



BENSHAW

Applied Motor Controls

AN **AMCONEX GROUP** COMPANY

Product Catalog



JANUARY 2026 EDITION

Control Products

Rapid | Rugged | Global

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Introduction

Benshaw offers a complete line of contactors, overload relays and full voltage starters. All units are UL and cUL listed, IEC or NEMA rated and backed by the industry's only two-year factory warranty.

Contactors

Benshaw contactors are used for controlling single- and three-phase motors, as well as for switching resistive or inductive loads up to 690 VAC. Our RediStart™ contactor line is built and tested to world-leading electrical and mechanical standards.

Overload Relays

Our 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. We also offer a selection of electronic and digital relays.

Full Voltage Starters

Benshaw full voltage full voltage starters (both reversing and non-reversing) are NEMA rated, feature direct-mount overload relays, draw-out cassette coils above 150 amps, a bimetallic overload relay, and integral coil surge suppression above 150 amps.

Benshaw's prepackaged full voltage starters are NEMA rated, cUL listed, and completely integrated. The rugged NEMA 12/3R design is ideal for industrial duty applications such as pumps, compressors, conveyors, fans and any other continuous duty equipment. The "three wires in/out" design includes a Benshaw SPE field-adjustable electronic overload relay, which enables quick installation and startup with precision motor protection ... standard.

Motor Starter Protectors

RMSP Series manual starters meet or exceed all universal standards and offer efficient motor starting functionality in a compact design. Protection functions include protection of group installation, protection of circuits, motor protection, starter protection and phase failure protection. They couple directly to RC Series contactors for a complete electromechanical combination starter.



CONTACTORS — UL / IEC / NEMA

RC / RSC SERIES
UP TO 690 VAC CONTACTORS

RATINGS

NEMA:	Size 00–7
IEC:	9–800 Amps
UL:	1–600 HP



IEC / NEMA CONTACTOR HIGHLIGHTS

Benschaw contactors are used for controlling single- and three-phase motors and for switching resistive or inductive loads up to 690 VAC. The RediStart™ contactor line is built and tested to world-leading electrical and mechanical standards.



RoHS compliant
 KEPIC compliant

KEY ADVANTAGES:

- World's longest electrical and mechanical lifespan
- UL/CSA, IEC, NEMA, BS, EN, VDE ratings
- Direct mount thermal overload relays
- Full line of field installable, modularized accessories
- Device marking strip
- AC or DC coil options

STANDARD FEATURES:

- DIN rail mountable to 150 amps
- Full product family to 800 amps
- Direct mount overload relays
- Draw out cassette coils 180 amps and above
- Integral coil surge suppression 180 amps and above
- Low coil power consumption
- Phase barriers supplied as standard
- Uni-directional mounting
- Extremely long lifespan
- Compact size
- Unit identification marker

RC-9 – 150A

- Finger-proof design
- DIN rail or screw mountable
- Top/side mount accessories
- Small physical size
- Dual auxiliary contacts above 22 A
- Integral voltage barriers

RSC-180 – 800

- Draw-out cassette-type coil
- Wide voltage range coils
- Integral coil surge suppression
- Dual auxiliary contacts

* Consult factory for certifications.

CONTACTOR PART NUMBER ASSEMBLER

RC / RSC SERIES

RSC

220

U120

REDISTART™ CONTACTOR

RC 9A–150A

RSC 180–800

CONTACTOR FRAME & RATING

Contactor	IEC AC3 480 Rating	NEMA Size
9A	9 A	00
12A	12 A	0
18A	18 A	–
22A	22 A	–
32A	32 A	–
40A	40 A	–
50A	50 A	–
65A	60 A	–
75A	75 A	–
85A	85 A	3
100A	105 A	–
130A	130 A	–
150A	150 A	4
180	185 A	–
220	225 A	–
300	330 A	5
400	400 A	–
600	630 A	6
800	800 A	7

	Frames 9A–150A	Frames 180–400	Frames 600/800
Coil Voltage	Suffix Part # AC 50 & 60 Hz	Suffix Part # AC 50 & 60 Hz	Suffix Part #
24	56AC24	–	–
48	56AC48	–	–
110	56AC110	U120	U120
120	56AC120	U120	U120
208	56AC208	U120	U200
240	56AC240	U120	U200
380	56AC380	–	–
480	56AC500	U500	U500
575	56AC500	U500	U500

RC-9A– RC -150A coil voltages: 85%~110% of rated voltage.

For DC and other coils not listed, consult factory.

U120 coils are universal 100–240 VAC / 100–220 VDC (100–400 amp frames only).

U120 coils are 100–127 VAC only for 600 and 800 amp frames.

U200 coils are 200–240 VAC for 600 and 800 amp frames.

U500 coils are universal 440–600 VAC.

56AC24 coils are 24 V 50/60 Hz.

56AC48 coils are 48V 50/60 Hz

56AC110 coils are 110V 50/60 Hz

56AC120 coils are 120V 50/60 Hz

CONTACTOR RATINGS AND PRICING



RC / RSC SERIES

UL / IEC RATED

Model Number	Amp Ratings						HP Ratings						Aux. Contact	
	AC1	AC3				UL	One-Phase		Three-Phase				NO NC	
	lth	200/240	380/440	500/550	690	lth	115	230	200	230	460	690	NO	NC
☞ RC-9A-*	25	11	9	7	6	25	0.5	1.5	2	3	5	7.5	1	1
☞ RC-12A-*	25	13	12	12	9	25	0.75	2	3	5	7.5	10	1	1
☞ RC-18A-*	32	18	18	13	9	32	1	3	5	7.5	10	15	1	1
☞ RC-22A-*	40	22	22	20	18	40	2	3	7.5	10	15	20	1	1
☞ RC-32A-*	50	32	32	28	20	50	2	5	7.5	10	20	25	2	2
☞ RC-40A-*	60	40	40	32	23	60	3	7.5	15	15	30	30	2	2
☞ RC-50A-*	70	55	50	43	28	70	3	10	20	25	40	50	2	2
☞ RC-65A-*	100	65	65	60	35	100	5	15	25	30	50	60	2	2
☞ RC-75A-*	110	75	75	64	42	110	5	15	25	30	50	60	2	2
☞ RC-85A-*	135	85	85	75	45	135	7.5	15	30	40	60	75	2	2
☞ RC-100A-*	160	105	105	85	65	160	10	20	30	40	75	75	2	2
☞ RC-130A-*	160	130	130	90	60	160	10	20	40	40	75	75	2	2
☞ RC-150A-*	210	150	150	100	60	210	15	25	40	50	100	75	2	2
☞ RSC-180-*	230	180	180	180	120	230	15	30	60	60	125	125	2	2
☞ RSC-220-*	275	250	250	200	150	275	15	40	60	75	150	150	2	2
☞ RSC-300-*	350	300	300	250	220	350	-	-	100	100	200	200	2	2
☞ RSC-400-*	450	400	400	350	300	450	-	-	125	150	300	300	2	2
☞ RSC-600-*	660	630	630	500	420	660	-	-	150	200	400	400	2	2
☞ RSC-800-*	900	800	800	720	630	900	-	-	250	300	600	600	2	2

AC1: Resistive Loads

AC3: AC Motor Loads

*Add coil suffix. See page 5 for Contactor part number assembler.

NEMA RATED

Model Number	NEMA Size	NEMA Amps	Full Voltage Starting			Part Winding Starting			Wye Delta Starting		
			200V	230V	460V 575V	200V	230V	460V 575V	200V	230V	460V 575V
☞ RC-9A-*	00	9	1 1/2	1 1/2	2	-	-	-	-	-	-
☞ RC-12A-*	0	18	3	3	5	-	-	-	-	-	-
☞ RC-18A-*	1	27	7.5	7.5	10	10	10	15	10	10	15
☞ RC-40A-*	2	45	10	15	25	20	25	40	20	25	40
☞ RC-85A-*	3	90	25	30	50	40	50	75	40	50	75
☞ RC-150A-*	4	135	40	50	100	75	75	150	60	75	150
☞ RSC-300-*	5	270	75	100	200	150	150	350	150	150	300
☞ RSC-600-*	6	540	150	200	400	-	300	600	300	350	700
☞ RSC-800-*	7	810	-	300	600	-	450	900	500	500	1000

*Add coil suffix. See page 5 for Contactor part number assembler.

☞ Web stocked

CONTACTOR TECHNICAL INFORMATION

RC / RSC SERIES

Specification		Contactor Type	RC 9A	RC 12A	RC 18A	RC 22A	RC 32A	RC 40A	RC 50A	RC 65A	RC 75AW	RC 85A	RC 100A	RC 130A	RC 150A	RSC 180		RSC 220	RSC 300	RSC 400	RSC 600	RSC 800
Lighting Duty	AC 5	120–690 V	11A	13A	18A	22A	32A	40A	50A	65A	75A	85A	105A	120A	150A	180A	250A	300A	400A	630A	800A	
Rated Life (million)		Electrical	2.5	2.5	2.5	2.5	2	2	2	2	2	2	1	1	1	1	1	1	0.5	0.5	0.5	
		Mechanical	25	25	25	25	15	15	10	10	10	10	5	5	5	5	5	5	5	5	5	
Withstand Voltage Rating			6000V																			
Ambient Temperature Range			-5 to 50°C Operation, -40 to 65°C Storage Without Derating																			
Operating Times (AC coil)	Closing (ms)	15–30							15–30				20–40		45–60		45–68		66–70			
	Opening (ms)	4–19							10–30				60–70		41–45		43–52		45–55			
Resistance to Shock			49 m/s2 (<5g)																			
Conductor Size (max.)*Note			#10AWG	#8			#6	#4	#3	#2	1/0	2/0	4/0	Limited Only by Crimp Size								
Switching Frequency (OP/HR) AC3			1800	1800	1800	1800	1800	1800	1800	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	
Interrupt Curr. @ 460 VAC			5KA	5KA	5KA	5KA	5KA	5KA	5KA	5KA	10KA	10KA	10KA	10KA	10KA	10KA	10KA	18KA	18KA	30KA	30KA	
Maximum Make Current (A)		480 V, AC3	90	120	180	220	320	400	500	650	750	950	1050	960	1200	1800	2500	3000	4000	6300	8000	
Maximum Break Current (A)		480 V, AC3	72	96	144	176	256	320	400	520	600	650	840	1200	1500	1800	2500	3000	4000	6300	8000	
Rated Insulation Voltage			690V				690V						690V									
Vibration Resistance			19.6 m/s2 (<2g)																			

*Note: ≤ RC-40A have screws with clamp-type washer

CONTACTOR TECHNICAL INFORMATION

RC / RSC SERIES

DESCRIPTION 22AF

Rating

Contactor Type			MC-9B	MC-12B	MC-18B	MC-22B
			A	A	A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	10	12	18	20
		48V	10	12	18	20
		110V	6	10	13	15
	3-pole in series	24V	10	12	18	20
		48V	10	12	18	20
		110V	8	12	18	20
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	8	12	12	20
		48V	4	6	6	15
		110V	2.5	4	4	8
	3-pole in series	24V	8	12	12	20
		48V	6	10	10	20
		110V	4	8	8	15

DESCRIPTION 40AF

Rating

Contactor Type			MC-32A	MC-40A
			A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	25	35
		48V	25	35
		110V	25	35
	3-pole in series	24V	25	35
		48V	25	35
		110V	25	35
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	25	35
		48V	20	20
		110V	10	10
	3-pole in series	24V	25	35
		48V	25	30
		110V	20	20

CONTACTOR TECHNICAL INFORMATION

RC / RSC SERIES

DESCRIPTION 65AF

Rating

Contactor Type			MC-50A	MC-65A
			A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	50	50
		48V	40	40
		110V	35	35
	3-pole in series	24V	50	65
		48V	50	65
		110V	50	65
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	45	45
		48V	25	25
		110V	15	15
	3-pole in series	24V	50	50
		48V	35	35
		110V	30	30

DESCRIPTION 100AF

Rating

Contactor Type			MC-75A	MC-85A	MC-100A
			A	A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	75	80	100
		48V	65	65	100
		110V	50	50	80
	3-pole in series	24V	75	80	100
		48V	75	80	100
		110V	75	80	100
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	65	65	100
		48V	40	40	60
		110V	20	20	40
	3-pole in series	24V	80	80	100
		48V	60	60	90
		110V	50	50	80

CONTACTOR TECHNICAL INFORMATION

RC / RSC SERIES

DESCRIPTION 150AF

Rating

Contactor Type			MC-130A	MC-150A
			A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	120	150
		48V	100	120
		110V	80	100
	3-pole in series	24V	120	150
		48V	120	150
		110V	100	150
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	120	150
		48V	60	100
		110V	40	80
	3-pole in series	24V	120	150
		48V	90	130
		110V	80	120

DESCRIPTION 225AF

Rating

Contactor Type			MC-185A	MC-225A
			A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	180	220
		48V	180	180
		110V	150	150
	3-pole in series	24V	180	220
		48V	180	220
		110V	180	220
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	180	220
		48V	150	150
		110V	120	120
	3-pole in series	24V	180	220
		48V	180	220
		110V	150	150

CONTACTOR TECHNICAL INFORMATION

RC / RSC SERIES

DESCRIPTION 400AF

Rating

Contactor Type			MC-265A	MC-330A	MC-400A
			A	A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	220	300	400
		48V	180	240	240
		110V	150	200	200
	3-pole in series	24V	220	300	400
		48V	220	300	400
		110V	220	300	400
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	220	300	400
		48V	150	200	200
		110V	120	150	150
	3-pole in series	24V	220	300	400
		48V	220	280	280
		110V	150	200	200

DESCRIPTION 800AF

Rating

Contactor Type			MC-500A	MC-630A	MC-800A
			A	A	A
DC1 Duty (L/R=1ms)	2-pole in series	24V	400	630	800
		48V	240	630	800
		110V	200	630	630
	3-pole in series	24V	400	630	800
		48V	400	630	800
		110V	400	630	800
DC3, 4 Duty (L/R=15ms)	2-pole in series	24V	400	630	800
		48V	200	630	630
		110V	150	630	630
	3-pole in series	24V	400	630	800
		48V	280	630	630
		110V	200	630	630

CONTACTOR COIL RATINGS

RC / RSC SERIES

Type	Coil Consumption AC (VA)		Heat Dissipation (W)	Operational Voltage		Operating Time	
	Inrush	Sealed		(% of rated coil voltage)		Closing	Opening
				Min.	Max.	(ms)	(ms)
RC-9A~22A	80	11	2.3	85%	110%	15~30	4~19
RC-32A~40A	80	9	2.7	85%	110%	15~30	4~19
RC-50A~65A	120	11	2.8	85%	110%	15~30	4~19
RC-75A~100A	220	16	5.4	85%	110%	15~30	10~30
RC-130A~150A	110	24	2.7	85%	110%	20~40	60~70
Pick Up (V) U120 Drop Out (V) U120							
RSC-180~220	220	9.1	3.4	77%	48%	60	41
RSC-300~400	393	14	4.4	77%	48%	64~68	43~47
RSC-600~800	1000	17	6.3	77%	48%	66~70	45~49

Type	Coil Consumption DC (W)		Operational Voltage		Operating Time	
			(% of rated coil voltage)		Closing	Opening
	Inrush	Sealed	Min.	Max.	(ms)	(ms)
RC-9A~22A	3	5	85%	110%	40~60	4~19
RC-32A~40A	2.2	9	85%	110%	50~65	4~19
RC-50A~65A	2.2	9	85%	110%	50~65	4~19
RC-75A~100A	5.1	18	85%	110%	100~120	10~45
RC-130A~150A	213	7.5	85%	110%	70~80	60~70

CONTACTOR ACCESSORIES

RC / RSC SERIES



OPTIONAL CONTACTOR BOX LUG KITS

Model Number	Description	Contactor Range	Conductors Per Phase	Wire Size
☞ RSC-AJ-220	1 Kit = 3 Lugs for Line or Load	180–220	1	1 AWG–350 MCM
☞ RSC-AJ-400		300–400	2	3/0–500 MCM
☞ RSC-AJ-800		600–800	2	3/0–600 MCM

No box lug kits for RC-9A–150A.

AUXILIARY CONTACT BLOCKS

Model Number	Description	Contactor Range	Poles
☞ RC-AU2-1A1B	Top Mount	RC-9A–150A	2 (1 NO/1 NC)
☞ RC-AU4-2A2B	Top Mount	RC-9A–150A	4 (2 NO/2 NC)
☞ RC-UA1	Side Mount	RC-9A–150A	2 (1 NO/1 NC)
☞ RC-AU100	Side Mount	RSC-180–800	2 (1 NO/1 NC)

SURGE SUPPRESSORS

Model Number	Description	Coil Voltage	Contactor Range
☞ RC-US1	RC + Varistor	AC 24–48 V	RC-9A–150A
☞ RC-US2	RC + Varistor	AC 120 V	RC-9A–150A
☞ RC-US3	RC + Varistor	AC 200–240 V	RC-9A–150A
☞ RC-US4	RC + Varistor	DC 24–48 V	RC-9A–150A
☞ RC-MO125	Varistor	AC 100–125 V	All
☞ RC-MO240	Varistor	AC 200–240 V	All
☞ RC-MO48	Varistor	AC 24–48 V	All

RSC-A100 and RC-AU100 are the same part. RSC-A100 is the old part number

RSC-180–800 contactors have built-in surge suppression.

☞ Web stocked

CONTACTOR ACCESSORIES

RC / RSC SERIES



MECHANICAL INTERLOCK UNITS

Model Number	Description	Contactor Range
☞ RC-M150*	Mechanical interlock for two contactors. Prevents both contactors from closing simultaneously.	RC-9A–150A
☞ RSC-M400		RSC-180–400
☞ RSC-M800		RSC-600–800

*RC-M150A includes (2) NC contacts for electrical interlock.

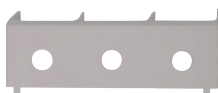
REVERSE WIRE KITS*



Model Number	Description
☞ RMSC-UW-22	Reversing Wire Kit for RC-22 contactor
☞ RMSC-UW-32	Reversing Wire Kit for RC-32 contactor
☞ RMSC-UW-63	Reversing Wire Kit for RC-63 contactor
☞ RMSC-UW-95	Reversing Wire Kit for RC-95 contactor

*The reverse wire kit is used when 2 contactors are connected together to create a reversing contactor set, remember to order the appropriate mechanical interlock RC-M150.

TERMINAL COVER KITS*



Model Number	Contactor Range
☞ RSC-AP220	RSC-180–220
☞ RSC-AP400	RSC-300–400
☞ RSC-AP600	RSC-600–800

*Terminal cover kits included with RC-9A–RC-150A.

Kits include line and load terminal covers.



CAPACITOR UNIT

Model Number	Description	Configuration	Contactor Range
☞ RSC-AC-9	Capacitor Unit	—	RC-9A–RC-40A
☞ RSC-AC-50	Capacitor Unit	—	RC-50A–RC-100A

Use when connecting PFCCs, reduces inrush current caused by charging of capacitors

☞ Web stocked

CONTACTOR REPLACEMENT PARTS

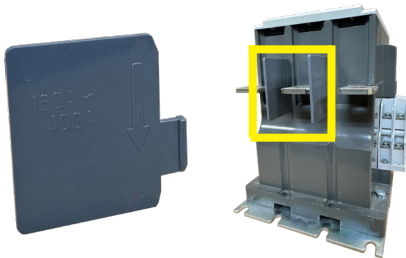
RC / RSC SERIES



REPLACEMENT CONTACT KITS

Model Number	Description	Contactor Range
☞ RSC-T180	Each kit includes: 6 stationary and 3 movable contacts (Replaces all three phases of one contactor)	RSC-180
☞ RSC-T220		RSC-220
☞ RSC-T300		RSC-300
☞ RSC-T400		RSC-400
☞ RSC-T600		RSC-600
☞ RSC-T800		RSC-800

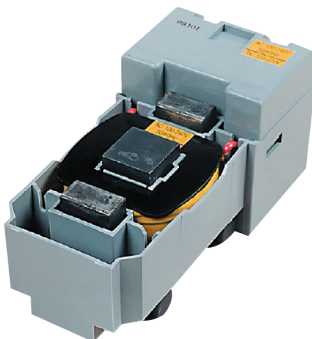
No contact kits are available for RC-9A-150A.



PHASE BARRIER KITS

Model Number	Description	Contactor Range
☞ RSC-B400	Each kit includes: 2 phase barriers for line or load side of one contactor	RSC-180-400
☞ RSC-B800		RSC-600-800

No replacement phase barriers are available for RC-9A-150A



CONTACTOR COILS

Model Number	Coil Voltage	Contactor Range
☞ RSC-C220U120	100 V-240 V	RSC-180-220
☞ RSC-C220U500	440 V-575 V	RSC-180-220
☞ RSC-C400U120	100 V-240 V	RSC-300-400
☞ RSC-C400U400	380 V-450 V	RSC-300-400
☞ RSC-C400U500	440 V-575 V	RSC-300-400
☞ RSC-C800U120	100 V-127 V	RSC-600-800
☞ RSC-C800U200	200 V-240 V	RSC-600-800
☞ RSC-C800U500	440 V-575 V	RSC-600-800

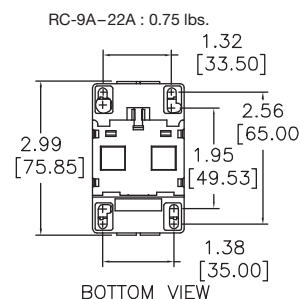
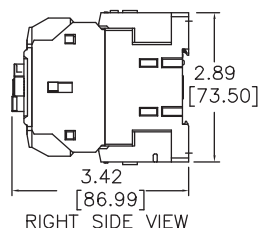
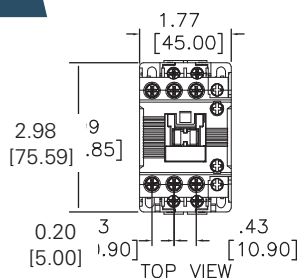
No replacement coils available for RC-9A-150A

☞ Web stocked

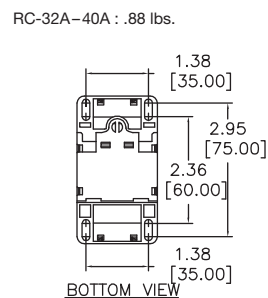
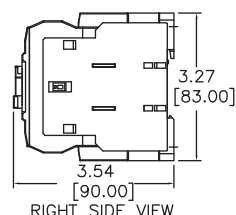
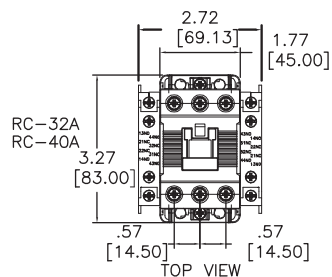
CONTACTOR MOUNTING DIMENSIONS

RC-9A – RC-65A CONTACTORS

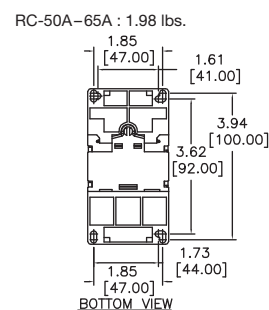
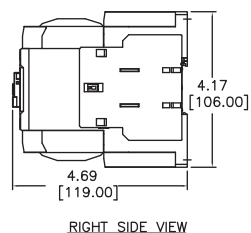
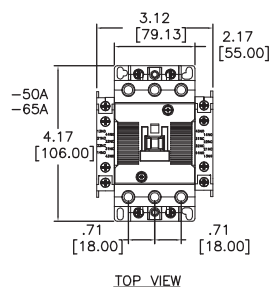
RC-9A, RC-12A, RC-18A, RC-22A



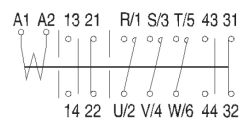
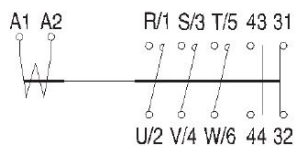
RC-32A, RC-40A



RC-50, RC-65A



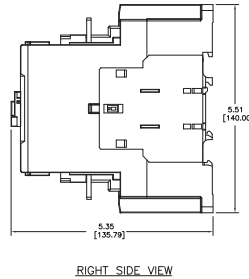
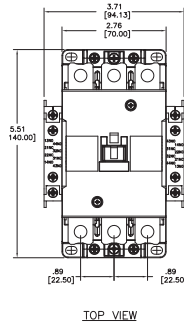
Circuit Diagram



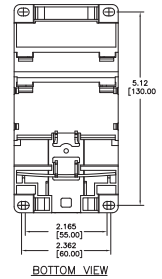
CONTACTOR MOUNTING DIMENSIONS

RC-75A – 150A CONTACTORS AND RSC-180 – 220 CONTACTORS

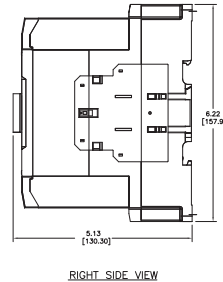
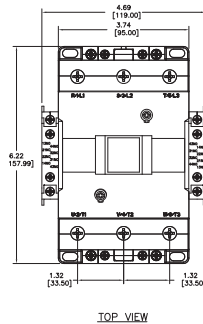
RC-75A, RC-85A, RC-100A



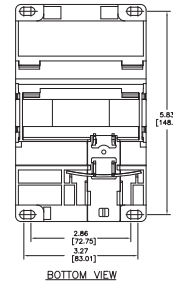
RC-75A-100A : 3.52 lbs.



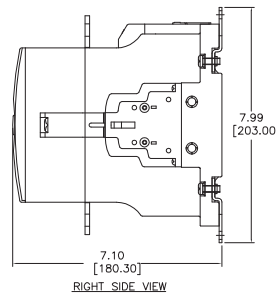
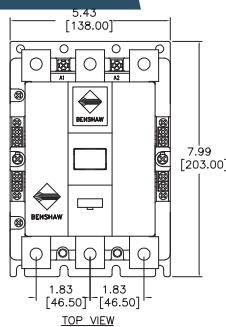
RC-130A, RC-150A



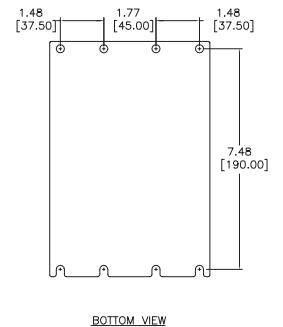
RSC-130A-150A : 5.3 lbs.



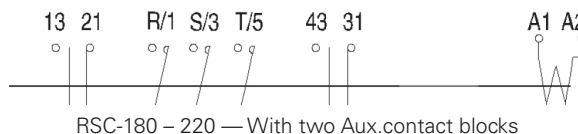
RSC-180, RSC-220



RSC-180-220 : 11.9 lbs.



Circuit Diagram

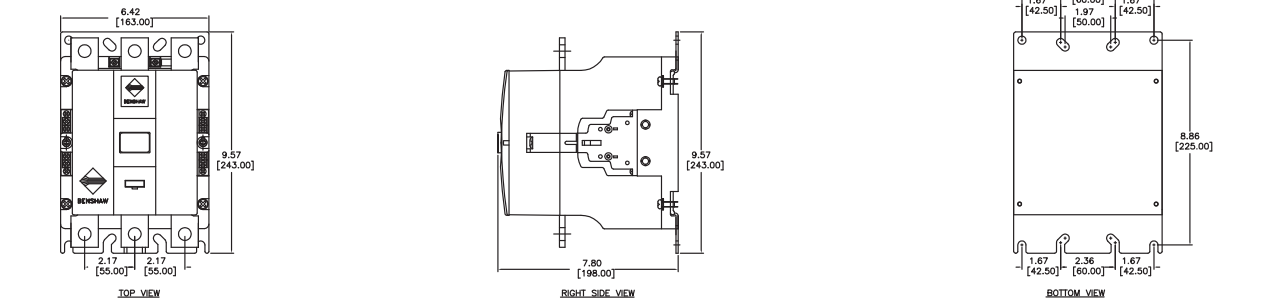


CONTACTOR MOUNTING DIMENSIONS

RSC-300 – 800 CONTACTORS

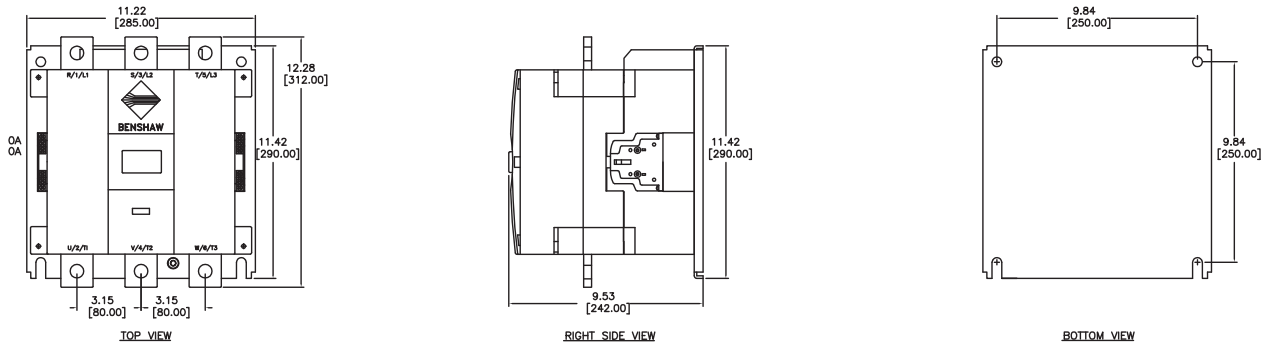
RSC-300, RSC-400

RSC-300–400 : 20.3 lbs.

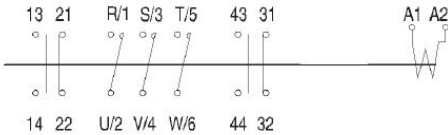


RSC-600, RSC-800

RSC-600–800 : 49.4



Circuit Diagram



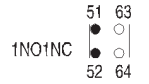
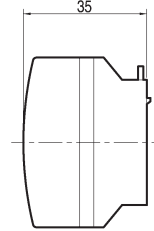
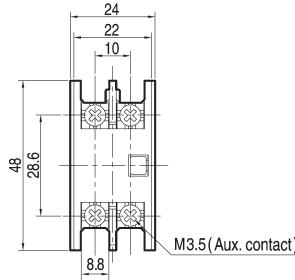
RSC-300 – 800

CONTACTOR MOUNTING DIMENSIONS

AUXILIARY CONTACTS

RC-AU2-1A1B

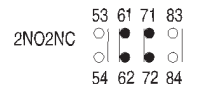
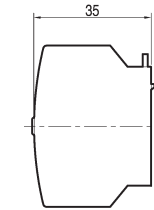
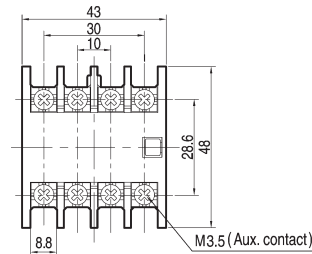
Weight: 28 g



Wiring Diagram

RC-AU4-2A2B

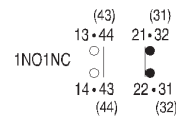
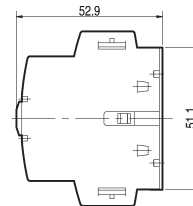
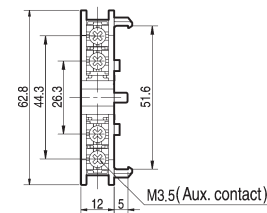
Weight: 50 g



Wiring Diagram

RC-UA1

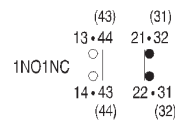
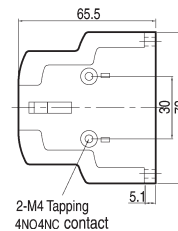
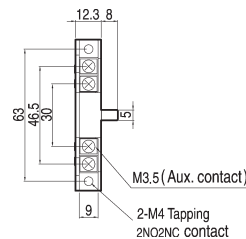
Weight: 33 g



Wiring Diagram

RC-AU100

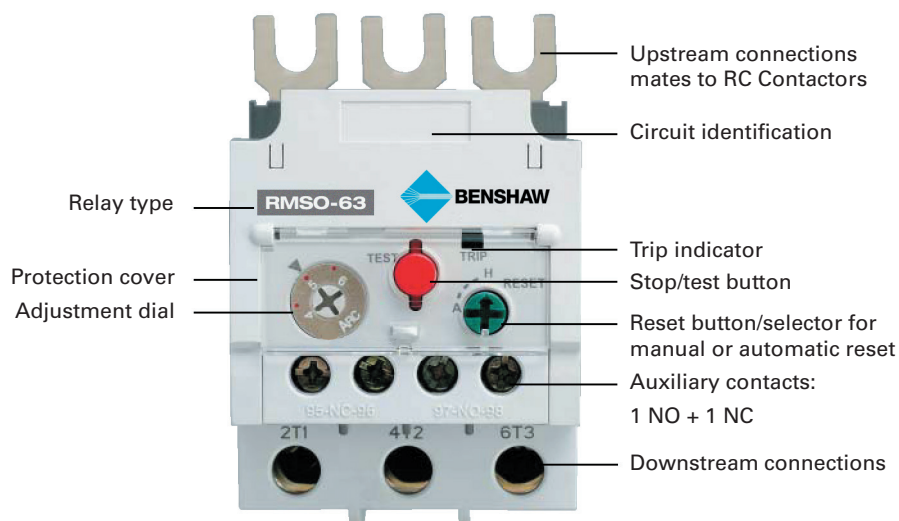
Weight: 45 g



Wiring Diagram

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

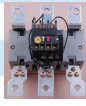
ELECTRICAL CHARACTERISTICS OF POWER CIRCUIT

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	
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	
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	
8.5	7 to 10	
11	9 to 13	
15	12 to 18	
19	16 to 22	
22	18 to 26	
30	24 to 36	
34	28 to 40	
42	34 to 50	
55	45 to 65	
65	54 to 75	
74	63 to 85	
80	65 to 100	
107	85 to 125	
130	100 to 160	
150	120 to 180	
200	160 to 240	
250	200 to 300	
350	260 to 400	
500	400 to 600	
660	520 to 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)

For Contactors RC-9A, 12A, 18A, 22A, 32A, 40A

☞ RMSO-32-0.14	0.1–0.16
☞ RMSO-32-.2A1	0.16–0.25
☞ RMSO-32-.3A3	0.25–0.4
☞ RMSO-32-.5A2	0.4–0.63
☞ RMSO-32-.8A2	0.63–1
☞ RMSO-32-1.3A	1–1.6
☞ RMSO-32-2.1A	1.6–2.5
☞ RMSO-32-3.3A	2.5–4
☞ RMSO-32-5A	4–6
☞ RMSO-32-6.5A	5–8
☞ RMSO-32-7.5A	6–9
☞ RMSO-32-8.5A	7–10
☞ RMSO-32-11A	9–13
☞ RMSO-32-15A	12–18
☞ RMSO-32-19A	16–22
☞ RMSO-32-21.5A	18–25
☞ RMSO-32-27A	22–32
☞ RMSO-32-30A	28–40

For Contactors RC-50A and 65A

☞ RMSO-63-8.5A	7–10
☞ RMSO-63-11A	9–13
☞ RMSO-63-15A	12–18
☞ RMSO-63-19A	16–22
☞ RMSO-63-21.5A	18–25
☞ RMSO-63-30A	24–36
☞ RMSO-63-34A	28–40
☞ RMSO-63-42A	34–50
☞ RMSO-63-55A	45–65

☞ Web stocked

Model Number Overload
Range (A)

For Contactors RC-75A, 85A and 100A

☞ RMSO-95-8.5A	7–10
☞ RMSO-95-11A	9–13
☞ RMSO-95-15A	12–18
☞ RMSO-95-19A	16–22
☞ RMSO-95-21.5A	18–25
☞ RMSO-95-30A	24–36
☞ RMSO-95-34A	28–40
☞ RMSO-95-42A	34–50
☞ RMSO-95-55A	45–65
☞ RMSO-95-65A	54–75
☞ RMSO-95-80A	80–100

For Contactors RC-130A and 150A

☞ RMSO-150-42A	34–50
☞ RMSO-150-55A	45–65
☞ RMSO-150-65A	54–75
☞ RMSO-150-74A	63–85
☞ RMSO-150-93A	80–105
☞ RMSO-150-113A	95–130
☞ RMSO-150-130A	110–150

Model Number Overload
Range (A)

For Contactors RSC-180 and 220

SPO-220-80A	65–100
SPO-220-107A	85–125
SPO-220-130A	100–160
SPO-220-153	120–180
SPO-220-200A	160–240

For Contactors RSC-300 and 400

SPO-400-107	85–125
SPO-400-130	100–160
SPO-400-150A	120–180
SPO-400-200	160–240
SPO-400-265	200–300
SPO-400-350A	260–400

For Contactors RSC-600 and 800

SPO-800-250A	200–300
SPO-800-350	260–400
SPO-800-515	400–600
SPO-800-660A	520–800

BIMETALLIC OVERLOAD RELAYS

RMSO/SPO SERIES — BIMETALLIC — CLASS 20



Model Number Overload
Range (A)

For Contactors RC-9A, 12A, 18A, 22A, 32A, 40A

☞ RMSO-32H-1.3A	1–1.6
☞ RMSO-32H-2.1A	1.6–2.5
☞ RMSO-32H-3.3A	2.5–4
☞ RMSO-32H-5A	4–6
☞ RMSO-32H-7.5A	6–9
☞ RMSO-32H-11A	9–13
☞ RMSO-32H-15A	12–18
☞ RMSO-32H-19A	16–22
☞ RMSO-32H-21.5A	18–25
☞ RMSO-32H-27A	22–32
☞ RMSO-32H-34A	28–40

For Contactors RC-50A and 65A

RMSO-63H-21.5A	18–25
RMSO-63H-30A	24–36
RMSO-63H-34A	28–40
RMSO-63H-42A	34–50
RMSO-63H-55A	45–65

Model Number Overload
Range (A)

For Contactors RC-75A, 85A and 100A

RMSO-95H-21.5A	18–25
RMSO-95H-30A	24–36
RMSO-95H-34A	28–40
RMSO-95H-42A	34–50
RMSO-95H-55A	45–65
RMSO-95H-65A	54–75
RMSO-95H-74A	63–85
RMSO-95H-80A	70–95
RMSO-95H-90A	80–100

For Contactors RC-130A and 150A

RMSO-150H-42A	34–50
RMSO-150H-65A	54–75
RMSO-150H-93A	80–105
RMSO-150H-113A	95–130
RMSO-150H-130A	110–150

Model Number Overload
Range (A)

For Contactors RSC-180 and 220

SPO-220H-80A	65–100
SPO-220H-130A	100–160
SPO-220H-200A	160–240

For Contactors RSC-300 and 400

SPO-400H-130A	100–160
SPO-400H-200A	160–240
SPO-400H-250A	200–300
SPO-400H-350A	260–400

For Contactors RSC-600 and RSC - 800

SPO-800H-250A	200–300
SPO-800H-350A	260–400
SPO-800H-500A	400–600
SPO-800H-660A	520–800

☞ 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.

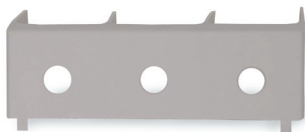
Model Number	Description	Terminal Type	Overload Type
RMSO-B32	Overload Mounting Base	Screw	RMSO-32/32H
RMSO-B63	Overload Mounting Base	Screw	RMSO-63/63H
RMSO-B95	Overload Mounting Base	Screw	RMSO-95/95H
RMSO-B150	Overload Mounting Base	Screw	RMSO-150/150H



REMOTE RESET DEVICE

Model Number	Description	Overload Type
☞ RMSOUM4R	400mm Cable	RMSO32-95
☞ RMSOUM5R	500mm Cable	RMSO32-95
☞ RMSOUM6R	600mm Cable	RMSO32-95

☞ Web stocked



SPO OVERLOAD TERMINAL COVERS

Model Number	Overload Frame
☞ SPO-APT25	SPO-125
☞ SPO-APT150	SPO-150
☞ SPO-APT220	SPO-220
☞ SPO-APT400	SPO-400
☞ SPO-APT600	SPO-600

Kits include line and load terminal covers.

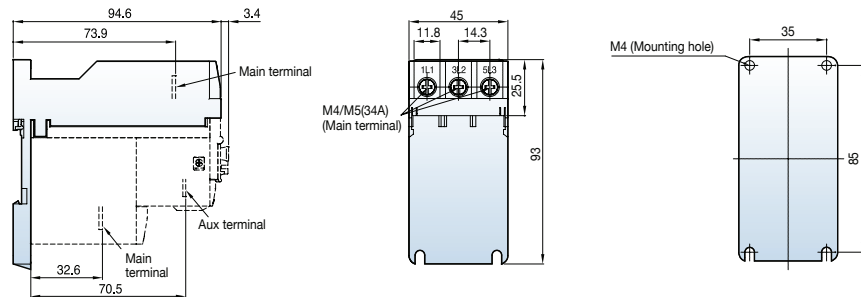
☞ Web stocked

OVERLOAD RELAY DIMENSIONS

RMSO SEPARATE MOUNTING BASE, SCREW TYPE — DIMENSIONS

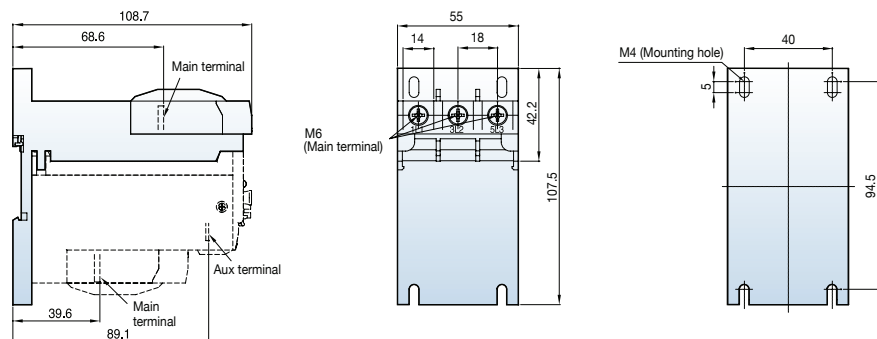
RMSO-B32

Weight: 68g



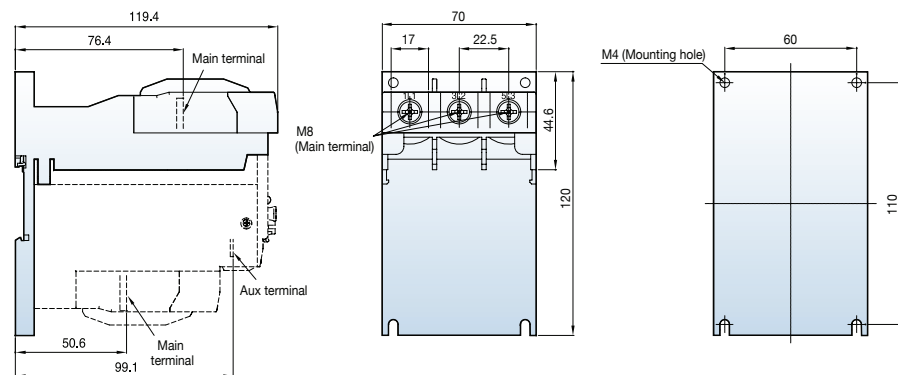
RMSO-B63

Weight: 134g



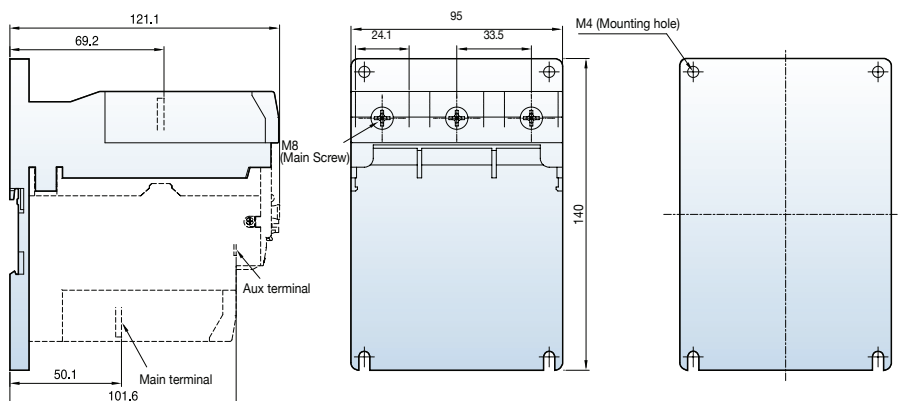
RMSO-B95

Weight: 230g



RMSO-B150

Weight: 284g

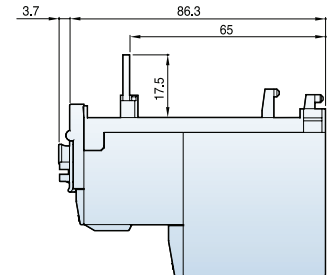
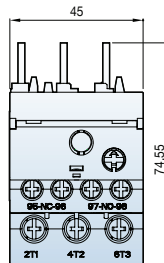


OVERLOAD RELAY DIMENSIONS

RMSO CLASS 10, 20 DIRECT MOUNT

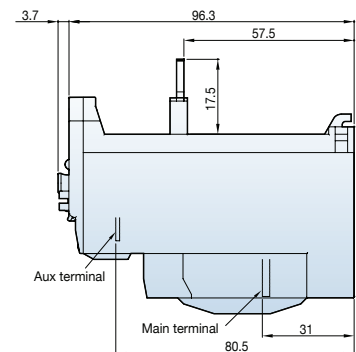
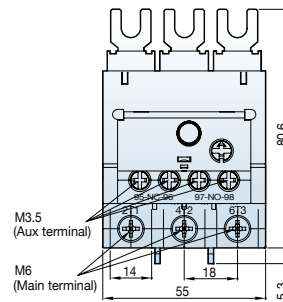
RMSO-32/32H

Weight: 167g



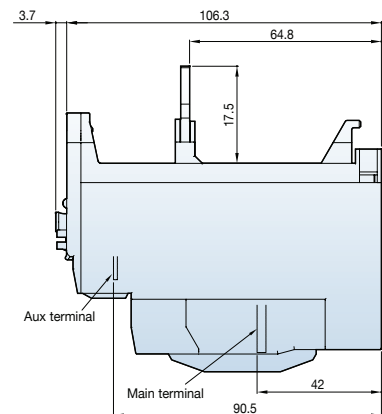
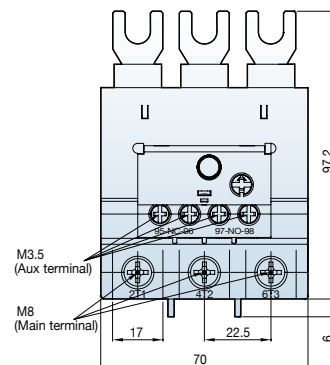
RMSO-63/63H

Weight: 303g



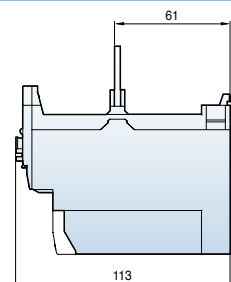
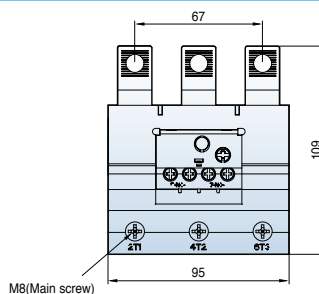
RMSO-95/95H

Weight: 474g



RMSO-150/150H

Weight: 0.7kg

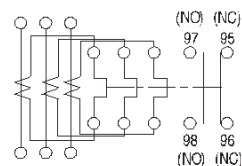
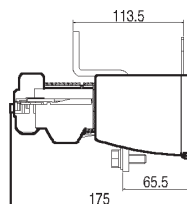
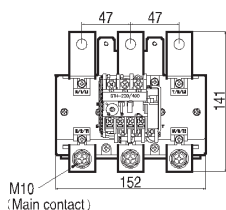


OVERLOAD RELAY MOUNTING DIMENSIONS

SPO CLASS 10, 20 DIRECT MOUNT

SPO-220

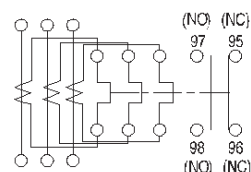
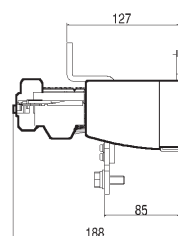
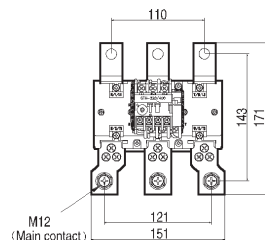
Weight: 2.5 Kg



Wiring Diagram

SPO-400

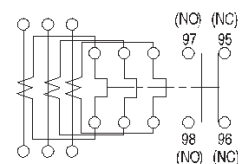
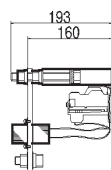
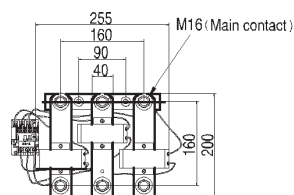
Weight: 2.6 Kg



Wiring Diagram

SPO-800

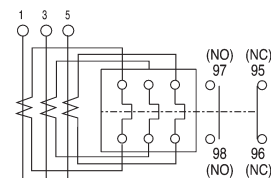
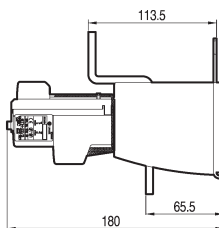
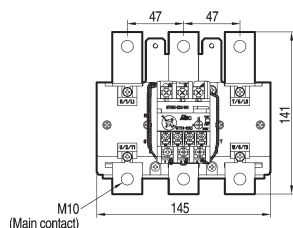
Weight: 5.5 Kg



Wiring Diagram

SPO-220H

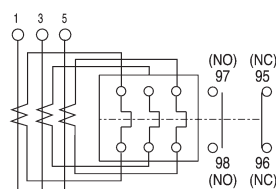
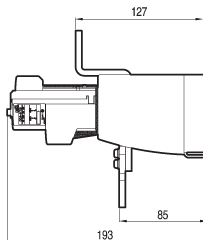
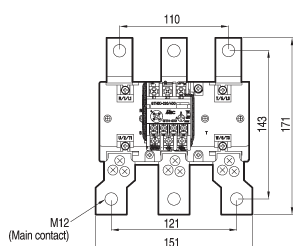
Weight: 2.5 Kg



Wiring Diagram

SPO-400H

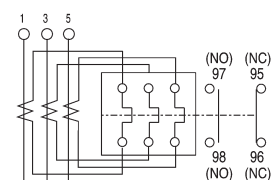
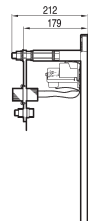
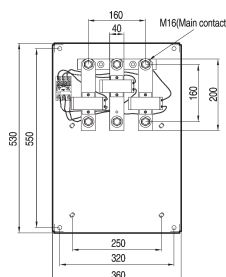
Weight: 2.6 Kg



Wiring Diagram

SPO-800H

Weight: 11.5 Kg



Wiring Diagram

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

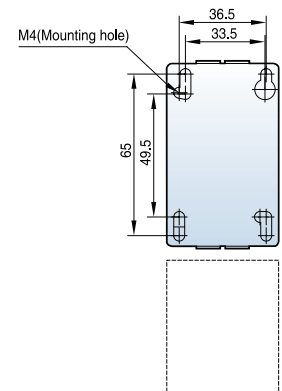
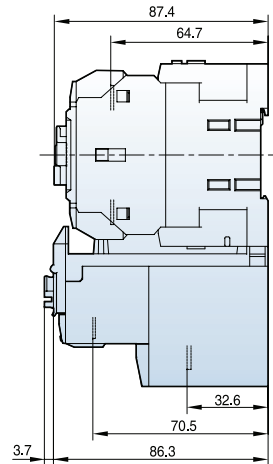
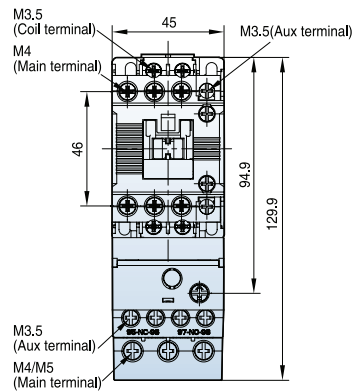


MOTOR STARTER OVERALL DIMENSIONS

RC+RMSO SERIES

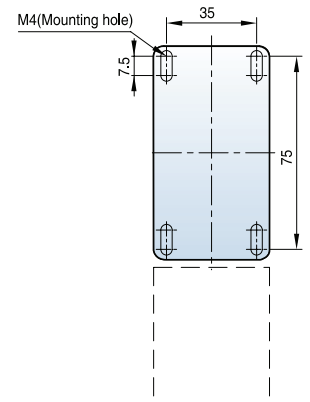
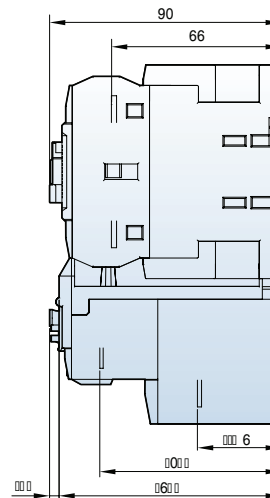
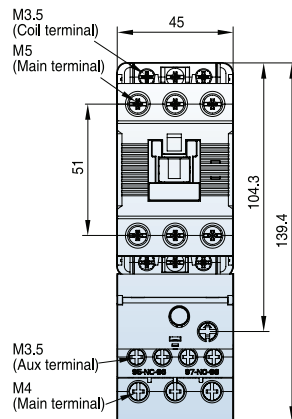
RC-9A through RC-22A with RMSO-32

Weight: 0.5 kg



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

Weight: 0.6 kg



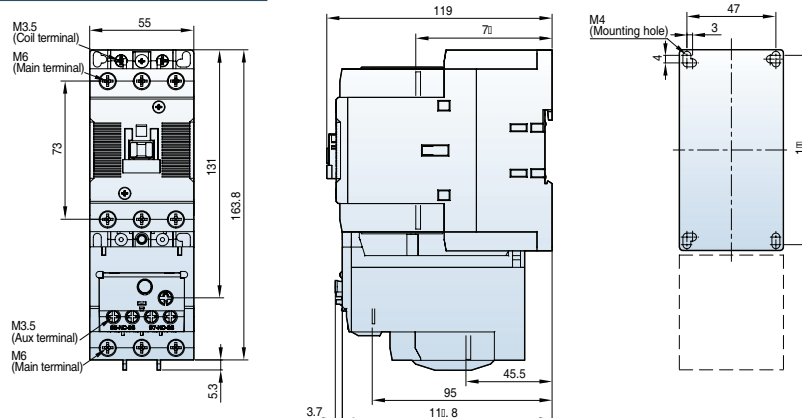
Dimensions are in mm (1 inch = 25.4 mm).

BIMETALLIC STARTER DIMENSIONS (65AF~150AF)

RC+RMSO SERIES

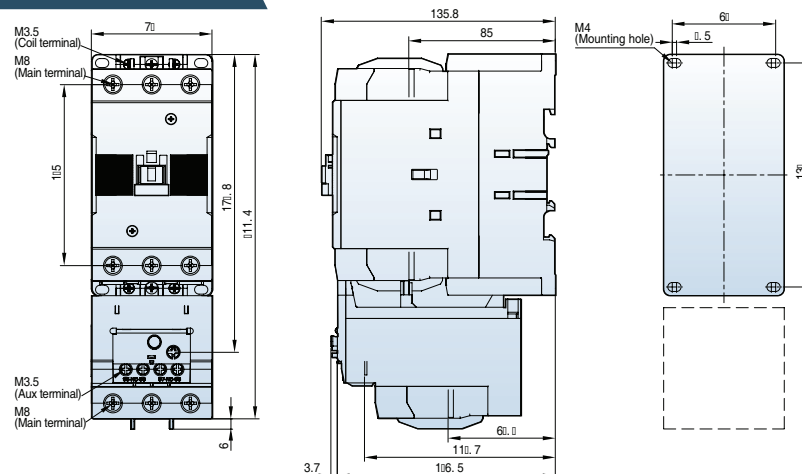
RC-50A and RC-65A with RMSO-63

Weight: 1.3 kg



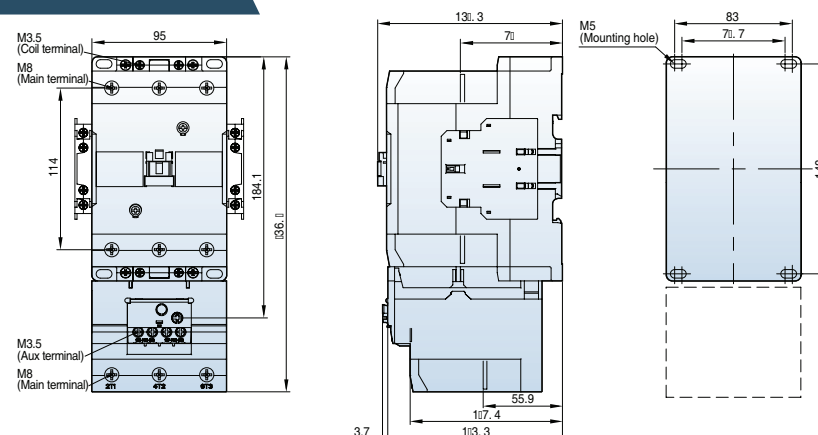
RC-75A through RC-100A with RMSO-95

Weight: 2.3 kg



RC-130A and RC-150A with RMSO-150

Weight: 2.9 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



SPE22-3SR-1.5A, -5A, -22A, -40A
Screw terminals



SPE80-3SR-80A
Separate mount with all contactors

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

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

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

Separate 120 VAC control source is required for operation.

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

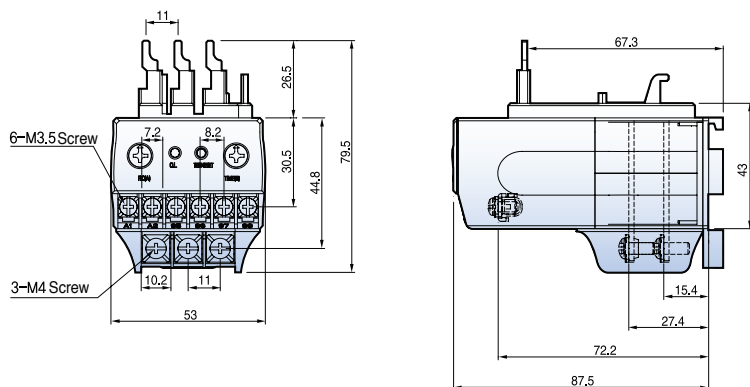
☞ Web stocked

ELECTRONIC OVERLOAD RELAY DIMENSIONS

SPE SERIES — ELECTRONIC TYPE — CLASS 1–30

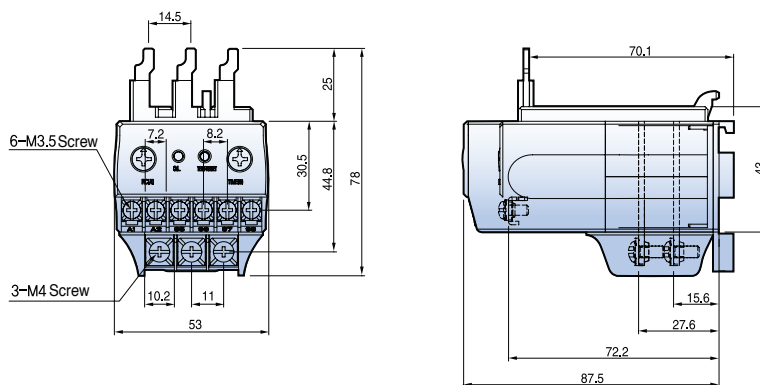
SPE22-3PR

Weight: 0.18kg



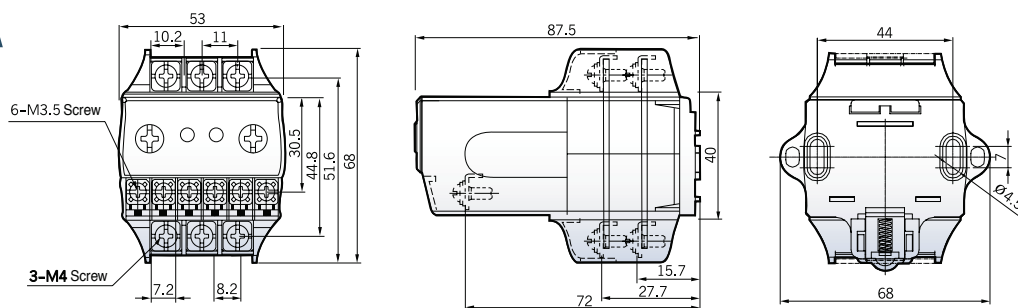
SPE40-3PR

Weight: 0.20kg/0.22kg



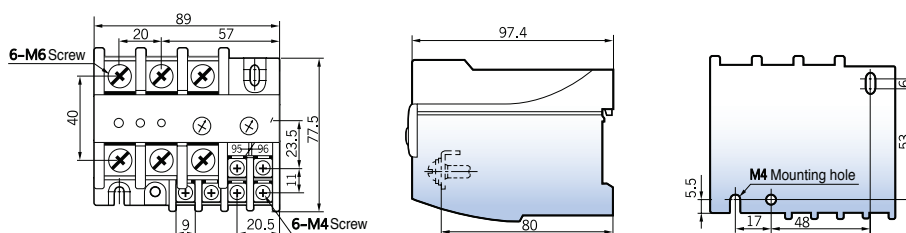
SPE22-3SR and SPE40-3SR

Weight: 0.19kg/0.21kg



SPE80-3SR

Weight: 0.42kg/0.46kg



DIGITAL OVERLOAD RELAYS

SPD SERIES — CLASS 1–60



Model Number	GFI Protection	Setting Range (A)	Wire Method
Separate Mount — All Contactors			
SPD-06S	No	0.5~6	Tunnel or Screw
SPD-06SZ	Yes	0.5~6	Tunnel or Screw
SPD-60S	No	5~60	Tunnel or Screw
SPD-60SZ	Yes	5~60	Tunnel or Screw

Separate 120VAC control source is required for operation.

Operational CTs can be used for higher current rated contactors.

Z Includes ground fault CT protection. See page 31 for ground fault CT information.

Kit Part Number	Description
Cable for Door Mounting (use existing display)	
SPD-C1	1m cable for remote mounting the display
SPD-C2	2m cable for remote mounting the display
SPD-C3	3m cable for remote mounting the display

Kit includes cable and mounting hardware

DIGITAL OVERLOAD RELAYS

SPD SERIES — CLASS 1–60

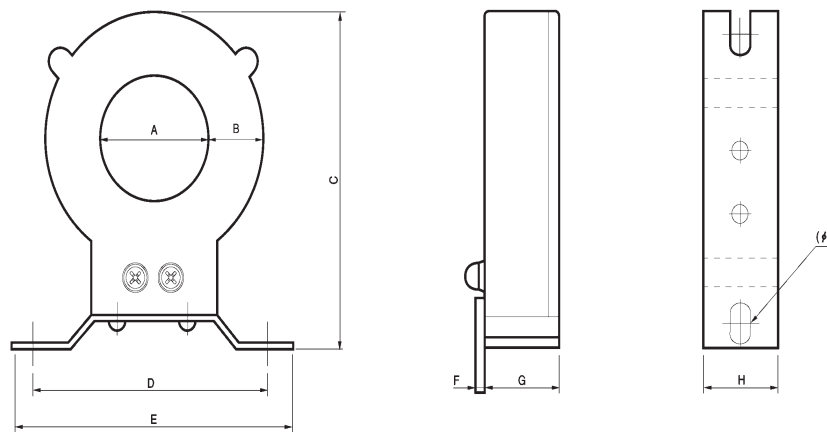
Model Number			SPD-06S		SPD-60S		SPD-06SZ		SPD-60SZ	
Wiring			Screw Type or Tunnel Type							
Display			Unit Mount or Remote Mount							
Operation Time			Select Either Reverse Time or Definite Time							
Characteristics		Protection	Overcurrent Adjustable							
		Phase Failure	3 Sec.							
		Reverse Phase	Within 0.1 Sec.							
		Asymmetry	5 Sec.							
		Stall	5 Sec.							
		Lock	Within 0.5 Sec.							
		Under Current	3 Sec.							
		Ground Fault	Within 0.05–1 Sec. Selectable (0.05–1.0 sec.) Z Models Only							
		Short Circuit	Within 50ms							
Alarm			Variable (60–110% of the setting current)							
Current Setting Range (A)			0.5–6		5–60		0.5–6		5–60	
Time Setting	Definite	Delay in Starting	0–60 sec.							
Range (sec.)	Time	Delay in Operating	0–30 sec.							
	Inverse Time		0–60 sec.							
	Reset		Manual Reset							
Tolerance		Current	+ 5%							
		Time	± 5% (or ± 0.5% sec.)							
Operating Power		Voltage	AC 120 V							
		Frequency	60 Hz (50 Hz)							
Aux. Contact	OL	2-SPST	3 A/250 VAC Resistive load							
	AL	SPST	3 A/250 VAC Resistive load							
Insulation Resistance			Over DC 500 V 100 MO							
Surge Impulse Voltage (IEC1000 - 4-5)			1.2 x 50us 6 kV (apply standard wave form)							
Fast Transient Burst (IEC1000 - 4-4)			2.5 kV/5 min.							
Environment	Temperature	Operation	-25 to 70°C							
		Storage	-30 to 80°C							
	Humidity		30–90% RH (non-condensing)							
Display	7 - Segment		3-Phase Current and Fault Indication							
	Bar-Graph		60–110% of Real Load Current							
Mounting Type			3mm DIN Rail or Panel Mount							

DIGITAL OVERLOAD RELAY ZCT

OPTIONAL ZERO SEQUENCE GROUND FAULT CURRENT TRANSFORMER (ZCT)

RATINGS

Model	Type	Diameter (mm)	Ratio	Weight (kg)
SPD-06SZCT	ZCT, D50, SPD-Z	50	200 mA/100 mV	0.7
SPD-60SZCT	ZCT, D65, SPD-Z	65	200 mA/100 mV	0.9



DIMENSIONS

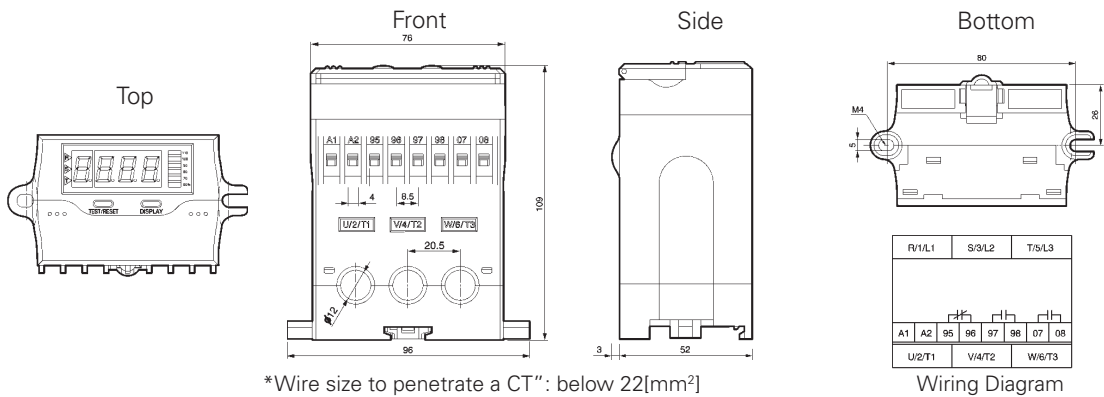
Model	A	B	C	D	E	F	G	H	I
SPD-06SZCT	50	25	131	100	122	7	32	36	6
SPD-60SZCT	65	26	143	114	133	7	39	37	6

DIGITAL OVERLOAD RELAY MOUNTING DIMENSIONS

SPD SERIES

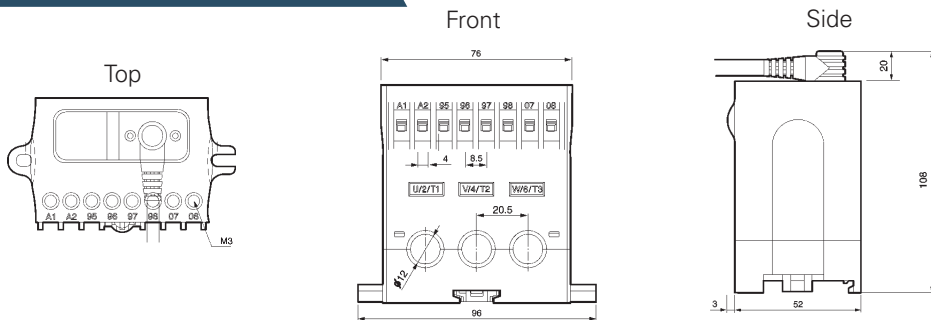
SPD-06S, SPD-06SZ, SPD-60S, SPD-60SZ

Weight: 0.56 kg

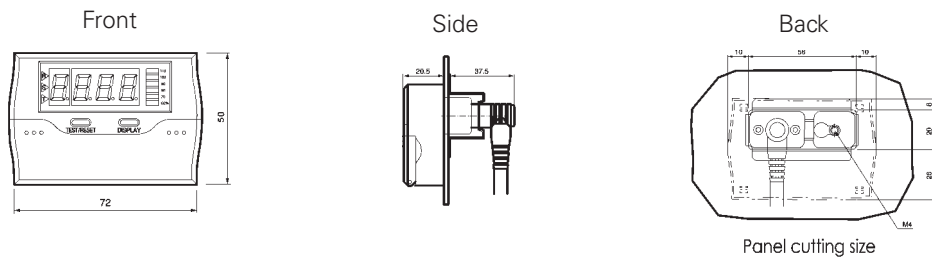


SPD with LED display removed

Weight: 0.5 kg



Panel mounting the LED display



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

Note: When remote mounting the display, the display and main body of the SPD are calibrated as a unit.

Do not swap displays with other units.

Note: For units with ground fault, the 07 and 08 terminals are for ZCT connection.

MOTOR STARTER PROTECTORS

RMSP SERIES — EFFICIENT FUNCTIONALITY AND COMPACT DESIGN



Snap together with an RC contactor to make a complete electro-mechanical combination starter



RMSP Series motor starter protector highlights:

RMSP Series manual starters meet or exceed all universal standards and offer efficient motor starting functionality in a compact design. Protection functions include protection of group installation, protection of circuits, motor protection, starter protection and phase failure protection. RMSP starters provide a wide range of ambient temperature compensation. They couple directly to RC Series contactors for a complete electro-mechanical combination starter.

KEY ADVANTAGES:

- 45mm width up to 32 amps
- 55mm width up to 63 amps
- 70mm width up to 100 amps
- Three position operator (ON-OFF-TRIP) (on 100AF only)
- Complete range of accessories
- Handle locks in the off position
- Class 10 overload trip characteristics
- Trip test
- Finger-safe terminals
- DIN rail and screw mounting

STANDARD FEATURES:

- Front-mounted auxiliary contact
- Easy mounting onto DIN rail
- Large scale for current setting
- Auxiliaries snap on without tools
- Dial cover lock device
- Test trip device for checks of the trip mechanism
- Finger-safe terminals
- Dial cover
- Handle lock device (off positions)
- Three position operator handle (ON-OFF-TRIP) (on 100AF only)
- Identification labels
- High interrupt capability

Guaranteed ... for two full years.

Only Benshaw has a two year guarantee.

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



RMSP MANUAL STARTER SPECIFICATIONS



Specification		RMSP-32H	RMSP-63H	RMSP-100H
Frame		32AF	63AF	100AF
Rated Operational Voltage (Ue)		Up to 690 V	Up to 690 V	Up to 690 V
Rated Frequency		50/60 Hz	50/60 Hz	50/60 Hz
Rated Insulation Voltage (Ui)		690 V	1,000 V	1,000 V
Rated Impulse Voltage (Uimp)		6 kV	8 kV	8 kV
Utilization Category	IEC 60 947-2 (Breaker)	Cat. A	Cat. A	Cat. A
	IEC 60 947-4 (Starter)	AC3	AC3	AC3
Shock Resistance (IEC 68 Part 2-27)		25 g	25 g	25 g
Degree Of Protection (IEC 60 529)		IP20	IP20	IP20
Instantaneous Short Circuit Release		13 x Ie max.	13 x Ie max.	13 x Ie max.
Mechanical Endurance (Operating)		100,000	50,000	50,000
Electrical Indurance (Cycles)		100,000	25,000	25,000
Max. Operating Frequency Per Hour		25	25	25
Temperature Compensation (Operation) (°C)		-20 ~ +60-	20 ~ +60	-20 ~ +60
Phase Failure Function		Yes	Yes	Yes
Trip Indicating Function		Yes	Yes	Yes
Test Function		Yes	Yes	Yes

RMSP SERIES UL/CSA PERFORMANCE DATA

MOTOR PROTECTION FOR GROUP INSTALLATION

RMSP-32H

Rated Operational Current I _e [A]			0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Max. Short-Circuit Current	240 V [KA]		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	480Y/277 V [KA]		65	65	65	65	65	65	65	65	65	65	65	65	30	30	30	30
	600Y/347 V [KA]		25	25	25	25	25	25	25	25	25	25	25	25	10	10	10	10
Motor Load (1 Phase)	115 V [HP]		—	—	—	—	—	—	—	1/8	1/4	1/3	1/2	1/2	1	2	2	2
	230 V [HP]		—	—	—	—	—	1/10	1/6	1/3	3/4	1	1 1/2	2	3	3	5	5
Motor Load (3 Phase)	230 V [HP]		—	—	—	—	—	1/3	1/2	1	1 1/2	2	3	3	5	7 1/2	7 1/2	10
	480 V [HP]		—	—	—	—	1/2	3/4	1 1/2	2	5	5	7 1/2	7 1/2	10	15	15	20
	575 V [HP]		—	—	—	—	1/2	1	1 1/2	3	5	5	10	10	15	20	20	30
Max. Rated Current of Breaker [A]			15	15	15	15	15	15	15	15	20	30	40	50	60	80	100	125



RMSP-63H

Rated Operational Current I _e [A]		10	13	17	22	26	32	40	50	63
Max. Short-Circuit Current	240 V [KA]	100	100	100	100	100	100	100	100	100
	480Y/277 V [KA]	65	65	50	50	50	50	50	50	50
	600Y/347 V [KA]	25	25	10	10	10	10	10	10	10
Motor Load (1 Phase)	115 V [HP]	1/2	1/2	1	2	2	3	3	5	5
	230 V [HP]	1 1/2	2	3	3	5	5	7 1/2	10	15
Motor Load (3 Phase)	230 V [HP]	3	3	5	7 1/2	10	10	15	15	20
	480 V [HP]	7 1/2	7 1/2	10	15	20	25	30	40	50
	575 V [HP]	10	10	15	20	25	30	40	50	60
Max. Rated Current of Fuse/Breaker [A]		600	600	600	600	600	600	600	600	600



RMSP-100H

Rated Operational Current I _e [A]		17	22	26	32	40	50	63	75	90	100
Max. Short-Circuit Current	240 V [kA]	100	100	100	100	100	100	100	100	100	100
	480Y/277 V [kA]	65	65	65	65	65	65	50	50	50	50
	600Y/347 V [kA]	25	25	25	20	20	20	10	10	10	10
Motor Load	115 V [HP]	1	1 1/2	2	3	3	5	5	7 1/2	10	10
	230 V [HP]	3	3	5	5	7 1/2	10	15	15	20	20
Motor Load	230 V [HP]	5	7 1/2	10	10	15	15	20	25	30	40
	480 V [HP]	10	15	20	25	30	40	50	60	75	75
	575 V [HP]	15	20	25	30	40	50	60	75	100	100
Max. Rated Current of Fuse/Breaker [A]		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Manual motor controller "group installation" or "Type E starter" (UL 508, CSA C22.2 No. 14, for group installation, in connection with a short-circuit protection device.

RMSP SERIES UL/CSA PERFORMANCE DATA

MOTOR PROTECTION

Rated Operational Current I _e [A]	Thermal Release Adjustment Range [A]	Magnetic Release Operating Current [A]	Switching of 3-Phase AC Motors, AC-2, AC-3					
			3-Phase [kW] (50/60 Hz)			3-Phase HP (60 Hz)		
			230 V	400 V	690 V	230 V	480 V	575 V
RMSP-32H								
0.16	0.1...0.16	2.1	-	0.02	—	—	—	—
0.25	0.16...0.25	3.3	0.03	0.06	—	—	—	—
0.4	0.25...0.4	5.2	0.06	0.09	—	—	—	—
0.63	0.4...0.63	8.2	0.09	0.12	0.25	—	—	—
1	0.63...1.0	13	0.12	0.25	0.55	—	½	½
1.6	1.0...1.6	20.8	0.25	0.55	1.1	⅓	¾	1
2.5	1.6...2.5	32.5	0.37	0.75	1.5	½	1½	1½
4	2.5...4.0	52	0.75	1.5	3	1	2	3
6	4...6	78	1.5	2.2	4	1½	5	5
8	5...8	104	1.5	3	5.5	2	5	5
10	6...10	130	3	4	7.5	3	7½	10
13	9...13	169	3	5.5	11	3	7½	10
17	11...17	221	4	7.5	11	5	10	15
22	14...22	286	4	7.5	15	7½	15	20
26	18...26	338	5.5	11	18.5	7½	15	20
32	22...32	416	7.5	15	22	10	20	30
RMSP-63H								
10	6~10	130	3	4	7.5	3	7½	10
13	9~13	169	3	5.5	11	3	7½	10
17	11~17	221	4	7.5	11	5	10	15
22	14~22	286	4	7.5	15	7½	15	20
26	18~26	338	5.5	11	18.5	10	20	25
32	22~32	416	7.5	15	22	10	25	30
40	28~40	520	7.5	18.5	30	15	30	40
50	34~50	650	11	22	45	15	40	50
63	45~63	819	15	30	55	20	50	60
RMSP-100H								
17	11~17	221	4	7.5	11	5	10	15
22	14~22	286	4	7.5	15	7½	15	20
26	18~26	338	5.5	11	18.5	10	20	25
32	22~32	416	7.5	15	22	10	25	30
40	28~40	520	7.5	18.5	30	15	30	40
50	34~50	650	11	22	45	15	40	50
63	45~63	819	15	30	55	20	50	60
75	55~75	975	22	37	63	25	60	75
90	70~90	1170	30	45	75	30	75	100
100	80~100	1300	30	45	90	40	75	100

MOTOR STARTER PROTECTORS

RMSP SERIES



32 AMP FRAME CLASS 10

Model Number	Rated Operational Current (A)	Thermal Release Adj. Range (A)	Disconnect Type	Weight	Dimensions (in.)		
					H	W	D
☞ RMSP-32HA16	0.16	0.1–0.16	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32HA25	0.25	0.16–0.25	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32HA4	0.4	0.25–0.4	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32HA63	0.63	0.4–0.63	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H1A	1	0.63–0.1	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H1A6	1.6	1–1.6	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H2A5	2.5	1.6–2.5	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H4A	4	2.5–4	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H6A	6	4–6	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H8A	8	5–8	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H10A	10	6–10	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H13A	13	9–13	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H17A	17	11–17	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H22A	22	14–22	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H26A	26	18–26	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9
☞ RMSP-32H32A	32	22–32	Rotary	0.36 kg/1 lb.	3.7	1.7	3.9

63 AMP FRAME CLASS 10

Model Number	Rated Operational Current (A)	Thermal Release Adj. Range (A)	Disconnect Type	Weight	Dimensions (in.)		
					H	W	D
☞ RMSP-63H10A	10	6–10	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H13A	13	9–13	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H17A	17	11–17	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H22A	22	14–22	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H26A	26	18–26	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H32A	32	22–32	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H40A	40	28–40	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H50A	50	34–50	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7
☞ RMSP-63H63A	63	45–63	Rotary	1 kg/2.2 lbs.	5.5	2.2	5.7

☞ Web stocked

MOTOR STARTER PROTECTORS

RMSP SERIES



100 AMP FRAME CLASS 10

Model Number	Rated Operational Current (A)	Thermal Release Adj. Range	Disconnect Type	Weight	Dimensions (in.)		
					H	W	D
☞ RMSP-100H17A	17	11–17	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H22A	22	14–22	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H26A	26	18–26	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H32A	32	22–32	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H40A	40	28–40	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H50A	50	34–50	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H63A	63	45–63	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H75A	75	55–75	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H90A	90	70–90	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7
☞ RMSP-100H100A	100	80–100	Rotary	2.2 kg/5 lbs.	6.5	2.8	6.7

☞ Web stocked

MOTOR STARTER PROTECTOR ACCESSORIES

RMSP SERIES

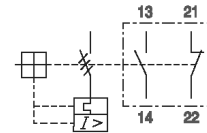
RMSP-FX11



AUXILIARY SWITCH

- Front mounting
- 2-pole
- One front-mounting module per RMSP

1NO1NC



Connection Diagram

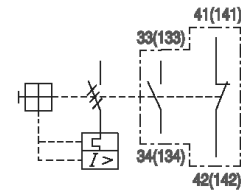
RMSP-LX11



AUXILIARY SWITCH

- Side mounting on the left
- 2-pole
- One side-mounting module per RMSP

1NO1NC



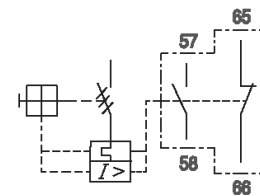
Connection Diagram

RMSP-LA



ANY TRIP ALARM SWITCH

- Side mounting on the left
- 2-pole
- One side-mounting module per RMSP (always directly fitted to the RMSP)



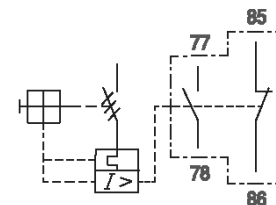
Connection Diagram

RMSP-LAM



MAGNETIC TRIP ALARM SWITCH

- Side mounting on the left
- 2-pole
- One side-mounting module per RMSP (directly fitted to RMSP except when using with any Trip Alarm)



Connection Diagram

MOTOR STARTER PROTECTOR ACCESSORIES

RMSP SERIES

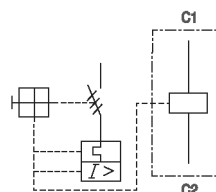


RMSP-RS120



SHUNT RELEASE

- Side mounting on the right
- One side-mounting module per RMSP (always directly fitted to the RMSP)



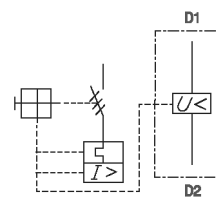
Connection Diagram — 120 V 60 Hz

RMSP-RU120



UNDervoltage RELEASE

- Side mounting on the right
- 2-pole
- One side-mounting module per RMSP (always directly fitted to the RMSP)



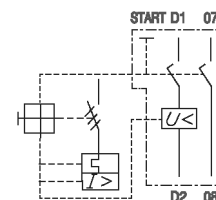
Connection Diagram — 120 V 60 Hz

RMSP-RUX



UNDervoltage RELEASE WITH SWITCH (ROTARY HANDLE ONLY)

- Side mounting on the right
- Include 2 NO auxiliary contacts
- One side-mounting module per RMSP (always directly fitted to the RMSP)



Connection Diagram — 120 V 60 Hz

MOTOR STARTER PROTECTOR ACCESSORIES

RMSP SERIES

RMSP-PIL32



PUSH-IN LUG

- For screwing the RMSP on to the mounting plates

Applied Types: RMSP-32H

RMSP-IB-100

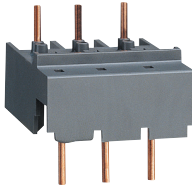


INSULATION BARRIERS

- Insulation barriers with increased creepage distances and clearances for UL

Applied Types: RMSP-100H

RMSP-DA



RMSC CONTACTOR ADAPTER

- For direct connection of RMSP to RC contactor

Applied Types: RC Contactors

Model Number	Description	Configuration	Number of Units Per RMSP
RMSP-FX11	Front-Mount Auxiliary Contact	1 NO / 1 NC	1
RMSP-LX11	Side-Mount Auxiliary Contact	1 NO / 1 NC	1
RMSP-LA	Side-Mount Alarm Switch ¹	1 NO / 1 NC	1
RMSP-LAM	Side-Mount Alarm Switch ²	1 NO / 1 NC	1
RMSP-RS120	Shunt Release 120V ³	-	1
RMSP-RU120	Undervoltage Release 120V ³	-	1
RMSP-RUX	Undervoltage Release with Switch 120V ³	2 NO	1
RMSP-IB-100	Insulation Barrier ⁴	-	4
RMSP-DA-32HA	RMSC Contactor Adapter RMSP32	-	1
RMSP-DA-63A	RMSC Contactor Adapter RMSP63	-	1
RMSP-DA-95A	RMSC Contactor Adapter RMSP95	-	1
RMSP-PB-322	Phase Bus Parallel Circuit 63H	-	1
RMSP-PB-362	Phase Bus Parallel Circuit 32H	-	1
RMSP-MU45	Mounting Unit 32H	-	1
RMSP-MU55	Mounting Unit 63H	-	1
RMSP-MU70	Mounting Unit 100H	-	1
RMSP-PIL32	Push-In Lug (for connection to mounting unit)	-	1

¹ RMSP-63 cannot accept LX and LA together

² Magnetic units only

³ Cannot be used with RU or RUX

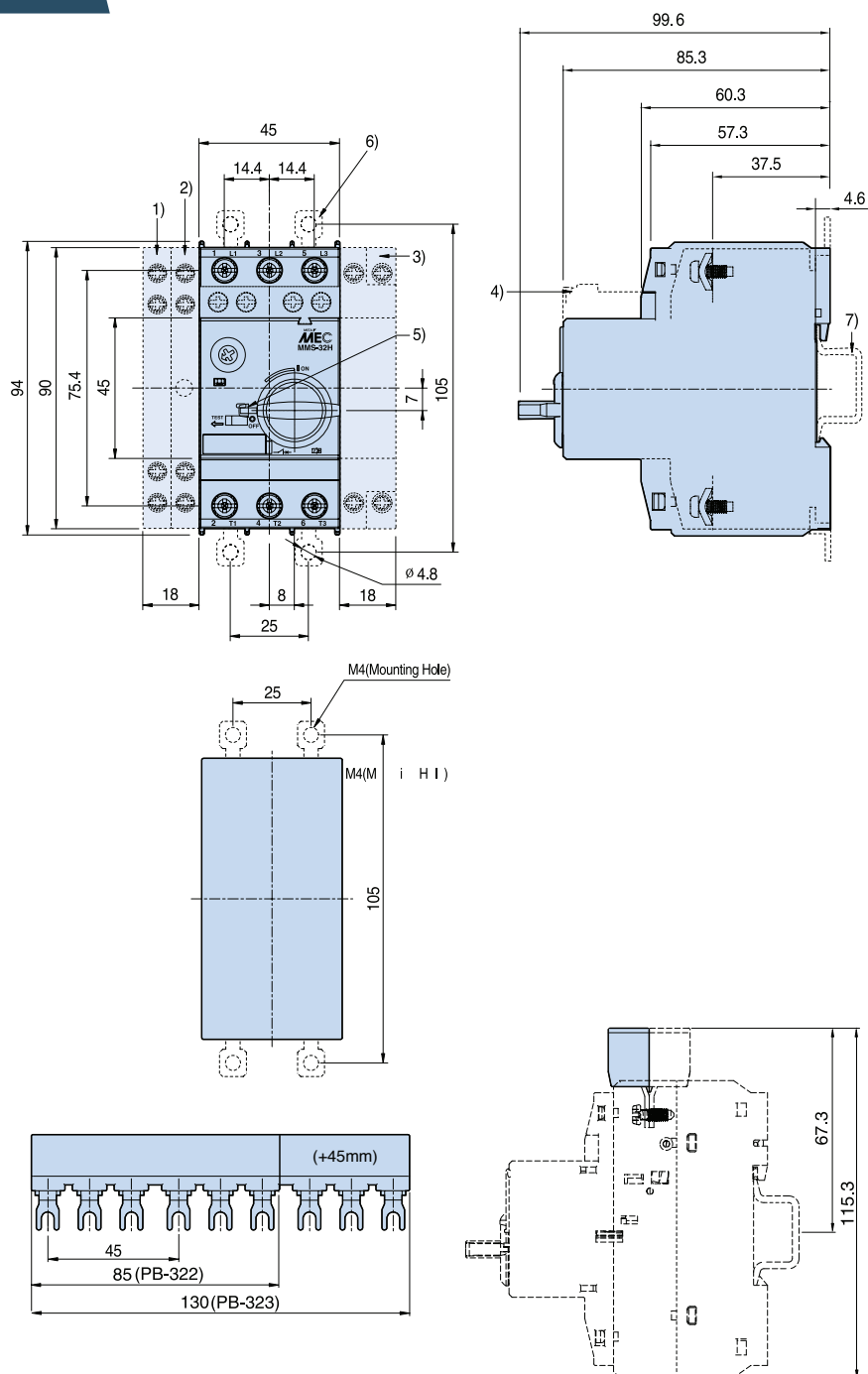
⁴ For RMSP-100 only

MOTOR STARTER PROTECTOR DIMENSIONS

RMSP SERIES

RMSP-32H

Weight: 0.36 kg



- 1) Side auxiliary switch
- 2) Side magnetic trip alarm switch
- 3) Side shunt release or Side undervoltage release
- 4) Front auxiliary switch
- 5) Handle lock in OFF position ($\phi 5$ mm)
- 6) Push-in Lugs for screw mounting
- 7) 35mm standard mounting rail acc. to EN 50 022

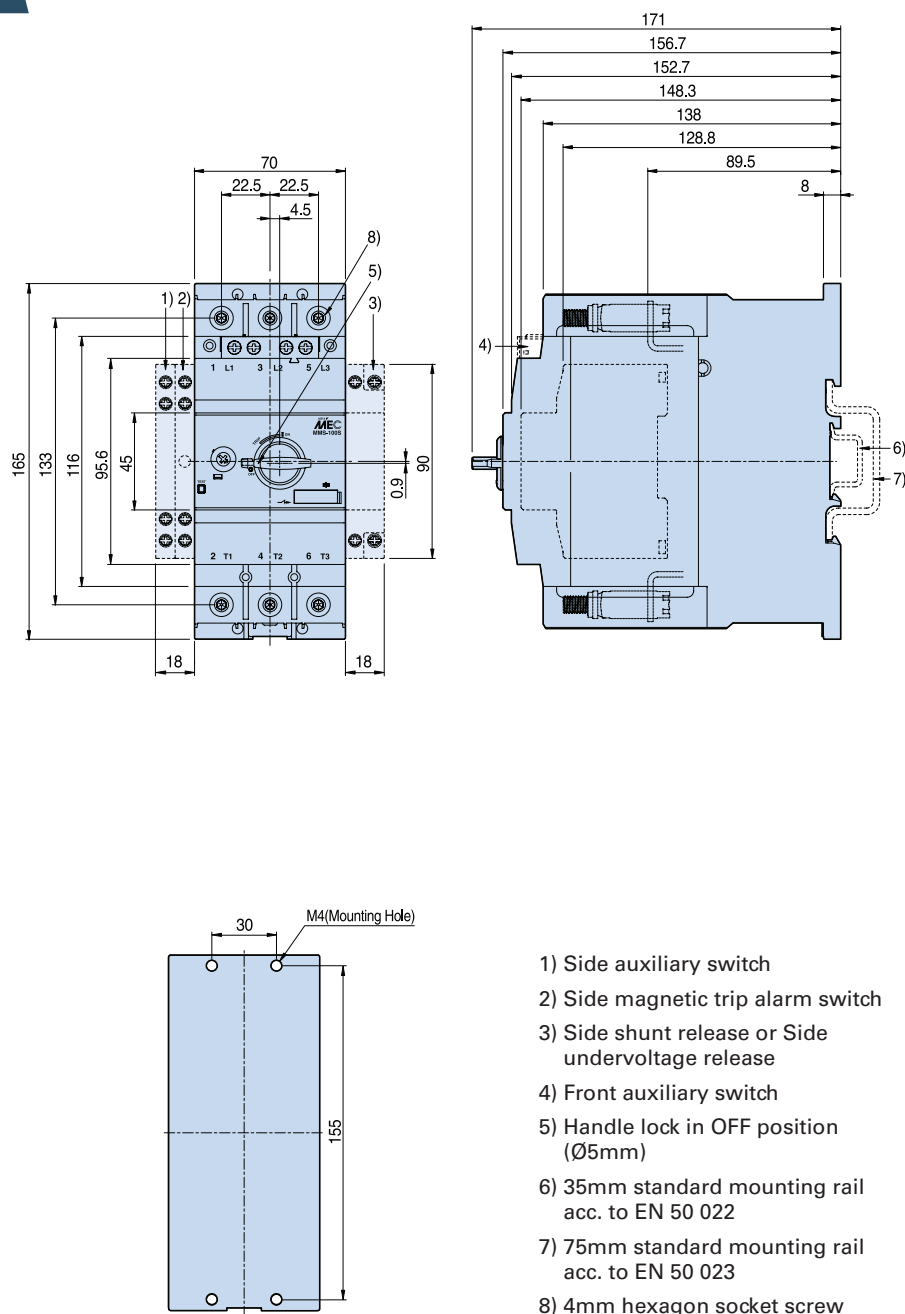
Dimensions are in mm (1 inch = 25.4 mm) .

MOTOR STARTER PROTECTOR DIMENSIONS

RMSP SERIES

RMSP-100H

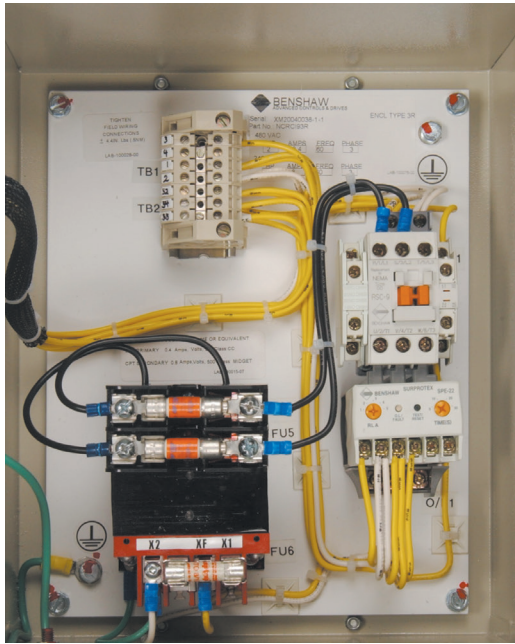
Weight: 2.2 kg



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

PREPACKAGED FULL VOLTAGE STARTERS WITH DOOR-MOUNTED CONTROLS

RCI SERIES — NON-COMBINATION / COMBINATION /
NEMA 12/3R / ELECTRONIC OVERLOAD PROTECTION



Control Terminal
Block

Fused Control Power
Transformer

Grounding Lug

Circuit Breaker
with Operator
CBRCI (Type)

NEMA Rated
Contactor

SPE
Electronic
Overload
Relay



SPE Electronic Overload Relay

NCRCI-18-4-3R Full Voltage Starter

RCI Series Product Highlights:

RCI starters are NEMA rated, cUL listed, completely integrated, full voltage/non reversing starter packages. The rugged NEMA 12/3R design is ideal for industrial duty applications such as pumps, compressors, conveyors, fans and any other continuous duty equipment. The “three wires in/out” design includes the Benshaw SPE field-adjustable electronic overload relay, which enables quick installation and startup with precision motor protection ...standard. Rugged. Reliable. Ready.

- cUL listed
- NEMA rated, heavy-duty contactors
- NEMA 12/3R enclosure
- Field-adjustable SPE electronic overload relay
- Two year warranty — standard
- Complete door-mounted operator control package
- 600/480/240:120 fused control power transformer
- “Three wires in/out” installation and startup
- Combination or non-combination

Provided with SPE Electronic Overload Relay

SPE electronic overload relays provide field adjustable, precise motor protection, including:

- Adjustable overload class (1–30)
- Wide range of current adjustments
- 1 NO and 1 NC auxiliary contact
- Current imbalance detection
- Phase loss detection
- Phase reversal protection
- Trip-free design
- Test function/trip indication
- Fault indication

PREPACKAGED FULL VOLTAGE STARTERS WITH DOOR-MOUNTED CONTROLS



CBRCI2 SERIES — COMBINATION / NEMA 12/3R / OVERLOAD PROTECTION

NCRCI2 SERIES — NON-COMBINATION / NEMA 12/3R / OVERLOAD PROTECTION

- NEMA 12/3R enclosure
- cUL listed
- NEMA rated contactor and separately mounted electronic class 20 protection relay
- 480/240:120 fused control power transformer
- Units set up to have 240 VAC fuses shipped loose with unit
- Labels for 480 and 240 installed
- Door-mounted start and stop push-buttons
- Door-mounted overload reset push-button
- Red run indicator light
- (2) Auxiliary contacts
- Hand-off-auto selector switch
- Ground lug
- Terminal block



CBRCI2



NCRCI2

CBRCI2 - 230VAC OR 460VAC

Model Number	Footnote	NEMA Size	NEMA Horsepower				Dimensions (in.)			
			230VAC	FLA at 230VAC	460VAC	FLA at 460VAC	H	W	D	Weight
CBRCI2-N00-3R-HB	1	00	1	4.2	2	3.4	20	16	8	48
CBRCI2-N0-3R-HB	1	0	3	9.6	5	7.6	20	16	8	48
CBRCI2-N1-3R-HB	1	1	5	15.2	10	14	20	16	8	63
CBRCI2-N2-3R-HB	1	2	10	28	25	34	20	16	8	63
CBRCI2-N3-3R-HB	1	3	25	68	50	65	24	20	10	125
CBRCI2-N4-3R-HB	1	4	50	130	100	124	36	24	12	125
CBRCI2-N5-3R-HB	2	5	100	248	200	240	48	24	12	250
CBRCI2-N6-3R-HB	2	6	200	480	400	477	48	36	16	N/A

1) Web stocked.

2) Built to order - Please allow two weeks for shipment.

NCRCI2 - 230VAC OR 460VAC

Model Number	Footnote	NEMA Size	NEMA Horsepower				Dimensions (in.)			
			230VAC	FLA at 230VAC	460VAC	FLA at 460VAC	H	W	D	Weight
NCRCI2-N00-3R	2	00	1	4.2	2	3.4	12	10	8	30
NCRCI2-N0-3R	2	0	3	9.6	5	7.6	12	10	8	30
NCRCI2-N1-3R	2	1	5	15.2	10	14	12	10	8	32
NCRCI2-N2-3R	2	2	10	28	25	34	12	10	8	32
NCRCI2-N3-3R	2	3	25	68	50	65	16	12	8	60
NCRCI2-N4-3R	2	4	50	130	100	124	20	16	8	60
NCRCI2-N5-3R	2	5	100	248	200	240	36	24	12	N/A
NCRCI2-N6-3R	2	6	200	480	400	477	36	24	12	N/A

2) Built to order - Please allow two weeks for shipment.

ENGINEERED PACKAGES

PRODUCT OVERVIEW

Benshaw has developed advanced engineering, drafting, materials management and quality systems focused on designing and building customer solutions. This “Build to Order” capability combined with an extensive inventory of control components, protective relays, circuit breakers, contactors, enclosures and other electrical / electronic devices provides our customers with the quickest shipment of engineered products in the industry.

STANDARD RATINGS

- 1/2–600 HP
- 120–600 V
- Single- or 3-phase
- UL / CSA, IEC and NEMA

CONTROL MODIFICATIONS — WHATEVER YOU SPECIFY

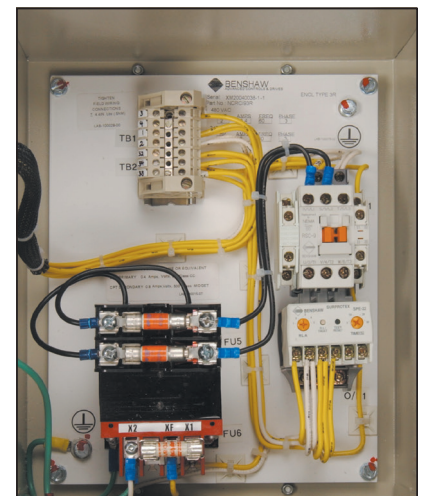
- Over 250 modifications and accessories are available
- Pilot devices, control power transformers, switches, meters, relays, space heaters, protective devices and more

COMBINATION STARTERS TO MEET YOUR REQUIREMENTS

- 15 to 1200 amp circuit breakers
- 40 to 1200 amp non-fused disconnects
- 30 to 800 amp fusible disconnects
- Flange or rotary handle mechanism

ENCLOSURES TO MATCH YOUR ENVIRONMENT

- Standard designs — NEMA 1, 12, 4 or open chassis
- Custom enclosures
- Special enclosures — 3R, 4X, as specified
- Motor control centers



FOR ANY APPLICATION

APPLICATION-SPECIFIC STARTERS OVERVIEW

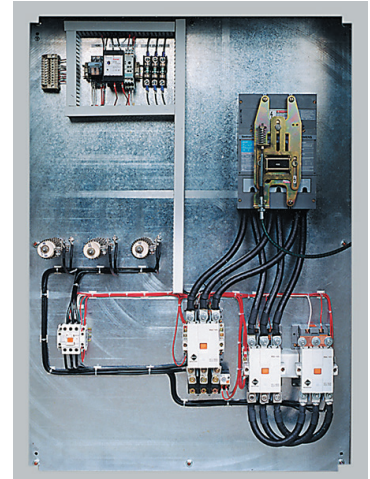
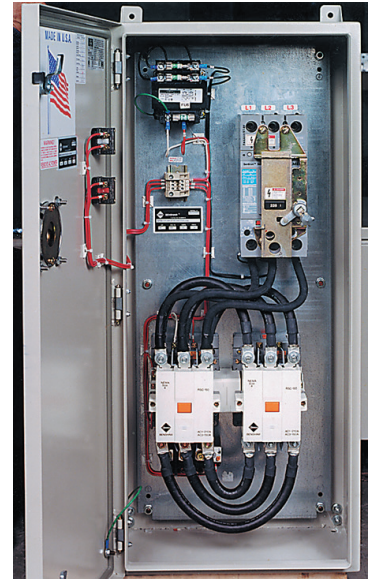
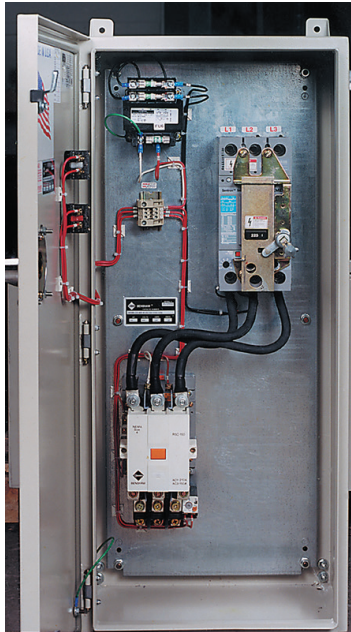
Benshaw is the trusted expert for any AC motor application. We provide a full line of application solutions for reversing motors, two-speed motors, part winding motors and Wye-Delta motors.

SPECIALTY ELECTROMECHANICAL STARTERS

- Full voltage, non-reversing
- Full voltage, reversing
- 2-Speed, one winding
- 2-Speed, two windings
- Part winding
- Wye-Delta open transition
- Wye-Delta closed transition

INDUSTRY-SPECIFIC SOLUTIONS

- Pump control starters
- Compressor starters
- Chiller starters
- VFD bypass units



Other Products Available from Benshaw

Low Voltage and Medium Voltage Variable Frequency Drives



General, pump & industrial, open, N1, washdown and packaged assemblies.
.5-1000HP @ 460V



Benshaw Medium Voltage drive technology, high performance, high reliability.
Up to 14,000HP @ 2.3-13.8KV

Medium Voltage Soft Starters, ATL Starters and Switchgear



Standard & custom assemblies. Freestanding, lineups, skid mounted and more.
Up to 25,000HP @ 2.3-13.8KV



MV switchgear assemblies, standalone or MCC/lineup.
@ 4.16-13.8KV

Pilot Devices



Push Buttons, Pilot Lights, Selector Switches, Potentiometers, Contact Blocks, and Accessories.

Circuit Breakers



Seven compact frame sizes, comprehensive set of accessories.
15-1200A @ 460V

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For more information and your local contact visit www.benshaw.com

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Applied Motor Controls

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