finder
RELAYING INNOVATION

86
SERIES

Timer modules
ATEX - HazLoc

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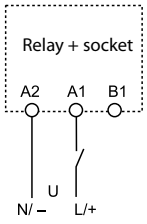
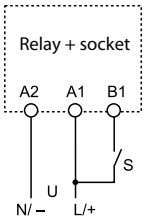
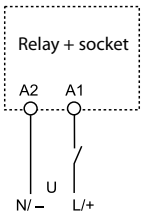
Timer modules for use in conjunction with relay & socket

Type 86.00
- Multi-function & multi-voltage timer module
- ATEX compliant (Ex ec)

Type 86.30
- Bi-function & multi-voltage timer module
- ATEX compliant (Ex ec)
- HazLoc Class I Div. 2 Group A, B, C, D - T6

- Timer module type 86.00 for 94.0x.7 socket with external start
- Timer module type 86.30 for 94.0x.7 socket
- Wide supply voltage range:
  12…48 V AC/DC (86.00)
  12…24 V AC/DC (86.30)
- LED indicator

	86.00 - 0073	86.30 - 0073
		
	• Time scale: from 0.05 s to 100 h • Multi-function • Plug-in for use with 94.02.7, 94.03.7, 94.04.7 sockets	• Time scale: from 0.05 s to 100 h • Bi-function • Plug-in for use with 94.02.7, 94.03.7, 94.04.7 sockets
	AI: On-delay **DI:** Interval **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 **EE:** Interval with control signal off **FE:** Interval with control signal on and off	**AI:** On-delay **DI:** Interval
	 Wiring diagram (without control signal)	 Wiring diagram (with control signal)	 Wiring diagram
	For outline drawing see page 5		

Contact specification				
Contact configuration			See 58 series ATEX version	See 58 series ATEX version
Rated current/Maximum peak current		A		
Rated voltage/ Maximum switching voltage		V AC		
Rated load AC1		VA		
Rated load AC15 (230 V AC)		VA		
Single phase motor rating (230 V AC)		kW		
Breaking capacity DC1: 24/110/220 V		A		
Minimum switching load		mW (V/mA)		
Standard contact material				
Supply specification				
Nominal voltage (U_N)		V AC (50/60 Hz)	12…48	12…24
		V DC	12…48	12…24
Rated power AC/DC		W	1.2	0.15
Operating range		V AC (50/60 Hz)	10.2…60	9.6…33.6
		DC	10.2…60	9.6…33.6
Technical data				
Specified time range			(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	
Repeatability		%	± 1	± 1
Recovery time		ms	≤ 50	≤ 50
Minimun control impulse		ms	50	—
Setting accuracy full range		%	± 5	± 5
Electrical life at rated load in AC1		cycles	See 58 series ATEX version	See 58 series ATEX version
Ambient temperature range		°C	–20…+50	–20…+50
Protection category			IP 20	IP 20
Approvals (according to type)				

Ordering information

Example: 86 series multi-function timer module, (12…240)V AC/DC supply voltage.

8 6	.	0	0	.	0	.	2 4 0	.	0	0	7	3

Series

Type
0 = Multi-function (AI, DI, SW, BE, CE, DE, EE, FE)
3 = Bi-function (AI, DI)

No. of poles
See 58 series ATEX relays
Poles for chosen relay/socket combination - according to chart below

Supply version
0 = AC (50/60 Hz)/DC

Supply voltage
024 = (12…24)V AC/DC (86.30 only)
240 = (12…48) V AC/DC (86.00 only)

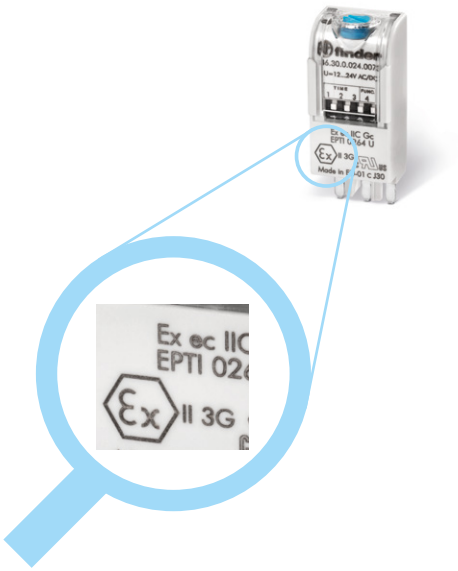
73 = ATEX (Ex ec nC)

Supply range voltage ATEX certified

Code available	Nominal voltage	Operating range	Use temperature
86.00.0.240.0073	12-48 V AC/DC	10.2…60 V AC/DC	–20…+50°C
86.30.0.024.0073	12-24 V AC/DC	9.6…33.6 V AC/DC	–20…+50°C

Markings - ATEX versions - ATEX, II 3G Ex ec IIC Gc

MARKING	
Ⓔx Specific marking of explosion protection	
II Component for surface plant (different from mines)	
3 Category 3: normal level of protection	
GAS	**G** Explosive atmosphere due to presence of combustible gas vapour or mist
	Ex ec Increased security
	IIC Gas group
	Gc Equipment Protection Level
–20 °C ≤ Ta ≤ +50 °C Ambient temperature	
EPTI 17 ATEX 0264 U EPTI: laboratory which issues the CE type certificate 17: year of issue of certificate 0264: number of CE type certificate	
U: ATEX component	



86.00 and 86.30 timer module are designed to be used with 58 Ex relay interface only.
If used with other relays or standalone, the 86.00 and 86.30, cannot be considered Ex components anymore.

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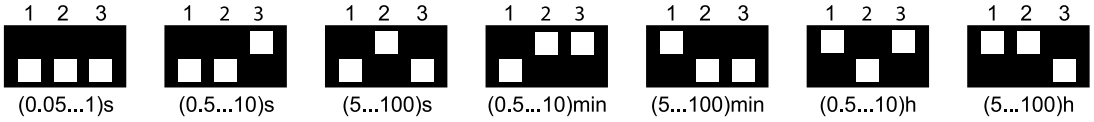
Technical data

EMC specifications					
Type of test			**Reference standard**	**86.00**	**86.30**
Electrostatic discharge	contact discharge		EN 61000-4-2	4 kV	n.a.
	air discharge		EN 61000-4-2	8 kV	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)			EN 61000-4-3	10 V/m	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals			EN 61000-4-4	4 kV	2 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	4 kV	2 kV
	differential mode		EN 61000-4-5	4 kV	1 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6	10 V	10 V
Radiated and conducted emission			EN 55022	class B	class B
Other data			**86.00**	**86.30**	
Current absorption on signal control (B1)		mA	1	—	
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)	0.2	
	with rated current		See 58 series ATEX version	See 58 series ATEX version	

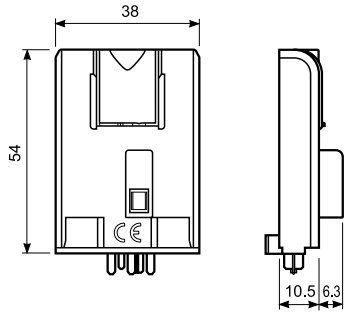
Times scales



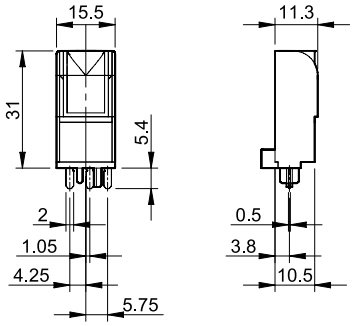
NOTE: Time scales and functions must be set before energising the timer.
To achieve the minimum time setting of 0.05 seconds it is necessary to use one of the functions with control signal.
When setting very short times it may be necessary to take into account the operate time of the relay used.

Outline drawings

Type 86.00



Type 86.30



Functions

U = Supply voltage

S = Signal switch

= Output contact

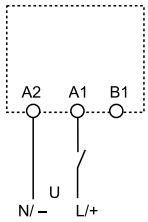
LED Type 86.00	LED Type 86.30	Supply voltage	NO output contact
		OFF	Open
		ON	Open
		ON	Open (Timing in Progress)
		ON	Closed

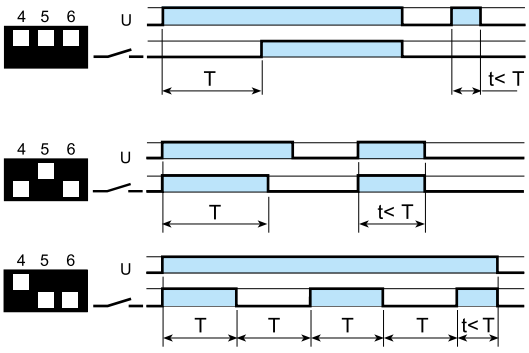
Without control signal = Start via contact in supply line (A1).
With control signal = Start via contact into control terminal (B1).

Wiring diagram

Type 86.00

Without control signal



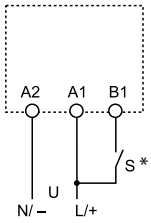


(AI) On-delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

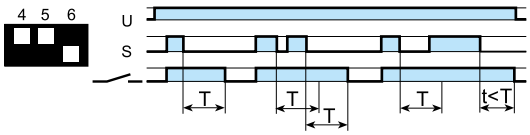
(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

(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).

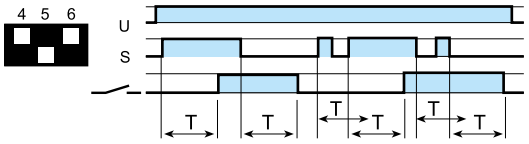
With control signal



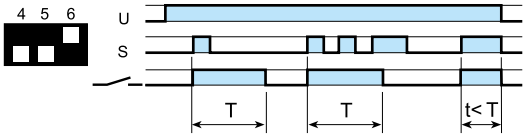
* With DC supply, positive polarity has to be conneted to B1 terminal (according to EN 60204-1).
Switch S should be exclusively used to provide the control signal to terminal B1. (Do not connect any other load at this point).



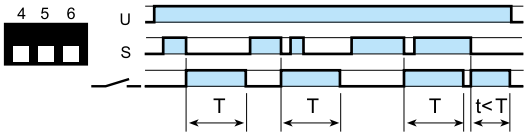
(BE) Off-delay with control signal.
Power is permanently applied to the timer.
The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



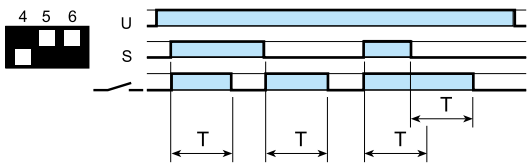
(CE) On- and off-delay with control signal.
Power is permanently applied to the timer.
Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.



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



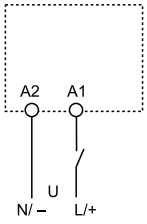
(EE) Interval with control signal off.
Power is permanently applied to the timer.
On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

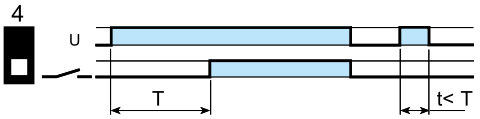


(FE) Interval with control signal on and off.
Power is permanently applied to the timer.
Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

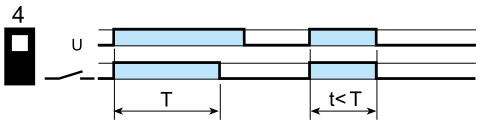
Wiring diagram

Type 86.30





(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.

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