

# ACCESSORIES

## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

Electrical Control Using Internally Mounted Accessories

Electrical control accessories for TemBreak 2 are designed with the installer in mind. Status and alarm contacts, remote tripping coils and undervoltage protection coils are of modular design and convenient to use.



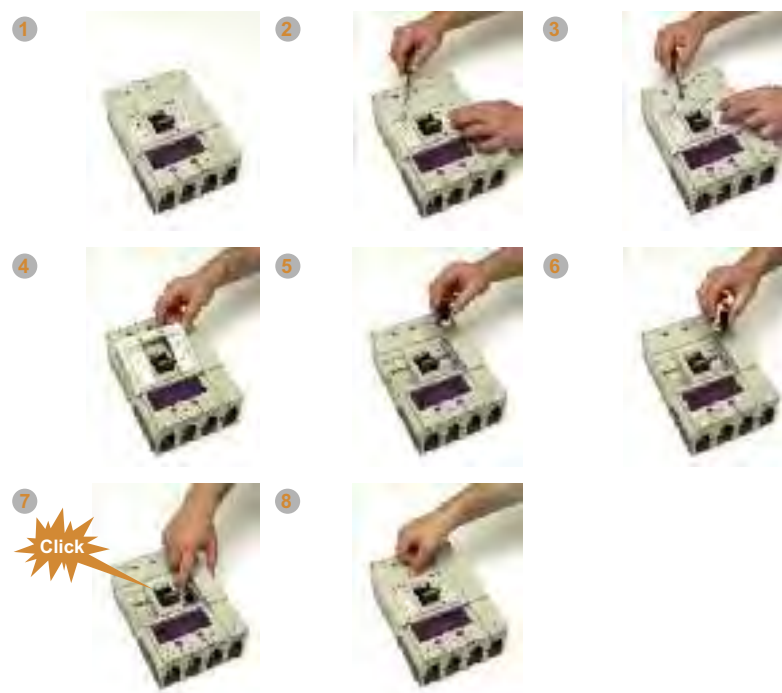
- 1) Heavy-duty auxiliary switch
- 2) Heavy-duty alarm switch
- 3) General-purpose auxiliary switch
- 4) General-purpose alarm switch
- 5) Shunt trip
- 6) Undervoltage trip

- All auxiliary, alarm switches and shunt trips are common up to 1600A. Undervoltage trips are split between two sizes: 125 to 630A and 800 to 1600A.
- All accessories are endurance tested to the same level as MCCBs.
- TemBreak 2 internal accessories are easily **field-installable**.
- All accessories are individually packaged and are supplied with fitting instructions.
- Control wiring is terminated on the accessory screw terminal. Alternatively a terminal block which clips to the side of the MCCB is available.



### Installing Accessories in a 4 pole S400 model

The internal accessories can be easily installed in the field without special tools or product training.



### Easy field-Installation of Accessories

- Internal accessory can be simply plugged into position.
- No tools are required for this, except a screwdriver to lift the MCCB front cover clips.
- Accessories fit with a firm click when installed correctly.
- Colour coding of accessories helps identification and installation.

## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

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Valid Maximum Accessory Combinations

| Frame Reference                                                                                                  | TB2 S125<br>TB2 S250<br>TB2 S/H/L 250                                                                                                            | TB2 H/L400<br>TB2 E/S 630                                       | TB2 H/L 800<br>TB2 1000                 | TB2 1250<br>TB2 1600 |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|----------------------|
|                                                                                                                  | S125<br>H125<br>L125<br>VS125<br>ZE125 **<br>ZS125 **<br>S160<br>H160<br>L160<br>PVS160<br>S250<br>H250<br>L250<br>VS250<br>ZE250 **<br>ZS250 ** | E400<br>E630<br>S400<br>S630<br>H400<br>L400<br>PVS400<br>VE400 | S800<br>H800<br>L800<br>S1000<br>PVS800 | S1250<br>S1600       |
| <div>General Purpose Auxiliary Switch</div> <div>General Purpose Alarm Switch</div> <div>Shunt Trip</div>        |                                                                                                                                                  |                                                                 |                                         |                      |
| <div>General Purpose Auxiliary Switch</div> <div>General Purpose Alarm Switch</div> <div>Undervoltage Trip</div> |                                                                                                                                                  |                                                                 |                                         |                      |
| <div>Heavy Duty Auxiliary Switch</div> <div>Heavy Duty Alarm Switch</div> <div>Shunt Trip</div>                  |                                                                                                                                                  |                                                                 |                                         |                      |
| <div>Heavy Duty Auxiliary Switch</div> <div>Heavy Duty Alarm Switch</div> <div>Undervoltage Trip</div>           |                                                                                                                                                  |                                                                 |                                         |                      |

- Auxiliary Switch
- Alarm Switch
- Shunt Trip
- Undervoltage Trip

- General purpose and heavy duty status indication switches cannot be mixed in the same MCCB.
- It is not possible to install a shunt trip and an undervoltage trip in an MCCB as they occupy the same location. Undervoltage trips can provide remote tripping if necessary by wiring a normally closed contact or pushbutton in series with the protected supply.
- Undervoltage trips with time delays require an external time delay controller which clips to the side of the MCCB.

\*\* Shunt trip and undervoltage cannot be installed in this model.

# ACCESSORIES

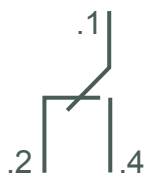
## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

Electrical Control Using Internally Mounted Accessories

### Status Indication Switches



General Purpose Auxiliary Switch



*Terminal Designations and Function of General Purpose Auxiliary Switch*

OFF, Trip

#### General Purpose Auxiliary Switch (AX)

An auxiliary switch electrically indicates the ON or OFF status of the MCCB. The general purpose type is a changeover switch with 3 terminals.

A microcurrent version is available for switching currents as low as 1mA.

Auxiliary switches are colour coded grey. The cable capacity of the terminals is 0.5 to 1.25mm<sup>2</sup>, bare cable.

The general purpose auxiliary switch meets the requirements of IEC 61058-1.



General Purpose Alarm Switch



*Terminal Designations and Function of General Purpose Alarm Switch*

Trip

#### General Purpose Alarm Switch (AL)

An alarm switch electrically indicates the TRIP status of the MCCB. The general purpose type is a changeover switch with 3 terminals.

A microcurrent version is available for switching currents as low as 1mA.

Alarm switches are colour coded grey and black. The cable capacity of the terminals is 0.5 to 1.25mm<sup>2</sup>, bare cable

The general purpose alarm switch meets the requirements of IEC 61058-1.

| General purpose auxiliaries and alarm switch ratings |                |                |           |                |                |                  |
|------------------------------------------------------|----------------|----------------|-----------|----------------|----------------|------------------|
| Volts (V)                                            | AC             |                | Volts (V) | DC             |                | Minimum Load     |
|                                                      | Amperes (A)    |                |           | Amperes (A)    |                |                  |
|                                                      | Resistive Load | Inductive Load |           | Resistive Load | Inductive Load |                  |
| 440                                                  | -              | -              | 250       | -              | -              | 100mA at 15V DC. |
| 240                                                  | 3              | 2              | 125       | 0.4            | 0.05           |                  |
| 110                                                  | 3              | 2              | 30        | 3              | 2              |                  |

| Microcurrent versions |                          |  |
|-----------------------|--------------------------|--|
| Volts (V)             | DC                       |  |
|                       | Amperes (A)              |  |
|                       | Resistive Load           |  |
| 30                    | 0.1                      |  |
|                       | 1mA at 5V DC and 30V DC. |  |

## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

### Connection and Mounting

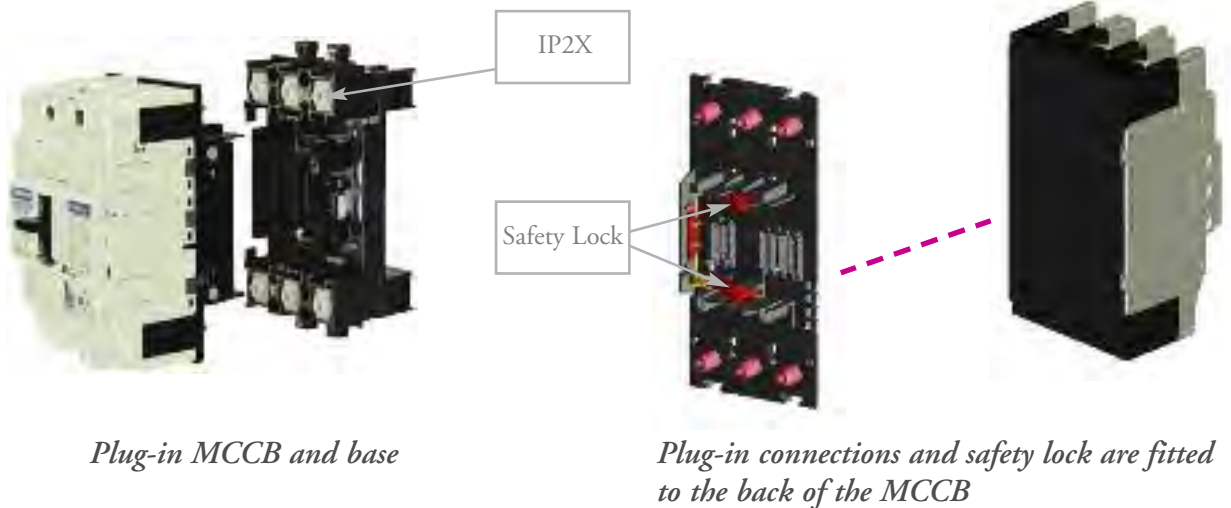
#### Plug-in Mounting

The plug in mounting system allows fast replacement of the MCCB body without the need to disturb the terminations. Solid conductors or cables terminated with compression terminals can be used.

#### Plug-In Safety Lock



The plug-in MCCB body is automatically locked to the base when the contacts are closed (toggle ON). It cannot be removed unless the contacts are in the isolated position (toggle OFF or TRIPPED). This system ensures safe removal of the MCCB from the base. Plug-in safety lock is available from 125A to 800A frame models.



The connection bars for plug-in bases are optional and can be configured in the field either for front or rear access. The illustrations below show possible mounting and connection options for plug in bases. These mounting and connection options are available from 125A to 800A frame models.



1. Mounted on base plate with connection bars mounted for front access. Insulation plates are supplied as standard and must be fitted.
2. Terminations in separate compartment. Connection bars are mounted for top access at the top and rear access at the bottom.
3. Mounted on angle bars. Connection bars are mounted for rear access.

Note: Plug-in mounting for 1250A frame model is available for only "Mounted on angle bars", and safety trip can be specified as option.

# INSTALLATION

## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

### Connection and Mounting

#### Mounting on 25mm DIN Rail

The DIN rail adaptor is easily fitted to the rear of 3 pole S125 and S250 models to allow clip mounting of the MCCB to 35mm DIN rail.

The 45mm cutout of TemBreak 2 devices makes them suitable for mounting alongside modular devices in distribution boards.



### Door Flanges

A range of flanges which improves the appearance of door cutouts is available. These are suitable for toggle-operated and motor-operated MCCBs and switch-disconnectors.

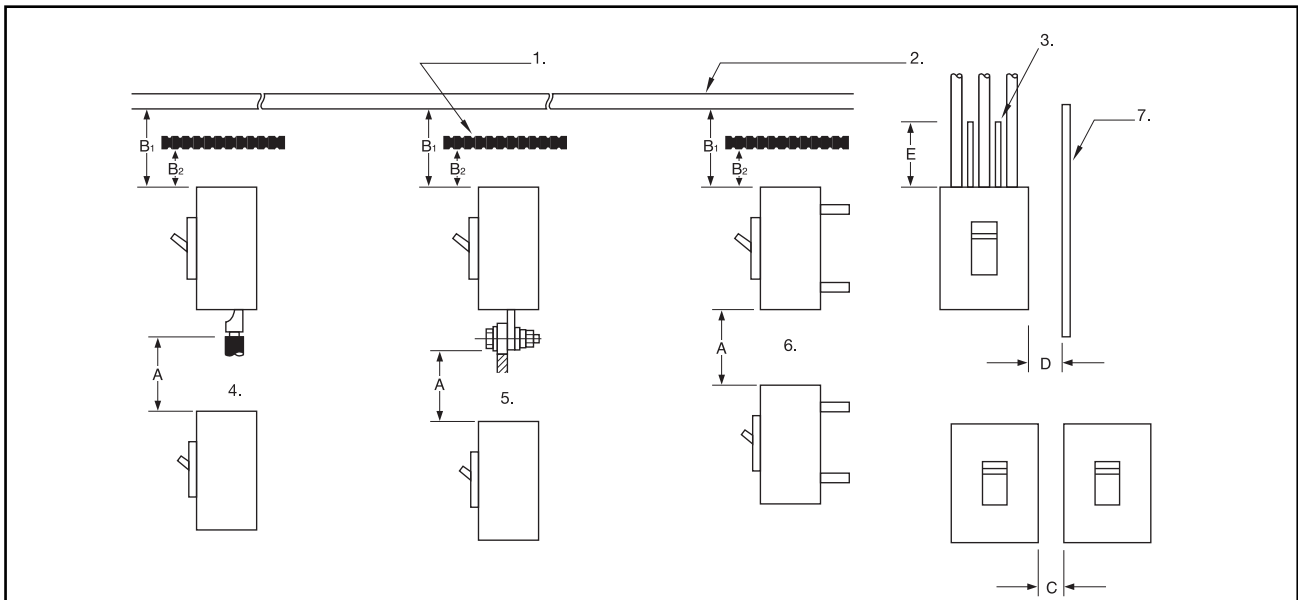
## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

### Insulation Distances

The insulation distances between the MCCB and earthed metal parts and insulators shown in this section must be maintained to prevent arcing faults occurring due to conductive ionised gas. In cases where other specifications require different insulation distances to those shown here, the greater distance must be maintained. In cases where two different models are installed one above the other, the insulation distance between the two models should be as for the lower model.

### ATTENTION

Exposed conductors must be insulated up to the breaker terminals. Interpole barriers or optional terminal covers are recommended. If optional terminal covers are used, insulate the exposed conductor until it overlaps the terminal cover.



1. Insulation plate
2. Top plate (earthed metal)
3. Interpole barrier
4. Front-connected type
5. Front-connected type with extension bar
6. Rear-connected type, plug-in type
7. Side panel
8. A. Distance from lower breaker to exposed live part of upper breaker terminal (front-connected type) or distance from lower breaker to end face of upper breaker (rear-connected type or plug-in type)
- B1. Distance from end face of breaker to top plate
- B2. Distance from end face of breaker to insulation plate
- C. Gap between breakers
- D. Distance from side of breaker to side panel (earthed metal)
- E. Dimensions of insulation over exposed conductors

# INSTALLATION

## TEMBREAK 2 MCCBs AND SWITCH DISCONNECTORS

Insulation Distance in mm (At 690V AC Maximum) Note (5)

| Model | Type | A      | B1    | B2  | C (4) | D   | E    |
|-------|------|--------|-------|-----|-------|-----|------|
| S125  | NJ   | 50     | 40(2) | 10  | 0     | 25  | *(1) |
| S125  | GJ   | 75     | 45    | 25  | 0     | 25  | *(1) |
| H125  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| L125  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| L125  | PJ   | 120    | 120   | 80  | 0     | 50  | *(1) |
| S160  | NJ   | 50     | 40    | 30  | 0     | 25  | *(1) |
| S160  | GJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| H160  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| L160  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| S250  | NJ   | 50     | 40    | 30  | 0     | 25  | *(1) |
| S250  | NE   | 50     | 40    | 30  | 0     | 25  | *(1) |
| S250  | GJ   | 100    | 80    | 30  | 0     | 25  | *(1) |
| S250  | GE   | 100    | 80    | 30  | 0     | 25  | *(1) |
| S250  | PE   | 100    | 80    | 60  | 0     | 50  | *(1) |
| H250  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| H250  | NE   | 100    | 80    | 60  | 0     | 50  | *(1) |
| L250  | NJ   | 100    | 80    | 60  | 0     | 50  | *(1) |
| E400  | NJ   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | CJ   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | NJ   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | GJ   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | GE   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | PJ   | 100    | 80    | 40  | 0     | 30  | *(1) |
| S400  | PE   | 100    | 80    | 40  | 0     | 30  | *(1) |
| H400  | NE   | 120    | 120   | 80  | 0     | 80  | *(1) |
| L400  | NE   | 120    | 120   | 80  | 0     | 80  | *(1) |
| L400  | PE   | 120    | 120   | 80  | 0     | 80  | *(1) |
| E630  | NE   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S630  | CE   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S630  | GE   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S800  | CJ   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S800  | NJ   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S800  | NE   | 120    | 100   | 80  | 0     | 80  | *(1) |
| S800  | RJ   | 150    | 120   | 80  | 0     | 80  | *(1) |
| S800  | RE   | 150    | 120   | 80  | 0     | 80  | *(1) |
| H800  | NE   | 120(3) | 120   | 80  | 0     | 80  | *(1) |
| L800  | NE   | 120(3) | 120   | 80  | 0     | 80  | *(1) |
| L800  | PE   | 200(3) | 200   | 160 | 0     | 100 | *(1) |
| S1000 | SE   | 150    | 120   | 80  | 0     | 80  | *(1) |
| S1000 | NE   | 150    | 120   | 80  | 0     | 80  | *(1) |
| S1250 | SE   | 150    | 120   | 80  | 0     | 80  | *(1) |
| S1250 | NE   | 150    | 120   | 80  | 0     | 80  | *(1) |
| S1250 | GE   | 150    | 150   | 100 | 0     | 100 | *(1) |
| S1600 | SE   | 150    | 150   | 100 | 0     | 100 | *(1) |
| S1600 | NE   | 150    | 150   | 100 | 0     | 100 | *(1) |

- \*Note:** (1) Insulate the exposed conductor until it overlaps the moulded case at the terminal, or the terminal cover.  
 (2) 10mm at 440V AC Maximum.  
 (3) Take care that arc gases are emitted to both line and load sides.  
 (4) If using extension bars (optional), ensure the insulation distance for the application.  
 (5) Contact Terasaki for model types VS125-NJ and VS250-NJ.