700-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, 8 A
- Timing Ranges From 0.05 s...60 hr
- Coil surge protection
- Hazardous location version available

Catalog Number Explanation - 700-FS Relays

700	–	FS	H	3	U	–	U23
a		b	c	d	e		f

a Bulletin Number	-	b Type of Relay	c Operating Mode	d Contact Output	e Timing Range	f Input Voltage
700		FS	A–On-delay B–Off-delay C–On- and off-delay D–One shot E–Fleeting off-delay F–Flasher (repeat cycle starts with pulse) G–Flasher (repeat cycle starts with pause) I–On-delay pulse generator J–On-delay (pulse controlled) K–One shot/watch dog (pulse controlled) L–Pulse converter	3–One changeover contact (SPDT)1 C/O	A–0.05…1 s B–0.15…3 s C–0.5…10 s D–1.5…30 s E–0.05…1 min F–0.15…3 min G–0.5…10 min H–1.5…30 min I–0.05…1 hr J–0.15…3 hr K–0.5…10 hr L–3.0…60 hr U–0.05 s…60 hr (1)	Z12–12V DC U23–24…48V DC | 24…240V AC 50/60 Hz

(1) Valid for functions "A" and "B" only.

Single Function (With 2PDT 2 C/O contacts)

Operating Mode	Contact Output	Timing Range(1)	Input Voltage	Cat. No.
On-delay	(DPDT) 2 C/O	0.05 s…60 hr	12V DC	700-FSA4UZ12
On-delay	(DPDT) 2 C/O		24…48V DC 24…240V AC, 50/60 Hz	700-FSA4UU23
Off-delay	(DPDT) 2 C/O		12V DC	700-FSB4UZ12
Off-delay	(DPDT) 2 C/O		24…48V DC 24…240V AC, 50/60 Hz	700-FSB4UU23

(1) The time range of "0.05 s…60 hr" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.

Single Function With Hazardous Location Certification(1) (With SPDT 1 C/O contacts)

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.
One Shot / Watch Dog (Pulse Controlled)	(SPDT) 1 C/O	0.05 s…1 s	24…48V DC 24…240V AC 50/60 Hz	700-FSK3AU23-EX
		0.5 s…10 s		700-FSK3CU23-EX

Multi-Function

This device allows the flexibility of selecting one of 8 single timing functions.

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.
Multi-function timing relays 8 Single-functions: A, B, C, D, E, F, I, and L ON and OFF function additional (for installation and maintenance) note: See connection diagrams for further description.	(SPDT) 1 C/O	0.05 s…60 hr	12V DC	700-FSM3UZ12
	(SPDT) 1 C/O		24…48V DC 24…240V AC 50/60 Hz	700-FSM3UU23
	(DPDT) 2 C/O		12V DC	700-FSM4UZ12
	(DPDT) 2 C/O		24…48V DC 24…240V AC 50/60 Hz	700-FSM4UU23

Multi-Function With Hazardous Location Certification (1)

This device allows the flexibility of selecting one of 8 single timing functions.

Operating Mode	Contact Output	Timing Range(1)	Input Voltage	Cat. No.
M Multi-function timing relays 8 Single-functions: A, B, C, D, E, F, I, and L ON and OFF function additional (for installation and maintenance) Note: See connection diagrams for further description.	(SPDT) 1 C/O	0.05 s…60 h	24…48V DC 24…240V AC 50/60 Hz	700-FSM3UU23-EX
	(DPDT) 2 C/O			700-FSM4UU23-EX

(1) The time range of "0.05 s…60 hr" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.

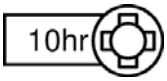
Special Function

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.
Flasher (repeat cycle starting with pulse or pause)	(SPDT) 1 C/O	0.05 s…60 hr (2)	12V DC	700-FSH3UZ12
			24…48V DC 24…240V AC 50/60 Hz	700-FSH3UU23
		2 x 0.05 s…60 hr (2 ranges)	12V DC	700-FSH3VZ12
			24…48V DC 24…240V AC, 50/60 Hz	700-FSH3VU23
OFF-delay without supply voltages (True OFF-delay)(1)	(SPDT) 1 C/O	0.15 s…10 min(3)	24…240V DC 24…240V AC 50/60 Hz	700-FSQ3QU18
	(DPDT) 2 C/O			700-FSQ4QU18
Star-Delta	2 N.O. + 1 Common	0.5 s…10 s	24…48V DC	700-FSY2CU23
		1.5…30 s	24…240V AC 50/60 Hz	700-FSY2DU23
		0.05 s…1 min		700-FSY2EU23
		0.15…3 min		700-FSY2FU23
		0.5…10 min		700-FSY2GU23

(1) Due to shock during shipment, the state of the contacts should be verified before initial use. Minimum power on time is 800 msec
(2) The time range of "0.05 s…60 hr" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.
(3) This time range is selectable in four smaller ranges: 0.15 s…2.5 s, 0.5 s…10 s, 4 s…80 s, 30 s…10 min.

(1) Temp. Code T4A 2A 32VDC MAX.: II 3 G, EEx nL IIC T4 DEMKO 04 ATEX 0404974X 2A 32VDC MAX. Ta 70 °C
Ind. Cont. Eq. for Hazardous Location Listed 87SL Class 1, Div. 2, Groups A,B,C,D Class 1, Zn 2, Group IIC
Subject devices are to be installed in an ATEX Certified IP54 (as defined in IEC 60529) enclosure and accessible only by the use of a tool.

Multi-Function Timing Relay Function and Time Range Settings - 700-FS Relays

Description			SPDT		DPDT
	Multi-function timing relays 700-FSM3U includes 10 setting functions:		Multi-Time Setting Range 0.05 s…60 h		
	(A)On-Delay		(1 s) 0.05…1 s (3 s) 0.15…3 s (10 s) 0.5…10 s (1 min) 0.05…1 min (3 min) 0.15…3 min (10 min) 0.5…10 min (1 hr) 0.05…1 hr (3 hr) 0.15…3 hr (10 hr) 0.5…10 hr (60 hr) 3….60 hr		
	(B)Off-Delay				
	(C)On- and Off-Delay				
	(D)One shot				
	(E)Fleeting Off-Delay				
	(F)Flasher (repeat cycle starts with pulse)				
	(I)On-Delay pulse generator				
	(L)Pulse converter				
	(On)ON-Function (1)				
	(Off)OFF-Function(1)				
	Note: Switch ⊗ is on DPDT relays only. When switch is down, one contact is instantaneous and one is timed. When switch is up, both contacts are timed.				

(1) For installation and maintenance.

Accessories - 700-FS Relays

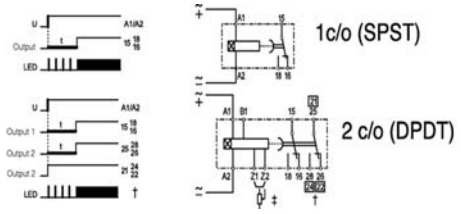
	Description	Pkg. Quantity	Cat. No.	
 	**Setting Knob with Scale** (for time setting without tools)	10	700-FSK	
	**Panel Mounting Adapter** For surface mounting according to drilling plan EN 50 002	5	199-FSA	
	**Label Sheet** 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS	
	Marking Tag Sheet 160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover	10	100-FMP	
	Transparent Cover To be used with marking tag sheets	100	100-FMC	
	Marking Tag Adapters To be used with marking tag: System 1492 W	100	(1)	100-FMA2

(1) Cat. No. 100-FMA2 is only a marking tag carrier. Please refer to the Terminal Block Accessories section, Marking Solutions of this publication for appropriate marker cards to be used with this carrier.

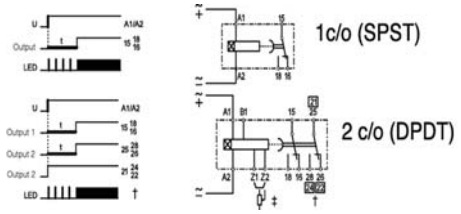
IMPORTANT Versatile Mounting: The 700-FS timing relay can be panel or DIN rail mounted. For best long-term performance, allow at least 5 mm (0.2 in.) of space on each side of the relay for proper ventilation.

Function and Connection Diagrams - 700-FS Relays

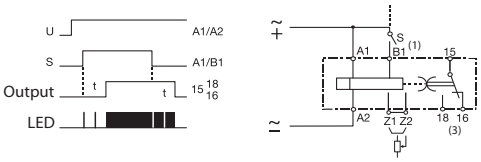
(A) On-Delay



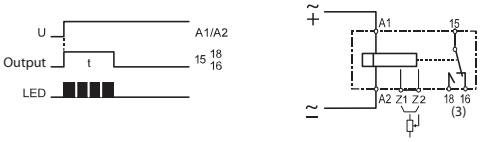
(B) Off-Delay (Min. Pulse AC 50 ms…DC 30 ms)



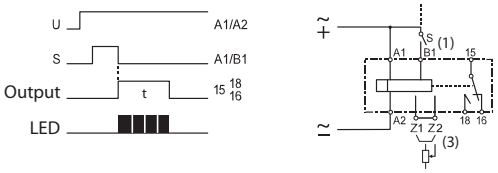
(C) On- and Off-Delay



(D) One Shot

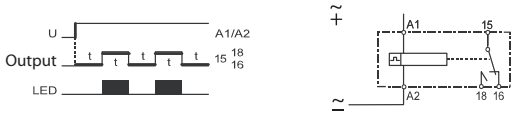


(E) Fleeting Off-Delay (Min. Pulse AC 50 ms…DC 30 ms)

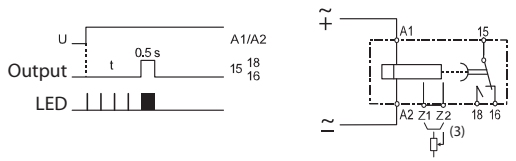


(F) Flasher (Repeat Cycle Starts with Pulse)

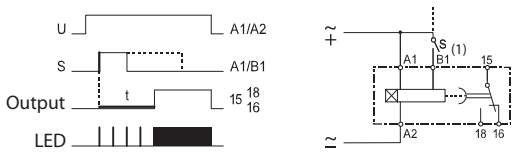
(G) Flasher (Repeat Cycle Starts with Pause)



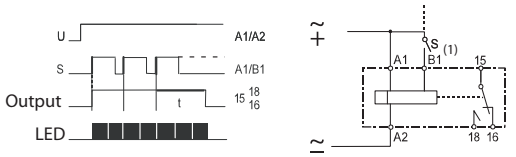
(I) On-Delay Pulse Generator



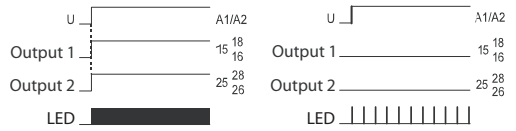
(J) On-Delay (Pulse Controlled)



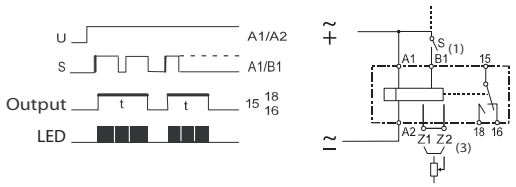
(K) One Shot/Watch Dog (Pulse Controlled)



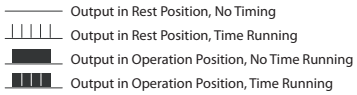
(On) ON-Function (Off) OFF-Function



(L) Pulse Converter (Min. Pulse AC 50 ms…DC 30 ms)



Cleverly Designed Function Display light-emitting diode (Green)

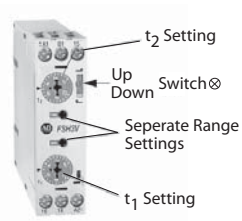


(1) A voltage other than the supply voltage can be used at B1, but must be within voltages specified on timer.
(2) Output 2 is selectable as instantaneous contact with sliding switch (⊗) on front panel (instantaneous when switch is down, timed when switch is up).
(3) Available on multifunction "M," and single function "A" or "B" option timing relays along with code "4" (2PDT contacts).
Bridge or potentiometer 10 kΩ, 0.25 W min. (low voltage) for external time setting. Set timer dial to 0.0.

Special Function Flasher Timing Relay

Description

700-FSH3U



700-FSH3V

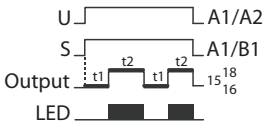
Supply Voltages (A1/A2)
Z12 12V DC
U23 24…48V DC, 24…240V AC, 50/60 Hz

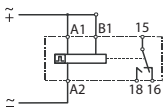
Function Diagram / Connection Diagram(1)

(H) Flasher (Repeat Cycle Starting with Pulse or Pause)

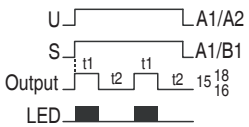
The repeat cycle timer permits different settings for on and off times. The following operating modes are possible:
- Oscillating mode; repeat cycle starts with voltage that is applied at A1 and B1, and continues to repeat until voltage is off.
- One cycle mode; started by energizing B1 with voltage on A1 and A2.
- Output starts with pulse or pause (switch ⊗ Up or Down).
- 700-FSH3U provides (1) range setting for t_1 and t_2
  700-FSH3V provides (2) range settings for t_1 and t_2

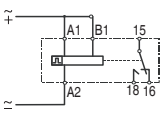
Supply Voltage Controlled, Oscillating Mode Starting with Pause — Switch ⊗ Is up



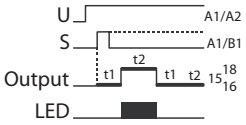


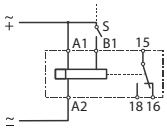
Supply Voltage Controlled, Oscillating Mode Starting with Pulse — Switch ⊗ is Down



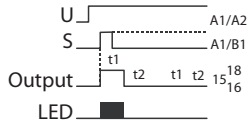


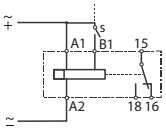
Pulse Controlled, Output Starts With Pause (Min. Pulse AC 50 ms — DC 30 ms) — Switch ⊗ is Up One Cycle Mode — Voltage Supplied at A1 and A2, then Pulsing "s" to Energize B1 will Initiate One Cycle.





Pulse Controlled, Output Starts with Pulse (Min. Pulse AC 50 ms — DC 30 ms) — Switch ⊗ is Down One Cycle Mode — Voltage Supplied at A1 and A2, then Pulsing "s" to Energize B1 will Initiate One Cycle.





(1) If B1 is pulsed, a one full time cycle consisting of t1 and t2 is completed.

LED Operation Chart Ñ Green LED

LED ▁▁▁▁▁▁▁▁ Output at Shelf State, No Timing - LED OFF
LED ▁▌▁▌▁▌▁▌ Output at Shelf State, Time is Running - LED Flashing
LED ▁▇▇▇▇▇▇▇ Output NO Contact is Closed, No Timing - LED On
LED ▁▇▁▇▁▇▁▇ Output NO Contact is Closed, Time is Running - LED Long Flashing