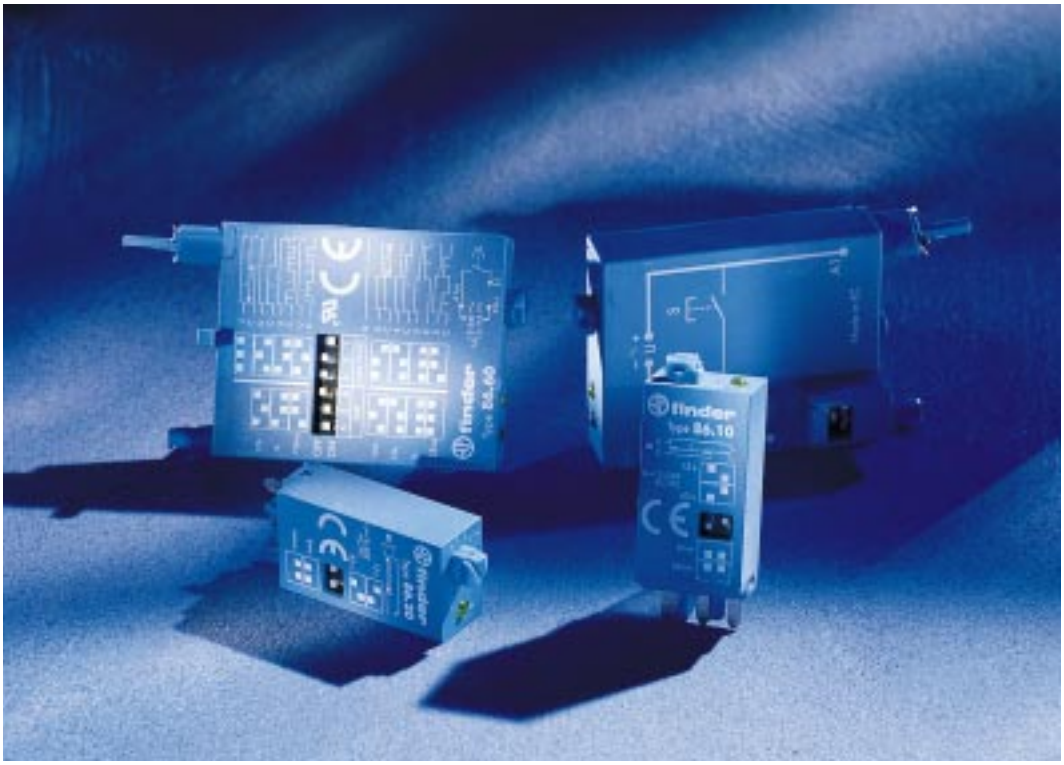
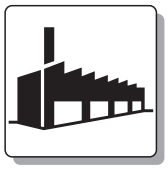
86 Series
Timer Modules



- Type 86.60 for use with 90.73 socket and 60.13 relay, or with 90.72 socket and 60.12 relay
- Type 86.10 and 86.20 for use with 95.03 or 95.05 sockets and 40 or 44 series relays, or with 94.02 or 94.04 sockets and 55.32 and 55.34 relays
- LED indication
- Approvals (according to type): cULus

TOOLING MACHINES

INDUSTRIAL APPLIANCES



INDUSTRIAL AUTOMATION

86 Series
Timer Modules

MONO-FUNCTION TIMER MODULE
TYPE 86.10

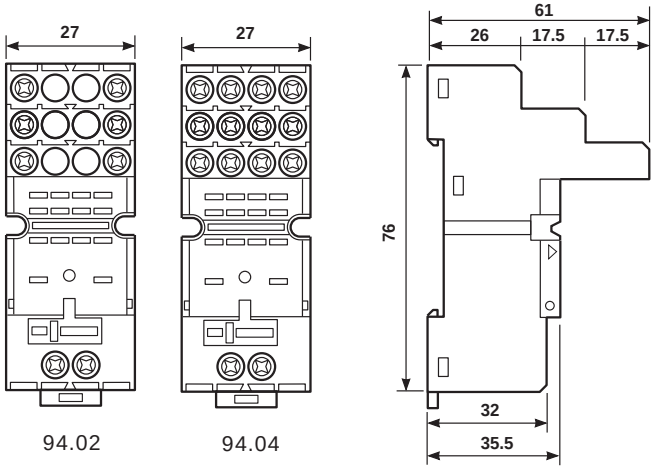
ON delay (AI): see page 22
- LED indication: relay ON
- 4 time scales: see page 23
- Ordering informationn: see page 23

MONO-FUNCTION TIMER MODULE
TYPE 86.20

ON pulse (DI): see page 22
- LED indication: relay ON
- 4 time scales: see page 23
- Ordering informationn: see page 23

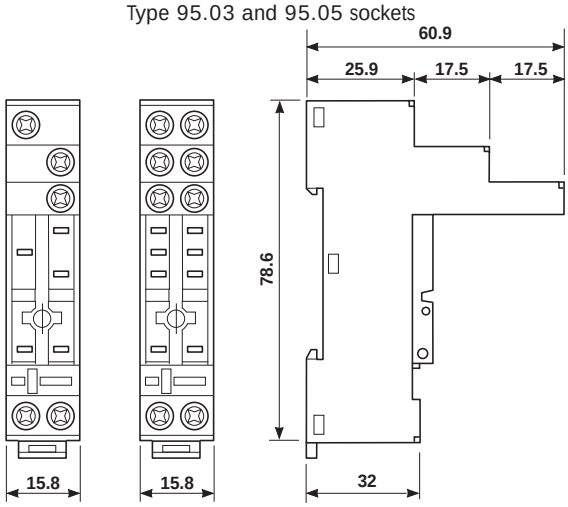
The 86.10 and 86.20 timer modules are for use with 95.03 - 95.05 and 94.02 - 94.04 sockets

Type 94.02 and 94.04 sockets



94.02 94.04

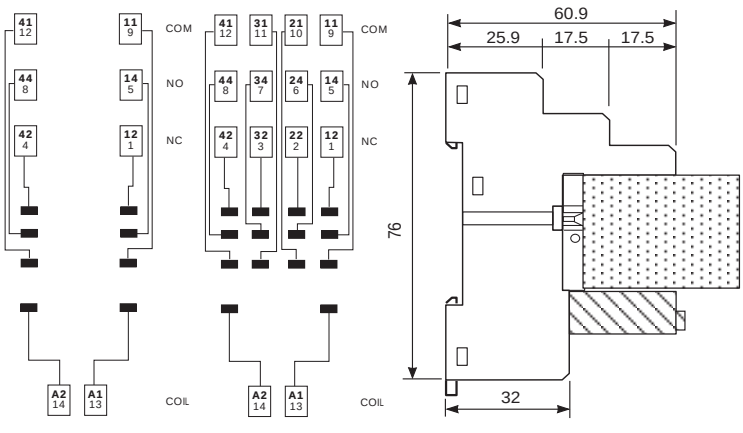
Type 95.03 and 95.05 sockets



95.03 95.05

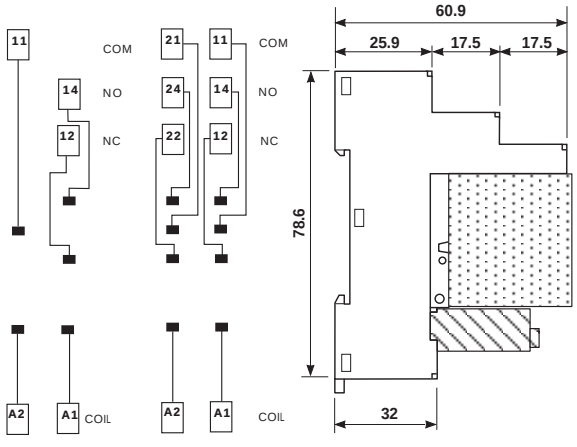
Numbers in bold type are European standard EN50 005.
Plain numbers are US standard.

Socket and module together with 55 series relay



94.02 94.04

Socket and module together with 40, 44 series relay



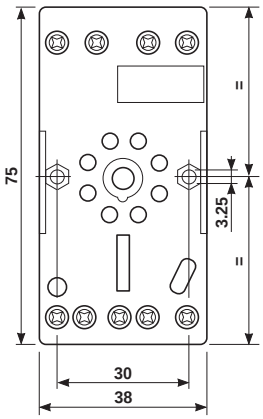
95.03 95.05

MULTI-FUNCTION TIMER MODULE

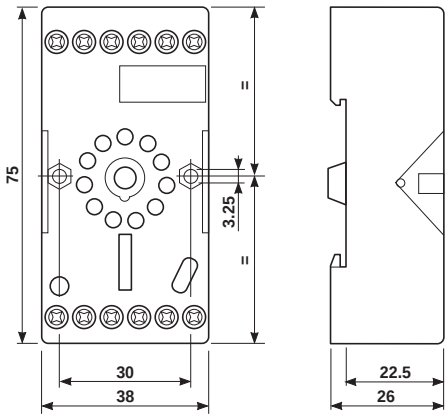
TYPE 86.60 module for use with 90.72 and 90.73 (VARITEC) sockets
- Additional clamp-terminal for external START (B1)
- LED indication:
 green = relay ON
 yellow = relay ON
- Time scales: see page 23
- Ordering information: see page 23

The 86.60 timer module is for use with 90.72 - 90.73 sockets

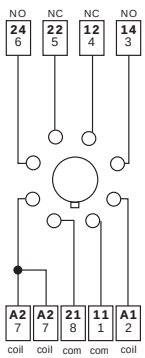
Type 90.72 socket

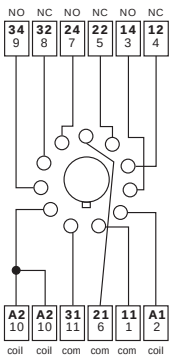


Type 90.73 socket

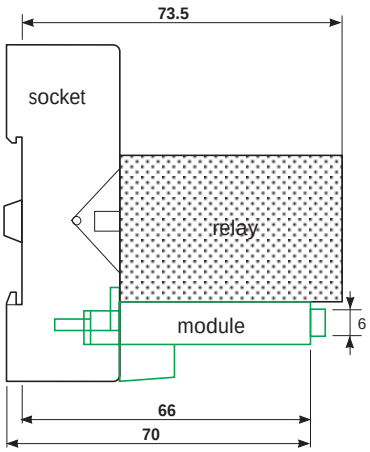


Numbers in bold type are European standard EN50 005. Plain numbers are US standard.





Socket and module together with 60 series relay



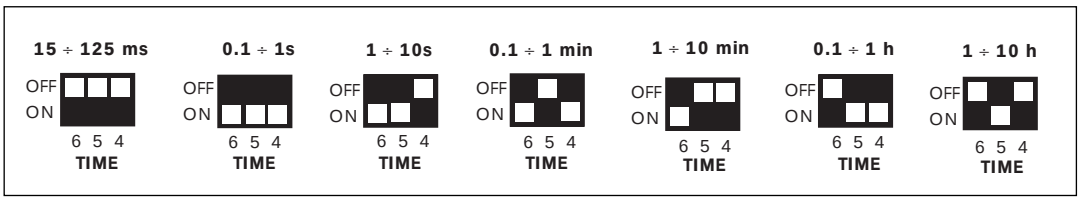
EMC SPECIFICATIONS

TYPE OF TEST	REFERENCE STANDARD	86.10/20	86.60
ELECTROSTATIC DISCHARGE - contact discharge	EN 61000-4-2	n.a.	4 kV
- air discharge		8 kV	8 KV
RADIO-FREQUENCY ELECTROMAGNETIC FIELD (80 ÷ 1000 MHz)	ENV 50140 (IEC 1000-4-3)	10 V/m	10 V/m
FAST TRANSIENTS (burst) (5-50 ns, 5 kHz) on Supply terminals	EN 61000-4-4	2 kV	2 kV
SURGES (1.2/50 µs) on Supply terminals			
- common mode	EN 61000-4-5	—	2 kV
- differential mode		—	1 kV
RADIO-FREQUENCY COMMON MODE (0.15 ÷ 80 MHz) on Supply terminals	ENV 50141 (IEC 1000-4-6)	10 V	10 V
POWER-FREQUENCY (50 Hz)	EN 61000-4-8	—	—
RADIATED AND CONDUCTED EMISSION	EN 55022	class B	class B

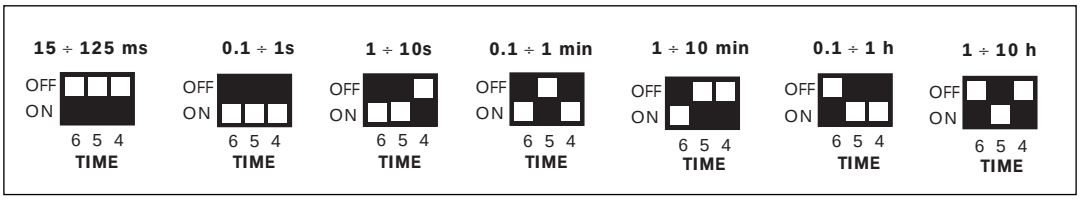
TIME SCALES

Type 86.10
Type 86.20

Type 86.60



Type 86.60...3



TECHNICAL DATA

Type 86.10
Type 86.20

SUPPLY VOLTAGE (U_N)	(12 to 24) V AC/DC (50/60 Hz)
RELAY OPERATING RANGE	(0.8 to 1.1) U_N
DELAY SETTING	1.5s to 64 min (see time scales)
REPEATABILITY	± 1 %
SETTING ACCURACY - FULL RANGE	± 5 %
AMBIENT TEMPERATURE	(–0 to +50)°C
RECOVERY TIME	≤150 ms

TYPE 86.60

SUPPLY VOLTAGE (U_N)	AC: (12 to 240) V (50/60 Hz) DC: (12 to 125)V
OPERATING RANGE	AC: (10.8 to 252) V DC: (10.8 to 135) V
RELAY OPERATING RANGE	(0.8 to 1.1) U_N
DELAY SETTING	15 ms to 10h (see time scales)
REPEATABILITY AND SCALE TOLERANCE - FULL RANGE	± 1 %
RESET TIME	≤ 120 ms
MINIMUM START PULSE DURATION	20 ms
AMBIENT TEMPERATURE	(–20 to +50)°C

CONTACT SPECIFICATIONS

TYPES 86.10 and 86.20: see 40, 44 and 55 series

TYPE 86.60: see types 60.12 and 60.13

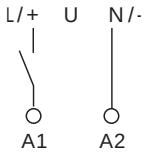
DESCRIPTION OF THE FUNCTIONS

TYPE 86.10 AND TYPE 86.20

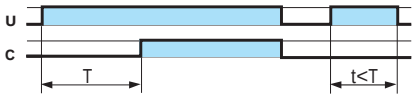
The (C) indicated in the diagrams refers to the position of the NO contact.

U = SUPPLY VOLTAGE C = RELAY CONTACT (NO)

Wiring diagram - internal start

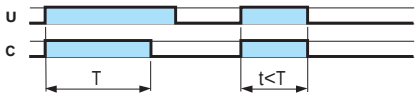


TYPE 86.10



(AI) ON delay.
Apply power to timer.
Contact transfers after preset time has elapsed.
Reset occurs when power is removed.

TYPE 86.20



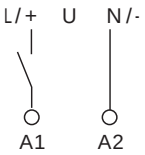
(DI) ON pulse.
Apply power to timer.
Contact transfers immediately.
After preset time has elapsed, contact returns to original position.

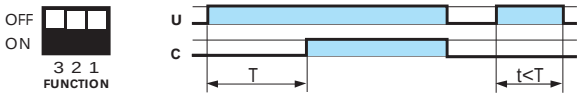
TYPE 86.60

The (C) indicated in the diagrams refers to the position of the NO contact. When the LED (C) is illuminated, the NO contacts are closed.

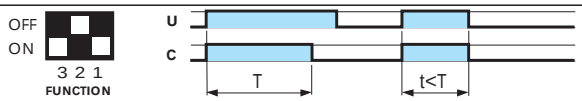
S = START U = SUPPLY VOLTAGE C = RELAY CONTACT (NO)

Wiring diagram-internal start

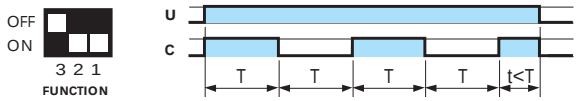




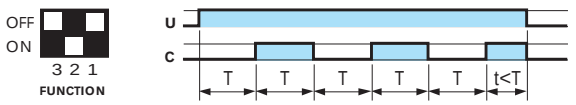
(AI) ON delay.
Apply power to timer.
Contact transfers after preset time has elapsed.
Reset occurs when power is removed.



(DI) ON pulse.
Apply power to timer.
Contact transfers immediately.
After preset time has elapsed, contact returns to original position.

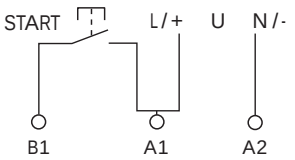


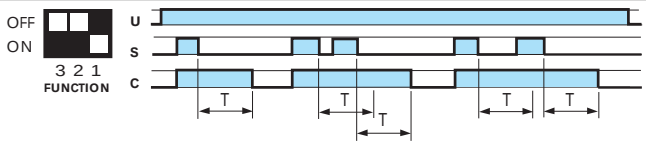
(SW) Symmetrical recycler: pulse start.
Apply power to timer.
First transfer of contact occurs as soon as power is applied. The timer now cycles between **ON** and **OFF** as long as power is applied. The ratio is 1:1 (time off = time on).



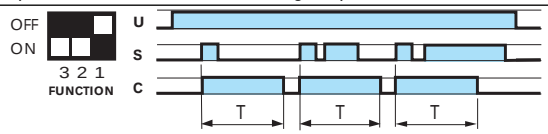
(SP) Symmetrical recycler: pause start.
Apply power to timer.
First transfer of contact occurs after preset time has elapsed. The timer now cycles between **OFF** and **ON** as long as power is applied. The ratio is 1:1 (time off = time on).

Wiring diagram- external start Conforming to EN 60204-1

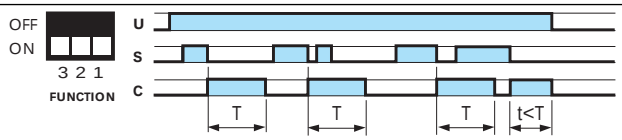




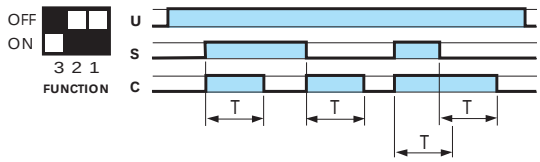
(BE) OFF delay: timing on START release (internal start).
Power must be applied at all times to timer. On closure of normally open control **Signal Switch**, the output contact transfers and remains in that position. When the **Signal Switch** is reopened, the desired delay begins. After preset time has elapsed, the contact returns to the original position.



(DE) ON pulse: timing on START pulse.
Power must be applied at all times to timer. On momentary or maintained closure of a normally open control **Signal Switch**, the output contact transfers.
After the desired time has elapsed, the contact returns to the original position.



(EE) OFF pulse: timing on START release.
Power must be applied at all times to timer.
On opening a normally open control **Signal Switch**, the output contact transfers. After the desired time has elapsed, the contact returns to the original position.



(FE) ON pulse + OFF pulse: timing on Start pulse and on START release
Power must be applied at all times to timer.
On opening or closing of a normally open **Signal Switch** the output contact occurs. After the desired time has elapsed, the contact returns to the original position.

ORDERING INFORMATION

Example: 86 series multi-function timer module, with (12 to 240) V AC and (12 to 115) V DC supply voltage.

8 6	1	0	0	0 2 4	0	0	0	0
Series	**Type** 1 = ON delay (AI) 2 = ON pulse (DI) 6 = Multi-function (AI, DI, SW, SP, BE, DE, EE, FE)		**Supply version** 0 = AC (50/60 Hz)/DC	**Supply voltage** 12 ... 125 V DC 240 = 12 ... 240 V AC 024 = 12 ... 24 V AC/DC	**Supply version** 0 = Standard (time scales until 10h) type 86.60 only 3 = Time scales until 30h type 86.60 only			