

ELECTRONIC RELAYS MODULAR LINE

Compact and safe solution
for several applications



Motors | Automation | Energy | Transmission & Distribution | Coatings



Electronic Relays Modular Line

Summary

Introduction	04
Applications	06
Construction Characteristics	07
Timing Relays - RTW17	08
Time Range Adjustment	09
Functions	10
Selection	12
Wiring Diagrams	16
Technical Data	18
Voltage Monitoring Relays - RMW17	19
Selection	19
Technical Data	22
Impulse Relay - RIEW17	23
Selection	23
Operation	23
Technical Data	24
Wiring Diagram	25
Dimensions	26
Altitudes - Ratio-Corrector Factor	26

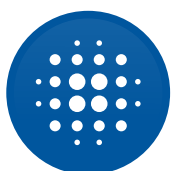


COMPACT AND SAFE SOLUTION FOR SEVERAL APPLICATIONS

The 17.5 mm wide Electronic Relays of the Modular Line were designed according to international standards, being a compact, effective and safe solution for industrial, commercial and residential applications.

The line offers many timing options for applications of motor control and starting, industrial and commercial automation, as well as specific functions for lighting system control and voltage monitoring. Its reduced size also allows the installation in distribution boards, electrical panels or motor starters, simplifying even more its application.

Benefits



COMPACT

Compact size,
17.5 mm wide



MODULAR

Suitable for installation in distribution
boards, industrial panels and motor
starters



EASY INSTALLATION

- Direct mounting on DIN rail
35 mm or fixed with screws
- Application in industrial or
residential environments



ENERGY SAVINGS

Low energy consumption due to highly precise electronic circuit



INTERNATIONAL CERTIFICATIONS

Designed according to the following standards:

- IEC / EN 60947-1
- IEC / EN 61812
- IEC / EN 60947-5-1
- UL 508 CAN / CSA C22.2

Applications



Industries in general



Panel installers



Residential and commercial buildings



Hospital installations



Agribusiness

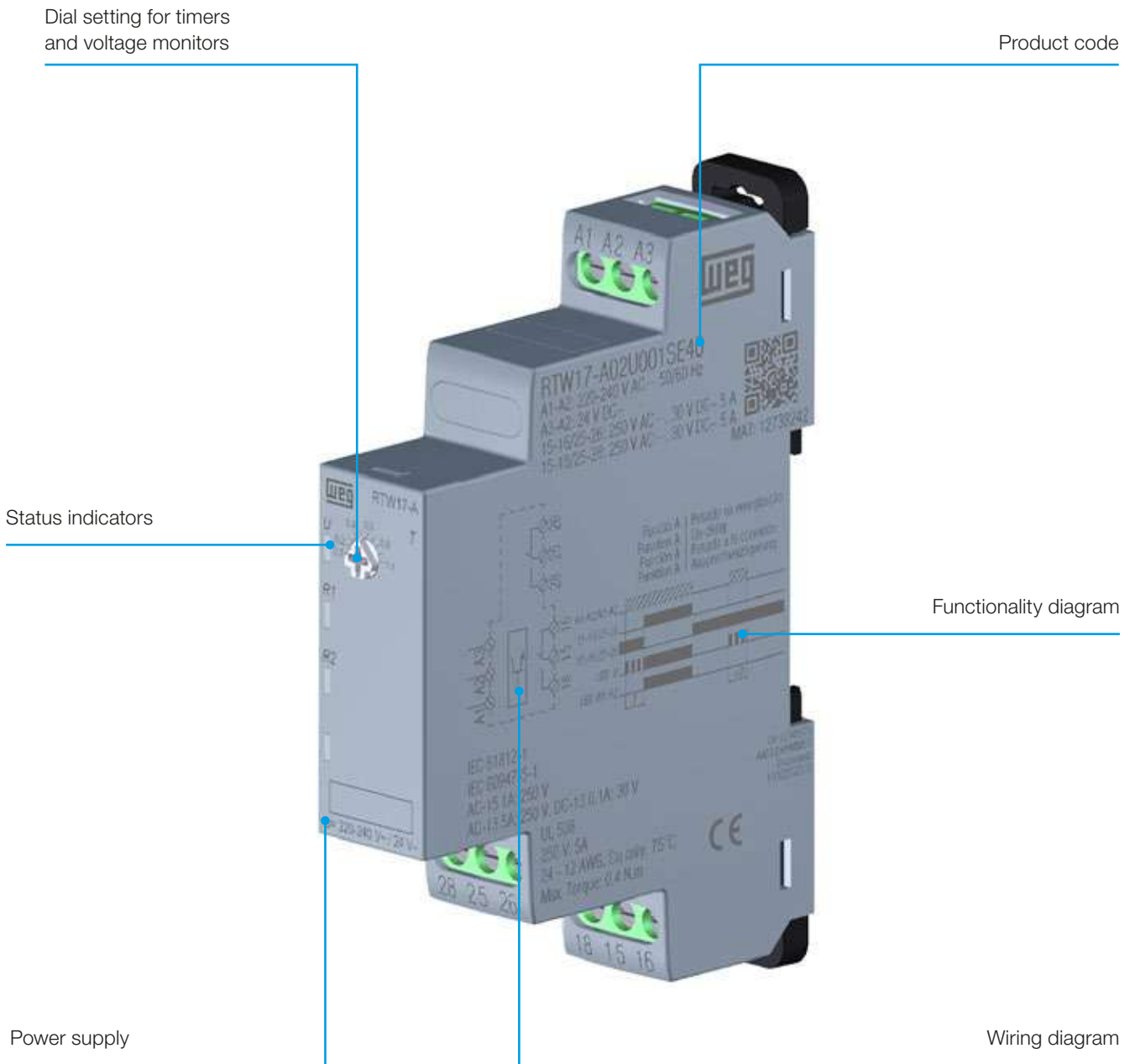


Shopping malls



Food equipment

Construction Characteristics



TIMING RELAYS

RTW17

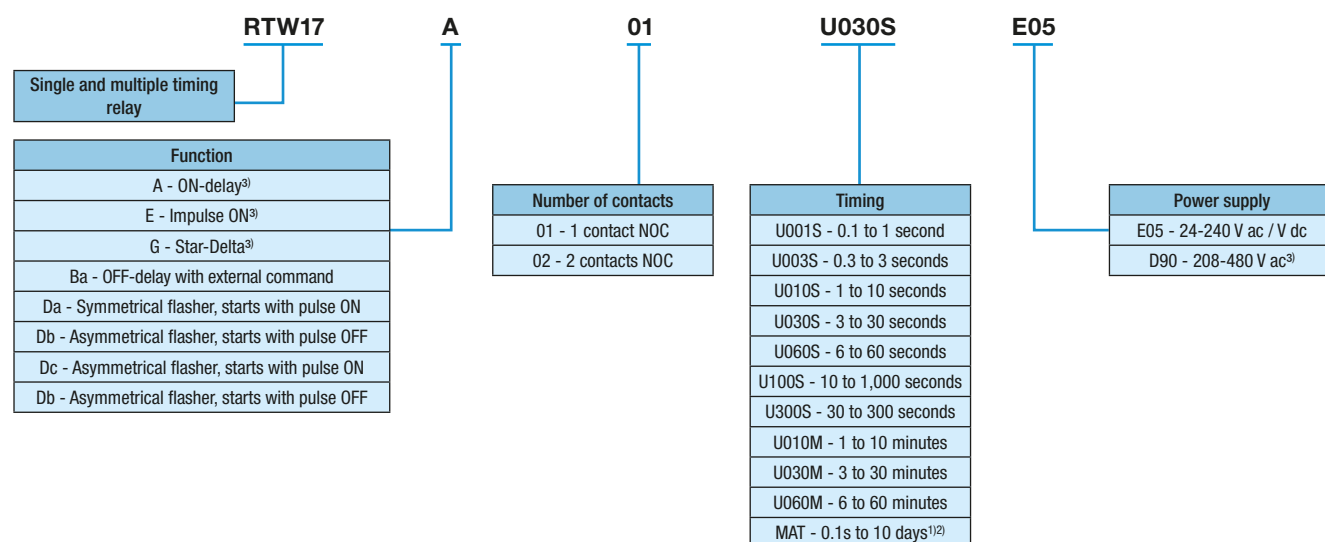
Electronic devices that allow switching an output signal according to the timing function and selected time. They are available in 17.5 mm wide boxes and can be mounted on DIN rails 35 mm or fixed by screws, available with one or two NOC outputs.

They can be used in different types of industrial applications, such as electric motor starters, control panels, industrial furnaces, die casting machines, among others. They can also be used in residential and commercial applications.

Timing Functions

- RTW17-A - ON-delay
- RTW17-E - Impulse ON
- RTW17-G - Star-Delta
- RTW17-Ba - OFF-delay with external command
- RTW17-Da - Symmetrical flasher, starts with pulse ON
- RTW17-Db - Symmetrical flasher, starts with pulse OFF
- RTW17-Dc - Asymmetrical flasher, starts with pulse ON
- RTW17-Dd - Asymmetrical flasher, starts with pulse OFF

Coding



Note: 1) MAT multiple timing models available only for RTW17-A, E, G, Ba, Da, Db models.

2) Multiple timing models only at voltage E05 - 24-240 V ac / V dc.

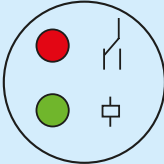
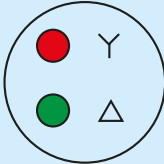
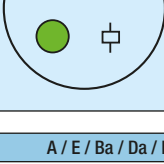
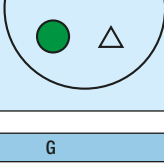
3) D90 - 208-480 V ac only for functions RTW17-A, E and G.

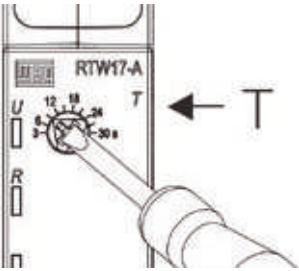
Time Range Adjustment

Single Timing



Example: RTW17-A

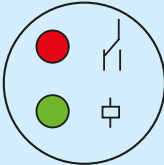
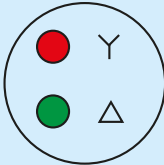
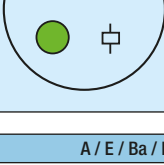
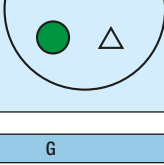
RTW17 - A / E / Ba / Da / Db / Dc / Dd			RTW17 - G	
Red LED	Output on		Time Y	
Green LED	Power supply		Time Δ	

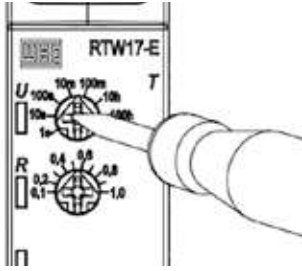
RTW17	A / E / Ba / Da / Db / Dc / Dd	G
	0.1 - 1s	3 - 30s
	0.3 - 3s	
	1 - 10s	
	3 - 30s	
	6 - 60s	
	10 - 100s	
	30 - 300s	
	1 - 10min	
	3 - 30min	
	6 - 60min	

Multiple Timing



Example: RTW17-E

RTW17 - A / E / Ba / Da / Db			RTW17 - G	
Red LED	Output on		Time Y	
Green LED	Power supply		Time Δ	

RTW17	A / E / Ba / Da / Db	G
	0.1s - 10 days	0.1s - 10 days

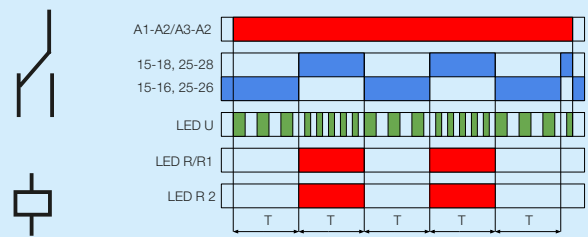
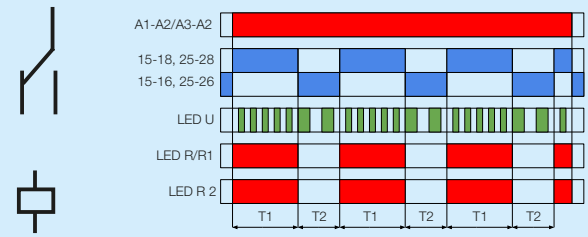
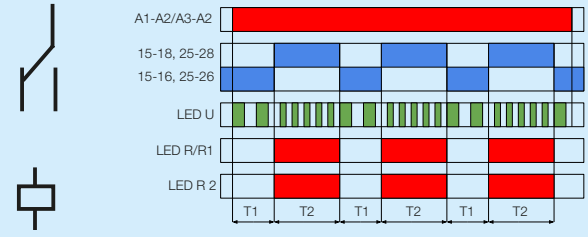
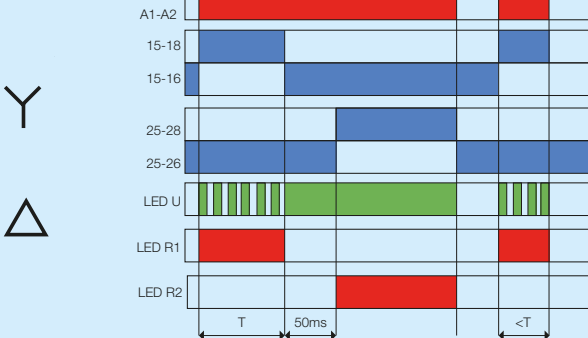
Functions

Single Timing Models (RTW17) or Multiple Timing (RTW17-MAT)

Operating mode	Timing diagram
RTW17-A (ON-delay) After the relay is energized, the time (T) set on the selector starts counting. After such time has elapsed, the output contacts will switch, remaining in that state until the power supply is interrupted.	
RTW17-E (impulse ON) After the relay is energized, the output contacts are instantly switched and remain activated for the time (T) set on the selector.	
RTW17-Ba (OFF-delay with external command) With the relay energized, from the energization of the command terminal, the output contacts switch instantly. When the command is removed, the output contacts return to the original condition after the time (T), set on the selector switch, has elapsed.	
RTW17-Da (symmetrical flasher, starts with pulse ON) After the relay is energized, the output contacts are activated; after the time set in the selector switch has elapsed, the contacts are deactivated; such behavior will continue cyclically. A single selection determines the relay time ON and time OFF.	

Functions

Single Timing Models (RTW17) or Multiple Timing (RTW17-MAT)

Operating mode	Timing diagram
RTW17-Db (symmetrical flasher, starts with pulse OFF) After the relay is energized, the output contacts remain deactivated; after the time set in the selector switch has elapsed, the contacts are activated; such behavior will continue cyclically. A single selection determines the relay time ON and time OFF.	 The diagram shows a symmetrical flashing pattern. The top row (A1-A2/A3-A2) is a solid red bar. The next two rows (15-18, 25-28 and 15-16, 25-26) show alternating blue and white blocks. The LED U row shows a series of green pulses. The LED R/R1 and LED R 2 rows show alternating red and white blocks. The time intervals are marked as 'T'.
RTW17-Dc (asymmetrical flasher, starts with pulse ON) After the relay is energized, the output contacts are activated and deactivated cyclically with the first cycle ON. The upper selector switch determines the time (T1) the contacts remain activated, while the lower selector switch determines the time (T2) the contacts remain deactivated.	 The diagram shows an asymmetrical flashing pattern. The top row (A1-A2/A3-A2) is a solid red bar. The next two rows (15-18, 25-28 and 15-16, 25-26) show alternating blue and white blocks. The LED U row shows a series of green pulses. The LED R/R1 and LED R 2 rows show alternating red and white blocks. The time intervals are marked as T1 and T2.
RTW17-Dd (asymmetrical flasher, starts with pulse ON) After the relay is energized, the output contacts are activated and deactivated cyclically with the first cycle OFF. The upper selector switch determines the time (T1) the contacts remain activated, while the lower selector switch (T2) determines the time the contacts remain deactivated.	 The diagram shows an asymmetrical flashing pattern. The top row (A1-A2/A3-A2) is a solid red bar. The next two rows (15-18, 25-28 and 15-16, 25-26) show alternating blue and white blocks. The LED U row shows a series of green pulses. The LED R/R1 and LED R 2 rows show alternating red and white blocks. The time intervals are marked as T1 and T2.
RTW17-G (star-delta) After the relay is energized, the star output contacts instantly switch and remain activated for the time (T) set on the selector switch. After 50 ms, the delta terminals are activated and remain in that state until the power supply is interrupted.	 The diagram shows the star-delta timing sequence. The top row (Power supply) is a solid red bar. The next two rows (A1-A2 and 15-18) show alternating blue and white blocks. The next two rows (15-16 and 25-28) show alternating blue and white blocks. The next two rows (25-26 and 25-28) show alternating blue and white blocks. The LED U row shows a series of green pulses. The LED R1 and LED R2 rows show alternating red and white blocks. The time intervals are marked as T, 50ms, and <T.

Note: MAT multiple timing functions available only for RTW17-A, E, Ba, Da, Db, G models.

Selection

Single Timing Relays - RTW17

Function: ON-delay

Model	Function	Contacts	Timing	Reference
RTW17	A	1NC	T: 0.1-1s	RTW17-A01U001S•
			T: 0.3-3s	RTW17-A01U003S•
			T: 1-10s	RTW17-A01U010S•
			T: 3-30s	RTW17-A01U030S•
			T: 6-60s	RTW17-A01U060S•
			T: 10-100s	RTW17-A01U100S•
			T: 30-300s	RTW17-A01U300S•
			T: 1-10min	RTW17-A01U010M•
			T: 3-30min	RTW17-A01U030M•
			T: 6-60min	RTW17-A01U060M•
		2NC	T: 0.1-1s	RTW17-A02U001S•
			T: 0.3-3s	RTW17-A02U003S•
			T: 1-10s	RTW17-A02U010S•
			T: 3-30s	RTW17-A02U030S•
			T: 6-60s	RTW17-A02U060S•
			T: 10-100s	RTW17-A02U100S•
			T: 30-300s	RTW17-A02U300S•
			T: 1-10min	RTW17-A02U010M•
			T: 3-30min	RTW17-A02U030M•
			T: 6-60min	RTW17-A02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc
D90	A1-A2: 208-480 V ac

Function: Impulse ON (E)

Model	Function	Contacts	Timing	Reference
RTW17	E	1NC	T: 0.1-1s	RTW17-E01U001S•
			T: 0.3-3s	RTW17-E01U003S•
			T: 1-10s	RTW17-E01U010S•
			T: 3-30s	RTW17-E01U030S•
			T: 6-60s	RTW17-E01U060S•
			T: 10-100s	RTW17-E01U100S•
			T: 30-300s	RTW17-E01U300S•
			T: 1-10min	RTW17-E01U010M•
			T: 3-30min	RTW17-E01U030M•
			T: 6-60min	RTW17-E01U060M•
		2NC	T: 0.1-1s	RTW17-E02U001S•
			T: 0.3-3s	RTW17-E02U003S•
			T: 1-10s	RTW17-E02U010S•
			T: 3-30s	RTW17-E02U030S•
			T: 6-60s	RTW17-E02U060S•
			T: 10-100s	RTW17-E02U100S•
			T: 30-300s	RTW17-E02U300S•
			T: 1-10min	RTW17-E02U010M•
			T: 3-30min	RTW17-E02U030M•
			T: 6-60min	RTW17-E02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc
D90	A1-A2: 208-480 V ac

Selection

Single Timing Relays - RTW17

Function: OFF-delay with External Command (Ba)

Model	Function	Contacts	Timing	Reference
RTW17	Ba	1NC	T: 0.1-1s	RTW17-Ba01U001S•
			T: 0.3-3s	RTW17-Ba01U003S•
			T: 1-10s	RTW17-Ba01U010S•
			T: 3-30s	RTW17-Ba01U030S•
			T: 6-60s	RTW17-Ba01U060S•
			T: 10-100s	RTW17-Ba01U100S•
			T: 30-300s	RTW17-Ba01U300S•
			T: 1-10min	RTW17-Ba01U010M•
			T: 3-30min	RTW17-Ba01U030M•
			T: 6-60min	RTW17-Ba01U060M•
		2NC	T: 0.1-1s	RTW17-Ba02U001S•
			T: 0.3-3s	RTW17-Ba02U003S•
			T: 1-10s	RTW17-Ba02U010S•
			T: 3-30s	RTW17-Ba02U030S•
			T: 6-60s	RTW17-Ba02U060S•
			T: 10-100s	RTW17-Ba02U100S•
			T: 30-300s	RTW17-Ba02U300S•
			T: 1-10min	RTW17-Ba02U010M•
			T: 3-30min	RTW17-Ba02U030M•
			T: 6-60min	RTW17-Ba02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc

Function: Symmetrical Flasher, Starts with Pulse ON (Da)

Model	Function	Contacts	Timing	Reference
RTW17	Da	1NC	T: 0.1-1s	RTW17-Da01U001S•
			T: 0.3-3s	RTW17-Da01U003S•
			T: 1-10s	RTW17-Da01U010S•
			T: 3-30s	RTW17-Da01U030S•
			T: 6-60s	RTW17-Da01U060S•
			T: 10-100s	RTW17-Da01U100S•
			T: 30-300s	RTW17-Da01U300S•
			T: 1-10min	RTW17-Da01U010M•
			T: 3-30min	RTW17-Da01U030M•
			T: 6-60min	RTW17-Da01U060M•
		2NC	T: 0.1-1s	RTW17-Da02U001S•
			T: 0.3-3s	RTW17-Da02U003S•
			T: 1-10s	RTW17-Da02U010S•
			T: 3-30s	RTW17-Da02U030S•
			T: 6-60s	RTW17-Da02U060S•
			T: 10-100s	RTW17-Da02U100S•
			T: 30-300s	RTW17-Da02U300S•
			T: 1-10min	RTW17-Da02U010M•
			T: 3-30min	RTW17-Da02U030M•
			T: 6-60min	RTW17-Da02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc

Selection

Single Timing Relays - RTW17

Function: Symmetrical Flasher, Starts with Pulse OFF (Db)

Model	Function	Contacts	Timing	Reference
RTW17	Db	1NC	T: 0.1-1s	RTW17-Db01U001S•
			T: 0.3-3s	RTW17-Db01U003S•
			T: 1-10s	RTW17-Db01U010S•
			T: 3-30s	RTW17-Db01U030S•
			T: 6-60s	RTW17-Db01U060S•
			T: 10-100s	RTW17-Db01U100S•
			T: 30-300s	RTW17-Db01U300S•
			T: 1-10min	RTW17-Db01U010M•
			T: 3-30min	RTW17-Db01U030M•
			T: 6-60min	RTW17-Db01U060M•
		2NC	T: 0.1-1s	RTW17-Db02U001S•
			T: 0.3-3s	RTW17-Db02U003S•
			T: 1-10s	RTW17-Db02U010S•
			T: 3-30s	RTW17-Db02U030S•
			T: 6-60s	RTW17-Db02U060S•
			T: 10-100s	RTW17-Db02U100S•
			T: 30-300s	RTW17-Db02U300S•
			T: 1-10min	RTW17-Db02U010M•
			T: 3-30min	RTW17-Db02U030M•
			T: 6-60min	RTW17-Db02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc

Function: Asymmetrical Flasher, Starts with Pulse ON (Dc)

Model	Function	Contacts	Timing	Reference
RTW17	Dc	1NC	T: 0.1-1s	RTW17-Dc01U001S•
			T: 0.3-3s	RTW17-Dc01U003S•
			T: 1-10s	RTW17-Dc01U010S•
			T: 3-30s	RTW17-Dc01U030S•
			T: 6-60s	RTW17-Dc01U060S•
			T: 10-100s	RTW17-Dc01U100S•
			T: 30-300s	RTW17-Dc01U300S•
			T: 1-10min	RTW17-Dc01U010M•
			T: 3-30min	RTW17-Dc01U030M•
			T: 6-60min	RTW17-Dc01U060M•
		2NC	T: 0.1-1s	RTW17-Dc02U001S•
			T: 0.3-3s	RTW17-Dc02U003S•
			T: 1-10s	RTW17-Dc02U010S•
			T: 3-30s	RTW17-Dc02U030S•
			T: 6-60s	RTW17-Dc02U060S•
			T: 10-100s	RTW17-Dc02U100S•
			T: 30-300s	RTW17-Dc02U300S•
			T: 1-10min	RTW17-Dc02U010M•
			T: 3-30min	RTW17-Dc02U030M•
			T: 6-60min	RTW17-Dc02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc

Selection

Single Timing Relays - RTW17

Function: Cyclical Asymmetrical, Start ON (Dd)

Model	Function	Contacts	Timing	Reference
RTW17	Dd	1NC	T: 0.1-1s	RTW17-Dd01U001S•
			T: 0.3-3s	RTW17-Dd01U003S•
			T: 1-10s	RTW17-Dd01U010S•
			T: 3-30s	RTW17-Dd01U030S•
			T: 6-60s	RTW17-Dd01U060S•
			T: 10-100s	RTW17-Dd01U100S•
			T: 30-300s	RTW17-Dd01U300S•
			T: 1-10min	RTW17-Dd01U010M•
		2NC	T: 3-30min	RTW17-Dd01U030M•
			T: 6-60min	RTW17-Dd01U060M•
			T: 0.1-1s	RTW17-Dd02U001S•
			T: 0.3-3s	RTW17-Dd02U003S•
			T: 1-10s	RTW17-Dd02U010S•
			T: 3-30s	RTW17-Dd02U030S•
			T: 6-60s	RTW17-Dd02U060S•
			T: 10-100s	RTW17-Dd02U100S•
			T: 30-300s	RTW17-Dd02U300S•
			T: 1-10min	RTW17-Dd02U010M•
			T: 3-30min	RTW17-Dd02U030M•
			T: 6-60min	RTW17-Dd02U060M•



• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc

Star-Delta Function (G)

Model	Function	Contacts	Timing	Reference
RTW17	G	2NC	T: 3-30s	RTW17-G02U030S•

• Power supply	
Code	Supply terminals 1
E05	A1-A2: 24-240 V ac / V dc
D90	A1-A2: 208-480 V ac



RTW17 Timing Relays - MAT Multiple Timing

Model	Function	Supply voltage	Contacts	Timing	Reference
RTW17	On-delay (A)	24-240 V ac / V dc	1NAF	T: 0.1 s to 10 days	RTW17-A01MATE05
			2NAF		RTW17-A02MATE05
	Impulse ON (E)	24-240 V ac / V dc	1NAF	T: 0.1 s to 10 days	RTW17-E01MATE05
			2NAF		RTW17-E02MATE05
	OFF-delay with control signal (Ba)	24-240 V ac / V dc	1NAF	T: 0.1 s to 10 days	RTW17-Ba01MATE05
			2NAF		RTW17-Ba02MATE05
	Symmetrical flasher, starts with pulse ON (Da)	24-240 V ac / V dc	1NAF	T: 0.1 s to 10 days	RTW17-Da01MATE05
			2NAF		RTW17-Da02MATE05
	Symmetrical flasher, starts with pulse OFF (Db)	24-240 V ac / V dc	1NAF	T: 0.1 s to 10 days	RTW17-Db01MATE05
			2NAF		RTW17-Db02MATE05
	Star-delta (G)	24-240 V ac / V dc	2NAF	T: 0.1 s to 10 days	RTW17-G02MATE05



Power Supply	
Code	Supply terminals 1
E05	24-240V ac / V dc

Wiring Diagram

Timing Relays RTW17 - Single Timing and Multiple Timing

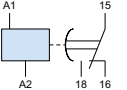
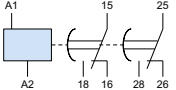
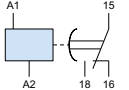
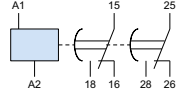
Reference		RTW17-A			
Contacts		1NOC	2NOC	1NOC	2NOC
Terminal position					
Circuit		24-240 V ac / V dc		208-480 V ac	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2

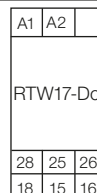
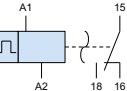
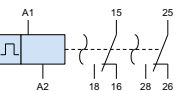
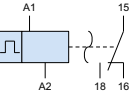
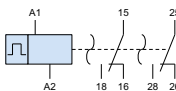
Reference		RTW17-Da	
Contacts		1NOC	2NOC
Terminal position			
Circuit		24-240 V ac / V dc	
		-	
		-	
Terminals	15-16-18	Output 1	Output 1
	25-26-28	-	Output 2

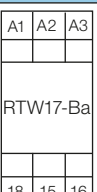
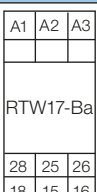
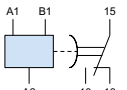
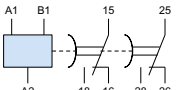
Reference		RTW17-Dd		RTW17-G	
Contacts		1NOC	2NOC	2NOC	2NOC
Terminal position					
Circuit		24-240 V ac / V dc		208-480 V ac	24-240 V ac / V dc
		-		-	-
		-		-	-
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	Output 2	Output 2

Wiring Diagram

Timing Relays RTW17 - Single Timing and Multiple Timing

Reference		RTW17-E			
Contacts		1NOC	2NOC	1NOC	2NOC
Terminal position					
		RTW17-E	RTW17-E	RTW17-E	RTW17-E
Wiring diagram					
Circuit		24-240 V ac / V dc		208-480 V ac	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2

Reference		RTW17-Db		RTW17-Dc	
Contacts		1NOC	2NOC	1NOC	2NOC
Terminal position					
		RTW17-Db	RTW17-Db	RTW17-Dc	RTW17-Dc
Wiring diagram					
Circuit		24-240 V ac / V dc		24-240 V ac / V dc	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2

Reference		RTW17-Ba	
Contacts		1NOC	2NOC
Terminal position			
		RTW17-Ba	RTW17-Ba
Wiring diagram			
Circuit		24-240 V ac / V dc	
		-	
		-	
Terminals	15-16-18	Output 1	Output 1
	25-26-28	-	Output 2

Technical Data

			Model		
			RTW17-xxx-UxxxxE05	RTW17-XXXX-MATE05	RTW17-xxx-UxxxxD90
Input	Power supply (U_s)	A1-A2	24-240 V ac / V dc	24-240 V ac / V dc	208-480 V ac
	Operation range		0.85 to 1.10 x U_s		
	Frequency		50/60 Hz		
	Maximum consumption (U_s)		70 mA / 1 W at 240 V ac	70 mA / 1 W at 240 V ac	70 mA / 1 W at 240 V ac
	Rated insulation voltage (U_i)		300 V	300 V	600 V
Time adjustment	Minimum time for reset		100ms		
	Minimum period of the command pulse		50ms		
	Scale precision (full scale)		±5%		
	Repeatability precision (full scale)		±2%		
	Switching time Y - Δ (star-delta function)		50ms ±20%		
Output	Capacity of the output contacts (Ie)		AC-13 (resistive) at 250 V ac: 5 A AC-15 at 230 V ac: 1 A DC-13 at 24 V dc: 1 A DC-13 at 48 V dc: 0.45 A DC-13 at 60 V dc: 0.35 A DC-13 at 125 V dc: 0.2 A DC-13 at 250 V dc: 0.1 A		
	Rated thermal current (Ith)		5 A for AC		
	Fuse (class gL/gG)		4 A		
	Mechanical life		30 x 10 ⁶ switching cycles		
Characteristics	Ambient temperature	Operation	-5 °C to +60 °C		
		Storage	-40 °C to +85 °C		
	Protection rating		Enclosure: IP20 Terminals: IP20		
	Connection section (min. to max.)	Cable without end sleeves	2 x 0.5 mm ² 2 x 1 mm ²		
		Cable with terminal	1 x (0.5 to 1.5) mm ² 2 x (0.5 to 0.75) mm ²		
		Wire AWG ¹⁾	2 x (28 to 18) AWG		
	Tightening torque		0.4 N.m		
	Terminal screw		3.5 Lb.in		
	Mounting position		Any position		
	Shock resistance		15 g / 11ms		
	Vibration resistance		10 a 55 Hz / 0.35 mm		
	Weight		0.08 kg - models with 1NOC 0.095 kg - models with 2NOC		
	Pollution degree		2		
	Overvoltage category		III		
	Certification		CE / UL		

Note: 1) for solid conductors, use gauges of the same diameter.

VOLTAGE MONITORING RELAYS

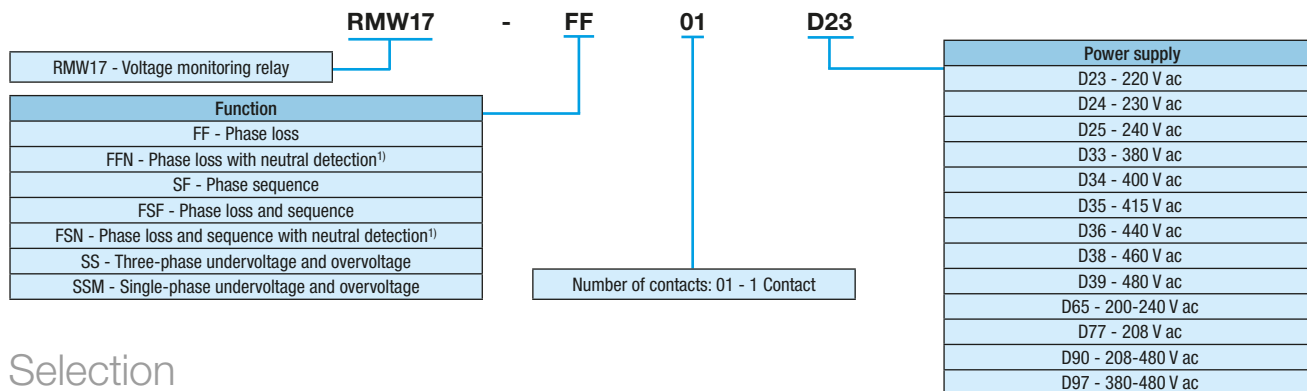
RMW17

They are electronic devices designed to supervise and monitor three-phase and single-phase power supplies, interrupting the process operation whenever an anomaly occurs. They can switch off circuits and activate safety devices and alarms in order to protect machines and equipment against faults on the power supply according to the settings.

Voltage Monitoring Functions

- RMW17-FF - Phase loss
- RMW17-FFN - Phase loss with neutral detection
- RMW17-SF - Phase sequence
- RMW17-FSF - Phase loss and sequence
- RMW17-FSN - Phase loss and sequence with neutral detection
- RWM17-SS - Three-phase undervoltage and overvoltage
- RMW17-SSM - Single-phase undervoltage and overvoltage

Configuration



Selection

Reference	Power supply (L1-L2-L3)
RMW17-FF01D65	200-240 V ac
RMW17-FFN01D65	200-240 V ac
RMW17-FF01D97	380-480 V ac
RMW17-FFN01D97	380-480 V ac
RMW17-FSF01D65	200-240 V ac
RMW17-FSN01D65	200-240 V ac
RMW17-FSF01D97	380-480 V ac
RMW17-FSN01D97	380-480 V ac
RMW17-SF01D65	200-240 V ac
RMW17-SF01D90	208-480 V ac
RMW17-SS01D77	208 V ac
RMW17-SS01D23	220 V ac
RMW17-SS01D24	230 V ac
RMW17-SS01D25	240 V ac
RMW17-SS01D33	380 V ac
RMW17-SS01D34	400 V ac
RMW17-SS01D35	415 V ac
RMW17-SS01D36	440 V ac
RMW17-SS01D38	460 V ac
RMW17-SS01D39	480 V ac
RMW17-SSM01D23	220 V ac

Note: 1) For FFN and FSN models it is mandatory to connect the three phases and neutral, otherwise the equipment will not function properly.



Selection

RMW17-FF/FFN - Phase Loss/Phase Loss with Neutral Function

RMW17-FF - This is for monitoring three-phase systems against the phase drop (without neutral).
RMW17-FFN - Will monitor the phase failure and also the voltage at neutral (terminal N) which must be ever connected.

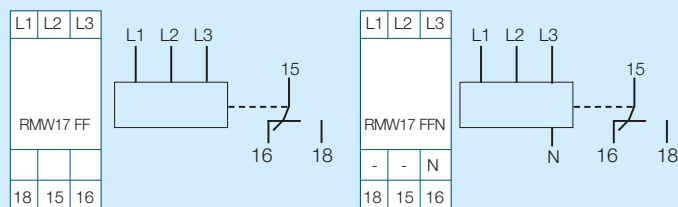
Installation

It is directly connected to the three phases, terminals L1, L2 and L3, on the power line to be monitored (connect the neutral to the FFN model if applicable).

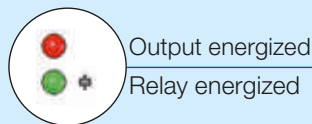
Operation

The output relay switches the contacts to the operation position (closing terminals 15-18), and the red LED (relay) and green LED (power supply) will turn on. Adjust the sensitivity of the line voltage. If one of the phases drops down below the percentage limit set on the selector switches, the coil output contacts will be powered down, opening contacts 15-18, and the red LED will turn OFF.

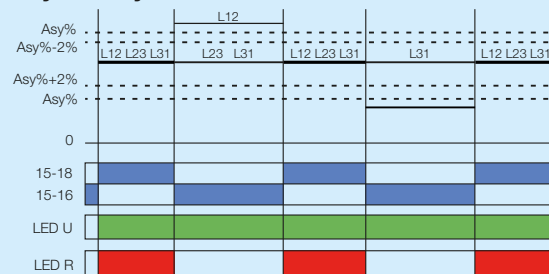
Wiring Diagram



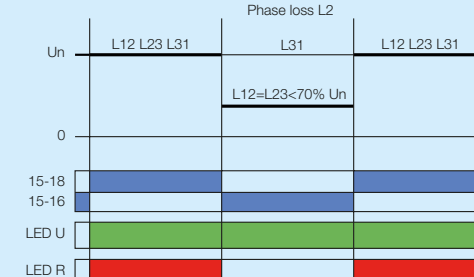
The RMW17 protector relay has state indication LEDs, as shown below:



Asymmetry Function



Phase Loss Function



RMW17-SF - Phase Sequence Function

It is designed to monitor three-phase systems against the inversion of phase sequence (L1-L2-L3).

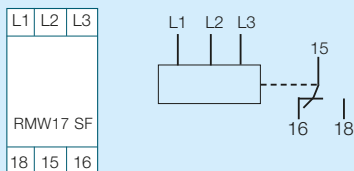
Installation

It is directly connected to the three phases, on terminals L1, L2 and L3, on the power line to be monitored.

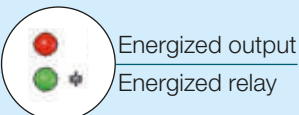
Operation

If the phase sequence is correct, the output relay switches the contacts to the operation position (closing terminals 15-18), and the red LED (relay) and green LED (power supply) will turn on.

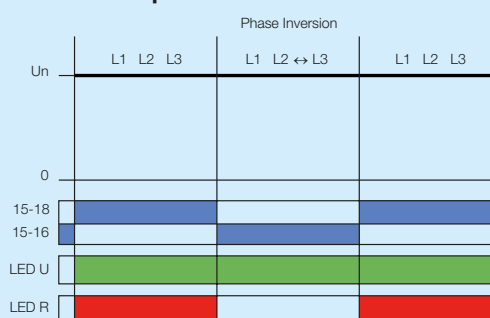
Wiring Diagram



The RMW17 protector relay has state indication LEDs, as shown below:



Phase Sequence Function



Selection

RWM17-FSF/FSN - Phase Loss and Sequence/Phase Loss and Sequence with Neutral

RMW17-FSF - It is designed to monitor three-phase systems against phase loss and inversion.
RMW17FSN - It will perform the monitoring for phase failure, phase inversion and also the neutral voltage, which must be ever connected.



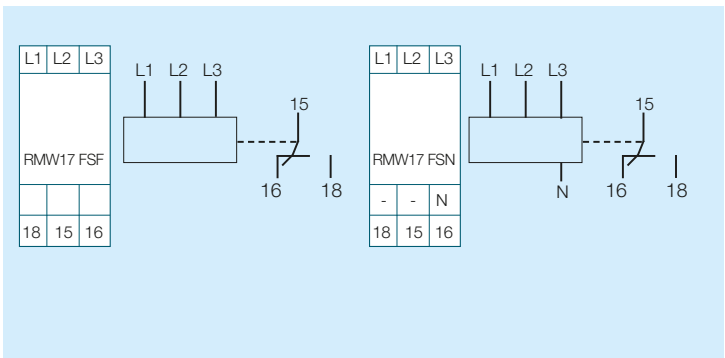
Installation

It is directly connected to the three phases, on terminals L1, L2 and L3, on the power line to be monitored (connect the neutral to the FSN model if applicable).

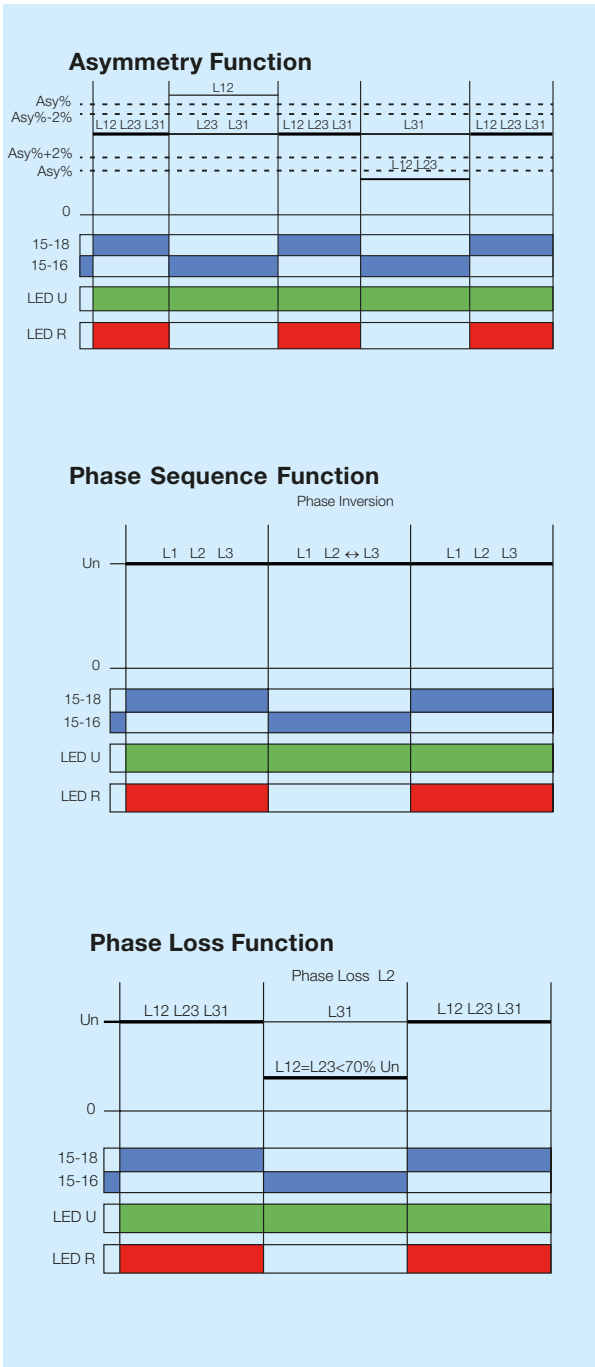
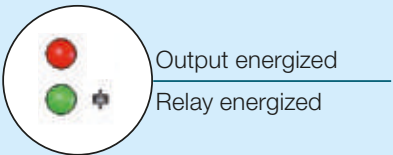
Operation

Energize the relay and observe if the green LED (power supply) and the red LED (relay) turn on. If they do not turn on, check for voltage between phases L1, L2 and L3 (including in relation to the neutral to be used).

Wiring Diagram



The RWM17 protector relay has state indication LEDs, as shown below:



Selection

RMW17-SS/SSM - Three-Phase and Single-Phase Undervoltage and Overvoltage Function

With this function, the RMW17 monitors the minimum and maximum voltage variations within which a three-phase or single-phase power supply can operate. Whenever an under or overvoltage condition is present, the relay will switch its output in order to interrupt the operation of the monitored motor or process.

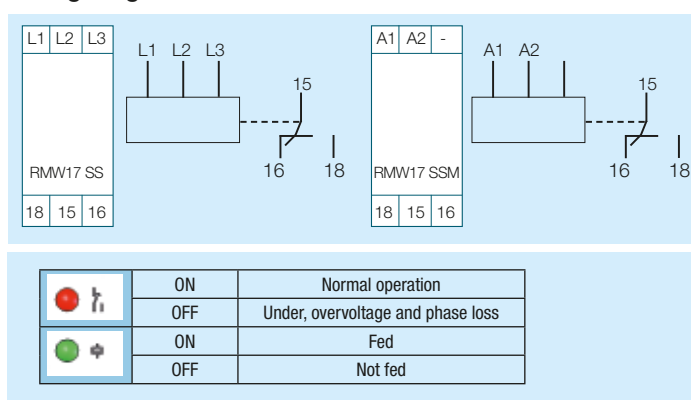
Installation

It is directly connected to the three phases, on terminals L1, L2 and L3 or contacts A1-A2 (for single-phase models), on the power line to be monitored.

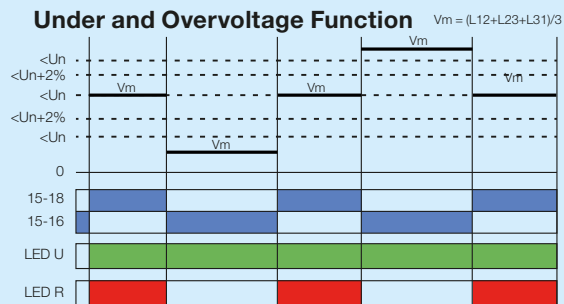
Operation

If the voltage applied to terminals A1 and A2 (for the single-phase version) and terminals L1-L2-L3 (for the three-phase version) is correct, the output relay is energized (contacts 15-18 close). If the monitored voltage (power supply) is below or above the adjusted limits for undervoltage and overvoltage, respectively, the output relay is powered down (contacts 15-18 open). The output relay is powered up again when the voltage returns to the acceptable value.

Wiring Diagram



Under and Overvoltage Function



Technical Data

Inputs	Product	RMW17
	Power supply (Us) L1 - L2 - L3 /A1-A2	208 V / 220-240 V/ 220V / 230 V / 240 V / 208-480 V / 380 V / 380-480 V / 400 V / 415 V / 440 V / 460 V / 480 V
	Frequency	50/60 Hz
	Sensitivity setting	+ / - 3 to 15 %
	Operation range	0.85 to 1.1 x Us for V ac
	Maximum consumption (U _s)	80 mA / 1 W
	Maximum voltage allowed on the neutral	20 V ac
	Scale precision (full scale)	+ / - 10 %
Outputs	Repeatability precision	+ / - 1 %
	Maximum output contact capacity (I _p)	5 A (resistive load)
	Fuse (class gL/gG)	3 A (AC-15)
	Mechanical lifespan	4 A
Characteristics	Electrical lifespan	30 x 10 ⁶ operating cycles
	Ambient temperature allowed	10 x 10 ⁵ operating cycles
	- In operation	-
	- Stored	-5 to +60 °C
	Degree of protection	-40 to +85 °C
	Connection section (min. to max.)	Enclosure IP20 / Terminals IP20
	- Wire	-
	- Cable with end sleeves	1 x (0.5 to 2.5) mm ²
	- AWG-wire ¹⁾	2 x (0.5 to 1) mm ²
	Tightening torque	1 x (0.5 to 1.5) mm ²
	Terminal screw	2 x (0.5 to 0.75) mm ²
	Mounting position	2 x (28 to 18) mm ²
	Shock resistance	0.4 N.m
	Vibration resistance	3.5 Lb.in
	Weight	M3
	Pollution grade	Any
	Overvoltage category	15g / 11ms
	Certification	10 to 55 Hz / 0.35 mm

Note: 1) For wires, use gauges of the same diameter.

IMPULSE RELAY

RIEW17

The RIEW17 impulse relay was designed to be used in the control of automation systems in homes, hotels and commercial or residential buildings. 17.5 mm wide, it is compact size allows installation in switchboard panels.

The commands of the automation system can be executed from one or more points, replacing conventional switches by pushbuttons, thus allowing multiple commands in a flexible, simple and quick way, providing greater effectiveness and electric energy savings. It may also be used in the command of illumination systems and other residential automation systems, ensuring safety and reliability. Furthermore, it has incorporated reset (master-off) and alternate current (AC) or direct current (DC) power supply.

Selection

Reference	Description	Power supply	Contacts	Width
RIEW17-01E40	Impulse relay	220-240 V ac / 24 V dc	1 NO	17.5 mm



Operation

Operating Mode

The U LED indicates the RIEW17 is energized (green LED On).

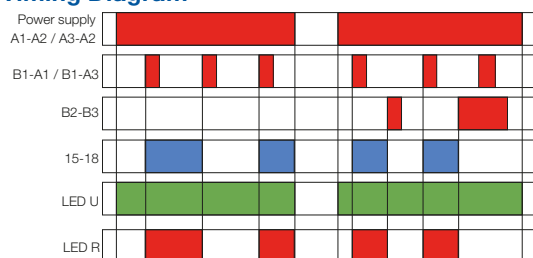
With the RIEW17 energized, when a command pulse is emitted, the output relays picks up, the NO contact closes, thus activating the connected devices.

The R red LED turns on, indicating the output is closed.

After one more command pulse, the output returns to the regular state (NO contact). The R LED turns off.

The reset function (master-off) disables the output relay, regardless of the output contact state. If several RIEW17 relays with reset (master-off) are present in a network and they can be enabled, all of them will be turned off (contacts 15-18 will remain open).

Timing Diagram



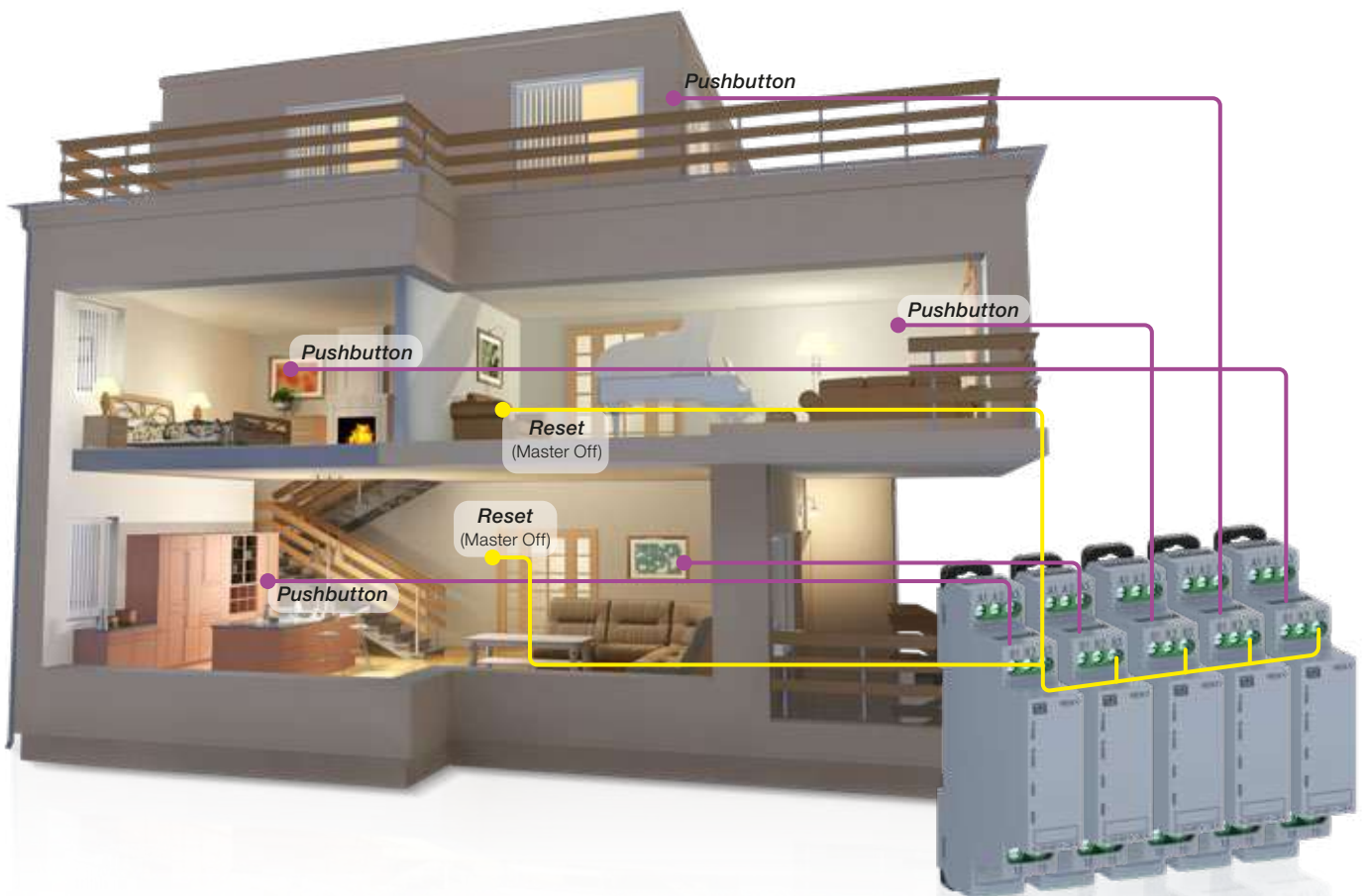
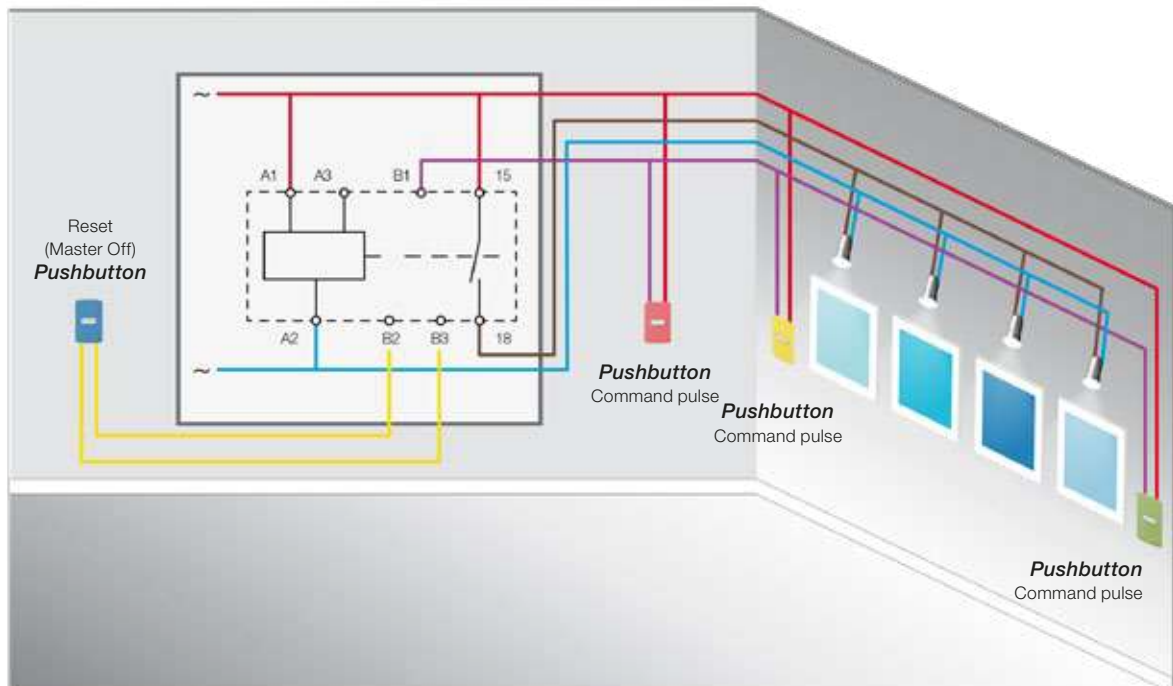
Note: A1-A2/A3-A2: Power supply
B1-A1/B1-A3: Command pulse
B2-B3: Reset (Master off)
15-18: Output contacts
LED U: Power status indication
R LED: Output contact status indication

Technical Data

Product		RIEW17	
Power supply (Us)		220-240 V ac / (50/60 Hz) / 24 V dc	
Operation range		AC: 0.85 to 1.1 Us	
		DC: 0.80 to 1.2 Us	
Maximum consumption (Us)		70 mA / 1 W	
Isolated rated voltage (Ui)		300 V ac	
Switching current by contact	Nominal	16 A	
	Maximum instant	30 A	
Rated load at AC1		4,000 VA	
Rated load at AC15 (230 V ac)		750 VA	
Maximum lamp loads		Incandescent/halogen: 3,000 W	
		Fluorescent with electronic reactor: 1,500 W	
		Fluorescent with electromagnetic reactor: 1,000 W	
		CFL: 600 W	
		LED (230 V ac): 600 W	
		Halogen or LED with electronic reactor: 600 W	
		Halogen or LED with electromagnetic reactor: 1,500 W	
Output contact		1 NO contact	
Characteristics	Electrical lifespan	10 x 10 ⁵ operating cycles	
	Ambient temperature allowed	-	
	- In operation	-5 to +60 °C	
	- Stored	-40 to +85 °C	
	Degree of protection	Enclosure IP20 / Terminals IP20	
	Connection section (min. to max.)	-	
	- Wire	1 x (0.5 to 2.5) mm ²	
		2 x (0.5 to 1) mm ²	
	- Cable with end sleeves	1 x (0.5 to 1.5) mm ²	
		2 x (0.5 to 0.75) mm ²	
	- AWG-wire ¹⁾	2 x (28 to 18) mm ²	
	Tightening torque	0.4 N.m	
		3.5 Lb.in	
	Terminal screw	M3	
	Mounting position	Any	
	Shock resistance	15g / 11ms	
	Vibration resistance	10 to 55 Hz / 0.35 mm	
	Weight	0.1 kg	
	Pollution grade	2	
	Overvoltage category	III	
	Certification	CE	

Note: 1) For wires, use gauges of the same diameter.

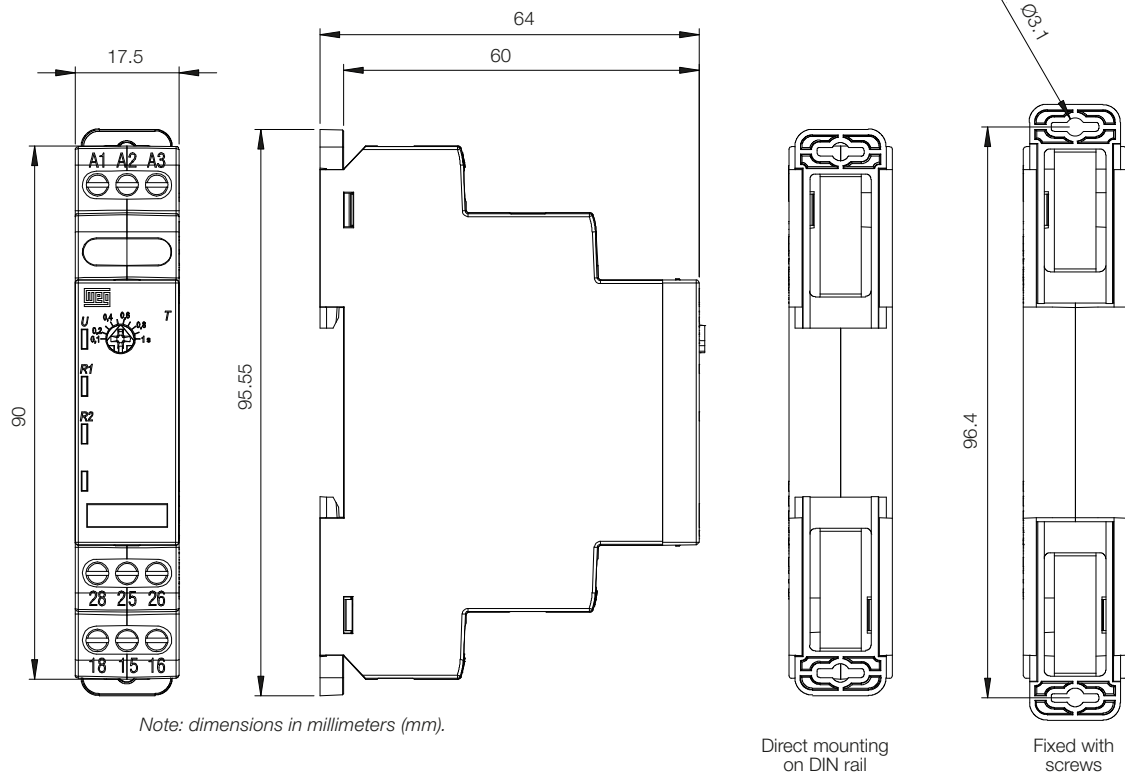
Wiring Diagram



Note: for 24 V dc power supply, see the wiring diagram on the product data sheet.

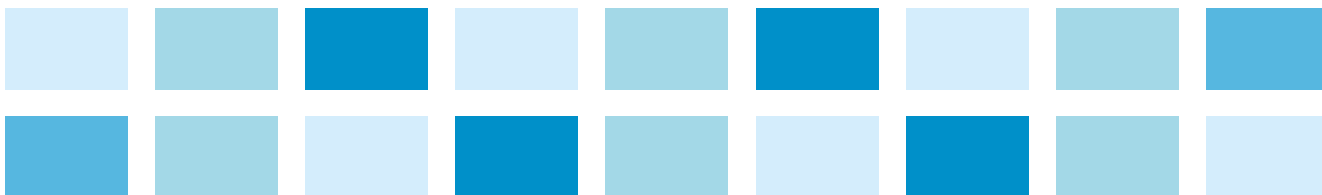
Dimensions

RTW17 / RIEW17 / RMW17



Altitudes - Ratio-Corrector Factor

Altitude above sea level - h	Voltage ratio-corrector factor (U_0) / V	Current ratio-corrector factor (I_0) / A
$h \leq 2,000$ m	1	$1 \times I_n$
$2,000 < h \leq 3,000$ m	0.87	$0.95 \times I_n$
$3,000 < h \leq 4,000$ m	0.77	$0.90 \times I_n$
$4,000 < h \leq 5,000$ m	0.67	$0.85 \times I_n$





Global presence is essential, as much as understanding your needs.

Global Presence

With more than 30.000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our **Electronic Relays - Modular Line** is the right choice for your application and business, assuring safety, efficiency and reliability.



Availability is to have a global support network



Partnership is to create solutions that suit your needs



Competitive edge is to unite technology and innovation

Know More

High performance and reliable products to improve your production process.

Excellence is to provide a whole solution in industrial automation that improves our customers productivity.



Visit:

www.weg.net



youtube.com/wegvideos

For WEG's worldwide
operations visit our website



www.weg.net



AUTOMATION

 +55 47 3276.4000

 automacao@weg.net

 Jaraguá do Sul - SC - Brazil

Cod: 50069233 | Rev: 04 | Date (m/a): 06/2020.

The values shown are subject to change without prior notice.

The information contained is reference values.