm body thickness
- Color option: champagne gold, silver or white

Dimension

Unit: mm



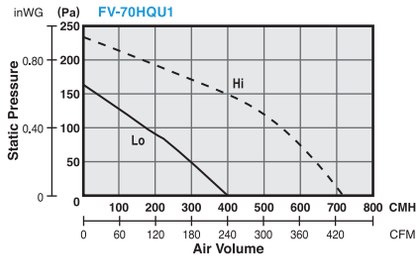




FV-70HQU1 Rocker Switch

Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]
FV-70HQU1	50	High	140	905	730	430	53	17	Ø 150
		Low	72	565	400	235			

Note: The value in Specification table are representative characteristics value at 220V, 50Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

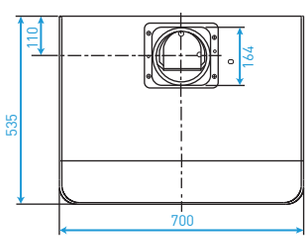
FV-70HQD1 Twin Motor Type

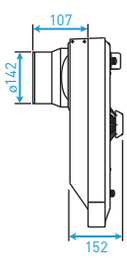
Champagne gold

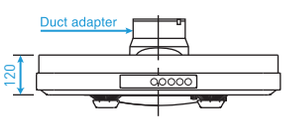
- Equipped with powerful sirocco fan
- 3-speed selection with 2-motor operating simultaneously
- Soft touch switch
- LED indicator and delay timer built-in
- Easy detachable for cleaning
- Slim design with only 120mm body thickness
- Color option: champagne gold, silver or white

Dimension

Unit: mm



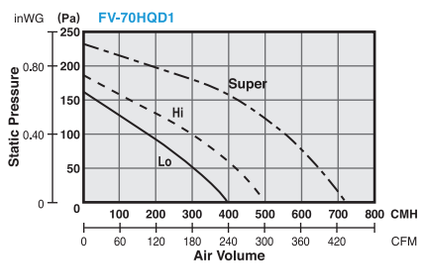




FV-70HQD1 Soft Touch Switch

Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]
FV-70HQD1	50	Super	140	905	730	430	53	17	Ø150
		High	95	665	500	294			
		Low	72	565	400	235			

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

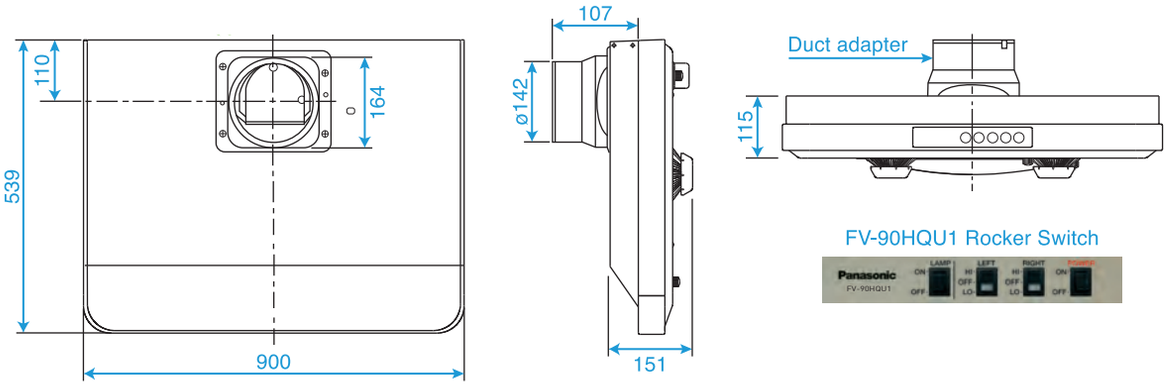
FV-90HQU1 Twin Motor Type

Dark Grey

- Equipped with powerful sirocco fan
- 2-speed selection with 2-motor operating individually
- Rocker switch
- Easy detachable for cleaning
- Slim design with only 115mm body thickness
- Color option: silver or dark grey

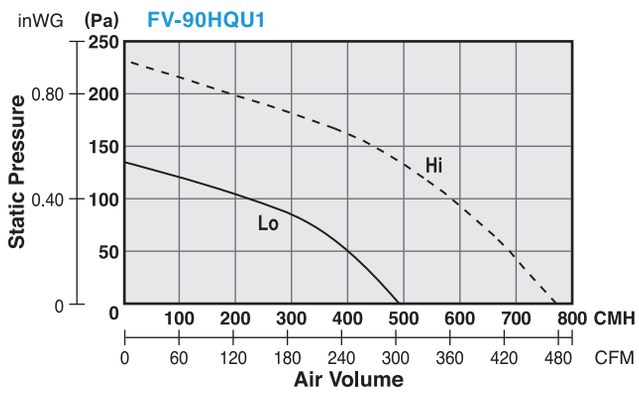
Dimension

Unit: mm



Performance Data

(220V 50Hz/60Hz)



Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]
FV-90HQU1	50	Hi	152	993	785	462	52	18	ø150
		Lo	75	570	484	285	38		
	60	Hi	127	905	779	459	38		
		Lo	69	594	464	273	41		

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

HAND DRYER

Power Dry hand dryer provides a comfortable and speedy hand drying experience by removing moistures on hands with warm and high velocity airflow. In addition, environment protection and cost saving are achieved by comparing with using paper towel.

New Features of Power Dry

Safe Operation

- Power Dry will stop after 60 seconds of continuous operation
- "Check" indicator will light up when the unit detects overheated

Quick Response Sensor

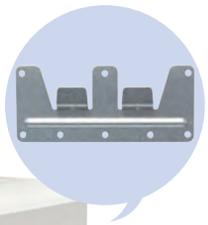
- Automatic sensor operation, no physical contact is required to activate the unit

Heater ON/OFF Switch

- Heater can be switched off for energy saving in hot season

Full Tank Indicator (FJ-T09A3 only)

- Remind you for cleaning up the water tank when it is full



Easy Installation

- Metallic bracket for wall hanging attached
- Stylish and streamline design fits most interior

Anti-bacteria Material

- The product body is adopted with anti-bacteria material to prevent the growth of bacteria and germs in the warm and humid environment of washroom

Drain Pan (FJ-T09A3 only)

- Drain pan can reduce water dripping on floor to avoid slippery

Super alleru-buster Filter

- The filter is equipped to ensure the air blow to your hand is clean

Quick Drying with 3 way Airflow

Wide Nozzle

Blow off water droplets on the whole palm with wide airflow.

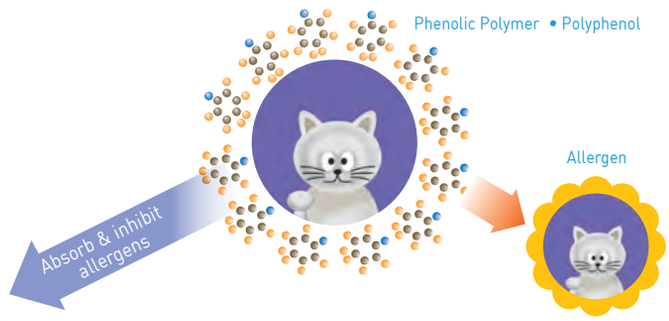
Spot Nozzle

Dry fine water droplets by rubbing hands with spot airflow.

2 kinds of nozzle, wide nozzle and spot nozzle, are equipped at front and rear of drying chamber respectively for efficient drying. The new structure realizes quick drying in only 4-9 seconds.

What is Super alleru-buster?

Super alleru-buster can inhibit up to several types of allergen.



Testing Organization: The Osaka Municipal Technical Research Institute.
Testing Method: to measure the level of reduction in cat's dandruff by Enzyme-linked Immuno Sorbent Assay.

FJ-T10T1, FJ-T09A3, FJ-T09B3

SUPER alleru-buster

FJ-T10T1

FJ-T09A3
With Drain Pan

FJ-T09B3
Without Drain Pan

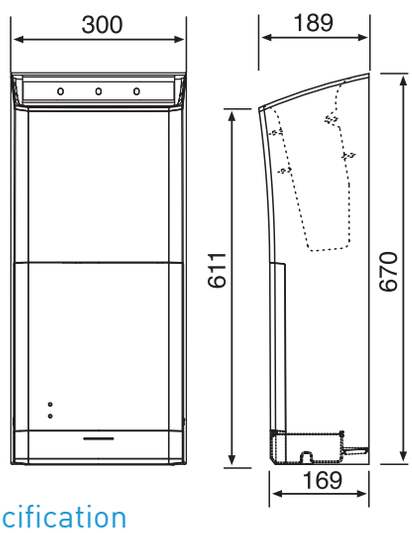
- Double-side & quad-row airflow for dual wiping effect
- Conical flask shaped nozzles for strong blow airflow
- Blue LED light reminds elapsed time of drying
- Super alleru-buster filter equipped
- Anti-bacteria material adopted for hand drying section
- Heater On/Off selectable

- Powerful air velocity enables drying time in few seconds
- Automatic operation by infra-red motion sensor
- Super-alleru buster filter equipped
- Anti-bacteria material adopted
- Heater ON/OFF switch for energy saving
- Safety check light function terminate the operation in case overload
- Drain pan and water tray equipped (FJ-T09A3 only)

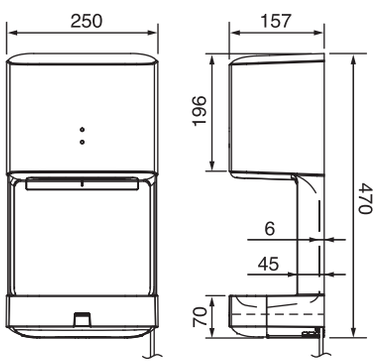
Dimension

Unit: mm

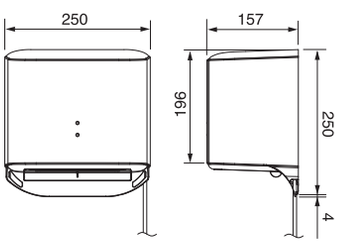
FJ-T10T1



FJ-T09A3



FJ-T09B3



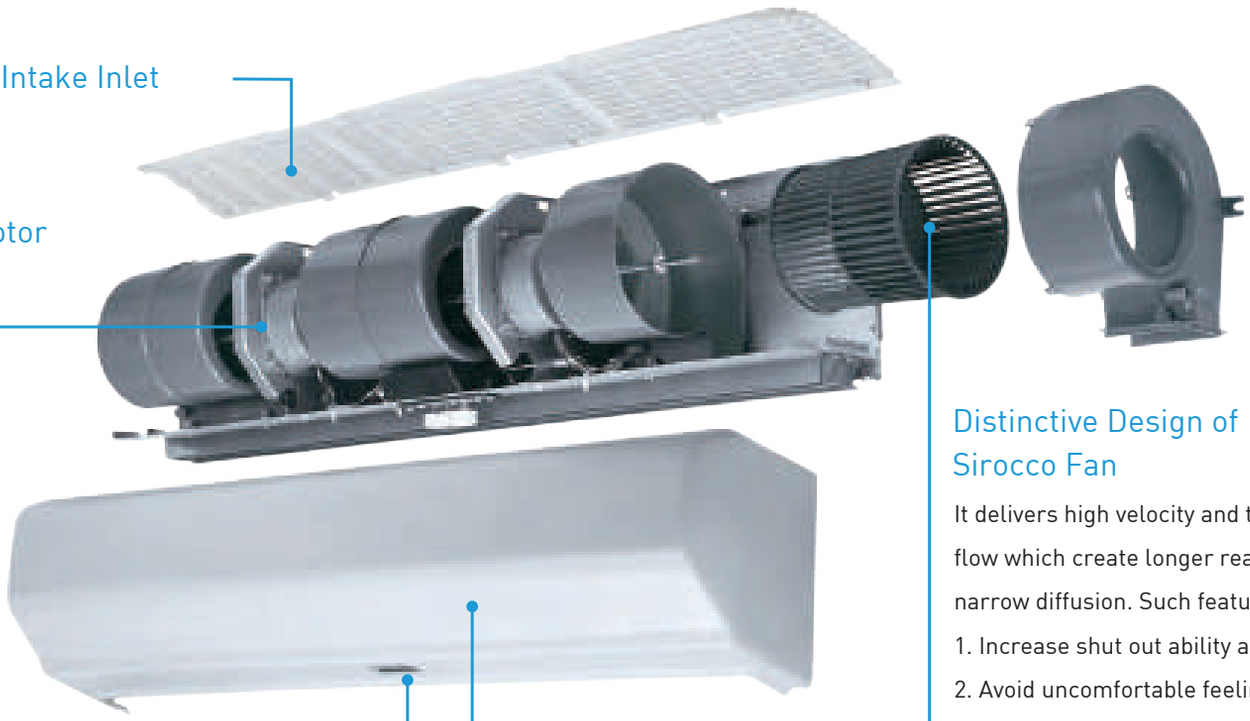
Specification

Model No.	Power Consumption [W]		Air Velocity [m/min]	Noise [dB(A)]	Drain Pan	Weight [kg]
	Heater ON	Heater OFF				
FJ-T10T1	1,250	800	-	59	Yes	8
FJ-T09A3	1,020	650	90-110	62	Yes	4
FJ-T09B3	1,020	650	90-110	62	No	3.5

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.

AIR CURTAIN

Air Curtain - Improved Functionality and Workability



Distinctive Design of Sirocco Fan

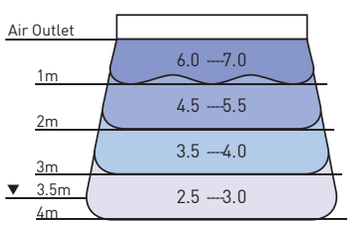
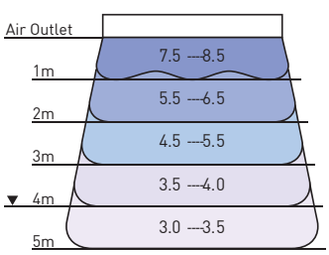
It delivers high velocity and thin air flow which create longer reach and narrow diffusion. Such features can

1. Increase shut out ability and
2. Avoid uncomfortable feelings when you pass through

Two-Speed Function

ABS Resin Casing

ABS is a material which are highly resistance to rust and with high bending flexibility which make the outlook more streamline. It provides a simple design that suits for all interiors.

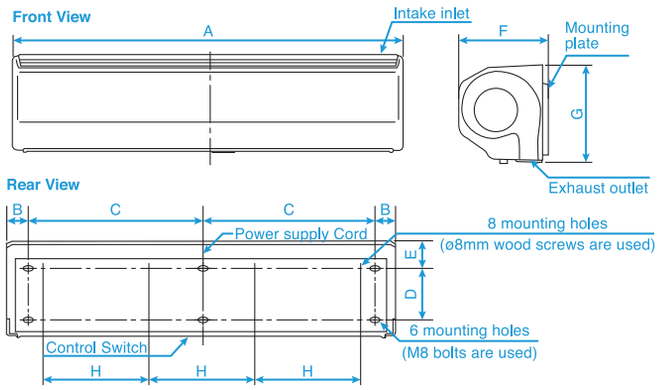
Length of unit	900mm (3 feet) FY-12ESN	1200mm (4 feet) FY-12ELN	900mm (3 feet) FY-14ESN	1200mm (4 feet) FY-14ELN
Air velocity chart (m/s) Maximum value at HI speed 50Hz				
Efficient distance	3.5m (12 feet)		4.0m (14 feet)	

FY-12ESN/14ESN Standard Type - 900mm

- Product length = 900mm
- Unique sirocco fan design
- Either wall hanging or suspending from ceiling
- Air deflection vent for adjusting air flow direction
- 2-speed changeover by push button switch
- ABS resin casing provides better weather resistance
- Optional suspending hanger available

Dimension

Unit: mm



Model No.	A	B	C	D	E	F	G	H
FY-12ESN / FY-14ESN	900	50	400	120	63	205	226	250

Specification

Model No.	Hz		Consumption [W]	Air Volume [CMH]	Air Volume [CFM]	Current [A]	Outlet Velocity [m/s]	Noise [dB(A)]	Weight [kg]
FY-12ESN	50	Hi	176	1,050	618	0.82	16.9	55	13
		Lo	155	960	565	0.69	15.8	50	
	60	Hi	202	990	583	0.94	16.1	54	
		Lo	170	940	553	0.75	15.3	49	
FY-14ESN	50	Hi	257	1,340	789	1.14	21.9	62	13
		Lo	218	1,168	687	0.99	19.1	59	
	60	Hi	312	1,303	767	1.43	21.3	61	
		Lo	255	1,083	637	1.16	17.7	57	

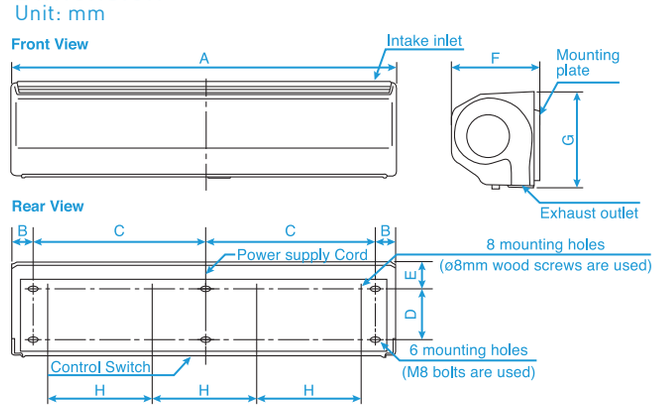
Note: The Value In Speccification tables are representive characteristic value at 220V, 50/60Hz

FY-12ELN/14ELN Extra Type - 1200mm

- Product length = 1200mm
- Unique sirocco fan design
- Either wall hanging or suspending from ceiling
- Air deflection vent for adjusting air flow direction
- 2-speed changeover by push button switch
- ABS resin casing provides better weather resistance
- Optional suspending hanger available

Dimension

Unit: mm



Model No.	A	B	C	D	E	F	G	
FY-12ELN / FY-14ELN	1,200	200	400	120	63	205	226	

Specification

Model No.	Hz		Consumption [W]	Air Volume [CMH]	Air Volume [CFM]	Current [A]	Outlet Velocity [m/s]	Noise [dB(A)]	Weight [kg]
FY-12ELN	50	Hi	224	1,420	836	1.04	17	56	15
		Lo	200	1,320	777	0.9	15.8	51	
	60	Hi	258	1,340	789	1.21	16.2	55	
		Lo	220	1,290	759	1.04	15.4	50	
FY-14ELN	50	Hi	333	1,867	1,099	1.52	22.5	63	15
		Lo	290	1,668	982	1.32	20.1	61	
	60	Hi	423	1,826	1,075	1.93	22	63	
		Lo	339	1,552	913	1.55	18.7	59	

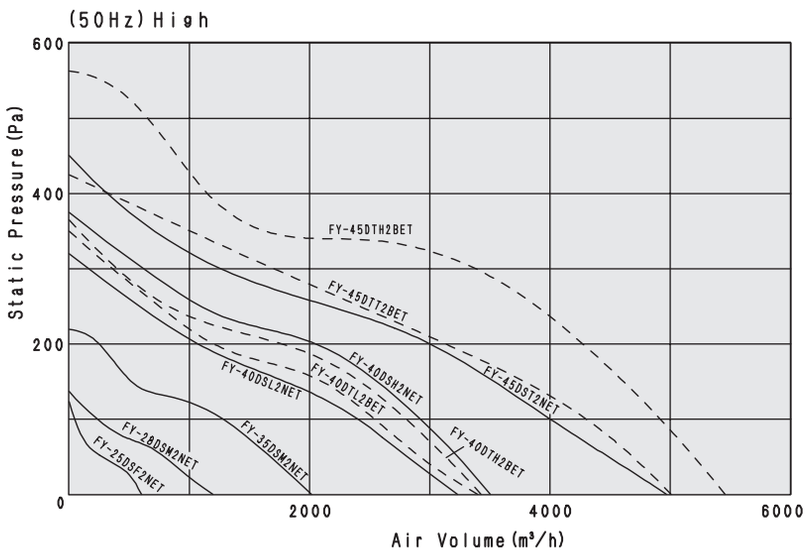
Note: The Value In Speccification tables are representive characteristic value at 220V, 50/60Hz

AIR MOVING EQUIPMENT

COMPACT AXIAL FLOW FAN (50Hz)

Single Phase	Three Phase
FY-25DSF2NET	**FY-40DTL2BET**
FY-28DSM2NET	**FY-40DTH2BET**
FY-35DSM2NET	**FY-45DTT2BET**
FY-40DSL2NET	**FY-45DTH2BET**
FY-40DSH2NET	
FY-45DST2NET	

Performance Data
(230V 50Hz)



Specification (50Hz)

	MODEL No.		Consumption [W]	Air Volume [CMH]	Air Volume [CFM]	Noise Level [dB] Side of Body	Noise Level [dB] Inlet Side	Noise Level [dB] Outlet Side	Wheel Diameter [cm]	Weight [kg]	Duct Size [mm]
Single-phase	FY-25DSF2NET	Hi	34	600	353	41.0	51.0	50.5	25	4.7	Ø200
		Lo	27	550	324	39.5	49.0	48.5			
	FY-28DSM2NET	Hi	51	1,194	703	44.5	54.5	54.0	28	8.5	Ø250
		Lo	55	1,050	618	42.0	52.0	51.5			
	FY-35DSM2NET	Hi	95	2,016	1,187	45.5	56.5	56.0	35	13.0	Ø300
		Lo	87	1,782	1,049	43.0	54.0	53.5			
	FY-40DSL2NET	Hi	204	3,228	1,900	56.0	68.0	67.5	40	20.0	Ø350
		Lo	194	3,084	1,815	54.0	66.0	65.5			
	FY-40DSH2NET	Hi	256	3,504	2,062	55.5	67.5	67.0	40	22.0	Ø350
		Lo	233	3,444	2,027	53.5	65.5	65.0			
	FY-45DST2NET	Hi	428	4,968	2,924	59.5	69.5	69.5	45	37.0	Ø400
		Lo	398	4,206	2,476	58.0	68.0	68.0			
Three-phase	FY-40DTL2BET	Hi	241	3,396	1,999	56.0	68.0	67.5	40	18.0	Ø350
		Lo	237	3,330	1,960	54.0	66.0	65.5			
	FY-40DTH2BET	Hi	250	3,426	2,016	56.0	68.0	67.5	40	19.0	Ø350
		Lo	220	3,264	1,921	55.0	67.0	66.5			
	FY-45DTT2BET	Hi	421	5,004	2,945	61.0	71.0	71.0	45	36.0	Ø400
		Lo	397	4,860	2,860	60.5	70.5	70.5			
	FY-45DTH2BET	Hi	511	5,454	3,210	59.0	68.5	68.5	45	37.0	Ø400
		Lo	482	5,250	3,090	58.5	68.0	68.0			

Note: In above table, the values are tested 230V for Single-phase Models, and 380V for Three-phase Models.
1. The values of air volume are measured at 0 static pressure (Pa) by the chamber method.
2. The values of Current and Input are in the free load condition.
3. The values of noise level are measured at 0 static pressure (Pa) and at the following positions.
(When ducts are connected on both inlet and outlet side.)
Side of fan body : 1.5m apart from the fan body (excluding the noise of outlet side)
Inlet side : 1.5m apart from the inlet of the fan (excluding the noise of outlet side)
Outlet side : 1.5m angle 45° apart from outlet side (excluding the noise of inlet side)
Add 2dB to the values above for the noise levels apart from 1.0 m.
4. Specifications above indicate the values under the condition of normal temperature (20 degrees Celsius).

Use condition:
- Use in the following conditions
  Handling air and Ambient air : -10 to +40 deg C, relative humidity 85% or less
- Do not use the product in the places such as outdoor (where rain water splashes), where water splashes, steam is always generated, corrosive gas may be generated, or chemicals may be used.
- Do not use the product in the places such as pools or hot springs where the chemicals such as chlorine are used. It has high possibility to cause corrosion in a short term.

MINI SIROCCO FAN (60Hz)

Single Phase

FY-10CG1 / FY-12CG1 / FY-14CG1 / FY-16CG1 / FY-17CG1 / FY-19CG1 / FY-21CG1

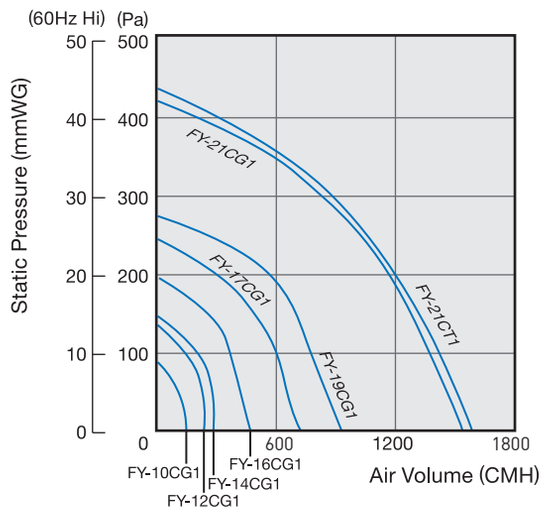
Three Phase

FY-21CT1

- Long life induction motor with thermal cut-off
- High efficient sirocco fan employed for powerful airflow
- Outlet direction is adjustable to vertical or horizontal position
- Compact size
- 2-speed selectable (except FY-10CG1, FY-12CG1, FY-14CG1)

Performance Data

(230V 60Hz)



Specification (60Hz)

	Model No.	Hz		Consumption [W]	R.P.M [min⁻¹]	Air Volume [CMH]	Air Volume [CFM]	Noise [dB (A)] Casing Side	Noise [dB (A)] Suction Side	Noise [dB (A)] Discharge Side	Weight [kg]	Duct Size [mm]	Impeller Diameter [cm]
Single Phase	FY-10CG1	60	-	13	970	143	84	32	38	38	3.1	Ø100	10
	FY-12CG1	60	-	22	725	242	142	32	38	38	3.6	Ø150	12
	FY-14CG1	60	-	40	870	284	167	36	41.5	41.5	3.8	Ø150	12
	FY-16CG1	60	Lo	59	1,060	470	277	42.5	49	49	5.3	Ø150	15
			Hi	40	805	335	197	36	42.5	42.5			
	FY-17CG1	60	Lo	95	850	722	425	44.5	49	49	8.8	Ø200	18
			Hi	79	730	593	349	40	45	45			
	FY-19CG1	60	Lo	143	1,100	931	548	50	55	55	9.4	Ø200	18
			Hi	127	985	791	466	48	53	53			
	FY-21CG1	60	Lo	340	1,430	1,540	906	59	63	63	15	Ø200	20
			Hi	300	1,180	1,230	724	54	58.5	58.5			
Three Phase	FY-21CT1	60	Hi	370	1,485	1,590	936	59.5	63.5	63.5	14.5	Ø200	20
			Lo	228	1,030	1,020	600	50	54	54			

Note: In above table, the values are tested 230V for Single-phase Models, and 380V for Three-phase Models
1. Power consumption is expressed as open value.
2. Air volume is measured using the Chamber method (JIS B 8330 or JIS C 9603) at 0 Pa static pressure.
3. Noise: Suction side - Noise at 1.5m at suction side. Casting side - Noise at 1.5m on the side of a machine body. Discharge side - Noise at 1.5m orthogonally at discharge side.

Use condition:
- Don't use it for ventilation at a site generating heat, oily smoke, steam and/or moisture. (Environmental condition : -10 deg C~+40 deg C, relative humidity below 85%)
- Install a door 600x600mm or more for maintenance purpose.
- Install a leak breaker or a motor breaker on the source site. A control panel such as a contact switch relay is required for three phase power source.
- In cold air supply to indoor during winter and at any other occasion susceptible to dew drop, heat insulation is required.
- It is recommended to use a commercially available filter at the suction side to avoid dust and/or oil waste attachment on a blade.
- Install it on a horizontal direction.
- Do not perform paralled operation of more than one unit on a switch, for it may result in motor failure.

ACCESSORIES

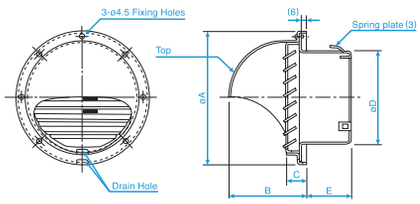
PIPE HOOD

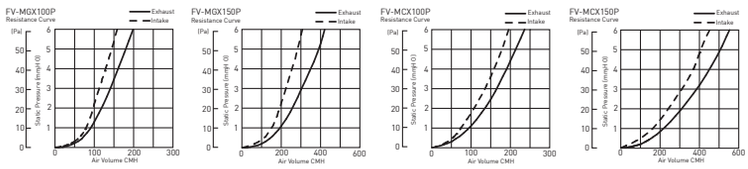
With Net (MGX)

Without Net (MCX)

With Net	Without Net
FV-MGX100P	**FV-MCX100P**
FV-MGX150P	**FV-MCX150P**

- High strength – adopt 0.5mm thickness SUS 304 stainless steel
- Excellent anti-rust capability – hood part coated with metallic silver paint prevent oxidation of material
- Easy installation – 3pcs of spring clip facilitate duct / pipe connection
- 2.5mm x 2.5mm net keep out ingress of small particles and insects from outside (FV-MGX100P & FV-MGX150P)
- It is recommended to use pipe hood with net at intake terminal while without net at exhaust





Model No.	A	B	C	D	E
FV-MGX100P	141	79	20	97	48
FV-MGX150P	190	106	23	147	53
FV-MCX100P	141	79	20	97	48
FV-MCX150P	190	106	23	147	53

Specification

Model No.	Diameter of Applicable Pipe [mm]	Material	Dimension of Net [mm]
FV-MGX100P	100	Stainless Steel	2.5 x 2.5
FV-MGX150P	150	Stainless Steel	2.5 x 2.5
FV-MCX100P	100	Stainless Steel	-
FV-MCX150P	150	Stainless Steel	-

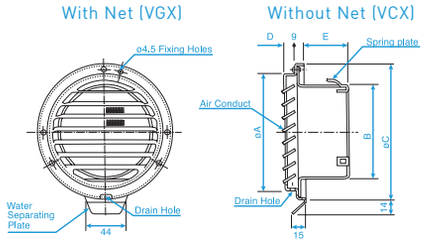
VENT CAP

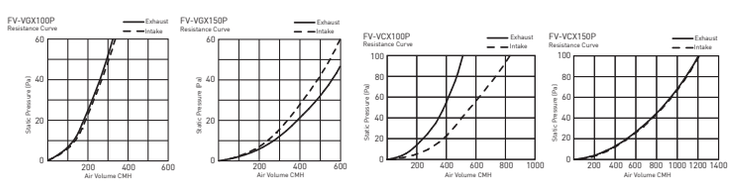
With Net (VGX)

Without Net (VCX)

With Net	Without Net
FV-VGX100P	**FV-VCX100P**
FV-VGX150P	**FV-VCX150P**

- High strength – adopt 0.5mm thickness SUS 304 stainless steel
- Easy installation – 3pcs of spring clip facilitate duct / pipe connection
- 2.5mm x 2.5mm net keep out ingress of small particles and insects from outside (FV-VGX100P & FV-VGX150P)
- It is recommended to use vent cap with net at intake terminal while without net at exhaust



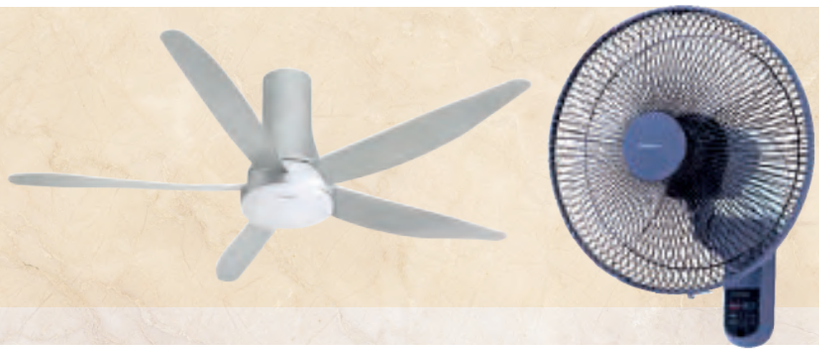


Model No.	A	B	C	D	E
FV-VGX100P	120	97	145	13	47
FV-VGX150P	169	147	195	18	52
FV-VCX100P	120	97	145	13	47
FV-VCX150P	169	147	195	18	52

Specification

Model No.	Diameter of Applicable Pipe [mm]	Material	Dimension of Net [mm]
FV-VGX100P	100	Stainless Steel	2.5 x 2.5
FV-VGX150P	150	Stainless Steel	2.5 x 2.5
FV-VCX100P	100	Stainless Steel	-
FV-VCX150P	150	Stainless Steel	-

ELECTRIC FAN



Safety Features for Ceiling Fan

1 Cut-off Safety Switch

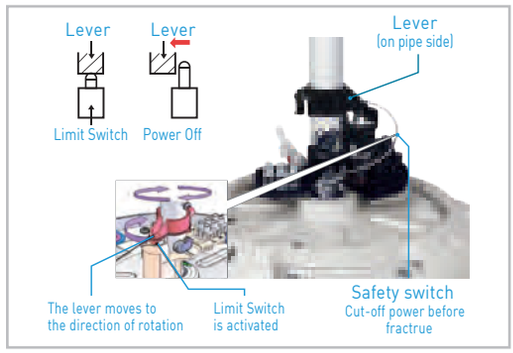
Patents registration in Japan, The United States, China, Malaysia and Vietnam

Problem

In case there is any wear at either the shaft or the bolt, abnormal wobbling of fan will occur as it runs. The wear will be further enlarged if the fan continues to operate, and the part or fastener will break eventually.

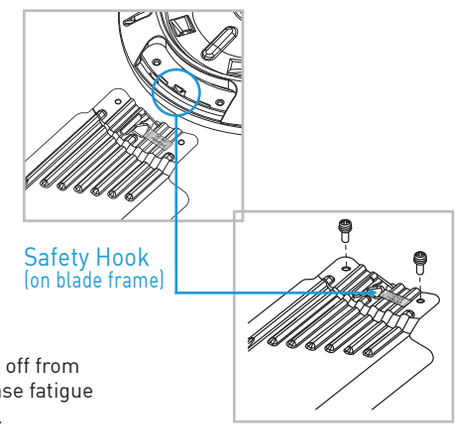
Our solution

Cut-off safety switch is equipped to cut off power supply while dangerous wear and tear of the shaft or bolt are detected.
As abnormal wobbling occurs, the lever will detach from the switch and the fan will stop. It will prevent further wear to the damaged part. It can minimize the fracture of the part that reduces the possibility of falling of fan.



2 Safety Hook

Patents registration in Japan, The United States, China and Vietnam



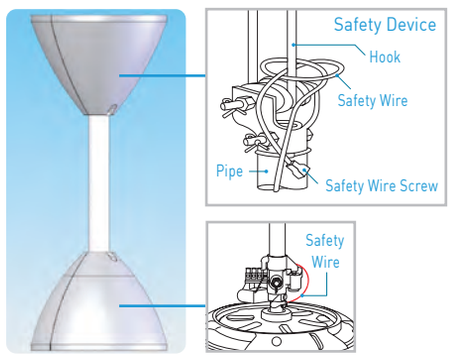
Problem

Blade fins may fall off from the fan motor in case fatigue of material occurs.

Our solution

An exclusively designed fall prevention hook is equipped on the back of motor.
This mechanism secures against falling of blades caused by damaging wear.

3 Safety Wire



Problem

Fan motor may fall from the pipe rod accidently whatever any factors, such as wearing of shaft bolt, etc.

Our solution

Safety wire is adopted to secure the fan motor with the ceiling hook that prevents falling of the motor when detaching of the fan motor from the pipe rod occurs.

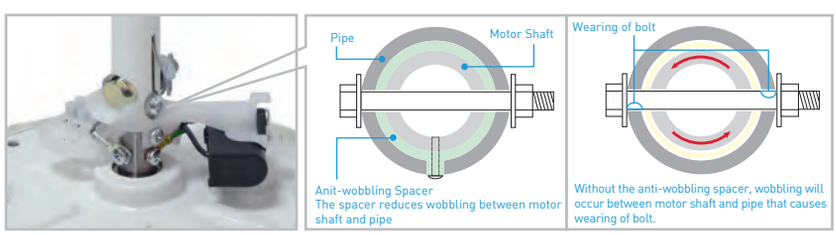
4 Wobbling Reduction Mechanism

Problem

Improper wobbling cause striking between bolt, motor shaft and pipe that wearing will be formed. Fracture may be happened when the wear of those parts are enlarged.

Our solution

The newly developed anti-wobbling structure can reduce wobbling between bolt, motor shaft and pipe. It can minimize wearing of motor shaft and bolt to prevent falling of fan.



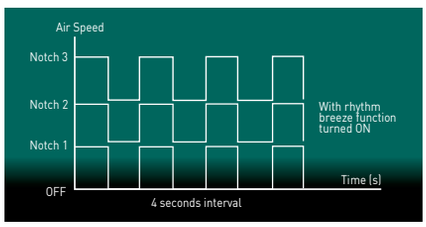
Other Features

1 1/f Yuragi (Natural Breeze)

These fans are equipped with 1/f Yuragi function which is a fluctuated pattern acting a gentle breeze. By this sophisticated formula, in varying air velocity and controlling wind force, these new ceiling fans present you a peaceful and comfortable feeling.

Current function rhythm breeze

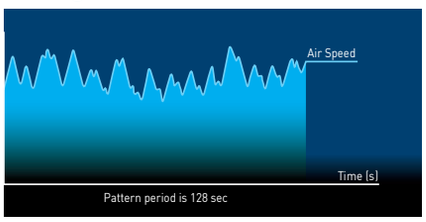
Speed notch toggles by 4 seconds regularly.



This regular pattern makes body temperature falling after a period of time. After that, you may feel anxious and uncomfortable when the wind velocity changes.

New function 1/f Yuragi

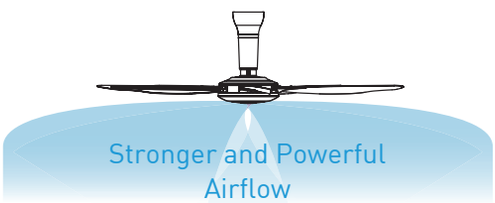
Speed notch toggles based on Yuragi pattern.

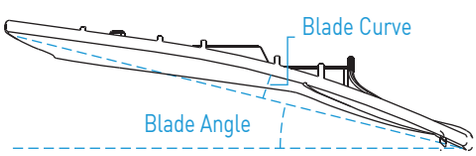


Incorporated with this human-concerned technology, this kind of rhythm maintains your external body temperature by giving you a feeling of natural wind when there is a change of wind velocity.

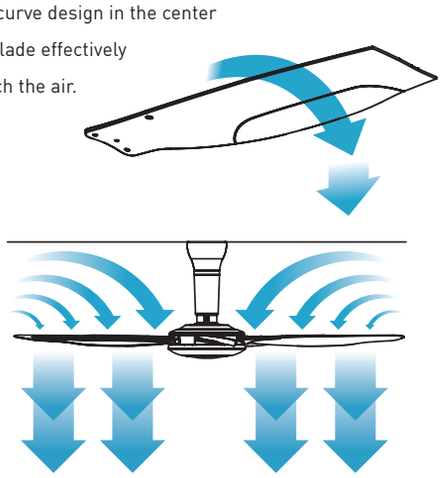
2 3D Blade (Powerful Airflow)

With the exclusive and unique 3D blade design, it provides a smooth and strong air flow while maintaining operating noise in low level.





3D curve design in the center of blade effectively catch the air.

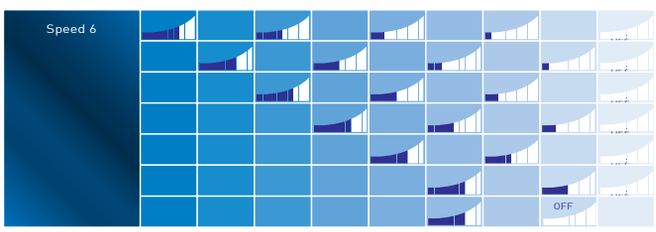


3 ON Timer

On Timer can be incorporated with air conditioner to realize economy and comfortable operation. It can minimize excessive cold feeling and save power consumption during your sleep.

4 Sleep Mode

The fan is equipped with Sleep Mode, by which fan speed and timer will gradually go down until the fan is off. The function not only creates an optimal sleeping environment, but also enhances energy saving as well.



5 LED Lamp

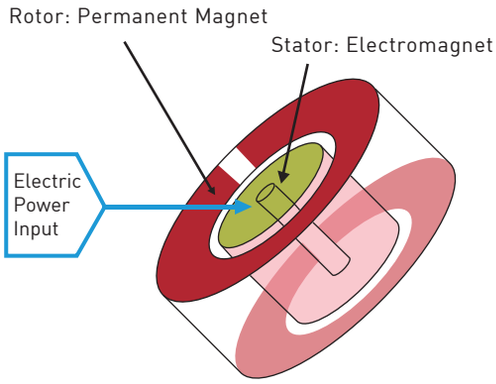
The embedded LED illumination lamp has 2 selection of color, blue or white. Incorporated with contemporary interior, they can foster a charming atmosphere to the room.

Blue Lamp White Lamp

6 Direct Current Motor (F-60UFN, F-60TAN, F-60TDN)

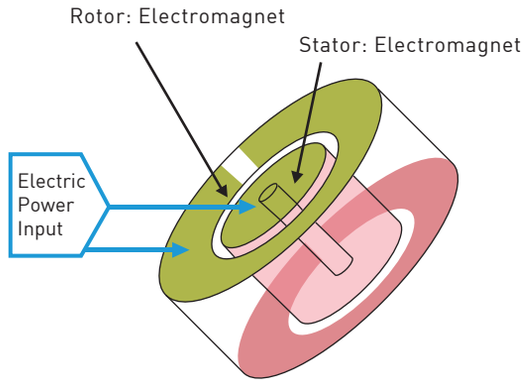
Newly developed direct current (DC) motor are adopted in these fans. Power consumption is reduced as compared with alternative current (AC) motor that energy saving is achieved. DC motor has lighter weight compared with conventional AC motor, that allows easy handling for DC ceiling fan.

Direct Current (DC) Motor



Electric power input is required for stator only

Alternative Current (AC) Motor

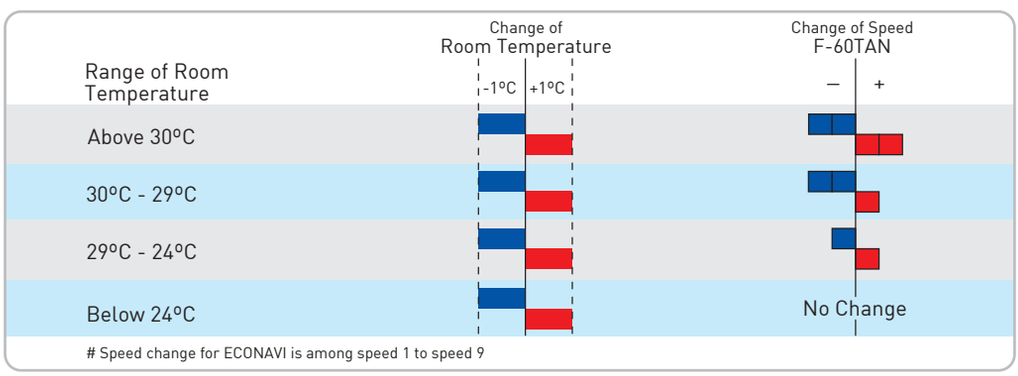


Electric power input is required for both rotor and stator

7 Auto Mode with ECONAVI Function

F-60TAN is equipped with temperature sensor. Incorporated with ECONAVI function, the innovative Auto Mode function is enhanced.This function controls the fan to generate the most comfortable air velocity to human body subject to the change of room temperature.

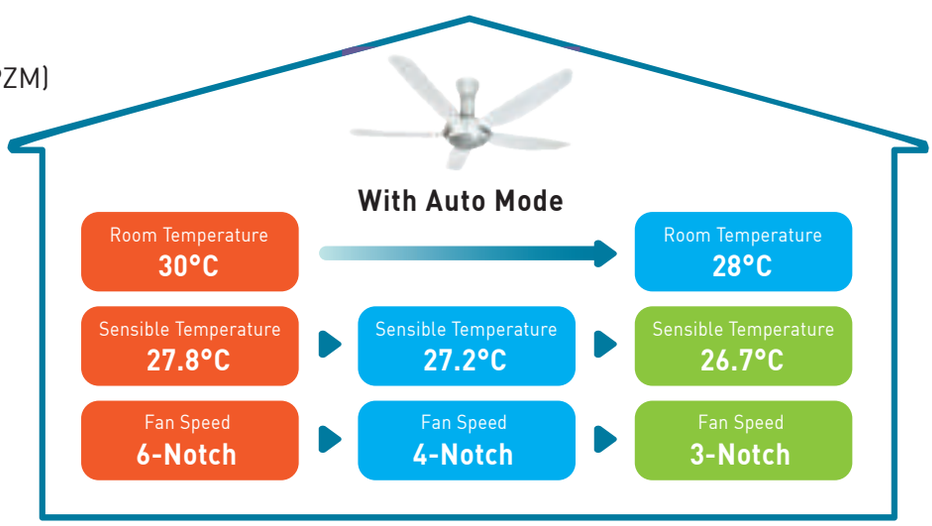
The sensor monitors the surrounding temperature change and air velocity will vary automatically in accordance with below table.



Speed change for ECONAVI is among speed 1 to speed 9

8 Comfort Eco (F-60TAN, F-56PZM)

The figure illustrates the effect of using air conditioner and ceiling fan with 'Auto Mode'. The fan speed is adjusted according to room temperature monitored by the thermal sensor. Room temperature decreases to 28°C over a period, while the sensible temperature could be maintained to 26.7°C, which is said to be most comfortable to human body.

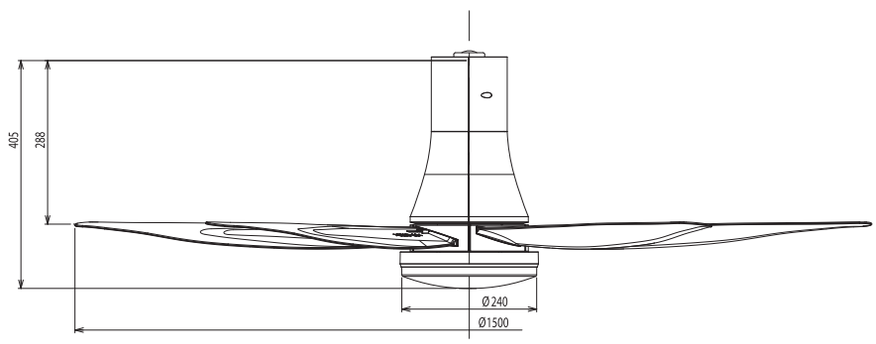


F-60UFN Ceiling Fan - Super Deluxe Series

- Dual function: Fan and Light
- Direct Current (DC) motor adopted
- LED lighting with brightness for daily life
- Selectable light color (White/Daylight/Warm)
- 5-PPG Blade material for durability
- 1/f Yuragi Function
- LCD wireless remote control
- Equipped with safety device
- 1-8 Hours On & Off timer
- 2-8 hours Sleep mode
- Color: Silver

Dimension

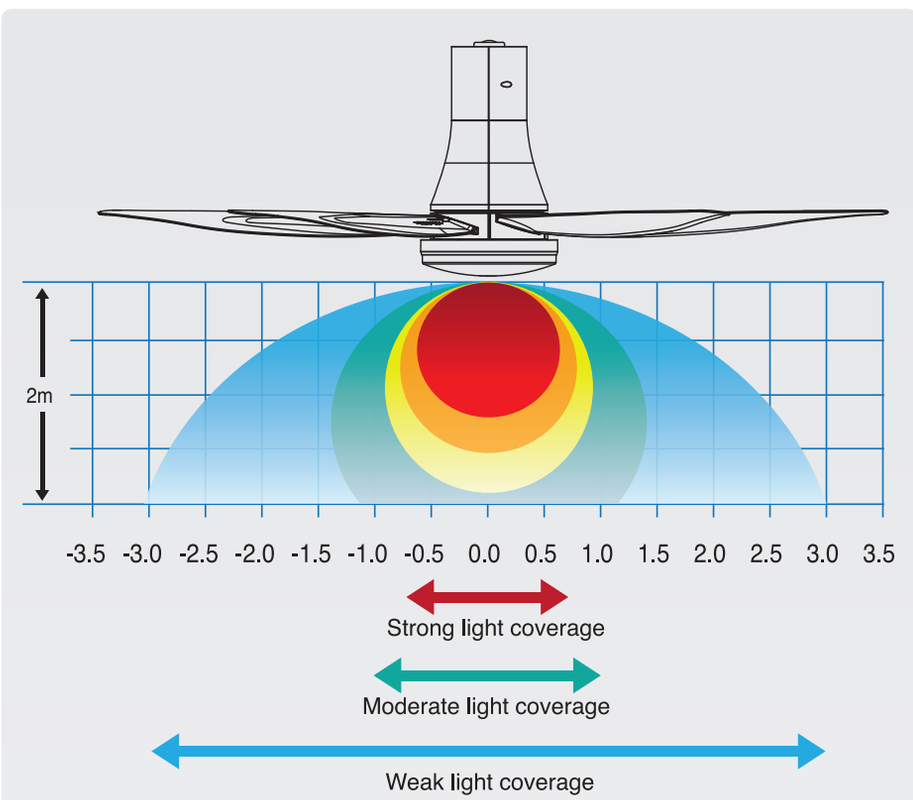
Unit: mm



Specification

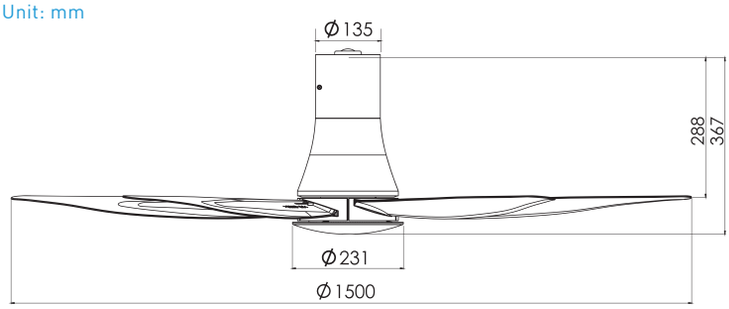
Model No.	Voltage		Consumption		Air Velocity		Air Delivery		Weight [kg]
	[V]	[Hz]	Fan	Fan+Light	[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-60UFN	220	50	37	59	200	656	235	8,299	6.2

Note: The value in Specification table are representative characteristics value at 220V, 50Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.



F-60TAN Ceiling Fan- Super Delux Series

Dimension
Unit: mm



- Direct current (DC) motor adopted
- Auto mode with ECONAVI function by temperature sensor
- 1/f Yuragi function
- 3D blade delivers smooth and strong airflow
- PPG blade material for durability
- LCD wiresless remote control
- 9-speed control
- Sleep mode with On time & Off time
- Equipped with safety device
- Blade safety plate and safety wire attached

Specification

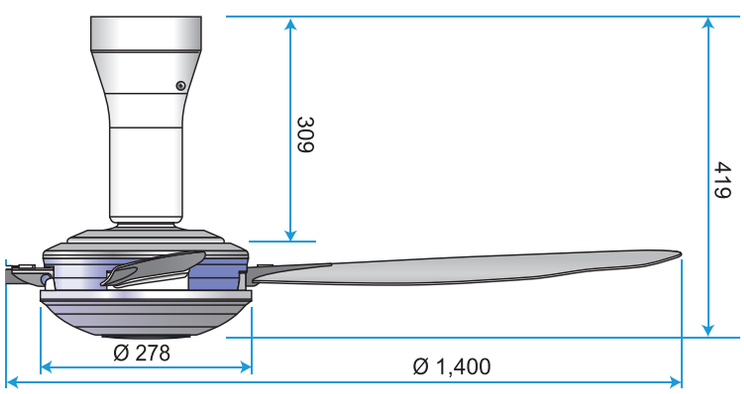
Model No.	[V]	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-60TAN	220	Hi	37	228	200	656	235	8,299	5.3
		Lo	3	80	-	-	-	-	
	230	Hi	39	230	205	673	240	8,476	
		Lo	3	80	-	-	-	-	

* Hi - Notch 9 / Lo - Notch 1

Note: The value in Specification table are representative characteristics value at 220V, 50Hz. R.P.M. data is for reference only, values may vary subject to different conditions.

F-56PZM Ceiling Fan - Super Deluxe Series

Dimension
Unit: mm



- Temperature sensor for auto airflow adjustment
- LED illumination lamp equipped
- 1/f Yuragi function
- 3D blade delivers smooth and strong airflow
- PPG blade material for durability
- LCD wireless remote controller
- 5-speed selection
- Sleep mode
- 8-hour off timer
- Equipped with cut-off safety device
- Blade safety plate attached
- Safety wire adopted

Specification

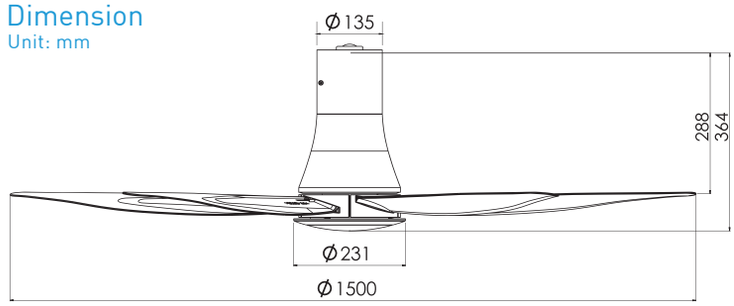
Model No.	Hz	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-56PZM	50	Hi	70	195	175	574	215	7,593	6.4
		Lo	18	87	-	-	-	-	

* Hi-Notch 5 / Lo-Notch 1

Note: The value in Specification table are representative characteristics value at 220V, 50Hz. R.P.M. data is for reference only, values may vary subject to different conditions.

F-60TDN Ceiling Fan- Deluxe Series

Dimension
Unit: mm



- Direct current (DC) motor adopted
- 1/f Yuragi function
- 3D blade delivers smooth and strong airflow
- PPG blade material for durability
- LCD wireless remote control
- 9-speed control
- Sleep mode with On timer & Off timer
- Equipped with safety device
- Blade safety plate and safety wire attached

Specification

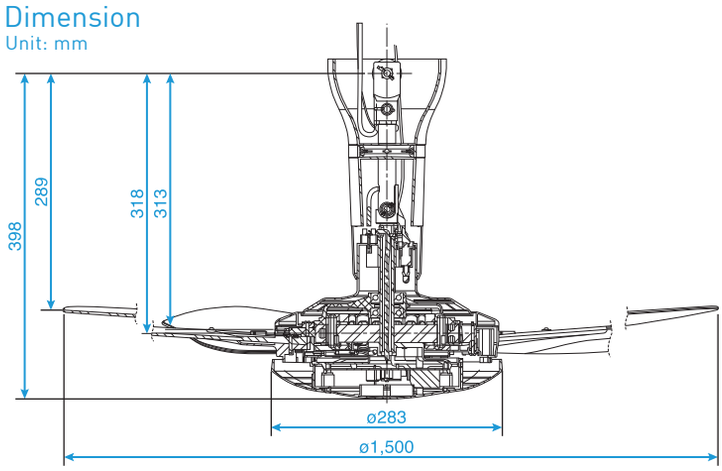
Model No.	[V]	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-60TDN	220	Hi	37	228	200	656	235	8,299	5.3
		Lo	3	80	-	-	-	-	
	230	Hi	39	230	205	673	240	8,476	
		Lo	3	80	-	-	-	-	

* Hi - Notch 9 / Lo - Notch 1

Note: The value in Specification table are representative characteristics value at 220V, 50Hz. R.P.M. data is for reference only, values may vary subject to different conditions.

F-60WWK Ceiling Fan- Deluxe Series

Dimension
Unit: mm



- 1/f Yuragi function
- 3D blade delivers smooth and strong airflow
- PPG blade material for durability
- LCD wireless remote controller
- 7 speed control
- Sleep mode
- 8-hour off timer
- Equipped with cut-off safety device
- Blade safety plate attached
- Safety wire adopted

Specification

Model No.	Hz	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-60WWK	50	Hi	80	183	191	627	220	7,769	8
		Lo	23	83	-	-	-	-	

* Hi-Notch 7 / Lo-Notch 1

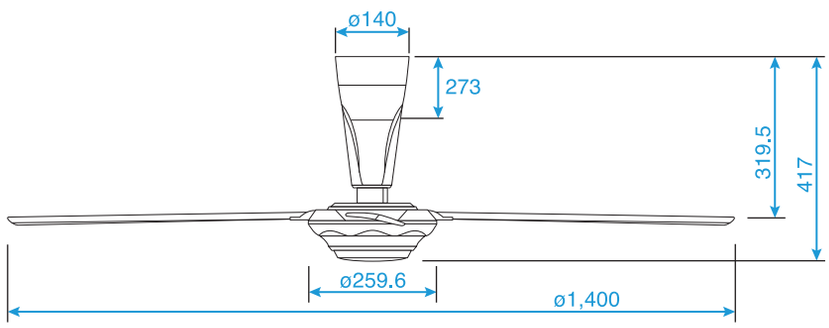
Note: The value in Specification table are representative characteristics value at 220V, 50Hz. R.P.M. data is for reference only, values may vary subject to different conditions.

F-56MPG Ceiling Fan - Wireless Remote Control Series

Gold

Siiver

Dimension
Unit: mm



- Wireless remote controller
- 3-speed selection
- 1, 3, 6 hours timer
- Sleep mode
- Thermal fuse prevent overheating or power surge
- Safety wire provided
- Cut-off safety switch equipped
- Fall prevention of blade adopted
- Permanently lubricated ball-bearing assembly
- Color: Gold or Silver

Specification

Model No.	Hz	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-56MPG	50	Hi	59	184	150	492	180	6,357	7
		Lo	17	88	-	-	-	-	
	60	Hi	69	180	150	492	190	6,710	
		Lo	19	88	-	-	-	-	

* Hi-Notch 3 / Lo-Notch 1

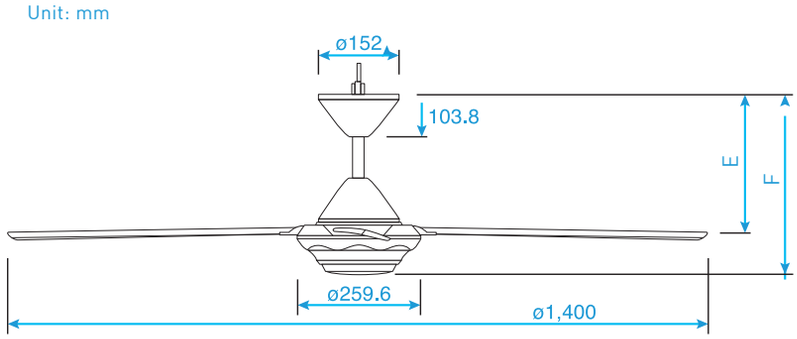
Note: The value in Specification table are representative characteristics value at 220V, 50Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-56MZG Ceiling Fan - Wireless Remote Control Series

Silver

Gold

Dimension
Unit: mm



Pipe Type	9 inch	12 inch	16 inch	18 inch	22 inch
Pipe Length	229	305	406	457	559
E	332.5	408.5	509.5	560.5	662.5
F	430.0	506.0	607.0	658.0	760.0

- Wireless remote controller
- 3-speed selection
- 1, 3, 6 hours timer
- Sleep mode
- Thermal fuse prevent overheating or power surge
- Safety wire provided
- Cut-off safety switch equipped
- Fall prevention of blade adopted
- Permanently lubricated ball-bearing assembly
- Color: Gold or Silver

Specification

Model No.	Hz	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-56MZG	50	Hi	59	184	150	492	180	6,357	6.9
		Lo	17	88	-	-	-	-	
	60	Hi	69	180	150	492	190	6,710	
		Lo	19	88	-	-	-	-	

* Hi-Notch 3 / Lo-Notch 1

Note: The value in Specification table are representative characteristics value at 220V, 50Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

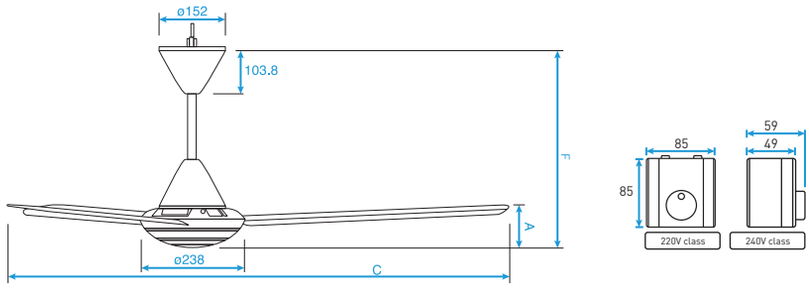
F-60MZ2 Ceiling Fan - Regulator Control Series

Non-Gloss Gold

220V

Dimension

Unit: mm



Pipe Type	9 inch	12 inch	16 inch	18 inch	22 inch
Pipe Length	229	305	406	457	559
F	375.7	451.7	552.7	603.7	705.7

Model No.	A	C
F-60MZ2	84.2	ø1,500

- Compact size condenser controlled regulator
- 5-speed selection
- Thermal fuse prevent overheating or power surge
- Safety wire provided
- Cut-off safety switch equipped
- Fall prevention of blade adopted
- Permanently lubricated ball-bearing assembly
- Color: Body - White

Specification

Model No.	Hz	*	Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-60MZ2	50	Hi	66	225	150	492	215	7,593	6.1
		Lo	15	94	-	-	-	-	
	60	Hi	78	234	155	509	225	7,946	
		Lo	16	92	-	-	-	-	

* Hi-Notch 5 / Lo-Notch 1

Note: The value in Specification table are representative characteristics value at 220V, 50Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-409Q Cycle Fan

Blue

- Oscillation over 360°
- 5-speed and on/off by wired regulator
- Easy angle adjustment
- Metal blade
- Color: Blue or Gold

Adjustment of Circulating Angle

The oscillation angle can be adjusted to 15,30 or 50 degrees.

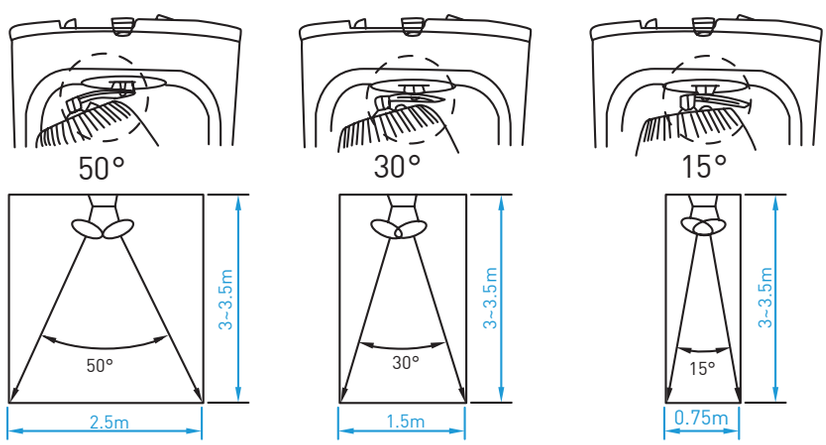


Fig. A Fig. B Fig. C

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-409Q	50	Hi	46.8 - 57.2	1,080 - 1,320	256	840	79	2,790	4.3
		Lo	22.5 - 27.5	690 - 850	-	-	-	-	
	60	Hi	57.7 - 70.5	1,160 - 1,410	277	909	86	3,037	
		Lo	26.6 - 32.5	710 - 860	-	-	-	-	

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-409M Wall Fan - Remote Control Type

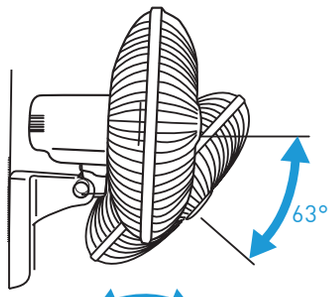
Grey

Blue

- Wireless remote controller
- Oscillation control
- Easy angle adjustment
- 3-speed and off electronic switch
- Transparent plastic blade
- Color: Blue or Grey

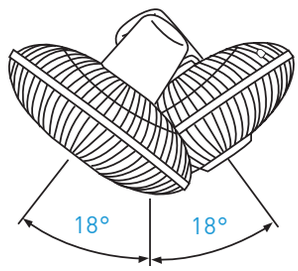
Adjustment of Circulation Angle "One-touch" adjustment of tilt

The air flow can be adjusted upward or downward by simply moving the guard up or down as shown in the figure. Adjust the angle of the fan only after first confirming that it has stopped rotating.



Double oscillation

To change the direction of the air flow, push the edge of the guard to the desired position.



Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-409M	50	Hi	46.8 - 57.2	1,055 - 1,289	228	748	63	2,225	4.4
		Lo	37.9 - 46.3	688 - 840	-	-	-	-	
	60	Hi	56.1 - 68.5	1,094 - 1,337	237	778	65	2,295	
		Lo	37.9 - 46.3	625 - 763	-	-	-	-	

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-409U Wall Fan - Cord Operated Type

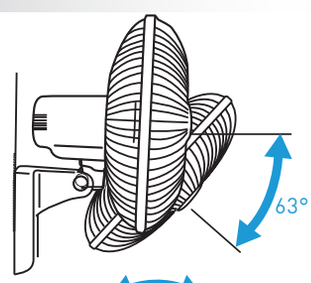
Blue

Gold

- Oscillation control
- 3-speed and on/off by pull switch
- Easy angle adjustment
- Blade - Metallic material
- Color: Blue or Gold

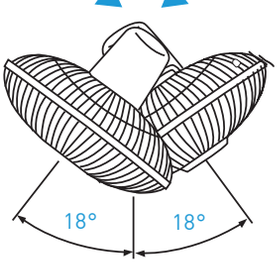
Adjustment of Circulation Angle "One-touch" adjustment of tilt

The air flow can be adjusted upward or downward by simply moving the guard up or down as shown in the figure. Adjust the angle of the fan only after first confirming that it has stopped rotating.



Double oscillation

To change the direction of the air flow, push the edge of the guard to the desired position.

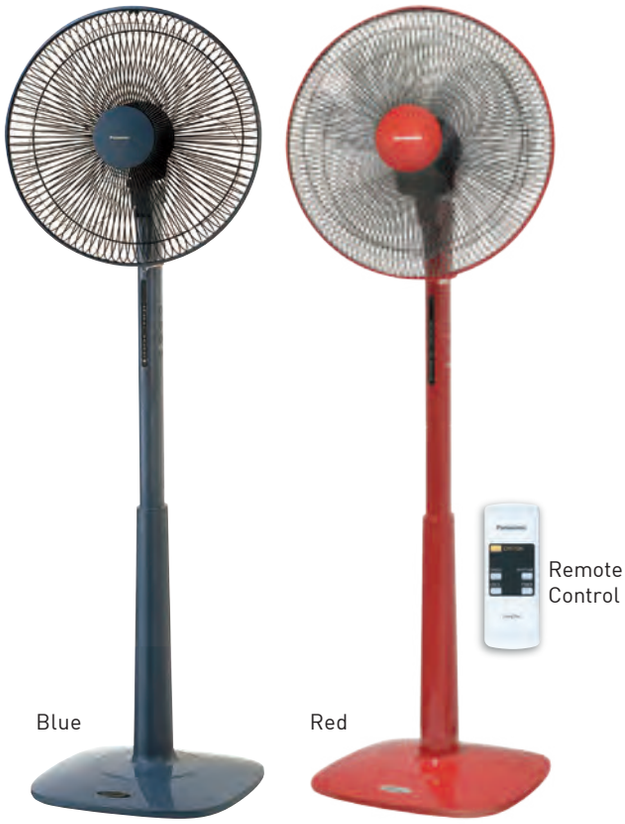


Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery		Weight [kg]
					[m/min]	[ft/min]	[m³/min]	[ft³/min]	
F-409U	50	Hi	42.5 - 51.9	1,097 - 1,341	226	741	63	2,225	4.4
		Lo	33.5 - 40.9	744 - 910	-	-	-	-	
	60	Hi	52.8 - 64.6	1,166 - 1,425	241	791	67	2,366	
		Lo	34.7 - 42.5	676 - 826	-	-	-	-	

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-409K 40cm (16")



- Wireless remote control
- 3-speed and off electronic switch
- Rhythm breeze function
- Height adjustable:
  128cm-143cm (50"-56")
- Transparent plastic blade
- Color: Blue or Beige
  or Red (Vietnam only)

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min^{-1}]	Air Velocity		Air Delivery	
					[m/min]	[ft/min]	[m^3/min]	[ft^3/min]
F-409K	50	Hi	46.8-57.2	1,055-1,289	228	748	63	2,225
		Lo	37.9-46.3	688-840	-	-	-	-
	60	Hi	56.1-68.5	1,094-1,337	237	778	65	2,295
		Lo	37.9-46.3	625-763	-	-	-	-

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-407W 40cm (16")

- 3-speed and off push-button switch
- Attractive twin lamps
- Height adjustable:
  134cm-157cm (52"$^{3/4}$-61$^{3/4}$)
- Metal blade
- Color: Blue or Gold

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min^{-1}]	Air Velocity		Air Delivery	
					[m/min]	[ft/min]	[m^3/min]	[ft^3/min]
F-407W	50	Hi	47.9-58.5	1,097-1,341	226	741	63	2,225
		Lo	38.9-47.5	744-910	-	-	-	-
	60	Hi	58.2-71.2	1,166-1,425	241	791	67	2,366
		Lo	40.1-49.1	676-826	-	-	-	-

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

F-308NH/F-307KH 30cm (12")

- 1/f Yuragi function
- 3-speed and electronic ON/OFF switch
- Slim and compact motor design
- 4-hour electronic timer
- Height adjustable: 91cm-105cm (36"-41")
- Wireless remote control
- Transparent plastic blade
- Color: Baby Pink or Pastel Blue

Remote Control

- 1/f Yuragi function
  The attached air filter combines Super alleru-buster, Green Tea Catechin and Anti-bacteria Enzyme functions
- 3-speed and electronic ON/OFF switch
- Wireless remote control
- Height adjustable: 66cm-85cm (26"-33")
- 4-hour electronic timer
- Transparent plastic blade
- Color: Metallic Green or Silver

Remote Control

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity [m/min]	Air Delivery		Weight [kg]
						[m³/min]	CFM	
F-308NH	50	Hi	34-42	935-1,140	181	40	1,412	4.8
		Lo	19-25	630-800	-	-	-	

Note: All values in specification table are at 220V

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity [m/min]	Air Delivery		Weight [kg]
						[m³/min]	CFM	
F-307KH	50	Hi	44	968-1232	201	51	1,801	4.1
		Lo	25	711-940	-	-	-	

Note: All values in specification table are at 220V

F-400C 40cm (16")

Beige gray

- 3-speed and push-button switch
- Transparent plastic blade
- Color: Ivory or Beige gray

Specification

Model No.	Hz		Consumption [W]	R.P.M. [min⁻¹]	Air Velocity		Air Delivery	
					[m/min]	[ft/min]	[m³/min]	[ft³/min]
F-400C	50	Hi	44.0-53.8	1,055-1,289	228	748	63	2,225
		Lo	33.9-41.5	688-840	-	-	-	-
	60	Hi	54.0-66.0	1,094-1,337	237	778	65	2,295
		Lo	35.0-42.8	625-763	-	-	-	-

Note: The value in Specification table are representative characteristics value at 220V, 50/60Hz.
R.P.M. data is for reference only, values may vary subject to different conditions.

VENTILATION PRODUCT SPECIFICATION

	Model No.	Phase		Consumption [W]		R.P.M [min⁻¹]		Air Volume				Noise [dB(A)]		Weight [kg]	Duct Size [mm]
								50Hz		60Hz					
				50Hz	60Hz	50Hz	60Hz	[CMH]	[CFM]	[CMH]	[CFM]	50Hz	60Hz		
Ceiling Mount Type Ventilating Fan	FV-24JR2	1		8	8	-	-	160	94	160	94	31	31	2.9	ø100
	FV-24JA2	1		8	8	-	-	160	94	160	94	31	31	2.9	ø100
	FV-17CU7	1		11	11	790	800	85	50	85	50	26	28	1.9	ø100
	FV-24CU7	1		14	16	690	690	140	82	140	82	28	29	2.9	ø100
	FV-24CD7	1		17	19	790	805	170	100	170	100	31	33	3.0	ø100
	FV-24CH7	1		20	24	870	840	200	118	190	112	35	35	3.0	ø100
	FV-27CH9	1	Hi	28	33	570	570	330	194	330	194	34	34	4.4	ø150
		1	Lo	23	26	480	490	260	153	270	159	30	31		
	FV-32CD9	1	Hi	42	48	590	580	430	253	410	241	36	36	5.2	ø150
		1	Lo	32	33	460	450	300	177	285	168	28	28		
	FV-32CH9	1	Hi	55	61	710	695	530	312	525	309	41	41	5.6	ø150
		1	Lo	45	47	570	540	400	235	390	230	34	33		
	FV-38CD8	1	Hi	90	98	645	628	640	377	630	371	44	44	9.7	ø150
		1	Lo	66	66	456	439	430	253	410	241	35	35		
	FV-38CH8	1	Hi	122	138	790	760	800	471	790	465	50	49	10.4	ø150
		1	Lo	89	90	540	509	525	309	500	294	40	39		
	FV-20CUT1	1		22.6	23.9	1,153	1,245	438	258	436	257	40.5	41.4	1.8	
Low Noise Type Cabinet Fan (In-line Fan)	FV-12NS3	1	Hi	18	23	1,265	1,370	180	106	190	112	21	22	5.5	ø100
		1	Lo	17	19	1,020	1,000	145	85	145	85	17	18		
	FV-15NS3	1	Hi	33	42	1,270	1,385	340	200	370	218	25	27	6.5	ø150
		1	Lo	29.5	33	1,100	1,040	275	162	260	153	22	22		
	FV-18NS3	1	Hi	60	73	1,250	1,260	500	294	490	288	29	30	8.5	ø150
		1	Lo	55	62.5	1,100	990	405	238	385	227	27	26		
	FV-18NF3	1	Hi	91	119	1,190	1,245	770	453	760	447	31	32	10.0	ø200
		1	Lo	80	87	1,000	990	620	365	580	341	29	28		
	FV-20NS3	1	Hi	120	159	1,195	1,165	920	541	860	506	32	32	14.0	ø200
		1	Lo	113	128	1,000	875	720	424	620	365	29	26		
	FV-23NL3	1	Hi	230	310	1,245	1,210	1,200	706	1,100	647	40	40	18.0	ø200
		1	Lo	170	190	985	890	900	530	800	471	34	32		
	FV-25NS3	1	Hi	345	425	1,125	1,100	1,700	1,001	1,650	971	41	41	24.0	ø250
		1	Lo	265	300	950	890	1,380	812	1,200	706	38	39		
	FV-25NF3	1	Hi	390	520	1,225	1,245	1,900	1,118	1,810	1,065	43	42	24.0	ø250
		1	Lo	325	380	1,070	1,000	1,600	942	1,400	824	40	41		

VENTILATION PRODUCT SPECIFICATION

	Model No.	Phase		Consumption [W]		R.P.M [min⁻¹]		Air Volume				Noise [dB(A)]		Weight [kg]
								50Hz		60Hz				
				50Hz	60Hz	50Hz	60Hz	[CMH]	[CFM]	[CMH]	[CFM]	50Hz	60Hz	
Industrial Type Ventilating Fan	FV-25GS4	1		39	47	1,360	1,560	1,150	677	1,250	736	34	39	4.4
	FV-30GS4	1		59	80	1,360	1,560	1,820	1,071	2,080	1,224	38	42	6.1
	FV-35GS4	1		88	127	1,420	1,660	2,560	1,507	2,940	1,730	44	48	10.5
	FV-40GS4	1		161	210	1,450	1,710	3,610	2,125	4,240	2,496	47	51	19.0
	FV-45GS4	1		227	325	1,410	1,630	5,200	3,061	5,970	3,514	51	54	19.0
	FV-50GS4	1		249	326	960	1,130	6,130	3,608	7,100	4,179	47	51	22.5
	FV-60GS4	1		245	361	970	1,150	8,040	4,732	9,410	5,539	50	54	34.0
	FV-45GT4	3		220	330	1,450	1,690	5,520	3,249	6,420	3,779	52	56	18.5
	FV-50GT4	3		320	475	1,400	1,590	6,960	4,097	8,010	4,715	54	58	28.5
	FV-60GT4	3		310	450	940	1,070	9,420	5,544	10,920	6,427	49	53	34.0
	FV-30KUT	1		42	51	1,185	1,255	1,220	718	1,270	747	46	47	4.9
	FV-40KUT	1		61	76	1,175	1,260	2,060	1,212	2,190	1,289	49	51	6.4
	FV-50AET2	1		108	130	920	1,050	3,630	2,137	4,200	2,472	54	58	11.5
Wall Mount Ventilating Fan	FV-10EGK1	1		5.5	4.4	2,706	2,888	75	44	80	47	33	34	1.2
	FV-15EGK1	1		6.2	8.5	2,329	2,647	160	94	180	106	34	38	1.5
	FV-10EGS1	1		5.5	4.4	2,706	2,888	75	44	80	47	35	36	0.9
	FV-15EGS1	1		6.2	8.5	2,329	2,647	150	88	175	103	36	40	1.1
	FV-25AUF1	1		34	34	1,100	1,060	835	491	820	483	42	42	2.8
	FV-15AST1	1		15	19	1,480	1,560	288	170	306	180	31	34	1.4
	FV-20AU9	1		20	24	1,250	1,400	580	341	650	383	37.5	41.5	2.0
	FV-25AU9	1		27	31	1,070	1,125	920	541	940	553	39	39	2.4
	FV-30AU9	1		31	38	1,000	1,000	1,200	706	1,140	671	39	38	2.7
	FV-20AL9	1		20	24	1,190	1,340	546	321	600	353	40	44	2.2
	FV-25AL9	1		27	36	1,060	1,110	835	491	846	498	43	43	2.7
	FV-30AL7	1		31	38	880	880	935	550	915	539	43	43	3.1
	FV-20RG7	1	Exhaust	20	24	1,260	1,410	580	341	630	371	36	39	2.2
		1	Intake	15	17	1,150	1,140	405	238	355	209	46	46	
	FV-25RG7	1	Exhaust	27	31	1,090	1,110	945	556	950	559	38	39	2.4
		1	Intake	21	23	1,010	970	600	353	560	330	45	44	
	FV-30RG7	1	Exhaust	31	38	885	800	1,165	686	1,000	589	39	38	2.8
		1	Intake	24	26	840	810	700	412	680	400	43	42	
	FV-20RL7	1	Exhaust	20	24	1,240	1,290	546	321	570	335	39	43	2.4
		1	Intake	15	17	1,190	1,180	370	218	340	200	46	46	
	FV-25RL7	1	Exhaust	29	33	1,100	1,100	840	494	835	491	43	43	2.7
		1	Intake	21	23.5	1,035	1,135	580	341	560	330	45	44.5	
	FV-30RL6	1	Exhaust	31	38	890	880	990	583	945	556	44	43	3.1
		1	Intake	25	26	770	770	600	353	600	353	43	44	
	FV-10BAT1	1		15	17	1,250	1,200	85	50	76	45	40	40	1.7
Window Mount Ventilating Fan	FV-15WU4			8	9	1,463	1,393	210	124	198	117	35	34	0.9
	FV-20WU4			16	19	1,042	1,024	360		360	212	32	31	1.1

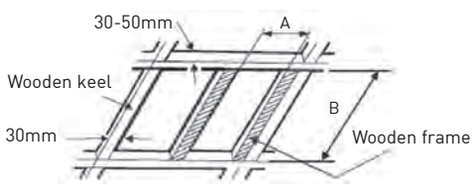
INSTALLATION METHOD

Ceiling Mount Type Ventilating Fan - Applicable Models:

FV-17CU7 / FV-24CU7 / FV-24CD7 / FV-24CH7 / FV-27CH9 / FV-32CD9 / FV-32CH9

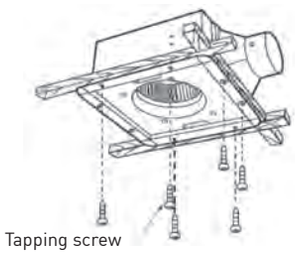
1A Installation with a wooden keel (for FV-17CU7 / FV-24CU7 / FV-24CD7 and FV-24CH7 only)

1. Build a wooden frame horizontally from the wooden keel. Note that the distance between the top of the fan body and the ceiling should be at least 20mm.



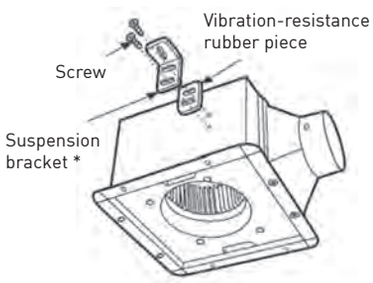
Model No.	A	B
FV-17CU7	177mm	275mm
FV-24CU7 / FV-24CD7 / FV-24CH7	240mm	335mm

2. Firmly secure the fan body with six tapping screws.



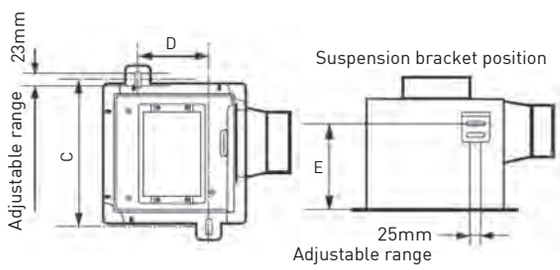
1B Installation with anchor bolts

1. Secure the 1 set of suspension bracket FV-KB021C (optional accessory) with screws.



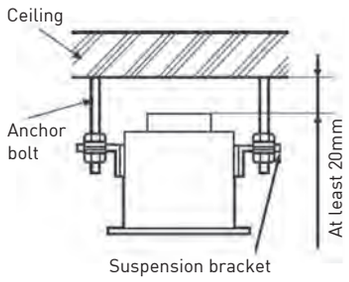
The screw length should not exceed 8mm.

* 2 sets of accessories are required for FV-32CD9 and FV-32CH9



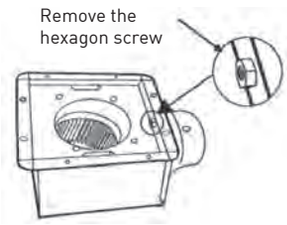
Model No.	C	D	E
FV-17CU7	226mm	89mm	108mm
FV-24CU7 / FV-24CD7 / FV-24CH7	286mm	131mm	124mm
FV-27CH9	296mm	160mm	158.5mm
FV-32CD9 / FV-32CH9	346mm	200mm	158.5mm

2. Mount the fan body enclosure on the anchor bolts (M8-M10, not supplied).

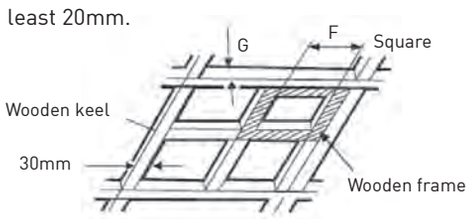


1C Installation of adaptor assembly first

1. First remove the hexagon screw attaching the adaptor assembly to the fan body.



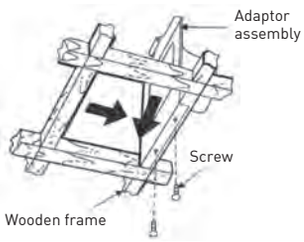
2. Build a wooden frame horizontally from the keel. Note that the distance between the top of the fan body and the ceiling should be at least 20mm.



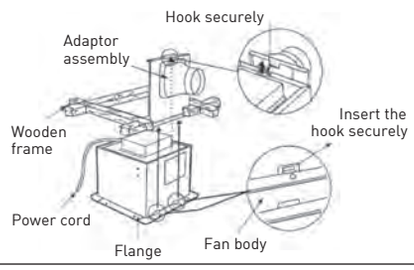
Model No.	F	G
FV-17CU7	177mm	30-50mm
FV-24CU7 / FV-24CD7 / FV-24CH7	240mm	30-50mm
FV-27CH9	270mm	25-30mm
FV-32CD9 / FV-32CH9	320mm	25-30mm

* Ceiling joist must be subject to static load more than 5 times of the product weight.

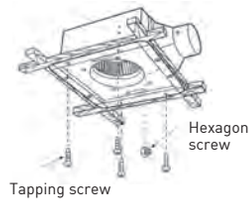
3. Attach the adaptor assembly to the wooden frame as shown in the figure.



4. Insert the fan body in the wooden frame, and connect it to the adaptor assembly.



5. Firmly secure the fan body with four tapping screws and a hexagon screw.

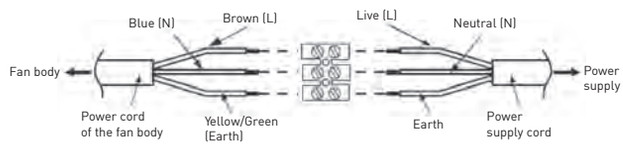


2 Power cord connection

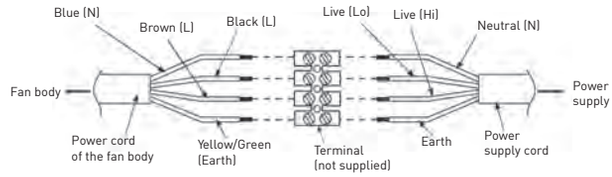
Connect the power cord to the power supply line according to the wiring diagram and the local electrical wiring rules of fixed wiring.

Make sure all connections are fastened firmly after wiring is finished.

For FV-17CU7 / FV-24CU7 / FV-24CD7 and FV-24CH7

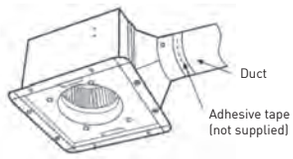


For FV-27CH9, FV-32CD9 and FV-32CH9

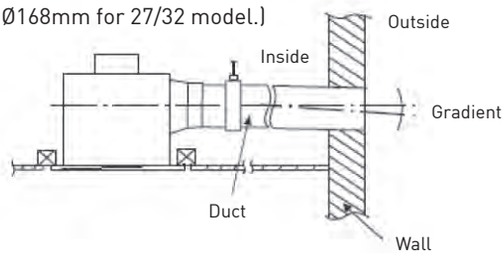


3 Duct connection and ceiling plate installation

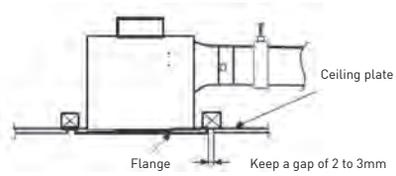
1. Insert the duct into the adaptor assembly, and tighten it with adhesive tape (not supplied). (Suspend the duct from the ceiling to prevent any external force onto the fan body.)



Slope the duct downward and guide it through the wall to the outside. Be sure to prevent rainwater from falling in the duct from its outlet. (The minimum size of the hole opening on the wall is: Ø116mm for 17/24 models, Ø168mm for 27/32 model.)



2. Install the ceiling plate. Note that the gap between the flange and the ceiling plate should be 2 to 3mm.

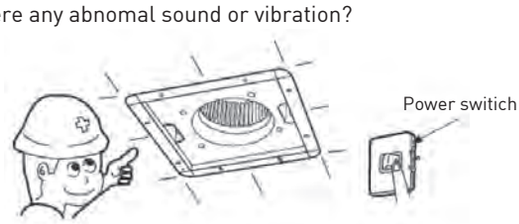


3. Install the pipe hood or vent cap (optional accessories) on the outer wall.

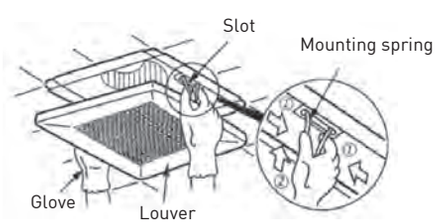
	Pipe Hood	Vent Cap
FV-17CU7 / FV-24CU7 / FV-24CD7 / FV-24CH7	FV-MCX100P	FV-VCX100P
FV-27CH9 / FV-32CD9 / FV-32CH9	FV-MCX150P	FV-VCX150P

4 Test run and louver installation

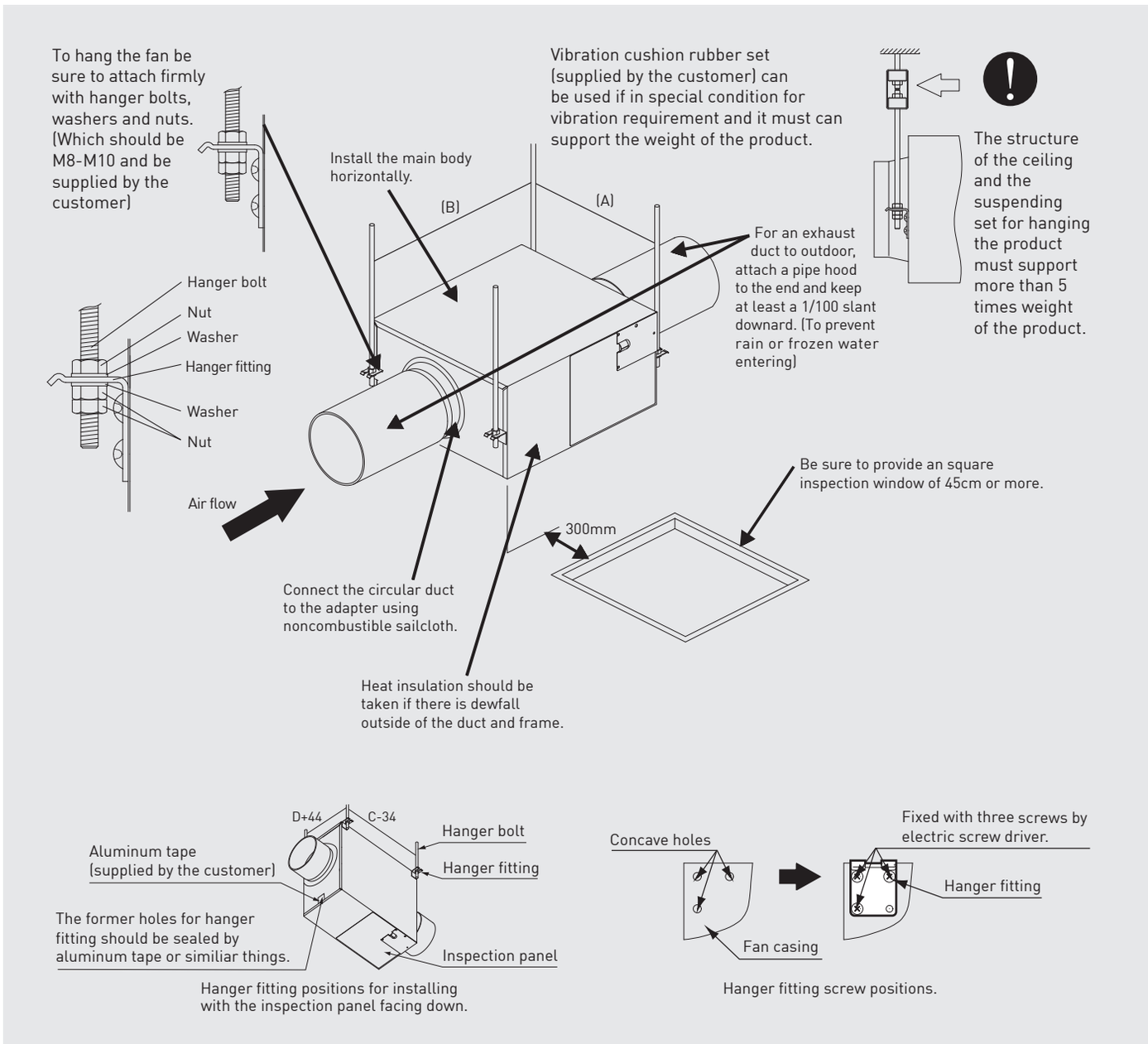
1. When the power is turned on, check for malfunctions as follow:
   Does the fan rotate correctly?
   Does the fan rotate anti-clockwise?
   Is there any abnomal sound or vibration?



2. Insert the mounting spring into the slots and mount the louver to the fan body. (Please wear gloves during installation.)



Applicable Models - FV-12NS3 / FV-15NS3 / FV-18NS3 / FV-18NF3 / FV-20NS3 FV-23NL3 / FV-25NS3 / FV-25NF3

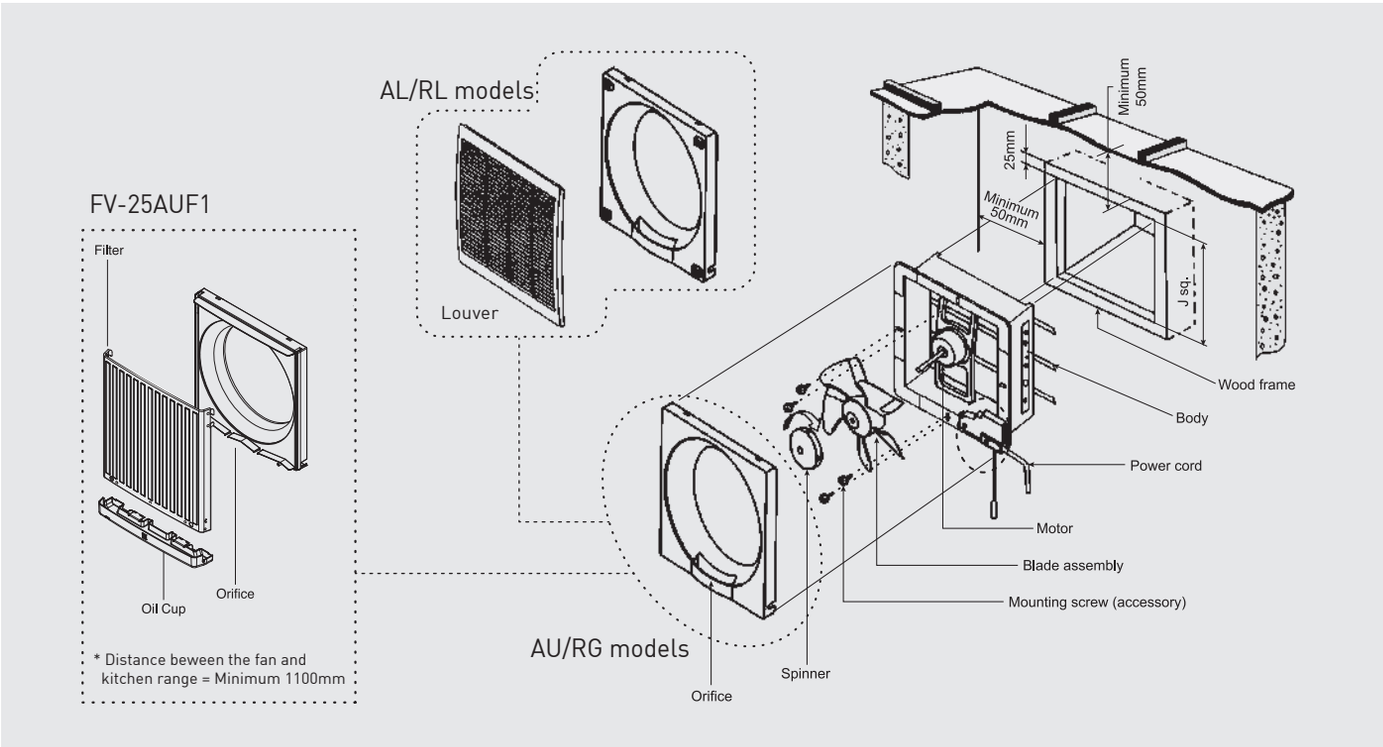


Notes:
To install the fan with the inspection panel facing down, remove the attached four hanger fittings and re-attach them in the holes on the top and bottom surfaces (use the screws you just removed). The former holles for installing the hanger fitting need to be sealed.

Model No.	A	B	C	D
FV-12NS3	250	335	291	184
FV-15NS3	250	346	302	206
FV-18NS3	276	382	338	232
FV-18NF3	336	441	397	254
FV-20NS3	376	485	441	272
FV-23NL3	424	513	469	298
FV-25NS3	420	549	505	334
FV-25NF3	450	549	505	334

Unit: mm

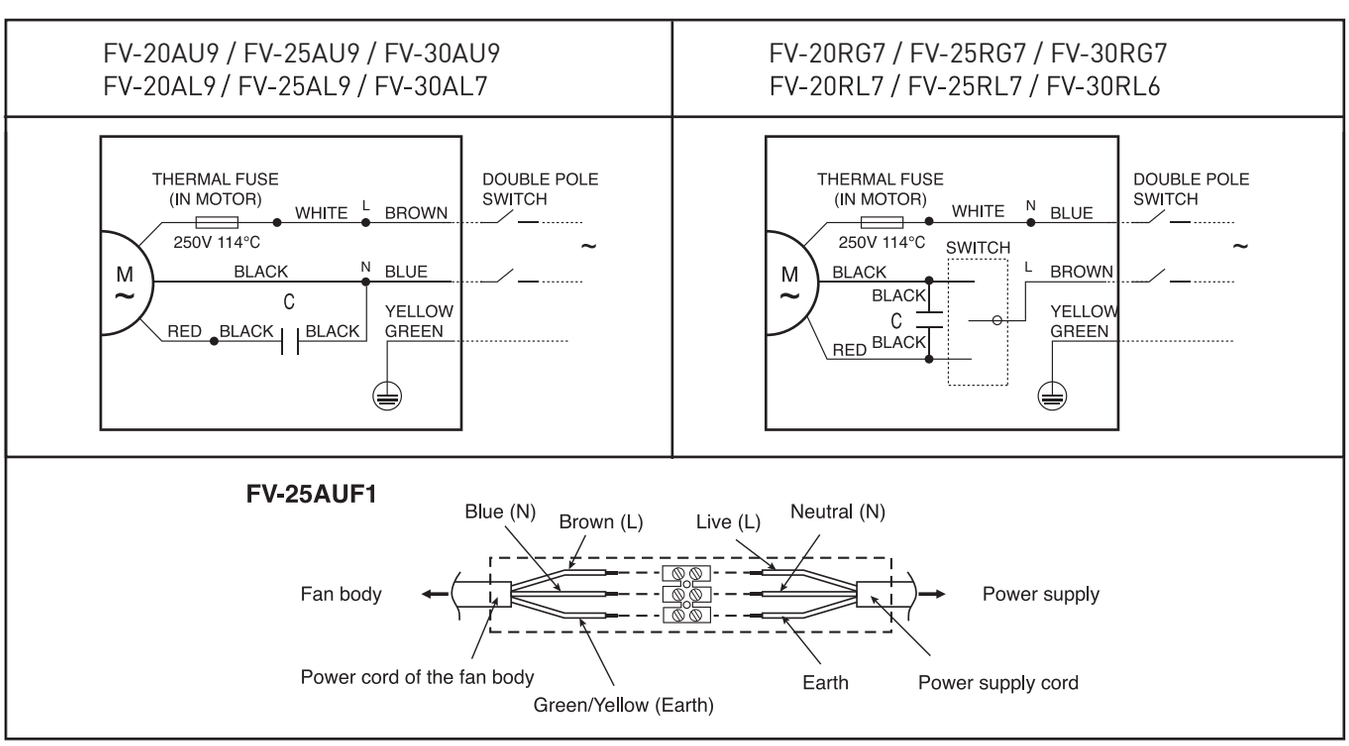
Applicable Models - FV-20AU9 / FV-25AU9 / FV-30AU9 / FV-20AL9 / FV-25AL9 / FV-30AL7
FV-20RG7 / FV-25RG7 / FV-30RG7 / FV-20RL7 / FV-25RL7 / FV-30RL6



Wiring Diagram

Connect the power cord to the power supply line according to the wiring diagram and the local electrical wiring rules of fixed wiring.

- Make sure all connections are fastened firmly after wiring is finished.
- It is required to use terminal (not included) that complies IEC 60998.

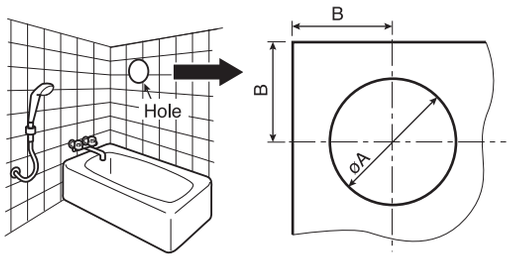


Wall Mount Type Ventilating Fan

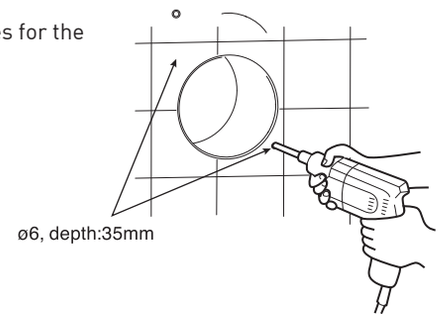
Applicable Models - FV-10EGK1 / FV-15EGK1

1 Make a hole on the wall.

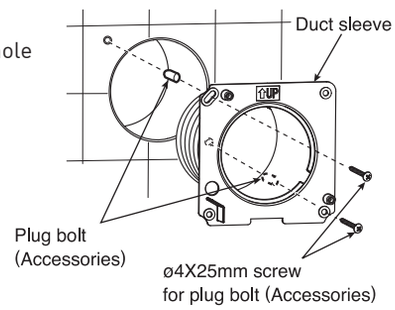
Model No.	ØA	B	Wall thickness
FV-10EGK1	135 ± 5mm	more than 125mm	100 ~ 150mm
FV-15EGK1	180 ± 5mm	more than 150mm	



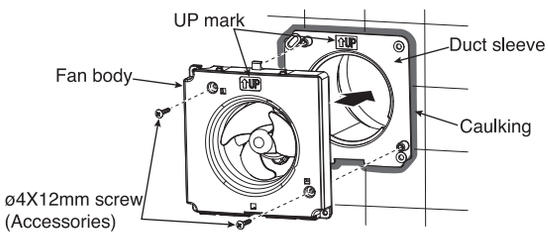
2 Make two holes for the plug bolt.



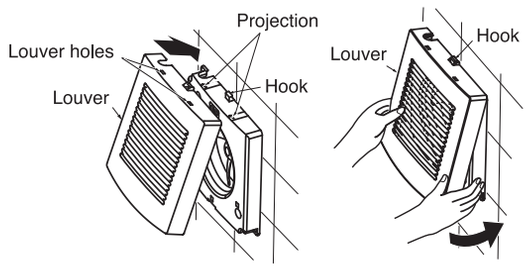
3 Insert the duct sleeve into the hole and fix with two screws.



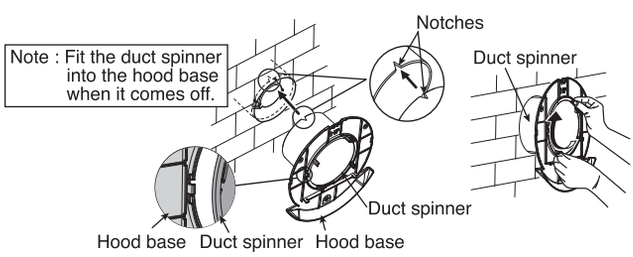
4 Caulk around the duct sleeve and Insert the fan body and fix it with two screws.



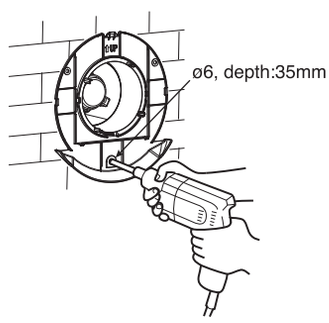
5 Install the louver.



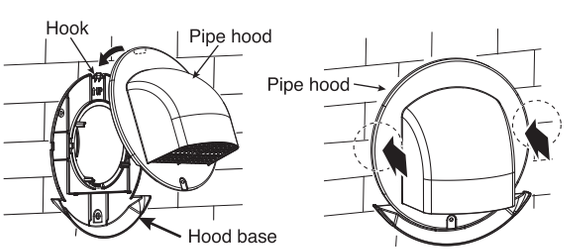
6 Screw the duct spinner and fix from out side wall.



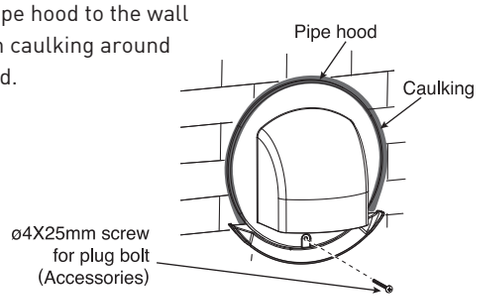
7 Make a hole for the plug bolt.



8 Hang and fix pipe hood.

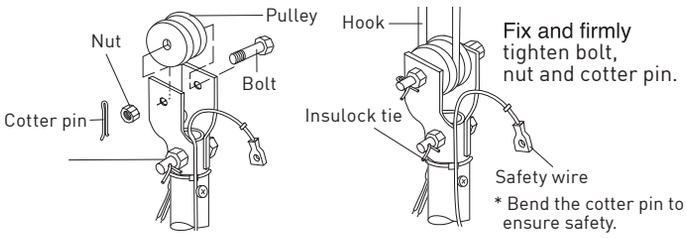


9 Screw pipe hood to the wall seal with caulking around pipe hood.

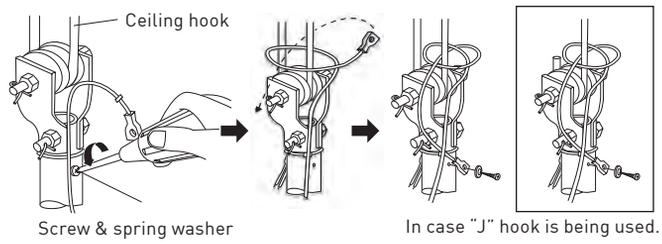


Applicable Models - F-60WWK

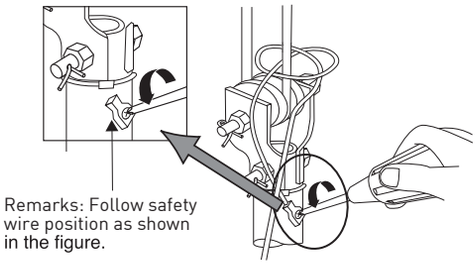
1 Remove the supplied bolt, nut, cotter pin and pulley at the top. Place the pulley onto the ceiling hook.



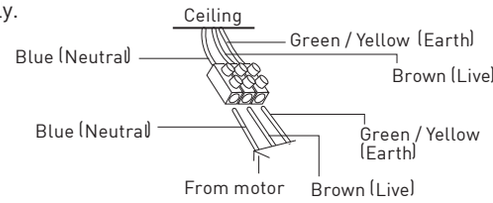
2 Remove the spring washer and safety wire screw from the pipe. Arrange and tie the safety wire as shown.



3 Firmly screw the safety wire onto the pipe.

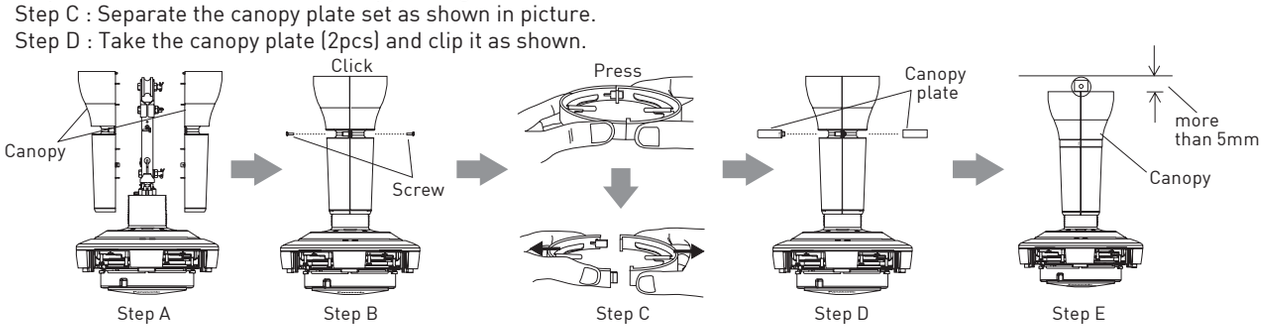


4 Connect the wires to the house supply line according to diagram shown.
Pull the wires after fixing to ensure the wires are tighten firmly.

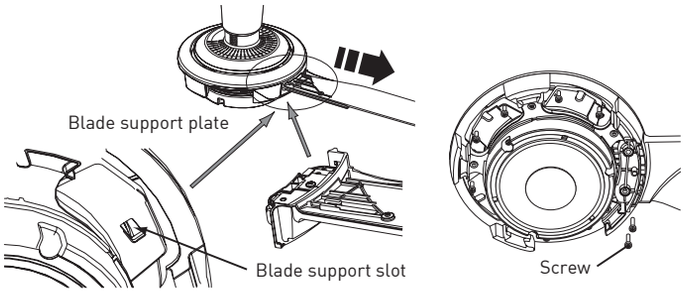


The length of the external earthing conductor which should be such that when failure of the system occur, the current-carrying conductors taut before the earthing conductor.

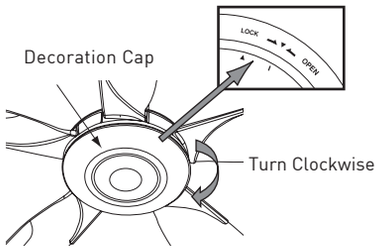
5 Before proceed to Step A, remove the screws from the canopy.
Step A : Take the canopy (2pcs) and press (until "click" sound is heard) it as shown.
Step B : Fix the screws into the canopy and tighten it.
Step C : Separate the canopy plate set as shown in picture.
Step D : Take the canopy plate (2pcs) and clip it as shown.



6 Hook the blades on the motor and tighten with the blade screws.



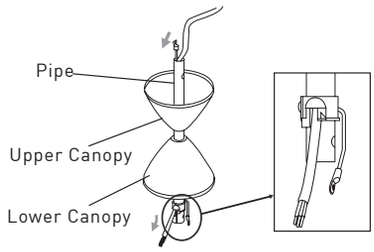
7 Fix the decoration cap at the motor.



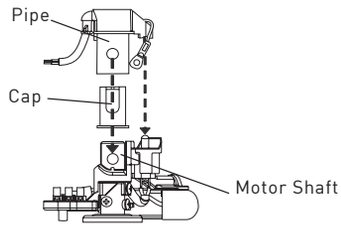
Applicable Models - Regulator Control Series

A Assemble Pipe To Motor Assembly

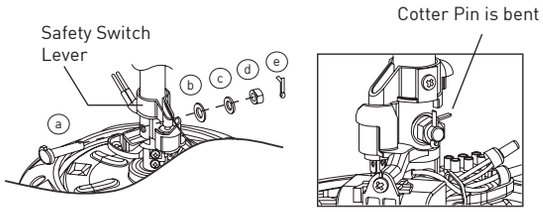
1. Pull power cord (from power supply) and insert into the Pipe hole.



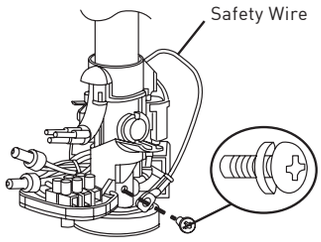
2. Insert the Cap to the Motor Shaft, fix the Pipe to Motor Shaft and ensure the Switch Lever is pressing the Switch.



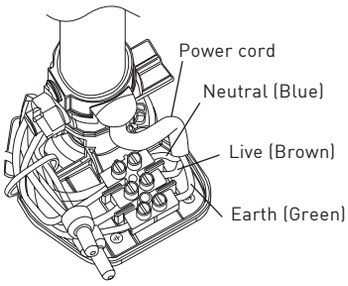
3. Fix the Pipe and Motor Assembly with a) Ellipse Bolt, b) P-R Washer, c) Spring Washer, d) Hexa Nut and e) Bend the Cotter Pin.



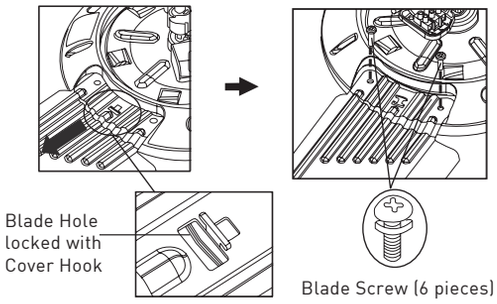
4. Remove Safety Wire Screw at shaft. Fix the Safety Wire firmly to the shaft with Safety Wire Screw.



5. Connect the Power Cord to the 3 Pin Terminal.

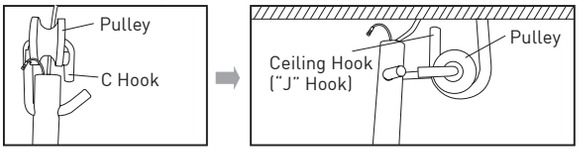


6. Remove Blade Screw from Motor Assembly. Set Blade towards to the Cover Hook and Pull to lock the Blade Hole. Tighten the Blades firmly with Blade Screws (2 pcs / Blade).

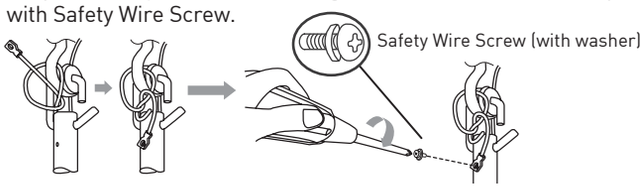


B Installation to Ceiling

1. Cross C Hook of Pulley Set to the Pipe and place the Pulley on Ceiling Hook.

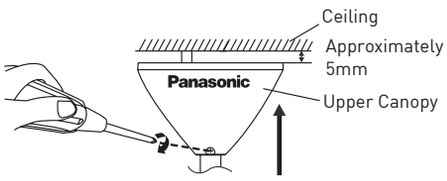


2. Loop the Safety Wire to the Ceiling Hook and screw it to the Pipe with Safety Wire Screw.

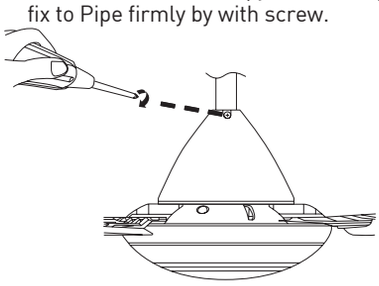


C Fix the Canopy

1. Adjust Upper Canopy position and fix Upper Canopy to Pipe firmly with screw.

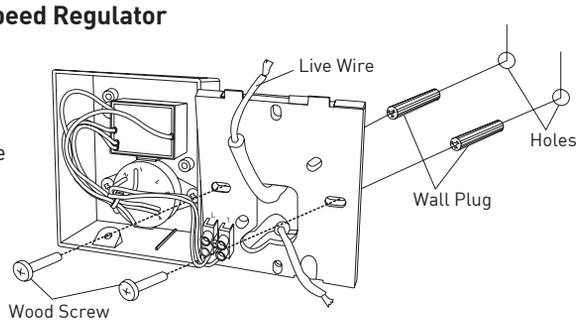


2. Pull down Lower Canopy untill it stop and fix to Pipe firmly by with screw.

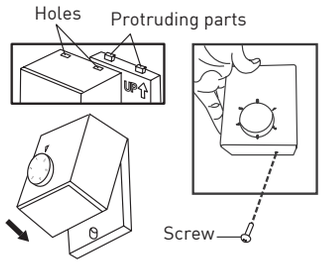


D Installation of Speed Regulator

1. Fix the Base of Speed Regulator Box on the wall with screws and connect Live Wire to the Terminal.



2. Set the regulator cover by Insert the 2 holes of regulator cover to the protruding parts of the base and fix with the screw.



HEATER VENTILATING

Panasonic Energy Recovery Ventilators help you with your "comfort" and "energy-saving" plan.

Panasonic Energy Recovery Ventilators can reduce the outside air load because they efficiently recover the heat lost by ventilation during the heat recovery process. This results in energy-saving ventilation and lower running costs for air-conditioning and heating equipment.
Furthermore, by designing our current models with a counter-flow heat-exchange element, we achieved products with slim body shapes and quiet operation that create a comfortable and pleasant air-conditioned environment while saving energy.

Energy-saving ventilation

Energy consumption is dramatically reduced by using a counter-flow heat-exchange element.
The air conditioning load is reduced by approximately 20%, resulting in significant energy savings.
(For details, refer to P.2)

Slim shape

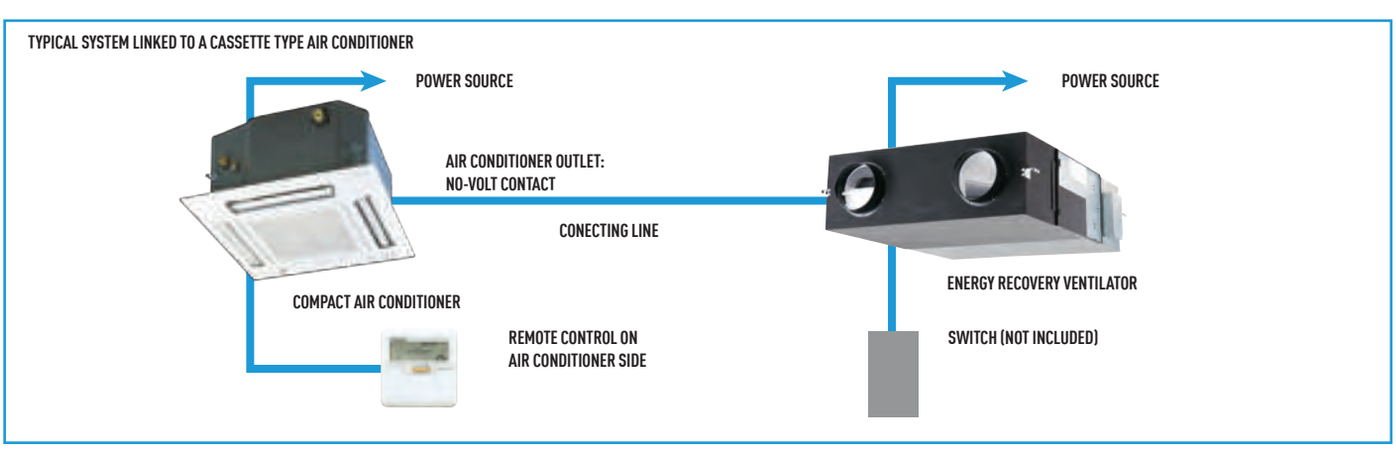
A slim shape saves on installation work.
Compared with the cross-flow configuration, the counter-flow element is more compact and slim.

Structure

The counter-flow heat-exchange element requires no regular cleaning.
Because of the use of an counter-flow element in a plastic frame, the heat-exchange element not only has large air passages that resist clogging, but the element itself has a rugged construction. In addition, a filter with a high dust collection capacity is adopted.

Quiet operation

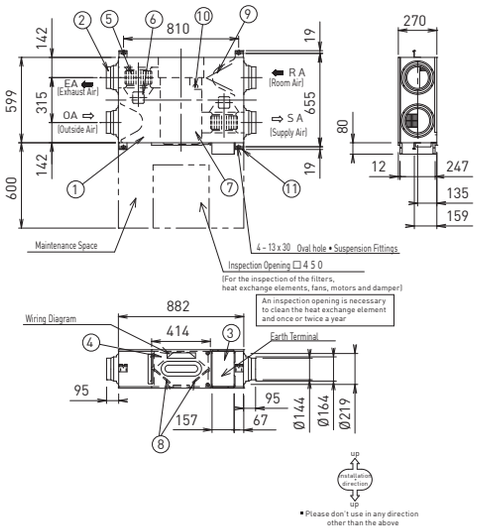
Low-noise operation results in noticeably quieter units.
All models run at low noise level, and even the largest 1000m^3/h-capacity models are only 39.5dB (high notch)



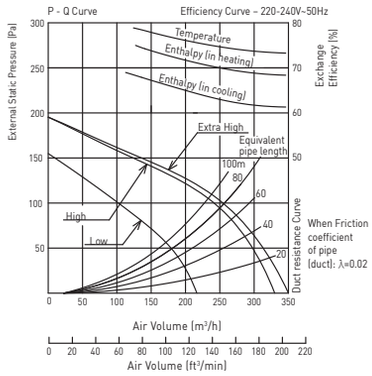
FY-250ZDY8

- Counter-flow heat-exchange element used for reduced noise and more compact and slim body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply/exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with a Extra-High setting.
- Can incorporate a medium-performance filter (optional, installed at site).

Dimension



Performance



No.	Parts Name	Qty.
1	Frame	1
2	Adapter	4
3	Electrical Equipment Box	1
4	Inspection Cover	1
5	Fan	2
6	Motor	2
7	Heat Exchange Element	1
8	Filter	2
9	Damper	1
10	Damper Motor	1
11	Ceiling Suspension Fixture	4

Specifications

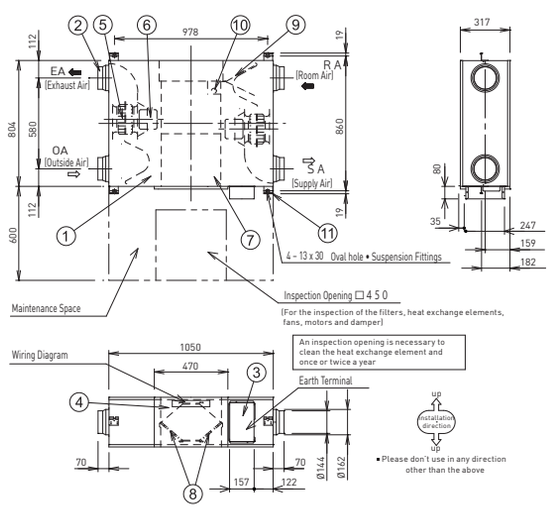
Model No	Power Source	Notch	Hz		Input [W]	Current [A]	Air Volume [m³/h]	External Static Pressure [Pa]	Temperature Exchange Efficiency [%]	Enthalpy Exchange Efficiency [%]		Noise [dB]	Product Weight [kg]
										Cooling	Heating		
FY-250ZDY8	220-240V	Extra High	50	Heat Exchange Ventilation	112-128	0.51-0.53	250	105	75	63	70	30.0-31.5	29
				Normal Ventilation	112-128	0.51-0.53	250	105	-	-	-	30.0-31.5	
		High	50	Heat Exchange Ventilation	108-123	0.49-0.51	250	95	75	63	70	29.5-30.5	
				Normal Ventilation	108-123	0.49-0.51	250	95	-	-	-	29.5-30.5	
		Low	50	Heat Exchange Ventilation	87-96	0.40-0.41	190	45	77	65	72	23.5-26.5	
				Normal Ventilation	87-96	0.40-0.41	190	45	-	-	-	23.5-26.5	

＊This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value
The input, current and exchange efficiency are values at the time of mentioned air volume
The noise level shall be measured 1.5m below the center of the unit
The temperature exchange efficiency averages that of when cooling and when heating

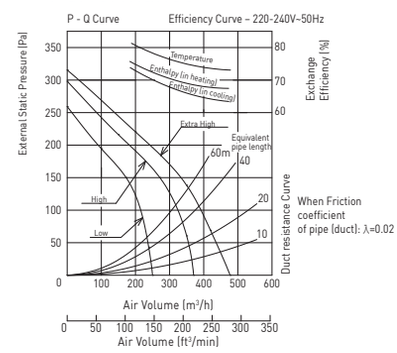
FY-350ZDY8

- Counter-flow heat-exchange element used for reduced noise and more compact and slim body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply/exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with a Extra-High setting.
- Can incorporate a medium-performance filter (optional, installed at site).

Dimension



Performance



No.	Parts Name	Qty.
1	Frame	1
2	Adapter	4
3	Electrical Equipment Box	1
4	Inspection Cover	1
5	Fan	2
6	Motor	2
7	Heat Exchange Element	2
8	Filter	2
9	Damper	1
10	Damper Motor	1
11	Ceiling Suspension Fixture	4

Specifications

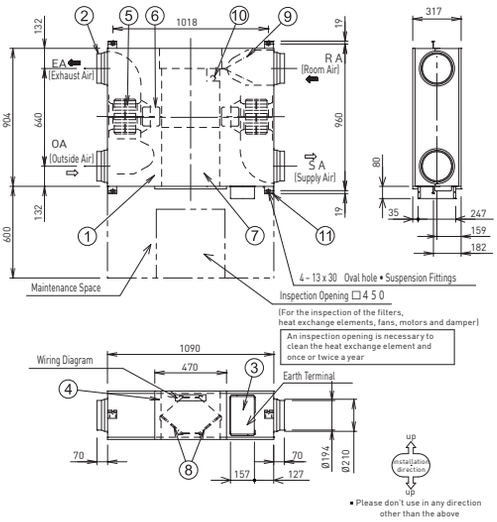
Model No	Power Source	Notch	Hz		Input [W]	Current [A]	Air Volume [m³/h]	External Static Pressure [Pa]	Temperature Exchange Efficiency [%]	Enthalpy Exchange Efficiency [%]		Noise [dB]	Product Weight [kg]
										Cooling	Heating		
FY-350ZDY8	220-240V	Extra High	50	Heat Exchange Ventilation	182-190	0.83-0.79	350	140	75	66	69	32.5-33.0	49
				Normal Ventilation	182-190	0.83-0.79	350	140	-	-	-	32.5-33.0	
		High	50	Heat Exchange Ventilation	178-185	0.81-0.77	350	60	75	66	69	30.5-31.0	
				Normal Ventilation	178-185	0.81-0.77	350	60	-	-	-	30.5-31.0	
		Low	50	Heat Exchange Ventilation	175-168	0.79-0.70	240	45	78	71	73	22.5-25.5	
				Normal Ventilation	175-168	0.79-0.70	240	45	-	-	-	22.5-25.5	

＊This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value
The input, current and exchange efficiency are values at the time of mentioned air volume
The noise level shall be measured 1.5m below the center of the unit
The temperature exchange efficiency averages that of when cooling and when heating

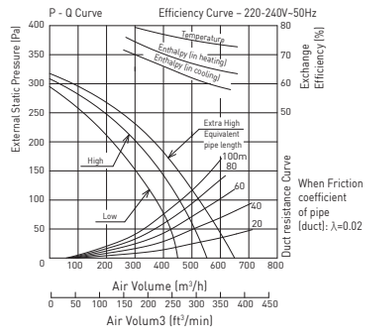
FY-500ZDY8

- Counter-flow heat-exchange element used for reduced noise and more compact and slim body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply/exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with a Extra-High setting.
- Can incorporate a medium-performance filter (optional, installed at site).

Dimension



Performance



No.	Parts Name	Qty.
1	Frame	1
2	Adapter	4
3	Electrical Equipment Box	1
4	Inspection Cover	1
5	Fan	2
6	Motor	2
7	Heat Exchange Element	2
8	Filter	2
9	Damper	1
10	Damper Motor	1
11	Ceiling Suspension Fixture	4

Specifications

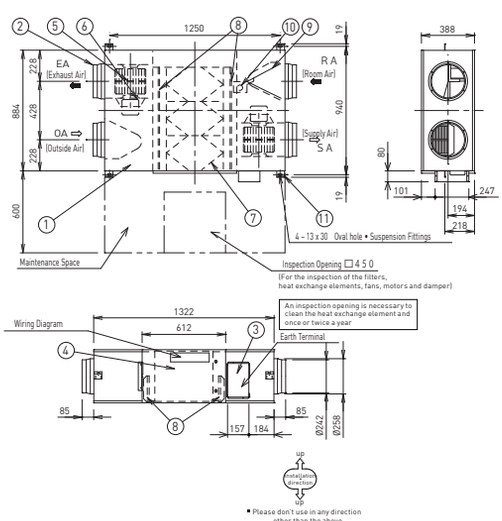
Model No	Power Source	Notch	Hz		Input [W]	Current [A]	Air Volume [m³/h]	External Static Pressure [Pa]	Temperature Exchange Efficiency [%]	Enthalpy Exchange Efficiency [%]		Noise [dB]	Product Weight [kg]
										Cooling	Heating		
FY-500ZDY8	220-240V	Extra High	50	Heat Exchange Ventilation	263-289	1.20-1.21	500	120	75	62	67	36.5-37.5	57
				Normal Ventilation	263-289	1.20-1.21	500	120	-	-	-	37.5-38.5	
		High	50	Heat Exchange Ventilation	204-225	0.93-0.94	500	60	75	62	67	34.5-35.5	
				Normal Ventilation	204-225	0.93-0.94	500	60	-	-	-	37.0-38.0	
		Low	50	Heat Exchange Ventilation	165-185	0.75-0.77	440	35	76	64	69	31.0-32.5	
				Normal Ventilation	165-185	0.75-0.77	440	35	-	-	-	31.0-32.5	

＊This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value
The input, current and exchange efficiency are values at the time of mentioned air volume
The noise level shall be measured 1.5m below the center of the unit
The temperature exchange efficiency averages that of when cooling and when heating

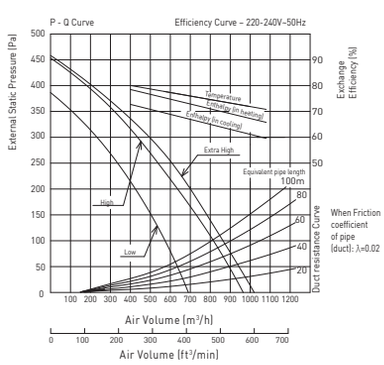
FY-800ZDY8

- Counter-flow heat-exchange element used for reduced noise and more compact and slim body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply/exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with a Extra-High setting.
- Can incorporate a medium-performance filter (optional, installed at site).

Dimension



Performance



No.	Parts Name	Qty.
1	Frame	1
2	Adapter	4
3	Electrical Equipment Box	1
4	Inspection Cover	1
5	Fan	2
6	Motor	2
7	Heat Exchange Element	3
8	Filter	2
9	Damper	1
10	Damper Motor	1
11	Ceiling Suspension Fixture	4

Specifications

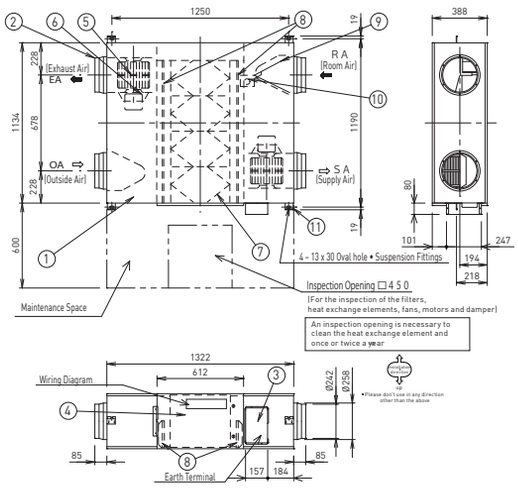
Model No	Power Source	Notch	Hz		Input [W]	Current [A]	Air Volume [m³/h]	External Static Pressure [Pa]	Temperature Exchange Efficiency [%]	Enthalpy Exchange Efficiency [%]		Noise [dB]	Product Weight [kg]
										Cooling	Heating		
FY-800ZDY8	220-240V	Extra High	50	Heat Exchange Ventilation	387-418	1.76-1.74	800	140	75	65	71	37.0-37.5	71
				Normal Ventilation	387-418	1.76-1.74	800	140	-	-	-	37.0-37.5	
		High	50	Heat Exchange Ventilation	360-378	1.64-1.58	800	110	75	65	71	36.5-37.0	
				Normal Ventilation	360-378	1.64-1.58	800	110	-	-	-	36.5-37.0	
		Low	50	Heat Exchange Ventilation	293-295	1.33-1.23	630	55	76	68	74	33.5-34.5	
				Normal Ventilation	293-295	1.33-1.23	630	55	-	-	-	33.5-34.5	

＊This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value
The input, current and exchange efficiency are values at the time of mentioned air volume
The noise level shall be measured 1.5m below the center of the unit
The temperature exchange efficiency averages that of when cooling and when heating

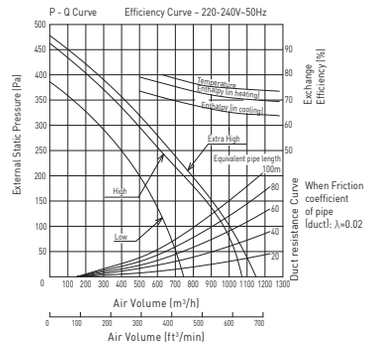
FY-01KZDY8A

- Counter-flow heat-exchange element used for reduced noise and more compact and slim body shape.
- All maintenance can be performed through a single inspection hole.
- Straight air supply/exhaust system used for easier installation.
- Each unit can be mounted in reverse position.
- Equipped with a Extra-High setting.
- Can incorporate a medium-performance filter (optional, installed at site).

Dimension



Performance



No.	Parts Name	Qty.
1	Frame	1
2	Adapter	4
3	Electrical Equipment Box	1
4	Inspection Cover	1
5	Fan	2
6	Motor	2
7	Heat Exchange Element	1
8	Filter	2
9	Damper	1
10	Damper Motor	1
11	Ceiling Suspension Fixture	4

Specifications

Model No	Power Source	Notch	Hz		Input (W)	Current (A)	Air Volume (m³/h)	External Static Pressure (Pa)	Temperature Exchange Efficiency (%)	Enthalpy Exchange Efficiency (%)		Noise (dB)	Product Weight (kg)
										Cooling	Heating		
FY-01KZDY8A	220-240V	Extra High	50	Heat Exchange Ventilation	437-464	1.99-1.93	1,000	105	75	65	71	37.5-38.5	83
				Normal Ventilation	437-464	1.99-1.93	1,000	105	-	-	-	39.5-40.5	
		High	50	Heat Exchange Ventilation	416-432	1.89-1.80	1,000	80	75	65	71	37.0-37.5	
				Normal Ventilation	416-432	1.89-1.80	1,000	80	-	-	-	39.0-39.5	
		Low	50	Heat Exchange Ventilation	301-311	1.37-1.29	700	75	79	70	76	33.5-34.5	
				Normal Ventilation	301-311	1.37-1.29	700	75	-	-	-	35.5-36.5	

＊This noise of the product is the value which was measured at the acoustic room. Actually, in the established condition, that undergo influence by the echoing of the room and so that become bigger than the display numerical value
The input, current and exchange efficiency are values at the time of mentioned air volume
The noise level shall be measured 1.5m below the center of the unit
The temperature exchange efficiency averages that of when cooling and when heating

Use conditions

Outdoor air conditions
- Temperature range -10°C~40°C
- Relative humidity 85% or less

Indoor air conditions
- Temperature range -10°C~40°C
- Relative humidity 85% or less

Installation requirements
- Same as the indoor air conditions

* Indoor air here means air in air-conditioned living rooms. Its use in refrigerators or other places where temperature can fluctuate greatly is prohibited even if a temperature range is acceptable.

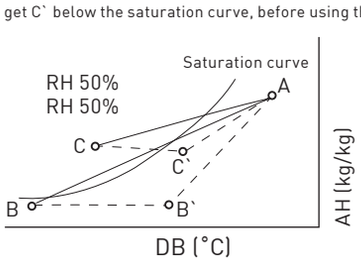
Example Indoor air conditions
- During cooling period
  - Temperature 27°C
  - Relative humidity 50%
- During heating period
  - Temperature 20°C
  - Relative humidity 40%

Motor Specifications

Type	4 Poles open type induction motor
Rating	Cont.
Insulation Class	class E
Temperature Rise	under 75 K
Surrounding Temperature	-10°C~40°C
Insulation Resistance	over 1MΩ (by DC500V)
Withstand Voltage	AC 1,500V for 1min

Condensation in energy exchange element

As shown in the figure to the right, suppose a high temp absorbing air condition A and a low temp absorbing air condition B are plotted on the air line figure, then a high temp air A is heat-exchanged by the unit and goes out of the saturation curve as shown by Point C. In this case , the unit will be dewed or frosted. To avoid this, you are required to heat a low temp air B up to B` so as to get C` below the saturation curve, before using the unit

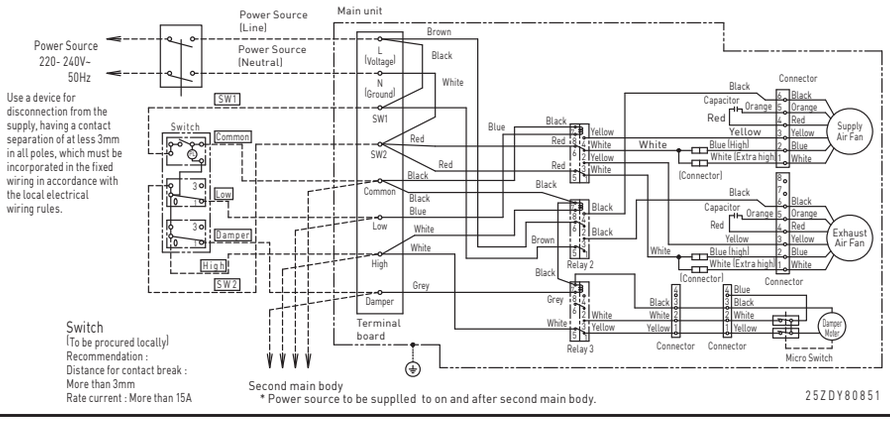


Filter

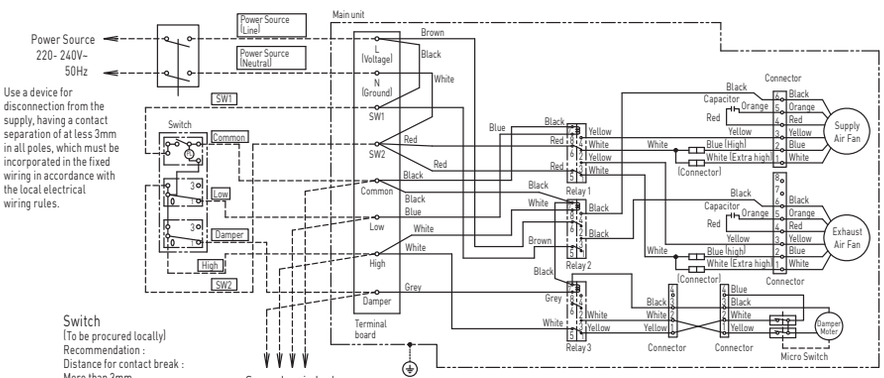
Model	Part No.	No. of Filter
FY-250ZDY8	25ZD80811	2
FY-350ZDY8	35ZD80811	2
FY-500ZDY8	50ZD80811	2
FY-650ZDY8	65ZD80811	2
FY-800ZDY8	65ZD80811	2
FY-01KZDY8A	01KZD80811	2

WIRING DIAGRAM

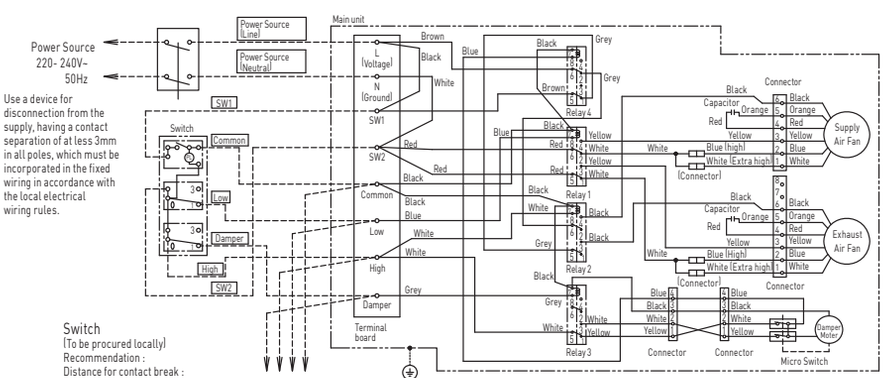
FY-250ZDY8



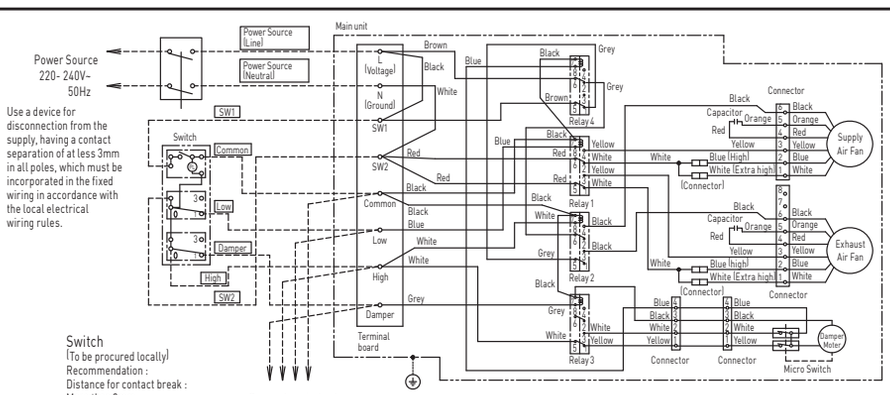
FY-350ZDY8
FY-500ZDY8



FY-650ZDY8



FY-800ZDY8
FY-01KZDY8A



AIR PURIFIER

Air Purifier Provide Clean And Fresh Air For You And Your Family

1 nanoe™
Provide your healthy and maintenance your beauty with the unique technology

2 ECONAVI
Eco operation mode that runs only as it is necessary

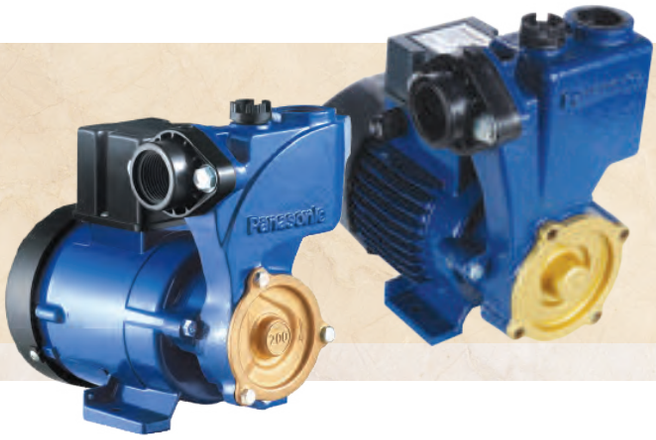
3 HEPA Composite Filter
Anti-bacteria Enzyme
Green tea Catechin
Super alleru-buster

HEPA Composite Filter not only can remove 0.3um participles, it also consists of 3 kinds of technology, Super alleru-buster, Green tea Catechin and Anti- bacteria enzyme. It can inhabit 17 kinds of virus, bacteria and allergen up to 99%

Specification

	F-PXL45A			F-PXM55			F-PXF35A			F-PXJ30A		
	Silver			Gold			Grey		Black	Grey		
Applicable area (m²)	33			41			26			20		
Nanoe Purification	nanoe™											
	High	Medium	Low	High	Medium	Low	High	Medium	Low	High	Medium	Low
Air purifying (Air volume [m³/min]	4,5	2,3	1,0	5,3	2,0	0,9	3,5	2,0	1,0	2,8	1,8	0,8
Power consumption	42	13	6,5	49	11	7	20	9	6	30	22	15
Noise [(dB (A)]	52	32	18	52	32	18	44	32	18	44	35	21
Filter Life HEPA Composite FIlter (year)	3			10			3			2		
Deodorizing Filter (year)	3			10			3			2		
Filter Replace Indicator/ Filter Life check	●			●			●			●		
Motor type	DC 1-way			DC 1-way			DC 1-way			DC multi-way		
3D Circulation Airflow	●			●			●			●		
Econavi	●			●			-			-		
Eco Mode	-			-			-			-		
Turbo mode	-			-			●			●		
Sleep mode (8 hours)	●			●			●			●		
Spot Air Mode	-			●			-			-		
Sensor	Dust / Smell			Dust / Smell			Dust			Dust		
Light Sensor	●			●			-			-		
Clean sign	●			●			●			●		
Child lock	●			●			-			-		
Seamless drive	●			●			●			-		
Dimension	404x516x221			580x300x205			520x300x189			540x311x210		
Weight	5,9			5,8			4,8			4,3		

PUMP



Compact and Energy Efficient

- Pump cover with smooth curve for elegant outlook
- Brass-made casing cover and impeller are resistance to friction and high temperature that allow smoother water stream

Reliable and Safe

- Equipped with Thermal Protector (130°C) enhances security against burning by turning off the pump directly as temperature exceeds the limit
- Double stator protection being resistant to abrasion reduce the danger of short circuit

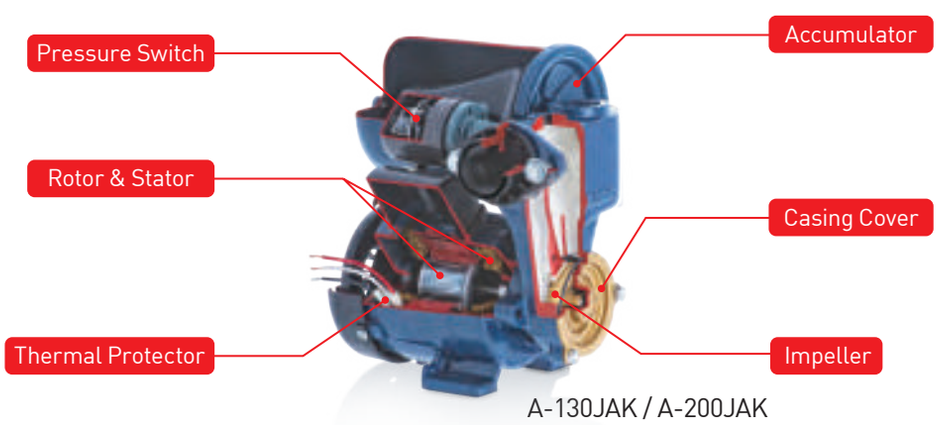
Durable

- High accurate rotor with anti-rust layer allows operation up to 8,000 hours without stopping
- Stainless aluminum motor body and brass casing cover allow high durability

Structure (For Auto Series) (*)

- Accumulator is a compression space containing Nitrogen Gas which has characteristics of elasticity. The gas content will never deplete that always stay stable and optimum.
- Rubber Bladder is made of Butyl that is stainless and anti-leakage. It functions as water separator with the Nitrogen compression room.
- Automatic Switch equipped with a protector made of fire-retardant material and a Platinum-made Switch that is long-lasting. It functions to break the stream if the water stream is closed.

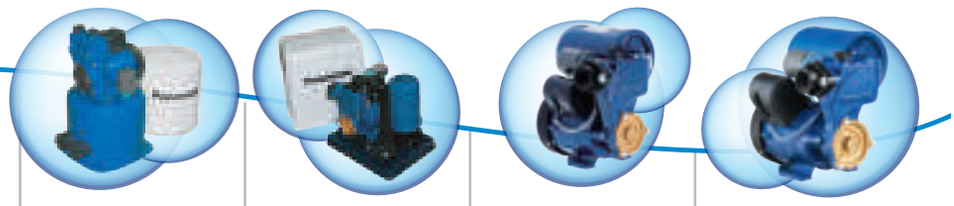
(*) Except A-130JTX



A-130JAK / A-200JAK

Auto Series (Shallow Well Type)

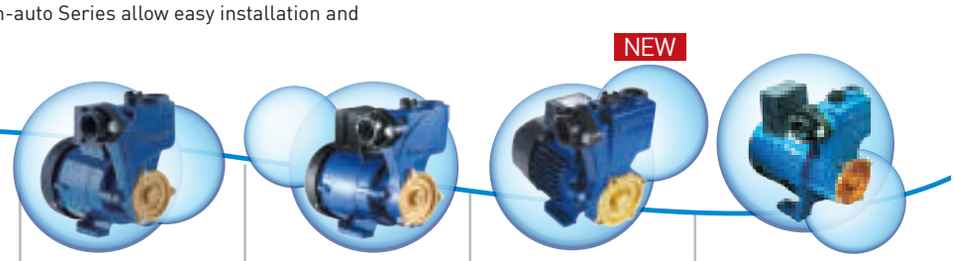
With Auto Series water pump, flow of water can be controlled by the automatic switch associated with water tap operation, that provides greater convenience.



Model No.	A-130JTX	A-130JACK	A-130JAK	A-200JAK
Maximum Capacity	30 liters / minute	30 liters / minute	30 liters / minute	45 liters / minute
Capacity at 12m	18 liters / minute	18 liters / minute	18 liters / minute	29 liters / minute
Power Suction	9 meters	9 meters	9 meters	9 meters
Maximum Total Head	25 meters	27 meters	27 meters	27 meters
Motor Power	125 watts	125 watts	125 watts	200 watts
Switch On Pressure	1.1 kgf / cm^2	1.1 kgf / cm^2	1.1 kgf / cm^2	1.1 kgf / cm^2
Switch Off Pressure	1.6 kgf / cm^2	1.8 kgf / cm^2	1.8 kgf / cm^2	1.8 kgf / cm^2
Suction Pipe	3/4 inch (19 mm)	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)
Push pipe	3/4 inch (19 mm)	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)
Size (L x W x H)	⌀ 330 x 425 mm	330 x 255 x 340 mm	246 x 225 x 240 mm	257 x 238 x 245 mm
Weight	14.5 kg	8.8 kg	6.9 kg	8.3 kg

Non-Auto Series (Shallow Well Type)

Compact-size and high performance of Non-auto Series allow easy installation and maintenance in different applications.



Model No.	GP-129JXK	GP-200JXK	GP-250JXK	GP-350JA
Maximum Capacity	30 liters / minute	45 liters / minute	50 liters / minute	45 liters / minute
Capacity at 12m	18 liters / minute	29 liters / minute	36 liters / minute	39 liters / minute
Power Suction	9 meters	9 meters	9 meters	9 meters
Maximum Total Head	30 meters	30 meters	38 meters	45 meters
Motor Power	125 watts	200 watts	250 watts	350 watts
Switch On Pressure	–	–	–	–
Switch Off Pressure	–	–	–	–
Suction Pipe	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)
Push pipe	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)	1 inch (25 mm)
Size (L x W x H)	206 x 152 x 212 mm	225 x 182 x 215 mm	233 x 168 x 236 mm	239 x 182 x 250 mm
Weight	5.9 kg	7.5 kg	8 kg	14 kg

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