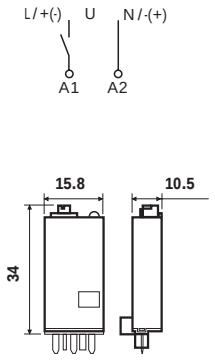
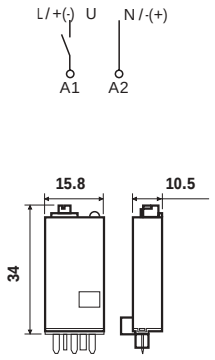
- *Mono-function timer modules*
- *Timer module for 92, 94, 95 series sockets*
- *LED indicator*

	86.10	86.20
		
	- Mono-function - Plug-in for use with 92.03 - 94.02 - 94.03 - 94.04 - 95.03 - 95.05 sockets	- Mono-function - Plug-in for use with 92.03 - 94.02 - 94.03 - 94.04 - 95.03 - 95.05 sockets
	AI: ON delay  wiring diagram	**DI:** ON pulse  wiring diagram
Contact specifications		
Contact configuration	see 40, 44, 55 and 62 series relays	see 40, 44, 55 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 and 62 series relays	see 40, 44, 55 and 62 series relays
Ambient temperature range °C	0...+50	0...+50
Protection category	IP 20	IP 20
Approvals: (according to type)	CE	

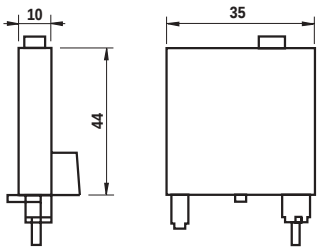
86.60

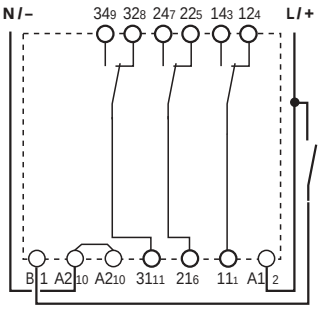
- *Multi-function timer modules*
- *Timer module for 90 series sockets*
- *LED indicator*

- Time scale: from 15ms to 10 h
- Multi-function
- Plug-in for use with 90.72 and 90.73 sockets

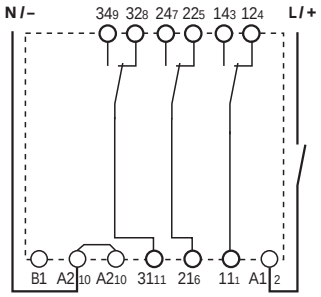
BE: Signal OFF delay
DE: Signal ON pulse
EE: Signal OFF pulse
FE: Signal ON delay + OFF pulse

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





(with signal START)



(without signal START)

wiring diagram

Contact specifications		
Contact configuration		see 60 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...90 - 110...240
	V DC	12...90 - 110...220
Rated current absorption AC / DC	mA	4.6 / 8
Operating range	AC	10.8...100 - 100...255
	DC	10.8...100 - 100...240
Technical data		
Specified time range		(15...125)ms, (0.1...1)s, (1...10)s, (0.1...1)min, (1...10)min, (0.1...1)h, (1...10)h
Repeatability	%	± 1
Recovery time	ms	≤ 120
Minimum control impulse	ms	20
Setting accuracy-full range	%	± 1
Electrical life at rated load in AC1	cycles	see 60 series relays
Ambient temperature range	°C	–20...+50
Protection category		IP 20
Approvals: (according to type)		CE cULus

ORDERING INFORMATION

Example: a 86 series mono-function timer module with (12 to 24) V AC/DC supply voltage.

8 6 . 1 0 . 0 . 0 2 4 . 0 0 0 0

Series

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

No. of poles
see 40, 41, 44, 55, 60 and 62 series relays

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

Supply voltage
024 = 12...24 V AC/DC (86.10/20 only)
100 = 12...90 V AC/DC (86.60 only)
250 = 110...220 V DC / 110...240 V AC (86.60 only)

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	62.32	92.03	86.10/86.20
3	55.33	94.03	86.10/86.20
3	62.33	92.03	86.10/86.20
4	55.34	94.04	86.10/86.20
2	60.12	90.72	86.60
3	60.13	90.73	86.60

TECHNICAL DATA

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	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

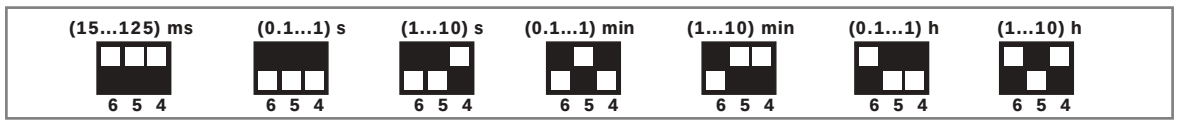
OTHER DATA

		86.10, 86.20	86.60
CURRENT ABSORPTION on signal control (B1)	mA	—	1
POWER LOST IN THE ENVIRONMENT			
- without contact current	W	0.2	0.1 (12 V) - 1 (230 V)
- with rated current		see 40, 44, 55, 62 series relays	see 60 series relays

TIME SCALES

Type 86.10
Type 86.20

Type 86.60



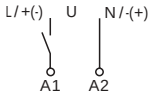
NOTE: time scales and functions must be set before energising the timer.

FUNCTIONS

	LED		Supply voltage	NO output contact
	Green (86.60 only)	Yellow		
U = Supply Voltage			OFF	Open
S = Signal switch			ON	Open
C = Output Contact			ON	Closed

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

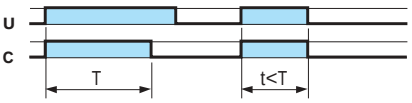
Wiring diagram



Type 86.10

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

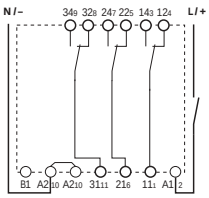
Type 86.20

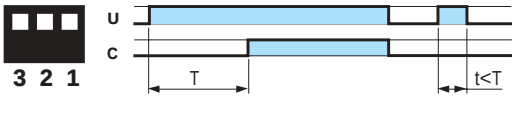


(DI) ON pulse.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

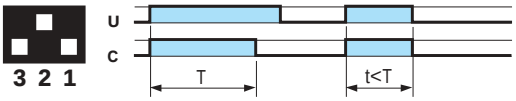
Type 86.60

without signal START

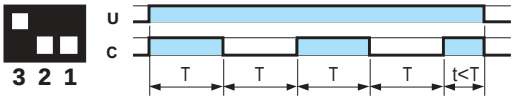




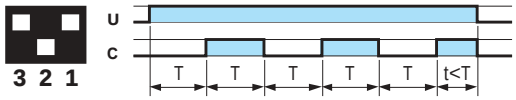
(AI) ON delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.



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

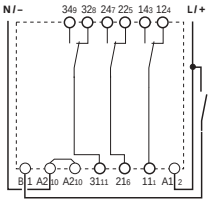


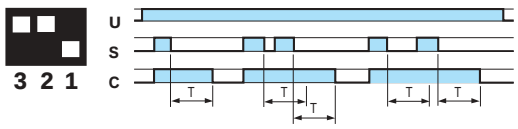
(SW) Symmetrical recycler: ON start.
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).



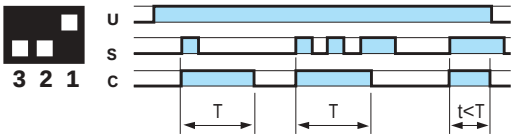
(SP) Symmetrical recycler: OFF start.
Apply power to timer. Output contacts transfer after time T has elapsed and cycle between OFF and ON for as long as power is applied. The ratio is 1:1 (time on = time off).

with signal START

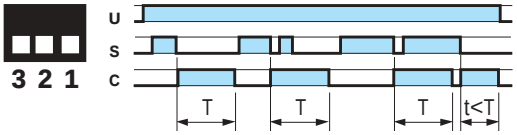




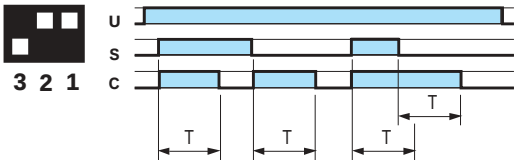
(BE) Signal OFF delay.
Power is permenently applied to the timer.
The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



(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.

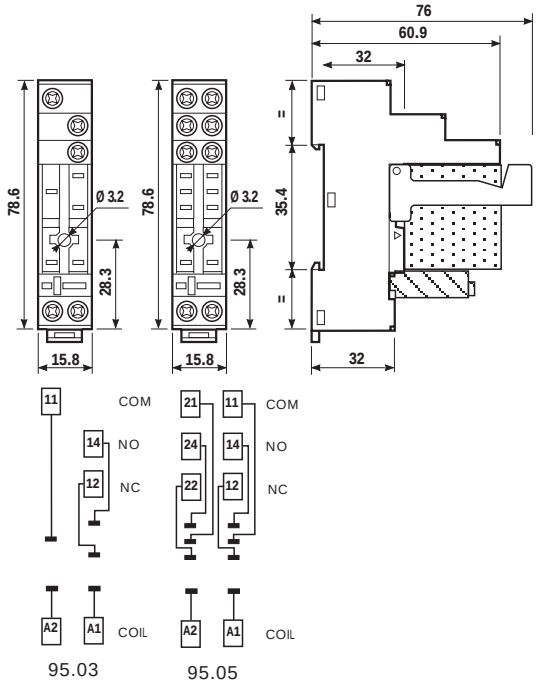
95.05

Approvals (according to type):

Relay type	40.31		40.51/52/61, 44.52/62	
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
Retaining and release clip	095.01	095.01.0	095.01	095.01.0
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
- INSULATION: ≥ 6 kV (1.2/50 µs) between coil and contacts
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (–40...+70)°C
- 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



95.03 95.05

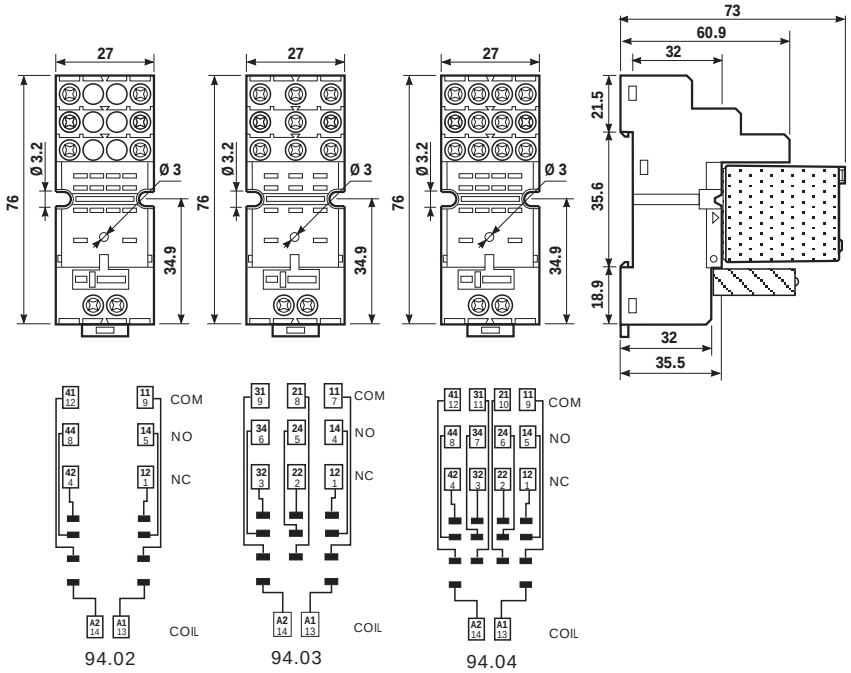
94.04

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 SPA	94.02	94.02.0	94.03	94.03.0	94.04	94.04.0
Retaining clip	094.71					
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					

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (–40...+70)°C
- TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 8 mm
- MAX WIRE SIZE: mm² - AWG

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



94.02 94.03 94.04

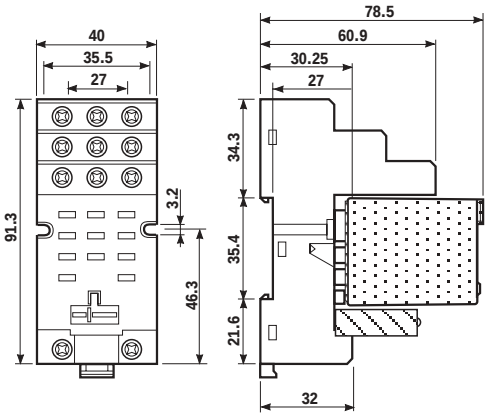

92.03

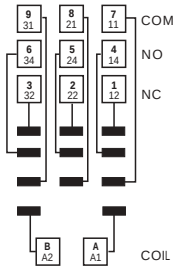
Relay type	62.32		62.33	
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount	92.03	92.03.0	92.03	92.03.0
retaining clip 092.71 supplied with socket packaging code SPA				
Retaining clip	092.71			
Timer modules	86.10, 86.20			

Approvals (according to type):

- RATED VALUES: 16 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2.5 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (–40...+70)°C
- 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

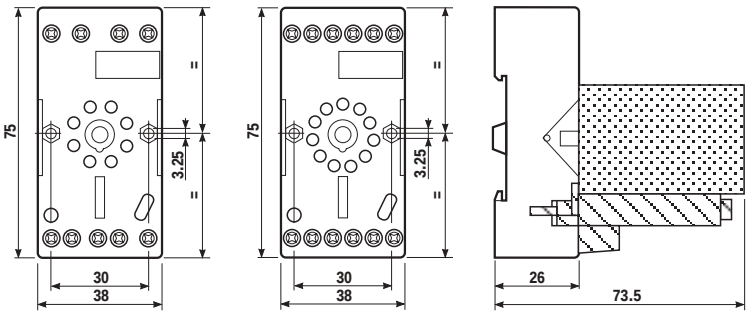

90.73

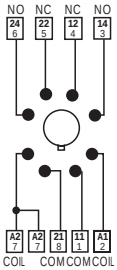
Relay type	60.12		60.13	
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount	90.72	90.72.0	90.73	90.73.0
Retaining clip	090.33			
Timer modules	86.60		86.60	

Approvals (according to type):

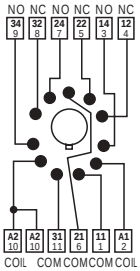
- Double ground terminal (A2).
- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (–40...+70)°C
- TORQUE: 0.8 Nm
- WIRE STRIP LENGTH: 7 mm
- MAX WIRE SIZE:

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





90.72



90.73