

RZ7-FS & RZ7-FE Electronic Timing Relays

Precision economical
DIN-rail mounted timing
relays



The RZ7-FS multifunction
Electronic Timing Relay



The RZ7-FE multifunction
Electronic Timing Relay



RZ7-FS

RZ7-FS timing relays are accurate to within 0.2 percent of the setting value. In addition, RZ7-FS relays function reliably -15% to +10% of rated voltage. RZ7-FS precision electronic timing relays offer 14 different output functions applicable to all types of industrial control. In addition to standard ON-Delay and OFF-Delay relays, the series also includes many special functions such as a true OFF-Delay that operates without supply voltage. Various timing ranges from 0.05 seconds to 300 hours are available.

RZ7-FS timing relays operate with multiple supply voltages ranging from 24-48VDC or 24-240VAC (some other voltages are available on multi-function and special function timers) The standard RZ7-FS is supplied with one single pole double throw (SPDT) contact within a compact case only 22.5mm wide. If more contacts are required, several relays are available that provide two separate, electrically isolated SPDT contacts within the same narrow footprint.

RZ7-FE

RZ7-FE electronic timing relays offer eight popular output functions in an economical package. This series is especially designed for applications where a high quality, yet basic timing relay is required. Timing formats include ON delay, OFF-delay, Wye-Delta and five other choices. All models are multi-time relays, meaning that various time ranges (from 0.05 seconds to 100 hours) can be selected from the face of the relay.

RZ7-FE timing relays operate with multiple supply voltages ranging from 24-48VDC or 24-240VAC (12-240VAC or DC on 2-pole multi-function). Universal voltage capability means smaller inventories and more flexibility. The RZ7-FE series has one single pole double throw (SPDT) contact. This series has several technical advantages such as shorter impulse duration requirements and a faster recovery time.

Features

- Each relay is equipped with LEDs that indicate supply of power and output status conditions.
- Finger and back of hand protection to IP40.
- Terminals are captive and supplied in the open position.
- RZ7's can be surface mounted, rail mounted, or mounted directly on our family of CA7/CS7 devices.
- RZ7 relays can be mounted in any-plane.
- Terminals, setting knob and LED's are all accessible from the front of the unit.
- RZ7 Timing Relays are very compact

Overview

RZ7-FS

RZ7-FE

| Type | DIN Rail Timer | DIN Rail Timer |
|----------------------------------|--|--|
| Features | <ul style="list-style-type: none"> • Only 22.5 mm wide • 5A contact rating • Multifunction or single function • Wye-delta timing function • True OFF-Delay timing function | <ul style="list-style-type: none"> • Only 17.5 mm wide • 5 A contact rating • Multifunction or single function • Wye-Delta timing function |
| Control Outputs | SPDT or DPDT | SPDT |
| Operation Modes | A ON-Delay A+ Accumulative ON-Delay B OFF-Delay with Auxiliary Voltage C ON-Delay and OFF-Delay, Symmetrical D Impulse-ON E Impulse-OFF with Auxiliary Voltage F Flasher, Starting with ON FG Flasher, Starting with ON or OFF G Flasher Starting with OFF I Fixed Impulse with Adjustable Time Delay K One Shot with B1 L Pulse Former M Adjustable Impulse with Fixed Time Delay Q OFF-Delay without Auxiliary Voltage T ON/OFF-Function Y Wye-Delta Timing Relay Y1 Wye-Delta Change-over with Impulse Function | A ON-Delay B OFF-Delay D One shot E Fleeting OFF-Delay F Flasher, Repeat cycle-pulse G Flasher, Repeat Cycle Starting with Pause L Pulse converter, Pulse Former Y Wye-Delta Timing Relay |
| Time Range | 0.05 s...300 hr | 0.05 s... 100 hr |
| Supply Voltage | 24V...48V DC 24V...240V AC 380...440V AC | 24...48V DC 24...240V AC 12...240V AC/DC |
| Contact Rating at 120V AC | 5 A | 5 A |
| Certifications | cULus, CE, UKCA, C-tick | cULus, CE, UKCA, C-tick |
| Mounting | DIN Rail or panel mount | DIN Rail or panel mount |

RZ7-FS Timing Relays
Single Function

| Operating Mode | Contact Output | Timing Range ① | Input Voltage | Catalog Number |
|----------------|----------------|-----------------|--|----------------|
| ON-Delay | (SPDT) 1 C/O | 0.05 s...300 hr | 24...48V DC 24...240V AC, 50/60 Hz | RZ7-FSA6UU23 |
| | (DPDT) 2 C/O | | | RZ7-FSA7UU23 |
| OFF-Delay | (SPDT) 1 C/O | | | RZ7-FSB6UU23 |
| | (DPDT) 2 C/O | | | RZ7-FSB7UU23 |
| One Shot w/B1 | (SPDT) 1 C/O | RZ7-FSK6UU23 | | |



Multi-Function This device allows the flexibility of selecting the appropriate timing function.

| Operating Mode | Contact Output | Timing Range ① | Input Voltage | Catalog Number |
|---|----------------|-----------------|---|----------------|
| Multi-function timing relays 10 Single-functions: A, A+, B, C, T, D, E, FG, L, and Y1 See function diagrams for further description. | (SPDT) 1 C/O | 0.05 s...300 hr | 24...48V DC 24...240V AC 50/60 Hz | RZ7-FSM6UU23 |
| | (DPDT) 2 C/O | | | RZ7-FSM7UU23 |
| | | | | 380...440V AC |
| Multi-function timing relays 7 Single-functions: A, T, D, I, M, F, and G See function diagrams for further description. | (DPDT) 2 C/O | | 24...48V DC 24...240V AC 50/60 Hz | RZ7-FSM8UU23 |

RZ7-FS High Performance Timing Relay

- Adjustable function and timing range timing relays
- DIN Rail mounted without cost of socket
- 22.5 mm wide multi-function or single functions
- Available as SPDT or DPDT contact output, 5A
- Timing Ranges From 0.05s...300 hr
- Coil Surge Protection

Special Function

| Operating Mode | Contact Output | Timing Range ② | Input Voltage | Catalog Number |
|----------------------------------|----------------|-----------------|--|----------------|
| OFF-Delay without supply voltage | (SPDT) 1 C/O | 0.05 s...10 min | 24...240V DC 24...240V AC 50/60 Hz | RZ7-FSQ6QU18 |
| | (DPDT) 2 C/O | | | RZ7-FSQ7QU18 |
| Wye-Delta timing relay | 2 C/O | | 24...48V DC 24...240V AC 50/60 Hz | RZ7-FSY7UU23 |
| | | | | 380...440V AC |

Accessories

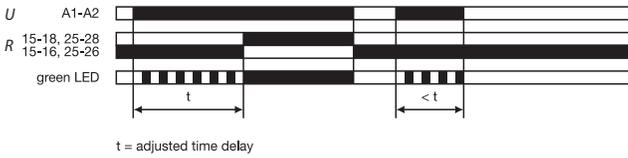
| Accessory | Description | Catalog Number |
|------------------|---|----------------|
| | Panel Mounting Adapter | RZ7-FSPMA |
| | Transparent Cover | RZ7-FSTC |
| IMPORTANT | Versatile Mounting: The RZ7-FS timing relay can be panel or DIN rail mounted. For best long-term performance, allow at least 10 mm (.04 in.) of space on each side of the relay for proper ventilation when operating in temperatures above 40 °C (104 °F). | |

① Ten selectable timing ranges: 0.05...1 s, 0.15...3 s, 0.5...10 s, 1.5...30 s, 5...100 s, 15...300 s, 1.5...30 min, 15...300 min, 1.5...30 hr, 15...300 hr

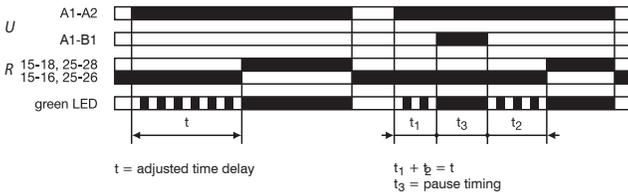
② This time range is selectable in seven smaller ranges: 0.05 s...1 s, 0.15...3 s, 0.15 s...10 s, 1.5 s...30 s, 5...100 s, 15...300 s, 0.5...10 min

Function Diagrams - RZ7-FS Relays

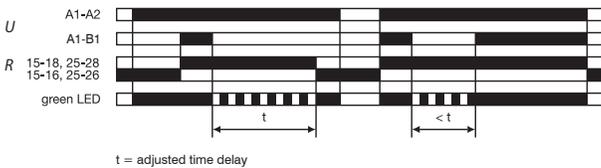
(A) ON-Delay



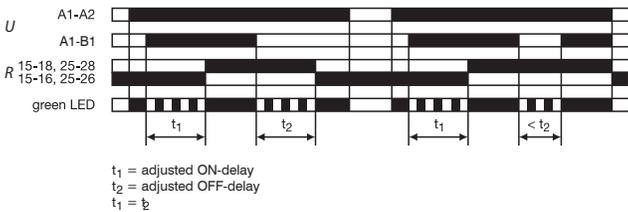
(A+) Accumulative ON-Delay



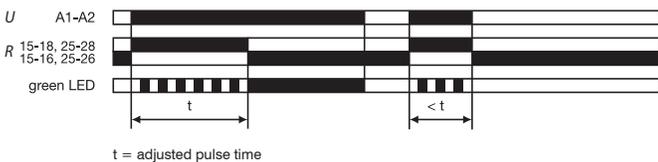
(B) OFF-Delay with Auxiliary Voltage



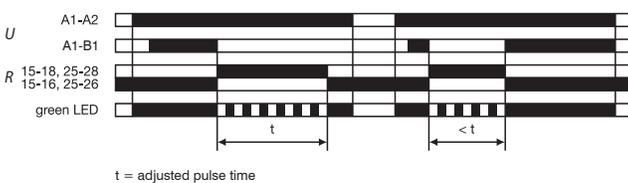
(C) ON-Delay and OFF-delay, Symmetrical



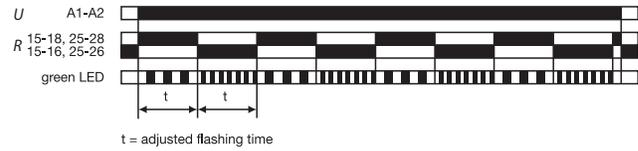
(D) Impulse-ON



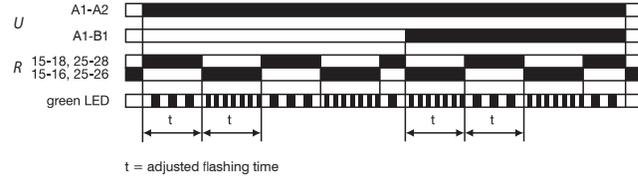
(E) Impulse-OFF with Auxiliary Voltage



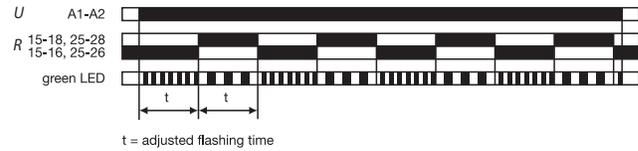
(F) Flasher, Starting with ON



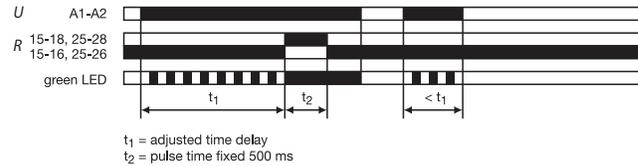
(FG) Flasher, Starting with ON or OFF



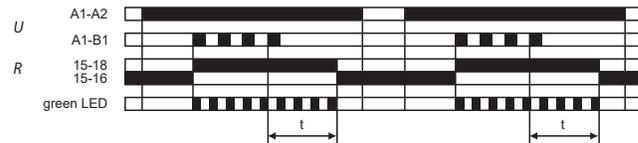
(G) Flasher, Starting with OFF



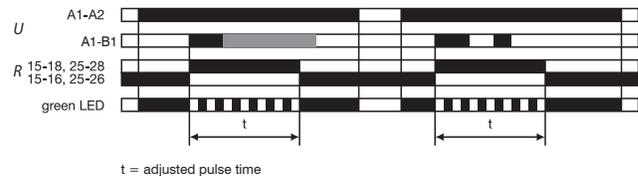
(I) Fixed Impulse with Adjustable Time Delay



(K) One Shot with B1



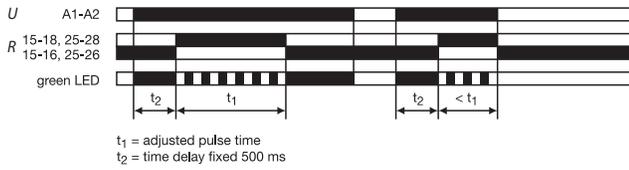
(L) Pulse Former



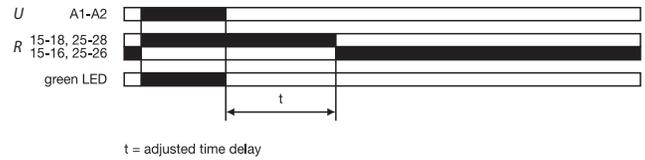
ⓘ For timing control, a voltage other than the supply voltage can also be used.

Function Diagrams - RZ7-FS Relays - Continued

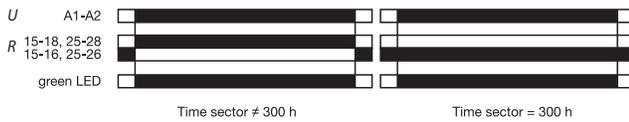
(M) Adjustable Impulse with Fixed Time Delay



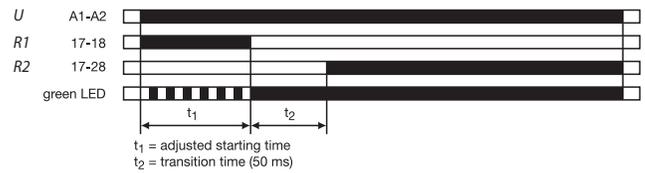
(Q) OFF-Delay without Auxiliary Voltage



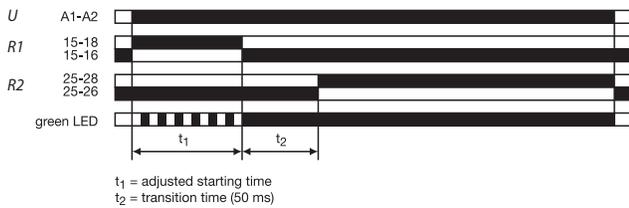
(T) ON/OFF-Function



(Y) Wye-Delta Change-over



(Y1) Wye-Delta Change-over with Impulse Function



Legend

- U - green LED: control supply voltage applied / timing
- R - yellow LED: output relay energized

RZ7-FE Timing Relays

Single-Function This device offers you one specific timing function.

| Time Range | Contact Output | Timing Range ① | Input Voltage | Catalog Number |
|--|----------------|-----------------|--|----------------|
| ON-Delay | SPDT (1 C/O) | 0.05 s...100 hr | 24V...48V DC 24...240V AC 50/60 Hz | RZ7-FEA6TU23 |
| OFF-Delay | | | | RZ7-FEB6TU23 |
| One Shot | | | | RZ7-FED6TU23 |
| Flasher (repeat cycle starting with pulse) | | | | RZ7-FEF6TU23 |



RZ7-FE Economy Timing Relay

- Adjustable function and timing range timing relays
- DIN Rail mounted without cost of socket
- 17.5 mm wide, multi-function or single function
- SPDT contact output, 5 A
- Timing ranges from 0.05 s... 100 hr
- Coil Surge Protection

Multi-Function This device offers you the flexibility of selecting one of 7 single timing functions.

| Operating Mode | Contact Output | Timing Range ① | Input Voltage | Catalog Number |
|--|----------------|-----------------|---|----------------|
| Multi-function timing relays 7 Single-functions: A, B, D, E, F, G, and L See function diagrams for further description. | SPDT (1 C/O) | 0.05 s...100 hr | 24...48V DC 24...240V AC 50/60 Hz | RZ7-FEM6TU23 |
| | DPDT (2 C/O) | | 12...240V AC/DC | RZ7-FEM6TZ12 |

Special Functions This device offers you one specific timing function.

| Operating Mode | Contact Output | Timing Range ② | Input Voltage | Catalog Number |
|----------------|----------------------|-----------------|--|----------------|
| Wye-Delta | 2 N.O. with 1 Common | 0.15 s...10 min | 24V...48V DC 24...240V AC 50/60 Hz | RZ7-FEY6QU23 |

Accessories

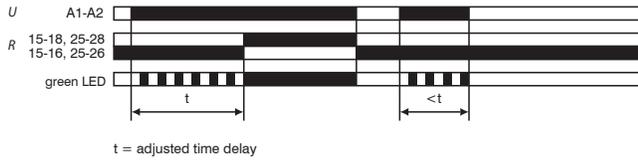
| Accessory | Description | Catalog Number |
|---|---|----------------|
|  | Panel Mounting Adapter | RZ7-FSPMA |
| IMPORTANT | Versatile Mounting: The RZ7-FE timing relay can be panel or DIN rail mounted. For best long-term performance, allow at least 10 mm (.04 in.) of space on each side of the relay for proper ventilation when operating in temperatures above 40 °C (104 °F). | |

① Time ranges: 0.05...1 s, 0.5...10 s, 5...100 s, 0.5...10 min, 5...100 min, 0.5...10 h, 5...100 h

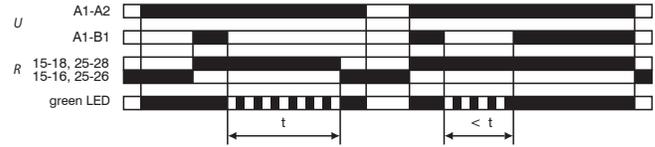
② Time ranges: 0.05...1 s, 0.5...10 s, 5...100 s, 0.5...10 min

Function Diagrams - RZ7-FE Relays

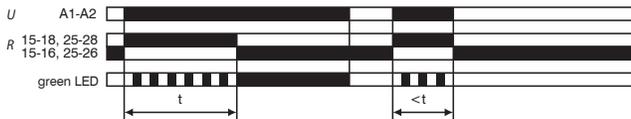
(A) ON-Delay



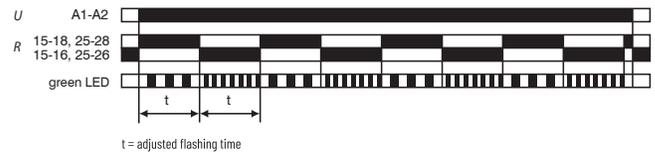
(B) OFF-Delay



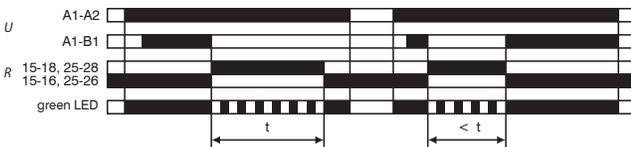
(D) One Shot [Impulse On]



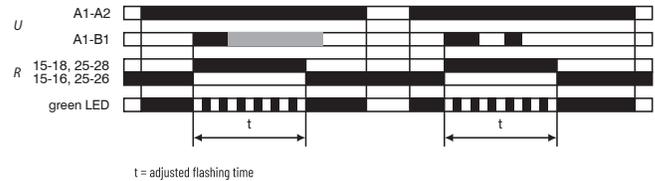
(F) Flasher [Repeat Cycle Starting with Pulse]



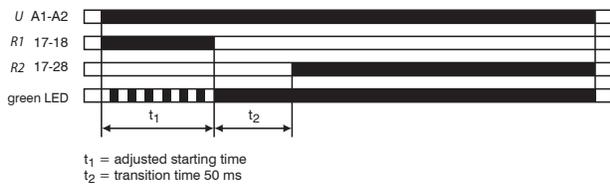
(E) Fleeting OFF-Delay [Impulse Off]



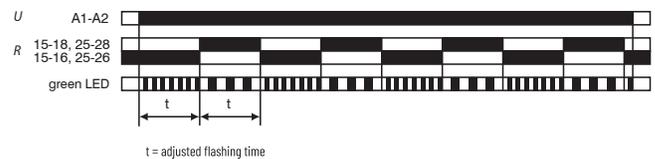
(L) Pulse Converter [Pulse Former]



(Y) Wye-Delta Timing Relay



(G) Flasher [Repeat Cycle Starting with Pause]



Legend

- U - green LED: control supply voltage applied / timing
- R - yellow LED: output relay energized

G
RZ7 Timing Relays

| General Data | RZ7-FS Relays ① | RZ7-FE Relays ① |
|------------------------------------|--|---|
| Insulation Characteristics | 2 kVAC/50 Hz test voltage according to VDE 0435 and 4 kV 1.2/50 μs surge voltage according to IEC 60947-1 between all inputs and outputs | |
| EMC/Interference Immunity | Performance of following requirements: Surge capacity of the supply voltage according to IEC 61000-4-5: 2 kV Burst according to IEC 1000-4-4: 6 kV 6/50 ns ESD discharge according to IEC 61000-4-2: Contact 6 kV, air 8 kV | The following requirements are fulfilled: Surge capacity of the supply voltage according to IEC 61000-4-5: Level 4 Burst according to IEC 61000-4-4: Level 3 ESD discharge according to IEC 61000-4-2: Level 3 |
| EMC/Emission | Electromagnetic fields according to EN 55 022: class B | |
| Safe Isolation | According to VDE 106, part 101 | |
| Relative Humidity | 25... 85% | |
| Vibration Resistance, operating | 1 G | |
| Vibration Resistance, nonoperating | 4 G | |
| Shock Resistance, operating | 7 G | |
| Shock Resistance, nonoperating | 50 G | |
| Ambient Temperature, operating | -25...+60 °C | |
| Ambient Temperature, nonoperating | -40...+85 °C | |
| Control Terminals | Tightening torque (0.6...0.8 Nm) 1 x 0.5...4.0 mm ² or 2 X0.5...2.5 mm ² (solid) 1 x 18...14 AWG or 2 x 18...16 AWG (stranded) Finger protection according to EN 50274 | Tightening torque (0.5...0.8 Nm) 1 x 0.5...4.0 mm ² or 2 X0.5...2.5 mm ² (solid) 1 x 18...14 AWG or 2 x 18...16 AWG (stranded) Finger protection according to EN 50274 |
| Panel Mounting | Front mounting; For snap-on mounting on 35 mm DIN Rail or screw fixing by panel mounting adapter and 2 screws (M4 type) | |
| Certifications | cULus Listed (File No. E14840, Guide NKCR/NKCR7), CE Marked, UKCA, C-tick | |
| Standards | EN/IEC 60947-1 EN/IEC 60947-5-1 UL 508 CAN/CSA C22.2 No.14 | IEC/EN 63000 IEC 61812-1 UL 508 CAN/CSA C22.2 No.14 |

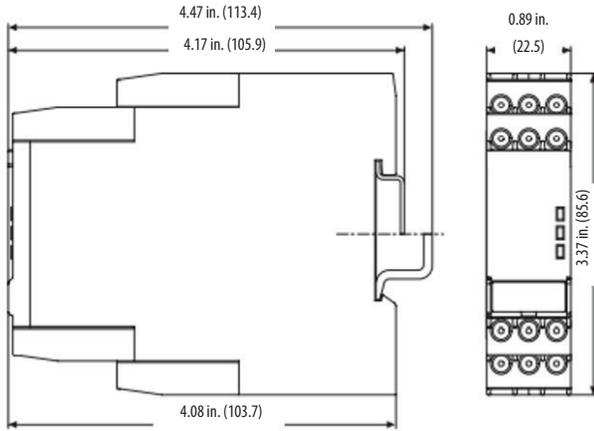
① Time Characteristics (according to VDE 0435, Part 2021)

| Specifications | | RS7-FS Relays ① | RS7-FE Relays ① |
|--|--------------------------|--|--|
| Setting Accuracy | | ±6% of full scale | ±10% of full scale |
| Repeatability | | ±0.2% of the setting values | ±0.5% of setting (typical) |
| Tolerance | | Voltage: ±0.004%/V Temperature: ±0.035%/°C | Voltage: ±0.001%/ΔU Temperature: ±0.025%/°C |
| Supply | | | |
| Supply Voltages | | 24...48V DC and 24...240V AC, 50/60 Hz (multi voltage) | 24...48V DC and 24...240V AC, 50/60 Hz |
| Voltage Tolerance | | -15%/+10% AC/DC | |
| Power Consumption | | Max 16 VA | max 3.5 VA |
| Time Energized | | 100% | |
| Reset Time | | <80 ms | 50 ms |
| Cable Length (Supply Voltage Control) | | Max. 50 m | |
| Pulse Control (B1) | | | |
| Pulse Duration | | ≥20 ms | |
| Input Voltage | | Supply voltage range | |
| Input Current | | 1 mA | |
| Cable Length | | Max. 50 m | |
| Outputs | | | |
| Contact Type | | 2 Form C - DPDT contacts, 1 Form C - SPDT contacts | 1 Form C - SPDT contact |
| Dielectric Withstand Voltage | Contact-to-coil | 6000V | 4000V |
| | Power | 500V AC | 3600 VA (Make) 360 VA (Break) |
| Switching Capacity | According to IEC 947-5-1 | | 4 A /230V AC (resistive load, AC-12) |
| | | 3 A/230V AC (inductive load, AC 15) | 0.2 A/230V AC (inductive load, AC 15) |
| | | 2 A/24V DC (inductive load, DC 13) | 1 A/24V DC (inductive load, DC 13) |
| | According to UL 508: | 1.5 A/250V AC (B300) - 3 A/120V AC (B300) | NEMA B300 - 5 A/300V AC |
| Short circuit protective device | | N/C 6 A, N/O 10 A (Fast Blow Fuse) | |
| Life | Mechanical | 30 million operations | |
| | Electrical | 100,000 operations at AC12, 230V, 4 A | min 100,000 operations |
| State Indicator | | 2 LED, combination signal | |

① Time Characteristics (according to VDE 0435, Part 2021)

Series RZ7-FS Timing Relays

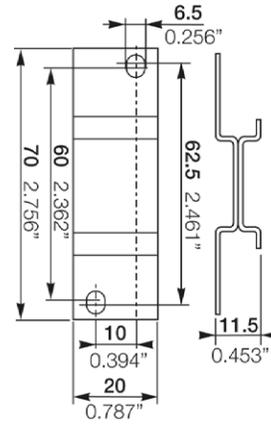
Dimensions are in inches (millimeters).
Dimensions not intended for manufacturing purposes.



RZ7-FS

Panel Mounting Adapter

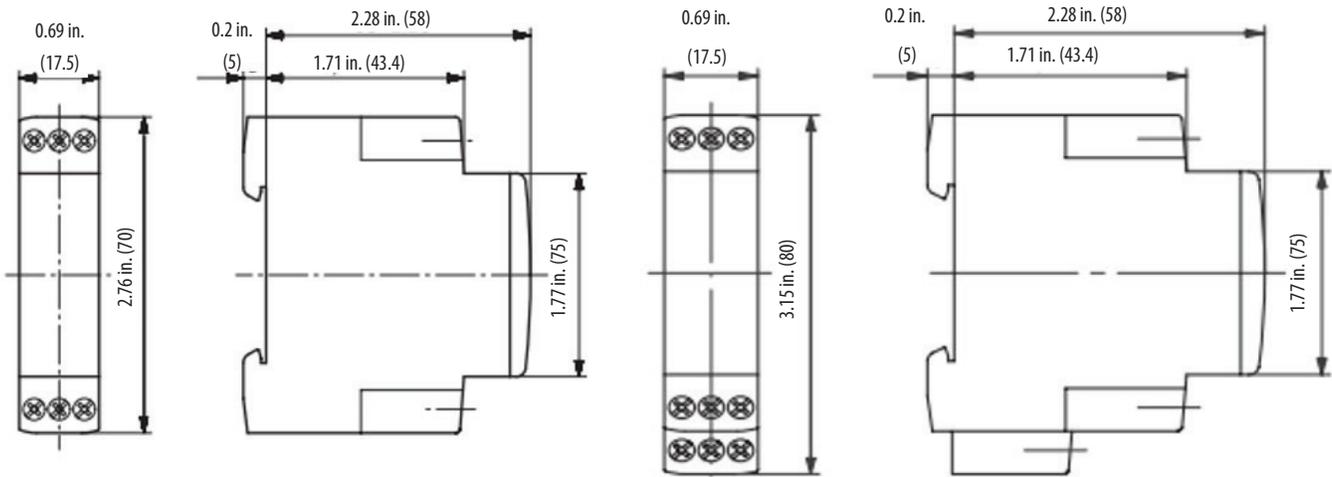
Dimensions are in inches (millimeters).
Dimensions not intended for manufacturing purposes.



RZ7-FSPMA

Series RZ7-FE Timing Relays

Dimensions are in inches (millimeters). Dimensions not intended for manufacturing purposes.



RZ7-FE with 1 c/o Contact or 2 n/o Contacts

RZ7-FE with 2 c/o Contact