

# Adjustable Overloads For GH15 Series Contactors

The RTD series adjustable motor overload relays are designed for use with the GH15 Series 45 mm, 60 mm, 79 mm, 110 mm, and 145 mm contactors.

By combining the contactor with an overload relay, you have a reliable motor starter solution.



## **RTD32 overload relays for 45mm contactors**

- 16 sizes for motor currents from 0.4 to 32 amps
- Units come with (1) N.O. and (1) N.C. auxiliary contacts
- Mount directly to 45mm contactors
- Class 10A trip class
- cULus listed, CE

## **RTD65 overload relays for 60mm contactors**

- Four sizes for motor currents from 20 to 65 amps
- Units come with (1) N.O. and (1) N.C. auxiliary contacts
- Mount directly to 60mm contactors
- Class 10A trip class
- cULus listed, CE

## **RTD180 overload relays for 79mm and 110mm contactors**

- 3 sizes for motor currents from 60 to 180 amps
- Units come with (1) N.O. and (1) N.C. auxiliary contacts
- Mount directly to 110mm contactors with connection links (included)
- Hard-wire connection to 79 mm contactors (No connection links available)
- Class 10A trip class
- cULus listed, CE

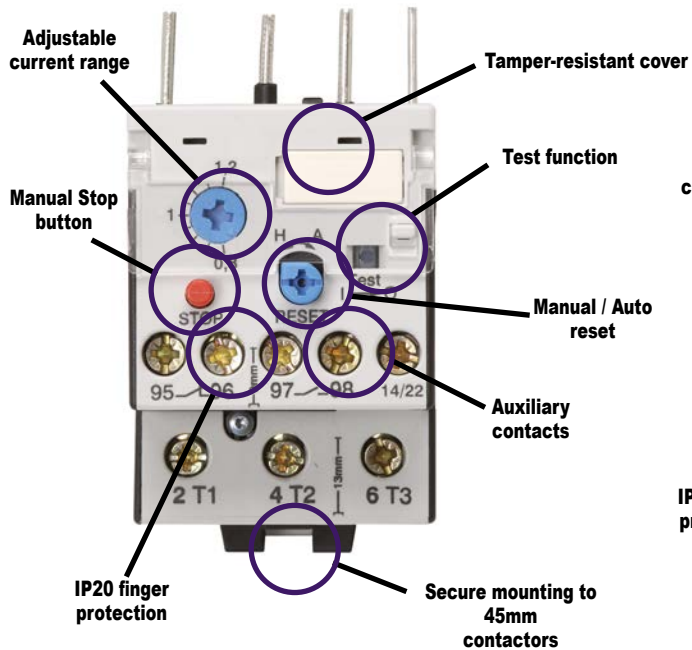
## **RTD320 overload relays for 145mm contactors**

- 2 sizes for motor currents from 144 to 320 amps
- Units come with (1) N.O. and (1) N.C. auxiliary contacts
- Mount directly to 145mm contactors with connection links (included)
- Class 10A trip class
- cULus listed, CE



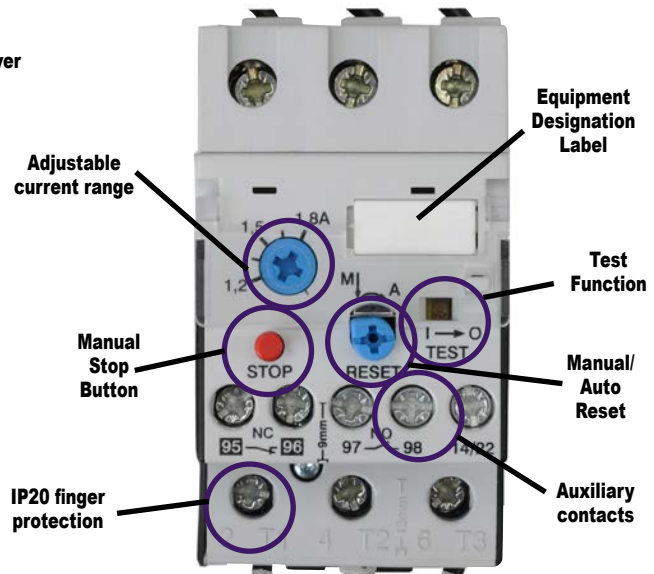
# GH15 Series Adjustable Overload Relay Features

**RTD32**  
for 45 mm Contactors



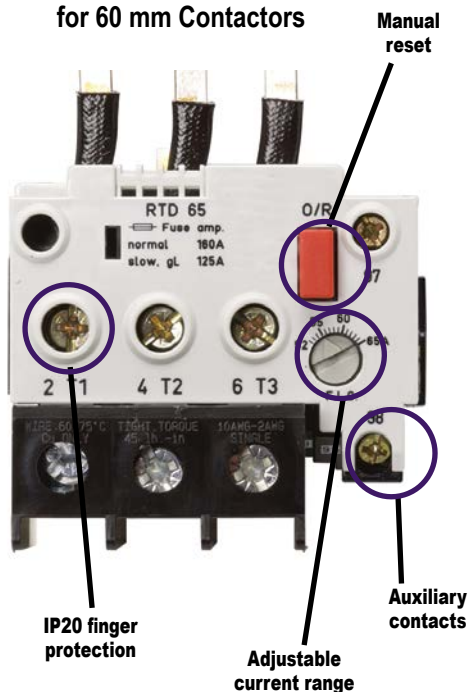
Note: Scale is 1:1 on dial.

**RTD180** for 79 mm and 110 mm Contactors



Note: The secondary current for the dial adjustment of the relay is 100x the dial current. For example, for a rated load current of 120A, the relay setting should be 1.2A.

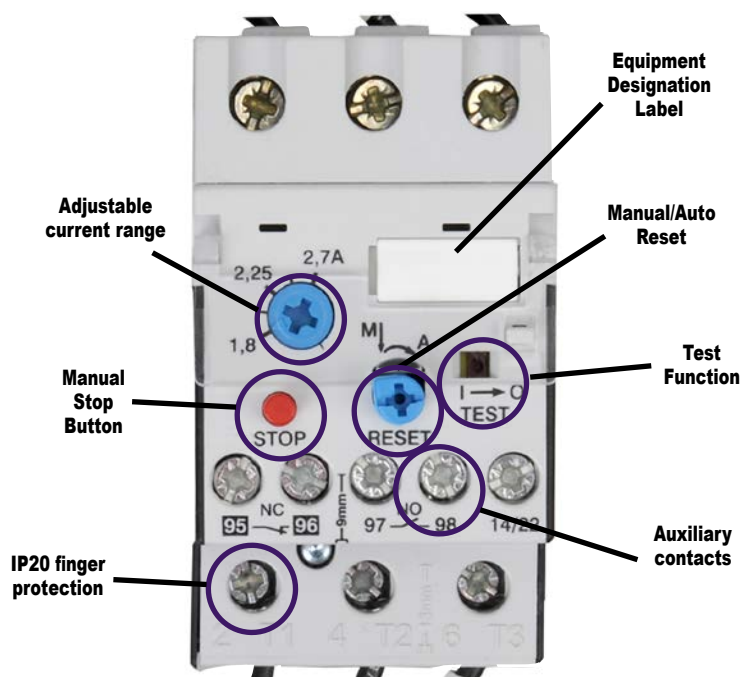
**RTD65**  
for 60 mm Contactors



Note: Scale is 1:1 on dial.

Note: Additional Black Loadside Terminal Block is available on RTD65-5200 and RTD65-6500 only.

**RTD320**  
for 145 mm Contactors



Note: The secondary current for the dial adjustment of the relay is 80x the dial current. For example, for a rated load current of 216A, the relay setting should be 2.7A.

# GH15 Series Overload Relay Selection Guide

**Step 1** Determine the motor FLA and service factor listed on the motor name plate. Next, calculate the size overload protection required based on 2005 NEC 430.32. Select your motor's FLA (Full Load Amperage) from Column A. Tripping current occurs at 125% of FLA in column A.

**Step 2** Follow across to Column B to find your contactor size. Check the maximum amperage rating for that contactor. Ranges overlap and you may have to go to the next larger size.

**Step 3** After selecting your contactor, follow across to Column C to find your overload relay model number.

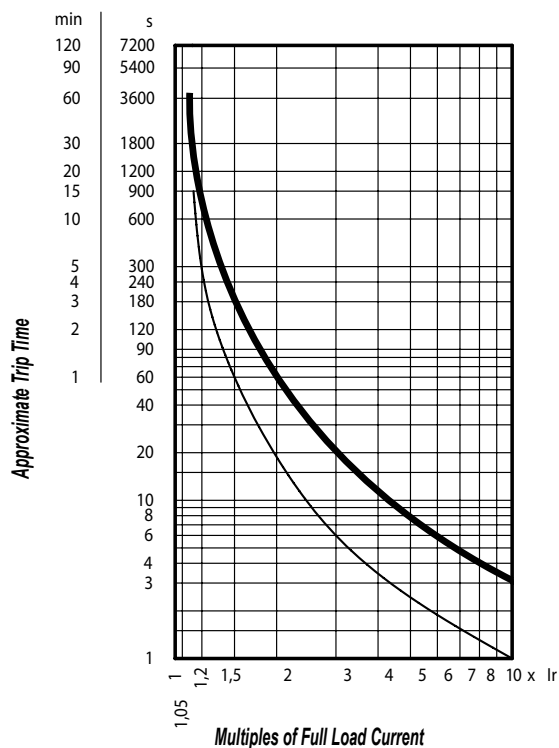
**Step 4** Order the contactor and overload relay, any desired auxiliary contacts, then assemble and install your motor starter.

Motor Contactor and Overload Relay Selection Guide (When Motor FLA is Known)				
A	B	C	Price	IEC Contactor Frame Size
Current Range Motor FLA	Contactor Model	Overload Relay		
0.4 to 0.6A	GH15BN up to maximum FLA of 9A	<a href="#">RTD32-60</a>	\$0dqd:	45mm
0.6 to 0.9A		<a href="#">RTD32-90</a>	\$0dqf:	
0.8 to 1.2A		<a href="#">RTD32-120</a>	\$0dq5:	
1.2 to 1.8A		<a href="#">RTD32-180</a>	\$0dq7:	
1.8 to 2.7A		<a href="#">RTD32-270</a>	\$0dqa:	
2.7 to 4.0A		<a href="#">RTD32-400</a>	\$0dq:	
4.0 to 6.0A		<a href="#">RTD32-600</a>	\$0dqe:	
6.0 to 9.0A		<a href="#">RTD32-900</a>	\$0dqg:	
8.0 to 11.0A	GH15CN up to 12A FLA	<a href="#">RTD32-1100</a>	\$0dq4:	
10.0 to 14.0A		<a href="#">RTD32-1400</a>	\$0dq6:	
10.0 to 14.0A	GH15DN up to 16A FLA	<a href="#">RTD32-1400</a>	\$0dq6:	
13.0 to 18.0A		<a href="#">RTD32-1800</a>	\$0dq8:	
13.0 to 18.0A	GH15ET up to 25A FLA	<a href="#">RTD32-1800</a>	\$0dq8:	
17.0 to 24.0A		<a href="#">RTD32-2400</a>	\$0dq9:	
22.0 to 32.0A		<a href="#">RTD32-3200</a>	\$00dqb:	
22.0 to 32.0A	GH15FT up to 32A FLA	<a href="#">RTD32-3200</a>	\$00dqb:	
20.0 to 28.0A	GH15GT up to 40A FLA	<a href="#">RTD65-2800</a>	\$00dqo:	60mm
28.0 to 42.0A		<a href="#">RTD65-4200</a>	\$00dqp:	
28.0 to 42.0A	GH15HT up to 50A FLA	<a href="#">RTD65-4200</a>	\$00dqp:	
40.0 to 52.0A		<a href="#">RTD65-5200</a>	\$00dq:	
40.0 to 52.0A	GH15JT up to 63A FLA	<a href="#">RTD65-5200</a>	\$00dq:	
52.0 to 65.0A		<a href="#">RTD65-6500</a>	\$00dqs:	
60.0 to 90.0A	GH15KT up to 80A FLA	<a href="#">RTD180-9000</a>	\$00dpt:	79mm
60.0 to 90.0A	GH15LT up to 95A FLA	<a href="#">RTD180-9000</a>	\$00dpt:	
80.0 to 120.0A	GH15MT up to 110A FLA	<a href="#">RTD180-12000</a>	\$00dps:	110mm
120.0 to 180.0A	GH15NT up to 150A FLA	<a href="#">RTD180-18000</a>	\$00dpb:	
120.0 to 180.0A	GH15PT up to 175A FLA	<a href="#">RTD180-18000</a>	\$00dpb:	
144.0 to 216.0A	GH15RT up to 210A FLA	<a href="#">RTD320-21600</a>	\$00dpi:	145mm
144.0 to 216.0A	GH15ST up to 260A FLA	<a href="#">RTD320-21600</a>	\$00dpi:	
216.0 to 320.0A		<a href="#">RTD320-32000</a>	\$00dpj:	
144.0 to 216.0A	GH15TT up to 315A FLA	<a href="#">RTD320-21600</a>	\$00dpi:	
216.0 to 320.0A		<a href="#">RTD320-32000</a>	\$00dpj:	

# GH15 Series Contactors Overload Technical Characteristics

## Typical Trip Curves

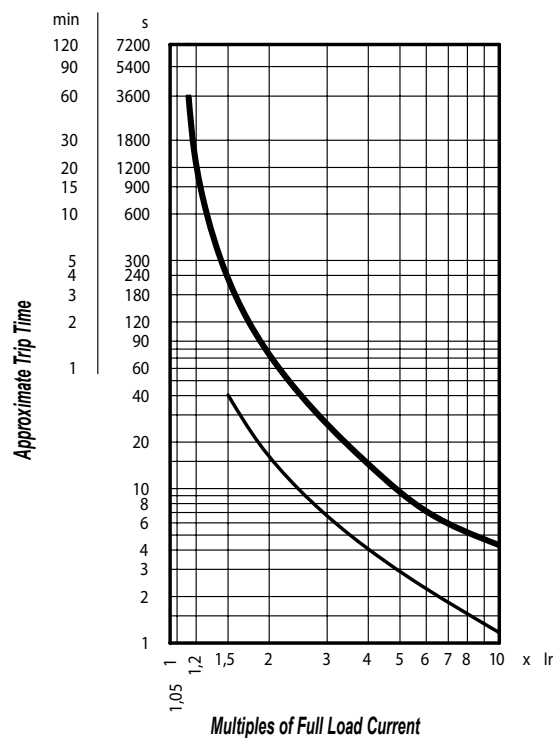
### 45mm and 60mm Overloads



Note: Curves show tripping time (average value) versus multiples of setting current  $I_r$ .

— Tripping starting from cold  
— Tripping starting from hot

### 79mm, 110mm, and 145mm Overloads



# GH15 Series Contactors Overload

## Technical Characteristics

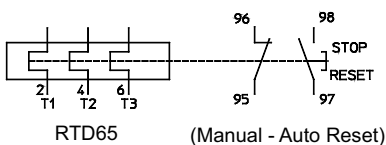
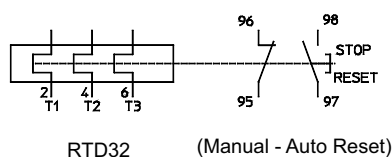
### Thermal Overload Relays Specifications

	RTD32	RTD65	RTD180	RTD180-18000	RTD320
Storage temperature	-40 to +70°C (-40°F to 158°F)				
Operating temperature	-25 to +55°C (-13°F to 131°F)				
Tripping class IEC 60947-4-1	10A				
Phase loss sensitive	Yes				
Connection to contactor	Built-in links		Pass through wire	Links for direct	Links for direct
Frequency limits	0-400 Hz		50-60 Hz		
Power dissipation per phase	2.3 Watts	3.7 Watts (52-65 A) setting range: 4.5 W	3 Watts		5 Watts
Short circuit current rating 600V	5kA rms				
Aux contacts wire range	14-10 AWG				
Aux contacts tightening torque	8.1 lb-in				

### Overload Aux Contact Ratings

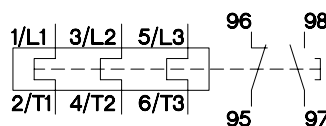
Contact Rating Code Designation	Thermal Continuous Current (Amps)	Maximum Current (Amps)			
		120 Volt	240 Volt	480 Volt	600 Volt
		Make / Break	Make / Break	Make / Break	Make / Break
<b>95-96 (NC) B600</b>	5	30 / 3	15 / 1.5	7.5 / 0.75	6 / 0.6
<b>97-98 (NO) C600</b>	2.5	15 / 1.5	7.5 / 0.75	3.75 / 0.375	3 / 0.3

### IEC Terminal Designations

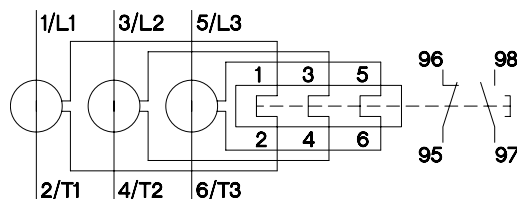


### Wiring Diagrams

#### RTD32 / RTD65

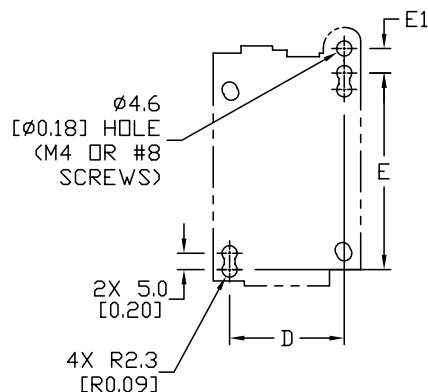
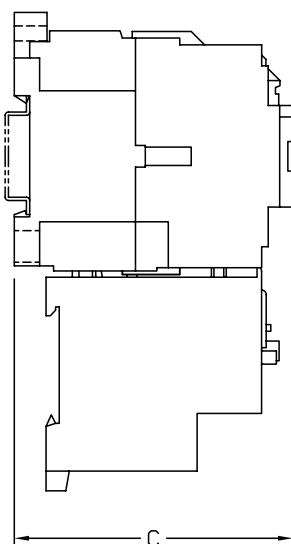
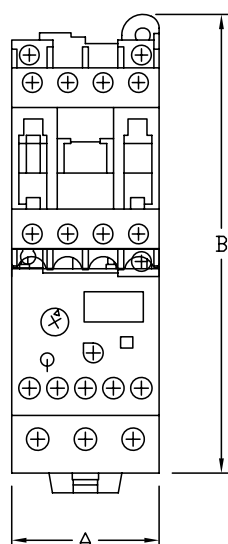


#### RTD180 / RTD320



# GH15 Series Overload Relay Dimensions

## 45mm Contactor and Overload Dimensions

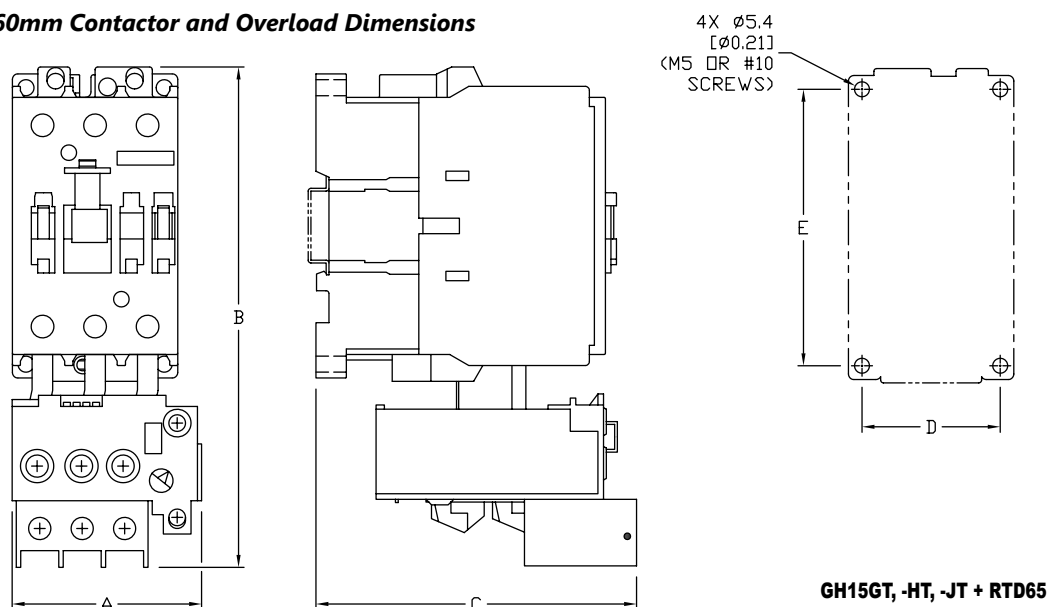


**GH15BN, -CN, -DN, -ET, -FT + RTD32**

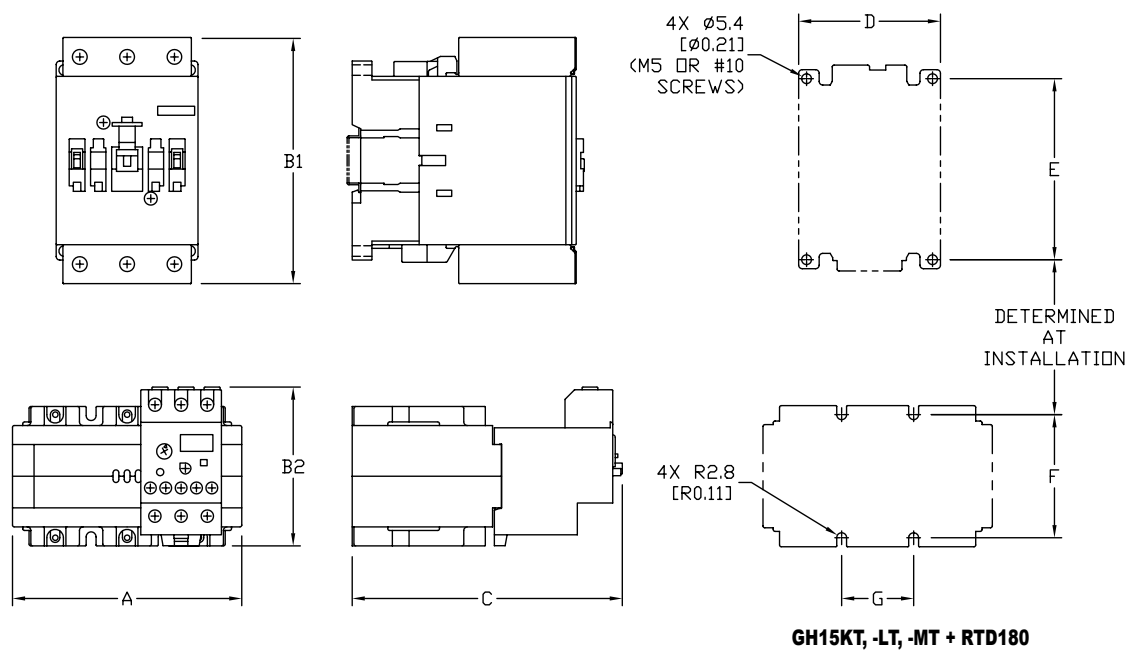
Overload Dimensions mm [in]																
Contactor Model	Overload Model	Width	Height			Depth	D	E	E1	F	G	H	I			
		A	B	B1	B2	C										
GH15BN	RTD32	45.0 [1.77]	146.0 [5.75]	-	-	85.0 [3.35]	35.0 [1.38]	60.0 [2.36]	7.5 [0.30]	-	-	-	-			
GH15CN																
GH15DN																
GH15ET																
GH15FT																
GH15GT	RTD65	68.5 [2.70]	169.0 [6.65]	-	-	109.0 [4.29]	50.0 [1.97]	100.0 [3.94]	-	-	-	-	-			
GH15HT																
GH15JT																
GH15KT	RTD180	128.0 [5.04]	contactor and overloads do not have a link connector	137.0 [5.39]	81.0 [3.19]	130.0 [5.12]	70.0 [2.76]	100.0 [3.94]	-	-	68.0 [2.68]	40.0 [1.57]	-			
GH15LT				162.0 [6.38]	81.0 [3.19]											
GH15MT				RTD180-18000	128.0 [5.04]	contactor and overloads do not have a link connector	290.0 [11.42]	-	-	145.0 [5.71]	100.0 [3.94]	130.0 [5.12]	-	42.5 [1.67]	68.0 [2.68]	40.0 [1.57]
GH15NT																
GH15PT																
GH15RT	RTD320	145.0 [5.71]	361.0 [14.21]	-				208.0 [8.19]	120.0 [4.72]	160.0 [6.30]	-	80.0 [3.15]	68.0 [2.68]	40.0 [1.57]	96.0 [3.78]	
GH15ST																
GH15TT																

# GH15 Series Overload Relay Dimensions

## 60mm Contactor and Overload Dimensions



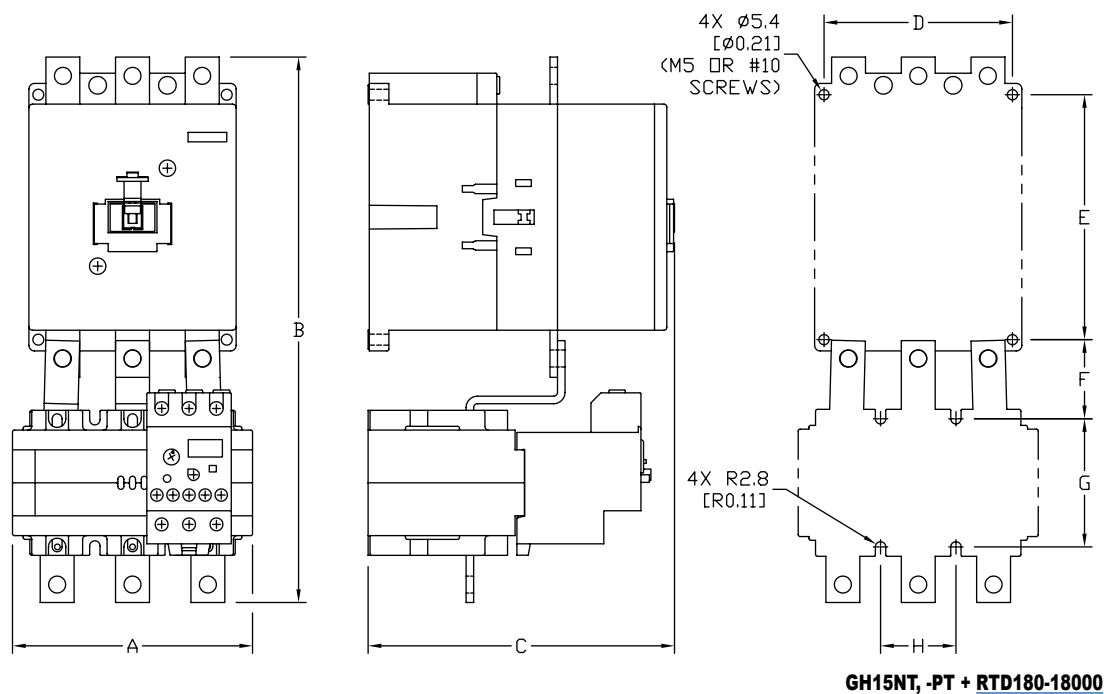
## 79mm Contactor and Overload Dimensions



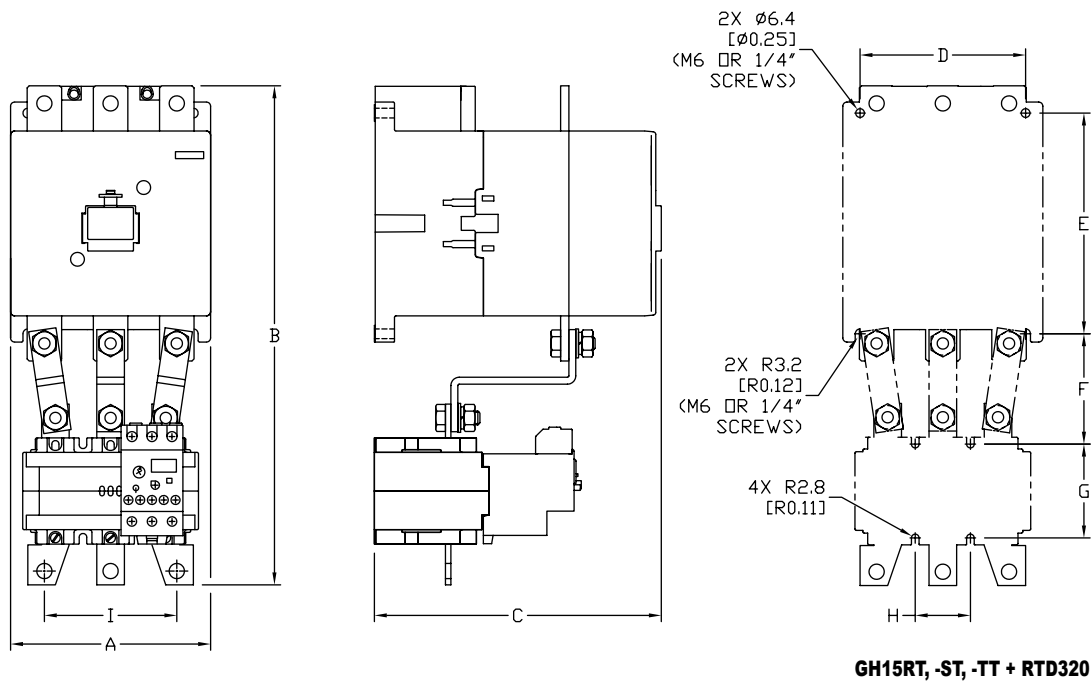
Note: See our website [www.automationdirect.com](http://www.automationdirect.com) for complete engineering drawings

# GH15 Series Overload Relay Dimensions

## 110mm Contactor and Overload Dimensions



## 145mm Contactor and Overload Dimensions



Note: See our website [www.automationdirect.com](http://www.automationdirect.com) for complete engineering drawings