TEMBREAK 2

MOULDED CASE CIRCUIT BREAKERS
16A TO 630A

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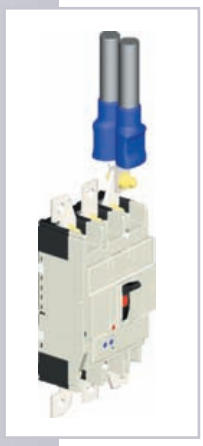


TEMBREAK 2

MINI MOULDED CASE CIRCUIT BREAKERS
10A TO 100A

8. TemBreak 2 MINI Moulded Case Circuit Breakers

TEMBREAK

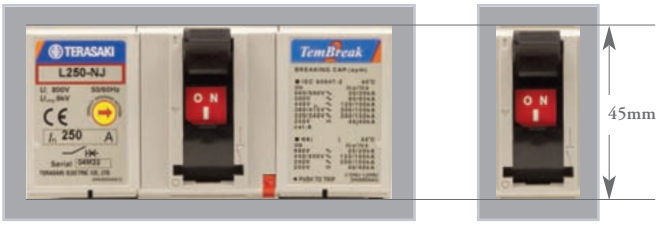
MOULDED CASE CIRCUIT BREAKERS
630A TO 1600A

9. TemBreak Moulded Case Circuit Breakers

10. Order Codes

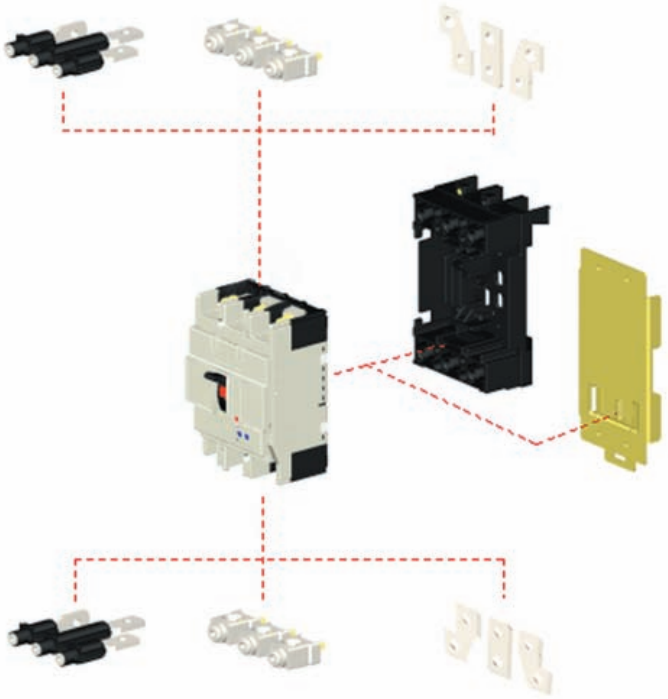
CONNECTION AND MOUNTING OPTIONS AND ACCESSORIES

TemBreak 2 MCCBs connection and mounting accessories facilitate easy installation in any arrangement. Breakers and accessories are easy to fit. They are designed to provide safe and secure termination and mounting points. 125A and 160A/250A frame models have a choice of 45mm front cutout patterns



Optional 45mm Cutout Patterns

Connection and mounting options overview diagram



Overview of Connection and Mounting Accessories

Please refer to Section 2, Ratings and Specifications, for details of the connection and mounting options which are available for each model.

Please refer to Section 7, Dimensions, for detailed dimensions of connection and mounting options and accessories.

Note that one set of mounting screws is supplied as standard with every circuit breaker or switch disconnector purchased.

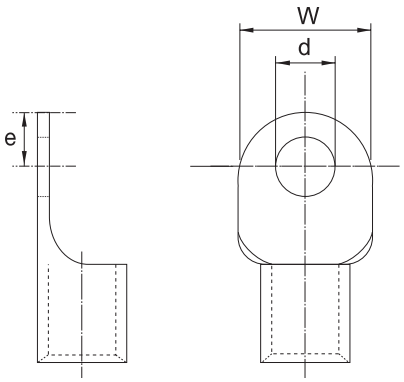
CONNECTION AND MOUNTING OPTIONS AND ACCESSORIES

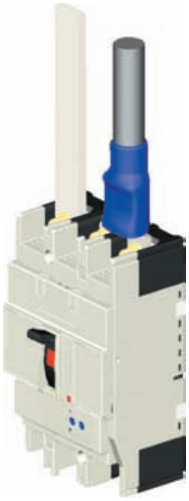
Connection of Busbars and Terminated Cables

This connection method is standard for all **front connected** (FC) MCCB models. Solid conductors or cables terminated with crimp lug terminals can be used.

Serrated Terminal Surface

Each terminal on 160A and 250A models has a serrated surface. This provides excellent grip for heavy cables terminated with crimp lug terminals, thereby preventing sideways rotation of the lug.

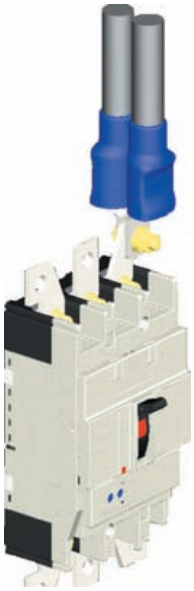




Maximum Dimensions of Compression Terminals			
Frame Size (A)	125*	160 & 250	400 & 630
Width, W (mm)	17	25	25
Diameter, d (mm)	9	9	11
Maximum from centre to tip, e(mm)	8.5	10	12

Connection of Large Conductors and Multiple Conductors

Flat bars (FB) are terminal extensions which can be fitted to line or load side terminals and are used to connect large conductors and multiple conductors. Available for field fitting in sets of 3 or 4 bars.



*H125 and L125 are 250A frame size

CONNECTION AND MOUNTING OPTIONS AND ACCESSORIES

Direct Entry of Stranded Cable

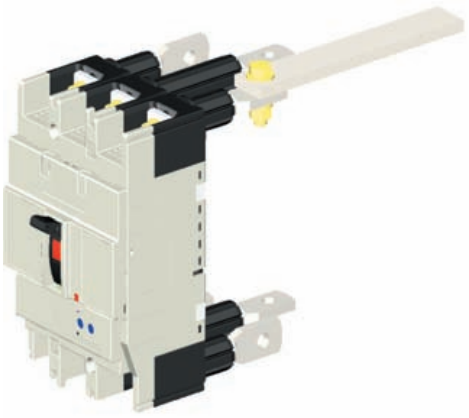
Solderless clamp terminals (FW) can be used to secure stranded cable directly to the MCCB. Available for field fitting in sets of 3 or 4.

MCCB Model	Cable Capacity (mm^2)
E125, S125, S125-NF	1.5 to 50 (1 cable)
H125, L125, S160-NF	1.5 to 70 (1 cable)
S160, E250, S250, H250, L250	35 to 120 (1 cable)
E400, S400, H400, L400	80 to 240 (1 cable)
	60 to 120 (2 cables)

Termination in Separate Compartment

Rear connections (RC) allow termination of conductors in a different switchboard compartment to the MCCB body.

The terminal bar can be rotated in steps of 45 degrees in the field.



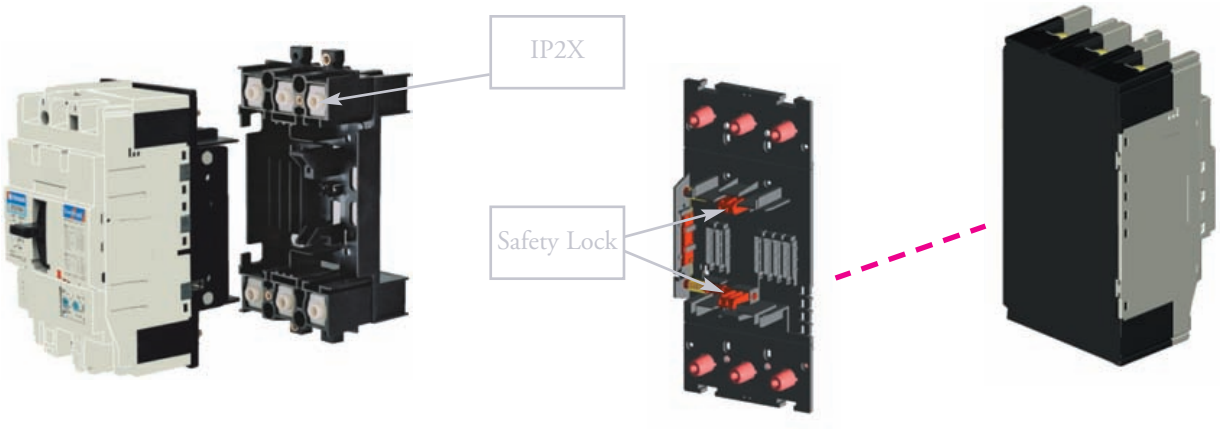
CONNECTION AND MOUNTING OPTIONS AND ACCESSORIES

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

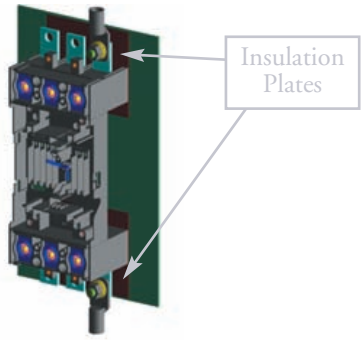
The plug-in MCCB body is **automatically locked to the base** when the contacts are closed (toggle ON). It cannot be removed unless the contacts are in the isolated position (toggle OFF or TRIPPED). This system ensures safe removal of the MCCB from the base.



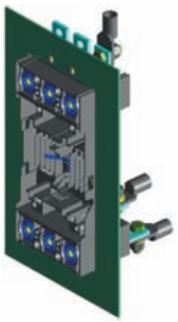
Plug-in MCCB and base

Plug-in connections and safety lock are fitted to the back of the MCCB

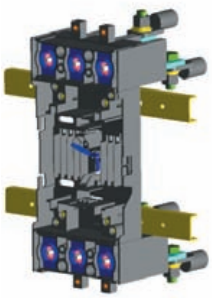
The connection bars for plug-in bases are optional and can be configured in the field either for front or rear access. The illustrations below show possible mounting and connection options for plug in bases.



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.

CONNECTION AND MOUNTING OPTIONS AND ACCESSORIES

Mounting on 35mm DIN Rail

The DIN rail adaptor is easily fitted to the rear of 3 pole E125 and S125 models to allow clip mounting of the MCCB to 35mm DIN rail.

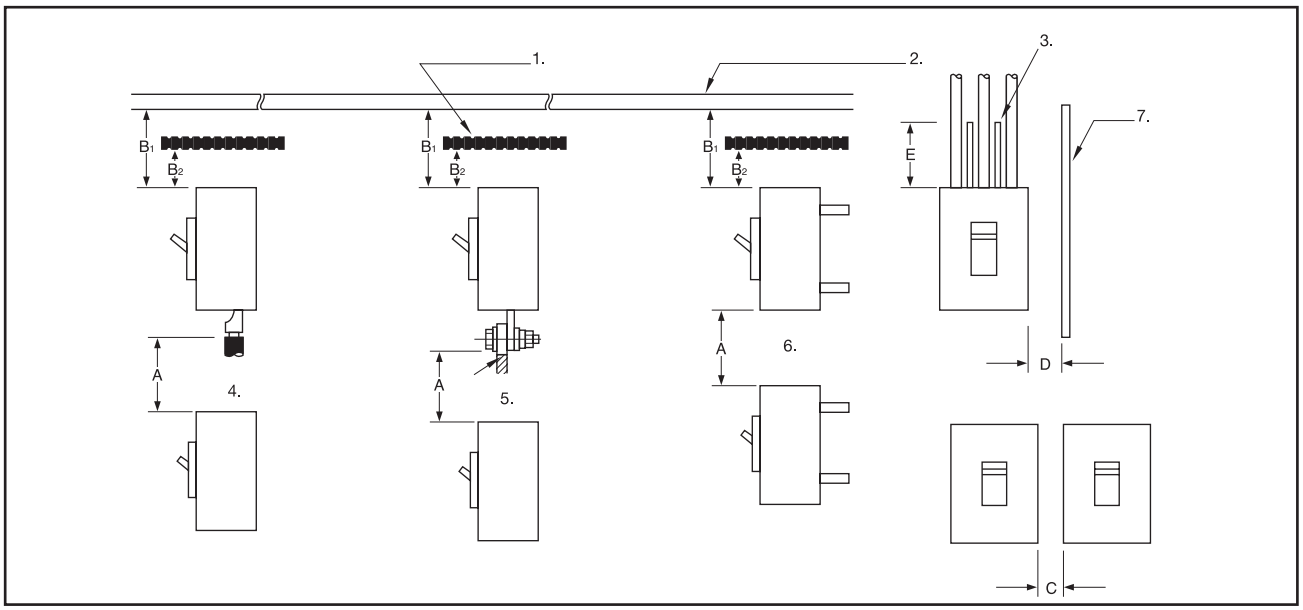
The 45mm cutout of TemBreak 2 devices makes them suitable for mounting alongside modular devices in distribution boards.

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 barrier 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. Insulation tube or tape
4. Front-connected type
5. Front-connected type with terminal 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

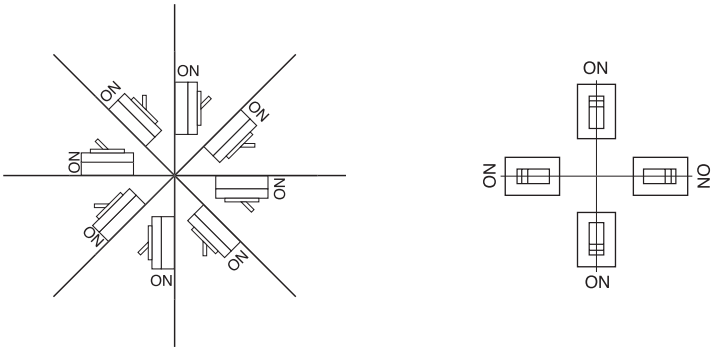
INSULATION DISTANCE IN mm (AT 440V AC MAXIMUM)

Model	Type	A	B1	B2	C	D	E
E125	NJ	50	10	10	0	25	*(1)
S125	NF	50	10	10	0	25	*(1)
S125	NJ	50	10	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)
S160	NF	50	40	40	0	50	*(1)
S160	NJ	50	40	40	0	50	*(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)
E250	NJ	50	40	40	0	50	*(1)
S250	NJ	50	40	40	0	50	*(1)
S250	GJ	100	80	60	0	50	*(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	60	0	80	*(1)
S400	CJ	100	80	60	0	80	*(1)
S400	NJ	100	80	60	0	80	*(1)
S400	GJ	100	80	60	0	80	*(1)
S400	GE	100	80	60	0	80	*(1)
H400	NJ	120	120	80	0	80	*(1)
H400	NE	120	120	80	0	80	*(1)
L400	NJ	120	120	80	0	80	*(1)
L400	NE	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)

***Note:** (1) Insulate the exposed conductor until it overlaps the moulded case at the terminal, or the terminal cover.

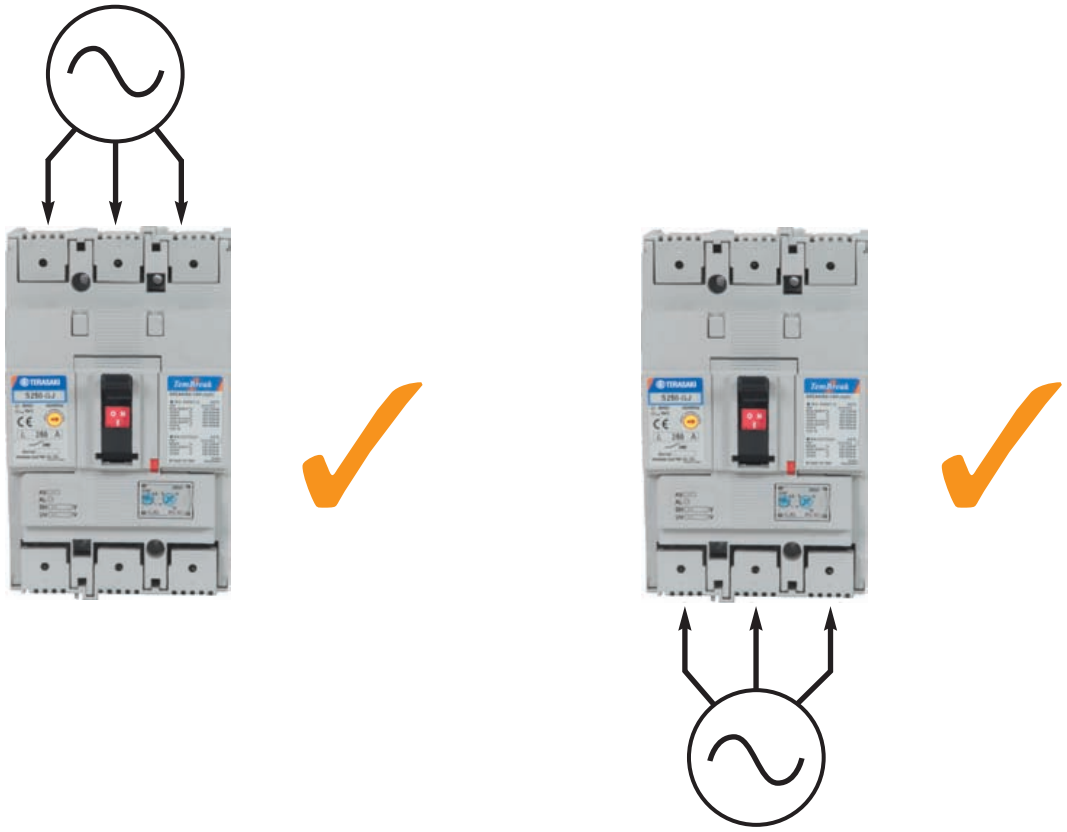
MOUNTING ANGLE

TemBreak 2 MCCBs may be mounted at any angle without affecting performance.



Mounting angle does not affect performance.

DIRECTION OF POWER SUPPLY



Power can be supplied through TemBreak 2 MCCBs in either direction without loss of performance.

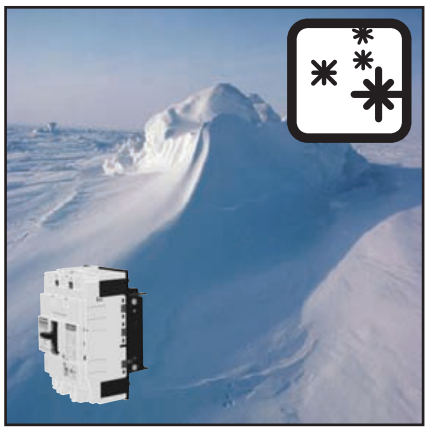
STANDARD INSTALLATION ENVIRONMENT AND SPECIAL TREATMENTS

TemBreak 2 MCCBs are intended for installation in the following conditions as standard:

- Operating ambient temperature -5 degrees C to 50 degrees C. Refer to page 84 for thermal derating information above this temperature.
- Relative humidity of up to 85%.
- Altitude up to 2000m.
- Atmospheres free from dust, smoke, corrosive gases, inflammable gases, moisture and salt.

For installation in conditions more onerous than those described above, contact Terasaki for details.

The following special treatments have been developed for installation in specific environmental conditions:



- Low temperature treatment. For installation at temperatures down to -40 degrees C for storage and -20 degrees C for operation. The environment must be free from rapid changes in temperature that result in the formation of condensation.

- Tropicalisation treatment. For installation at temperatures up to 65 degrees C and relative humidity of up to 95%. The environment must be free from rapid changes in temperature.

- Anti-corrosion treatment. MCCB is surface treated to increase resistance to corrosion.
  If the MCCB is to be installed in atmosphere that contains excessive volumes of corrosive gases or moisture, it should be house in an airtight enclosure.

TEMPERATURE RATINGS

Calibration Temperature: 50°C

MCCB Type	Connection Type	Rating at calibration temperature (50°C)	Rated Current (A)		
			55°C	60°C	65°C
E125-NJ S125-NJ S125-GJ	Front Rear Plug-in	20A	18.5	18	17.5
		32A	30.5	30	29
		50A	45	43	41
		63A	57	55	52
		100A	94	90	87
		125A	117	113	109
H125-NJ L125-NJ	Front Rear Plug-in	20A	18.5	18	17.5
		32A	30	29	28
		50A	47	45	44
		63A	59	57	55
		100A	95	92	89
		125A	118	114	111
S160-NJ S160-GJ	Front Rear Plug-in	20A	18.5	18	17.5
		32A	30	29	28
		50A	46	44	42
		63A	59	57	55
		100A	94	91	88
		125A	117	113	109
		160A	151	146	141
H160-NJ L160-NJ	Front Rear Plug-in	160A	151	147	143
E250-NJ	Front Rear Plug-in	20A	18.5	18	17.5
		32A	30	29	28
		50A	46	44	42
		63A	59	57	55
		100A	94	91	88
		125A	117	113	109
E250-NJ S250-NJ S250-GJ	Front Rear Plug-in	160A	151	146	141
		250A	235	227	219
H250-NJ L250-NJ	Front Rear Plug-in	160A	151	147	143
	Front Rear	250A	237	230	223
E400-NJ S400-CJ S400-NJ S400-GJ	Front Rear Plug-in	250A	237	230	223
		400A	380	369	358
H400-NJ L400-NJ	Front Rear	250A	237	230	223
		400A	381	371	361
	Plug-in	250A	237	231	224
		400A	384	376	368

Calibration Temperature: 30°C

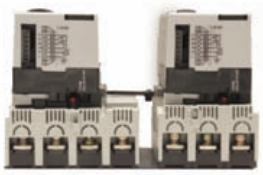
MCCB Type	Connection Type	Rating at calibration temperature (30°C)	Rated Current (A)						
			35°C	40°C	45°C	50°C	55°C	60°C	65°C
H250-NJ L250-NJ	Plug-in Conn.	250A	244	236	225	219	209	200	190

MCCB Type	Connection Type	Rating	Rated Current (A)							
			30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C
S250-PE H250-NE L250-NE	Front Rear	250A	250	250	250	250	250	225	200	200
	Plug-in	250A	250	237.5	225	225	200	200	157.5	157.5
S400-NE S400-GE	Front Rear Plug-in	250A	250	250	250	250	250	250	225	200
		400A	400	400	400	400	400	380	360	320
H400-NE L400-NE	Front Rear	250A	250	250	250	250	250	250	225	200
		400A	400	400	400	400	400	380	360	320
	Plug-in	250A	250	250	250	250	250	250	225	200
		400A	400	400	400	400	400	380	360	320
E630-NE S630-CE S630-GE	Front Rear*	630A	630	630	630	630	630	598.5	567	504

*Contact us for details of plug-in versions

COMPACT CHANGEOVERS

Changeover Pair with Link Interlock and Motor Operators



Viewed from Below (250A frame)

The mechanical interlock is installed on the front of the MCCB, and is compatible with motor operators and handles. An automatic changeover system can be assembled in a few minutes by a switchboard builder or end-user.