

# Push-In Plus Terminal Block Sockets

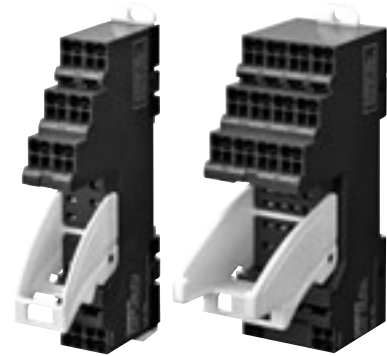
## PYF-□□-PU/P2RF-□□-PU



### Sockets with Push-In Plus Terminal Blocks Reduce Wiring Time for Relays and Timers

- Wiring time is reduced by 60%\* in comparison with traditional screw terminals.
- No screw loosening means maintenance-free application.
- Light insertion force and strong pull-out strength to achieve both less wiring work and high reliability.
- 'Hand-free' structure that holds an inserted screwdriver to achieve easier wiring work for stranded wires.
- Two wires can be independently inserted into each terminal hole.
- DIN Track mounting or screw mounting.
- Use with MY and G2R-S relays; H3RN-B, H3Y-B, H3YN-B timers; and K7L-\_B liquid leak detector

\* According to OMRON actual measurement data from November 2015.

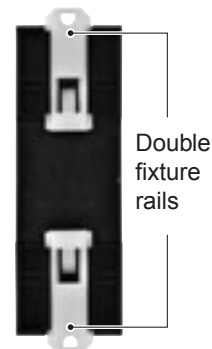
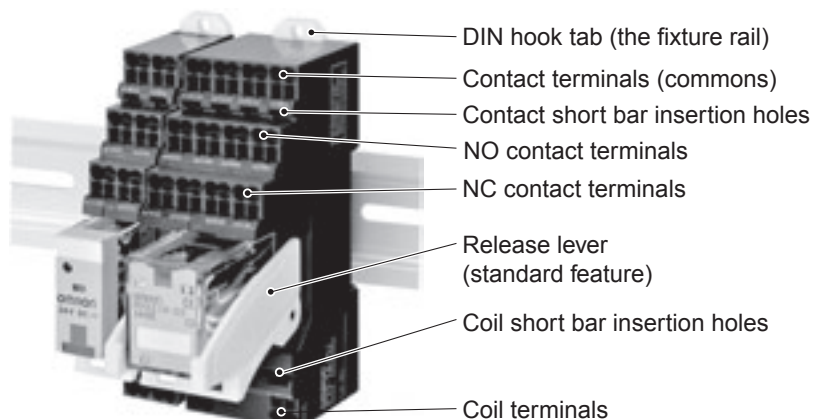


Refer to *Safety Precautions* on page 6.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

## Features

- Coil terminals and contact terminals are completely separated in an organized wiring layout.
- A Release Lever is provided as a standard feature.
- DIN terminal numbers are indicated.
- The double fixture rail with DIN hook tabs attached to the top and bottom lets you mount the Socket from either the top or bottom.
- Front-in short bar enables easy installation without interference in duct when wiring.
- Please refer short bar correspondence table in page 5 for further information of short bar.
- There are screw mounting holes in the DIN hooks on the PYF-□□-PU and P2RF-□□-PU. Pull out the DIN hook tabs to mount the Sockets with screws.



Back of Push-In Plus Terminal Block Socket

The fixture rails can be pulled out to mount the Relays with screws.



# PYF-□□-PU/P2RF-□□-PU

## Ordering Information

### Sockets

| Applicable model (typical example) |                           |             | Socket       |             |
|------------------------------------|---------------------------|-------------|--------------|-------------|
|                                    |                           |             | No. of poles | Model *     |
| General Purpose Relays             | MY Series                 | MY2         | 2            | PYF-08-PU   |
|                                    |                           | MY4         | 4            | PYF-14-PU   |
| Timers                             | H3Y Series<br>H3YN Series | H3Y(N)-2-B  | 2            | PYF-08-PU-L |
|                                    |                           | H3Y(N)-4-B  | 4            | PYF-14-PU-L |
| General Purpose Relays             | G2R-□-S (S) Series        | G2R-1-S (S) | 1            | P2RF-05-PU  |
| Timers                             | H3RN Series               | H3RN-1-B    |              |             |
| General Purpose Relays             | G2R-□-S (S) Series        | G2R-2-S (S) | 2            | P2RF-08-PU  |
| Timers                             | H3RN Series               | H3RN-2-B    |              |             |
| Liquid Leakage Sensors             | K7L Series                | K7L-□B      |              |             |

**Note:** \* The PYF-□□-PU-L Sockets do not have release levers.

### Accessories (Order Separately)

#### Short Bars

| Pitch   | Applicable models           | No. of poles | Colors                            | Model *        | Minimum order (quantity) |
|---------|-----------------------------|--------------|-----------------------------------|----------------|--------------------------|
| 7.75 mm | PYF-□□-PU and<br>P2RF-□□-PU | 2            | Red (R)<br>Blue (S)<br>Yellow (Y) | PYDN-7.75-020□ | 10                       |
|         |                             | 3            |                                   | PYDN-7.75-030□ |                          |
|         |                             | 4            |                                   | PYDN-7.75-040□ |                          |
|         |                             | 20           |                                   | PYDN-7.75-200□ |                          |
| 8       | PYDN-31.0-080□              |              |                                   |                |                          |
| 31.0 mm | PYF-□□-PU                   | 8            |                                   | PYDN-31.0-080□ |                          |
| 15.5 mm | P2RF-□□-PU                  | 8            |                                   | PYDN-15.5-080□ |                          |

**Note:** Use the Short Bars for crossover wiring within one Socket or between Sockets.

\* Replace the box (□) in the model number with the code for the covering color.

#### Labels

| Applicable models           | Model        | Minimum order (sheet)<br>(quantity per sheet) |
|-----------------------------|--------------|---|
| PYF-□□-PU and<br>P2RF-□□-PU | XW5Z-P4.0LB1 | 5<br>(1 sheet/60 pieces)                      |

#### Parts for DIN Track Mounting

| Type        | Model | Minimum order (quantity) |     |
|-------------|-------|--------------------------|-----|
| DIN Tracks  | 1 m   | PFP-100N                 | --- |
|             | 0.5 m | PFP-50N                  |     |
| End Plate * | PFP-M | 10                       |     |
| Spacer      | PFP-S |                          |     |

Refer to your OMRON website for details on the PFP-□.

\* When mounting DIN rail, please use End Plate (Model PFP-M).

## Ratings/Characteristics

### Characteristics

#### PYF-□□-PU(-L)

| Item                          | Model   | PYF-08-PU (-L)             | PYF-14-PU (-L)   |
|-------------------------------|---|----------------------------|------------------|
| Ambient operating temperature |   | -40 to 70°C                |                  |
| Ambient operating humidity    |   | 5 to 85%                   |                  |
| Continuous carry current *    |   | 10 A                       | 6 A              |
| Dielectric strength           | Between contact terminals of same polarity      | 2,000 VAC, 1 min           | 2,000 VAC, 1 min |
|                               | Between contact terminals of different polarity | 2,000 VAC, 1 min           | 2,000 VAC, 1 min |
|                               | Between coil and contact terminals              | 2,000 VAC, 1 min           | 2,000 VAC, 1 min |
| Insulation resistance         |   | 1,000 MΩ min. (at 500 VDC) |                  |
| Weight (approx.)              |   | 80 g                       | 87 g             |

\* The continuous carry current of 10 A for PYF-08-PU(-L) is for an ambient temperature of 55°C. At an ambient temperature of 70°C, the value is 7 A.

#### P2RF-□□-PU

| Item                          | Model   | P2RF-05-PU                 | P2RF-08-PU       |
|-------------------------------|---|----------------------------|------------------|
| Ambient operating temperature |   | -40 to 70°C                |                  |
| Ambient operating humidity    |   | 5 to 85%                   |                  |
| Continuous carry current *    |   | 10 A                       | 6 A              |
| Dielectric strength           | Between contact terminals of same polarity      | 1,000 VAC, 1 min           | 1,000 VAC, 1 min |
|                               | Between contact terminals of different polarity | ---                        | 3,000 VAC, 1 min |
|                               | Between coil and contact terminals              | 4,000 VAC, 1 min           | 4,000 VAC, 1 min |
| Insulation resistance         |   | 1,000 MΩ min. (at 500 VDC) |                  |
| Weight (approx.)              |   | 40 g                       | 45 g             |

\* The continuous carry current of 10 A for P2RF-05-PU is for an ambient temperature of 55°C. At an ambient temperature of 70°C, the value is 7 A. The continuous carry current of 6 A for P2RF-08-PU is for an ambient temperature of 55°C. At an ambient temperature of 70°C, the value is 5 A.

### Applicable Standards

- UL 508, CSA C22.2 No.14, TÜV (EN 61984)

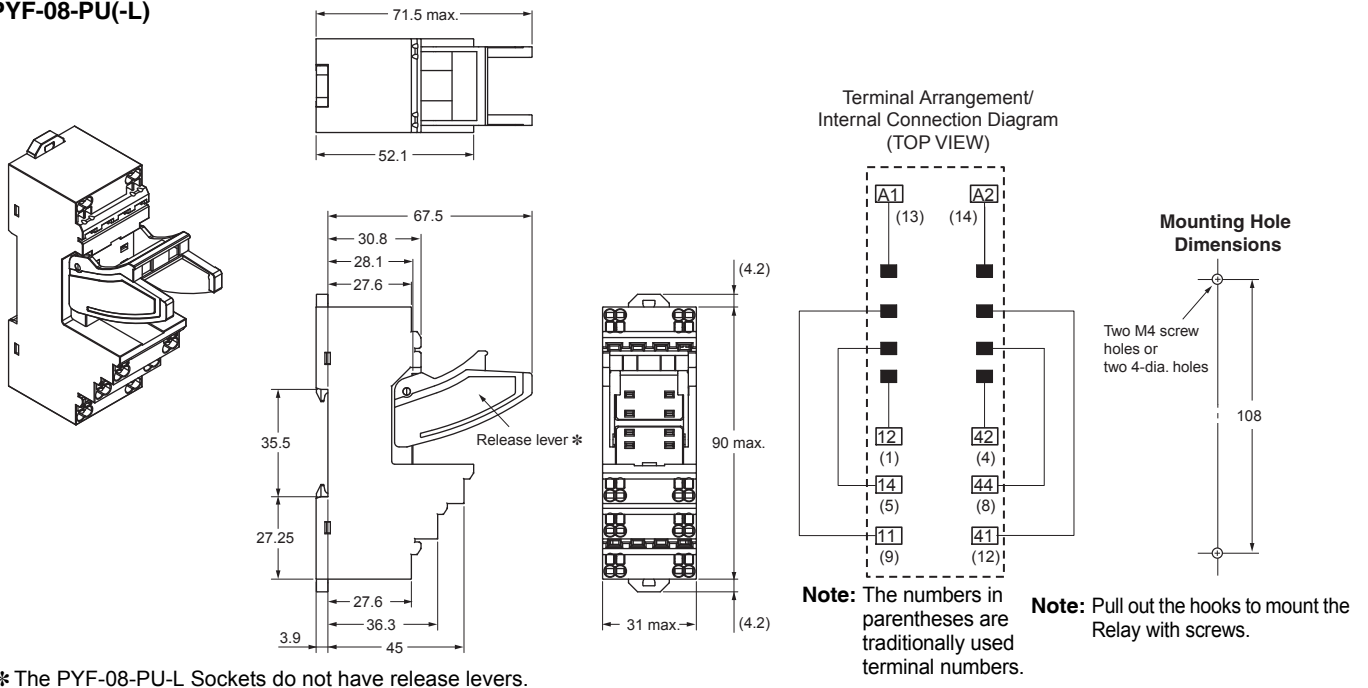
**Note:** The continuous carry current of the PYF-08-PU and P2RF-05-PU for TÜV certification is 10 A at an ambient temperature of 55°C and 7 A at an ambient temperature of 70°C.

The continuous carry current of the P2RF-08-PU for TÜV certification is 6 A at an ambient temperature of 55°C and 5 A at an ambient temperature of 70°C.

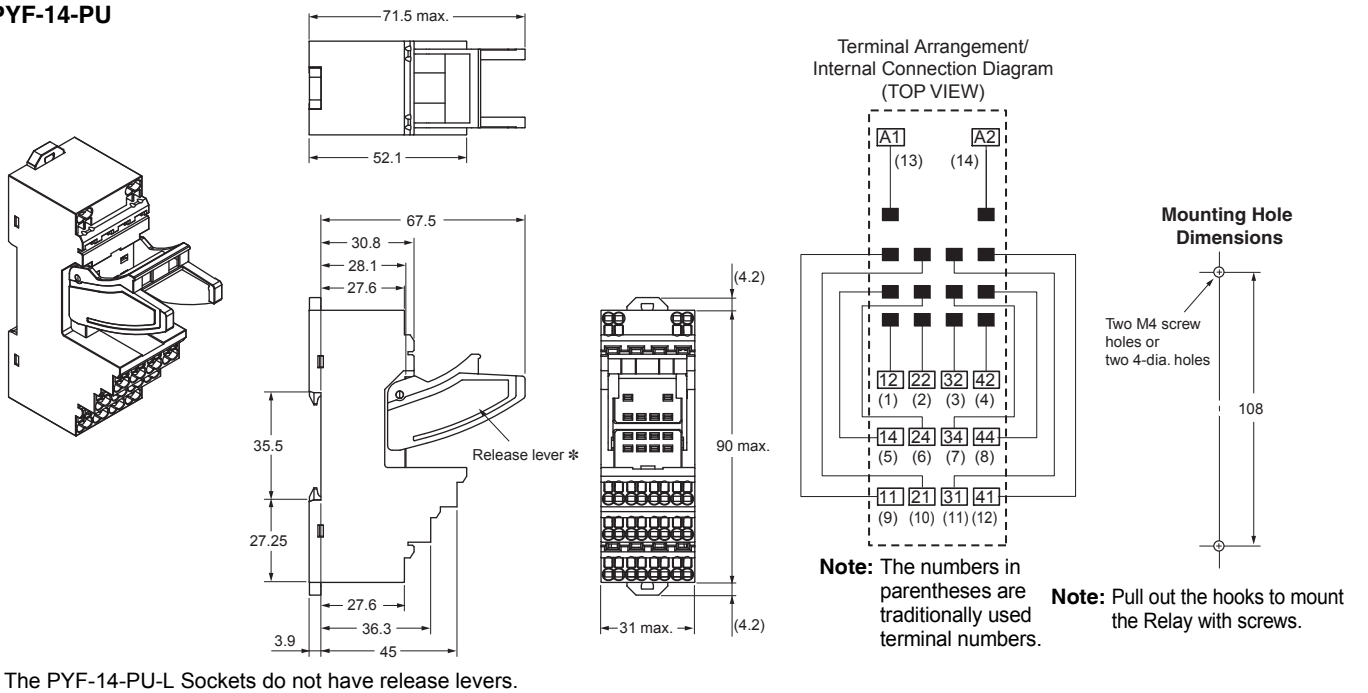
# Dimensions

## Sockets

### PYF-08-PU(-L)

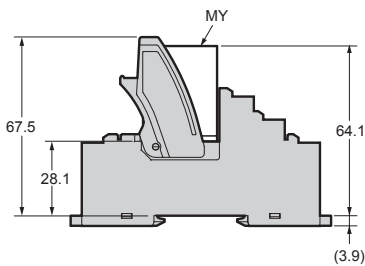


### PYF-14-PU

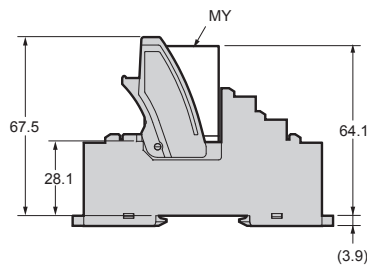


## Mounting Heights

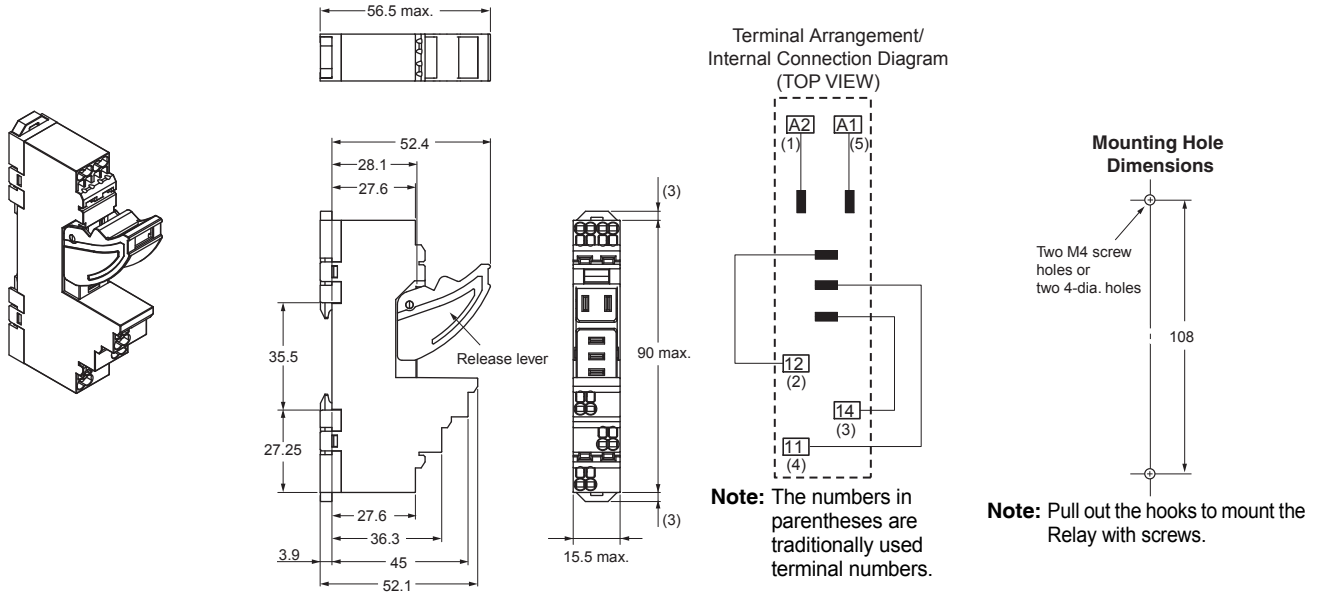
### PYF-08-PU



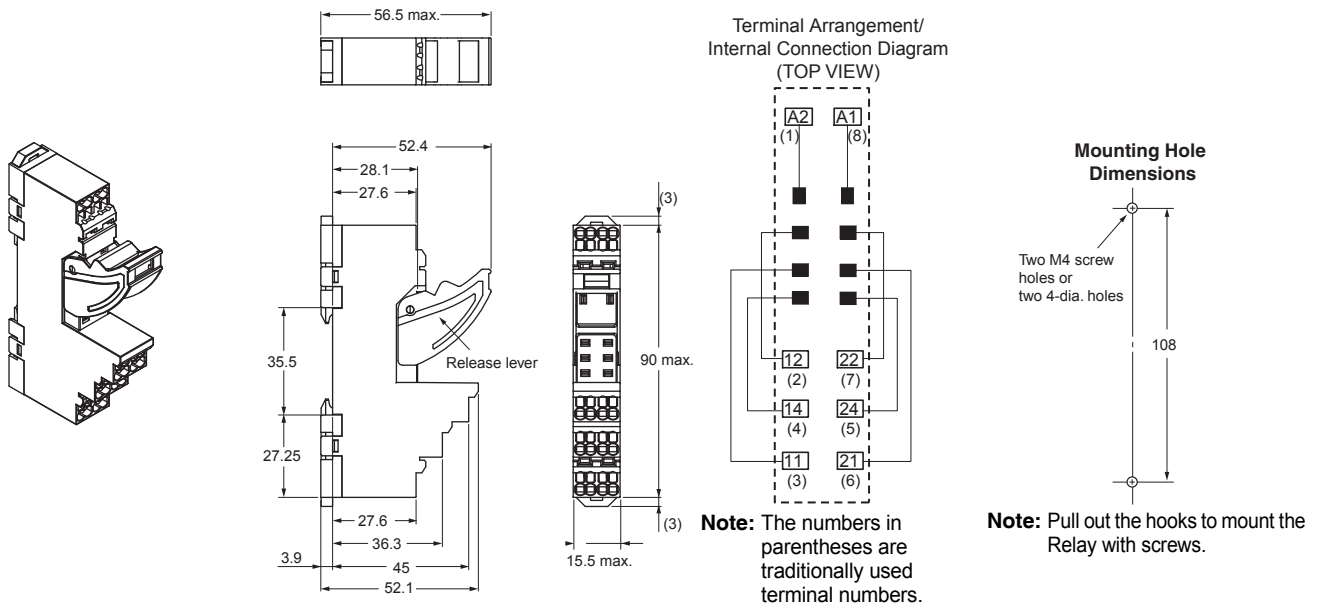
### PYF-14-PU



P2RF-05-PU

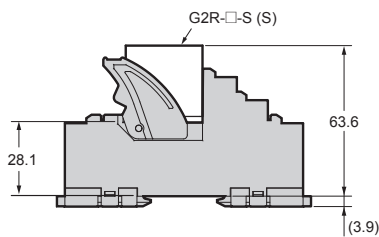


P2RF-08-PU

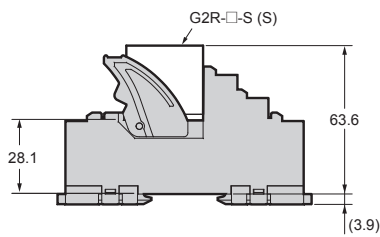


Mounting Heights

P2RF-05-PU



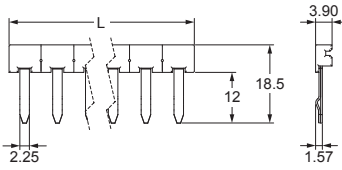
P2RF-08-PU



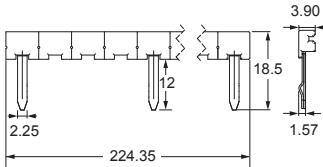
## Accessories (Order Separately)

### Short Bars

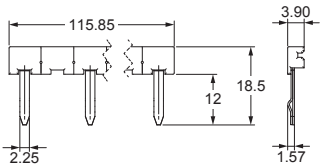
#### PYDN-7.75-□□ (7.75 mm)



#### PYDN-31.0-080□ (31mm)



#### PYDN-15.5-080□ (15.5mm)



| Application                    | Pitch   | Applicable models        | No. of poles | L (Length) | Colors                            | Model *        | Maximum carry current |
|--------------------------------|---------|--------------------------|--------------|------------|-----------------------------------|----------------|-----------------------|
| For Contact terminals (common) | 7.75 mm | PYF-□□-PU and P2RF-□□-PU | 2            | 15.1       | Red (R)<br>Blue (S)<br>Yellow (Y) | PYDN-7.75-020□ | 20 A                  |
|                                |         |                          | 3            | 22.85      |                                   | PYDN-7.75-030□ |                       |
|                                |         |                          | 4            | 30.6       |                                   | PYDN-7.75-040□ |                       |
|                                |         |                          | 20           | 154.6      |                                   | PYDN-7.75-200□ |                       |
| For Coil terminals             | 31 mm   | PYF-□□-PU                | 8            | 224.35     |                                   | PYDN-31.0-080□ |                       |
|                                | 15.5 mm | P2RF-□□-PU               | 8            | 115.85     |                                   | PYDN-15.5-080□ |                       |

\* Replace the box (□) in the model number with the code for the covering color.

**Note: 1.** Use the Short Bars for crossover wiring within one Socket or between Sockets.

**2.** When using short bar to coil terminals of PYF-□□-PU, make sure to use PYFDN-31.0-080□ (31mm).

When using short bar to coil terminals of P2RF-□□-PU, A1 terminal cannot be used.

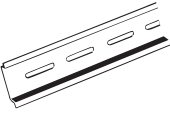

In case crossover wiring of A1 terminal side is needed, crossover wiring using A1 terminals by wire is possible.

#### Short bar correspondence table

|            | Contact terminal (Common) | Coil terminal |    |
|------------|---------------------------|---------------|----|
|            |                           | A1            | A2 |
| PYF-□□-PU  | Available                 | ○             | ○  |
| P2RF-□□-PU | Available                 | ---           | ○  |

## Parts for DIN Track Mounting

Refer to your OMRON website for details on the PFP-□.


| Appearance  | Type       | Model | Minimum order (Quantity) |
|---|------------|-------|--------------------------|
|  | DIN Tracks | 1 m   | -                        |
|   |            | 0.5 m |                          |
|  | End Plate* | PFP-M | 10                       |
|   | Spacer     | PFP-S |                          |

\*Use End Plates (PFP-M) to prevent components from sliding out of position in shipping and applications with vibration.


## Safety Precautions

Be sure to read the *Common Precautions for All Relays* in the website at the following URL:  
<http://www.ia.omron.com/>.

### Warning Indications

|   |  |
|---|--|
|  <b>WARNING</b> | Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage. |
| <b>Precautions for Safe Use</b>   | Supplementary comments on what to do or avoid doing, to use the product safely.  |
| <b>Precautions for Correct Use</b>  | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance.  |

### Meaning of Product Safety Symbols

|   |   |
|---|---|
|  | Used to warn of the risk of electric shock under specific conditions. |
|---|---|

 **WARNING**

Make sure that the Socket does not have an electrical charge before you perform wiring or maintenance work. Electrical shock may occur.



### Precautions for Safe Use

#### Transportation

- Do not use a Socket that has fallen to the floor or ground. The performance of a Socket that has been dropped may be reduced.
- Do not drop the Socket or subject it to abnormal vibration or shock during transportation or mounting. Doing so may result in deterioration of performance, malfunction, or failure.
- Do not transport a Socket when it is not packaged. Damage or failure may occur.

#### Operating and Storage Environments

- Do not use or store Sockets in the following locations. Doing so may result in deterioration of performance.
  - Locations subject to ambient storage temperatures outside the range -40 to 70°C
  - Locations subject to relative humidity outside the range 5% to 85%
  - Locations subject to high temperature or high humidity
  - Locations in which condensation may occur due to rapid changes in temperature
- Do not use or store Sockets in environments that contain silicone gas, sulfidizing gas (e.g., SO<sub>2</sub> or H<sub>2</sub>S), or organic gas, or near materials that contain silicone. Doing so may cause the contacts to be unstable or to fail.
- Do not use a Socket in a location subject to ultraviolet light (such as a location subject to direct sunlight). Printing may fade, the Socket may rust or corrode, and plastic parts may deteriorate.
- Before you start wiring, make sure that the Socket is securely attached and mounted to a DIN Track. If the Socket is not stable, it may fall and possibly injure a worker.
- Insert the flat-blade screwdriver fully to the bottom of the release hole. If the flat-blade screwdriver is not inserted correctly, the wire may not be connected correctly.
- If there is lubrication, such as oil, on the tip of the flat-blade screwdriver, the flat-blade screwdriver may fall and possibly injure a worker.
- When crossover wiring by wire and short bar, make sure not to insert wrong position, it may cause short circuit, malfunction or failure.

#### Push-In Plus Terminal Blocks

- Do not attempt to wire anything to the release holes.
- When you insert a flat-blade screwdriver into a release hole, do not tilt or twist the screwdriver. The terminal block may be damaged.
- Insert a screwdriver into the release holes at an angle. The terminal block may be damaged if the screwdriver is inserted straight in.
- Do not allow the flat-blade screwdriver to fall when you are holding it in a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force. Doing so may break the wires.
- Do not insert more than one wire into each terminal insertion hole.
- To prevent wire materials from smoking or igniting, use the wiring materials given in the following table.

| Recommended wires  | Stripping length |                   |
|--|------------------|-------------------|
|  | Ferrules used    | Ferrules not used |
| 0.5 to 1.5 mm <sup>2</sup> /AWG20 to AWG16<br>(Ferrules: 0.5 to 1.0 mm <sup>2</sup> /AWG 20 to AWG 18) | 10 mm            | 8 mm              |

**Note:** Please use Ferrules with UL certification (R/C).

#### Disposal

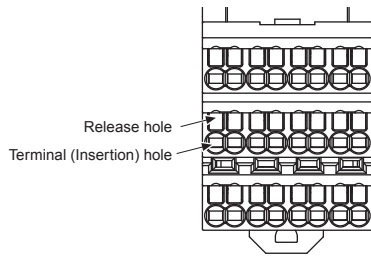
- Do not dispose of sockets by burning.

### Precautions for Correct Use

- Do not transport the Socket under the following conditions. Doing so may occasionally result in damage, malfunction, or deterioration of performance characteristics.
  - Locations subject to high temperature or high humidity
  - Locations subject to condensation due to rapid changes in temperature
- Do not use or store the Socket in the following locations. Doing so may occasionally result in damage, malfunction, or deterioration of performance characteristics.
  - Locations subject to shock or vibration
- Do not use the Socket in a location where it may be subjected to solvents or alkali liquids.
- Do not insert short bar in the hole for wire or screw driver, it may cause the result of failure of pull out. If insert short bar in the hole for wire or screw driver and try to pull out, it may cause damage for short bar or socket.

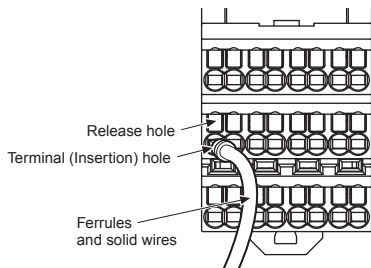
### Push-In Plus Terminal Blocks

#### 1. Connecting Wires to the Push-In Plus Terminal Block Part Names of the Terminal Block



#### Connecting Wires with Ferrules and Solid Wires

Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block.

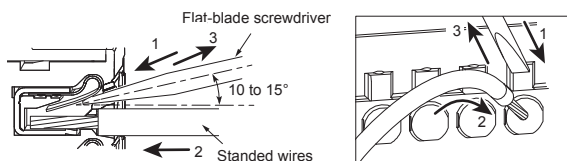


- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wire.

#### Connecting Stranded Wires

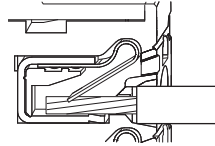
Use the following procedure to connect the wires to the terminal block.

- Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be between 10° and 15°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
- With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until it strikes the terminal block.
- Remove the flat-blade screwdriver from the release hole.



### Checking Connections

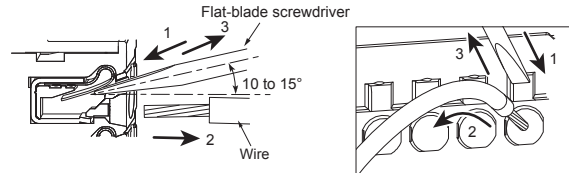
- After the insertion, pull gently on the wire to make sure that it will not come off and the wire is securely fastened to the terminal block.
- To prevent short circuits, insert the stripped part of a stranded or solid wire or the conductor part of a ferrule until it is hidden inside the terminal insertion hole. (See the following diagram.)



### 2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

- Hold a flat-blade screwdriver at an angle and insert it into the release hole.
- With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
- Remove the flat-blade screwdriver from the release hole.

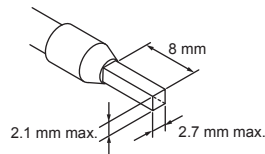


### 3. Recommended Ferrules and Crimp Tools

#### Recommended Ferrules

| Applicable wire        |       | Ferrule Conduct or length (mm) | Recommended ferrules                    |                    |               |
|------------------------|-------|--------------------------------|---|--------------------|---------------|
| (mm <sup>2</sup> )     | (AWG) |                                | Phoenix Contact product                 | Weidmuller product | Wago product  |
| 0.5                    | 20    | 8                              | AI0.5-8                                 | H0.5/14            | FE-0.5-8N-WH  |
| 0.75                   | 18    | 8                              | AI0.75-8                                | H0.75/14           | FE-0.75-8N-GY |
| 1                      | 18    | 8                              | AI1-8                                   | H1.0/14            | FE-1.0-8N-RD  |
| Recommended crimp tool |       |                                | CRIMPFOX6<br>CRIMPFOX6-F<br>CRIMPFOX10S | PZ6 roto           | Variocrimp4   |

- \*1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.
- \*2. Make sure that the ferrule processing dimensions conform to the following figures.



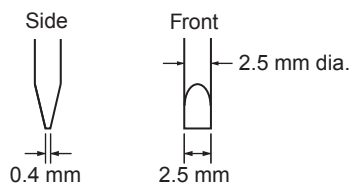
# PYF-□□-PU/P2RF-□□-PU

## Recommended Flat-blade Screwdriver

Use a flat-blade screwdriver to connect and remove wires.

Use the following flat-blade screwdriver.

The following table shows manufacturers and models as of 2015/Dec.



| Model          | Manufacturer    |
|----------------|-----------------|
| XW4Z-00B       | Omron           |
| ESD0.40X2.5    | Wera            |
| SZF 0.4X2.5    | Phoenix Contact |
| 0.4X2.5X75 302 | Wiha            |
| AEF.2.5X75     | Facom           |
| 210-719        | Wago            |
| SDI 0.4X2.5X75 | Weidmuller      |



# Terms and Conditions of Sale

1. **Offer; Acceptance.** These terms and conditions (these "**Terms**") are deemed part of all quotes, agreements, purchase orders, acknowledgments, price lists, catalogs, manuals, brochures and other documents, whether electronic or in writing, relating to the sale of products or services (collectively, the "**Products**") by Omron Electronics LLC and its subsidiary companies ("**Omron**"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
2. **Prices; Payment Terms.** All prices stated are current, subject to change without notice by Omron. Omron reserves the right to increase or decrease prices on any unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice.
3. **Discounts.** Cash discounts, if any, will apply only on the net amount of invoices sent to Buyer after deducting transportation charges, taxes and duties, and will be allowed only if (i) the invoice is paid according to Omron's payment terms and (ii) Buyer has no past due amounts.
4. **Interest.** Omron, at its option, may charge Buyer 1-1/2% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.
5. **Orders.** Omron will accept no order less than \$200 net billing.
6. **Governmental Approvals.** Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Products.
7. **Taxes.** All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Omron or required to be collected directly or indirectly by Omron for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Omron.
8. **Financial.** If the financial position of Buyer at any time becomes unsatisfactory to Omron, Omron reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Omron may (without liability and in addition to other remedies) cancel any unshipped portion of Products sold hereunder and stop any Products in transit until Buyer pays all amounts, including amounts payable hereunder, whether or not then due, which are owing to it by Buyer. Buyer shall in any event remain liable for all unpaid accounts.
9. **Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.
10. **Force Majeure.** Omron shall not be liable for any delay or failure in delivery resulting from causes beyond its control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delay in or lack of transportation or the requirements of any government authority.
11. **Shipping; Delivery.** Unless otherwise expressly agreed in writing by Omron:
  - a. Shipments shall be by a carrier selected by Omron; Omron will not drop ship except in "break down" situations.
  - b. Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer;
  - c. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Omron), at which point title and risk of loss shall pass from Omron to Buyer; provided that Omron shall retain a security interest in the Products until the full purchase price is paid;
  - d. Delivery and shipping dates are estimates only; and
  - e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
12. **Claims.** Any claim by Buyer against Omron for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Omron within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.
13. **Warranties.** (a) **Exclusive Warranty.** Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied. (b) **Limitations.** OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) **Buyer Remedy.** Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty. See <http://www.omron247.com> or contact your Omron representative for published information.
14. **Limitation on Liability; Etc.** OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.
15. **Indemnities.** Buyer shall indemnify and hold harmless Omron Companies and their employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, litigation or proceeding (whether or not Omron is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Products. Without limiting the foregoing, Buyer (at its own expense) shall indemnify and hold harmless Omron and defend or settle any action brought against such Companies to the extent based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party.
16. **Property; Confidentiality.** Any intellectual property in the Products is the exclusive property of Omron Companies and Buyer shall not attempt to duplicate it in any way without the written permission of Omron. Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Omron. All information and materials supplied by Omron to Buyer relating to the Products are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
17. **Export Controls.** Buyer shall comply with all applicable laws, regulations and licenses regarding (i) export of products or information; (ii) sale of products to "forbidden" or other proscribed persons; and (iii) disclosure to non-citizens of regulated technology or information.
18. **Miscellaneous.** (a) **Waiver.** No failure or delay by Omron in exercising any right and no course of dealing between Buyer and Omron shall operate as a waiver of rights by Omron. (b) **Assignment.** Buyer may not assign its rights hereunder without Omron's written consent. (c) **Law.** These Terms are governed by the law of the jurisdiction of the home office of the Omron company from which Buyer is purchasing the Products (without regard to conflict of law principles). (d) **Amendment.** These Terms constitute the entire agreement between Buyer and Omron relating to the Products, and no provision may be changed or waived unless in writing signed by the parties. (e) **Severability.** If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision. (f) **Setoff.** Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice. (g) **Definitions.** As used herein, "including" means "including without limitation"; and "Omron Companies" (or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliate thereof.

## Certain Precautions on Specifications and Use

1. **Suitability of Use.** Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given: (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document. (ii) Use in consumer products or any use in significant quantities. (iii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations. (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this Product. NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON'S PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
2. **Programmable Products.** Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.
3. **Performance Data.** Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.
4. **Change in Specifications.** Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.
5. **Errors and Omissions.** Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.