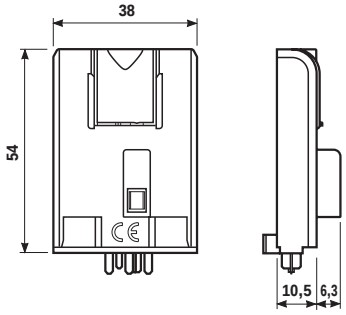
86.00

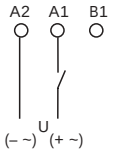
- *Multi-function timer modules*
- *Timer module for 90 and 92 series sockets*
- *LED indicator*

- Time scale: from 0.05s to 100 h
- Multi-function
- Plug-in for use with 90.02, 90.03 and 92.03 sockets

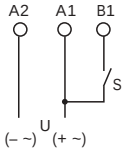
AI: ON delay
DI: ON pulse
SW: Symmetrical recycler: ON start

BE: Signal OFF delay
CE: ON delay
DE: Signal ON pulse
EE: Signal OFF pulse
FE: Signal ON delay + OFF pulse





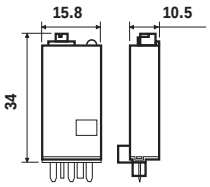
wiring diagram
without signal START

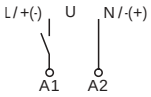
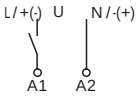


wiring diagram
with signal START

Contact specifications		
Contact configuration		see 60 and 62 series relays Note: don't use with relay 62.3x.x012.x300 and 62.3x.x012.x600
Rated current / Maximum peak current	A	
Rated voltage / Maximum switching voltage	V AC	
Rated load in AC1	VA	
Rated load in AC15 (230 VAC)	VA	
Single phase motor rating (230 VAC)	kW	
Breaking capacity in DC1:	30 / 110 / 220V A	
Minimum switching load	mW(V / mA)	
Standard contact material		
Supply specifications		
Nominal voltage	V AC(50 / 60Hz)	12...240
	V DC	12...240
Rated power AC / DC	W	1.2
Operating range	AC	10.2...265
	DC	10.2...265
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
Recovery time	ms	≤ 50
Minimun control impulse	ms	50
Setting accuracy full range	%	± 5
Electrical life at rated load in AC1	cycles	see 60 and 62 series relays
Ambient temperature range	°C	–20...+50
Protection category		IP 20
Approvals: (according to type)		CE

- *Mono-function timer modules*
- *Timer module for 90, 92, 94, 95 series sockets*
- *LED indicator*



	86.10	86.20
		
	- Mono-function - Plug-in for use with 90.03 - 92.03 - 94.02 - 94.03 - 94.04 - 95.03 - 95.05 sockets	- Mono-function - Plug-in for use with 90.03 - 92.03 - 94.02 - 94.03 - 94.04 - 95.03 - 95.05 sockets
	AI: ON delay	**DI:** ON pulse
		
	wiring diagram	wiring diagram
	wiring diagram without signal START	wiring diagram without signal START
Contact specifications		
Contact configuration	see 40, 44, 55, 60 and 62 series relays	see 40, 44, 55, 60 and 62 series relays
Rated current / Maximum peak current A		
Rated voltage / Maximum switching voltage V AC		
Rated load in AC1 VA		
Rated load in AC15 (230 VAC) VA		
Single phase motor rating (230 VAC) kW		
Breaking capacity in DC1: 30 / 110 / 220V A		
Minimum switching load mW(V / mA)		
Standard contact material		
Supply specifications		
Nominal voltage V AC(50 / 60Hz)	12...24	12...24
V DC	12...24 (non polarized)	12...24 (non polarized)
Rated power AC / DC mW	150	150
Operating range AC	$(0.8...1.1)U_N$	$(0.8...1.1)U_N$
DC	$(0.8...1.1)U_N$	$(0.8...1.1)U_N$
Technical data		
Specified time range	(1.5...15)s,(6...60)s,(0.8...8)min,(6.4...64)min	(1.5...15)s,(6...60)s,(0.8...8)min,(6.4...64)min
Repeatability %	± 1	± 1
Recovery time ms	≤ 150	≤ 150
Minimum control impulse ms	—	—
Setting accuracy-full range %	± 5	± 5
Electrical life at rated load in AC1 cycles	see 40, 44, 55, 60 and 62 series relays	see 40, 44, 55, 60 and 62 series relays
Ambient temperature range °C	0...+50	0...+50
Protection category	IP 20	IP 20
Approvals: (according to type)	CE GOST cULus	

ORDERING INFORMATION

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

8 6 . 0 0 . 0 . 2 4 0 . 0 0 0 0

Series

Type
0 = Multi-function (AI, DI, SW, BE, CE, DE, EE, FE)
1 = Mono-function (AI)
2 = Mono-function (DI)

No. of poles
see 40, 44, 55, 60 and 62 series relays

Supply voltage
024 = 12...24 V AC/DC (86.10/20 only)
240 = 12...240 V AC/DC (86.00 only)

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

COMBINATIONS

Number of poles	Relay type	Socket type	Timer module
1	40.31	95.03	86.10/86.20
1	40.61	95.05	86.10/86.20
2	40.52/44.52/44.62	95.05	86.10/86.20
2	55.32	94.02	86.10/86.20
2	60.12	90.02	86.00/86.10/86.20
2	62.32	92.03	86.00/86.10/86.20
3	55.33	94.03	86.10/86.20
3	60.13	90.03	86.00/86.10/86.20
3	62.33	92.03	86.00/86.10/86.20
4	55.34	94.04	86.10/86.20

TECHNICAL DATA

EMC SPECIFICATIONS

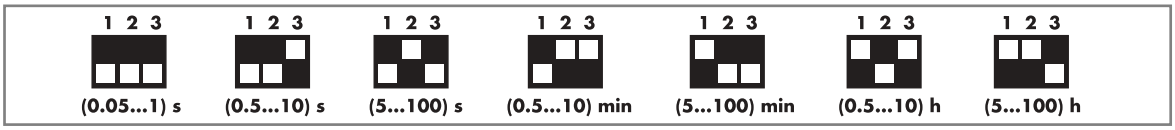
TYPE OF TEST		REFERENCE STANDARD	86.00	86.10/20
ELECTROSTATIC DISCHARGE	- contact discharge	EN 61000-4-2	4 kV	n.a.
	- air discharge	EN 61000-4-2	8 kV	8 kV
RADIO-FREQUENCY ELECTROMAGNETIC FIELD (80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m	10 V/m
FAST TRANSIENTS (burst) (5-50 ns, 5 kHz) on Supply terminals		EN 61000-4-4	2 kV	2 kV
SURGES (1.2/50 µs) on Supply terminals	- common mode	EN 61000-4-5	2 kV	2 kV
	- differential mode	EN 61000-4-5	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	86.10, 86.20
CURRENT ABSORPTION on signal control (B1)	mA	1	—
POWER LOST IN THE ENVIRONMENT			
- without contact current	W	0.1 (12 V) - 1 (230 V)	0.2
- with rated current		see 60 and 62 series relays	see 40, 44, 55, 60, 62 series relays

TIME SCALES

Type 86.00



Type 86.10
Type 86.20

NOTE: time scales and functions must be set before energising the timer.

FUNCTIONS

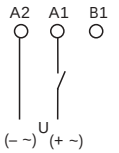
	LED Type 86.00	LED Type 86.10/20	Supply voltage	NO output contact
U = Supply Voltage S = Signal switch = Output Contact			OFF	Open
			ON	Open
			ON	Open (timing in progress)
			ON	Closed

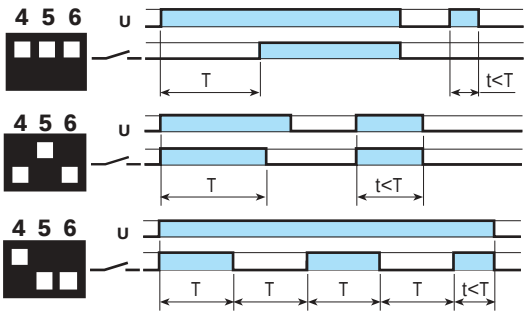
Without signal Start= Start via contact in supply line (A1).
With signal Start = Start via contact into control terminal (B1).

Type 86.00

Wiring diagram

without signal START



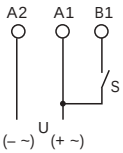


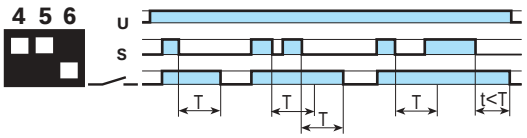
(AI) ON delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

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

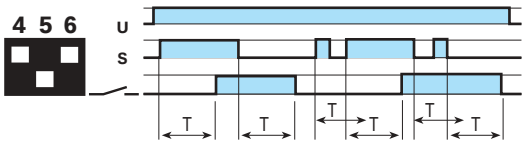
(SW) Symmetrical recycler: ON start.
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

with signal START

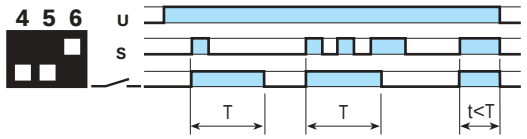




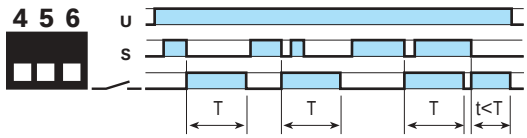
(BE) Signal OFF delay.
Power is permenently applied to the timer.
The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



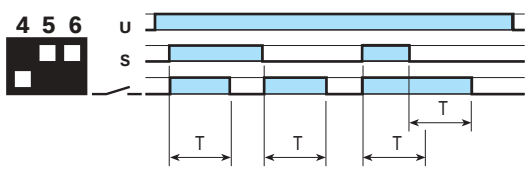
(CE) Signal ON and OFF delay.
Power is permenently applied to the timer.
Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.



(DE) Signal ON pulse.
Power is permenently 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.

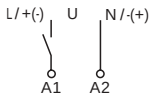


(EE) Signal OFF pulse.
Power is permenently applied to the timer.
On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

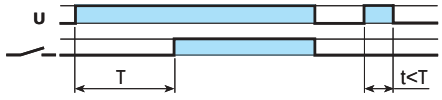


(FE) Signal ON pulse + OFF pulse.
Power is permenently applied to the timer.
Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

Wiring diagram

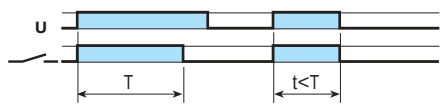


Type 86.10



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

Type 86.20



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


90.03

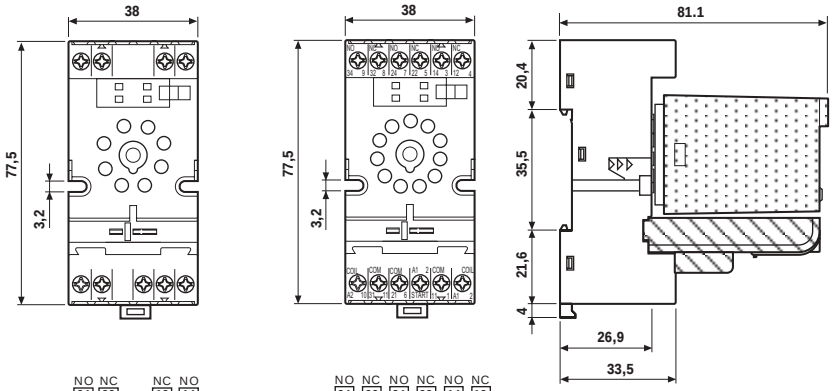
Relay type	60.12		60.13	
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount	90.02	90.02.0	90.03	90.03.0
Metal retaining clip	090.33			
Timer module	86.00, 86.10, 86.20			
6-way jumper link for 90.02 and 90.03 sockets	090.06			

Approvals (according to type):

GOST

- Double terminal A1 (for easy start connection).
- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (–40...+70)°C
- TORQUE: 0.6 Nm
- WIRE STRIP LENGTH: 10 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14



90.02 90.03


92.03

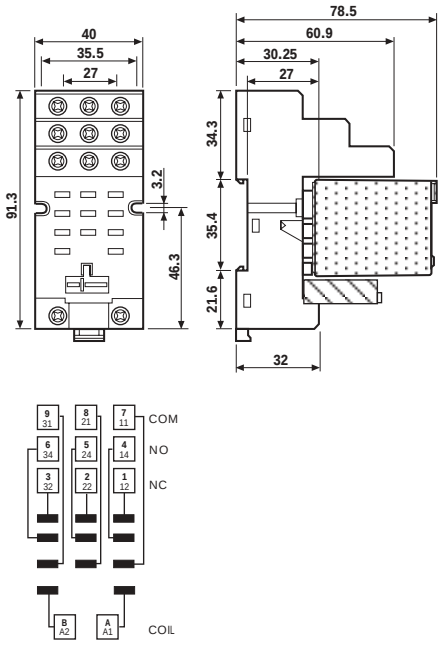
Relay type	62.32, 62.33	
Colour	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 092.71 supplied with socket packaging code SMA	92.03	92.03.0
Metal retaining clip	092.71	
Timer modules	86.00, 86.10, 86.20	

Approvals (according to type):

GOST

- RATED VALUES: 16 A - 250 V
- INSULATION: ≥ 6 kV (1.2/50µs) between coil and contacts
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.8 Nm
- WIRE STRIP LENGTH: 10 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x10 / 2x4	1x6 / 2x4
AWG	1x8 / 2x12	1x10 / 2x12



92.03


94.04

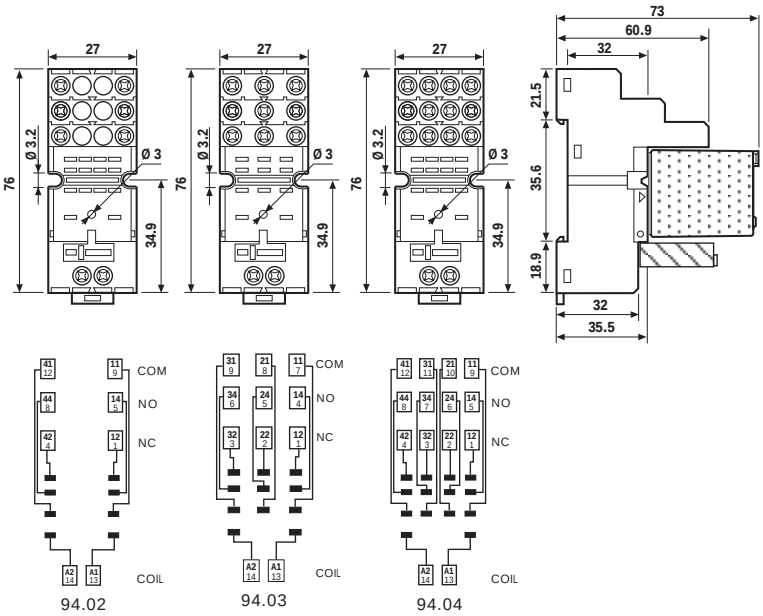
Approvals (according to type):

Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.02	94.02.0	94.03	94.03.0	94.04	94.04.0
Metal retaining clip	094.71					
Plastic retaining and release clip	094.01					
6-way jumper link for 94.02, 94.03 and 94.04 sockets	094.06	094.06.0	094.06	094.06.0	094.06	094.06.0
Identification tag	094.00.4					
Timer modules	86.10, 86.20					
Sheet of marker tags for retaining and release clip 094.01	060.72					

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 8 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14


094.01




95.05

Approvals (according to type):

Relay type	40.31		40.51, 40.52, 40.61	
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount, retaining clip 095.01 supplied with socket packaging code SPA	95.03	95.03.0	95.05	95.05.0
Plastic retaining and release clip	095.01	095.01.0	095.01	095.01.0
Metal retaining clip	095.71			
8-way jumper link for 95.03 and 95.05 sockets	095.18	095.18.0	095.18	095.18.0
Identification tag	095.00.4			
Timer modules	86.10, 86.20			

- RATED VALUES: 10 A - 250 V
  with a current >10 A, the contact terminal must be connected in parallel (21 with 11, 24 with 14, 22 with 12)
- INSULATION: ≥ 6 kV (1.2/50µs) between coil and contacts
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70) °C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 8 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14


095.01