Motors

Automation

Energy

Transmission & Distribution

WEG Automation Catalog

Overloads (RW, RW-E, and SRW01 series)

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Driving efficiency and sustainability

Thermal Overload Relays

An extended operational service life is one of the main features you can find in RW overload relays. WEG's RW Thermal Overload Relays are designed for use with, and as perfect complement to, WEG contactors. Effectively, RW overload relays can be mounted directly under WEG contactors, assuring electrical and mechanical operation as an open across-the-line starter. Accessories are also available for separate mounting.

UL File No. E189202

Standard Features:

- 2 and 3 pole versions available
- Direct mounting to WEG contactors with no accessory. (Accessories also available for separate mounting)
- Phase loss & current unbalance sensitivity protection
- Class 10 Trip characteristics
- Selectable RESET button (auto or manual)
- Isolated 1NO & 1NC auxiliary contacts

RW Series Catalog Number Sequence

RW	27-1D	3	-	U004

Overload Relay Series
RW: Thermal Overload Relay

Power Pole
3: 3NO Power Poles
2: 2NO Power Poles

Frame, Size and Terminal Type
17-1D: to use with CWC07…016 & CWCA0
17-2D: to use with CWC025
27-1D: to use with CWM9…40 & CWM9N…CWM32N
27-2D: to use with CWB9…38 & CWBN00…CWBN1
67-1D: to use with CWM32…40 & CWM32N
67-2D: to use with CWM50…80 & CWM50N
67-5D: to use with CWB40…80 & CWBN2
117-1D: to use with CWM95…105 & CWM95N
117-2D: to use with CWM112…150 & CWM150N
117-3D: to use with CWB95…125 & CWBN3
317-1D: to use with CWM112…300 & CWM300N
407-1D: to use with CWM400…800

Overload Setting Current

RW17	RW117
D004: 0.28…0.40A	U080: 63…80A
U032: 22…32A	U140: 110…140A
RW27	**RW317**
D004: 0.28…0.40A	U150: 100…150A
U040: 32…40A	U420: 275…420A
RW67	**RW407**
U040: 25…40A	U600: 400…600A
U080: 63…80A	U840: 560…840A

For more details refer to selection table

Chart intended for reference only and not to create part numbers.

Overloads

RW Series - Bi-Metallic

Multifunction Reset / Test Button

The thermal overload relay has a multifunction ***RESET / TEST*** button that can be set in four different positions:
A - Automatic ***RESET*** only;
AUTO - Automatic ***RESET / TEST***;
HAND - Manual ***RESET / TEST***;
H - Manual ***RESET*** only.
In ***HAND*** and **AUTO** positions, when ***RESET*** button is pressed, both NO (97-98) and NC (95-96) contacts change states.

Operation description:

In H (manual RESET only) or A (automatic RESET only) position, the test function is blocked. However in the positions HAND (manual RESET / TEST) or AUTO (automatic RESET / TEST) it is possible to simulate the test and the trip functions by pressing the RESET button.
When set in the H or HAND position the RESET button must be pressed manually to reset the overload relay after a tripping event. On the other hand, when set in A or AUTO position, the overload relay will reset automatically after a tripping event.
The H, HAND, AUTO and A function setting is carried out by rotating without pressing the red button and placing it on the desired position of the RESET button.
When changing from HAND to AUTO, the RESET button must be slightly pressed while the red button is rotated.

Functions	H	HAND	AUTO	A
Relay reset	Manual[1)]	Manual[1)]	Automatic	Automatic
Auxiliary contact trip test 95-96 (NC) opening test	Function is disabled	Test/Stop is allowed	Test/Stop is allowed	Function is disabled
Auxiliary contact trip test 97-98 (NO) opening test	Function is disabled	Test/Stop is allowed	Test/Stop is allowed	Function is disabled

Note: 1) A recovery time of a few minutes is necessary before resetting the thermal overload relay.

Recovery Time

The RW thermal overload relays have thermal memory.
After tripping due to an overload, the relay requires a certain period of time for the bimetal strips to cool down. This period of time is so-called recovery time. The relay can only be reset once it has cooled down. The recovery time depends on the characteristic tripping curves and the level of the tripping current. After tripping due to overload, the recovery time allows the load to cool down.

Operation in the Output Side of Frequency Inverters

The RW27-2D, RW67-5D, and RW117-3D thermal overload relays are designed for operation on 50/60 Hz up to 400 Hz and the tripping values are related to the heating by currents within this frequency range. Depending on the design of the frequency inverter, the switching frequency can reach several kHz and generate harmonic currents at the output that result in additional temperature rise in the bimetal strips. In such applications, the temperature rise not only depends on the rms value of the current, but on the induction effects of the higher frequency currents in the metal parts of the device (skin effect caused by eddy currents).
Due to these effects, the current settings on the overload relay should be higher than the motor rated current.

Dial FLA Setting

The trip-current is set via an infinitely adjustable dial designed with the motor‘s full load current (FLA) in mind.

Temperature Compensation

Because RW overload relays include a forth bimetallic strip in addition to the three that are directly heated by the motor current, ambient temperature variations in the range of -4°F to +140°F are no obstacle for accurate protection of your motors even in the toughest conditions.

Phase Failure Sensitivity

WEG overload relays include phase failure sensitivity protection as a standard. This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs/corrective maintenance.

For use with CWC, CWM and CWM-N Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from-40°F to +140°F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	List Price	Multiplier New (Old)
	Min.	Max.				
CWC07…CWC016 CWCA0 (Mini-contactor)	0.28	0.40	15	RW17-1D3-D004	$46	Z2A (Z2)
	0.40	0.63	15	RW17-1D3-C063	$46	
	0.56	0.80	15	RW17-1D3-D008	$46	
	0.80	1.20	15	RW17-1D3-D012	$46	
	1.20	1.80	15	RW17-1D3-D018	$46	
	1.80	2.80	15	RW17-1D3-D028	$46	
	2.80	4.00	15	RW17-1D3-U004	$46	
	4.00	6.30	25	RW17-1D3-D063	$46	
	5.60	8.00	30	RW17-1D3-U008	$46	
	7.00	10.0	40	RW17-1D3-U010	$46	
	8.00	12.5	50	RW17-1D3-D125	$46	
	10.0	15.0	60	RW17-1D3-U015	$46	
	11.0	17.0	60	RW17-1D3-U017	$46	
CWC025 (Mini-contactor)	15.0	23.0	90	RW17-2D3-U023	$46	
	22.0	32.0	90	RW17-2D3-U032	$46	
CWM9...CWM40 CWM9N...CWM32N	0.28	0.40	15	RW27-1D3-D004	$50	Z2
	0.40	0.63	15	RW27-1D3-C063	$50	
	0.56	0.80	15	RW27-1D3-D008	$50	
	0.80	1.20	15	RW27-1D3-D012	$50	
	1.20	1.80	15	RW27-1D3-D018	$50	
	1.80	2.80	15	RW27-1D3-D028	$50	
	2.80	4.00	15	RW27-1D3-U004	$50	
	4.00	6.30	25	RW27-1D3-D063	$50	
	5.60	8.00	30	RW27-1D3-U008	$50	
	7.00	10.0	40	RW27-1D3-U010	$50	
	8.00	12.5	50	RW27-1D3-D125	$50	
	10.0	15.0	60	RW27-1D3-U015	$50	
	11.0	17.0	60	RW27-1D3-U017	$50	
	15.0	23.0	90	RW27-1D3-U023	$50	
	22.0	32.0	90	RW27-1D3-U032	$50	
CWM32...CWM40 CWM32N	25.0	40.0	90	RW67-1D3-U040	$87	
	32.0	50.0	125	RW67-1D3-U050	$94	
CWM50...CWM80 CWM50N	25.0	40.0	90	RW67-2D3-U040	$95	
	32.0	50.0	125	RW67-2D3-U050	$95	
	40.0	57.0	150	RW67-2D3-U057	$95	
	50.0	63.0	150	RW67-2D3-U063	$95	
	57.0	70.0	175	RW67-2D3-U070	$112	
	63.0	80.0	200	RW67-2D3-U080	$112	
CWM95...CWM105 CWM95N	63.0	80.0	200	RW117-1D3-U080	$150	
	75.0	97.0	225	RW117-1D3-U097	$192	
	90.0	112	250	RW117-1D3-U112	$192	
CWM112...CWM150 CWM150N	75.0	97.0	225	RW117-2D3-U097	$232	
	90.0	112	250	RW117-2D3-U112	$232	
CWM112…CWM300 CWM300N	100	150	300	RW317-1D3-U150	$285	
	140	215	350	RW317-1D3-U215	$285	
	200	310	500	RW317-1D3-U310	$320	
CWM400...CWM800	275	420	700	RW317-1D3-U420	$320	
	400	600	1000	RW407-1D3-U600	$690	
	560	840	1250	RW407-1D3-U840	$690	

Note: RW117-2D, RW317-1D and RW407-1D are for separate mounting
Connector links for contactors CWM112...CWM300 are available as an accessory on page 233.

Overloads

RW Series - Bi-Metallic

For use with CWB, CWBN, and CWBS Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable Trip Current
- Phase Loss Sensitivity
- Trip Class 10
- Built-In Auxiliary Contacts: 1NO + 1NC
- Ambient Temperature Compensation: -4°F to +140°F
- Multi-Function Button: Hand/Auto/Reset

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	List Price	Multiplier
	Min.	Max.				
CWB9 - CWB38 CWBN00 - CWBN1	0.28	0.40	15	RW27-2D3-D004	$50	Z2
	0.40	0.63	15	RW27-2D3-C063	$50	
	0.56	0.80	15	RW27-2D3-D008	$50	
	0.80	1.20	15	RW27-2D3-D012	$50	
	1.20	1.80	15	RW27-2D3-D018	$50	
	1.80	2.80	15	RW27-2D3-D028	$50	
	2.80	4.00	15	RW27-2D3-U004	$50	
	4.00	6.30	25	RW27-2D3-D063	$50	
	5.60	8.00	30	RW27-2D3-U008	$50	
	7.00	10.0	40	RW27-2D3-U010	$50	
	8.00	12.5	50	RW27-2D3-D125	$50	
	10.0	15.0	60	RW27-2D3-U015	$50	
	11.0	17.0	60	RW27-2D3-U017	$50	
	15.0	23.0	90	RW27-2D3-U023	$50	
	22.0	32.0	90	RW27-2D3-U032	$50	
	32.0	40.0	90	RW27-2D3-U040	$60	
CWB40-CWB80 CWBN2	25.0	40.0	90	RW67-5D3-U040	$95	Z2
	32.0	50.0	125	RW67-5D3-U050	$95	
	40.0	57.0	150	RW67-5D3-U057	$95	
	50.0	63.0	150	RW67-5D3-U063	$95	
	57.0	70.0	175	RW67-5D3-U070	$112	
	63.0	80.0	200	RW67-5D3-U080	$112	
CWB95 – CWB125 CWBN3	63.0	80.0	200	RW117-3D3-U080	$195	Z2
	75.0	97.0	225	RW117-3D3-U097	$221	
	90.0	112.0	250	RW117-3D3-U112	$231	
	110.0	140.0	315	RW117-3D3-U140	$264	

For use with CWM Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40°F to +140°F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	List Price	Multiplier
	Min.	Max.				
CWM9...CWM40	0.28	0.40	15	RW27-1D2-D004	$40	Z2
	0.40	0.63	15	RW27-1D2-C063	$40	
	0.56	0.80	15	RW27-1D2-D008	$40	
	0.80	1.20	15	RW27-1D2-D012	$40	
	1.20	1.80	15	RW27-1D2-D018	$40	
	1.80	2.80	15	RW27-1D2-D028	$40	
	2.80	4.00	15	RW27-1D2-U004	$40	
	4.00	6.30	25	RW27-1D2-D063	$40	
	5.60	8.00	30	RW27-1D2-U008	$50	
	7.00	10.0	40	RW27-1D2-U010	$50	
	8.00	12.5	50	RW27-1D2-D125	$50	
	10.0	15.0	60	RW27-1D2-U015	$50	
	11.0	17.0	60	RW27-1D2-U017	$50	
	15.0	23.0	90	RW27-1D2-U023	$50	
	22.0	32.0	90	RW27-1D2-U032	$50	
CWM32...CWM40	25.0	40.0	90	RW67-1D2-U040	$81	
	32.0	50.0	125	RW67-1D2-U050	$88	
CWM50...CWM80	25.0	40.0	90	RW67-2D2-U040	$95	
	32.0	50.0	125	RW67-2D2-U050	$95	
	40.0	57.0	150	RW67-2D2-U057	$95	
	50.0	63.0	150	RW67-2D2-U063	$95	
	57.0	70.0	175	RW67-2D2-U070	$105	
	63.0	80.0	200	RW67-2D2-U080	$105	

Overloads

RW Series - Bi-Metallic

For use with CWB Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -4°F to +140°F
- Hand/Auto/Reset button

2 POLE THERMAL OVERLOAD RELAYS - CLASS 10

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	List Price	Multiplier
	Min.	Max.				
CWB9 - CWB38	0.28	0.40	15	RW27-2D2-D004	$50	Z2
	0.40	0.63	15	RW27-2D2-C063	$50	
	0.56	0.80	15	RW27-2D2-D008	$50	
	0.80	1.20	15	RW27-2D2-D012	$50	
	1.20	1.80	15	RW27-2D2-D018	$50	
	1.80	2.80	15	RW27-2D2-D028	$50	
	2.80	4.00	15	RW27-2D2-U004	$50	
	4.00	6.30	25	RW27-2D2-D063	$50	
	5.60	8.00	30	RW27-2D2-U008	$50	
	7.00	10.0	40	RW27-2D2-U010	$50	
	8.00	12.5	50	RW27-2D2-D125	$50	
	10.0	15.0	60	RW27-2D2-U015	$50	
	11.0	17.0	60	RW27-2D2-U017	$50	
	15.0	23.0	90	RW27-2D2-U023	$50	
	22.0	32.0	90	RW27-2D2-U032	$50	
	32.0	40.0	90	RW27-2D2-U040	$50	
CWB40-CWB80	25.0	40.0	90	RW67-5D2-U040	$95	Z2
	32.0	50.0	125	RW67-5D2-U050	$95	
	40.0	57.0	150	RW67-5D2-U057	$95	
	50.0	63.0	150	RW67-5D2-U063	$95	
	57.0	70.0	175	RW67-5D2-U070	$105	
	63.0	80.0	200	RW67-5D2-U080	$105	

Accessories

Separate Mounting Bracket

Description	Mounting on Overload Relays (2 or 3 pole)	Catalog Number	List Price	Multiplier
Enables overload relay to be directly mounted to a back panel via screws or DIN rail	RW27-1D	BF27D	$14	Z2
	RW27-2D	BF27-2D	$14	
	RW67-1D	BF67.1D	$23	
	RW67-2D	BF67-2D	$23	
	RW117-1D	BF117D	$30	
	RW67-5D	BF67-5D	$23	
	RW117-3D	BF117-3D	$30	

Reset Pushbutton with Shaft

Description	Catalog Number	List Price	Multiplier
Flush pushbutton - blue - engraved reset - with shaft. Length: max. 250 mm and min. 22.5 mm	CSW-BHF437	$12	Z5

Connector links (3 per package)

Description	Contactor	Overload Relay	Catalog Number	List Price	Multiplier
Link connectors for easier CWM contactors and RW overload relays assembly	CWM112 / CWM150	RW117-2D3	GA117D	$41	Z2
	CWM150	RW317-1D3	GA317-1D	$68	
	CWM180	RW317-1D3	GA317-2D	$70	
	CWM250 / CWM300	RW317-1D3	GA317-3D	$118	
	CWM400	RW317-1D3	GA317-10D	$118	

Lugs for RW Series (Overload Relay) (3 units per package)

Description / Wire Range	Mounting on Overloads	Catalog Number	List Price	Multiplier
6 AWG...300 MCM	RW317-1D (100A-215A)	LW3-S300	$35	Z2
4 AWG...600 MCM	RW317-1D (200A-420A)	LW2-S600	$75	
2 AWG...(2)600 MCM	RW407-2D (400A-840A)	LW1-2S600-B	$230	

Overloads

RW Series - Bi-Metallic

Technical Data

Basic Data

Models		RW17	RW27	RW67	RW117	RW317	RW407
Compliance with the standards		IEC 60947-1 and UL 508					
Frequency limits (Hz)		25...400				50/60	
Use in direct current		Yes				No	
Maximum frequency of operation cycles (operations/h)		15					
Protection rating (IEC 60529)	Main terminals	IP10				IP00	
	Auxiliary contacts	IP10					
	Other regions	IP20				IP20	
Mounting		Directly to mini-contactors	Directly to contactors or with screws and DIN rail 35 mm (EN 50022) using an accessory			Directly to contactors by accessories or with screws	
Resistance to mechanical shocks (IEC 60068-2-27 - 1/2 sine wave) (g/ms)		10/11					
Ambient temperature	Transport and storage	-50 °C...+80 °C					
	Operation	-20 °C...+70 °C					
	Temperature compensation	-20 °C...+60 °C					
Maximum operation altitude without modification in the rated values		2,000 m					

Main Contacts

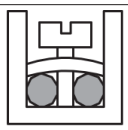
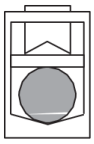
Models			RW17	RW27	RW67	RW117	RW317	RW407
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	(V)	690				1,000	
	UL, CSA	(V)	600					
Rated impulse withstand voltage Uimp (IEC 60947-1)		(kV)	6				8	
Current settings / maximum fuse (gL / gG)		(A)	0.28...0.4 / 2	0.28...0.4 / 2	25...40 / 80	63...80 / 200	100...150 / 315	320...480 / 800
			0.43...0.63 / 2	0.43...0.63 /2	32...50 / 100	75...97 / 225	140...215 / 355	400...600 / 1.000
			0.56...0.8 / 2	0.56...0.8 / 2	40...57 / 100	90...112 / 250	200...310 / 500	560...840 / 1.250
			0.8...1.2 / 4	0.8...1.2 / 4	50...63 / 100	110...140 / 315	275...420 / 710	
			1.2...1.8 / 6	1.2...1.8 / 6	57...70 / 125			
			1.8...2.8 / 6	1.8...2.8 / 6	63...80 / 125			
			2.8...4 / 10	2.8...4 / 10				
			4...6.3 / 16	4...6.3 / 16				
			5.6...8 / 20	5.6...8 / 20				
			7...10 / 25	7...10 / 25				
			8...12.5 / 25	8...12.5 / 25				
			10...15 / 35	10...15 / 35				
			11...17 / 40	11...17 / 40				
			15...23 / 50	15...23 / 50				
			22...32 / 63	22...32 / 63				
				32...40 / 90				
Average power dissipation per pole		(W)	≤3	≤3	≤5.5	≤5.5	≤15	≤20

Technical Data

Auxiliary Circuit

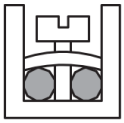
Models			RW17	RW27	RW67	RW117	RW317	RW407
Compliance with the standards			IEC 60 947-4-1 and UL 508					
Rated insulation voltage U_i (pollution degree 3)	IEC	(V)	690					
	UL, CSA	(V)	600					
Rated operational voltage Ue	IEC	(V)	690					
	UL, CSA	(V)	600					
Conventional thermal current Ith (Θ ≤55 ºC)		(A)	6					
Rated operational current Ie								
AC-14/AC-15 (IEC 60947-5-1)	24 V	(A)	4					
	60 V	(A)	3.5					
	125 V	(A)	3					
	230 V	(A)	2					
	400 V	(A)	1.5					
	500 V	(A)	0.5					
	690 V	(A)	0.3					
UL, CSA			C600					
DC-13/DC-14 (IEC 60947-5-1)	24 V	(A)	1					
	60 V	(A)	0.5					
	110 V	(A)	0.25					
	220 V	(A)	0.1					
UL, CSA			R300					
Short circuit protection with fuse (gL/gG)		(A)	6					
Minimum voltage / permissible current (IEC 60947-5-4)			17V / 5 mA					

Terminal Capacity and Tightening Torque - Power Circuit

Models			RW17 and RW27	BF27D	RW67-1D and BF67-1D	RW67-2D, RW67-5D, BF67-2D and BF67-5D	RW117 and BF117D
Mounting system screw type			M4 x 10 Slot / Phillips	M4 x 10 Slot / Phillips	M6 x 16.8 Slot / Phillips	M6 x 16.8 Allen	M10 Allen
Conductor cross-section							
Flexible conductor	(mm²)		-	1.5...10	-	-	-
Conductor with terminal/ solid wire	(mm²)		-	1.5...6.0	-	-	-
Wire / cable AWG			-	14...6	-	-	-
Torque	(Nm)		-	2.3	-	-	-
Flexible conductor	(mm²)		1.5...10	-	-	-	-
Conductor with terminal/ solid wire	(mm²)		1.5...6.0	-	-	-	-
Wire / cable AWG			14...6	-	-	-	-
Torque	(Nm)		2.3	-	-	-	-
Conductor connection at the bottom							
Flexible conductor	(mm²)		-	-	6.0...35	6.0...35	25...35
Conductor with terminal/ solid wire	(mm²)		-	-	6.0...35	6.0...35	25...35
Flexible conductor	(mm²)		-	-	6.0...35	6.0...35	25...35
Wire / cable AWG			-	-	18...2	18...2	8...1/0
Torque	(Nm)		-	-	4	4	6

Models			RW317 (100 A... 215 A)	RW317 (200 A...420 A)	RW407
Mounting system screw type			M8 Hexagonal	M10 Hexagonal	M12 Hexagonal
Cable with terminal	(mm²)		35...120	95...150	-
Busbars (mm) - maximum size			2 x (25x5)	2 x (25x5)	2 x (60x10)
Torque	(Nm)		16	26	26

Terminal Capacity and Tightening Torque - Auxiliary Contacts

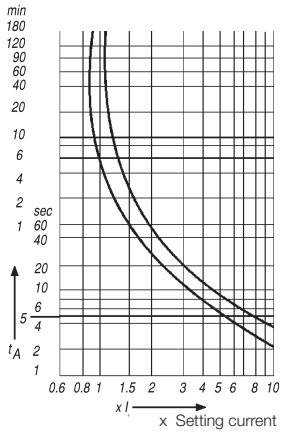
Models			RW17...407
Mounting system screw type			M3.5 x 10 Fenda / Philips
Conductor cross-section			
Wire / conductor with or without terminal	(mm²)		2 x 1...2.5
Torque	(Nm)		1.5

Overloads

RW Series - Bi-Metallic

RW Tripping Characteristics

These tripping characteristics show the tripping of RW in relation to the current. They show the mean values of the tolerance ranges at on ambient temperature of 68°F (20°C), starting from cold stats. The tripping time of the overload releases at operational temperature is reduced to approximately 25% of the values shown. Under normal operational conditions, all three phases of the RWs should be loaded.



Altitude & Temperature Derating

The derating of a RW overload relay has two possible factors:

1) Ambient temperature

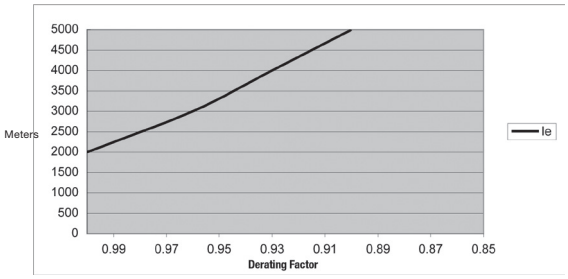
- Temperature compensation considers a factor according to which the rated current must be reduced when ambient temperature is higher than 60°C (140°F).

2) Altitude

- Altitude compensation involves both, rated current and voltage.
- Current compensation considers a factor according to the rated current must be reduced.
- For voltage, altitude limits the higher operating voltage the overload relay can be used.

Temperature Compensation		Current Correction factor
149°F	(65°C)	0.94
158°F	(70°C)	0.87
167°F	(75°C)	0.81
176°F	(80°C)	0.73

Altitude	Voltage Correction [Ue]
Up to 2,000m (6,667ft)	690
Up to 3,000m (10,000ft)	550
Up to 4,000m (13,333ft)	480
Up to 5,000m (16,667ft)	420



The derating of the permissible operating current for installation altitudes above 2,000m (6,667 ft) and ambient temperatures over 60°C (140°F) is calculated according to:

Total derating = Derating altitude x Derating ambient temperature

Example;
Altitude: 3,000 m (10,000 ft)
K1 = 0.96
Ambient temperature: 70°C (158°F)
K2 = 0.87

Total current derating = 0.96 x 0.87 = 0.84 x Ie
In this case, the maximum rated voltage we can connect to our RW overload relay is 550V.

In order to select the proper overload relay, you have to choose a device with a current range that accommodates:
Overload Setting Point = FLA motor / (K1 x K2)

As in the example above, K1 x K2 = 0.84
For a motor with FLA = 20Amps

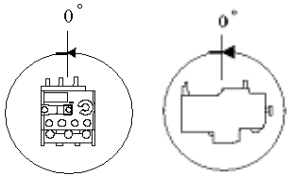
Overload Setting Point = 20 / 0.84 = 23.8Amps

Operating Positions[1]

RW17D, RW27D, RW67D, RW117D, RW317D, RW407D

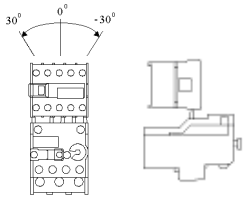
Mounting without contactor

The overload relays can be mounted at any position.



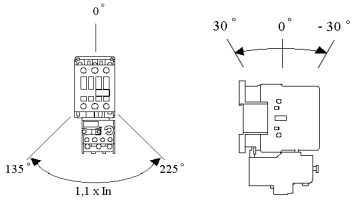
RW17D with CWC Series

As showed at the left figure below, the inclination can not exceed ± 30° degrees for a perfectly functioning of the contactor. Laterally, as showed at the right figure below, the mounting position is equivalent to 0° degrees - not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 180°



RW27D, RW67D, RW117D, RW317D, RW407

The mounting position showed at the left figure below is equivalent to 0° degrees - not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 135° for each side, however the mounting with the relay above the contactor, position between 135° and 225°, is required a correction factor of +10% on the dial of the relay. Laterally, as showed at the right figure below, the inclination can not exceed ± 30° for a perfect functioning of the contactor.

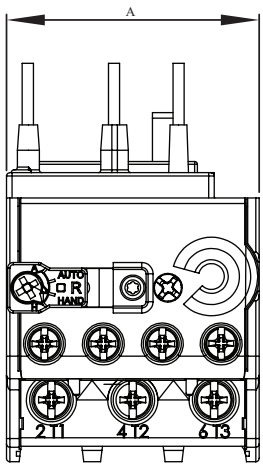


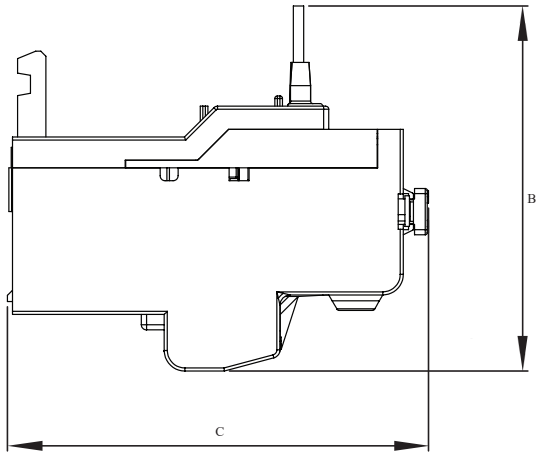
Note: 1)Please consult WEG for different mounting positions.

Overloads

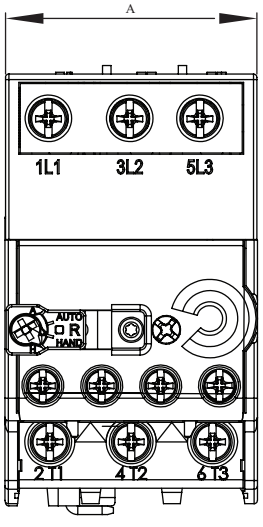
RW Series - Bi-Metallic

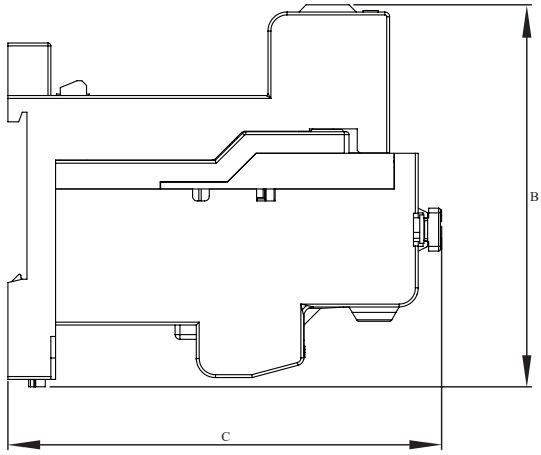
Dimensions





	RW17-1D RW17-2D RW27-1D RW27-2D	RW67-1D	RW67-2D	RW67-5D	RW117-1D RW117-3D
A (mm)	45.0	50.0	50.0	50.0	75.0
B (mm)	71.5	76.5	81.5	71.5	99.5
C (mm)	83.5	106.5	106.5	106.5	98.8

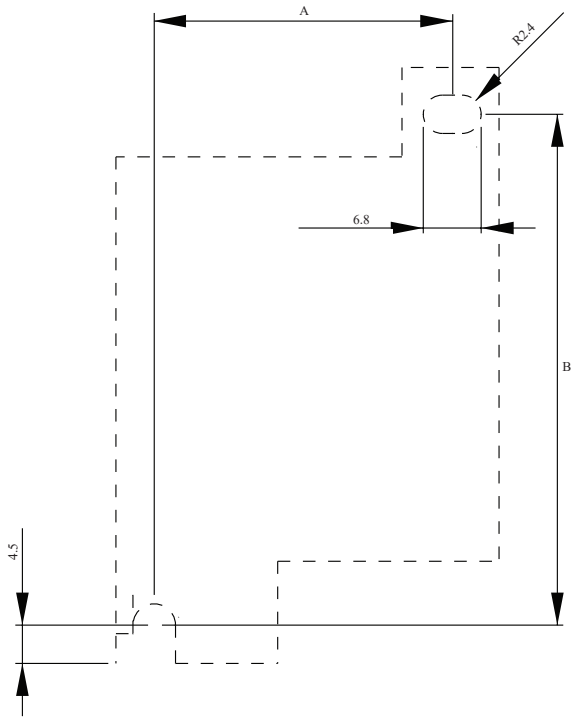




	BF27D + RW27-1D BF27-2D + RW27-2D	BF67-1D + RW67-1D BF67-2D + RW67-2D BF67-5D + RW67-5D	BF117D + RW117-1D RW117-2D
A (mm)	45.0	50.0	75.0
B (mm)	80.0	71.0	116.4
C (mm)	92.5	106.0	107.0

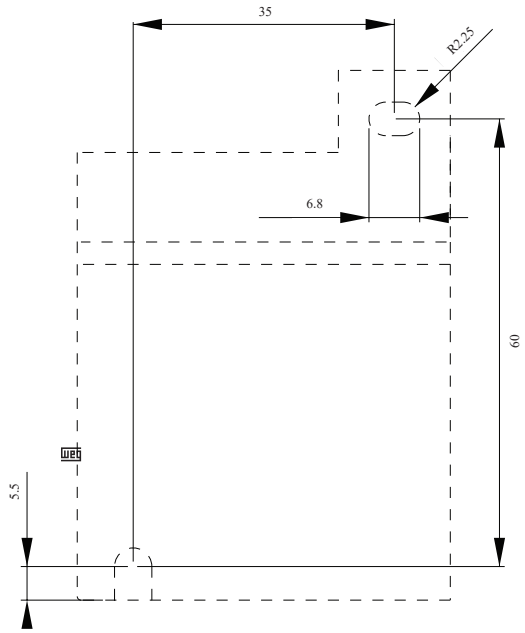
Dimensions mm

RW27 + BF27



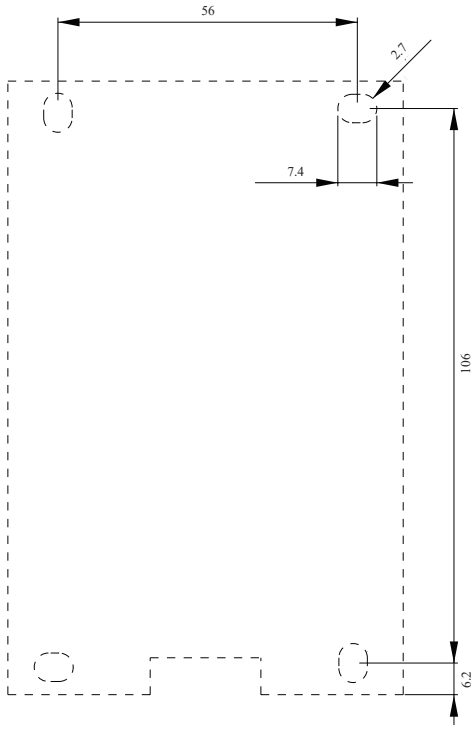
	BF27D	BF27-2D
A (mm)	34	34
B (mm)	60	65

RW67 + BF67



RW117-1D + BF117D

RW117-2D

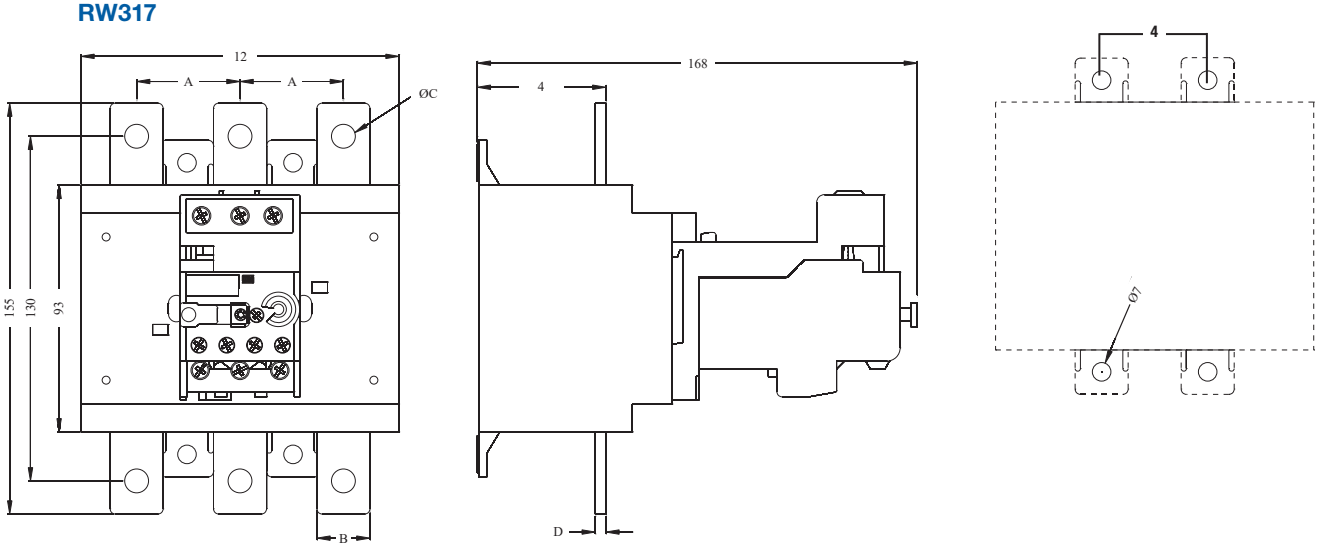


Overloads

RW Series - Bi-Metallic

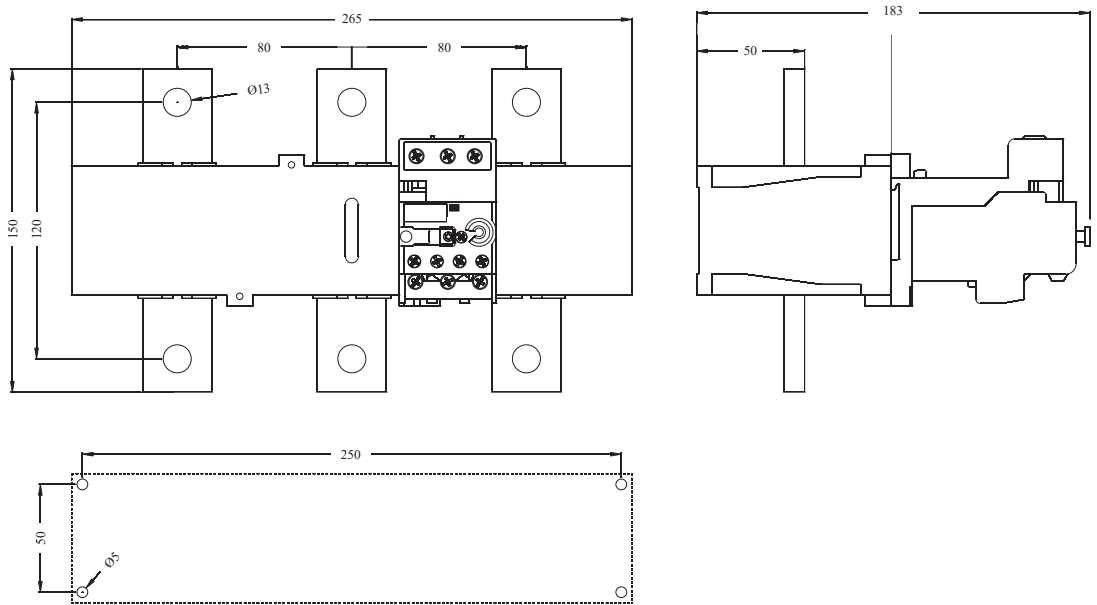
Dimensions mm

RW317

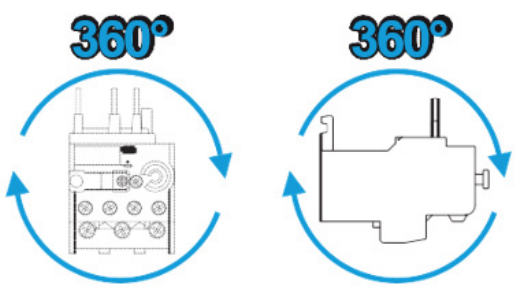


Current ranges	A (mm)	B (mm)	C (mm)	D (mm)
100...150 A	39	20	9	4
140...215 A				
200...310 A	45	25	11	5
275...420 A				

RW407

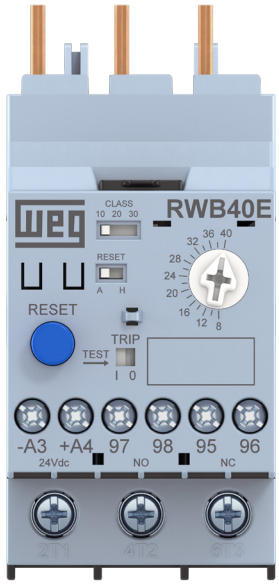


Mounting Postion
RW17 . . . 407



Solid-State Overload Relays

The new RW_E Solid State Overload relays are developed with cutting edge technology according to the most demanding standards worldwide. With its wide current/AMP setting; the RW_E OL Relay can be used for protection of electric motors of different power ratings. The benefit is versatility and flexibility for manufacturers due to the possibility of standardization of control panels and the new remote reset mode.. This Solid State Overload Relay can be directly mounted on WEG Contactors (CWM and CWB lines) providing very reliable and flexible motor starter units. The RW_E counts on two independent and highly reliable built in auxiliary contacts that assure the motor is switched off when a failure occurs.



UL File No. E189202

Standard Features:

- 3-pole solid state overload relays with adjustable trip class: 10, 20 and 30
- Self-powered
- Wide adjustment range (5:1)
- Thermal memory
- Phase loss protection (less than 5 seconds)
- Phase unbalance protection (>40% between phases)
- Temperature compensated (-20 °C up to +60 °C)
- Reset modes: Manual (Hand), Automatic, and Remote reset
- Direct mounting on CWB9...38 and CWM9...105 contactors
- Separate mounting is possible with accessories
- 1NO + 1NC built in auxiliary contacts

Solid-State Overload Relay Catalog Number Sequence

RWB	40	E	-	3	-	A	4U040

Contactor Series
RWM - Solid State OL for CWM
RWB - Solid State OL for CWB

Contactor Frame
40: 40A Contactor
112: 112A Contactor
420: 420A Contactor
840: 840A Contactor

OL Relay Type
E: Electronic OL

Power Poles
3: 3-Phase Relay

Reset Mode
A: Local
E: Remote/Local

Overload Current Settings
4U002: 0.4 - 2.0A
4U008: 1.6 - 8.0A
4U025: 5 - 25A
4U040: 8 - 40A
4U056: 14 - 56A
4U112: 28 - 112A
4U250: 50 - 250A
4U420: 85 - 420A
4U840: 170 - 840A

Chart intended as reference only and not to create part numbers.

Overloads

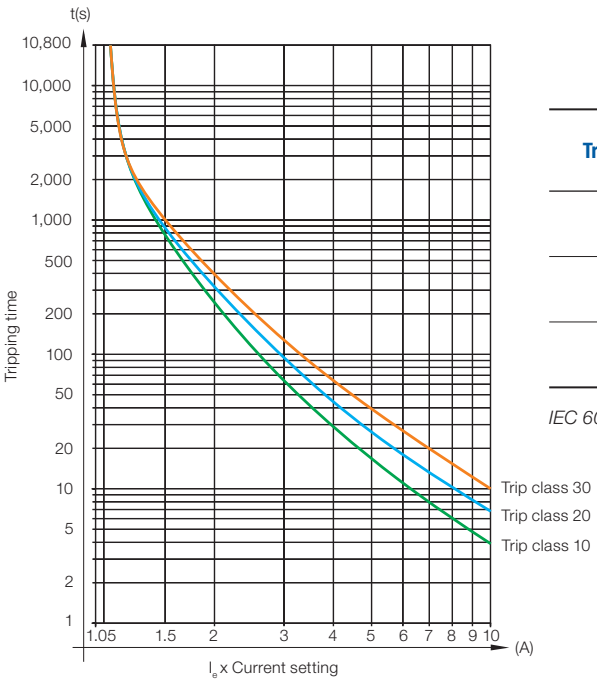
RW-E Series - Solid State

Suitable for Great Variety of Applications

The solid-state overload relays RW_E are suitable to protect motors in a wide range of industrial applications including those where long starting time is required. This way, motors on low, medium or heavy duty applications can be properly protected just by selecting the proper trip class (10, 20 or 30 according to IEC 60947-4-1) in the DIP-switches.

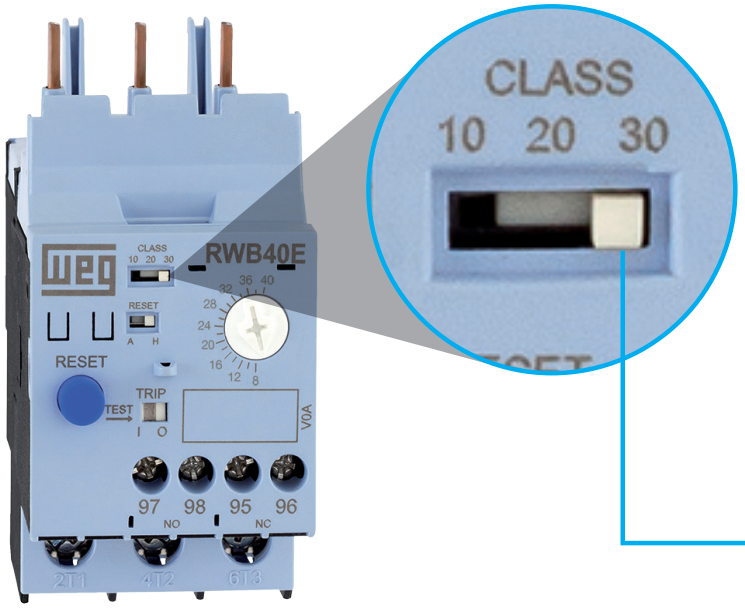
Additionally, the microprocessed electronic circuits of RW_E are temperature compensated according to IEC 60947-4-1, which means that throughout the temperature range of -20 °C up to +60 °C, the tripping point is not affected and it performs consistently without undesirable tripping.

The RW_E also features thermal memory which assures that the heating and cooling effects of motors are modeled and proper protection is guaranteed even after downtime periods.



Trip class	Multiples of current setting			
	1.05 x Ir	1.2 x Ir	1.5 x Ir	7.2 x Ir
10	-	Tp <2h	Tp <4min	4 <Tp ≤10s
20	-	Tp <2h	Tp <8min	6 <Tp ≤20s
30	-	Tp <2h	Tp <12min	9 <Tp ≤30s

IEC 60947-4-1

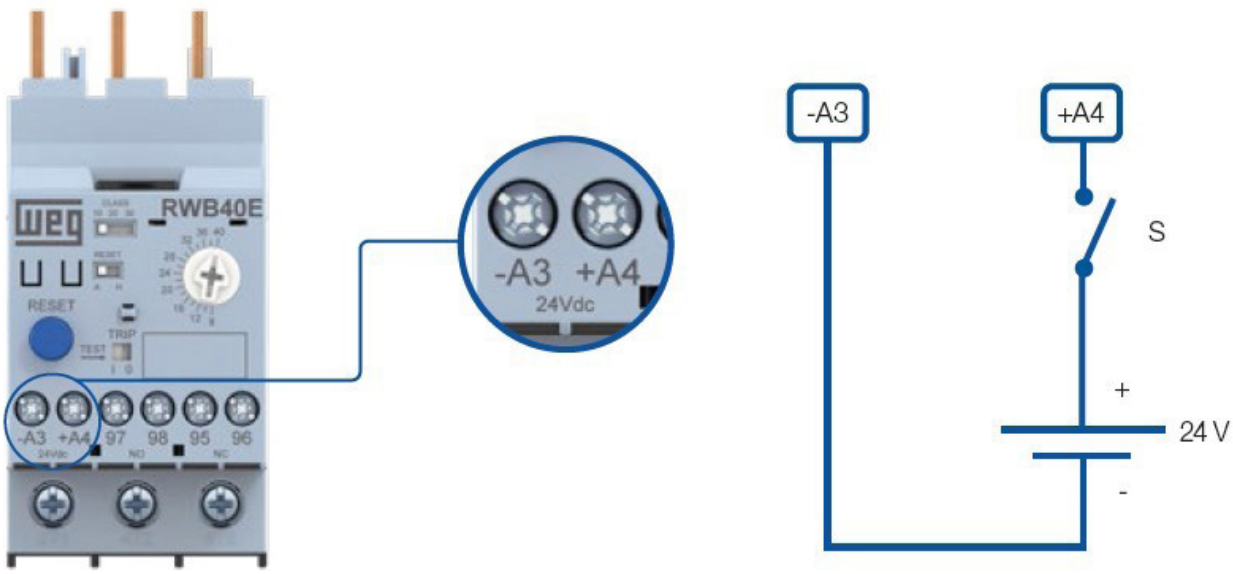


Trip class dip-switch

Local and Remote Reset Modes

Solid state overload models with remote reset mode can be reset locally (in front of a panel where the solid-state overload is installed) or remotely (long-distance operation).

- The Local Reset mode is performed by pressing the blue “RESET” button located on the front of the overload or by pressing an external Reset pushbutton (separate accessory) with shaft that can be wired and mounted on a panel enclosure without having to open the panel door.
- The Remote Reset mode is performed by applying 24 VDC across terminals –A3 and +A4 and by pressing an external pushbutton (separate accessory) or via a PLC’s digital output.

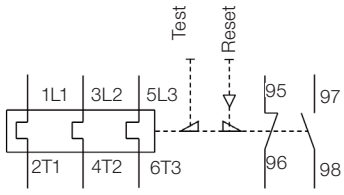


Note: The duration of the reset pulse must be greater than 0.25 seconds and must not exceed 5 seconds (typical = 1s).

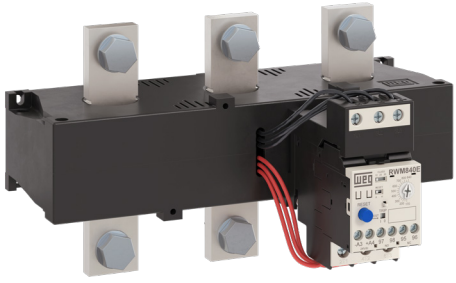
Overloads

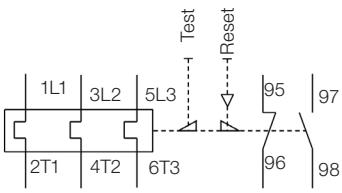
RW-E Series - Solid State

RW_E Solid-State Overload Relays from 0.4 up to 840 A

For direct mounting on contactors	Current range A	Diagram	Max fuse (gL/gG) A	Local Reset Only		Local/Remote Reset		Multiplier
				Catalog Number	List Price	Catalog Number	List Price	
CWB9...38	0.4...2		16	RWB40E-3-A4U002	$92	RWB40E-3-R4U002	$98	Z2
CWB9...38	1.6...8		32	RWB40E-3-A4U008		RWB40E-3-R4U008		
CWB9...38	5...25		63	RWB40E-3-A4U025		RWB40E-3-R4U025		
CWB9...38	8...40		125	RWB40E-3-A4U040	$145	RWB40E-3-R4U040	$155	
CWM9...40	0.4...2		16	RWM40E-3-A4U002	$92	RWM40E-3-R4U002	$98	
CWM9...40	1.6...8		32	RWM40E-3-A4U008		RWM40E-3-R4U008		
CWM9...40	5..25		63	RWM40E-3-A4U025		RWM40E-3-R4U025		
CWM9...40	8...40		125	RWM40E-3-A4U040	$145	RWM40E-3-R4U040	$155	
CWM50...105	14...56		160	RWM112E-3-A4U056	$225	RWM112E-3-R4U056	$240	
CWM50...105	28...112		250	RWM112E-3-A4U112	$240	RWM112E-3-R4U112	$255	

Note: Not to be used in single-phase and direct current applications.



For separate mounting or by connector links[1)]	Current range A	Diagram	Max fuse (gL/gG) A	Local Reset Only		Local/Remote Reset		Multiplier
				Catalog Number	List Price	Catalog Number	List Price	
CWM112...500	50...250		500	RWM420E-3-A4U250	$490	RWM420E-3-R4U250	$520	Z2
	85...420		710	RWM420E-3-A4U420	$580	RWM420E-3-R4U420	$620	
CWM150...800	170....840		1,250	RWM840E-3-A4U840[1]	$1,300	RWM840E-3-R4U840[1]	$1,380	

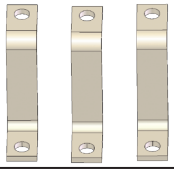
Note: Not to be used in single-phase and direct current applications.
1) RWM840E model allows two different types of connection to contactor:
a) By connecting the contactor cables to relay busbars;
b) By removing the relay busbars and using the Ø32 mm window for the passage of the contactor cables.

Accessories

Mounting Kit

Image	For use with relays	Description	Catalog Number	Weight kg	List Price	Multiplier
	RWM40E	Enables the overload relay to be mounted directly to a panel via screws or 35 mm DIN rail	BF27D	0.050	$14	Z2
	RWB40E		BF27-2D			
	RWM112E		BF112	0.230	$35	

Connector Links for Direct Mounting of Overload Relay on Contactor

Image	For use with relays	For use with contactors	Catalog Number	Weight kg	List Price	Multiplier
	RWM112E	CWM112/150	GA117D	0.135	$41	Z2
	RWM420E	CWM112/CWM150	GA317-1D	0.250	$68	
		CWM180	GA317-2D	0.270	$70	
		CWM250/300	GA317-3D	0.630	$118	
		CWM400	GA317-10D	0.500	$118	

Phase Barriers

Image	For use with relays	Description	Catalog Number	Weight kg	List Price	Multiplier
	RWM420E	Contains 1 plastic insulator and fixing screws to be used where the overload relay power terminals external dimension exceed the busbar external dimension	IBRW317	0.044	$4	Z2

Reset Pushbutton with Shaft

Image	For use with relays	Description	Catalog Number	Weight kg	List Price	Multiplier
	RW-E	Blue Flush pushbutton - Engraved Reset - with shaft. Length: max. 250 mm and min. 22.5 mm	CSW-BHF437	0.032	$12	Z5

Overloads

RW-E Series - Solid State

Technical Data

General Data

Product model			RWM40E / RWB40E[1]	RWM112E[1][2]	RWM420E[2]	RWM840E
Standards			IEC 60947-4-1, IEC 60947-5-1, IEC 60947-1, UL 60947-1, UL 60947-4-1A and UL 508			
Rated insulation voltage U_i (pollution degree 3)	IEC 60947-4-1	(V)	690		100	
	UL, CSA	(V)	600			
Rated impulse withstand voltage U_{imp} (IEC 60947-1)		(kV)	6		8	
Rated operational frequency (sinusoidal networks)		(Hz)	50/60			
Suitable for use	Three phase loads		Yes			
	Single phase / two phase loads		No			
	DC current loads		No			
Trip class (IEC 60947-4-1)			10, 20 or 30 - selectable			
Additional featured protections	Phase loss		Yes / less than <5s			
	Phase unbalance		Yes / >40%			
Reset	Manual / minimum downtime for reset		Yes / instantaneous[3]			
	Automatic / minimum downtime for reset		Yes / ≥90s			
Maximum operation per hour		(ops./h)	30			
Protection degree (IEC 60529)	Main contacts		IP10		IP00	
	Auxiliary contacts		IP20			
Mounting			[1]		[2]	
Mechanical shock resistance - 1/2 sinusoid			15 g / 11ms			
Vibration resistance (IEC 60068-2-6)			6 g / 30...300 Hz			
Ambient temperature	Transport and storage		-50 °C...+80 °C			
	Operating		-20 °C...+60 °C			
	Temperature compensation		-20 °C...+60 °C			
Altitude			2,000 m			

Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112)
2) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.
3) Before performing a manual reset, it is recommended to wait at least 180 seconds for the load to cool down and for the system to recover after an overload occurs. Resetting the overload before the recommended time will not guarantee a proper re-activation of the system and may cause damages to the equipment.

Main Contacts

Product model			RWM40E / RWB40E[1]	RWM112E[1][2]	RWM420E[2]	RWM840E
Rated operational voltage Ue	IEC 60947-4-1	(V)	690		100	
	UL, CSA	(V)	600			
Current setting / max fuse (gL/gG)		(A)	0.4...2 / 16 1.6...8 / 32 5...25 / 63 8...40 / 125	14...56 / 160 28....112 / 250	50...250 / 500 85...420 / 710	170...840 / 1,250
Setting current / average power dissipation per pole		(W)	0.4...2 / 0.07 1.6...8 / 0.06 5...25 / 0.38 8...40 / 1.5	14...56 / 2 28....112 / 2.6	50...250 / 12 85...420 / 12	170...840 / 14.5

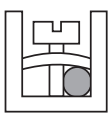
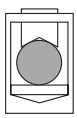
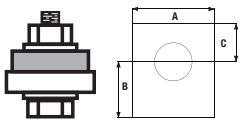
Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112);
2) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.

Technical Data

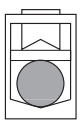
Auxiliary Contacts

Product model			RWM40...840E / RWB40E
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	(V)	250
	UL, CSA	(V)	600
Rated impulse withstand voltage Uimp (IEC 60947-1)		(kV)	4
Rated operational voltage Ue	IEC 60947-4-1	(V)	250
	UL, CSA	(V)	600
Rated thermal current Ith ≤ 60 ºC)		(A)	5
Rated operational current Ie			
AC-14/AC-15 (IEC 60947-5-1)	24 V	(A)	3
	120 V	(A)	3
	250 V	(A)	1.5
DC-13 (IEC 60947-5-1)	24 V	(A)	2
	60 V	(A)	0.4
	110 V	(A)	0.22
	125 V	(A)	0.22
	250 V	(A)	0.1
NEMA control circuit ratings	UL, CSA		C300 / R300
Short-circuit protection with fuse		(A)	6
Minimum voltage / admissible current (IEC 60947-5-4)			12 V / 10 mA

Terminal Capacity and Tightening Torque - Main Contacts

Product model			BF27D	RWM40E / RWB40E	RW112E	BF112
Type of screw			M4 Flat / Phillips #2	M3.5 Flat / Phillips #2	M10 Allen #4	M10 Allen #4
Cable size						
Flexible cable	(mm²)		1.5...10	-	-	-
Cable with terminal / rigid cable	(mm²)		1.5...6	-	-	-
AWG wire			16...10	-	-	-
Tightening torque	(Nm)		2.3	-	-	-
Flexible cable	(mm²)		-	1...10	2.5...35	2.5...35
Cable with terminal / rigid cable	(mm²)		-	1...10	2.5...35	2.5...35
AWG wire			-	16...8	14...2	14...2
Tightening torque	(Nm)		-	1.7	6	6
Product model			**RWM420E**		**RWM840E**	
Type of screw			M10 Hexagon Head		M12 Hexagon Head	
Cable with terminal	(mm²)		2 x (25...150)		2 x (60 x 10)	
Busbar (A x B x C)	(mm)		25 x 18.5 x 12.5		31.7 x 28.3 x 15	
Tightening torque	(Nm)		26		26	

Terminal Capacity and Tightening Torque - Auxiliary Contacts

Product model			RWM40...840E / RWB40E
Type of screw			Flat / Phillips #1
Cable size			
Cable with or without terminal	(mm²)		1 x 1...2.5
AWG wire			16...12
Tightening torque	(Nm)		0.8

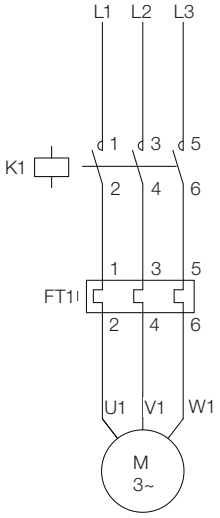
Overloads

RW-E Series - Solid State

Technical Data

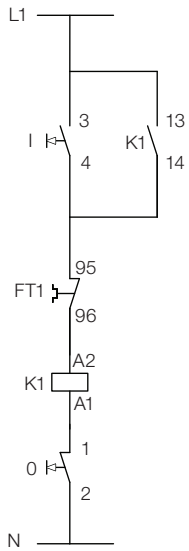
Motor Protection - Alternating Current

3-pole

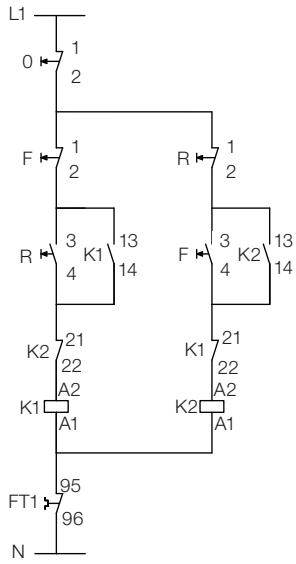


Typical Connection - Contactor + Overload Relay

Direct On Line Starter (1 Direction of Rotation)

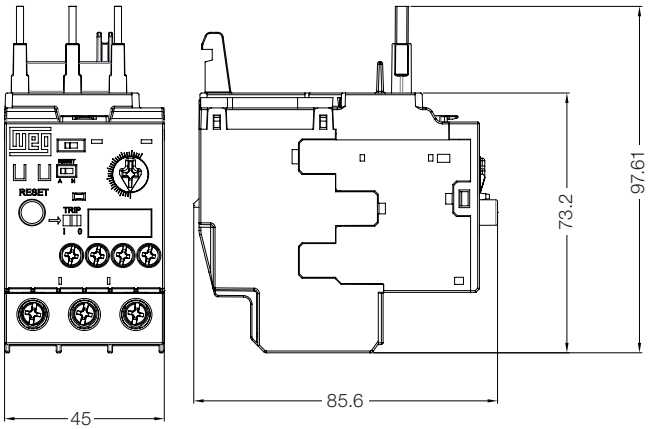


Direct On Line Starter (2 Directions of Rotation)

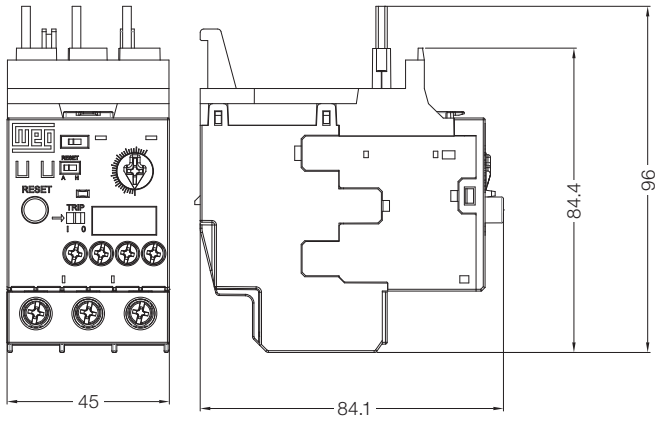


Dimensions (mm)

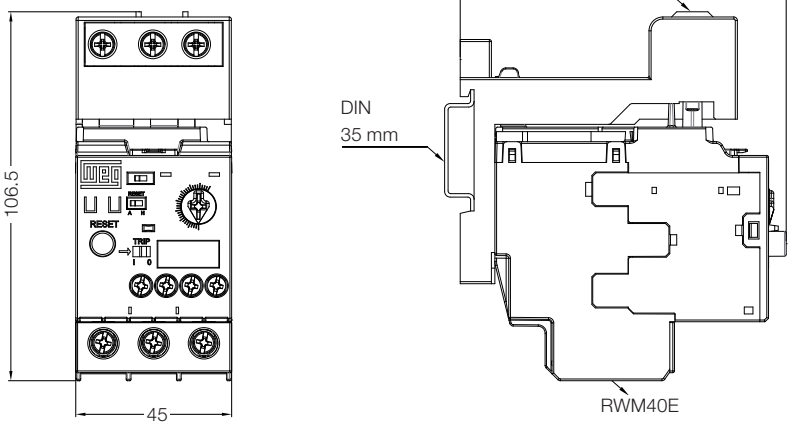
RWM40E

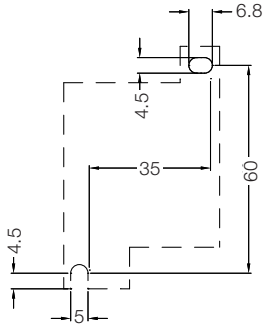


RWB40E



RWM40E + BF27D
RWB40E + BF27-2D



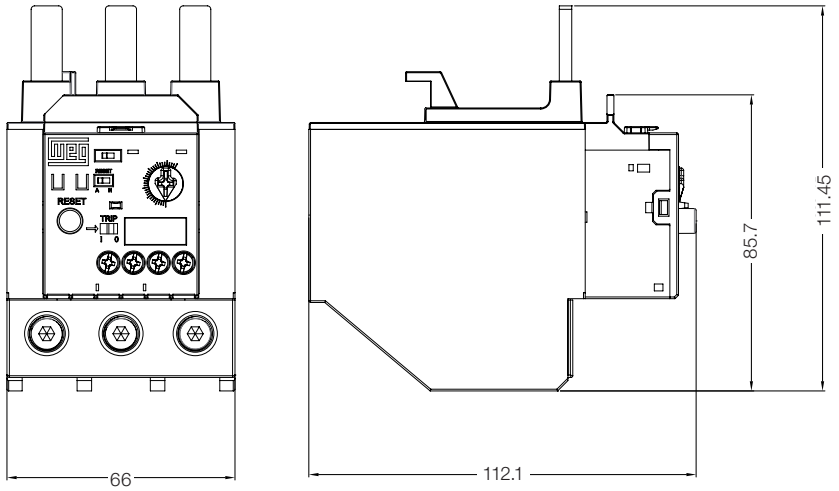


Overloads

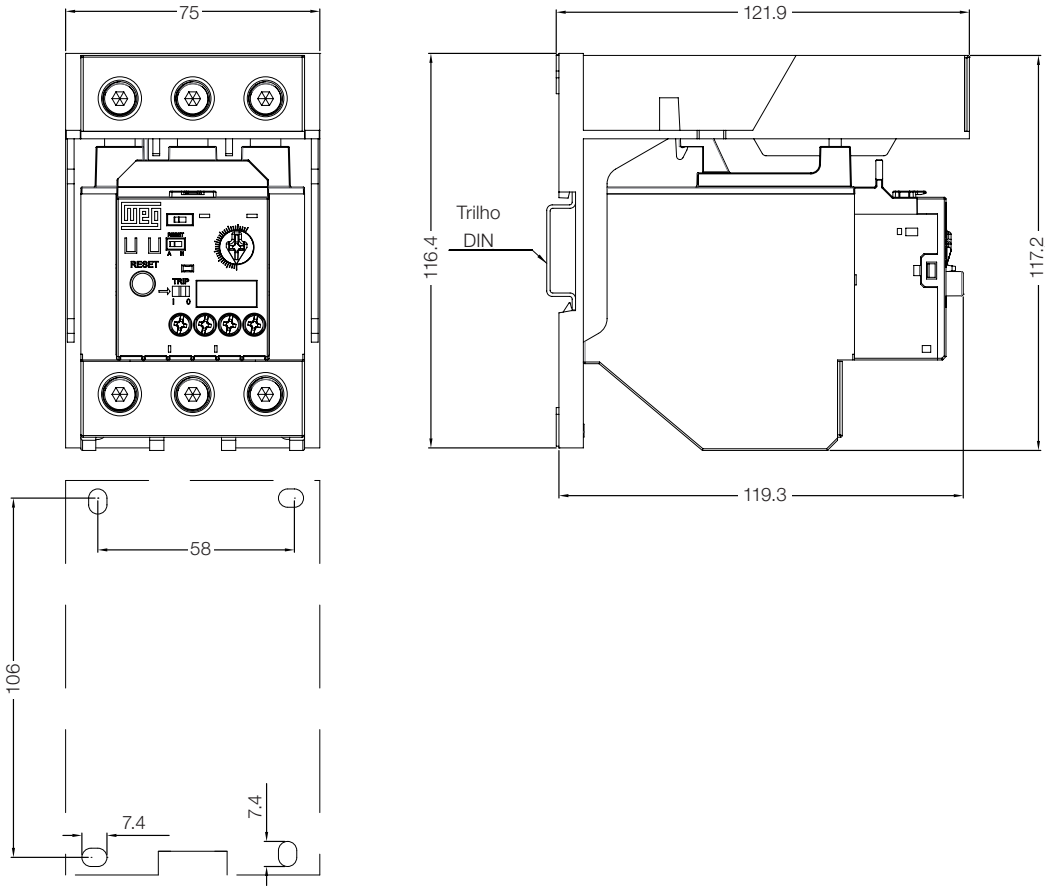
RW-E Series - Solid State

Dimensions (mm)

RWM112E

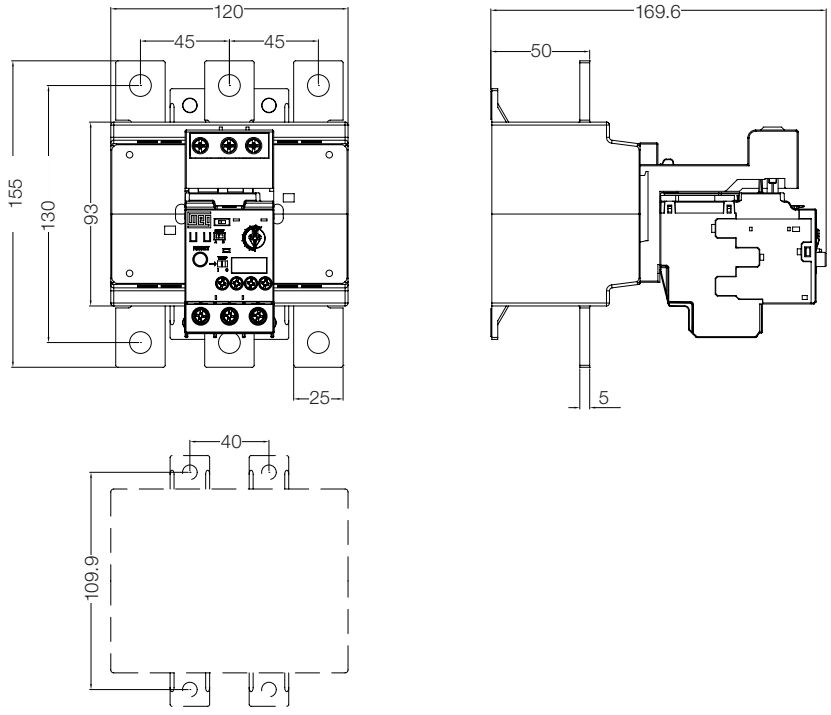


RWM112E + BF112

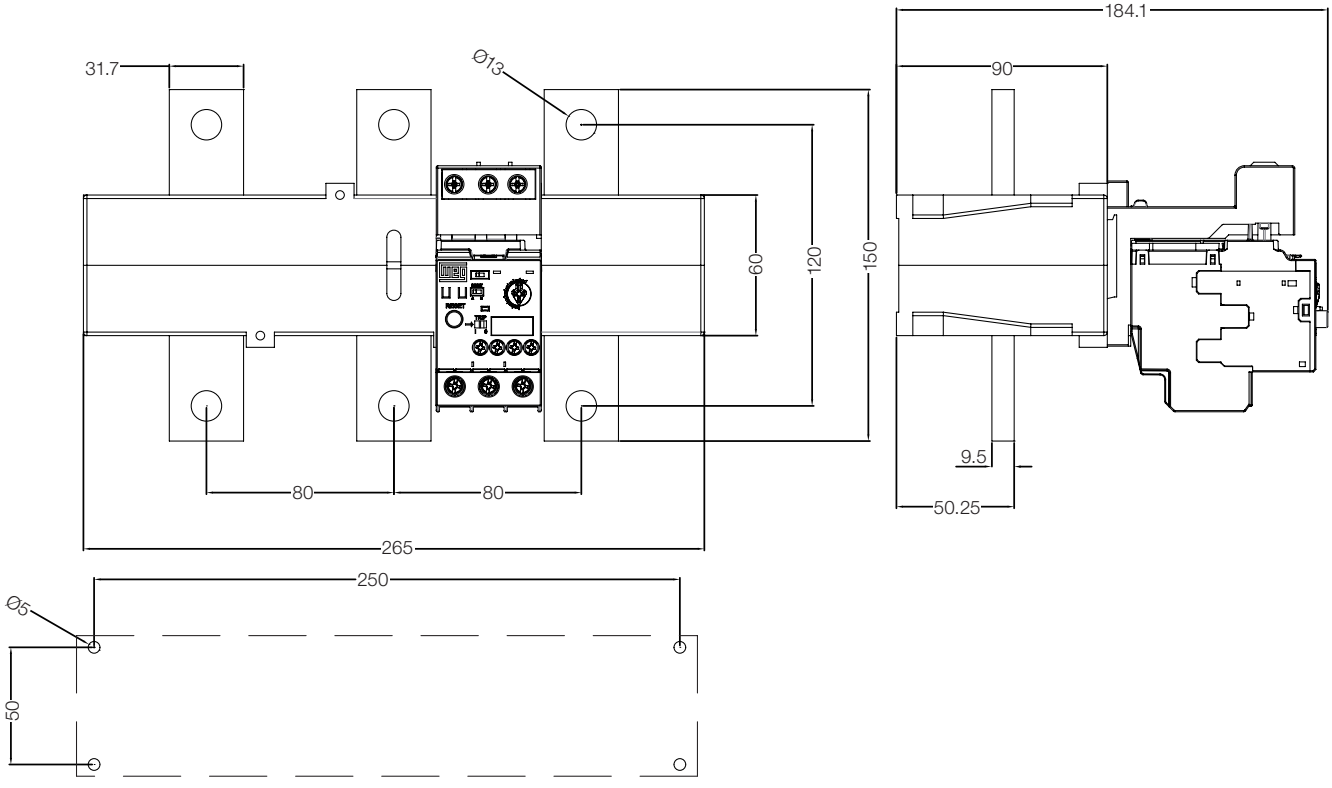


Dimensions (mm)

RWM420E



RWM840E

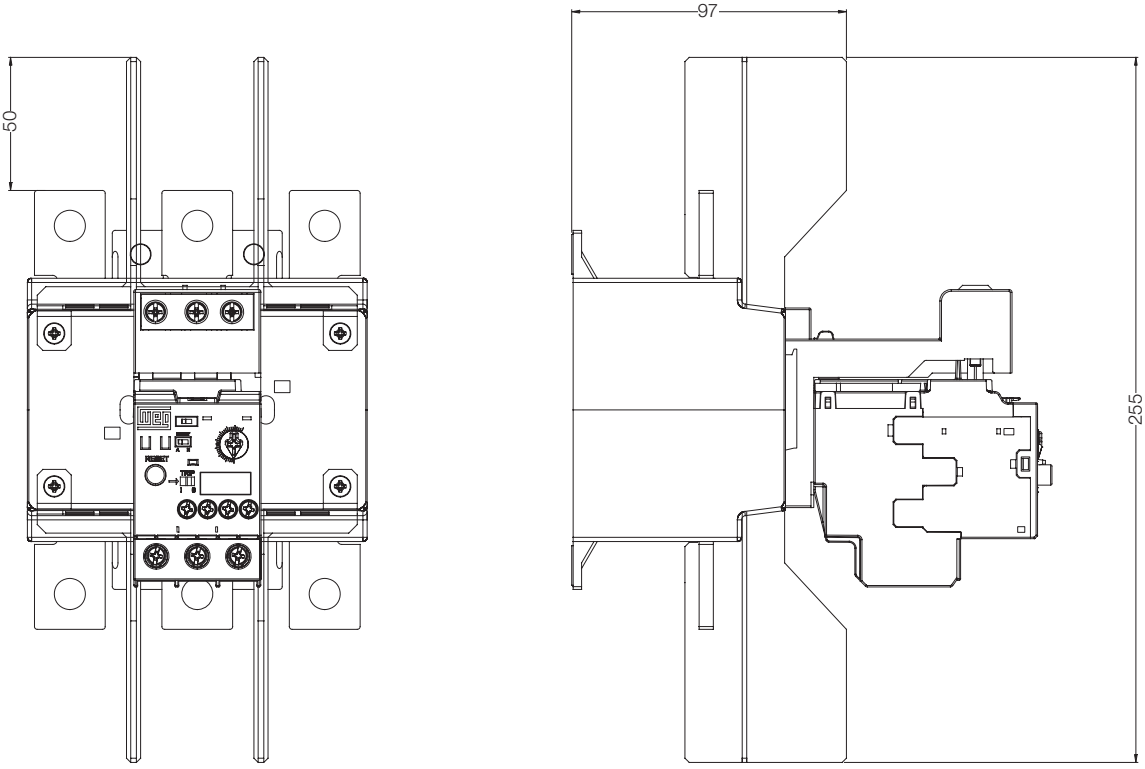


Overloads

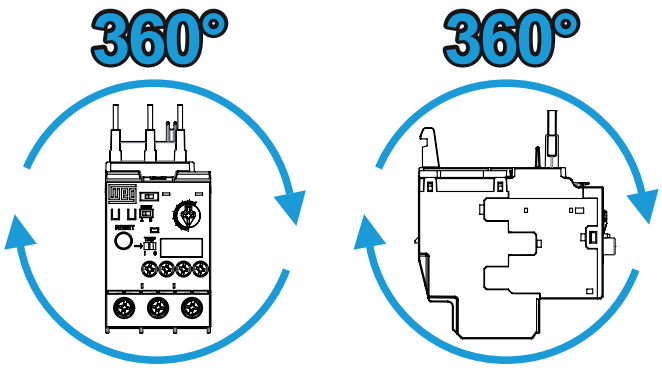
RW-E Series - Solid State

Dimensions (mm)

RWM420E + IBRW317



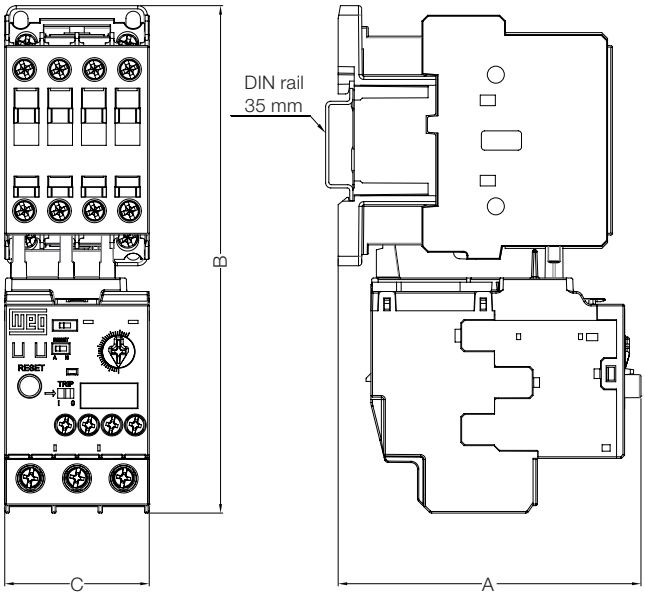
RWM40...840E / RWB40E



Mounting Position

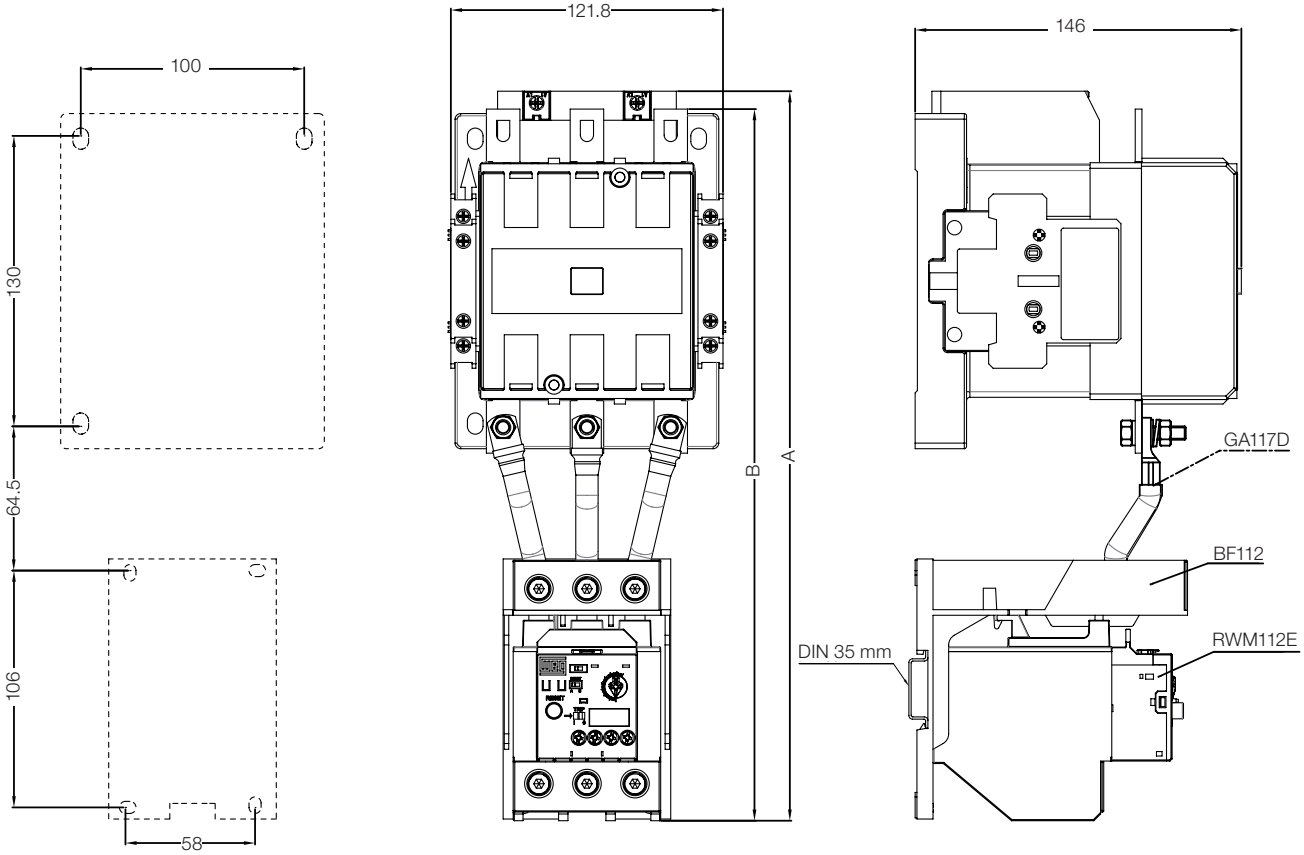
Dimensions (mm)

CWM9...105 + RWM40...112E and CWB9...38 + RWB40E



Contactor	Type of contactor coil	A	B	C
CWM9...18	AC	94.3	158	45
	DC	125.1		
CWM25	AC	94.9	159.3	45
	DC	124.8		
CWM32/40	AC	98.6	166.5	55
	DC	118.6		
CWM50...80	AC	122.6	202.7	66
	DC			
CWM95/105	AC	126	202.7	75.4
	DC			
CWB9...18	AC	89.5	163.1	45
	DC	98.7		
CWB25...38	AC	93	166.5	
	DC	102.2		

CWM112 + RWM112E + BF112



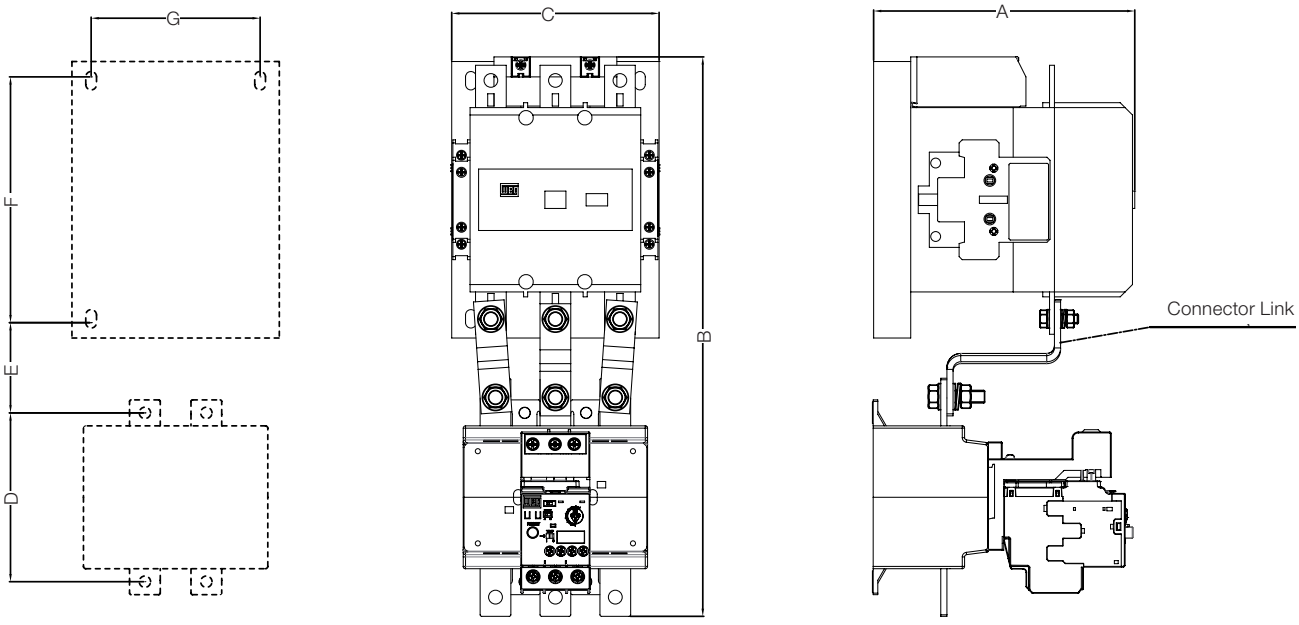
CWM112	A	B
AC conventional coil	-	318.5
Electronic coil	326.5	318.5

Overloads

RW-E Series - Solid State

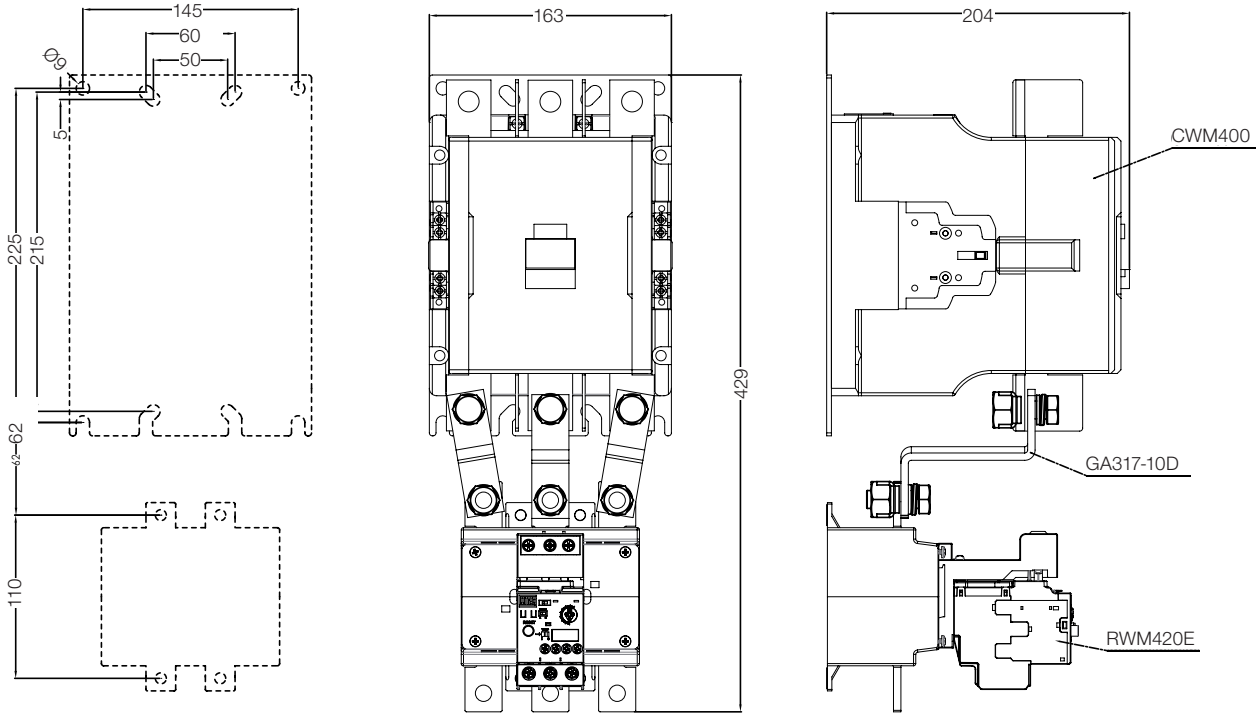
Dimensions (mm)

CWM112...300 + RWM112/420E



Contactor	Connector links	Overload relay	A	B	C	D	E	F	G
CWM112/150	GA117D	RWM112E	147	325	121.5	106	64	130	100
CWM112/150	GA317-1D	RW420E	166	343			60.5		
CWM180	GA317-2D	RW420E	172	358	139	110	52.5	160	110
CWM250/300	GA317-3D	RW420E	181	380	148.4		55	180	120

CWM400 + RWM420E



SRW01

The main function of the SRW01 is to protect and control electric motors in their most diverse industrial applications. Due to its reduced size and modular design, the relay is frequently used when space for its assembly is a determining point. The on-line monitoring options, failure diagnosis, and failure statistics allow preventive maintenance to be more effective, thus reducing the number of downtimes. It covers wide applications for continuous process plants in a wide variety of market segments..

UL File No. E189202

Standard Features

- Three ways to parameterize, program, and monitor:
  - Via network protocols
  - Via HMI (Human Machine Interface)
  - Via USB port with free WLP (WEG Ladder Programmer) software
- Standard 6 digital inputs and 4 digital outputs
- Status LED indicators for digital inputs, outputs, network, operating condition, failure, and alarm
- Digital Expansion Unit (EDU) for extra digital inputs and outputs
- Current Measuring Unit (UMC) for three-phase electric motors
- Current and Voltage Measuring Unit with Transformer (UMCT) for monitoring phase sequence, power factor, motor power, and power consumption

SRW01-U C P T 1 E47

Communication protocols
B = Without communication
D = DeviceNet
M = Modbus-RTU
P = Profibus-DP
E1 = Ethernet Modbus-TCP
E2 = Ethernet PROFINET IO
E3 = EtherNet/IP

Protection
T = PTC
E = Earth leakage
TE = PTC and Earth leakage

Digital input operating voltage
1 = 24 V dc
2 = 110 V ac

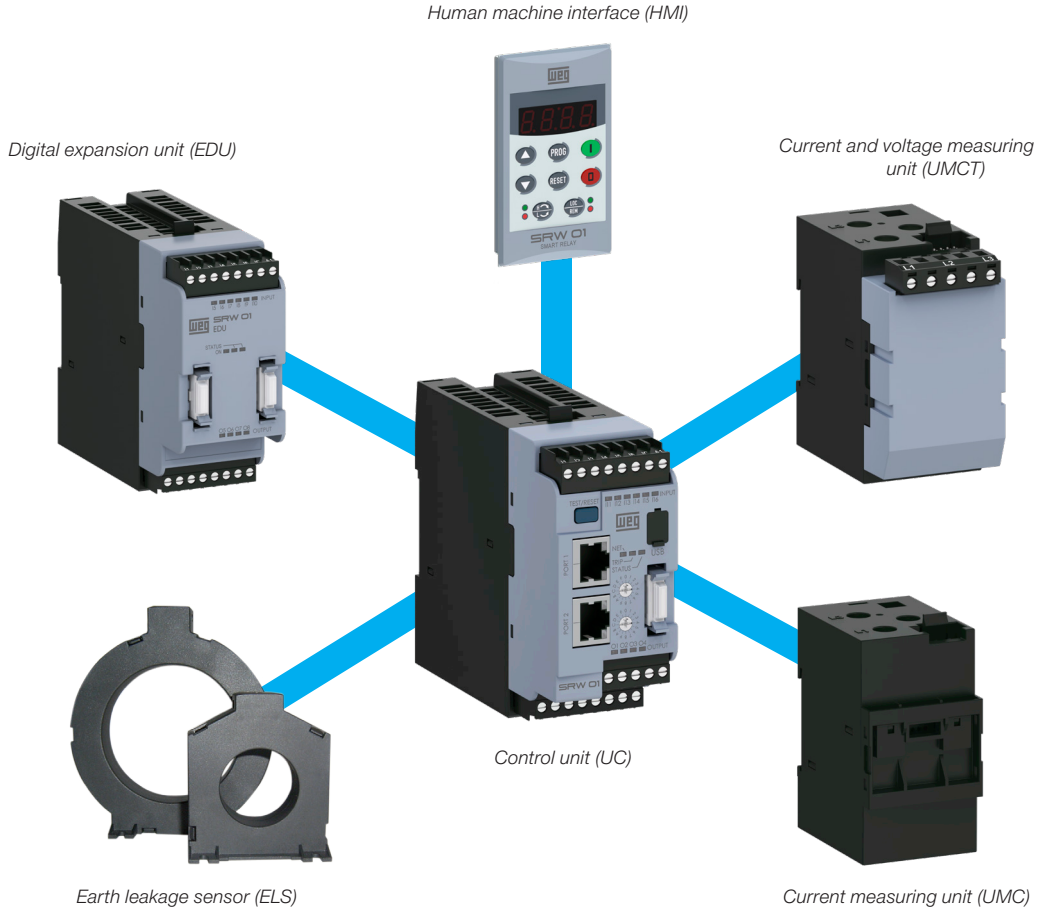
Supply voltage
E26 = 24 V ac (50-60 Hz) / V dc
E47 = 110-240 V ac (50-60 Hz) / V dc

Overloads

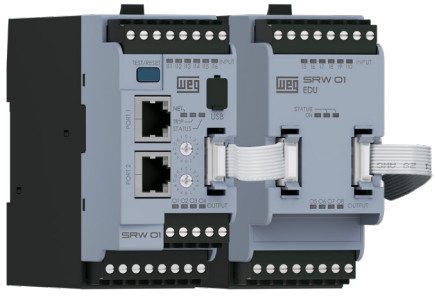
Smart Relays

Construction Characteristics

Using the modular concept, SRW01 offers flexibility and easy configuration.



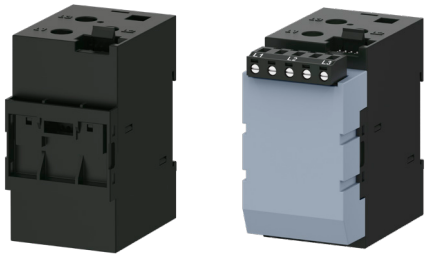
Digital Expansion Unit (EDU)



The Digital Expansion Unit (EDU) increases the number of digital inputs and outputs present in the Control Unit (UC) of the SRW01. The EDU adds 6 digital inputs and 4 digital outputs, and can be used to monitor signals and to control external devices.

Note: Limit of one Digital Expansion Unit (EDU) for each Control Unit (UC).

Current Measuring Unit (UMC) or Voltage and Current Measuring Unit (UMCT)



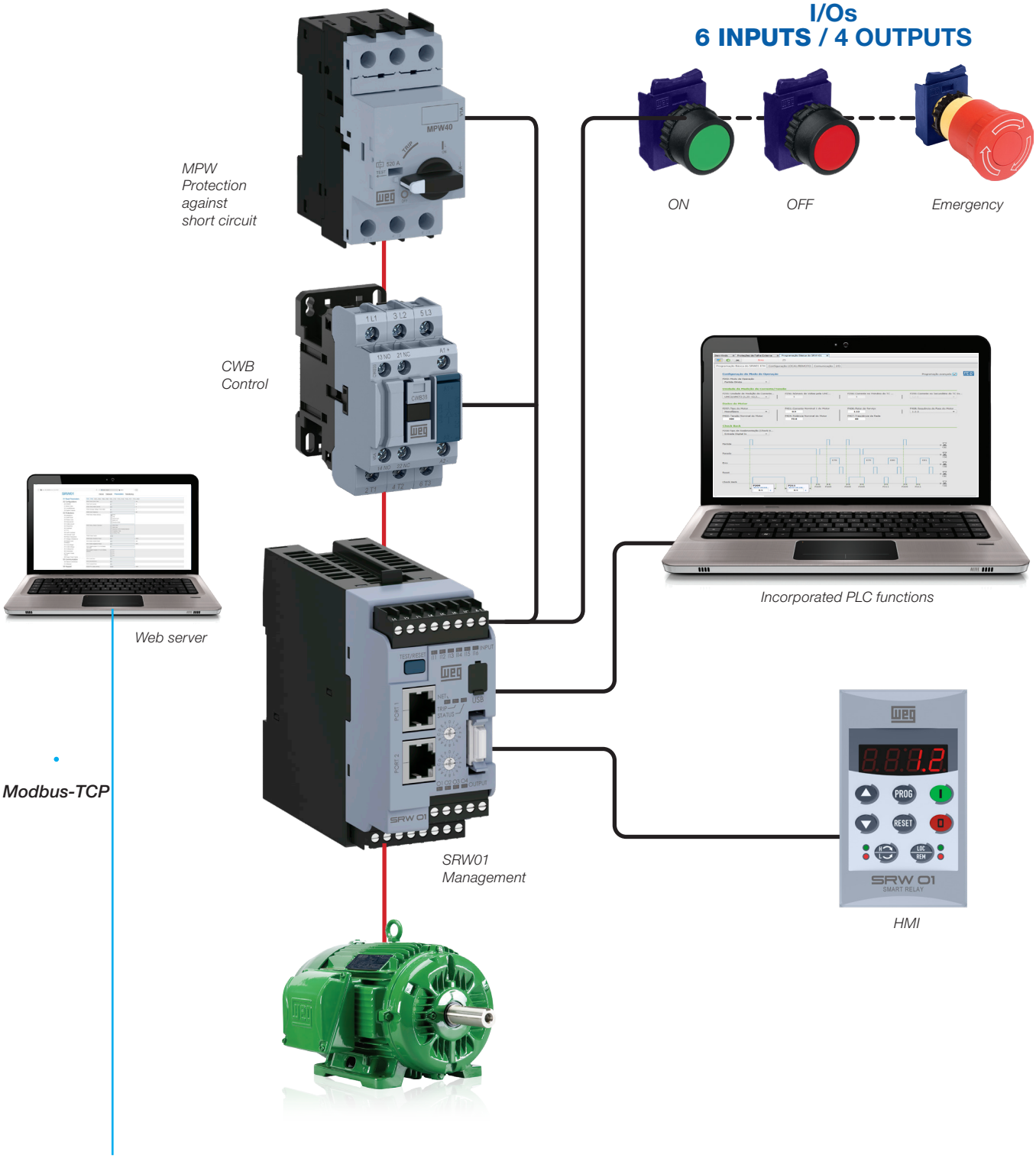
UMC *UMCT*

The Current Measuring Unit (UMC) measures the current of the three phases of the motor.

Including a potential transformer, the Current and Voltage Measuring Unit (UMCT) also monitors voltages up to 690 V, allowing the smart relay to monitor phase sequence, power factor, motor power (active, reactive and apparent) and power consumption (kWh).

The data are digitally transmitted to the Control Unit (UC).

Connectivity



Its capacity of immediate diagnosis helps the preventive maintenance, avoiding undesirable machine breakdown, and also meeting the **IoT** requirements, which is one of the cornerstones of the **4.0 Industry.**

Overloads

Smart Relays

Control Unit - UC

Image for illustrative purposes
Ethernet version.

Selection Table

SRW01-U C P T 1 E47

Communication protocols
B = Without communication
D = DeviceNet
M = Modbus-RTU
P = Profibus-DP
E1 = Ethernet Modbus-TCP
E2 = Ethernet PROFINET IO
E3 = EtherNet/IP

Protection
T = PTC
E = Earth leakage
TE = PTC and Earth leakage

Digital input operating voltage
1 = 24 V dc
2 = 110 V ac

Supply voltage
E26 = 24 V ac (50-60 Hz) / V dc
E47 = 110-240 V ac (50-60 Hz) / V dc

Catalog Number	Protection	Supply voltage	Communication protocol	Digital input voltage	List Price	Multiplier
SRW01-UCBE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Without communication	24 V dc	$890	Z8
SRW01-UCBE1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,000	
SRW01-UCBE2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$890	
SRW01-UCBE2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,000	
SRW01-UCBT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		24 V dc	$810	
SRW01-UCBT1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$810	
SRW01-UCBT2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$810	
SRW01-UCBT2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$910	
SRW01-UCDE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	DeviceNet	24 V dc	$995	
SRW01-UCDE1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,110	
SRW01-UCDE2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$995	
SRW01-UCDE2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,110	
SRW01-UCDT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		24 V dc	$910	
SRW01-UCDT1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,020	
SRW01-UCDT2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$910	
SRW01-UCDT2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,020	
SRW01-UCPE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Profibus-DP	24 V dc	$1,290	
SRW01-UCPE1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,450	
SRW01-UCPE2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$1,290	
SRW01-UCPE2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,450	
SRW01-UCPT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		24 V dc	$1,450	
SRW01-UCPT1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,360	
SRW01-UCPT2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$1,210	
SRW01-UCPT2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,360	
SRW01-UCME1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Modbus-RTU	24 V dc	$1,110	
SRW01-UCME1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,250	
SRW01-UCME2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$1,110	
SRW01-UCME2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,250	
SRW01-UCMT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		24 V dc	$1,030	
SRW01-UCMT1E26		24 V ac (50-60 Hz) / V dc		24 V dc	$1,150	
SRW01-UCMT2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	$1,030	
SRW01-UCMT2E26		24 V ac (50-60 Hz) / V dc		110 V ac	$1,150	
SRW01-UCE1TE1E47	PTC and Earth leakage	110-240 V ac (50-60Hz) / V dc	Modbus-TCP	24 V dc	$1,660	
SRW01-UCE1TE1E26		24 V ac (50-60Hz) / V dc		24 V dc	$1,860	
SRW01-UCE2TE1E47		110-240 V ac (50-60Hz) / V dc	PROFINET IO	24 V dc	$1,650	
SRW01-UCE2TE1E26		24 V ac (50-60Hz) / V dc		24 V dc	$1,850	
SRW01-UCE3TE1E47		110-240 V ac (50-60Hz) / V dc	EtherNet/IP	24 V dc	$1,650	
SRW01-UCE3TE1E26		24 V ac (50-60Hz) / V dc		24 V dc	$1,850	

Tolerances for the SRW01 are 5% and above, Measurement Modules are only for reference

Accessories

Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT)

They must be selected according to the motor rated current.

Current range (A)	Catalog Number	List Price	Catalog Number[1)]	List Price	Multiplier
0.5-5.0	SRW01-UMC1	$335	SRW01-UMCT1	$670	Z8
1.25-12.5	SRW01-UMC2	$345	SRW01-UMCT2	$685	
2.5-25.0	SRW01-UMC3	$360	SRW01-UMCT3	$700	
12.5-125.0	SRW01-UMC4	$525	SRW01-UMCT4	$860	
42.0-420.0	SRW01-UMC5	$715	SRW01-UMCT5	$1,050	
84.0-840.0	SRW01-UMC6	$955	SRW01-UMCT6	$1,290	

Notes:
- The Control Unit (UC) can be assembled with the Current Measuring Unit (UMC) to create one single unit, or it can be assembled as detached (up to 2 meters). The Current and Voltage Measuring Unit (UMCT) can be exclusively assembled as detached from the Control Unit (UC).
- Tolerances for the SRW01 are 5% and above. Measurement models are only for reference.

SRW01-UMC1, 2 and 3

SRW01-UMCT1, 2 and 3

Width (mm)	Current (A)	Power connection
45	0.25 - 2.5[2)]	Cable through
	0.5 - 5	
	1.25 - 12.5	
	2.5 - 25	

SRW01-UMC4

SRW01-UMCT4

Width (mm)	Current (A)	Power connection
66	12.5 - 125	Cable through

SRW01-UMC5

SRW01-UMCT5

Width (mm)	Current (A)	Power connection
120	42 - 420	Busbar

SRW01-UMC6

SRW01-UMCT6

Width (mm)	Current (A)	Power connection
265	84 - 840	Cable through or busbar

Images for illustrative purposes

For applications at higher currents or out of the model range of the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMTC), it is possible to use external current transformers (CTs) supplied by the user.

UC-UMC or UMCT / UC-EDU Connection Cable

The SRW01-CB cable makes the electrical connection of the Control Unit (UC) to the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) or Digital Expansion Unit (EDU), allowing the detached assembly up to two meters away and simplifying the installation.

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-CB0	60	$13.50	Z8
SRW01-CB1	120	$13.50	
SRW01-CB2	500	$15.50	
SRW01-CB3	2,000	$17.50	
SRW01-CB4	1,000	$17.50	

Notes: 1) Alternating supply voltage from 35 to 690 V.
2) For a current range from 0.25 to 2.5 A, use the SRW01-UMC1 or SRW01-UMCT1 with two turns in the primary winding. For further details, refer to the user's manual.

Overloads

Smart Relays

Accessories

Digital Expansion Unit - EDU

Catalog Number	Digital inputs	Digital input (external) supply voltage	Digital outputs	List Price	Multiplier
SRW01-EDU1	6	24 V dc	4	$440	Z8
SRW01-EDU2	6	110 V ac	4	$440	

Human Machine Interface - HMI

The HMI is connected to the front part of the relay by means of a communication cable, making its operation and configuration easier and more convenient. It offers two mounting options: vertical and horizontal.

Catalog Number	Description	List Price	Multiplier
SRW01-HMI	Standard human machine interface - HMI - vertical	$250	Z8

Catalog Number	Description	List Price	Multiplier
SRW01-HMI2	Human machine interface - HMI - horizontal	$470	Z8

Earth Leakage Sensor (EL)

The Earth leakage sensor must be installed detached from the Control Unit (UC).
It can be installed in any position and connected to the Control Unit (UC) by means of a twisted pair and/or shielded cable connected to the sensor terminals and S1 and S2 terminals, for the model with Profibus-DP, DeviceNet and Modbus-RTU, or to the other E1 and E2 terminals for the EtherNet/IP, PROFINET IO and Modbus-TCP models, with maximum recommended distance of 10 m.

Catalog Number	Diameter (mm)	UMC/UMCT compatible	List Price	Multiplier
SRW01-EL1	35	SRW01-UMC/UMCT 1, 2, 3	$265	Z8
SRW01-EL2	70	SRW01-UMC/UMCT 4	$460	
SRW01-EL3	120	SRW01-UMC/UMCT 5	$825	
SRW01-EL4	210	SRW01-UMC/UMCT 6	$1,670	

Specify the Earth leakage sensor according to the diameter of the cables that go through the window; choose the sensor with the smallest opening.

It is recommended to use the equivalence relation between the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) and the ELS sensors for the installation, as shown on the table above.

Accessories

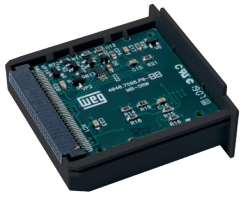
Connection Cable UC-HMI

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-CH1	500	$35	Z8
SRW01-CH2	1,000	$35	
SRW01-CH3	1,500	$35	
SRW01-CH4	2,000	$45	

USB Communication Cable

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-USB	2,000	$45	Z8

Communication Module



Catalog Number	Communication protocol	List Price	Multiplier
SRW01-MCD	DeviceNet	$100	Z8
SRW01-MCM	Modbus-RTU	$220	
SRW01-MCP	Profibus-DP	$400	

Note: - For replacement or for Control Unit (UC) without network module.
- Not available in the Ethernet version.

Fixing Adaptor

Catalog Number	Description	List Price	Multiplier
PLMP	Adapter for screw fixing (2 pieces per package/0.006 kg)	$.50	Z4

Busbar for UMC and UMCT

Catalog Number	Description	List Price	Multiplier
JBL RW407D	Busbar for the Current Measuring Unit (UMC6) / Current and Voltage Measuring Unit (UMCT6)	$345	Z8

Protection Covers - Replacement

DB9

Catalog Number	Description	List Price	Multiplier
SRW01-CDB[1)]	Plastic cover for DB9 connector protection	$7	Z8

Note: 1) 10-unit pack.

USB Adapter for Panel Door

Catalog Number	Descrição	List Price	Multiplier
SRW01-AUSB1	USB adapter cable with protection cover IP68 and length of 25 cm	$160	Z8
SRW01-AUSB2	USB adapter cable with protection cover IP68 and length of 50 cm	$230	

Overloads

Smart Relays

Technical Data

General data	Mounting position	Any	
	Pollution degree (UL 508)	2	
	Degree of protection (IEC 60529)	Control Unit (UC): IP20 Current Measurement Unit (UMC): - Without busbar: IP20 - With busbar: IP00 Current and Voltage Measuring Unit (UMCT): - Without busbar: IP20 - With busbar: IP00 Digital Expansion Unit (EDU) IP20 Human Machine Interface (HMI): IP54 Earth Leakage Sensor (ELS): IP20	
	Ambient temperature	Operation: - According to IEC: 0...+55 °C - According to UL: 0...+40 °C Storage and transport: -25...+80 °C	
	Short circuit ratings (UL)[1)]	Control Unit (UC): refer to the user's manual Current Measuring Unit (UMC/UMCT): refer to the user's manual	
	Tripping class (UL)	Control Unit (UC): classes 10/20/30 Current Measuring Unit (UMC/UMCT): classes 10/20/30	
Control Unit (UC)	Rated insulation voltage U_i	300 V	
	Rated supply voltage U^s	110 - 240 V ac/V dc @ 50/60 Hz	24 V ac/V dc @ 50/60 Hz
	Operation range	0.85 U_s - 1.10 U_s	0.85 U_s - 1.10 U_s
	Consumption (typical)[2)]	6 W	5 W
	Number of digital inputs	4 optically isolated inputs (24 V dc or 110 V ac) 6 optically isolated inputs (24 V dc) for the Ethernet model	
	Digital input power supply	24 V dc	110 V ac
	Digital input power source	Internal 24 V dc isolated power source or external	External 110 V ac power source
	Digital input current	11 mA @ 24 V dc 6 mA @ 24 V dc (Ethernet)	5 mA @ 110 V ac
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	2 SPST outputs 2 common shared SPST outputs	
	Maximum operation voltage	250 V dc, 240 V ac	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: C300 Pilot Duty AC-15 (IEC 60947-5-1): 1.5 A AC / 120 V ac 0.75 A AC / 240 V ac DC-13 (IEC 60947-5-1): 0.22 A DC / 125 V dc 0.1 A DC / 250 V dc	
	Contacts capacity (resistive load)	2.5 A, 30 V dc / 250 V ac	
	External protection against short circuit	6 A gL/gG fuse	
	Motor protection via PTC	TRIP value: >3.4 kΩ; Reset value <1.6 kΩ	
	Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm^2); 1 x (26 -12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) Screws: M3	
	Reset button	Error or fault reset - system TRIP or alarm reset - protections TRIP test	

Notes: 1) See the user's manual.
2) Considering the consumption of the Control Unit (UC) and of the Current Measuring Unit (UMC).

Technical Data

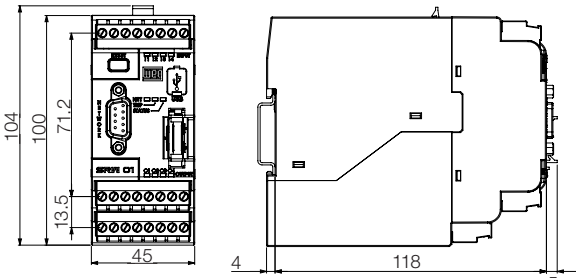
Current Measurement Unit (UMC)	Current range	0.25 to 840 Vac	
	Insulation degree U_i	690 V ac	
	Rated operating voltage U_e	IEC 60947-4-1: 690 V ac UL 508: 600 V ac	
	Impulse voltage U_{imp}	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Cable hole diameter	UMC 1, 2 and 3: 8 mm UMC 4: 15 mm UMC 5: busbar UMC 6: 32 mm or busbar	
Current and Voltage Measuring Unit (UMCT)	Current range	0.25 - 840 Vac	
	Voltage range	35 - 690 V ac	
	Insulation degree U_i	690 V ac	
	Rated operating voltage U_e	IEC 60947-4-1: 690 V ac UL 508: 600 V ac	
	Impulse voltage U_{imp}	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Cable hole diameter	UMCT 1, 2 and 3: 8 mm UMCT 4: 15 mm UMCT 5: busbar UMCT 6: 32 mm or busbar	
	Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm²); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm²); 1 x (26 - 12 AWG) Screws: M3	
Digital Expansion Unit (EDU)	Rated insulation voltage U_i	300 V	
	Number of digital inputs	6 optically isolated inputs (24 V dc or 110 V ac)	
	Digital input power source	24 V dc	110 V ac
	Digital input power source	External 24 V dc power source	External 110 V ac power source
	Digital input current	11 mA @ 24 V dc	5 mA @ 110 V ac
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	4 SPST outputs	
	Maximum operation voltage	250 V dc, 240 V ac	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: Piloty Duty C300 AC-15 (IEC 60947-5-1): 1.5 A AC / 120 V ac 0.75 A AC / 240 V ac DC-13 (IEC 60947-5-1): 0.22 A DC / 125 V dc 0.1 A DC / 250 V dc	
	Contacts capacity (resistive load)	2.5 A, 30 V dc / 250 V ac	
	External protection against short circuit	6 A gL/gG fuse	
	Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm²); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm²); 1 x (26 - 12 AWG) Screws: M3	
Earth Leakage Sensor (ELS)	Current range	0.3 - 5 Vac	
	Insulation degree U_i	690 V ac	
	Rated operating voltage U_e	IEC 60947-4-1: 690 Vac UL 508: 600 Vac	
	Impulse voltage U_{imp}	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Window internal diameter	EL1: 35 mm EL2: 70 mm EL3: 120 mm EL4: 210 mm	
	Terminals (connectors)	Torque: 0.29 Nm - 2.6 lb.in Maximum conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm²); 1 x (22 - 14 AWG) - Flexible with/without terminals: 1 x (0.2 - 1.5 mm²); 1 x (22 - 14 AWG) Screws: M3	

Overloads

Smart Relays

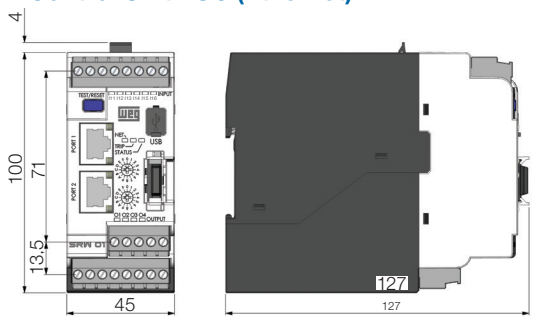
Dimensions (mm)

Control Unit - UC



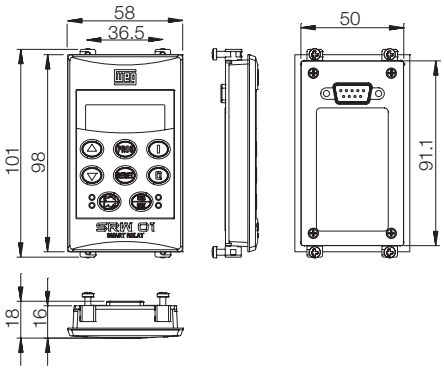
SRW01-UC

Control Unit - UC (Ethernet)

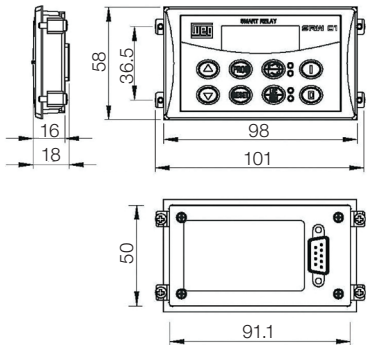


Control Unit – UC (mm)

Human Machine Interface - HMI

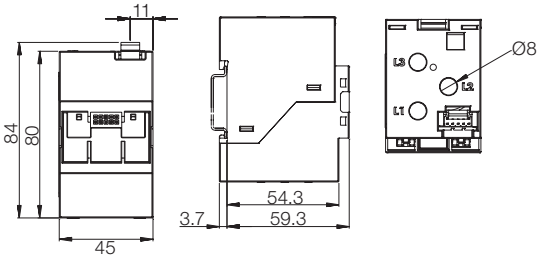


SRW01-HMI

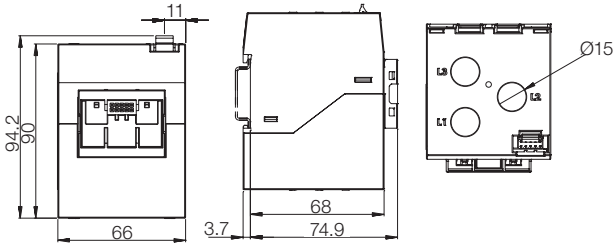


SRW01-HMI2

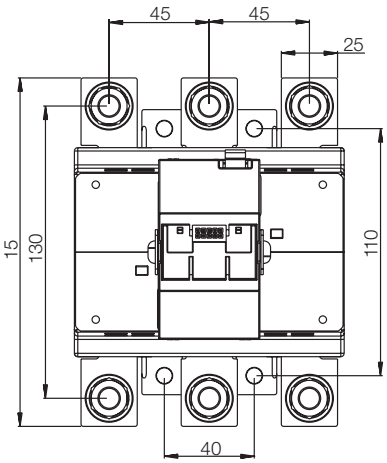
Current Measurement Unit - UMC

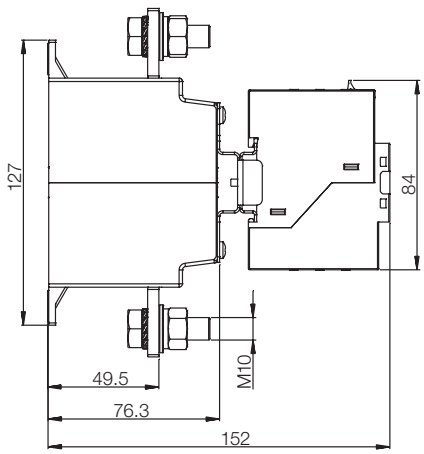


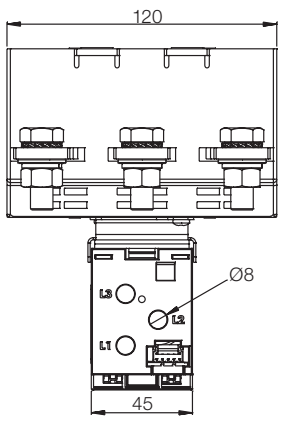
SRW01-UMC1/UMC2/UMC3



SRW01-UMC4



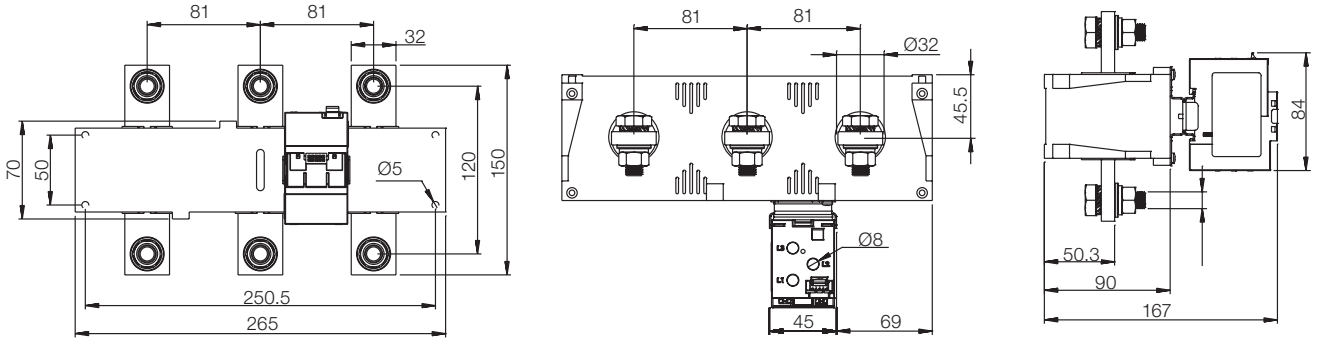




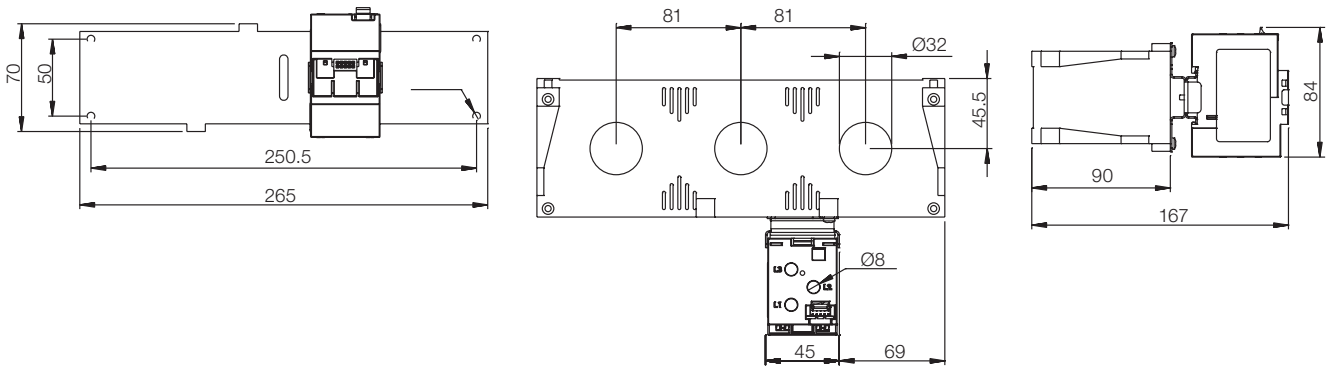
SRW01-UMC5

Dimensions (mm)

Current Measurement Unit - UMC

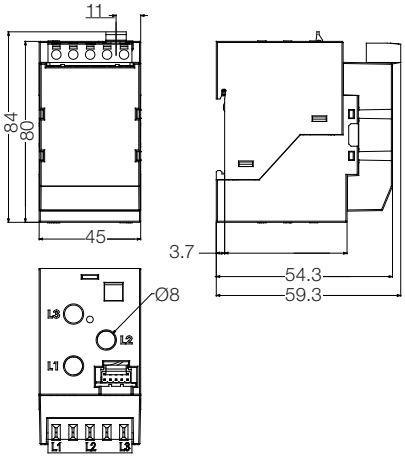


SRW01-UMC6
(with busbar)



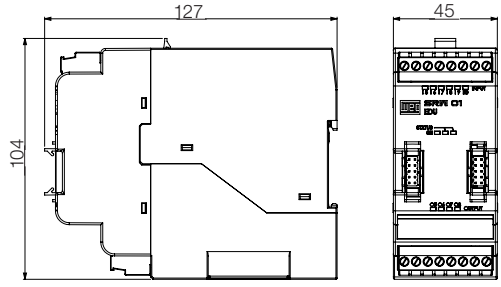
SRW01-UMC6
(without busbar)

Current and Voltage Measuring Unit - UMCT



SRW01-UMCT1/UMCT2/UMCT3

Digital Expansion Unit - EDU



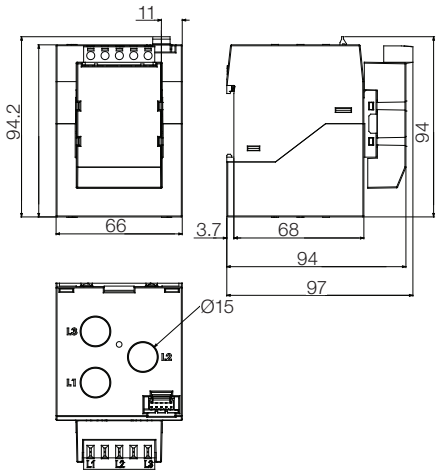
SRW01-EDU

Overloads

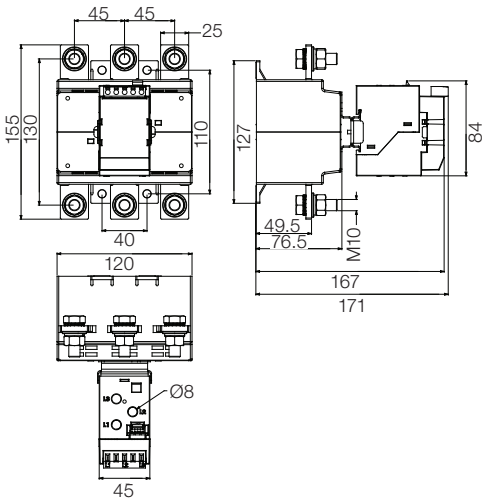
Smart Relays

Dimensions (mm)

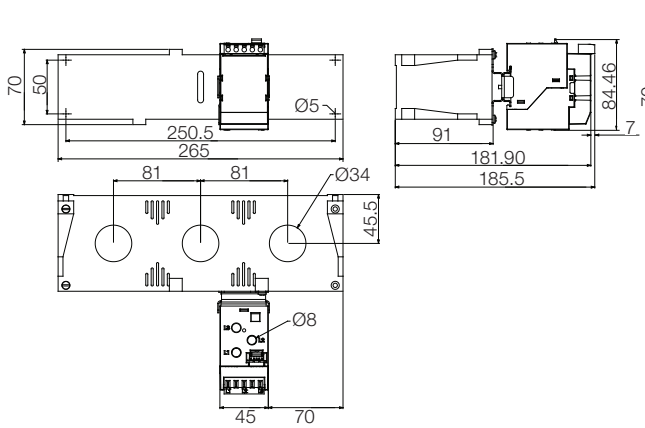
Current and Voltage Measuring Unit - UMCT



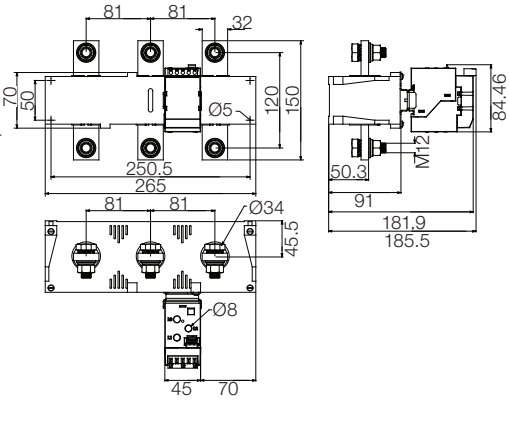
SRW01-UMCT4



SRW01-UMCT5

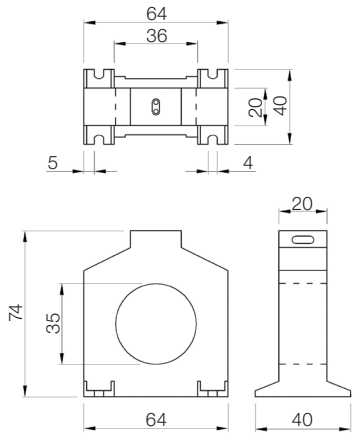


SRW01-UMCT6
(without busbar)

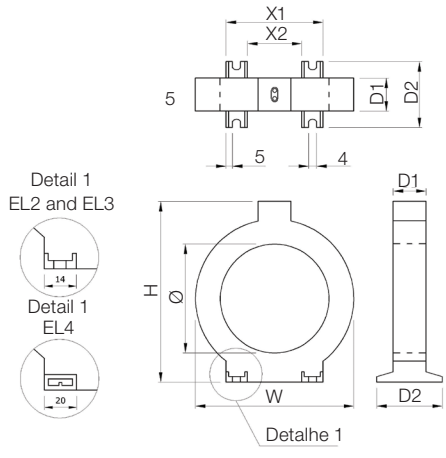


SRW01-UMCT6
(with busbar)

Earth Leakage Sensor (ELS)



SRW01-EL1



SRW01-EL2 / EL3 / EL4

Model	ø	H	W	X1	X2	D1	D2
EL2	70	116	104	64	36	20	40
EL3	120	169	154	94	66	20	40
EL4	210	304	290	150	110	33	90[1)]

Note: 1) With base metallic support.