

## Shunt Trip (MX) and Undervoltage Trip (MN)



A voltage release can be used to trip the circuit breaker using a control signal.

**Table 88: Shunt Trip and Undervoltage Trip**

<b>Applications</b>	<b>Shunt Trip (MX)</b>
	<ul style="list-style-type: none"> <li>• Trips the circuit breaker when the control voltage rises above 70% of its rated voltage</li> <li>• Impulse type <math>\geq 20</math> ms or maintained control signals</li> <li>• AC shunt trips are suitable for ground-fault protection when combined with a Class I ground-fault sensing element</li> <li>• Continuous duty rated coil</li> </ul>
<b>Undervoltage Trip (MN)</b>	<ul style="list-style-type: none"> <li>• Trips the circuit breaker when the control voltage drops below a tripping threshold</li> <li>• Drops out between 35% and 70% of the rated voltage</li> <li>• Continuous duty rated coil</li> <li>• Circuit breaker closing is possible only if the voltage exceeds 85% of the rated voltage. If an undervoltage condition exists, operation of the closing mechanism of the circuit breaker will not permit the main contacts to touch, even momentarily. This is commonly called "Kiss Free".</li> </ul>
<b>Installation and Connection</b>	<ul style="list-style-type: none"> <li>• Accessories are common to H-, J-, and L-frame circuit breakers and snap into cavities under the front accessory cover of the circuit breaker</li> <li>• Each terminal may be connected by one 18–14 AWG (1.0–2.5 mm<sup>2</sup>) stranded copper wire</li> </ul>
<b>Operation</b>	<ul style="list-style-type: none"> <li>• The circuit breaker must be reset locally after being tripped by shunt trip (MX) or undervoltage trip (MN)</li> <li>• Tripping by the shunt trip or undervoltage trip has priority over manual (or motor operator) closing; in the presence of a standing trip order such an action does not result in any closing, even temporarily, of the main contacts</li> <li>• Endurance: 50% of the rated mechanical endurance of the circuit breaker</li> </ul>

**Table 89: Electrical Characteristics**

	AC	DC
Rated Voltage (V)	24, 48, 120, 208/277, 380/480, 525, 600	12, 24, 30, 48, 60, 125, 250
Power Requirements	Pickup (shunt trip)	< 10 VA
	Seal-in (undervoltage trip)	< 5 VA
Clearing Time (ms)	< 50	< 50

**Table 90: Shunt Trip and Undervoltage Trip Suffix Codes and Kit Numbers**

<b>Voltage</b>	<b>Shunt Trip (MX)</b>		<b>Undervoltage Release (MN)</b>	
	<b>Factory-Installed Suffix</b>	<b>Field-Installable Kit No.</b>	<b>Factory-Installed Suffix</b>	<b>Field-Installable Kit No.</b>
24 Vac	SK	S29384	UK	S29404
48 Vac	SL	S29385	UL	S29405
120 Vac	SA	S29386	UA	S29406
208/277 Vac	SD	S29387	UD	S29407
380/480 Vac	SH	S29388	UH	S29408
525/600 Vac	SJ	S29389	UJ	S29409
12 Vdc	SN	S29382	UN	S29402
24 Vdc	SO	S29390	UO	S29410
30 Vdc	SU	S29391	UU	S29411
48 Vdc	SP	S29392	UP	S29412
60 Vdc	SV	S29383	UV	S29403
125 Vdc	SR	S29393	UR	S29413
250 Vdc	SS	S29394	US	S29414

**Table 91: Adjustable and Fixed Time Delay Units for Undervoltage Trip**

<b>Rated Voltage</b>	<b>Field-Installable Kit No.</b>	
	<b>Adjustable</b>	<b>Fixed</b>
48 Vac/dc	S33680	S29426
100/130 Vac/dc	S33681	—
220/250 Vac/dc	S33682	S29427