

TEMBREAK 2 LITE MCCBs AND SWITCH DISCONNECTORS

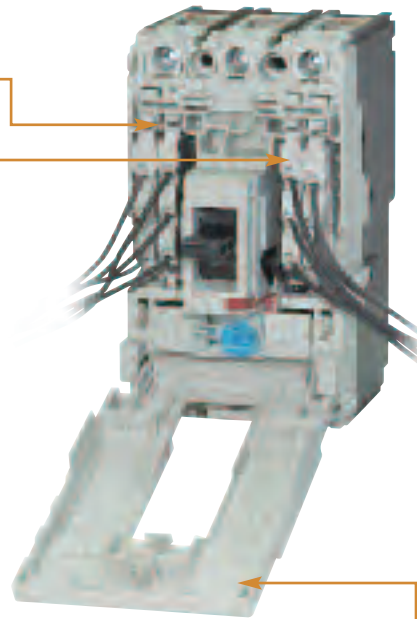
Electrical Control Using Internally Mounted Accessories

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

SECTION 4



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	Shunt trips are continuous rating without anti-burn switches.
Undervoltage trip device (UV)		For AC/DC 	
Auxiliary switch (AX)			1pc Aux. SW installed.
			2pcs Aux. SW installed.
			4pcs Aux. SW installed.
Alarm switch (AL)			1pc Alarm. SW installed.
			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 Auxiliary 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				
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-14/AXa "Open"	11/AXc-14/AXa "Open"
		11/AXc-12/AXb "Open"	11/AXc-12/AXb "Closed"	11/AXc-12/AXb "Closed"
Alarm switch (AL) status		91/ALc-94/ALa "Open"	91/ALc-94/ALa "Open"	91/ALc-94/ALa "Closed"
		91/ALc-92/ALb "Closed"	91/ALc-92/ALb "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% to 125% 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.

ACCESSORIES

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Remote Tripping Devices

Ratings of Undervoltage Trip (Instantaneous)

Type of breaker	Power supply capacity, VA			Exciting current, mA		
	Rated voltage	AC (V)		DC (V)		
	100-120	200-240	380-450	24	100-120	200-240
E160-SF, S160-SCF, S160-SF, E160-SJ, S160-SCJ, S160-SJ, S160-SN E250-SF, E250-SCF, S250-SF, E250-SJ, E250-SCJ, S250-SJ, S250-SN	1.4	1.5	2.3	23	10	3.5

Ratings of Undervoltage Trip with Time Delay Time delays: 500±300 msec.

Applicable breakers	Power supply capacity, VA							Exciting current, mA				
	Rated voltage	AC (V)						DC (V)				
		100-110	115-120	200-220	230-240	380-415	440-450	24	100-110	115-120	200-220	230-240
E160-SF, S160-SCF, S160-SF, E160-SJ, S160-SCJ, S160-SJ, S160-SN E250-SF, E250-SCF, S250-SF, E250-SJ E250-SCJ, S250-SJ, S250-SN	1.1	1.3	2.1	2.5	1.5	1.7	22	7.6	8.3	8.6	9.3	

Undervoltage trips with AC operating voltage are available with time delay (500+/-300 mili seconds).

UVT controllers are installed on the right hand side of the breaker. For this option refer to page 142 details.