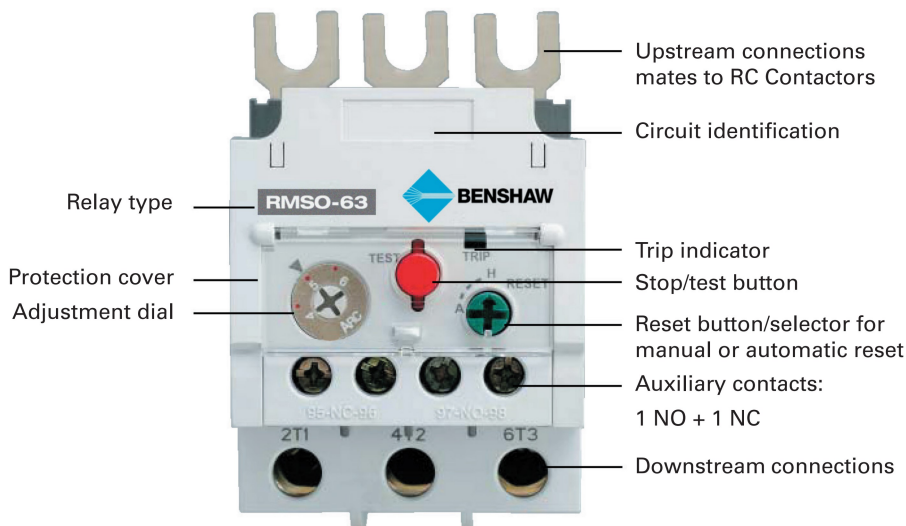


# BIMETALLIC OVERLOAD RELAYS

RMSO/SPO SERIES — FOR MOTOR PROTECTION UP TO 800 A  
UP TO 690 V FOR CATEGORY AC-3



	Stop	Test/Trip	Reset
NC 95-96			
NO 97-98			

## RMSO overload relay highlights:

RMSO SPO Series overload relays are bimetallic-style and are designed to protect AC circuits and motors against overloads, phase failure, long starting times and stalling of the motor.

### KEY ADVANTAGES:

- Meet EN 60947-1, EN 60947-4-1 standards
- CE, CSA, cUL, UL listed
- Trip indicator
- Reset button/selector for manual or auto reset
- Finger-safe terminals
- Differential-type phase failure protection
- Add-on accessories available
- Close couple to RC contactors (see page 17–18)
- Separate mount bases available for RMSO-32-150

### STANDARD FEATURES:

- IP20 protection (IEC 60 529)
- Trip indicator
- Reset button/selector for manual or auto reset
- Test trip device
- Finger-safe terminals
- Overload adjustment dial cover
- 1 NO and 1 NC auxiliary contacts
- Identification labels
- Temperature compensation
- -60°C to 70°C storage temperature range
- -5°C to 55°C operating temperature range
- Differential-type phase loss protection
- 6 kV dielectric strength at 50 Hz (IEC 25505)
- 6 kV impulse withstand voltage (IEC 801-5)

### Guaranteed ... for two full years.

Only Benschaw has a two year guarantee.

Every Benschaw modular overload relay is guaranteed for two full years. Other manufacturers limit their warranties to just one year. But at Benschaw, we believe that, because we build them better, we can guarantee them longer.



# BIMETALLIC OVERLOAD RELAY SPECIFICATIONS

## RMSO SERIES

### ELECTRICAL CHARACTERISTICS OF POWER CIRCUIT

Specification	RMSO-32	RMSO-63	RMSO-95	RMSO-150
Differential Type (Phase failure protection)	Yes	Yes	Yes	Yes
Tripping Class (IEC 60947-4-1)	10 A, 20	10 A, 20	10 A, 20	10 A, 20
Terminal Type	Screw Clamp	Screw Clamp	Screw Clamp	Screw/Lug
Number of Poles	3	3	3	3
Rated Operational Voltage (Ue)	Up to 690 V	Up to 690 V	Up to 690 V	Up to 690 V
Rated Insulation Voltage (Ui)	690 V	690 V	690 V	690 V
Rated Impulse Voltage (Uimp)	6 kV	6 kV	6 kV	6 kV
Setting Range	0.1~32 A	4~65 A	7~95 A	34~150 A
Degree of Protection (IEC 60 529)	IP20	IP20	IP20	IP20
Temperature Compensation (°C)	-5 ~ +40	-5 ~ +40	-5 ~ +40	-5 ~ +40
Trip Indicating Function	•	•	•	•
Stop Function	•	•	•	•
Test Function	•	•	•	•
Manual/Automatic Reset Function	•	•	•	•
Applied Contactors	RC-9A, 12A, 18A, 22A, 32A, 40A	RC-50A, 65A	RC-75A, 85A, 100A	RC-130A, 150A

## SPO SERIES

### ELECTRICAL CHARACTERISTICS OF POWER CIRCUIT

Specification	SPO-220	SPO-400	SPO-800
Differential Type (Phase failure protection)	Yes	Yes	Yes
Trip Class	10 A, 20	10 A, 20	10 A, 20
Terminal Type	Screw/Lug	Screw/Lug	Screw/Lug
Number of Poles	3	3	3
Rated Operational Voltage (Ue)	Up to 690 V	Up to 690 V	Up to 690 V
Rated Insulation Voltage (Ui)	690 V	690 V	690 V
Rated Impulse Voltage (Uimp)	6 kV	6 kV	6 kV
Setting Range	65~240A	85~400 A	200~800 A
Degree of Protection (IEC 60 529)	IP20	IP20	IP20
Temperature Compensation (°C)	-5 ~ +40	-5 ~ +40	-5 ~ +40
Trip Indicating Function	•	•	•
Stop Function	•	•	•
Test Function	•	•	•
Applied Contactors	RSC-180,RSC-220	RSC-300, RSC-400	RSC-600, RSC-800
Separate Mounting Unit		-	-

# BIMETALLIC OVERLOAD RELAYS

RMSO/SPO SERIES — BIMETALLIC — CLASS 10A AND 20

**Simple, fully adjustable overload relays.**

Extended Part No.	Setting Range Min. (A) to Max. (A)	Overload Frame (Contactor Mount)
0.14	0.1 to 0.16	RMSO - 32 (RC - 9A -> RC - 40A)
0.21	0.16 to 0.25	
0.33	0.25 to 0.4	
0.52	0.4 to 0.63	
0.82	0.63 to 1	
1.3	1 to 1.6	RMSO - 63 (RC - 50A -> RC - 65A)
2.1	1.6 to 2.5	
3.3	2.5 to 4	
5	4 to 6	
6.5	5 to 8	
7.5	6 to 9	RMSO - 95 (RC - 75A -> RC - 100A)
8.5	7 to 10	
11	9 to 13	
15	12 to 18	
19	16 to 22	
22	18 to 26	RMSO - 150 (RC - 130A -> RC - 150A)
30	24 to 36	
34	28 to 40	
42	34 to 50	
55	45 to 65	
65	54 to 75	SPO - 220 (RSC - 180 - 220)
74	63 to 85	
80	65 to 100	
107	85 to 125	
130	100 to 160	
150	120 to 180	SPO - 400 (RSC - 300 - 400)
200	160 to 240	
250	200 to 300	
350	260 to 400	
500	400 to 600	
660	520 to 800	SPO - 800 (RSC - 600 - 800)

Benshaw bimetallic overload relays integrally mount to RC and RSC contactors to provide thermal overload protection.



**THE SURPROTEX OVERLOAD RELAY**

The SurProtex overload relay can be mounted directly to the magnetic contactors without additional brackets.



**SAFETY COVER**

A "finger-proof" safety cover prevents any contact with live parts.



**SIMPLE ADJUSTMENTS**

Overload adjustments are easy to access and straightforward to set.



**TRIP/RESET INDICATOR**

Each overload relay has a manual trip operator and indicator flag.

NOTE: Direct mount to RC and RSC Series contactors only.

# BIMETALLIC OVERLOAD RELAYS

## RMSO/SPO — BIMETALLIC — CLASS 10A



Model Number	Overload Range (A)	List Price	Model Number	Overload Range (A)	List Price	Model Number	Overload Range (A)	List Price
<b>For Contactors RC-9A, 12A, 18A, 22A, 32A, 40A</b>			<b>For Contactors RC-75A, 85A and 100A</b>			<b>For Contactors RSC-180 and 220</b>		
☞ RMSO-32-0.14	0.1–0.16	\$92	☞ RMSO-95-8.5A	7–10	\$176	SPO-220-80A	65–100	\$361
☞ RMSO-32-.2A1	0.16–0.25	\$92	☞ RMSO-95-11A	9–13	\$176	SPO-220-107A	85–125	\$361
☞ RMSO-32-.3A3	0.25–0.4	\$92	☞ RMSO-95-15A	12–18	\$176	SPO-220-130A	100–160	\$361
☞ RMSO-32-.5A2	0.4–0.63	\$92	☞ RMSO-95-19A	16–22	\$176	SPO-220-153	120–180	\$361
☞ RMSO-32-.8A2	0.63–1	\$92	☞ RMSO-95-21.5A	18–25	\$176	SPO-220-200A	160–240	\$361
☞ RMSO-32-1.3A	1–1.6	\$92	☞ RMSO-95-30A	24–36	\$176	<b>For Contactors RSC-300 and 400</b>		
☞ RMSO-32-2.1A	1.6–2.5	\$92	☞ RMSO-95-34A	28–40	\$176	SPO-400-107	85–125	\$388
☞ RMSO-32-3.3A	2.5–4	\$92	☞ RMSO-95-42A	34–50	\$176	SPO-400-130	100–160	\$388
☞ RMSO-32-5A	4–6	\$92	☞ RMSO-95-55A	45–65	\$176	SPO-400-150A	120–180	\$388
☞ RMSO-32-6.5A	5–8	\$92	☞ RMSO-95-65A	54–75	\$176	SPO-400-200	160–240	\$388
☞ RMSO-32-7.5A	6–9	\$92	☞ RMSO-95-80A	80–100	\$176	SPO-400-265	200–300	\$388
☞ RMSO-32-8.5A	7–10	\$92	<b>For Contactors RC-130A and 150A</b>			SPO-400-350A	260–400	\$388
☞ RMSO-32-11A	9–13	\$92	☞ RMSO-150-42A	34–50	\$233	<b>For Contactors RSC-600 and 800</b>		
☞ RMSO-32-15A	12–18	\$92	☞ RMSO-150-55A	45–65	\$233	SPO-800-250A	200–300	\$1,262
☞ RMSO-32-19A	16–22	\$92	☞ RMSO-150-65A	54–75	\$233	SPO-800-350	260–400	\$1,262
☞ RMSO-32-21.5A	18–25	\$92	☞ RMSO-150-74A	63–85	\$233	SPO-800-515	400–600	\$1,262
☞ RMSO-32-27A	22–32	\$92	☞ RMSO-150-93A	80–105	\$233	SPO-800-660A	520–800	\$1,262
☞ RMSO-32-30A	28–40	\$92	☞ RMSO-150-113A	95–130	\$233			
<b>For Contactors RC-50A and 65A</b>			☞ RMSO-150-130A	110–150	\$233			
☞ RMSO-63-8.5A	7–10	\$143						
☞ RMSO-63-11A	9–13	\$143						
☞ RMSO-63-15A	12–18	\$143						
☞ RMSO-63-19A	16–22	\$143						
☞ RMSO-63-21.5A	18–25	\$143						
☞ RMSO-63-30A	24–36	\$143						
☞ RMSO-63-34A	28–40	\$143						
☞ RMSO-63-42A	34–50	\$143						
☞ RMSO-63-55A	45–65	\$143						

☞ Web stocked

Price Effective July 1, 2025

# BIMETALLIC OVERLOAD RELAYS

## RMSO/SPO SERIES — BIMETALLIC — CLASS 20



Model Number	Overload Range (A)	List Price
<b>For Contactors RC-9A, 12A, 18A, 22A, 32A, 40A</b>		
☞ RMSO-32H-1.3A	1–1.6	\$92
☞ RMSO-32H-2.1A	1.6–2.5	\$92
☞ RMSO-32H-3.3A	2.5–4	\$92
☞ RMSO-32H-5A	4–6	\$92
☞ RMSO-32H-7.5A	6–9	\$92
☞ RMSO-32H-11A	9–13	\$92
☞ RMSO-32H-15A	12–18	\$92
☞ RMSO-32H-19A	16–22	\$92
☞ RMSO-32H-21.5A	18–25	\$92
☞ RMSO-32H-27A	22–32	\$92
☞ RMSO-32H-34A	28–40	\$92
<b>For Contactors RC-50A and 65A</b>		
RMSO-63H-21.5A	18–25	\$143
RMSO-63H-30A	24–36	\$143
RMSO-63H-34A	28–40	\$143
RMSO-63H-42A	34–50	\$143
RMSO-63H-55A	45–65	\$143

Model Number	Overload Range (A)	List Price
<b>For Contactors RC-75A, 85A and 100A</b>		
RMSO-95H-21.5A	18–25	\$176
RMSO-95H-30A	24–36	\$176
RMSO-95H-34A	28–40	\$176
RMSO-95H-42A	34–50	\$176
RMSO-95H-55A	45–65	\$176
RMSO-95H-65A	54–75	\$176
RMSO-95H-74A	63–85	\$176
RMSO-95H-80A	70–95	\$176
RMSO-95H-90A	80–100	\$176
<b>For Contactors RC-130A and 150A</b>		
RMSO-150H-42A	34–50	\$233
RMSO-150H-65A	54–75	\$233
RMSO-150H-93A	80–105	\$233
RMSO-150H-113A	95–130	\$233
RMSO-150H-130A	110–150	\$233

Model Number	Overload Range (A)	List Price
<b>For Contactors RSC-180 and 220</b>		
SPO-220H-80A	65–100	\$361
SPO-220H-130A	100–160	\$361
SPO-220H-200A	160–240	\$361
<b>For Contactors RSC-300 and 400</b>		
SPO-400H-130A	100–160	\$422
SPO-400H-200A	160–240	\$422
SPO-400H-250A	200–300	\$422
SPO-400H-350A	260–400	\$422
<b>For Contactors RSC-600 and RSC - 800</b>		
SPO-800H-250A	200–300	\$1,262
SPO-800H-350A	260–400	\$1,262
SPO-800H-500A	400–600	\$1,262
SPO-800H-660A	520–800	\$1,262

☞ Web stocked

# BIMETALLIC OVERLOAD RELAY ACCESSORIES

## RMSO/SPO SERIES



### SEPARATE MOUNT ADAPTERS

Used to individually mount the RMSO overload relays.  
Can be DIN rail or panel mounted.

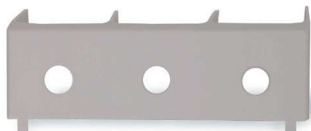
Model Number	Description	Terminal Type	Overload Type	List Price
RMSO-B32	Overload Mounting Base	Screw	RMSO-32/32H	\$30
RMSO-B63	Overload Mounting Base	Screw	RMSO-63/63H	\$42
RMSO-B95	Overload Mounting Base	Screw	RMSO-95/95H	\$51
RMSO-B150	Overload Mounting Base	Screw	RMSO-150/150H	\$70



### REMOTE RESET DEVICE

Model Number	Description	Overload Type	List Price
☞ RMSOUM4R	400mm Cable	RMSO32-95	\$30
☞ RMSOUM5R	500mm Cable	RMSO32-95	\$36
☞ RMSOUM6R	600mm Cable	RMSO32-95	\$43

☞ Web stocked



### SPO OVERLOAD TERMINAL COVERS

Model Number	Overload Frame	List Price
☞ SPO-APT25	SPO-125	\$28
☞ SPO-APT150	SPO-150	\$28
☞ SPO-APT220	SPO-220	\$28
☞ SPO-APT400	SPO-400	\$36
☞ SPO-APT600	SPO-600	\$92

Kits include line and load terminal covers.

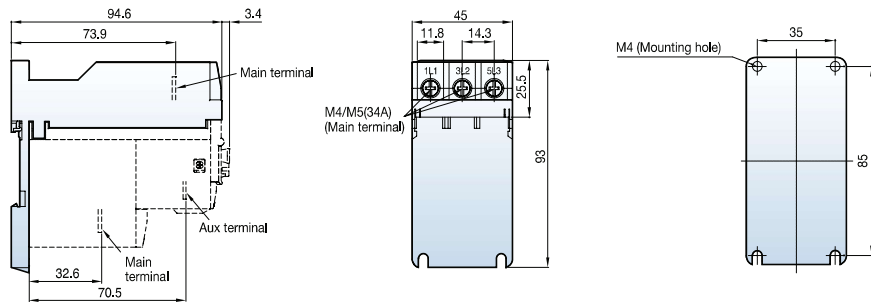
☞ Web stocked

# OVERLOAD RELAY DIMENSIONS

## RMSO SEPARATE MOUNTING BASE, SCREW TYPE — DIMENSIONS

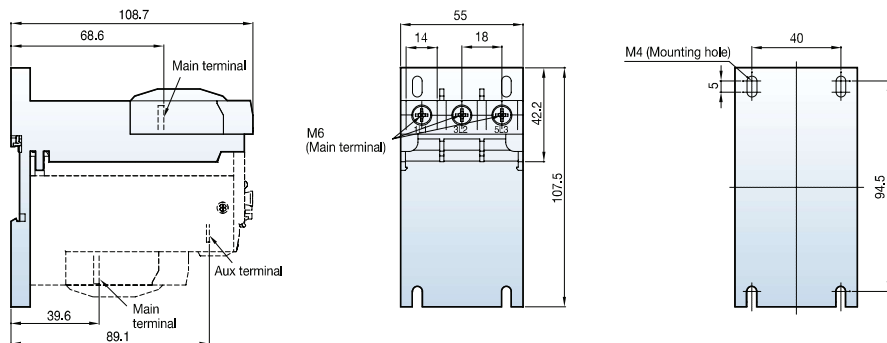
### RMSO-B32

Weight: 68g



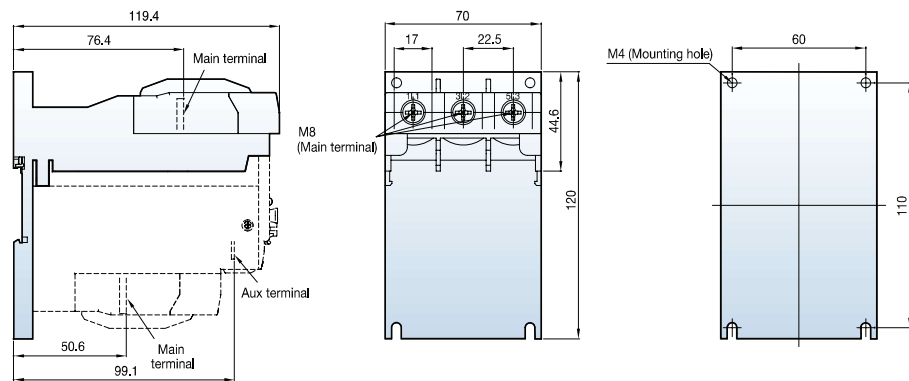
### RMSO-B63

Weight: 134g



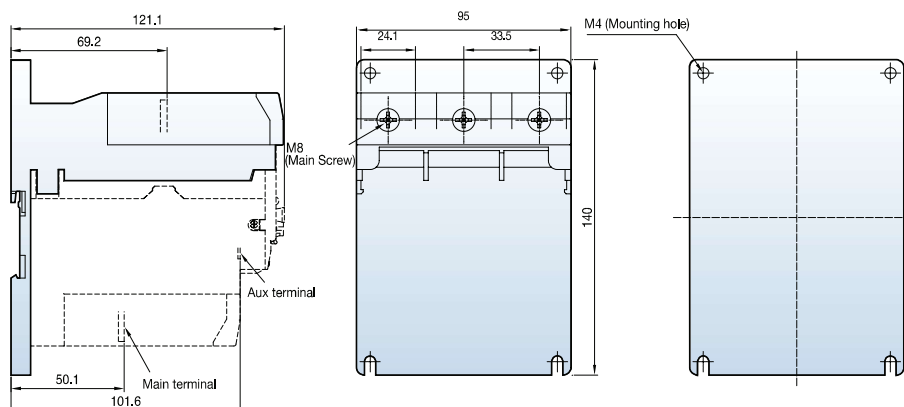
### RMSO-B95

Weight: 230g



### RMSO-B150

Weight: 284g

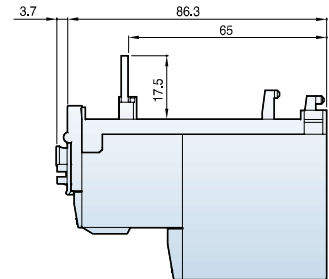
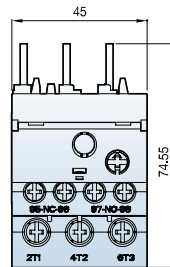


# OVERLOAD RELAY DIMENSIONS

## RMSO CLASS 10, 20 DIRECT MOUNT

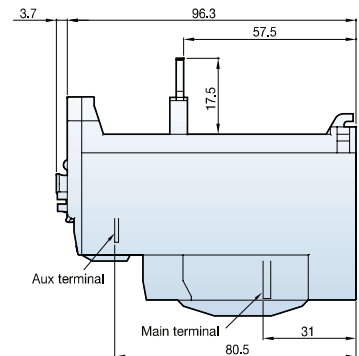
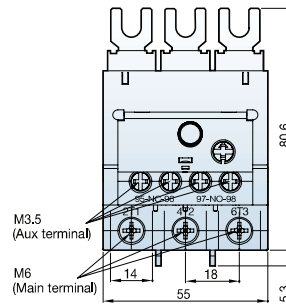
### RMSO-32/32H

Weight: 167g



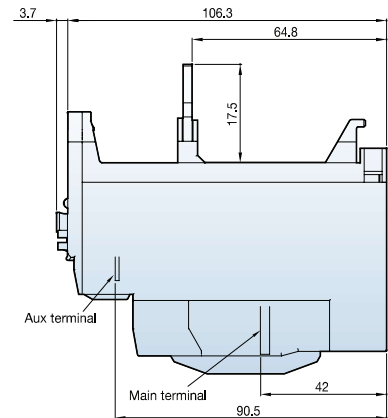
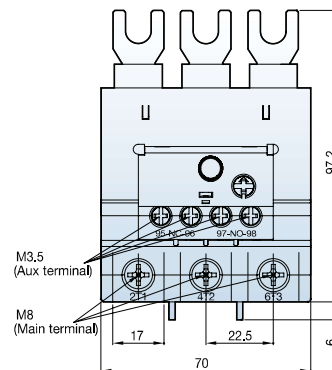
### RMSO-63/63H

Weight: 303g



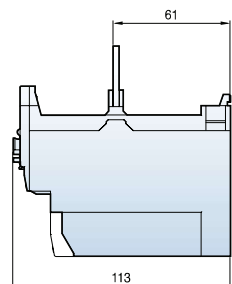
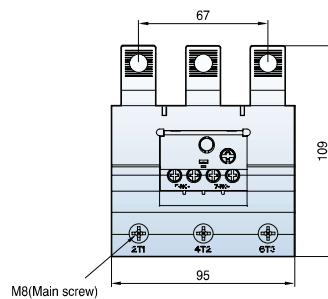
### RMSO-95/95H

Weight: 474g



### RMSO-150/150H

Weight: 0.7kg

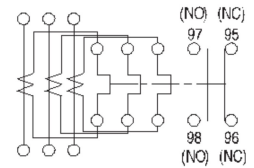
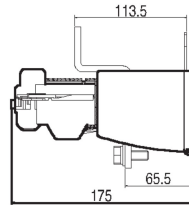
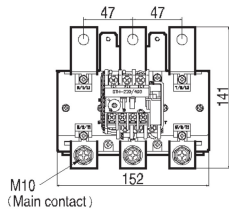


# OVERLOAD RELAY MOUNTING DIMENSIONS

## SPO CLASS 10, 20 DIRECT MOUNT

### SPO-220

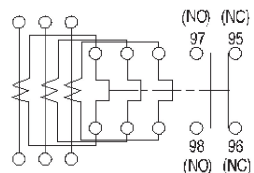
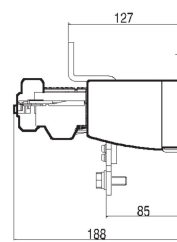
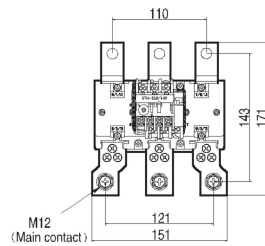
Weight: 2.5 Kg



Wiring Diagram

### SPO-400

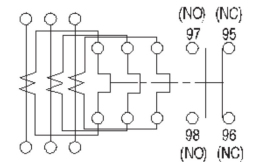
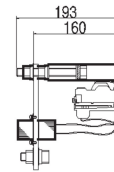
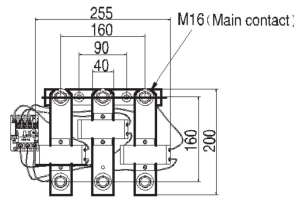
Weight: 2.6 Kg



Wiring Diagram

### SPO-800

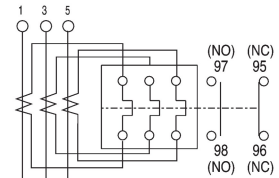
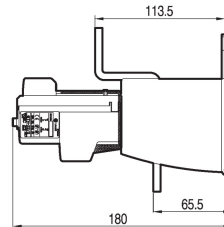
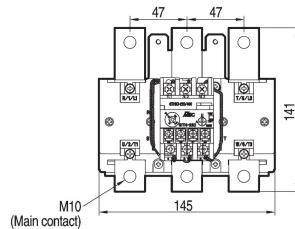
Weight: 5.5 Kg



Wiring Diagram

### SPO-220H

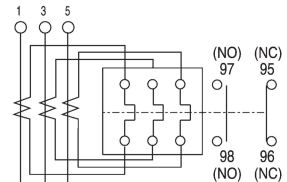
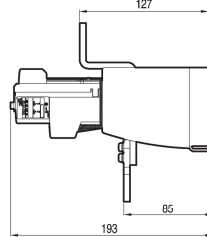
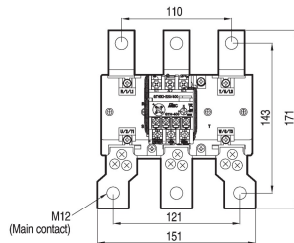
Weight: 2.5 Kg



Wiring Diagram

### SPO-400H

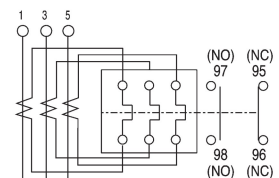
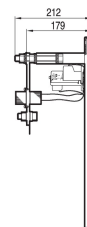
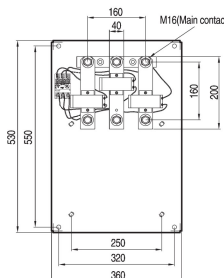
Weight: 2.6 Kg



Wiring Diagram

### SPO-800H

Weight: 11.5 Kg



Wiring Diagram

Dimensions are in mm (1 inch = 25.4 mm).

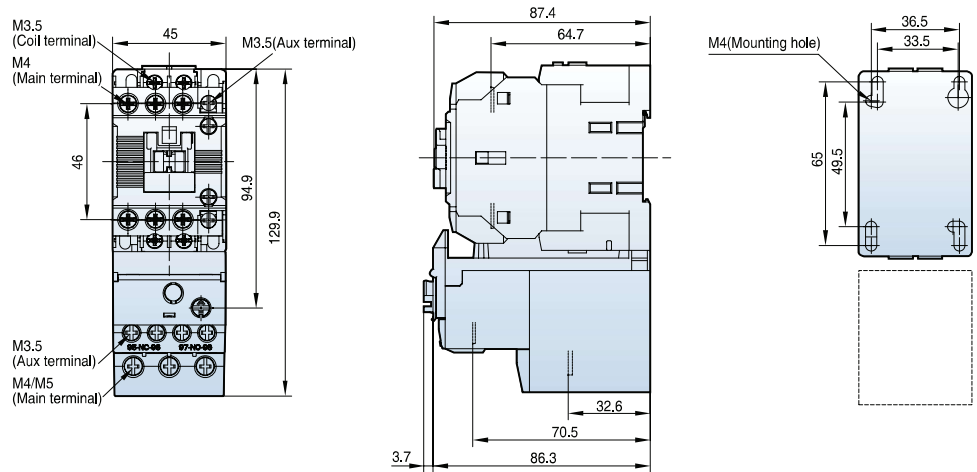


# MOTOR STARTER OVERALL DIMENSIONS

## RC+RMSO SERIES

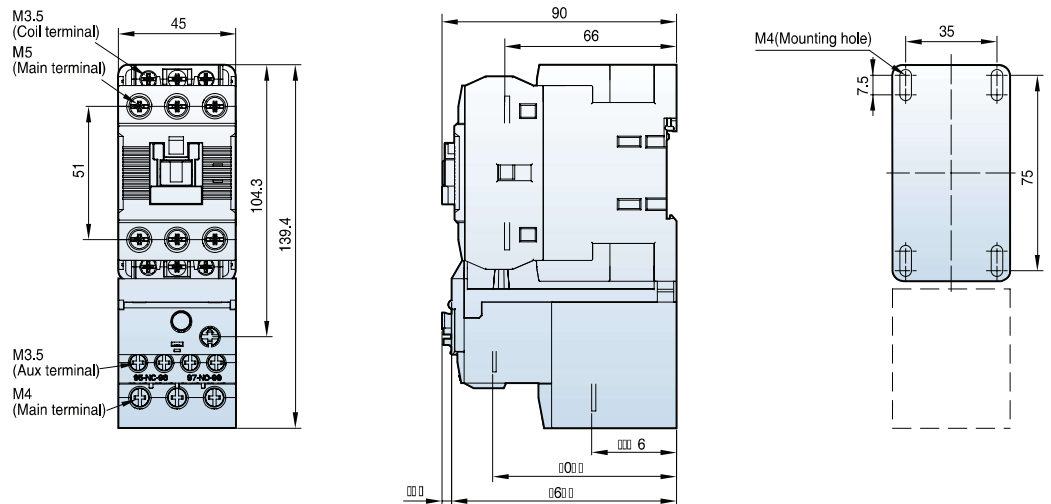
### RC-9A through RC-22A with RMSO-32

Weight: 0.5 kg



### RC-32A and RC-40A with RMSO-32

Weight: 0.6 kg



Dimensions are in mm (1 inch = 25.4 mm).





# ELECTRONIC OVERLOAD RELAYS

## SPE SERIES — ELECTRONIC TYPE — CLASS 1–30



### SPE22-3PR-1.5A, -5A, -22A, 32A -40A

Direct mount on RC- 9, 12, 18, 22, 32, 40

#### DESCRIPTION:

- Wide and adjustable current range
- Adjustable trip time class 5, 10, 15, 20, 30
- Direct mount to RC 9 to 40 contactors
- Separate mount using 3SR type with screw terminals
- DIN rail mountable except SPE-80S
- Manual reset is standard



### SPE22-3SR-1.5A, -5A, -22A, -40A

Screw terminals

#### FEATURES:

- Operation status LED indicator
  - Normal operation
  - Overload
  - Phase imbalance
- Trip cause indication
  - Overcurrent
  - Phase loss
  - Reverse phase
- Test / Reset push-button
- Trip time setting 0–30 sec. @ 6 x set current
- Setting range 0.1–80 amps



### SPE80-3SR-80A

Separate mount with all contactors

Model Number	Overload Range (A)	List Price
Contactor RC - 9, 12, 18 & 22 — Direct Mount to RC Contactor ONLY		
☞ SPE22-3PR-1.5A	0.3~1.5	\$176
☞ SPE22-3PR-5A	1–5	\$176
☞ SPE22-3PR-22A	4.4~22	\$206
Contactor RC - 32 & 40 — Direct Mount to RC Contactor ONLY		
☞ SPE40-3PR-40A	8~40	\$317
All Contactors — Separate Mount*		
☞ SPE22-3SR-1.5A	0.3~1.5	\$176
☞ SPE22-3SR-5A	1–5	\$176
☞ SPE22-3SR-22A	4.4~22	\$206
☞ SPE40-3SR-40A	8~40	\$351
All Contactors — Separate Mount*		
☞ SPE80-3SR-80A	16–80	\$351

Separate 120 VAC control source is required for operation.

\*Optional CTs can be used for higher current ratings with SPE22-35R-5A

☞ Web stocked

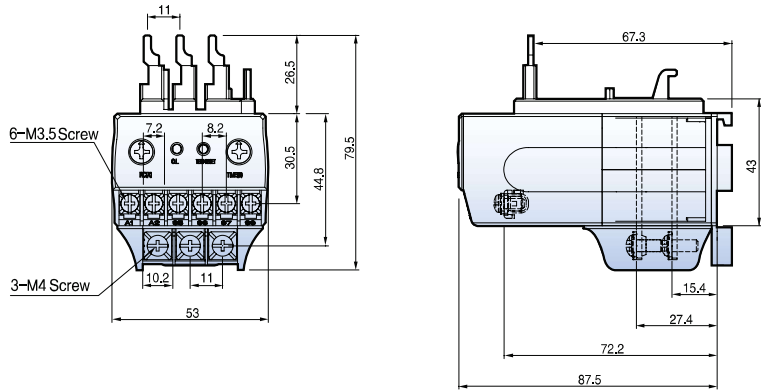
Price Effective July 1, 2025

# ELECTRONIC OVERLOAD RELAY DIMENSIONS

## SPE SERIES — ELECTRONIC TYPE — CLASS 1-30

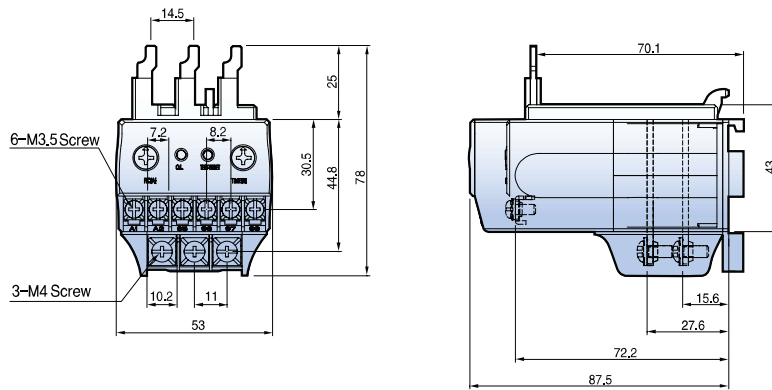
### SPE22-3PR

Weight: 0.18kg



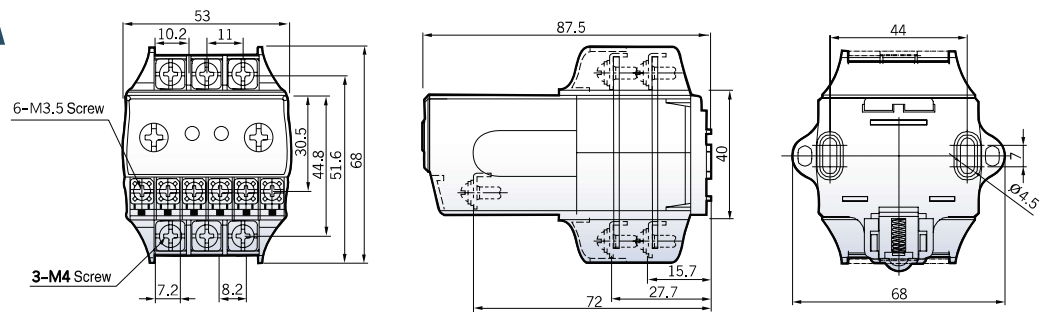
### SPE40-3PR

Weight: 0.20kg/0.22kg



### SPE22-3SR and SPE40-3SR

Weight: 0.19kg/0.21kg



### SPE80-3SR

Weight: 0.42kg/0.46kg

