

# Electronic Overload Relay



# Ex9RE

## Electronic Thermal Overload Relay

### Product Overview

# Features

NOARK Electric Ex9RE40 electronic thermal overload relays are designed to provide dependable and accurate protection for motors if an overload or phase failure occur. They also offer jam, stall and current unbalance protection. The Ex9RE40 is available with coil voltages of 24Vac/dc, 110Vac and 220Vac 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 products. They are also equipped with integrated diagnostics via LED lights to allow for quick status identification. Control settings are protected by a clear plastic cover.

- Coil voltages: 24Vac/dc, 110Vac, 220Vac
- Available in 4 current 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
- 1 NO + 1 NC auxiliary contact
- Manual or automatic reset
- Compact 45 mm size
- Easily mounts on NOARK Ex9C 09-38 A contactor or on DIN 35mm
- 5 year limited warranty

# Electronic Thermal Overload Relay

## Product Overview

### 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



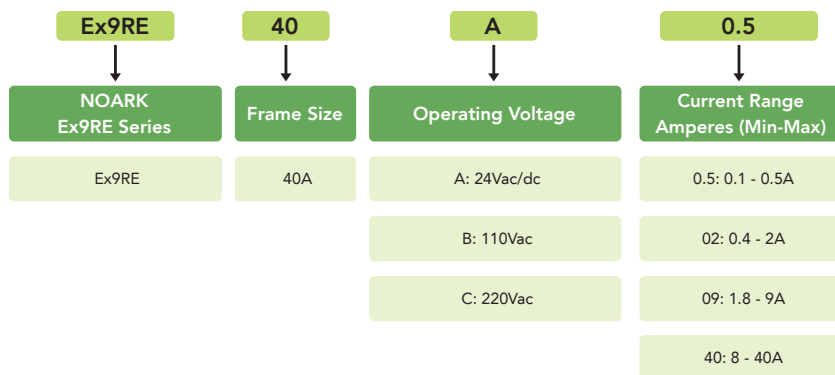
## Electronic Thermal Overload Relay Product Selection Guide

### Label



1. Brand
2. Adjustable Current Range
3. Manual Reset
4. Operating Voltage
5. Product Series/Frame Amperage
6. Tripping class
7. Push to test
8. Auxiliary Contacts

### Product Selection Guide



# Electronic Thermal Overload Relay

## Ex9RE 40A



**Certifications**  
 IEC/EN 60947-4-1  
 UL 60947-4-1, 60947-5-1

CE cULus LISTED

### 40 A

Current Range Amp (Min-Max)	Operating Voltage	Product	Part Number
0.1-0.5	24 Vac/dc	Ex9RE40A0.5	1420048
	110Vac	Ex9RE40B0.5	1420049
	220Vac	Ex9RE40C0.5	1420050
0.4-2	24 Vac/dc	Ex9RE40A02	1420051
	110Vac	Ex9RE40B02	1420052
	220Vac	Ex9RE40C02	1420053
1.8-9	24 Vac/dc	Ex9RE40A09	1420054
	110Vac	Ex9RE40B09	1420055
	220Vac	Ex9RE40C09	1420056
8-40	24 Vac/dc	Ex9RE40A40	1420057
	110Vac	Ex9RE40B40	1420058
	220Vac	Ex9RE40C40	1420059

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## Electronic Thermal Overload Relay

### Specifications

General Information		Ex9RE
Number of Poles		3
Mounting		Mounts on DIN rail 35mm, contactor or base
Rated Insulation Voltage Ui (V)	IEC	690
	UL, CSA	600
Rated Operating Voltage Ue (V)	AC 50/60 HZ	24, 110, 220
	DC	24
Rated Impulse Withstand Voltage Uimp (kV)		6
Product certifications		UL, CE, CB, CCC
Degree of protection		IP 20 (front face)
Ambient air temperature around the device (°C)	Storage	- 55 C to + 80 C
	Normal operation without derating	- 25 C to + 40 C
Maximum operating altitude (m)		2000
Shock resistance		15 gn - 11 ms
Vibration resistance		4 gn
Surge withstand (kV)		6
Immunity to fast transient currents (kV)		2
Electromagnetic compatibility		Class B
Electrical characteristics of power circuit		
Setting range (A)		0.1-40
Tripping class		5/10/20/30
Rated impulse withstand voltage Uimp		690V
Frequency limits (Hz)		50-60
Connection by cable or lug-clamps		
Flexible cable without cable end (1 conductor) (AWG/mm <sup>2</sup> )	Min	18/1
	Max	8/10
Flexible cable with cable end (1 conductor) (AWG/mm <sup>2</sup> )	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

# Electronic Thermal Overload Relay

## Specifications

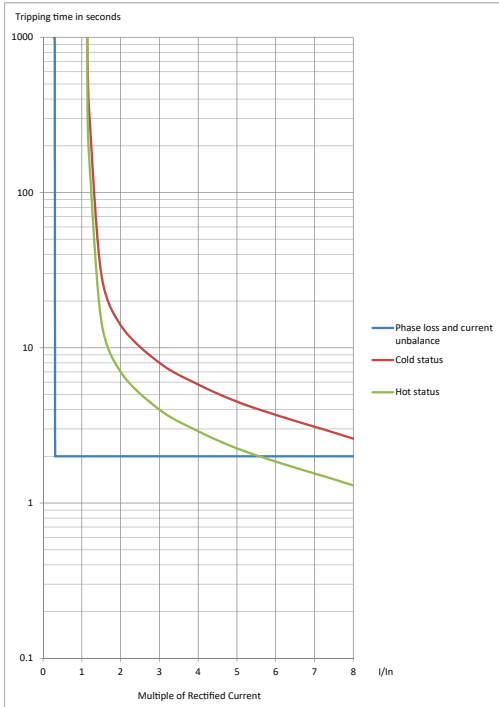
Auxiliary contact characteristics		
Rated Insulation Voltage U <sub>i</sub> (V)	IEC	250
Rated Operating Voltage U <sub>e</sub> (V)	AC-15	AC250V/3A
	DC-13	DC30V/3A
Rated Impulse Withstand Voltage U <sub>imp</sub> (V)		2.5
Contact type		1NO+1NC
Conventional thermal current (A)		3
Short-circuit protection (A)		RT36-00/4
Connection by cable or lug-clamps		
Flexible cable without cable end (1 or 2 conductors) (AWG/mm <sup>2</sup> )	Min	1 × (18/1)
	Max	2 × (12/2.5)
Flexible cable with cable end (1 or 2 conductors) (AWG/mm <sup>2</sup> )	Min	1 × (18/1)
	Max	1 × (16/1.5) + 1 × (12/2.5)
Ø of screw (mm)		M3
Tightening torque (Lb.in/N.m)		7/0.8

Operating characteristics		
Reset	Manual	Reset button
	Automatic	120s fixed
Status and fault signalling (see Instruction Booklet for details)		2 LEDs
Stop/Test		Stop/Test button
Sensitivity to current unbalance		phase difference > 36%, trip in 2s
Stall and jam protection		> 480% FLA, trip in 3s

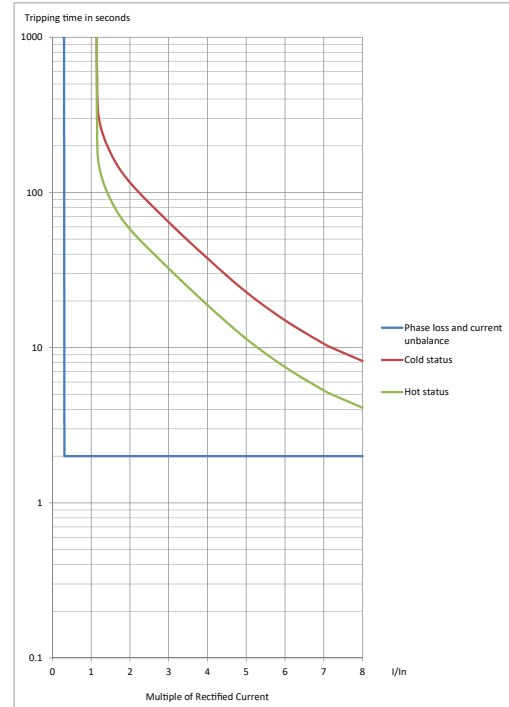
## Electronic Thermal Overload Relay

### Trip Curves

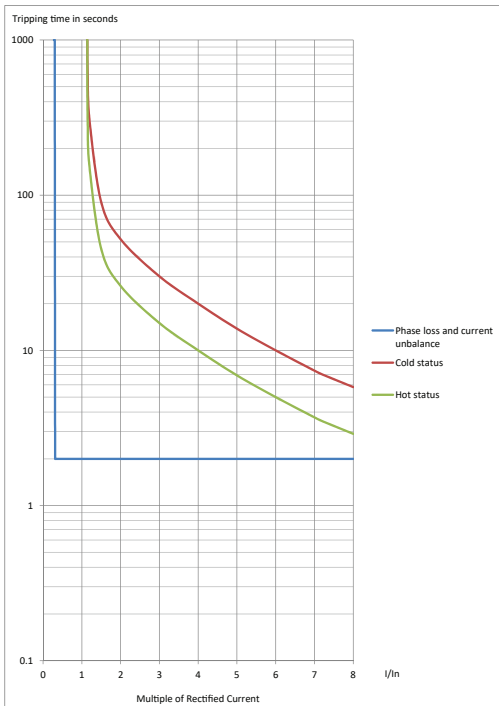
#### Class 5



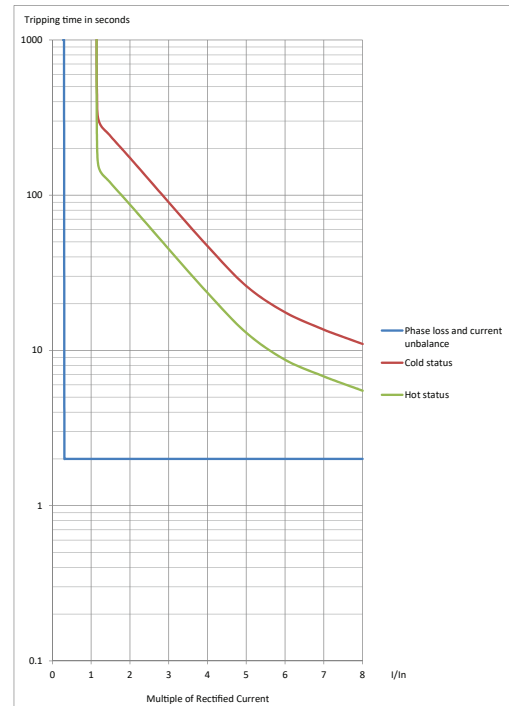
#### Class 20



#### Class 10



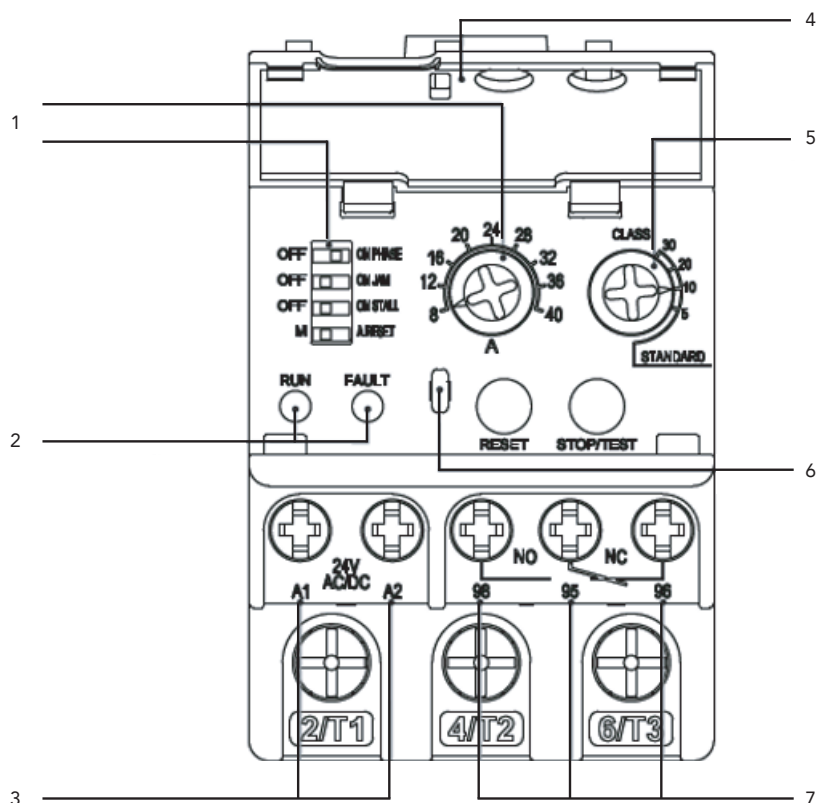
#### Class 30





# Electronic Thermal Overload Relay

## Control Functions



1. Current setting Dip switch (1)
2. Action indication (2)
3. Power supply
4. Transparent cover
5. Trip Class setting
6. Lock
7. Relay output

- (1) Select function by Dip SW.
- Dip SW1: Current imbalance OFF/ON
  - Dip SW2: Jam OFF/ON
  - Dip SW3: Stall OFF/ON
  - Dip SW4: Reset Manual / Auto

(2) 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 imbalance	Off	On
Stall	Off	On
Jam	Off	On
Others	Off	On

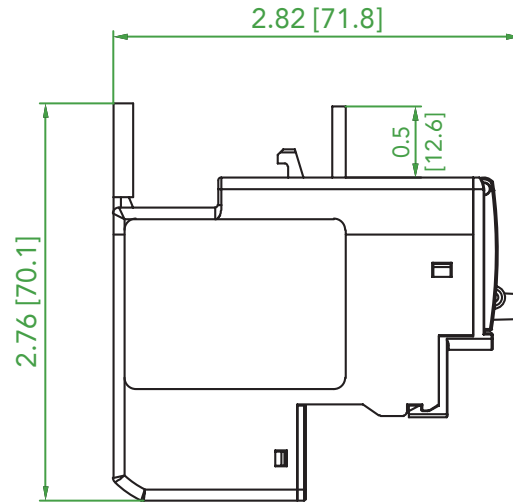
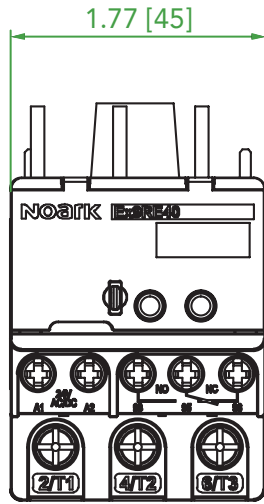
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## Electronic Thermal Overload Relay

### Ex9RE 40 Dimensions

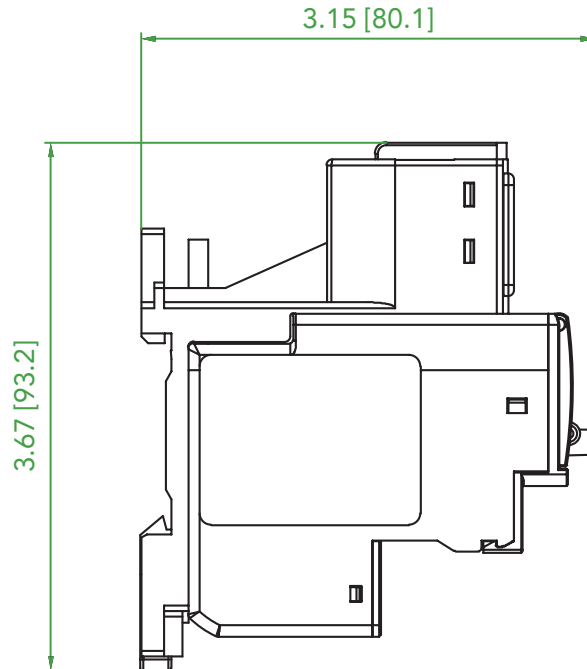
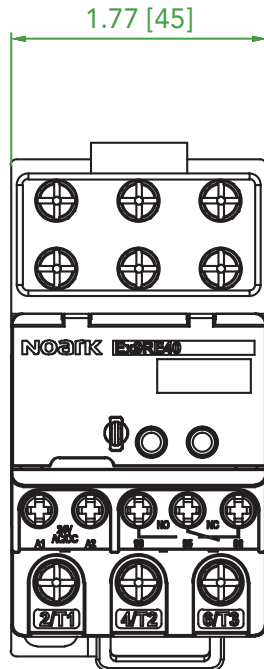
#### Ex9RE40

Unit: in [mm]



#### Ex9RE40+AD57

Unit: in [mm]

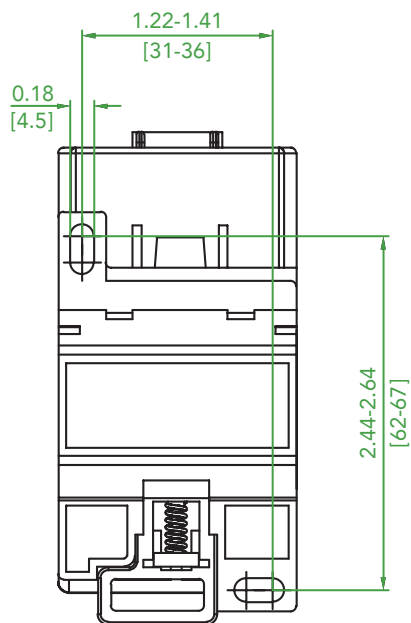
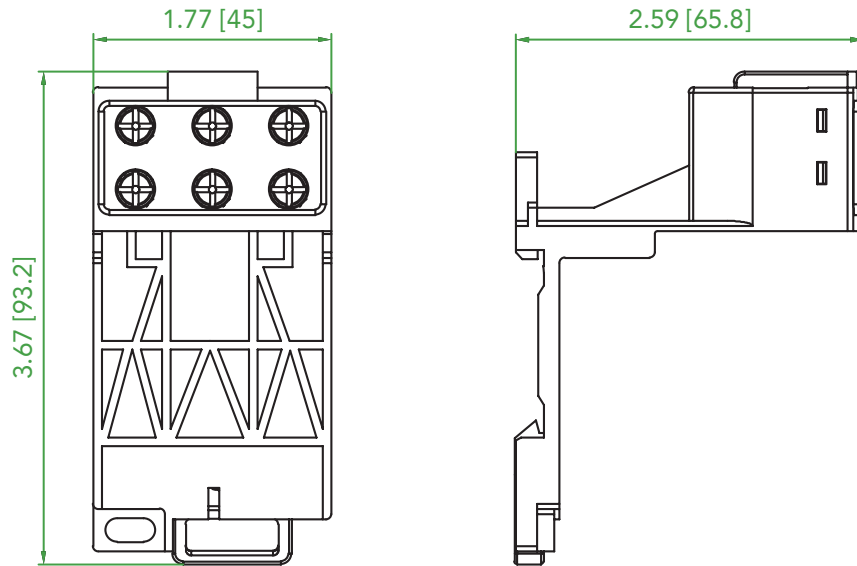


# Electronic Thermal Overload Relay

## Ex9RE Accessory Dimensions

**AD57**

Unit: in [mm]



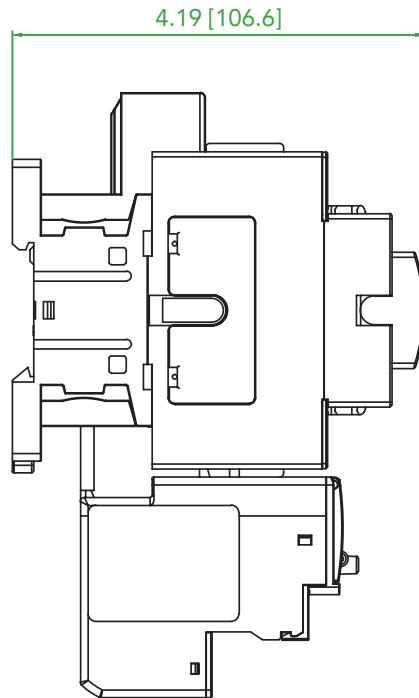
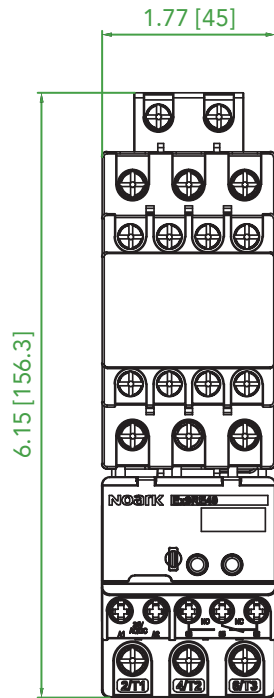
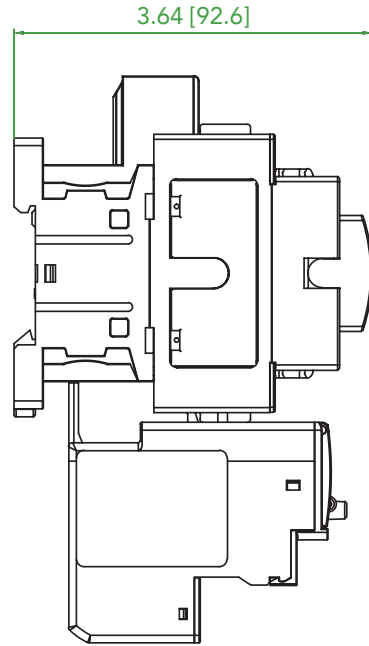
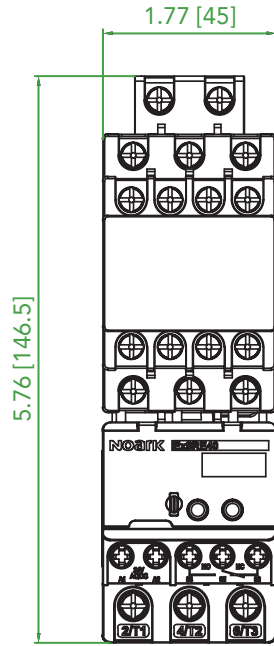
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## Electronic Thermal Overload Relay

### Ex9RE 40 Dimensions

**Ex9RE40+Ex9C09~18**

Unit: in [mm]



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