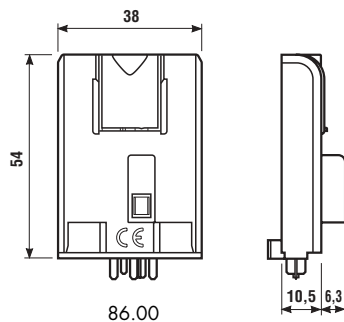
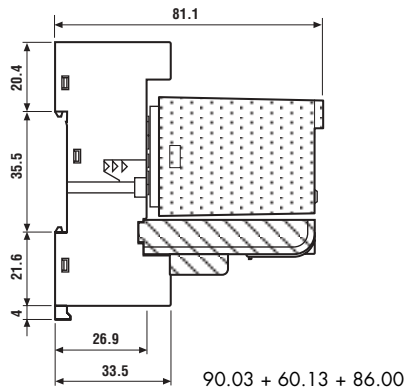


## 86.00

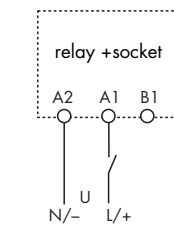
- Multi-function timer modules
- Timer module for 90 and 92 series sockets
- LED indicator



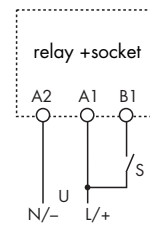
- Time scale: from 0.05s to 100 h
- Multi-function
- Plug-in for use with 90.02, 90.03 and 92.03 sockets

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

- BE:** Signal OFF delay
- CE:** Signal ON & OFF 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	
Rated current/Maximum peak current	A
Rated voltage/Maximum switching voltage V AC	
Rated load in AC1	VA
Rated load in AC15 (230 V AC)	VA
Single phase motor rating (230 V AC)	kW
Breaking capacity in DC1:	30/110/220 V A
Minimum switching load	mW (V/mA)
Standard contact material	

### Supply specifications

Nominal voltage	V AC (50/60 Hz)	12...240
	V DC	12...240
Rated power AC/DC	W	1.2
Operating range	V AC (50/60 Hz)	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
Minimum 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

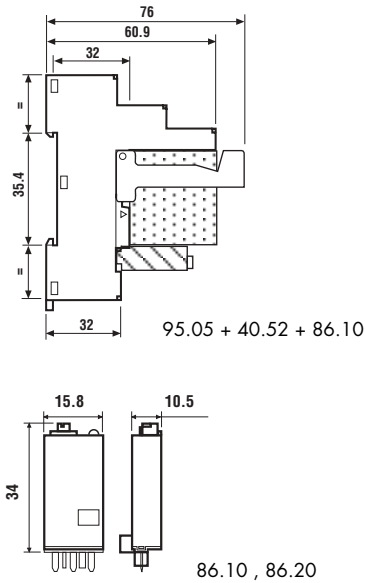
### Approvals (according to type):



see 60 and 62 series relays

Note: don't use with relay 62.3x.x012.x300 and 62.3x.x012.x600

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



## 86.10

## 86.20

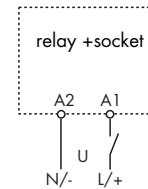
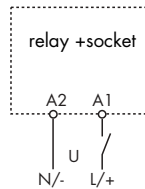


- Mono-function
- Plug-in for use with 90.02, 90.03, 92.03, 94.02, 94.03, 94.04, 95.03, 95.05 sockets

- Mono-function
- Plug-in for use with 90.02, 90.03, 92.03, 94.02, 94.03, 94.04, 95.03, 95.05 sockets

**A1:** ON delay

**D1:** ON pulse



wiring diagram  
without signal START

wiring diagram  
without signal START

### Contact specifications

Contact configuration	
Rated current/Maximum peak current	A
Rated voltage/Maximum switching voltage V AC	
Rated load in AC1	VA
Rated load in AC15 (230 V AC)	VA
Single phase motor rating (230 V AC)	kW
Breaking capacity in DC1:	30/110/220 V A
Minimum switching load	mW (V/mA)
Standard contact material	

see 40, 44, 55, 60 and 62 series relays

see 40, 44, 55, 60 and 62 series relays

### Supply specifications

Nominal voltage	V AC (50/60 Hz)	
	V DC	
Rated power AC/DC	mW	
Operating range	AC	
	DC	

12...24

12...24

12...24 (non polarized)

12...24 (non polarized)

150

150

$(0.8...1.1)U_N$

$(0.8...1.1)U_N$

$(0.8...1.1)U_N$

$(0.8...1.1)U_N$

### Technical data

Specified time range	
Repeatability	%
Recovery time	ms
Minimum control impulse	ms
Setting accuracy-full range	%
Electrical life at rated load in AC1	cycles
Ambient temperature range	°C
Protection category	

$(1.5...15)s, (6...60)s, (0.8...8)min, (6.4...64)min$

$(1.5...15)s, (6...60)s, (0.8...8)min, (6.4...64)min$

$\pm 1$

$\pm 1$

$\leq 150$

$\leq 150$

—

—

$\pm 5$

$\pm 5$

see 40, 44, 55, 60 and 62 series relays

see 40, 44, 55, 60 and 62 series relays

0...+50

0...+50

IP 20

IP 20

Approvals (according to type):



GOST



## ORDERING INFORMATION

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

<b>8</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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**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

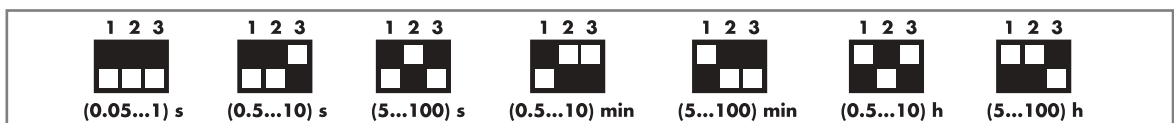
TYPE OF TEST	REFERENCE STANDARD	86.00	86.10/20	
Electrostatic discharge	- contact discharge	EN 61000-4-2	4 kV	n.a.
	- air discharge	EN 61000-4-2	8 kV	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)	EN 61000-4-3	10 V/m	10 V/m	
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals	EN 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

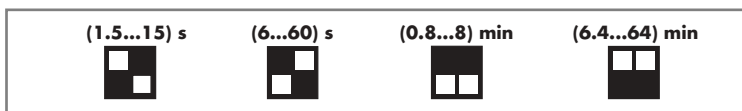
		86.00	86.10, 86.20
Current absorption on signal control (B1)	mA	1	—
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)
	with rated current		see 60 and 62 series relays

## TIME SCALES

### Type 86.00



### Type 86.10 Type 86.20



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

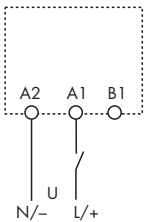
FUNCTIONS

	LED Type 86.00	LED Type 86.10/20	Supply voltage	NO output contact
<b>U</b> = Supply Voltage			OFF	Open
<b>S</b> = Signal switch			ON	Open
= Output Contact			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).

Wiring diagram

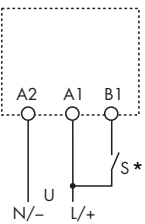
without signal START



Type 86.00

<b>4 5 6</b>		<b>(AI) ON delay.</b> Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.
<b>4 5 6</b>		<b>(DI) ON pulse.</b> Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.
<b>4 5 6</b>		<b>(SW) Symmetrical recycler: ON start.</b> 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).

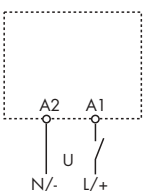
with signal START



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

<b>4 5 6</b>		<b>(BE) Signal OFF delay.</b> 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.
<b>4 5 6</b>		<b>(CE) Signal ON and OFF delay.</b> 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.
<b>4 5 6</b>		<b>(DE) Signal ON pulse.</b> 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.
<b>4 5 6</b>		<b>(EE) Signal OFF pulse.</b> 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.
<b>4 5 6</b>		<b>(FE) Signal ON pulse + OFF pulse.</b> 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



<b>Type 86.10</b>		<b>(AI) ON delay.</b> Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.
<b>Type 86.20</b>		<b>(DI) ON pulse.</b> Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



90.03

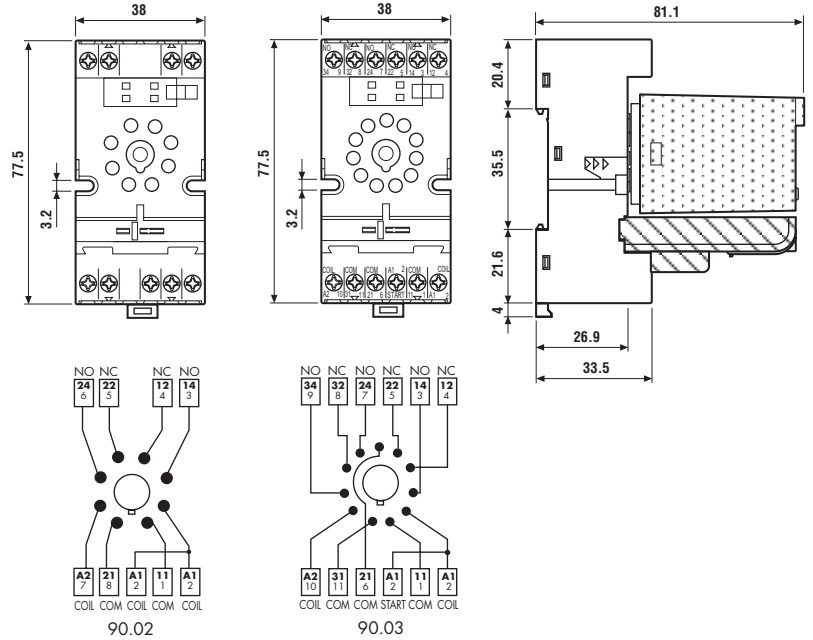
Approvals  
(according to type):



- Double terminal A1 (for easy start connection)
- Rated values: 10 A - 250 V
- Dielectric strength:  $\geq 2$  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
mm <sup>2</sup>	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14

Relay type	60.12		60.13	
	BLUE	BLACK	BLUE	BLACK
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 090.33 supplied with socket packaging code SMA	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			

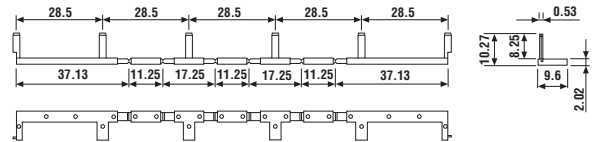


090.06

6-way jumper link	090.06
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- Rated values: 10 A - 250 V

Approvals  
(according to type):



92.03

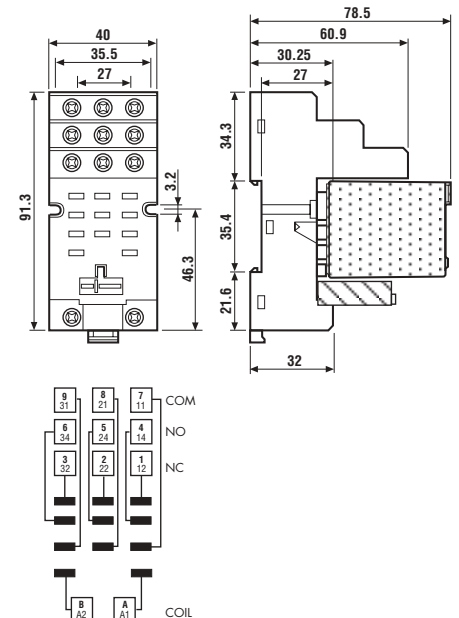
Approvals  
(according to type):



- Rated values: 16 A - 250 V
- Insulation:  $\geq 6$  kV (1.2/50 $\mu$ s) 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
mm <sup>2</sup>	1x10 / 2x4	1x6 / 2x4
AWG	1x8 / 2x12	1x10 / 2x12

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	





94.04

Approvals  
(according to type):



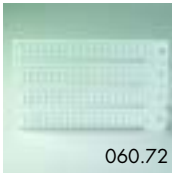
GOST

- Rated values: 10 A - 250 V
- Dielectric strength:  $\geq 2$  kV AC
- Protection category: IP 20
- Ambient temperature:  $(-40...+70)^{\circ}\text{C}$
- Screw torque: 0.5 Nm
- Wire strip length: 8 mm
- Max wire size:

	solid wire	stranded wire
mm <sup>2</sup>	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14

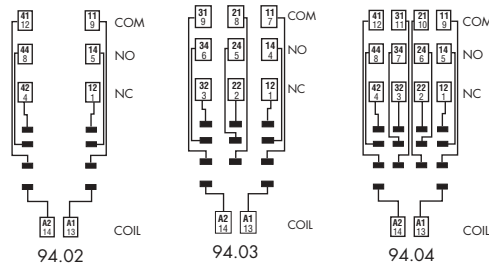
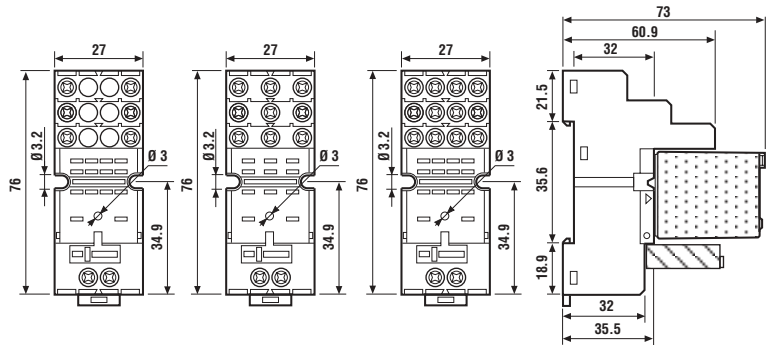


094.01



060.72

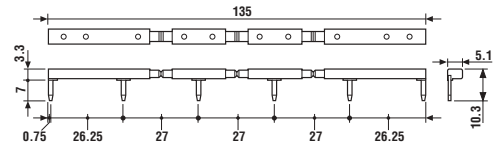
Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.02	94.02.0	94.03	94.03.0	94.04	94.04.0
Metal retaining clip	094.71					
Plastic retaining and release 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					



094.06

6-way jumper link	094.06
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- Rated values: 10 A - 250 V





95.05

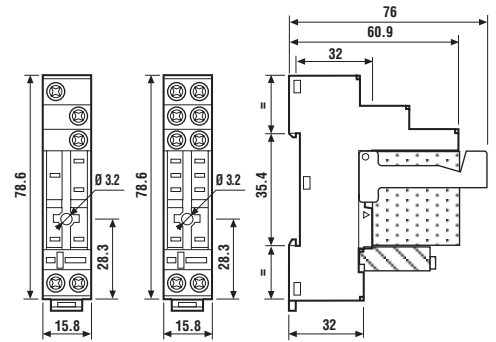
Approvals  
(according to type):



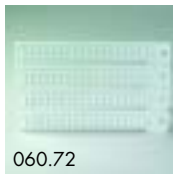
Relay type	40.31		40.51, 40.52, 40.61	
Colour	BLUE	BLACK	BLUE	BLACK
<b>Clamp terminal socket:</b> panel or 35 mm rail (EN 50022) mount, retaining clip 095.01 supplied with socket packaging code SPA	95.03	95.03.0	95.05	95.05.0
Plastic retaining and release clip	095.01	095.01.0	095.01	095.01.0
Metal retaining 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			
Sheet of marker tags for retaining and release clip 095.01	060.72			

- 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:  $\geq 6$  kV (1.2/50 $\mu$ s) 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:

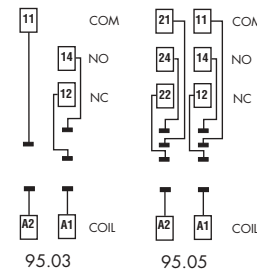
	solid wire	stranded wire
mm <sup>2</sup>	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14



095.01



060.72



095.18

8-way jumper link	095.18
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- Rated values: 10 A - 250 V

