

# TemPlug 70

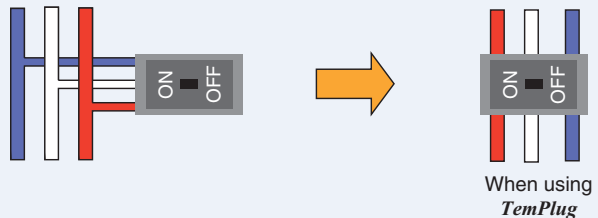
## PG Series

Simply plug the **TemPlug** into the main busbar to complete the connection !  
Aligned with the handle centreline, no need for height adjustment due to standardized depth dimensions.

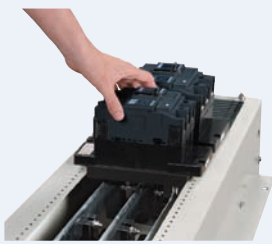
We can help you miniaturize, standardize, and shorten the production time for 21st century switchboards and distribution boards.

### Miniaturisation and time reduction

Branching busbars do not need to be fabricated and the width of the switchboard can be reduced.



### Standardisation & Flexibility



The 15mm pitch mounting holes allow the 100AF to 630AF TemPlugs to be mounted in any position.

Standardized mounting pitch  
Multiples of 15mm

### Standardisation

The front panel cutout width is standardized to 92mm

\*Excludes high-performance electronic circuit breakers and smart circuit breakers.



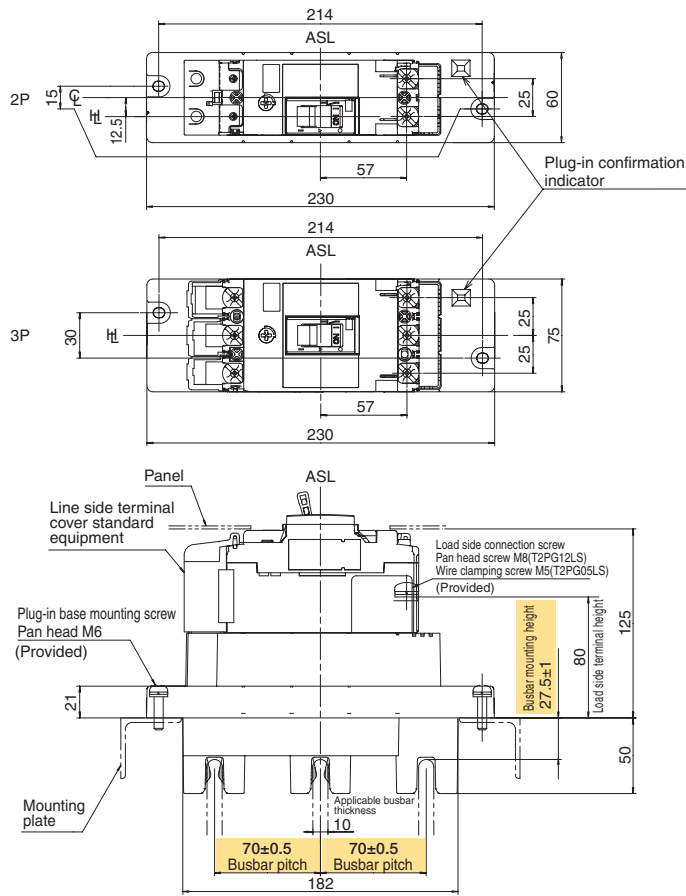
The front panel and mounting surface height is standardized

### Safety

- Switchboards where the busbar block (primary side) and equipment (secondary side) are separated can be configured.
- Optional items for circuit breaker can be used for the terminal covers and interpole barriers on the load side.

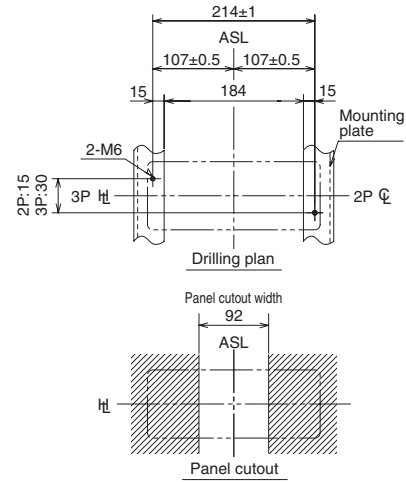
ASL : Arrangement Standard Line  
 ht : Handle Frame Centre Line  
 C : Handle Centre Line

**T2PG05LS, T2PG12LS**



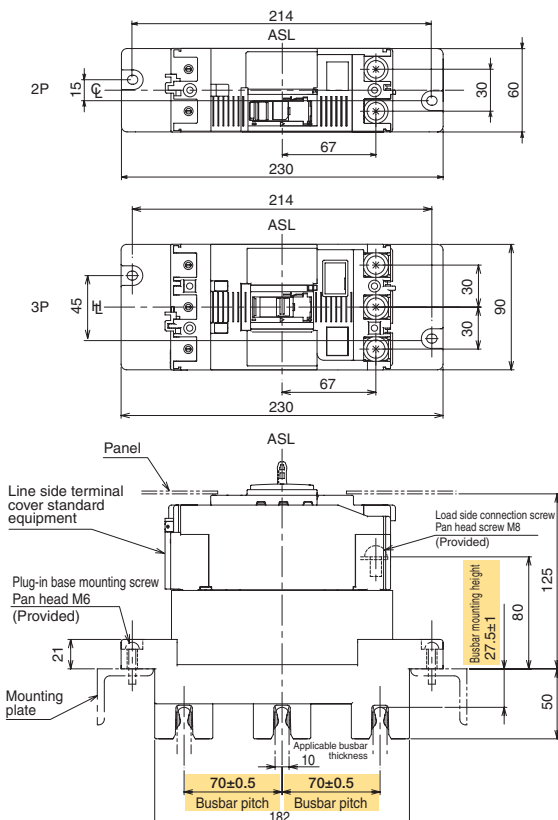
**Applicable breakers**

| Type of TemPlug | MCCB  | ELCB  |
|-----------------|---|---|
| <b>T2PG05LS</b> | S50-SF, S125-SF (15-50A), ZAS125-SF (15-50A)—3P only      | ZS50-SF, ZS125-SF (15-50A), ZS100-SM (16-45A) ] 3P only |
| <b>T2PG12LS</b> | S125-SF (60-125A), S125-SN, ZAS125-SF (60-125A) ] 3P only | ZS125-SF (60-125A), ZS100-SM (60-100A) ] 3P only        |



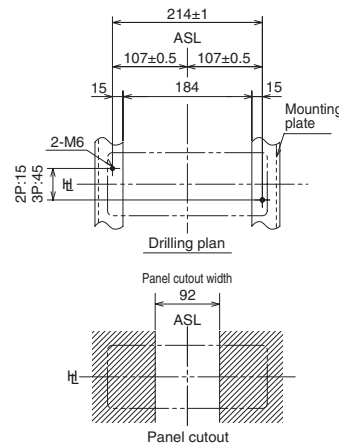
- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 3 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

**T2PG12S**



**Applicable breakers**

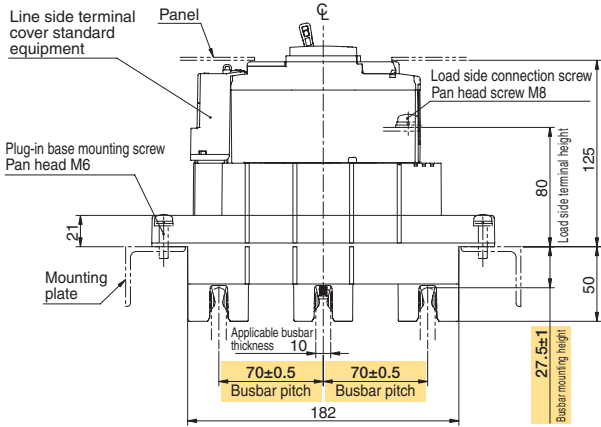
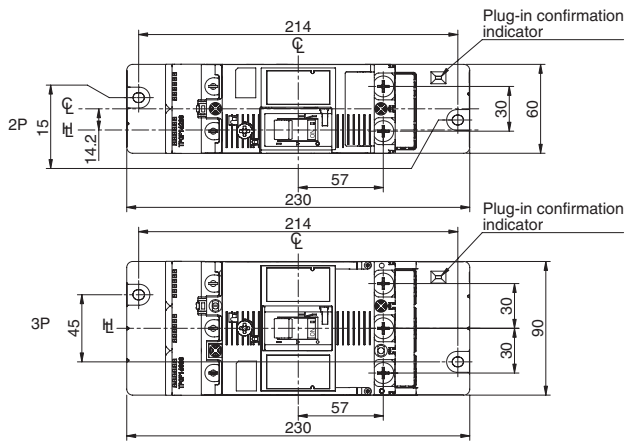
| Type of TemPlug | MCCB   | ELCB                         |
|-----------------|--|------------------------------|
| <b>T2PG12S</b>  | ZAS50-GF, ZAS100-GF, ZAS125-GF, S100-GF, S125-GF ] 3P only | ZS100-GF, ZS125-GF ] 3P only |



- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 3 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

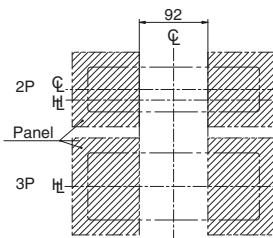
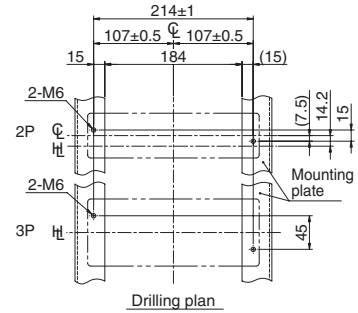
ASL : Arrangement Standard Line  
 ht : Handle Frame Centre Line  
 CL : Handle Centre Line

**TPPG12S**



**Applicable breakers**

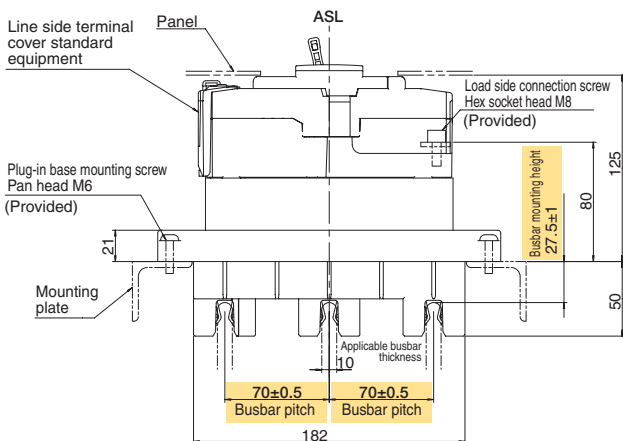
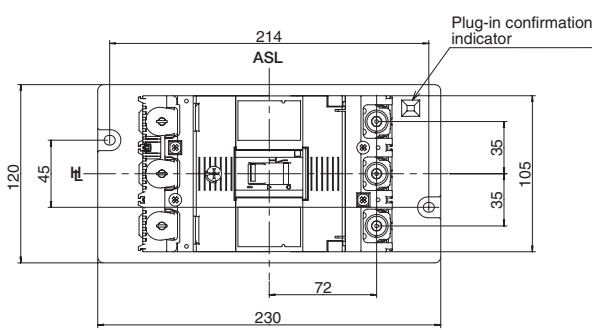
| Type of TempPlug | MCCB   |
|------------------|--|
| <b>TPPG12S</b>   | PS125-NF, PS50-PF, PS125-PF,<br>PS125-NE, PS125-PE<br>PS125-NN, PS125-NM } 3P only |



Note: Smart circuit breakers have a different panel cutout and are not compatible with panel cutout width 92mm.

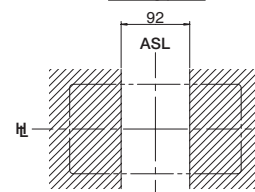
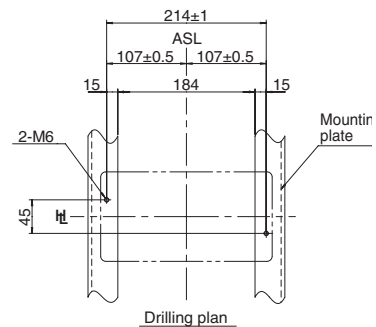
- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 3 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

**T2PG25LS**



**Applicable breakers**

| Type of TempPlug | MCCB   | ELCB                            |
|------------------|--|---------------------------------|
| <b>T2PG25LS</b>  | E250-SF, S250-SF, S250-SM, S250-SN,<br>ZAE250-SF, ZAS250-SF,<br>PS250-PF, PS250-NE, PS250-PE, PS250-NN | ZE250-SF,<br>ZS250-SF, ZS250-SM |

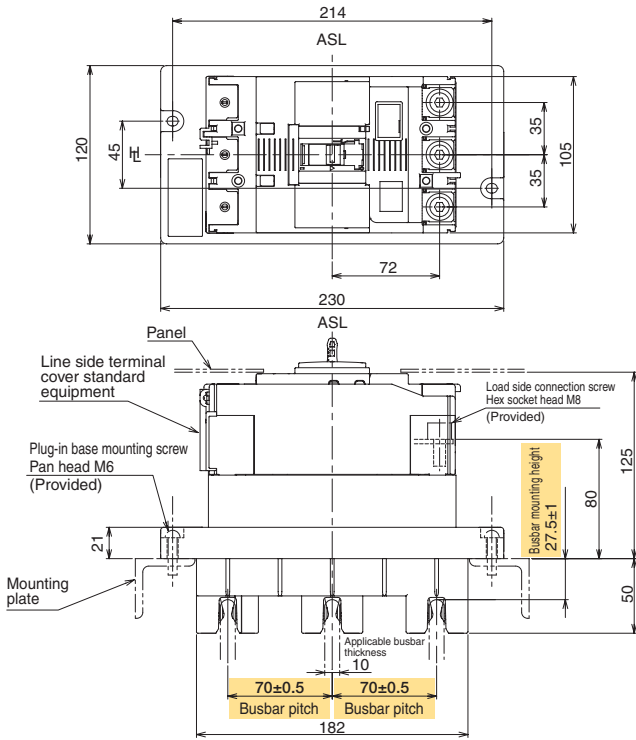


Note: Smart circuit breakers have a different panel cutout and are not compatible with panel cutout width 92mm.

- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 3 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

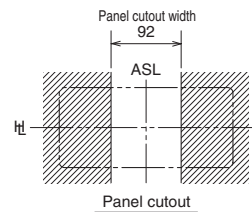
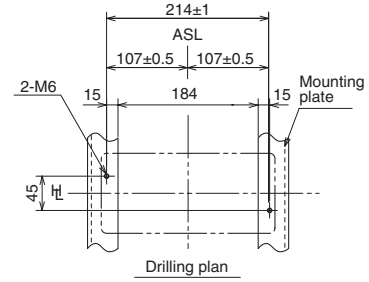
ASL : Arrangement Standard Line  
 H<sub>L</sub> : Handle Frame Centre Line  
 C<sub>L</sub> : Handle Centre Line

**T2PG25S**



**Applicable breakers**

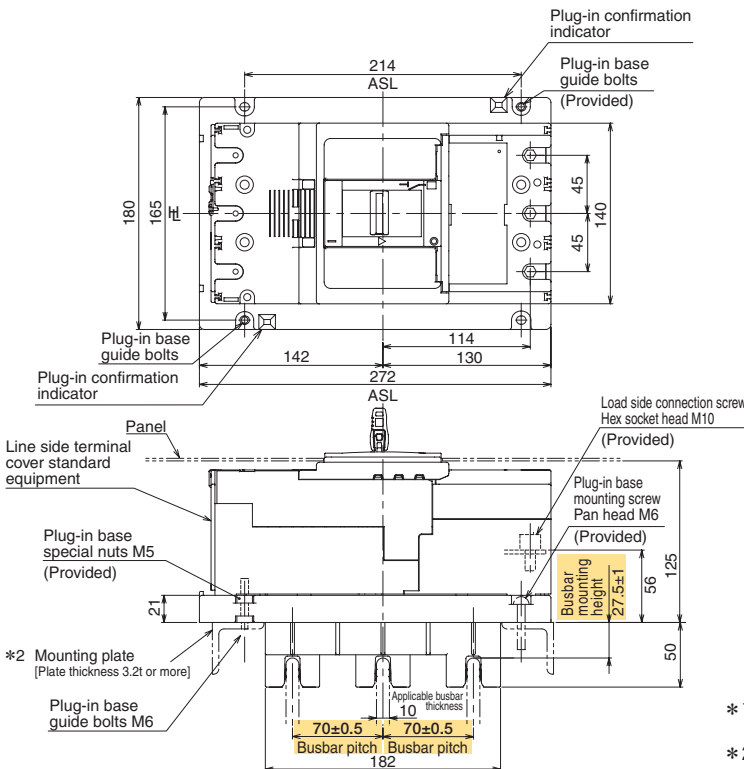
| Type of TemPlug | MCCB                 | ELCB               |
|-----------------|----------------------|--------------------|
| <b>T2PG25S</b>  | ZAS225-GF, ZAS250-GF | ZS225-GF, ZS250-GF |



- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 3 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

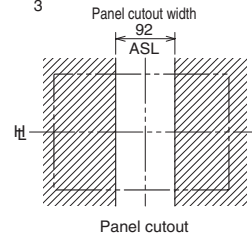
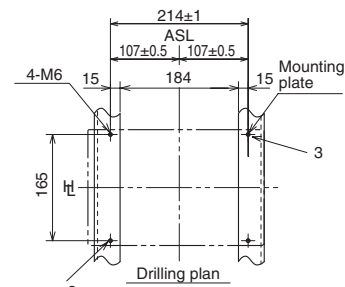
**T2PG40S**

ASL : Arrangement Standard Line  
 H<sub>L</sub> : Handle Frame Centre Line



**Applicable breakers**

| Type of TemPlug | MCCB                                     | ELCB                         |
|-----------------|--|------------------------------|
| <b>T2PG40S</b>  | ZAE400-NF, ZAS400-NF, ZAS400-GF, E400-NF | ZE400-NF, ZS400-NF, ZS400-GF |

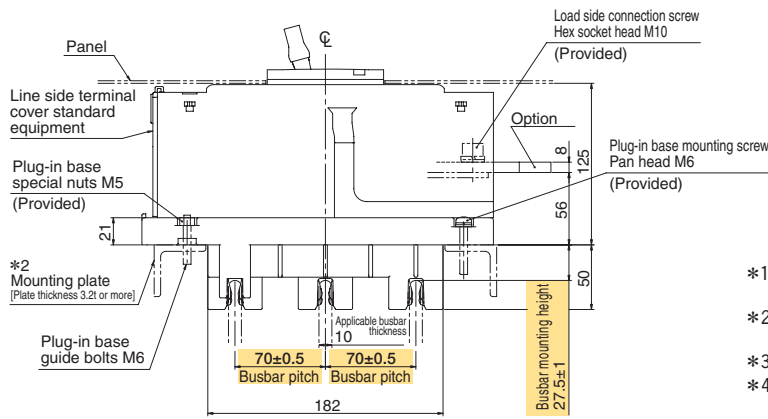
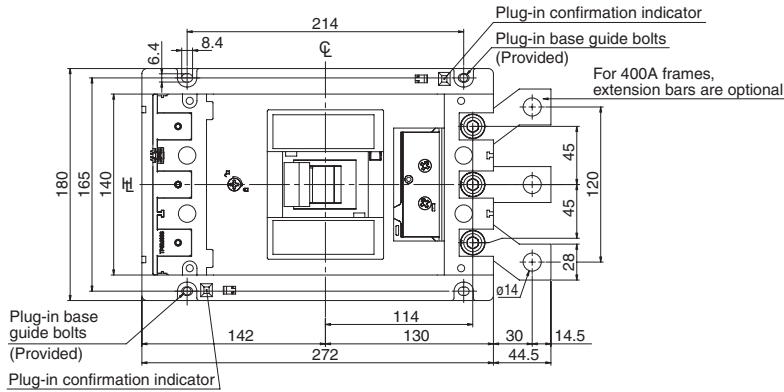


Note: High-Performance electronic circuit breakers have a different panel cutout and are not compatible with panel cutout width 92mm.

- \* 1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \* 2 When using a steel plate for the mounting angle, the thickness of the plate should be 3.2t or more.
- \* 3 Install the guide bolts in this position first and position them.
- \* 4 The busbar pitch ( $70 \pm 0.5$ ) and busbar mounting height ( $27.5 \pm 1$ ) are important dimensions.
- \* 5 If needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

ASL : Arrangement Standard Line  
 HL : Handle Frame Centre Line  
 CL : Handle Centre Line

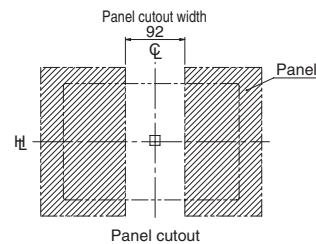
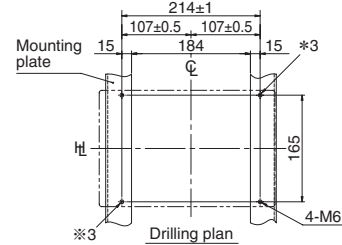
**TPPG40S**



**Applicable breakers**

| Type of TemPlug | MCCB   |
|-----------------|--|
| <b>TPPG40S</b>  | PS400-CF, PS400-NF, PS400-GF, PS400-NE, PS400-GE, PH400-CF①, PH400-CE①, PS400-NN, PS630-CF 500A, PS630-NF 500A, PS630-GF 500A, PS630-NN 500A, PH630-CF 500A① |

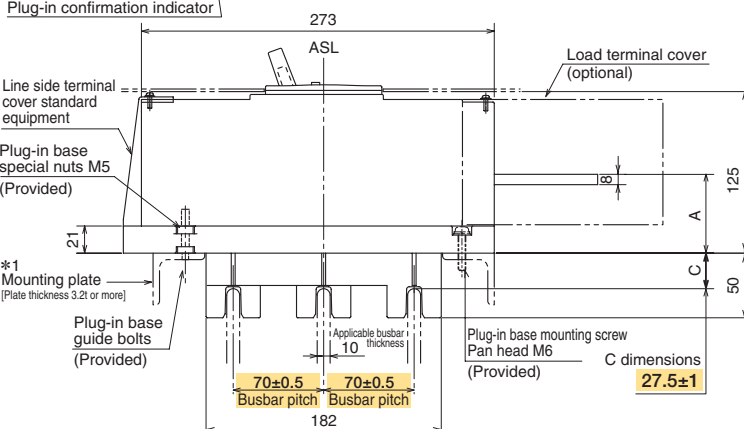
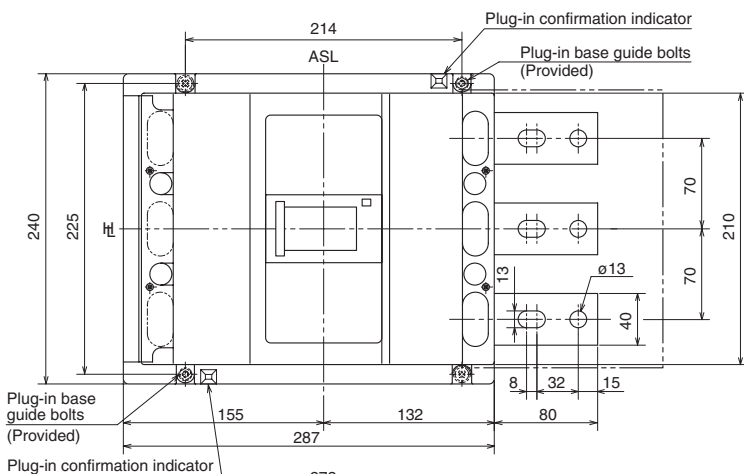
Note① : These are special types that can be used. However, due to the limitation of the short-time withstand current of the busbar, they cannot be applied to circuits with a short circuit breaking current exceeding 85kA.



- \*1 See the outline dimensions of the chapter 7 for the load side connection conductor preparation diagram.
- \*2 When using a steel plate for the mounting angle, the thickness of the plate should be 3.2t or more.
- \*3 Install the guide bolts in this position first and position them.
- \*4 The busbar pitch (70 ± 0.5) and busbar mounting height (27.5 ± 1) are important dimensions.
- \*5 For 400A frames, if needed please specify front-connected type with extension bar (optional) on the secondary side when ordering.

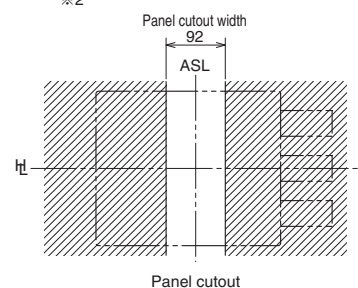
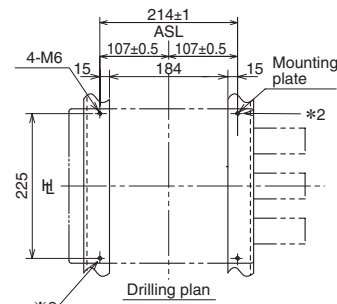
ASL : Arrangement Standard Line  
 HL : Handle Frame Centre Line

**T2PG63S**



**Applicable breakers**

| Type of TemPlug | MCCB                          | ELCB               | A (mm) |
|-----------------|-------------------------------|--------------------|--------|
| <b>T2PG63S</b>  | S630-CF, S630-NF, S630-GN     |                    | 61     |
|                 | S630-NE, ZAS630-CF, ZAS630-NF | ZS630-CF, ZS630-NF | 63     |



- \* 1 When using a steel plate for the mounting angle, the thickness of the plate should be 3.2t or more.
- \* 2 Install the guide bolts in this position first and position them.
- \* 3 The busbar pitch (70 ± 0.5) and busbar mounting height (27.5 ± 1) are important dimensions.

## 100A to 630A Frame

| Plug-in base type *1 | poles  | Applicable breakers   |  |  |   |  |   |
|----------------------|--------|---|--|--|---|--|---|
|                      |        | Moulded case circuit breakers   | Non-automatic trip breakers/<br>Switch disconnectors (3P only) | Circuit breakers with earth<br>leakage alarm (3P only) | Earth leakage circuit<br>breakers (3P only) | Moulded case circuit<br>breakers for motor<br>protection (3P only) | Earth leakage circuit<br>breakers for motor<br>protection (3P only) |
| T2PG05LS             | 2<br>3 | S50-SF,<br>S125-SF (15-50A)   |  | ZAS125-SF (15-50A)                                     | ZS50-SF,<br>ZS125-SF (15-50A)               |  | ZS100-SM<br>(16-45A)  |
| T2PG12LS             | 2<br>3 | S125-SF (60-125A)   | S125-SN  | ZAS125-SF (60-125A)                                    | ZS125-SF (60-125A)                          |  | ZS100-SM<br>(60-100A)   |
| T2PG12S              | 2<br>3 | S100-GF,<br>S125-GF   |  | ZAS50-GF, ZAS100-GF,<br>ZAS125-GF                      | ZS100-GF,<br>ZS125-GF                       |  |   |
| TPPG12S              | 2<br>3 | PS125-NF,<br>PS50-PF, PS125-PF<br>PS125-NF,<br>PS50-PF, PS125-PF,<br>PS125-NE*2,<br>PS125-PE*2  | PS125-NN   |  |   | PS125-NNM  |   |
| T2PG25H              | 3      | H100-NF*3*4, H125-NF*3*4,<br>H225-NF*3*4  |  |  |   |  |   |
| T2PG25LS             | 3      | E250-SF, S250-SF,<br>PS250-PF, PS250-NE*2,<br>PS250-PE*2  | S250-SN, PS250-NN  | ZAE250-SF,<br>ZAS250-SF                                | ZE250-SF,<br>ZS250-SF                       | S250-SM  | ZS250-SM  |
| T2PG25S              | 3      |   |  | ZAS225-GF, ZAS250-GF                                   | ZS225-GF, ZS250-GF                          |  |   |
| T2PG40S              | 3      | E400-NF   |  | ZAE400-NF, ZAS400-NF,<br>ZAS400-GF                     | ZE400-NF,<br>ZS400-NF, ZS400-GF             |  |   |
| TPPG40S              | 3      | PS400-CF, PS400-NF,<br>PS400-GF, PH400-CF*3,<br>PS400-NE*2, PS400-GE*2,<br>PH400-CE*2*3,<br>PS630-CF 500A, PS630-NF 500A,<br>PS630-GF 500A, PS630-NN 500A,<br>PH630-CF 500A*3 | PS400-NN,<br>PS630-NN 500A                                     |  |   |  |   |
| T2PG63S              | 3      | S630-CF, S630-NF,<br>S630-NE*2  | S630-GN  | ZAS630-CF,<br>ZAS630-NF                                | ZS630-CF, ZS630-NF                          |  |   |

Use full-round R5 or square R0.9 with a plate thickness of 10mm for the main busbar.

If used in a multi-stack, please consider the temperature of the busbar for a 30K rise under JIS C 4620.

\* 1 : The plug-in base is not supplied as a single item. Order together with the circuit breaker.

\* 2 : High-performance electronic circuit breakers and smart circuit breakers are not compatible with panel cutout width 92mm.

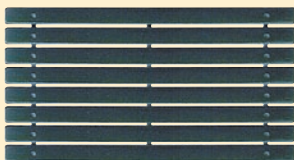
\* 3 : These are special types that can be used. However, due to the limitation of the short-time withstand current of the busbar, they cannot be applied to circuits with a short circuit breaking current exceeding 85kA.

\* 4 : Please contact us for the outline dimensions.

# OPTION *TemPlug 70*

## Blank cover for *TemPlug 70*

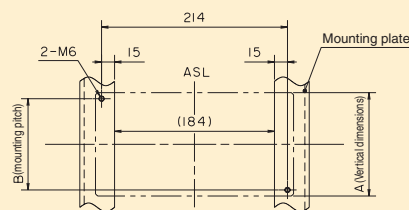
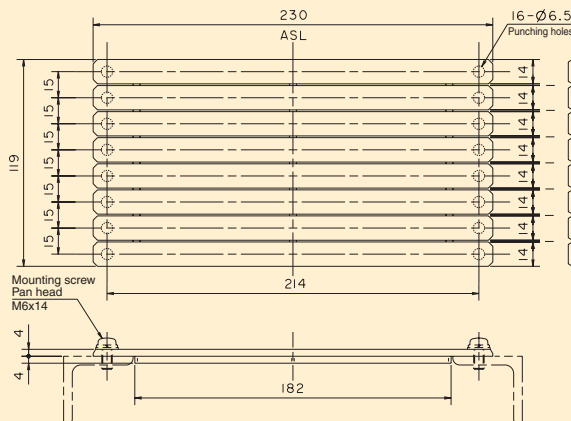
(Option)



A cover that covers the gap between the *TemPlug* and separates them from the busbar block.

It can be easily divided in 15mm increments, so cut it to fit the gap.

Type XDI-BCOVER

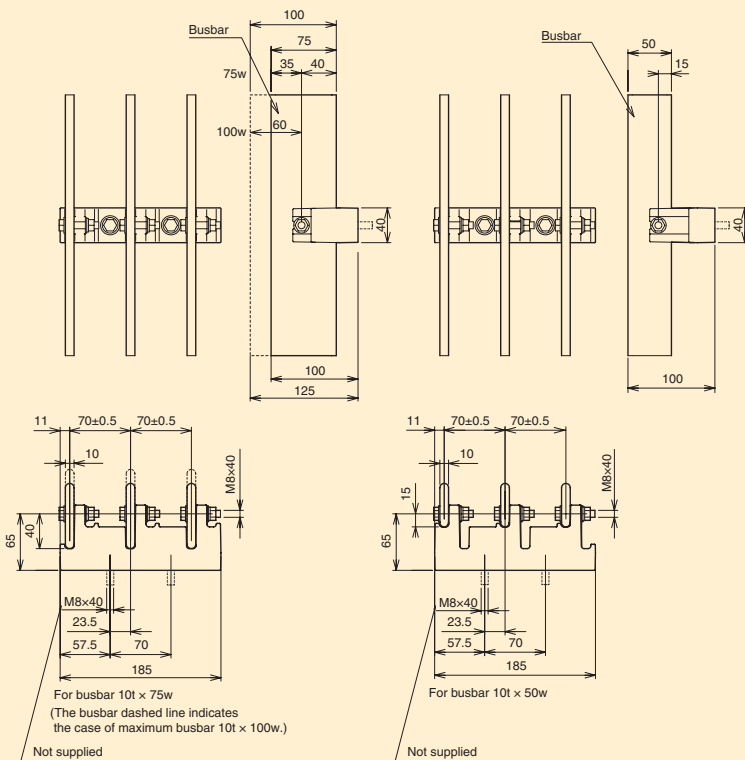
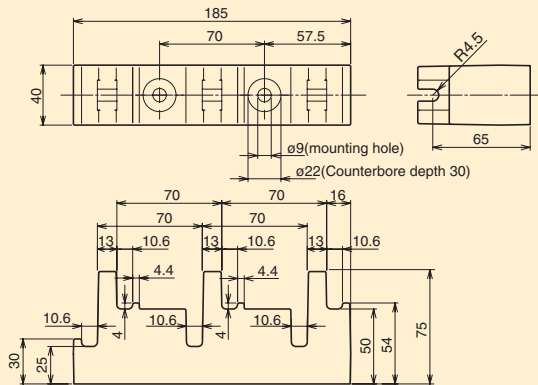


|                            |         |                       |
|----------------------------|---------|-----------------------|
| If folded into 1 in series | A=14.5  | B=0                   |
| If folded into 2 in series | A=29.5  | B=15                  |
| If folded into 3 in series | A=44.5  | B=30                  |
| If folded into 4 in series | A=59.5  | B=45                  |
| If folded into 5 in series | A=74.5  | B=60                  |
| If folded into 6 in series | A=89.5  | B=75                  |
| If folded into 7 in series | A=104.5 | B=90                  |
|                            | A=119   | B=105 for 8 in series |

## Busbar support for *TemPlug 70*

We recommend the use of a busbar support in order to achieve an accurate busbar pitch of 70mm.

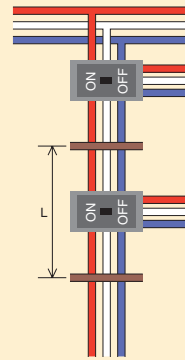
### Type BST 70



- Note1. When using a busbar of 10t x 125w or more, use a bushing type support, too.  
 Note2. When using a 50w or 75w busbar, the relationship between the busbar and the busbar support mounting hole is the same, and the busbar support can be mounted inversely in the horizontal direction.  
 Note3. The busbar support should be secured to a strong L-shaped angle or similar.

### When using *TemPlug 70*

- ① The recommended values for the busbar support interval to interrupt short-circuit current with an MCCB are as shown in the table below.



For rated breaking capacity 460V AC 50kA

| Busbar size | Busbar support interval L (mm) |      |          |
|-------------|--------------------------------|------|----------|
|             | 225A                           | 400A | 600/630A |
| 10t×50w     | 585                            | 405  | 345      |
| 10t×100w    | 735                            | 525  | 450      |

For rated breaking capacity 220V AC 85kA

| Busbar size | Busbar support interval L (mm) |      |          |
|-------------|--------------------------------|------|----------|
|             | 225A                           | 400A | 600/630A |
| 10t×50w     | 690                            | 525  | 390      |
| 10t×100w    | 885                            | 660  | 495      |

- ② In order to withstand a short-time current of 50kA for 1 second the distance between the busbar supports should be 300mm.

In order to withstand a short-time current of 85kA for 1 second the distance between the busbar supports should be 150mm.

### *TemPlug 70* confirmation jig

#### Type XDI-GAUGE



*TemPlug 70* confirmation jig is a Go/No Go gauge that determines whether the plug-in base is properly inserted into the busbar.

(Not available for T2PG05LS 3P, T2PG12LS 3P, T2PG12S 2P/3P and TPPG12S 2P/3P.)

## Busbar unit for *TemPlug 70*

We have prepared busbar units to standardize and shorten the production time for switchboards.

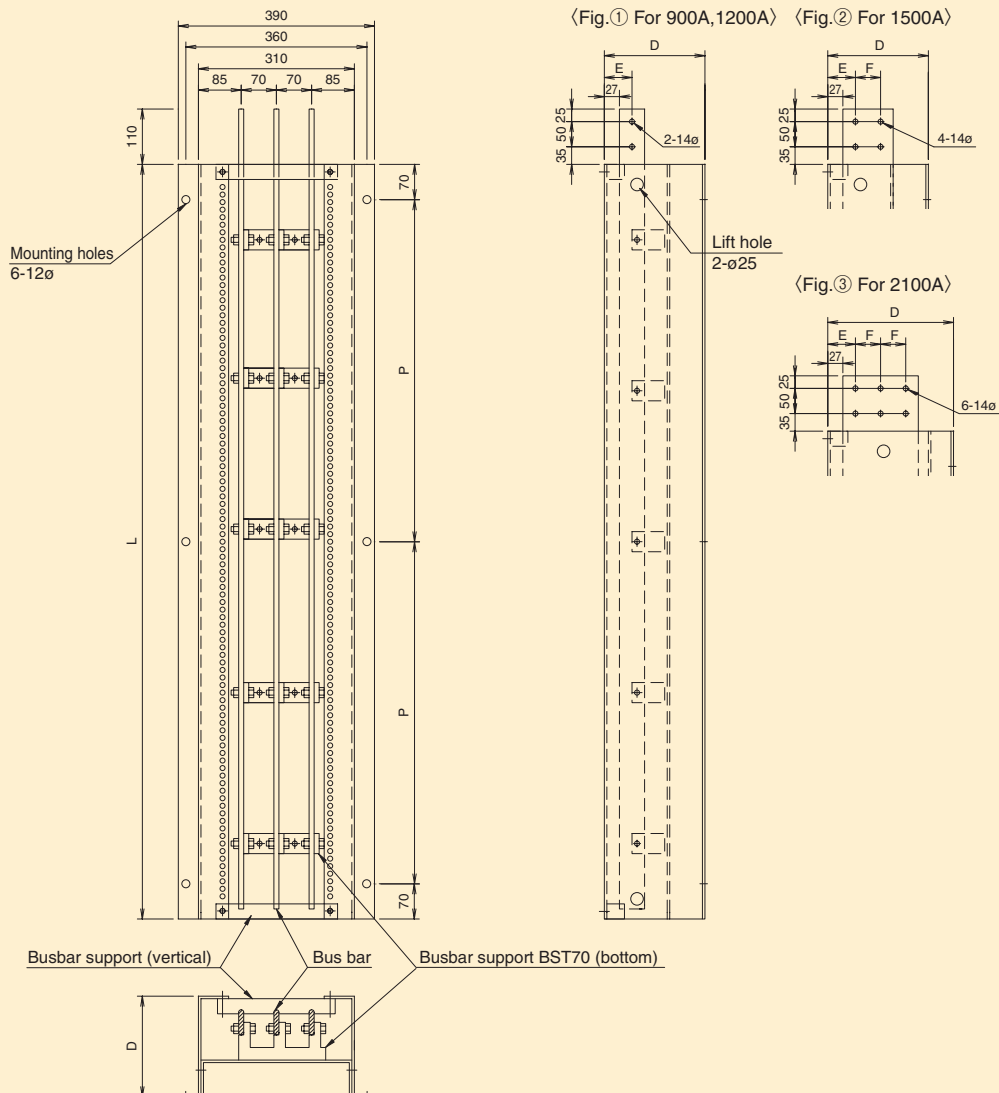
Every busbar unit is inspected before shipment for tolerances such as busbar pitch, busbar mounting height, and lateral dimensions of the busbar and plug-in base mounting screw holes, so you can be assured of product quality.

### Slim type branch dedicated type

The branch circuit breaker can be installed on the line side or load side, either on the left or right.

| Type         | Rated current | Busbar width (mm) | E (mm) | F (mm) | L (mm) | P (mm) | D (mm) | Short-time current |
|--------------|---------------|-------------------|--------|--------|--------|--------|--------|--------------------|
| BW 9-B-50S   | 900A          | 50 Fig.①          | 52     | —      | 1500   | 680    | 200    | 50kA 1sec          |
| BW12-B-50S   | 1200A         | 75 Fig.①          | 64.5   | —      |        |        |        |                    |
| BW15-B-50S   | 1500A         | 100 Fig.②         | 52     | 50     |        |        |        |                    |
| BW 9-B17-50S | 900A          | 50 Fig.①          | 52     | —      | 1700   | 780    | 200    |                    |
| BW12-B17-50S | 1200A         | 75 Fig.①          | 64.5   | —      |        |        |        |                    |
| BW15-B17-50S | 1500A         | 100 Fig.②         | 52     | 50     |        |        |        |                    |
| BW 9-B-85S   | 900A          | 50 Fig.①          | 52     | —      | 1500   | 680    | 200    | 85kA 1sec          |
| BW12-B-85S   | 1200A         | 75 Fig.①          | 64.5   | —      |        |        |        |                    |
| BW15-B-85S   | 1500A         | 100 Fig.②         | 52     | 50     |        |        |        |                    |
| BW21-B-85S   | 2100A         | 150 Fig.③         | 52     | 50     | 1700   | 780    | 200    |                    |
| BW 9-B17-85S | 900A          | 50 Fig.①          | 52     | —      |        |        |        |                    |
| BW12-B17-85S | 1200A         | 75 Fig.①          | 64.5   | —      |        |        |        |                    |
| BW15-B17-85S | 1500A         | 100 Fig.②         | 52     | 50     | 1700   | 780    | 250    | 85kA 1sec          |
| BW21-B17-85S | 2100A         | 150 Fig.③         | 52     | 50     |        |        |        |                    |

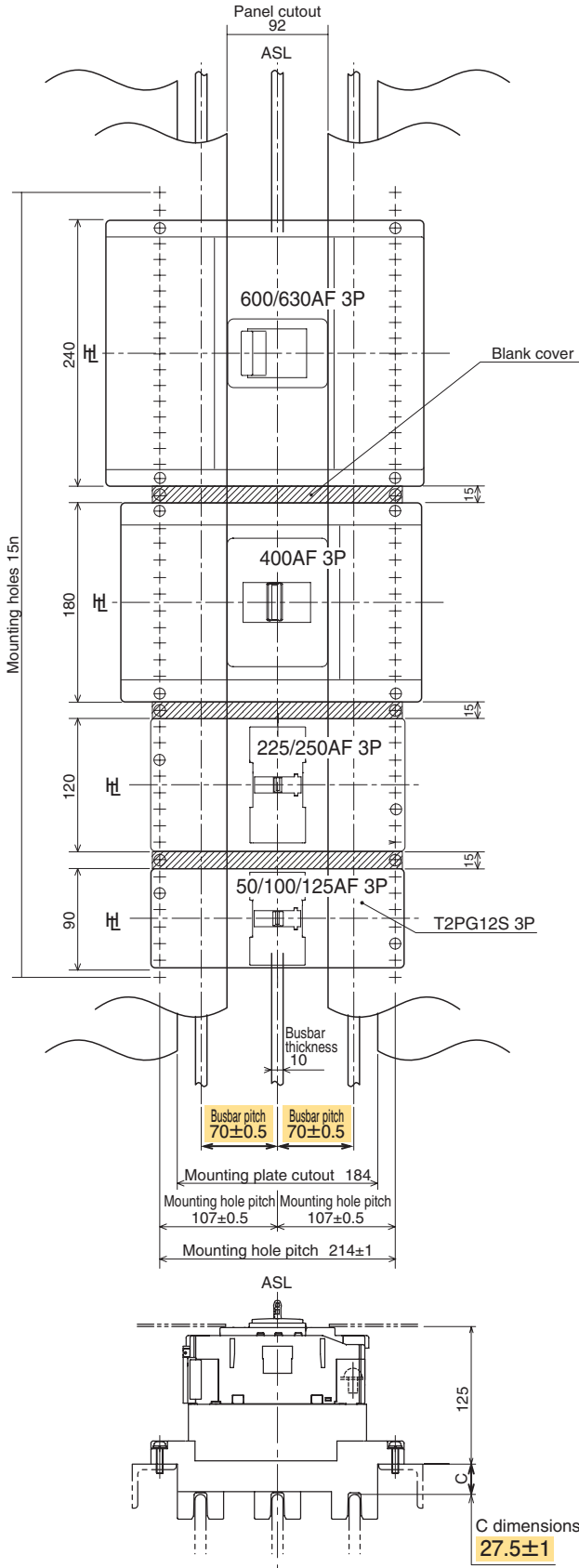
The outline drawing shows the case of a rated current of 900A and short-time current of 50kA 1sec.





## 100A to 630A Frame

### Circuit breaker mounting drawing

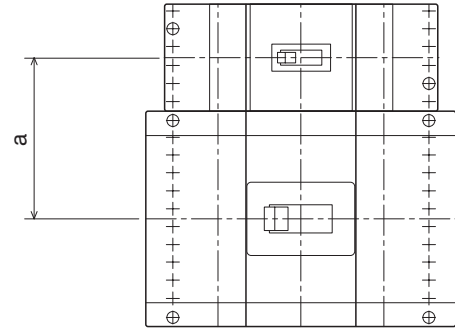


\* The busbar pitch (70±0.5) and busbar mounting height (27.5±1) are important dimensions.

### Circuit breaker centre-to-centre pitch

#### ■ For close fitting mounting

(Close fitting is possible in the case of lead wire draw-in. However, circuit breakers with earth leakage alarm except for ZAE250-SF and ZAS250-SF cannot be close fitted.)



#### a dimensions

| Circuit breaker frame size | 50/100/125AF 2P     | 50/100/125AF 3P  | 50/100/125AF 3P            | 225/250AF 3P             | 400AF 3P                  | 600/630AF 3P             |
|----------------------------|---------------------|--|----------------------------|--------------------------|---------------------------|--------------------------|
|                            | <i>TemPlug</i> Type | T2PG05LS 2P<br>T2PG12LS 2P<br>T2PG12S 2P<br>TPPG12S 2P | T2PG06LS 3P<br>T2PG12LS 3P | T2PG12S 3P<br>TPPG12S 3P | T2PG25LS 3P<br>T2PG25S 3P | T2PG40S 3P<br>TPPG40S 3P |
| 50/100/125AF 2P            | 60                  | 67.5   | 75                         | 90                       | 120                       | 150                      |
| 50/100/125AF 3P            | 67.5                | 75   | 82.5                       | 97.5                     | 127.5                     | 157.5                    |
| 50/100/125AF 3P            | 75                  | 82.5   | 90                         | 105                      | 135                       | 165                      |
| 225/250AF 3P               | 90                  | 97.5   | 105                        | 120                      | 150                       | 180                      |
| 400AF 3P                   | 120                 | 127.5  | 135                        | 150                      | 180                       | 210                      |
| 600/630AF 3P               | 150                 | 157.5  | 165                        | 180                      | 210                       | 240                      |

#### ■ When mounting a blank cover

(If the circuit breaker has a lead wire terminal block, use about one to three blank covers. (See the figure on the left))

#### a dimensions

| Circuit breaker frame size | 50/100/125AF 2P     | 50/100/125AF 3P  | 50/100/125AF 3P            | 225/250AF 3P             | 400AF 3P                  | 600/630AF 3P             |
|----------------------------|---------------------|--|----------------------------|--------------------------|---------------------------|--------------------------|
|                            | <i>TemPlug</i> type | T2PG05LS 2P<br>T2PG12LS 2P<br>T2PG12S 2P<br>TPPG12S 2P | T2PG06LS 3P<br>T2PG12LS 3P | T2PG12S 3P<br>TPPG12S 3P | T2PG25LS 3P<br>T2PG25S 3P | T2PG40S 3P<br>TPPG40S 3P |
| 50/100/125AF 2P            | 75                  | 82.5   | 90                         | 105                      | 135                       | 165                      |
| 50/100/125AF 3P            | 82.5                | 90   | 97.5                       | 112.5                    | 142.5                     | 172.5                    |
| 50/100/125AF 3P            | 90                  | 97.5   | 105                        | 120                      | 150                       | 180                      |
| 225/250AF 3P               | 105                 | 112.5  | 120                        | 135                      | 165                       | 195                      |
| 400AF 3P                   | 135                 | 142.5  | 150                        | 165                      | 195                       | 225                      |
| 600/630AF 3P               | 165                 | 172.5  | 180                        | 195                      | 225                       | 255                      |

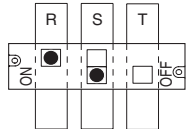
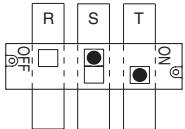
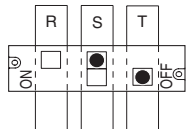
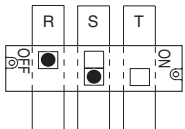
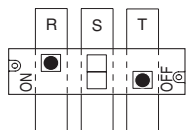
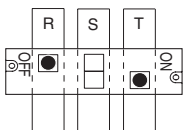
## Order Form

When ordering a *TemPlug*, please specify the "breaker type", "number of poles", "*TemPlug* series abbreviation" and "connection type" (for 2 poles). It is not necessary to fill in the individual type of *TemPlug* (plug-in base type) because we do not supply plug-in bases as a single item. We will deliver it as a set with the circuit breaker.

|                  | <i>TemPlug</i> series abbreviation |
|------------------|------------------------------------|
| <i>TemPlug70</i> | PG                                 |

When the number of poles is 2P, the following three types of plug-in base are available, depending on the phase to be connected.

Please specify which connection type.

| Connection type | For ON (line side) left mounting  | For ON (line side) right mounting  |
|-----------------|---|--|
| A               |  <p>R-S(N) phase connection</p>  |  <p>T-S(N) phase connection</p>  |
| B               |  <p>T-S(N) phase connection</p> |  <p>R-S(N) phase connection</p> |
| C               |  <p>R-T phase connection</p>   |  <p>R-T phase connection</p>   |

### Order code

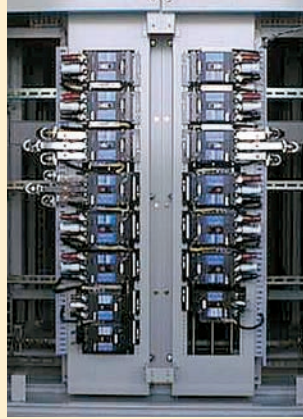
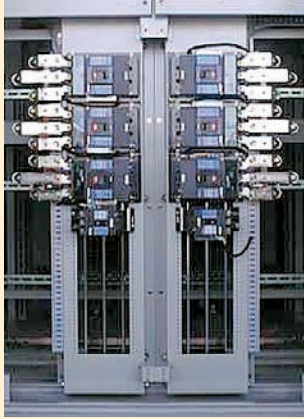
EX. 1

[PS125-NF] + [2P] + [PG] + [A]

EX. 2

[PS250-PF] + [3P] + [PG]

## Flexibility to change specifications



The system can easily accommodate changes to the circuit breakers or additions due to changes in load capacity, as well as changes in the use of the circuit breaker.

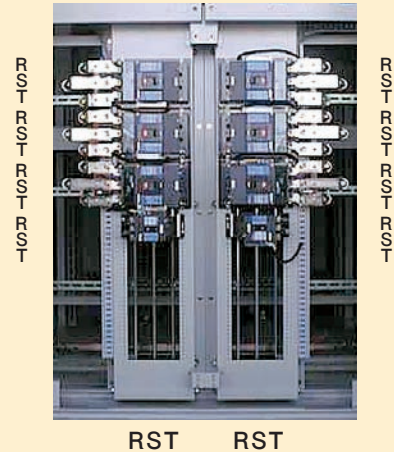
Note: We recommend turning off the power when replacing circuit breakers for safety. However, in emergencies or when it is impossible to turn off the power, it is possible to replace a circuit breaker when energised, provided that the breaker is turned off and the work is carried out with due consideration for safety.

## Miniaturisation of the switchboard



**TemPlug** plugs directly into the main busbar, so no space is needed for the branching busbar. This makes it possible to reduce the width of the switchboard.

## Standardisation of phase order



Regardless of the mounting orientation of the circuit breaker, the phase order of the load side can be standardized to R, S, T from the top.

**TemPlug** uses the contact part used in the motor control centre (MCC). Terasaki has developed this technology over many years in our marine switchboards.

- Short circuit test
- Short-time withstand current test
- Vibration test
- Insertion test
- Multi-step temperature test (photo on the right)

We conduct a variety of tests, such as:



Status of multi-step temperature test