finder
RELAYING INNOVATION

83
SERIES

Modular timers 10 A
IECEx - ATEX - HazLoc

Multi-function timer and IECEx - Ex - HazLoc multi-function modular timer

Type 83.02.0.240.0003

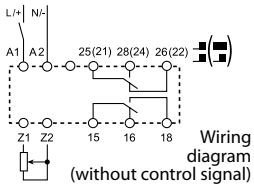
- Multi-function & multi-voltage IECEx, ATEX (Zone 2, Category 3), HazLoc (Cl I, Div.2) timer
- 2 Pole (timed + instantaneous options), external time setting potentiometer option

- 22.5 mm wide
- Eight time scales from 0.05 s to 10 days
- High input/output isolation
- Wide supply range (24…240)V AC/DC
- 35 mm rail (EN 60715) mounting
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage versions with "PWM clever" technology

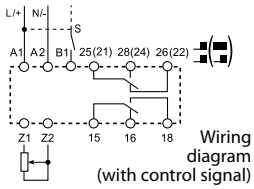
83.02 - 0003

- IECEx - Ex - HazLoc
- Multi-voltage and Multi-function
- Timing can be regulated using ext. Potentiometer
- 2 timed contacts or 1 timed + 1 instantaneous contact

AI: On-delay
DI: Interval
GI: Pulse delayed
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
WD: Watchdog (Retriggerable interval with control signal on)



Wiring diagram (without control signal)



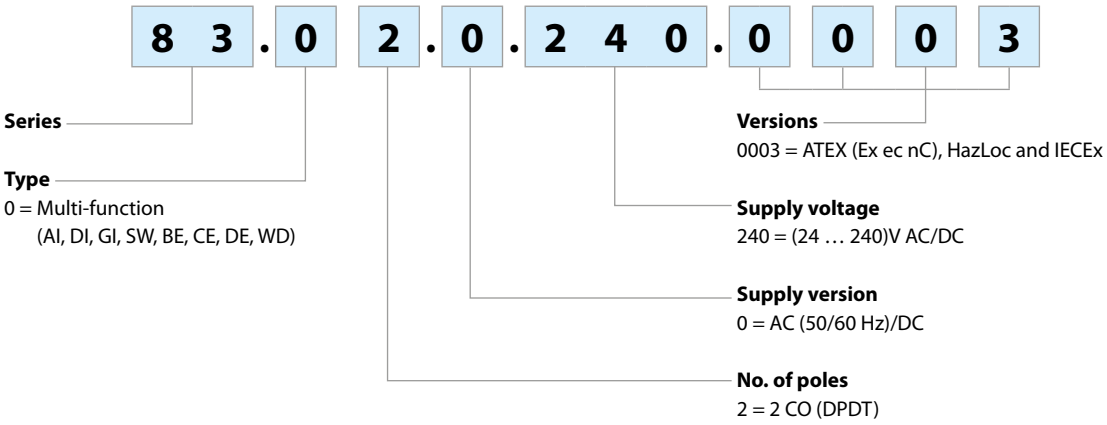
Wiring diagram (with control signal)

For outline drawing see page 6

Contact specification		
Contact configuration		2 CO (DPDT)
Rated current/Maximum peak current	A	10/30
Rated voltage/ Maximum switching voltage	V AC	277/400
Rated load AC1	VA	2770
Rated load AC15 (230 V AC)	VA	750
Single phase motor rating (230 V AC)	kW	0.5
Breaking capacity DC1: 24/110/220 V	A	5/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)
Standard contact material		AgNi
Supply specification		
Nominal voltage (U_N)	V AC (50/60 Hz)	24…240
	V DC	24…240
Rated power AC/DC	VA (50 Hz)/W	< 2/< 2
Operating range	V AC	16.8…265
	V DC	16.8…265
Technical data		
Specified time range		(0.05…1)s, (0.5…10)s, (0.05…1)min, (0.5…10)min, (0.05…1)h, (0.5…10)h, (0.05…1)d, (0.5…10)d
Repeatability	%	± 1
Recovery time	ms	200
Minimum control impulse	ms	50
Setting accuracy-full range	%	± 5
Electrical life at rated load in AC1	cycles	$60 \cdot 10^3$
Ambient temperature range	°C	–20…+55
Protection category		IP 20
Approvals (according to type)		

Ordering information

Example: 83 series, modular timers, 1 CO (SPDT) - 16 A, supply rated at (24…240)V AC/DC.

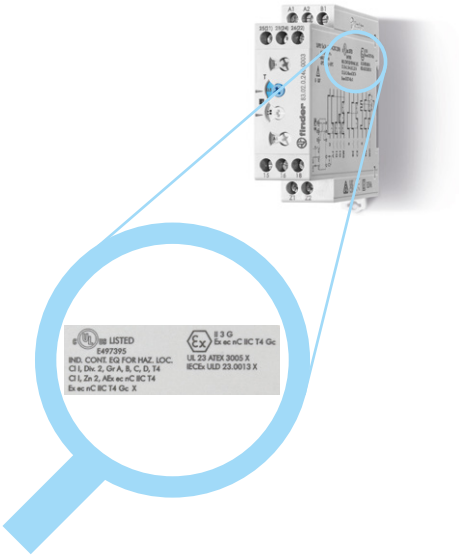


Technical data

Insulation				
Dielectric strength	between input and output circuit	V AC	4000	
	between open contacts	V AC	1000	
Insulation (1.2/50 µs) between input and output		kV	6	
EMC specifications				
Type of test			**Reference standard**	
Electrostatic discharge	contact discharge		EN 61000-4-2	4 kV
	air discharge		EN 61000-4-2	8 kV
Radio-frequency electromagnetic field	(80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m
	(1000 ÷ 2700 MHz)		EN 61000-4-3	3 V/m
Fast transients (burst) (5-50 ns, 5 and 100 kHz)	on Supply terminals		EN 61000-4-4	7 kV
	on control signal terminal (B1)		EN 61000-4-4	7 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	6 kV
	differential mode		EN 61000-4-5	6 kV
on control signal terminal (B1)	common mode		EN 61000-4-5	6 kV
	differential mode		EN 61000-4-5	4 kV
Radio-frequency common mode	(0.15 ÷ 80 MHz)		EN 61000-4-6	10 V
on Supply terminals	(80 ÷ 230 MHz)		EN 61000-4-6	10 V
Radiated and conducted emission			EN 55022	class A
Other data				
Current absorption on control signal (B1)			< 1 mA	
- max cable length (capacity of ≤ 10 nF/100 m)			150 m	
- when applying a control signal to B1, which is different from the supply voltage at A1/A2			B1 is isolated from A1 and A2 by an opto-coupler, and can therefore be operated at a voltage other than the supply voltage. If using a control signal of between (24…48)V DC and a supply voltage of (24…240)V AC, ensure that the signal - is connected to A2 and the + is applied to B1, and that L is applied to B1 and N to A2.	
External potentiometer			Use a 10 kΩ / ≥ 0.25 W linear potentiometer. Maximum cable length 10 m. When using an external potentiometer, the timer automatically use its setting in place of the internal setting. Consider the voltage potential at the potentiometer to be the same as the timer supply voltage.	
Power lost to the environment	without contact current	W	1.4	
	with rated current	W	3.2	
Screw torque		Nm	0.8	
Max. wire size			solid cable	stranded cable
		mm²	1 x 6 / 2 x 4	1 x 4 / 2 x 2.5
		AWG	1 x 10 / 2 x 12	1 x 12 / 2 x 14

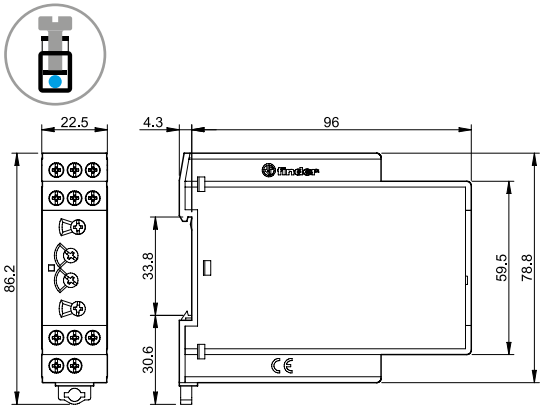
Markings - ATEX, IECEx and HazLoc versions

ATEX (UL 23 ATEX 3005 X):	II 3 G	
IECEx (IECEx ULD 23.0013 X):	Ex ec nC IIC T4 Gc	
Haz.Loc. (E497395):	Cl I, Div2, Gr A, B, C, D, T4 Cl I, Zn 2, AEx ec nC IIC T4 Ex ec nC IIC T4 Gc X	c UL us LISTED IND. CONT. EQ FOR HAZ.LOC.
Specific marking of explosion protection		
II Component for surface plant (different from mines)		
3 Category 3: normal level of protection		
G - Cl I Explosive atmosphere due to presence of combustible gas vapour or mist		
Div 2 - Zn 2 Hazardous explosive concentration presence just in case of fault		
Ex ec - AEx ec Increased safety		
Ex nC - AEx nC Sealed device		
IIC - Gr A, B, C, D Gas group		
T4 Temperature class		
Gc Device protection level		
–20°C ≤ Ta ≤ +55 °C Ambient temperature range		
UL 23 ATEX 3005 X - IECEx ULD 23.0013 X - E497395 UL - ULD: ID of the notified body which issues the type certificate 23: year of issue of the certificate 3005 - 0013: number of the type certificate E497395: UL file number X: special instruction for use		
Zyy: production batch identification Z: year, yy: week		



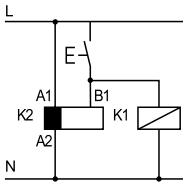
Outline drawings

Type 83.02
Box clamp

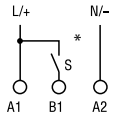


Functions

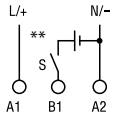
LED	Supply voltage	NO output contact	Contacts	
			Open	Closed
	OFF	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open (Timing in Progress)	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Closed	15 - 16 25 - 26	15 - 18 25 - 28



• Possible to control an external load, such as another relay coil or timer, connected to the control signal terminal B1.



* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).



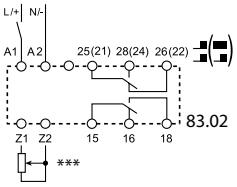
** A voltage other than the supply voltage can be applied to the control signal (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

XI-2024, www.findernet.com

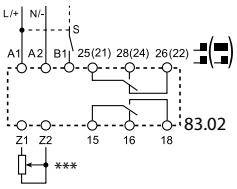
Functions

Wiring diagram | **U** = Supply voltage | **S** = Signal switch | = Output contact

Multi-function
without control signal

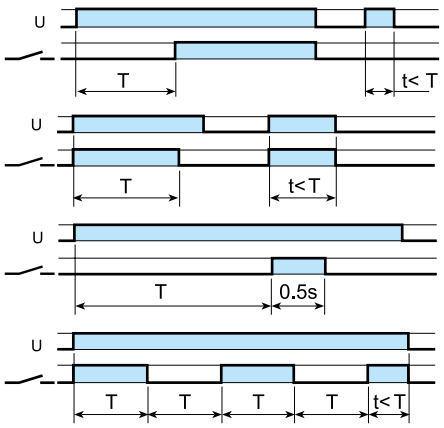


with control signal



*** Type 83.02: regulated using an external potentiometer (10 kΩ - 0.25 W).

Type 83.02

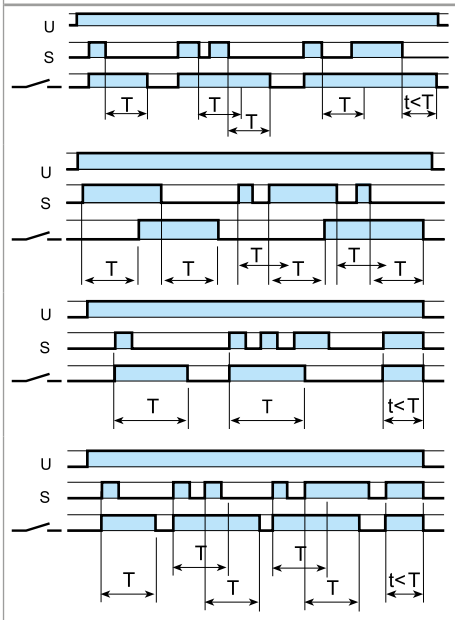


(AI) ON-delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

(GI) Pulse delayed.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5s.

(SW) Symmetrical flasher (starting pulse ON).
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).



(BE) OFF-delay with control signal.
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.

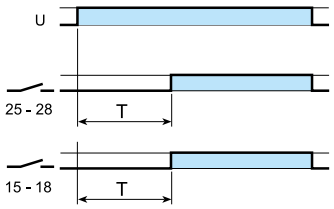
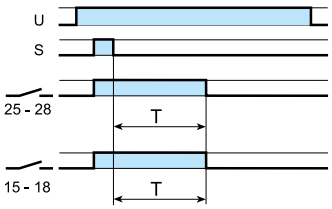
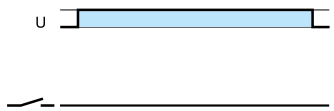
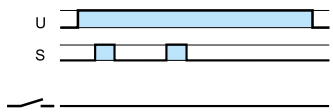
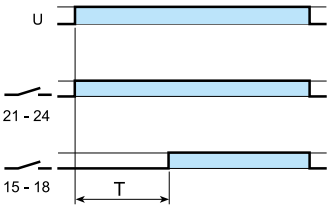
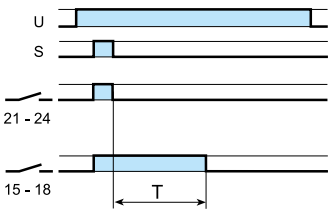
(CE) ON- and OFF-delay with control signal.
Power is permanently applied to the timer.
Closing the control signal (S) initiates the preset delay, after which time the output contacts transfer. Opening the control signal initiates the same preset delay, after which time the output contacts reset.

(DE) Interval with control signal ON.
Power is permanently applied to the timer.
On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

(WD) Watchdog (Retriggerable interval with control signal ON).
Power is permanently applied to the timer.
On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset; subsequent closures of control signal during the delay will extend the time. If the closure of the control signal (S) is longer than the preset time (T) then the output contacts reset.

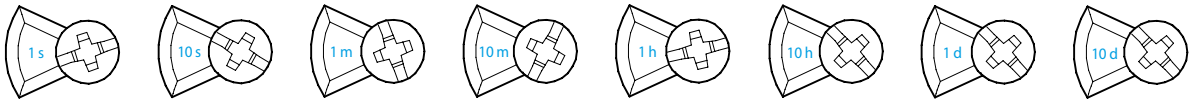
NOTE: The timing function must be set when the timer is de-energised. Or for the 83.02, when the contact mode selector is in the OFF position.

Type 83.02

Contact mode selector	Functions without control signal (example: AI)	Functions with control signal (example: BE)
2 timed contacts 	 Both output contacts (15-18 and 25-28) follow the timing function	 Both output contacts (15-18 and 25-28) follow the timing function
OFF 	 Both output contacts [15-18 and 25(21)-28(24)] stay permanently open	 Both output contacts [15-18 and 25(21)-28(24)] stay permanently open
1 timed + 1 instantaneous contact 	 The output contact 15-18 follows the timing function The output contact 21-24 follows the power supply (U)	 The output contact 15-18 follows the timing function The output contact 21-24 follows the control signal (S)

Times scales

Rotary switch position 83 series



(0.05…1)s (0.5…10)s (0.05…1)min (0.5…10)min (0.05…1)h (0.5…10)h (0.05…1)d (0.5…10)d