MX MCCB Type ENM

Electronic txpe release (Motor protection)

User Instruction

Danger, installation and use by electricians only

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Table 1. Protection for motor

Integrated protection: Electronic type release for motor protection ENM The ENM electronic trip unit allows for tighter tolerance trip times, as detailed in the table below

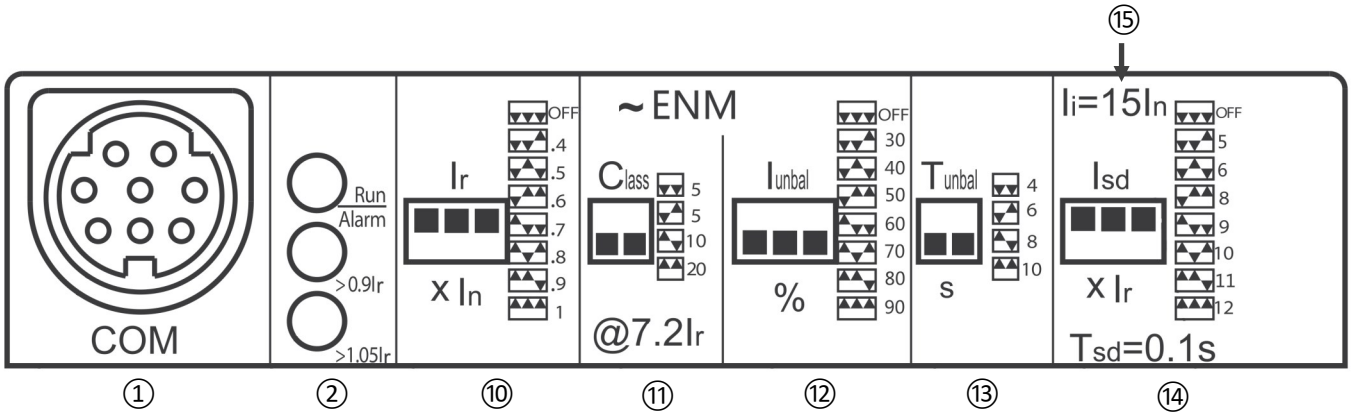
Electronic Type ENM		250	630
Overload long-time delay protection	Setting current Ir=In x	0.4-0.5-0.6-0.7-0.8-0.9-1.0-OFF	
	7.2Ir Tripping time Tr(s)	4, 8, 16, Accuracy ±10%	48, 16, 24, Accuracy ±10%
	Tripping level	5, 10, 20	5, 10, 20, 30
Short circuit short-time delay protection	Setting current Isd=Irx	5-6-8-9-10-11-12, OFF, Accuracy ±15%	
	Tripping time Tsd(ms)	100, Accuracy ±40	
Short circuit instantaneous protection	Setting current Ii=Inx	15*	
	Max. tripping time (ms)	60	
Phase unbalance/Phase failure Iunbal		30%-40%- 50%-60%-70%-80%-90% (Phase failure) -OFF	
Max. trip time of phase inbalance (s)		4-6-8-10, Accuracy ±10%	
Tripping time of phase failure (s)		0.25; Accuracy ±20%	
Neutralline protection	Setting current	Irn= (0.5; 1)xIn; IsdN=(5-6-8-9-10-11-12)IrN IiN=15IrN, OFF	
	Tripping time	The same with the other three-phase poles	

*Setting current I_{sd}<I_i (within tolerance)

Table 2. Electronic type rated current

Frame size rated current In A	Rated current In A
250	32, 63, 100, 160, 250
400	250, 400
630	250, 400, 630
800	630, 800
1600	800, 1000, 1250, 1600

Diagram 1. MX2 (Motor Protection) Controller interface



① Communication test interface: external communication module or dedicated handheld test equipment

② Status indicator: Under normal working status, the green working status indicator flashes. When the actual current I≥90%Ir, the yellow warning light is on, and when 1<90%Ir, the yellow warning light is off. When the actual current I≥105%Ir, the red overload warning light is on, when I<105%Ir, the overload warning light is off.

⑩ Long-time delay current setting dial switch: long-time delay multiple setting, including (0.4-1) In+OFF, with a total 8 gears

⑪ Long -time delay protection tripping level dial switch: long -time delay protection trip level setting, including Class (5-10-20) with a total 3 gears

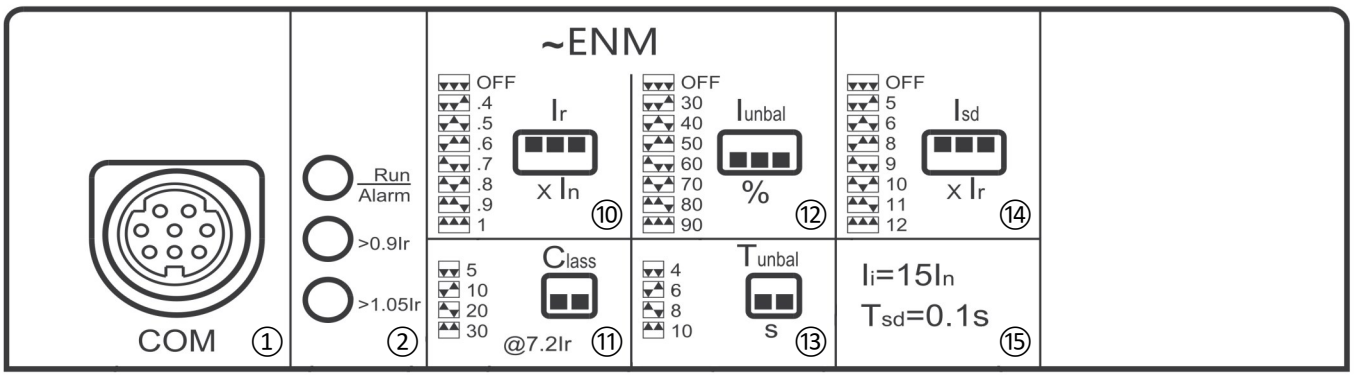
⑫ Current phase unbalance rate setting dial switch: phase unbalance rate setting, including (30%-90%) + OFF with a total 8gears. If the overload long-time delay Ir is turned off, the phase unbalance/ phase loss protection function automatically turns OFF.

⑬ Phase unbalance rate delay time setting dial switch: phase unbalance rate delay time setting, including {4-10) s a total of 4 gears

⑭ Short circuit short- time delay current setting dial switch, the customer can use the tool to dial according to actual needs. including OFF+ {5-12) Ir with a total of 8 gears. The tripping time is set 0.ls as default and is not adjustable. If the overload long-time delay Ir is turned off, the short circuit short-time delay protection setting protects according to the multiple of x In.

⑮ Short circuit instantaneous protection default setting Ii=15In, not adjustable

Diagram 2. MX3 (Protection) Controller Interface



① Communication test interface: external communication module or dedicated handheld test equipment

② Status indicator: Under normal working status, the green working status indicator flashes. When the actual current I≥90%Ir, the yellow warning light is on, and when 1<90%Ir, the yellow warning light is off. When the actual current I≥105%Ir, the red overload warning light is on, when I<105%Ir, the overload warning light is off.

⑩ Long-time delay current setting dial switch: long-time delay multiple setting, including (0.4-1) In+OFF, with a total 8 gears

⑪ Long -time delay protection tripping level dial switch: long -time delay protection trip level setting, including Class (5 -10 - 20-30) with a total 4 gears

⑫ Current phase unbalance rate setting dial switch: phase unbalance rate setting, including (30%-90%) + OFF with a total 8 gears. If the overload long-time delay Ir is turned off, the phase unbalance/ phase loss protection function automatically turns OFF.

⑬ Phase unbalance rate delay time setting dial switch: phase unbalance rate delay time setting, including (4-10) s a total of 4 gears

⑭ Short circuit short time delay current setting dial switch. the customer can use the tool to dial according to actual needs. including OFF+ (5-12)1rwith a total of 8 gears. The tripping time is set O.Is as default. and is not adjustable. If the over-load long-time delay Ir is turned off, the short circuit short- time delay protection setting protects according to the multiple of x In.

⑮ Short circuit instantaneous protection default setting Ii=15In, not adjustable.

Dealing function adjustment example

Motor type electronic moulded case circuit breaker MX2 type ENM

⑩ Long time delay current setting switch

I_n 250A

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I_r	0,4	0,5	0,6	0,7	0,8	0,9	0,95	1,0

↓

I_r=0,6x250(I_n)=150A

⑪ Long time delay protection trip level dial switch: long time delay protection trip level setting, including Class (5-10- 20) a total of 3 gears

Table 3. Overload long time delay inverse time action characteristic table

I	≤1.05I_r	1.2I_r	2 I_r(s)				7.2 I_r(s)			
T_r	>2h non-tripping	<2h tripping	Class 5	Class 10	Class 20	Class 30	Class 5	Class 10	Class 20	Class 30
T(S)			52	104	208	311	4	8	16	24

⑫ Current phase imbalance setting switch: phase imbalance rate setting, including (30%-90%) + OFF total 8 gears

⑬ Phase unbalance rate delay time setting dial switch: phase unbalance rate delay time setting, including (4-6-8-10) s total 4 gears

⑭ Short time delay current setting dial switch (short delay time Tsd=0.1s, not adjustable)

I_n=250A, I_r=0.6I_n=150A

↓

I_{sd}

OFF	5	6	8	9	10	11	12

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I_{sd}=5x150 (I_r)=750A

⑮ Unverzögerter Schutz Standardeinstellung I_i=15I_n, nicht einstellbar.