TEMBREAK 2 LITE MCCBs AND SWITCH DISCONNECTORS

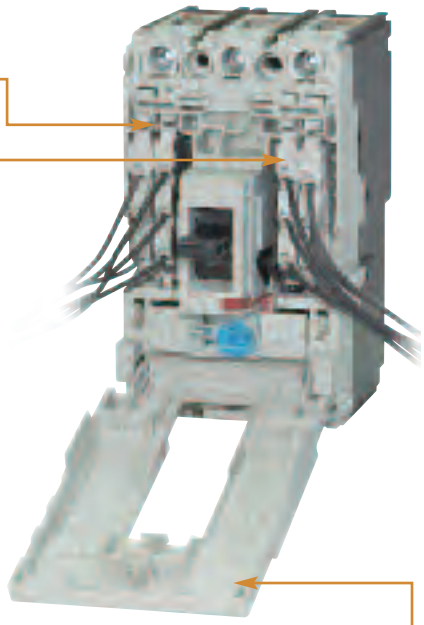
Electrical Control Using Internally Mounted Accessories

Electrical control accessories for the TemBreak 2 Lite range 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.

Two Alarm Switches can be installed easily

Practical internal accessories can be installed with one touch

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



Unique accessory cover opens with one screw

Secure accessory cover retains MCCBS name plate

Undervoltage Trip

Shunt Trip

Alarm Switch (Left)

Auxiliary Switch

ACCESSORIES

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Connection Diagrams and Terminal Numbers

Accessory	Combination symbol	Connection diagram and terminal No.	Remarks
Shunt trip device (SH)		• Without anti-burn switch C1 C2	Shunt trips are continuous rating without anti-burn switches.
Undervoltage trip device (UV)		For AC/DC U1 U2	
		D1 D2	
Auxiliary switch (AX)		12/AXb1 14/AXa1 11/AXc1	1pc Aux. SW installed.
		12/AXb1 14/AXa1 22/AXb2 24/AXa2 11/AXc1 21/AXc2	2pcs Aux. SW installed.
		12/AXb1 14/AXa1 22/AXb2 24/AXa2 32/AXb3 34/AXa3 42/AXb4 44/AXa4 11/AXc1 21/AXc2 31/AXc3 41/AXc4	4pcs Aux. SW installed.
Alarm switch (AL)		92/ALb1 94/ALa1 TRIP 91/ALc1	1pc Alarm. SW installed.
		92/ALb1 94/ALa1 02/ALb2 04/ALa2 TRIP TRIP 91/ALc1 01/ALc2	2pcs Alarm. SW installed.

Valid/Maximum Accessory Combinations

Moulded Case Circuit Breakers

Type	Number of poles	AX Auxiliary switch	AL Alarm switch	SH Shunt trip	UV Under voltage trip	AX–AL	AX–SH	AX–UV	AL–SH	AL–UV	AX–AL–SH	AX–AL–UV
S160-SCF	2											
E160-SF S160-SCF S160-SF E160-SJ S160-SCJ S160-SJ S160-SN	3·4											
E250-SCF E250-SF S250-SF E250-SCJ S250-SJ E250-SJ S250- N	3·4											

Notes:

①: The two-pole type breaker obtained by modifying a three-pole breaker by removing the conductive part of its central pole is regarded as the same as the three-pole type.

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Status Indication Switches

Ratings of Auxilary and Alarm (AX/AL)

The applicable load of the switch shall be no larger than the rating and no smaller than the minimum load.

Type of breaker	Standard							For microload ①		
	AC (V)			DC (V)			Minimum load	DC (V)		Minimum load
	Voltage (V)	Current (A)		Voltage (V)	Current (A)			Voltage (V)	Current (A)	
		Resistive load	Inductive load ②		Resistive load	Inductive load ②			Resistive load	
E160-SF, S160-SCF, S160-SF, E160-SJ, S160-SCJ, S160-SJ, S160-SN E250-SCF, E250-SF, S250-SF, E250-SCJ E250-SJ, S250-SJ, S250-SN	480	-	-	250	-	-	DC15V 100mA	30	0.1	DC5V 1mA
	250	3	2	125	0.4	0.05				
	125	3	2	30	3	2				

Note: ① This is a custom-made product. When ordering for this product, specify that it is intended for minute load use.
Note: ② The inductive load means power factor of no smaller than 0.4 and time constant of no larger than 7 ms.

Operation of AX and AL

Switch	Breaker status	[ON]	[OFF]	[TRIP]
Auxiliary switch (AX) status		11/AXc-14/AXa “Closed” 11/AXc-12/AXb “Open”	11/AXc-14/AXa “Open” 11/AXc-12/AXb “Closed”	11/AXc-14/AXa “Open” 11/AXc-12/AXb “Closed”
Alarm switch (AL) status		91/ALc-94/ALa “Open” 91/ALc-92/ALb “Closed”	91/ALc-94/ALa “Open” 91/ALc-92/ALb “Closed”	91/ALc-94/ALa “Closed” 91/ALc-92/ALb “Open”

Remote Tripping Devices

Ratings of Shunt Trip (SHT)

Type of breaker	Peak exciting current, A						
	Rated voltage	AC (V)			DC (V)			
		100-120	200-240	380-450	24	48	100-120	200-240
E160-SF, S160-SCF, S160-SF, E160-SJ, S160-SCJ, S160-SJ, S160-SN E250-SCF, E250-SF, S250-SF, E250-SCJ, E250-SJ, S250-SJ, S250-SN		0.014	0.014	0.0065	0.03	0.03	0.011	0.011

Notes:
① The permissible voltage range is from 85% to 110% of the rated voltage for AC or 75 % to125 % thereof for DC.
Ensure that the voltage does not drop or exceed the permissible voltage range when SHT is actuated.
② Breaker contacts usually start opening within 30 ms after the rated voltage is applied to the breaker.