

Data Sheet

Ex9RE

Electronic Thermal Overload Relay

Ex9RE40



Ex9RE40



Electronic Thermal Overload Relay

NOARK Ex9RE

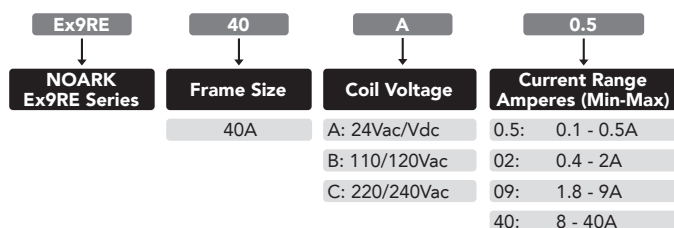
NOARK Electric Ex9RE electronic thermal overload relays are designed to provide dependable and accurate protection for motors if an overload or phase failure occurs. It also offers jam, stall and current unbalance protection. The Ex9RE is available with three different power supply voltages: 24 Vac/Vdc, 110/120 Vac and 220/240 Vac. with current ranges from 0.1A to 40A Each unit has selectable trip class settings of 5, 10, 20 and 30 providing a wide range of coverage with fewer SKUs. They are also equipped with integrated diagnostics via LED lights to allow for quick status identification. Settings are protected by a clear plastic cover. Like all NOARK Electric products, the Ex9RE is backed by a 5-year limited warranty.

- Power supply voltages: 24Vac/Vdc, 110/120Vac, 220/240Vac
- Available in 4 amperage ranges: 0.1 - 0.5A, 0.4 - 2A, 1.8 - 9A, 8 - 40A
- Integrated diagnostics with LED indicators
- Selectable trip class: 5, 10, 20, 30
- 1NO+1NC auxilliary contact
- Reduced sensitivity to ambient temperature
- Manual or automatic reset
- Compact 45 mm size
- Easily mounts on Ex9C 09-38A contactor or on DIN rail 35mm
- 5-Year limited warranty



		General
Certifications		UL 60947-4-1, UL 60947-5-1, GB/T 14048.4, GB/T 14048.5, IEC/EN 60947-4-1, IEC/EN 60947-5-1
Number of Poles		3
Mounting		Mounts on DIN rail 35 mm, contactor or base
Rated Insulation Voltage U _i (V)	IEC	690
	UL, CSA	600
Rated Operating Voltage U _e (V)	AC 50/60 HZ	24, 120, 240
	DC	24
Rated Impulse Withstand Voltage U _{imp} (V)		6

Product Selection Guide



Electronic Thermal Overload Relay

Specifications

		Ex9RE		
General Information				
Characteristics				
Environment				
Conforming to standards		IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 60947-4-1, UL 60947-5-1, GB/T 14048.4, GB/T 14048.5		
Product certifications		UL, CE, CB, CCC		
Degree of protection		IP 20 (front face)		
Ambient air temperature around the device (°C)	Storage	- 55...+ 80		
	Normal operation without derating	- 25...+ 40		
Maximum operating altitude (m)		2000		
Operating positions without derating		Any position		
Shock resistance		15 gn - 11 ms		
Vibration resistance		4 gn		
Dielectric strength at 50 Hz (kV)		2		
Surge withstand (kV)		6		
Resistance to electrostatic discharge (kV)	In open air	8 (level 3)		
	In direct mode	6 (level 3)		
Immunity to radiated radio-frequency disturbance (V/m)		10 (level 3)		
Immunity to fast transient currents (kV)		2		
Electromagnetic compatibility		Class B		
Auxiliary contact characteristics				
Contact type		1NO+1NC		
Conventional thermal current (A)		3		
Maximum hold consumption of controlled contactor coils	V	~ 24	~ 110/120	~ 220/240
	VA	70	360	360
	W	=24	-	-
	W	55	-	-
Short-circuit protection(A)		4		
Connection by cable or lug-clamps				
Flexible cable without cable end (1 or 2 conductors) (AWG/mm2)	Min.	1 x (18/1)		
	Max.	2 x (12/2.5)		
Flexible cable with cable end (1 or 2 conductors) (AWG/mm2)	Min.	1 x (18/1)		
	Max.	1 x (16/1.5) + 1 x (12/2.5)		
Ø of screw (mm)		M3		
Tightening torque (Lb.in/N.m)		7/0.8		
Electrical characteristics of power circuit				
Setting range(A)		0.1...40		
Tripping class		5/10/20/30		
Rated insulation voltage Ui	Conforming to IEC 60947-4-1	690V		
	Conforming to UL, CSA	600V		
Rated impulse withstand voltage Uimp		6kV		
Frequency limits(Hz)		50...60		
Connection by cable or lug-clamps				
Flexible cable without cable end (1 conductor) (AWG/mm2)	Min.	18/1		
	Max.	8/10		
Flexible cable with cable end (1 conductor) (AWG/mm2)	Min.	18/1		
	Max.	8/10		
Ø of screw (mm)		M4		
Tightening torque (Lb.in/N.m)		18/2.0		
Short circuit current rating	25kA@600Vac with MCCB M1; @600Vac max. with Fuse			
	100kA@480Vac with MCCB M1; @600Vac max. with Fuse			
Operating characteristics				
Reset	Manual	Reset button		
	Automatic	120 s fixed		
Status and fault signalling (see Instruction Booklet for details)		2 LEDs		
TEST/STOP function	Test	No load		
	Stop	Under load		
Sealing		Yes		
Sensitivity to current unbalance		phase difference>30%, trip in 2s		
Stall and jam protection		>400% FLA, trip in 2s		

Electronic Thermal Overload Relay Control Functions

Current setting

DIP switch 2)

2) Select function by DIP SW.

- DIP SW1: Phase(Current unbalance) protection OFF/ON
- DIP SW2: Motor jam protection OFF/ON
- DIP SW3: Motor stall protection OFF/ON
- DIP SW4: Reset mode Manual/Auto

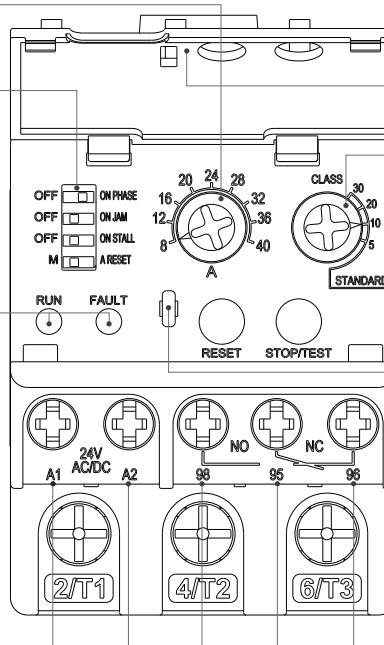
Action indication 1)

1) Combined signals from red and green LEDs indicate motor status including trip causes.

Condition	LED Signal(Pulse Chart)	
	Green LED	Red LED
Power on	On	Off
Steady state	On	Off
Current unbalance	Off	On
Stall	Off	On
Jam	Off	On
Others	Off	On

Power supply

(24V AC/DC; 110~120V AC;220~240V AC)



Transparent cover

Trip Class setting

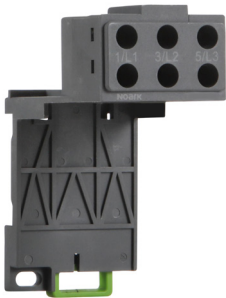
Trip class	Tripping time T_p (s)
5	$0.5 < T_p \leq 5$
10	$4 < T_p \leq 10$
20	$6 < T_p \leq 20$
30	$9 < T_p \leq 30$

Cover lock

Z9RE1202010NA

Auxiliary contacts

Accessories



Accessory Description	Catalog Number
DIN Rail Mount	AD57UL

Mounting Base	AD57UL
Current Rating (A)	40
Voltage (Vac)	600
Terminal Wire Range	#18-8 AWG*
Terminal Torque in-lb (N.m)	22 (2.5)
Matched Contactor Type	Ex9C 9-38A

* AWG = American Wire Gauge

- Allows for DIN rail mounting of Ex9RE40 overload relays remotely from contactor (Ex9C).

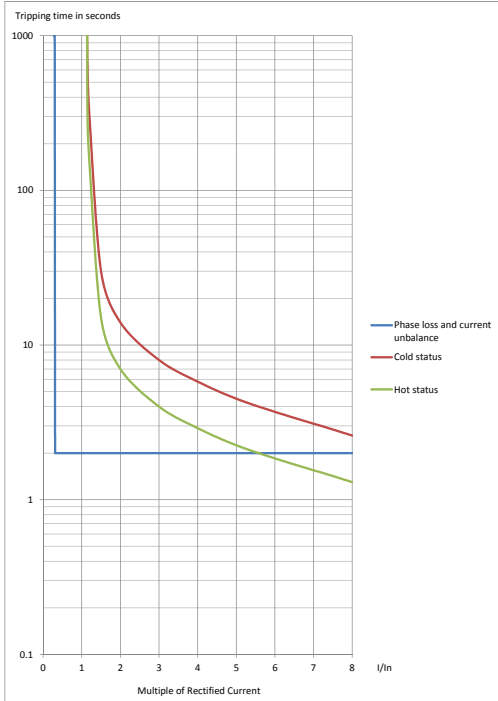
Disclaimer: Proper Sizing of an overcurrent protection device is the responsibility of the customer and should be determined using the application standards of the NEC*, CEC**, or other applicable standards.

*NEC-National Electrical Code

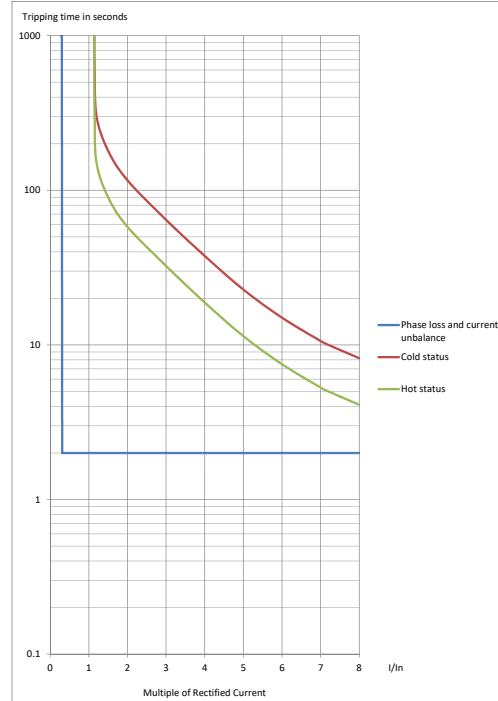
** CEC-Canadian Electrical Code

Electronic Thermal Overload Relay Trip Curves

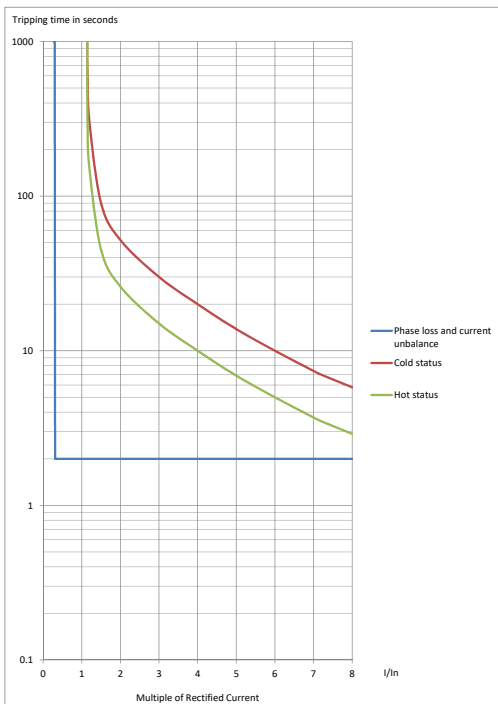
Class 5



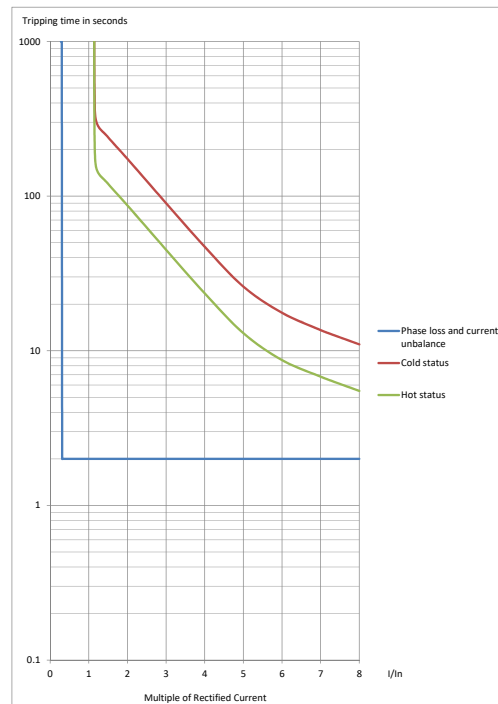
Class 20



Class 10



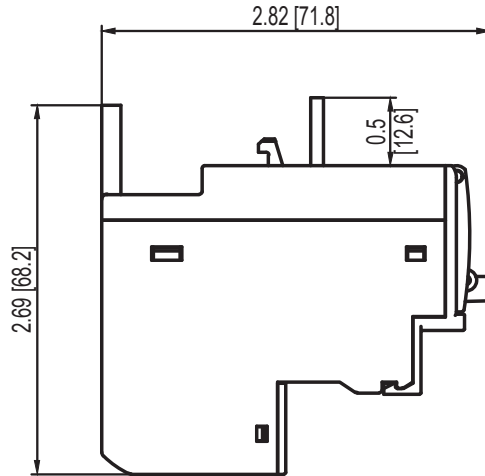
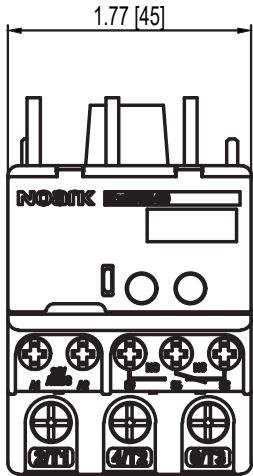
Class 30



Electronic Thermal Overload Relay Dimensions

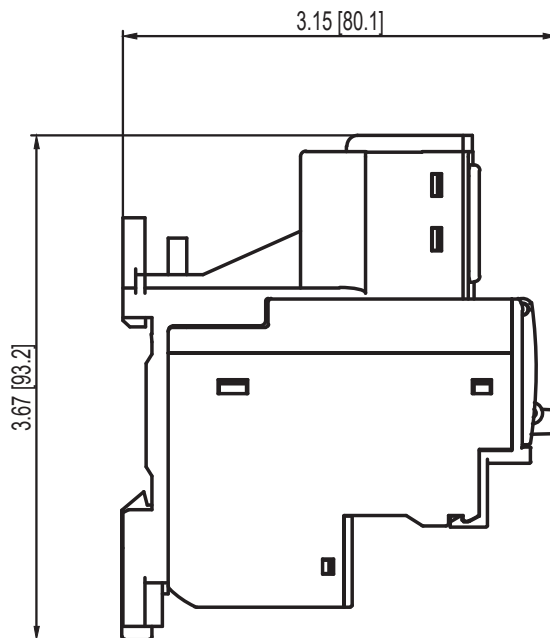
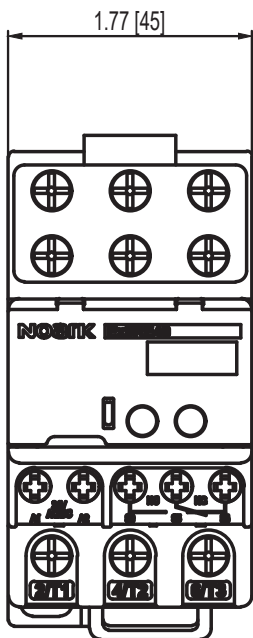
Ex9RE

Unit: in. [mm]



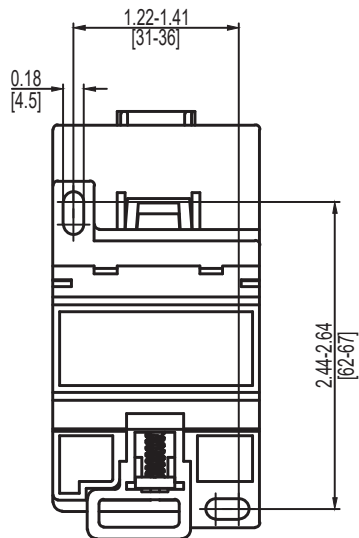
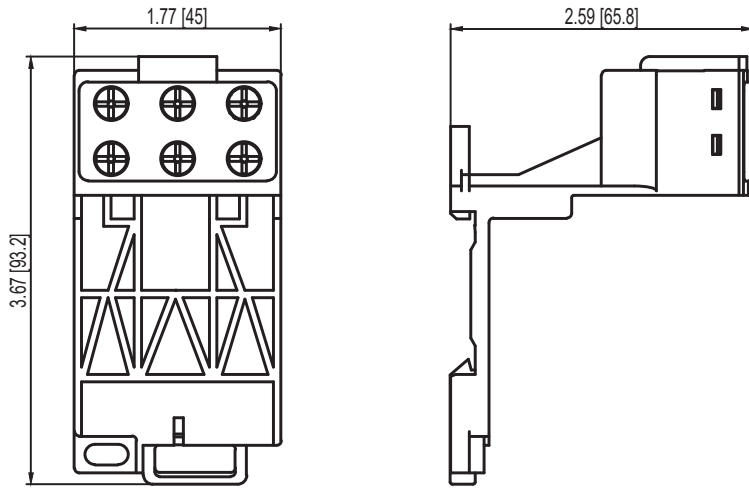
Ex9RE40+AD57UL

Unit: in. [mm]



Electronic Thermal Overload Relay Dimensions

AD57UL
Unit: in. [mm]

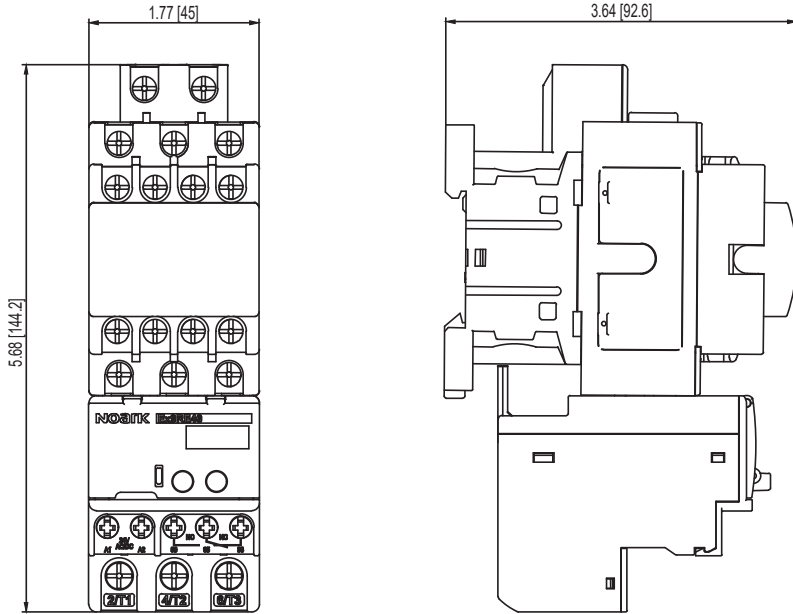


Electronic Thermal Overload Relay

Dimensions

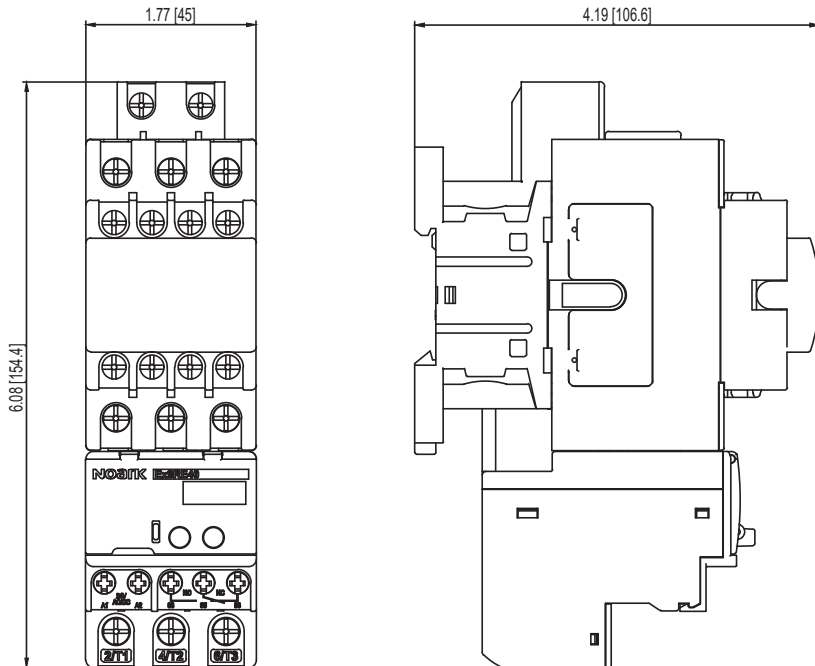
Ex9RE40+Ex9C09 - 18

Unit: in. [mm]



Ex9RE40+Ex9C25 - 38

Unit: in. [mm]




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