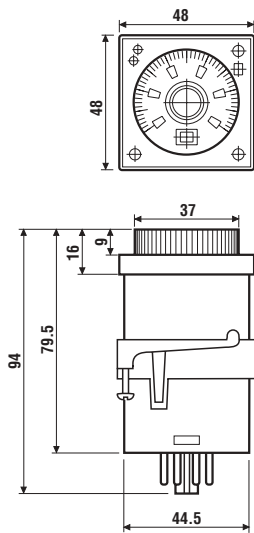


- 8 - 11 pin plug-in version available
- Multi-voltage and multi-function versions available
- Time scales from 0.05s to 100h
- "1 delayed contact + 1 instantaneous contact" version available (type 88.12)
- Front panel mount
- Sockets: 90 series



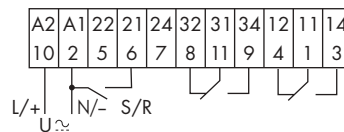
88.02



- Multi-function
- 11 pin
- Plug-in for use with 90 series sockets

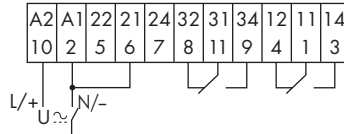
- AE:** Signal ON delay
- BE:** Signal OFF delay
- DE:** Signal ON pulse

with signal START



- AI:** ON delay
- HI:** ON pulse
- SW:** Symmetrical recycle: ON start

without signal START



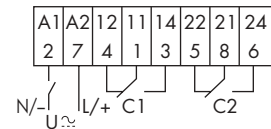
88.12



- Multi-function
- 8 pin, 2 timed contacts or 1 timed + 1 instantaneous contact
- Plug-in for use with 90 series sockets

- AI a:** ON Delay (2 timed contacts)
- AI b:** ON Delay (1 timed + 1 instantaneous contact)
- DI a:** ON Pulse (2 timed contacts)
- DI b:** ON Pulse (1 timed + 1 instantaneous contact)

without signal START



Contact specifications			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	8/15	5/10
Rated voltage/Maximum switching voltage V AC		250/250	250/400
Rated load in AC1	VA	2,000	1,250
Rated load in AC15 (230 V AC)	VA	400	250
Single phase motor rating (230 V AC)	kW	0.3	0.125
Breaking capacity in DC1:	30/110/220 V A	8/0.3/0.12	5/0.3/0.12
Minimum switching load	mW(V/mA)	300 (5/5)	500 (5/5)
Standard contact material		AgNi	AgCdO
Supply specifications			
Nominal voltage	V AC (50/60 Hz)	24...230	24...230
	V DC	24...230	24...48
Rated power AC/DC	VA (50 Hz)/W	3.5 (230 V)/1 (24 V)	9 (230 V)/1 (24 V)
Operating range	AC	20.4...264.5	20.4...264.5
	DC	20.4...264.5	20.4...55.2
Technical data			
Specified time range		(0.05s...5h) - (0.05s...10h) - (0.05s...50h) - (0.05s...100h)	
Repeatability	%	± 1	± 1
Recovery time	ms	300	200
Minimum control impulse	ms	50	—
Setting accuracy-full range	%	± 3	± 3
Electrical life at rated load in AC1	cycles	100·10 ³	100·10 ³
Ambient temperature range	°C	-10...+55	-10...+55
Protection category		IP 40	IP 40
Approvals: (according to type)		CE GOST	

ORDERING INFORMATION

Example: 88 series multi-function timer, 2 CO (DPDT) contact 8 A, with (24...230)V AC (50/60 Hz) and (24...230)V DC supply.

8 8 . 0 2 . 0 . 2 3 0 . 0 0 0 1

Series _____
Type _____
 0 = Functions AI, SW, AE, BE, DE, HI
 1 = Functions AI α, AI b, DI α, DI b
No. of poles _____
 2 = 2 pole
Supply version _____
 0 = AC (50/60 Hz)/DC

Special versions _____
 0 = Standard for type 88.12
 1 = Standard for type 88.02
Supply voltage
 230 = { (24...230)V AC (for type 88.12)
 (24...48)V DC
 230 = (24...230)V AC/DC (for type 88.02)

TECHNICAL DATA

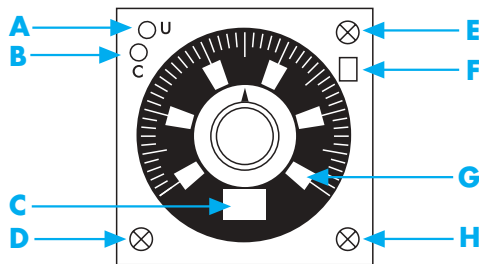
EMC SPECIFICATIONS

TYPE OF TEST		REFERENCE STANDARD	
Electrostatic discharge	- contact discharge	EN 61000-4-2	4 kV
	- air discharge	EN 61000-4-2	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals		EN 61000-4-4	2 kV/5 kV
Surges (1.2/50 µs) on Supply terminals	- common mode	EN 61000-4-5	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	3 V

TIME SCALES AND FUNCTIONS SELECTION

		88.02	88.12
E	Function selector	AE, AI, BE, DE, HI, SW	AI α, AI b, DI α, DI b
D	Time scale selector	0.5, 1, 5, 10	0.5, 1, 5, 10
H	Unit of time selector	s, min, h, 10h	s, min, h, 10h

A	Yellow LED: power ON (U)
B	Red LED: timing in progress (C)
C	Unit of time selected
F	Function selected
G	Time selected



88

TIME SCALES

END SCALE

D \ H	s	min	h	x10 h
0.5	0.5 s	0.5 min	0.5 h	5 h
1	1 s	1 min	1 h	10 h
5	5 s	5 min	5 h	50 h
10	10 s	10 min	10 h	100 h

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

FUNCTIONS

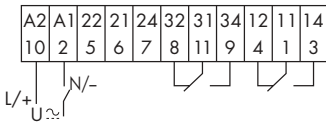
	LED (yellow)	LED (red)	Supply voltage	NO output contact	Contact	
U = Supply Voltage			OFF	Open	x1 - x4	x1 - x2
S = Signal switch			ON	Open	x1 - x4 x1 - x2	x1 - x2 x1 - x4
= Output Contact			ON	Open (timing in progress)	x1 - x4	x1 - x2
			ON	Closed	x1 - x2	x1 - x4

Without signal Start= Start via contact in supply line (A1).
 With signal Start = Start via contact into control terminal (6/21).

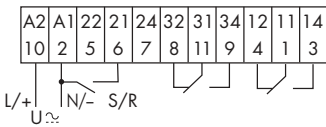
Wiring diagram

Type 88.02

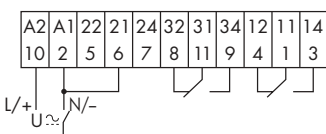
without signal START



with signal START

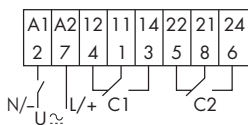


without signal START



Type 88.12

without signal START



	<p>(AI) ON delay. Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.</p>
	<p>(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).</p>
	<p>(AE) ON delay. When power is applied, the timer will function as an ON delay except when the Signal Switch (S) is closed which will force the output and the timing process into the reset condition.</p>
	<p>(BE) Signal OFF delay. 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.</p>
	<p>(DE) Signal ON pulse. 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.</p>
	<p>(HI) ON pulse. Apply power to timer. Output contacts transfer immediately. After preset time has elapsed, contacts reset.</p> <p>N.B. Ensure a fixed connection between Terminals 2 and 6.</p>

	<p>(AI a) ON Delay (2 timed contacts). Apply power to timer. Contacts (C₁ and C₂) transfer after preset time has elapsed. Reset occurs when power is removed.</p>
	<p>(AI b) ON Delay (1 timed contact + 1 instantaneous contact). Apply power to timer. Output contact (C₁) transfers immediately. Contact (C₂) transfers after the preset time has elapsed. Reset occurs when power is removed.</p>
	<p>(DI a) ON pulse (2 timed contacts). Apply power to timer. Output contacts (C₁ and C₂) transfer immediately. After preset time has elapsed, the contacts reset.</p>
	<p>(DI b) ON pulse (1 timed contact + 1 instantaneous contact). Apply power to timer. Output contacts (C₁ and C₂) transfer immediately. After preset time has elapsed, the contact (C₂) resets. Contact (C₁) resets when power is removed.</p>



90.21

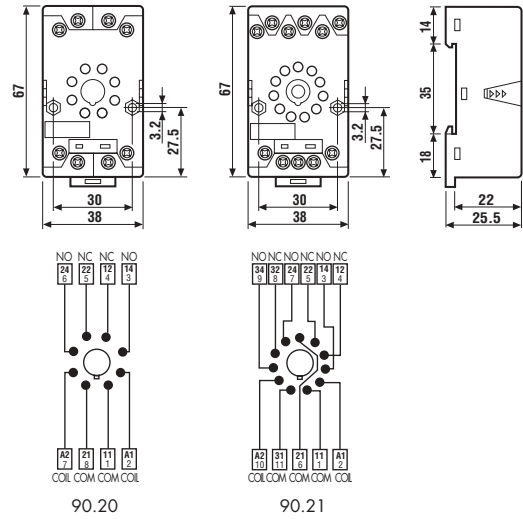
Approvals
(according to type):



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

	solid wire	stranded wire
mm ²	1x6 / 2x2.5	1x6 / 2x2.5
AWG	1x10 / 2x14	1x10 / 2x14

Timer type	88.12		88.02	
	BLUE	BLACK	BLUE	BLACK
Colour	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount	90.20	90.20.0	90.21	90.21.0



90.26

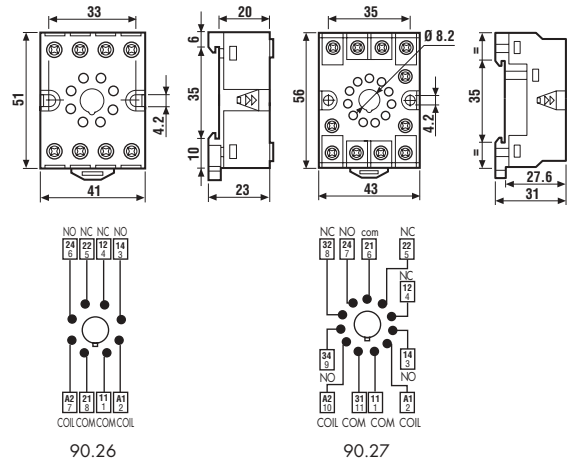
Approvals
(according to type):



- Rated values: 10 A - 250 V
- Dielectric strength: ≥ 2 kV AC
- Protection category: IP 20
- Ambient temperature: $(-40...+70)^{\circ}\text{C}$
- Torque: 0.8 Nm
- Wire strip length: 11 mm
- Max wire size:

	solid wire	stranded wire
mm ²	1x4 / 2x2.5	1x4 / 2x2.5
AWG	1x12 / 2x14	1x12 / 2x14

Timer type	88.12		88.02	
	BLUE	BLACK	BLUE	BLACK
Colour	BLUE	BLACK	BLUE	BLACK
Screw terminal socket: panel or 35 mm rail (EN 50022) mount	90.26	90.26.0	90.27	90.27.0



90.13.4

Approvals
(according to type):



- Rated values: 10 A - 250 V
- Dielectric strength: ≥ 2 kV AC
- Ambient temperature: $(-40...+70)^{\circ}\text{C}$

Timer type	88.12		88.02	
	BLUE	BLACK	BLUE	BLACK
Colour	BLUE	BLACK	BLUE	BLACK
Sockets 8-11 pin backwired with solder terminals	—	90.12.4	—	90.13.4

