

Electronic timers

2



TEF5-OFF

1565/0138RF0014

Description

TEF5 frontal electronic timers are used for realizing timing function and are available in ON-delay and OFF-delay versions.

Compact solution in cabinet compared to separate timers


TEF5 electronic timers are front-mounted and locked on contactors. A mechanical indicator allows to show the state of the contactor.

TEF5 electronic timers are supplied by direct wiring to the coil terminals A1 - A2 of the contactor or contactor relay. A varistor is integrated on the timer to offer a built-in protection against surges in the contactor coil.

Available for a wide control voltage range 24...240 V AC/DC

TEF5-ON or TEF5-OFF allow time-delayed functions up to 100 s in 3 distinct time ranges, independently of the control system. The time delay ranges are selected by a switch and the time delay can be adjusted by means of a rotary switch. The timing function is activated by closing or opening the device on which the timer is mounted. The OFF-delay version operates without additional control supply.

Ordering details

For contactors, contactor relays	Time delay range selected by switch	Delay type	Rated control circuit voltage U _c V 50/60 Hz or DC	Auxiliary contacts 	Order code	Weight Pkg (1 pce) kg
AF45, AF50, AF75	0.1...1 s	ON-delay	24...240	1 1	TEF5-ON	0.065
	1...10 s 10...100 s	OFF-delay	24...240	1 1	TEF5-OFF	0.065

Electronic timers

Technical data

Contact utilization characteristics according to IEC

Types	TEF5-ON	TEF5-OFF
Standards	IEC 60947-5-1 and EN 60947-5-1	
Rated insulation voltage U_i acc. to IEC 60947-5-1	400 V	
Rated impulse withstand voltage U_{imp}	4 kV	
Rated operational voltage U_e max.	240 V	
Rated frequency (without derating)	50 / 60 Hz	
Conventional thermal current $I_{th} - \theta \leq 40^\circ\text{C}$	5 A	
I_e / Rated operational current AC-15 acc. to IEC 60947-5-1	24-127 V 50/60 Hz 220-240 V 50/60 Hz	3 A 1.5 A
Making capacity acc. to IEC 60947-5-1	10 x I_e AC-15	
Breaking capacity acc. to IEC 60947-5-1	10 x I_e AC-15	
I_e / Rated operational current DC-13 acc. to IEC 60947-5-1	24 V DC	1 A / 24 W
Short-circuit protection device gG type fuse	6 A	
Rated short-time withstand current I_{cw} $\theta = 40^\circ\text{C}$	for 1.0 s for 0.1 s	8 A 8 A
Minimum switching capacity with failure rate acc. to IEC 60947-5-4	24 V DC	10^{-7}
Power dissipation per pole at 3 A	0.1 W	
Function diagram	ON-delay 	OFF-delay
Bistable relay inside. Before use, once apply U_c then switch it off in order to initialize position of the contacts.		
Control circuit voltage		
AC control voltage	Rated control circuit voltage U_c 50/60 Hz	24...240 V AC 1.5 mA RMS
DC control voltage	Rated control circuit voltage U_c Average consumption	24...240 V DC 1.5 mA 1 mA RMS
Rated frequency limits	50 / 60 Hz	
Supply voltage range	0.85...1.1 x U_c (at $\theta \leq 70^\circ\text{C}$)	
Oversvoltage protection	Varistor included	
Time delay range (t) selected by switch	0.1...1 s 1...10 s 10...100 s	
On-load reiteration accuracy under constant conditions	$\leq 1\%$	
Minimum ON period	0.1 s	
Recovery time	0.15 s	
Ambient air temperature	Operation Storage	-25 °C ... +70 °C -40 °C ... +80 °C
Climatic withstand	Category B according to IEC 60947-1 Annex Q	
Maximum operating altitude	2000 m	
Mounting positions	Acc. to mounting positions permitted on contactors or contactor relays With AL, TAL contactors or NL, TNL contactor relays: mounting position 5 not permitted.	
Shock withstand acc. to IEC 60068-2-27 and EN 60068-2-27 (Mounting position 1)	1/2 sinusoidal shock for 11 ms: no change in contact position Same as contactor or contactor relay	
Mechanical durability	Number of operating cycles Max. switching frequency	5 millions operating cycles 3600 cycles/h
Max. electrical switching frequency	AC-15 DC-13	1200 cycles/h 900 cycles/h








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Technical data

Contact utilization characteristics according to UL / CSA

Types	TEF5-ON	TEF5-OFF
Standards	UL 508, CSA C22.2 N°14	
Rated insulation voltage U_i acc. to UL / CSA	300 V	
Max. operational voltage	240 V	
Pilot duty	B300, R300	
AC thermal rated current	5 A	
AC maximum volt-ampere making	3600 VA	
AC maximum volt-ampere breaking	360 VA	
DC thermal rated current	1 A	
DC maximum volt-ampere making-breaking	28 VA	

Connecting characteristics

Connection capacity (min. ... max.)		
 Rigid solid	1 x	1...2.5 mm ²
 Rigid solid	2 x	1...2.5 mm ²
 Flexible with non insulated ferrule	1 x	0.75...2.5 mm ²
 Flexible with non insulated ferrule	2 x	0.75...2.5 mm ²
 Flexible with insulated ferrule	1 x	0.75...2.5 mm ²
 Flexible with insulated ferrule	2 x	0.75...1.5 mm ²
 Lugs	L ≤	8 mm
	L >	3.7 mm
Connection capacity acc. to UL / CSA	1 or 2 x	AWG 18...14
Stripping length		10 mm
Tightening torque		1 N.m / 9 lb.in
Degree of protection		IP20
acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529		
Screw terminals		Delivered in open position, screws of unused terminals should be tightened
All terminals		M3.5
Screwdriver type		Flat Ø 5.5 / Pozidriv 2
Terminal Marking	