

# 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
<b>Features</b>	<ul style="list-style-type: none"> <li>• Only 22.5 mm wide</li> <li>• 5A contact rating</li> <li>• Multifunction or single function</li> <li>• Wye-delta timing function</li> <li>• True OFF-Delay timing function</li> </ul>	<ul style="list-style-type: none"> <li>• Only 17.5 mm wide</li> <li>• 5 A contact rating</li> <li>• Multifunction or single function</li> <li>• Wye-Delta timing function</li> </ul>
<b>Control Outputs</b>	SPDT or DPDT	SPDT
<b>Operation Modes</b>	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
<b>Time Range</b>	0.05 s...300 hr	0.05 s... 100 hr
<b>Supply Voltage</b>	24V...48V DC 24V...240V AC 380...440V AC	24...48V DC 24...240V AC 12...240V AC/DC
<b>Contact Rating at 120V AC</b>	5 A	5 A
<b>Certifications</b>	cULus, CE, UKCA, C-tick	cULus, CE, UKCA, C-tick
<b>Mounting</b>	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	RZ7-FSM7UA40
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**

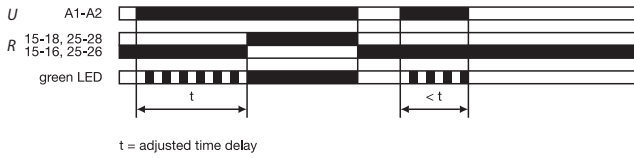
Accessory	Description	Catalog Number
	Panel Mounting Adapter	RZ7-FSPMA
	Transparent Cover	RZ7-FSTC
<b>IMPORTANT</b>	Versatile Mounting: The RZ7-FS timing relay can be panel or DIN rail mounted. For best long-term performance, allow at least 10 mm (.04 in.) of space on each side of the relay for proper 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

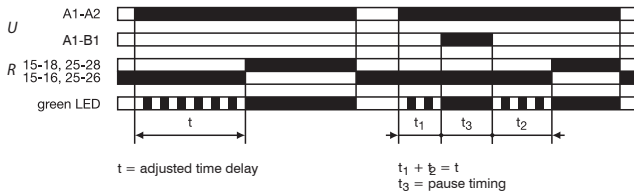
② This time range is selectable in seven smaller ranges: 0.05 s...1 s, 0.15...3 s, 0.15 s...10 s, 1.5 s...30 s, 5...100 s, 15...300 s, 0.5...10 min

### Function Diagrams - RZ7-FS Relays

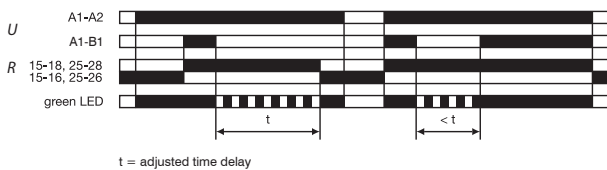
#### (A) ON-Delay



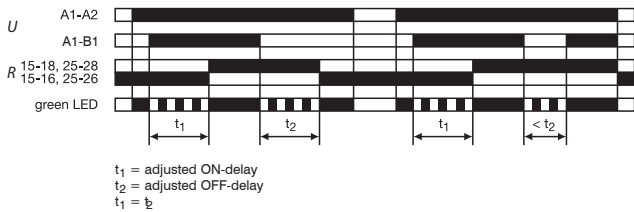
#### (A+) Accumulative ON-Delay



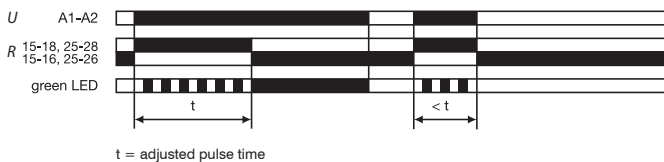
#### (B) OFF-Delay with Auxiliary Voltage



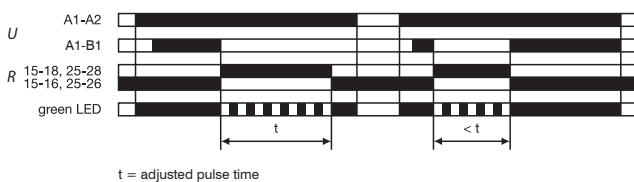
#### (C) ON-Delay and OFF-delay, Symmetrical



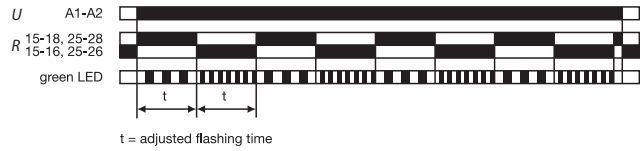
#### (D) Impulse-ON



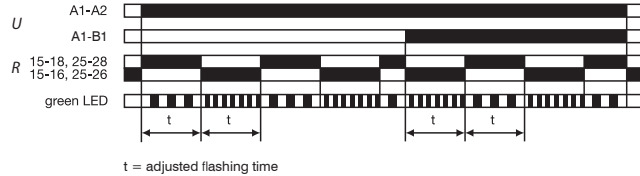
#### (E) Impulse-OFF with Auxiliary Voltage



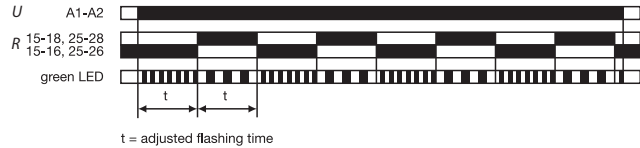
#### (F) Flasher, Starting with ON



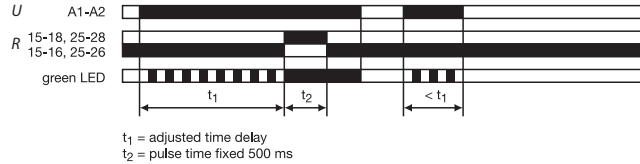
#### (FG) Flasher, Starting with ON or OFF



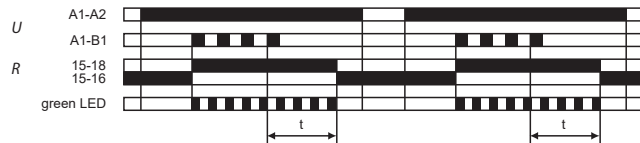
#### (G) Flasher, Starting with OFF



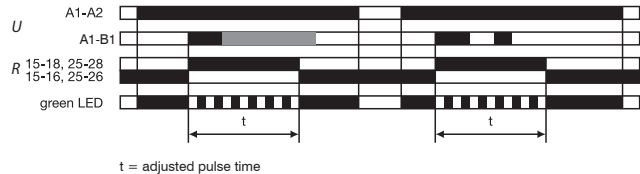
#### (I) Fixed Impulse with Adjustable Time Delay



#### (K) One Shot with B1



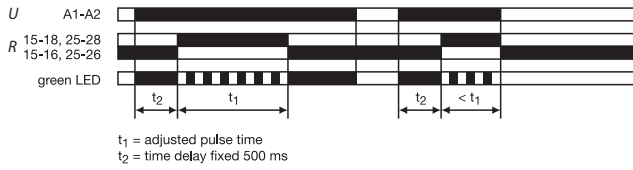
#### (L) Pulse Former



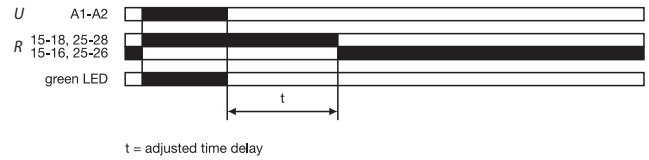
For timing control, a voltage other than the supply voltage can also be used.

Function Diagrams - RZ7-FS Relays - Continued

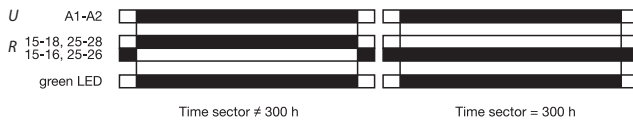
**(M) Adjustable Impulse with Fixed Time Delay**



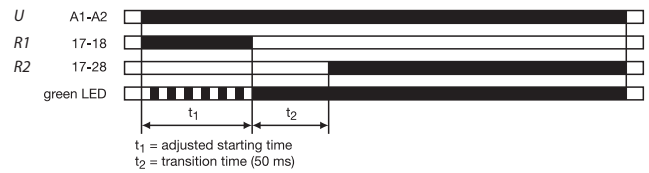
**(Q) OFF-Delay without Auxiliary Voltage**



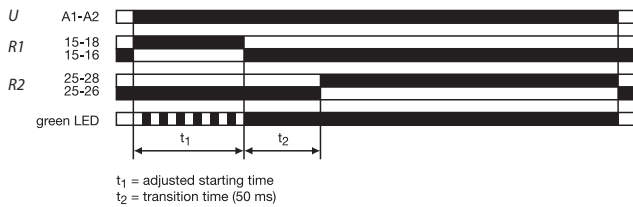
**(T) ON/OFF-Function**



**(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

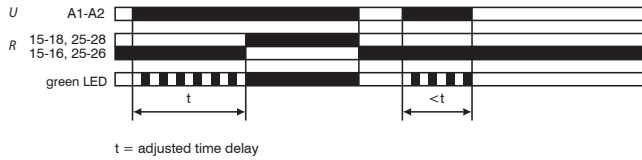
Accessory	Description	Catalog Number
	Panel Mounting Adapter	RZ7-FSPMA
<b>IMPORTANT</b>	Versatile Mounting: The RZ7-FE timing relay can be panel or DIN rail mounted. For best long-term performance, allow at least 10 mm (.04 in.) of space on each side of the relay for proper ventilation when operating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

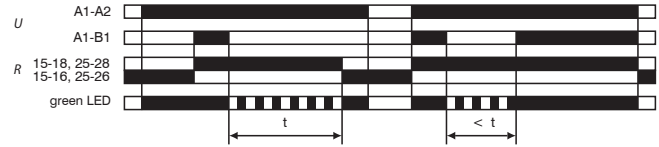
② Time ranges: 0.05...1 s, 0.5...10 s, 5...100 s, 0.5...10 min

Function Diagrams - RZ7-FE Relays

(A) ON-Delay



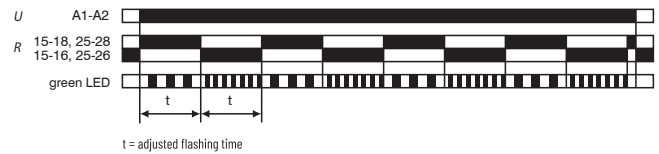
(B) OFF-Delay



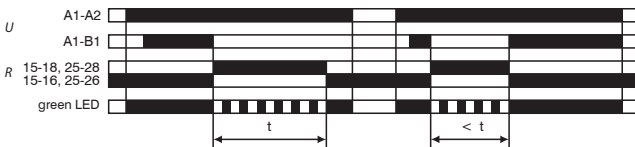
(D) One Shot [Impulse On]



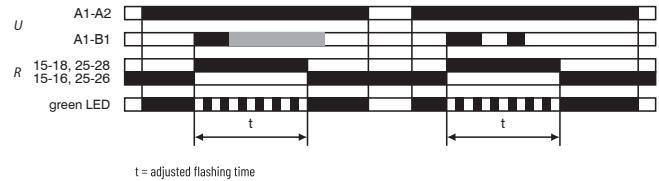
(F) Flasher [Repeat Cycle Starting with Pulse]



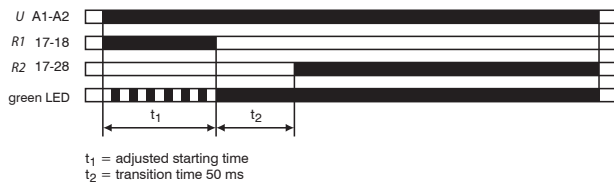
(E) Fleeting OFF-Delay [Impulse Off]



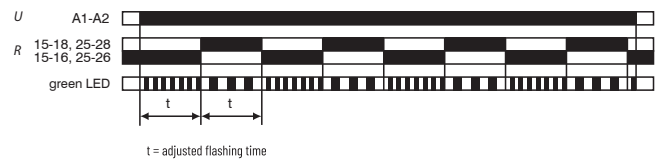
(L) Pulse Converter [Pulse Former]



(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	
Weight	100g	60g
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 <sup>2</sup> or 2 X0.5...2.5 mm <sup>2</sup> (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 <sup>2</sup> or 2 X0.5...2.5 mm <sup>2</sup> (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)

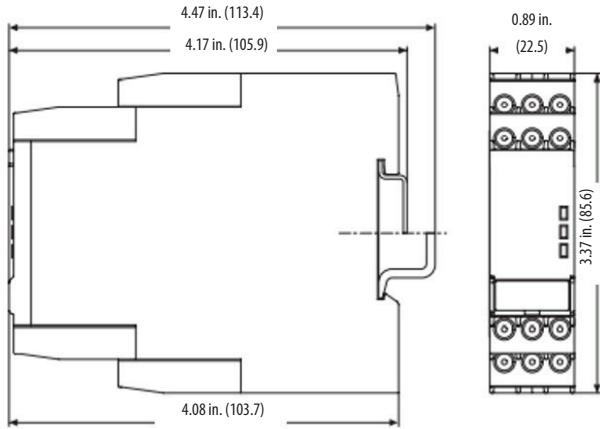


Specifications		RS7-FS Relays ①	RS7-FE Relays ①
Setting Accuracy		±6% of full scale	±10% of full scale
Repeatability		±0.2% of the setting values	±0.5% of setting (typical)
Tolerance		Voltage: ±0.004%/V Temperature: ±0.035%/°C	Voltage: ±0.001%/ΔU Temperature: ±0.025%/°C
<b>Supply</b>			
Supply Voltages		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	
<b>Pulse Control (B1)</b>			
Pulse Duration		≥20 ms	
Input Voltage		Supply voltage range	
Input Current		1 mA	
Cable Length		Max. 50 m	
<b>Outputs</b>			
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**

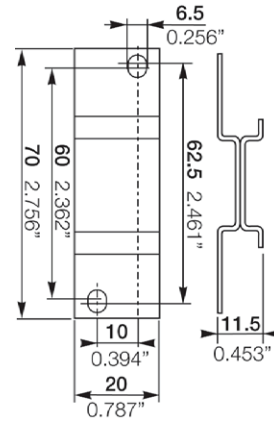
Dimensions are in inches (millimeters).  
Dimensions not intended for manufacturing purposes.



**RZ7-FS**

**Panel Mounting Adapter**

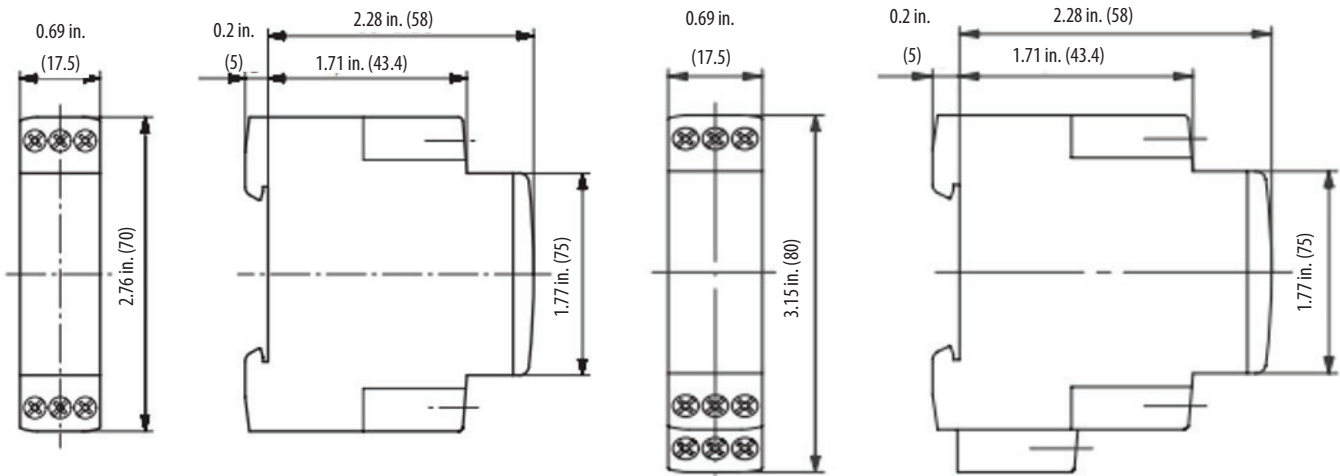
Dimensions are in inches (millimeters).  
Dimensions not intended for manufacturing purposes.



**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**