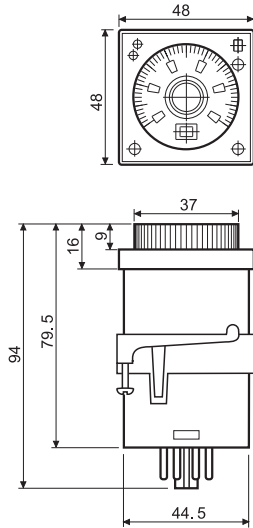


Features

Multi-voltage and multi-function timer range Front panel or socket mount

- 8 - 11 pin plug-in version available
- Time scales from 0.05s to 100h
- "1 delayed contact + 1 instantaneous contact" version available (type 88.12)
- Front panel mounting fixing included
- 90 series sockets

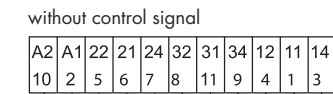


88.02

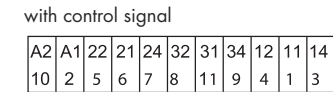


- Multi-function
- 11 pin
- Plug-in for use with 90 series sockets

- AI:** On-delay
- DI:** Interval
- GI:** Pulse delayed
- SW:** Symmetrical flasher (starting pulse on)



- BE:** Off-delay with control signal
- CE:** On- and off-delay with control signal
- DE:** Interval with control signal on



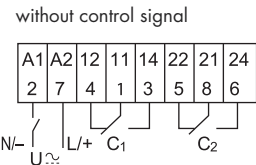
P = Pause
S = Start
R = Reset

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:** Interval (2 timed contacts)
- DI b:** Interval (1 timed + 1 instantaneous contact)
- GI:** Pulse delayed
- SW:** Symmetrical flasher (starting pulse on)



Contact specification

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 AC1	VA	2,000	1,250
Rated load AC15 (230 V AC)	VA	400	250
Single phase motor rating (230 V AC)	kW	0.3	0.125
Breaking capacity 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 specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24...230	24...230
	V DC	24...230	24...230
Rated power AC/DC	VA (50 Hz)/W	2.5 (230 V)/1 (24 V)	2.5 (230 V)/1.5 (24 V)
Operating range	V AC	20.4...264.5	20.4...264.5
	V DC	20.4...264.5	20.4...264.5

Technical data

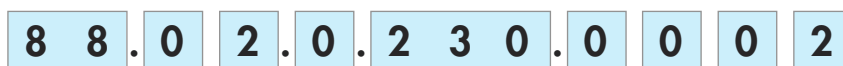
Specified time range		(0.05 s...5 h) - (0.05 s...10 h) - (0.05 s...50 h) - (0.05 s...100 h)	
Repeatability	%	± 1	± 1
Recovery time	ms	300	200
Minimum control impulse	ms	50	—
Setting accuracy-full range	%	± 3	± 3
Electrical life at rated load AC1	cycles	100·10 ³	100·10 ³
Ambient temperature range	°C	-10...+55	-10...+55
Protection category		IP 40	IP 40

Approvals (according to type)



Ordering information

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



Series _____
Type _____
 0 = Functions AI, DI, GI, SW, BE, CE, DE, 11 pin
 1 = Functions AI a, AI b, DI a, DI b, GI, SW, 8 pin
No. of poles _____
 2 = 2 pole
Supply version _____
 0 = AC (50/60 Hz)/DC

Special versions _____
 2 = Standard
Supply voltage _____
 230 = (24...230)V AC/DC

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 ÷ 1,000 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
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

Selection of: function, time scale and units

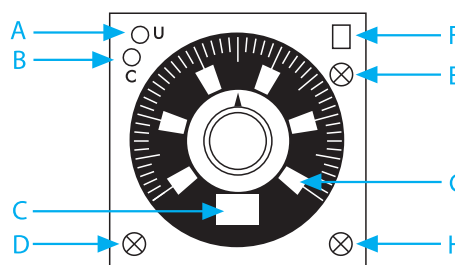
		88.02	88.12
E	Function selector	AI, DI, GI, SW, BE, CE, DE	AI a, AI b, DI a, DI b, GI, SW
D	Time scale selector	0.5, 1, 5, 10	
H	Unit of time selector	s (second), min (minute), h (hour), 10h (10 hour)	

Time scales

Full scale value

D \ H	s	min	h	x10h
0.5	0.5 second	0.5 minute	0.5 hour	5 hour
1	1 second	1 minute	1 hour	10 hour
5	5 second	5 minute	5 hour	50 hour
10	10 second	10 minute	10 hour	100 hour

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



LED/visual indication

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

Functions

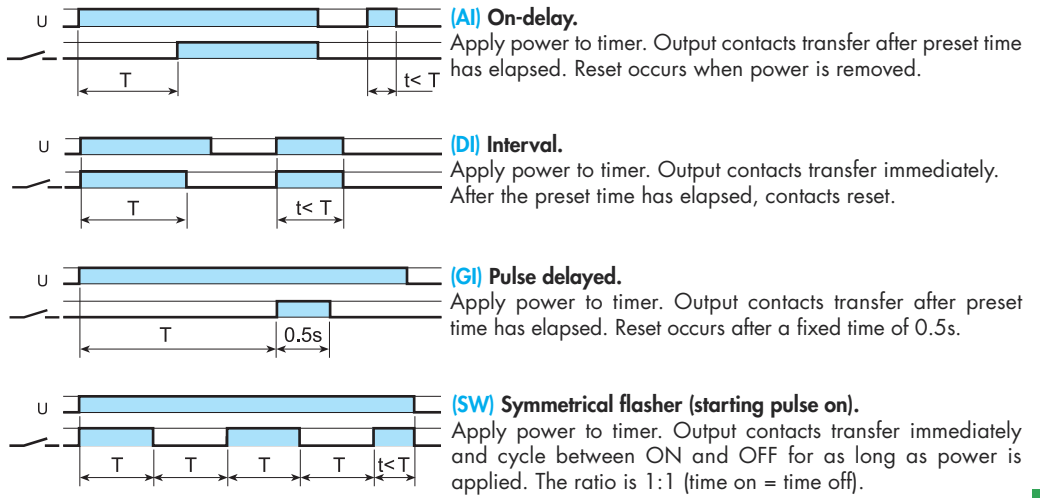
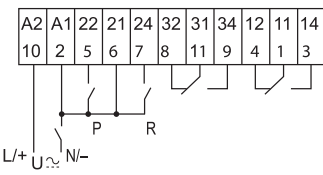
- U** = Supply Voltage
- S** = Signal switch
- P** = Pause
- R** = Reset
- = Output Contact

LED (yellow)	LED (red)	Supply voltage	NO output contact	Contact	
				Open	Closed
		OFF	Open	x1 - x4	x1 - x2
		ON	Open	x1 - x4 x1 - x2	x1 - x2 x1 - x4
		ON	Open (timing in progress)	x1 - x4	x1 - x2
		ON	Closed	x1 - x2	x1 - x4

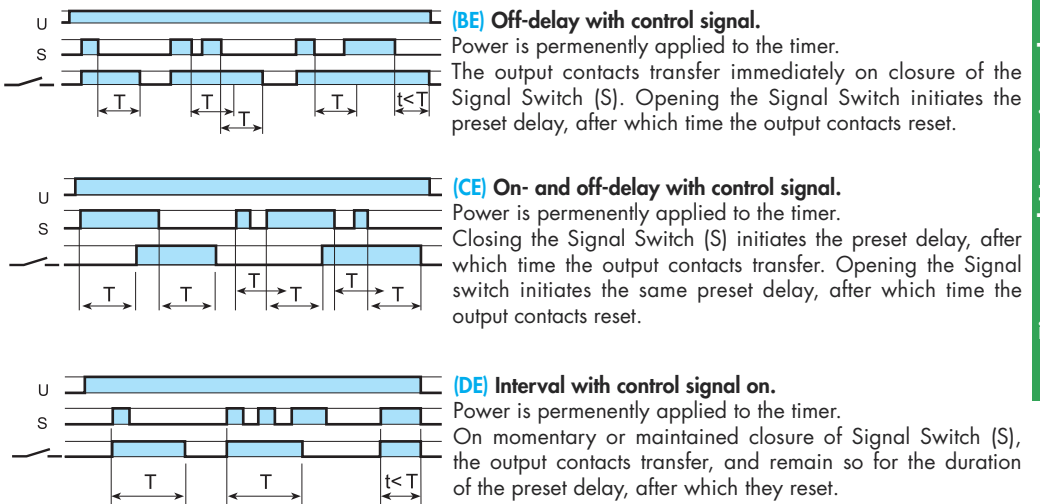
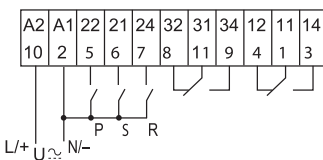
Wiring diagram

Type 88.02

without control signal



with control signal



RESET (R)

A momentary closure of the reset switch (2-7) will reset the timer. Longer term closure of the reset switch will hold the timer in the reset state. This is applicable for all functions.

PAUSE (P)

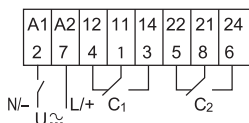
Closure of the pause switch (2-5) will immediately halt the timing process, but the elapsed time will be retained, and the current state of the output contacts will be maintained.

On opening of the pause switch, timing resumes from the retained value. This is applicable for all functions.

Functions

Wiring diagram

without control signal

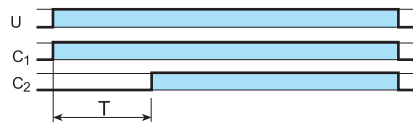


Type 88.12



(AI a) On-delay (2 timed contacts).

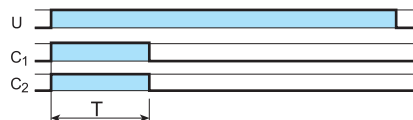
Apply power to timer.
Contacts (C₁ and C₂) transfer after preset time has elapsed.
Reset occurs when power is removed.



(AI b) On-delay

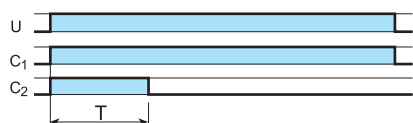
(1 timed contact + 1 instantaneous contact).

Apply power to timer. Output contact (C₁) transfers immediately.
Contact (C₂) transfers after the preset time has elapsed. Reset occurs when power is removed.



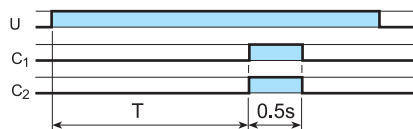
(DI a) Interval (2 timed contacts).

Apply power to timer.
Output contacts (C₁ and C₂) transfer immediately.
After preset time has elapsed, the contacts reset.



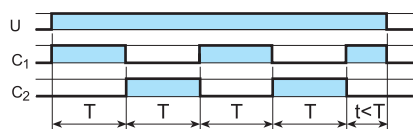
(DI b) Interval (1 timed contact + 1 instantaneous contact).

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.



(GI) Pulse delayed.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5s.



(SW) Symmetrical flasher (starting pulse on).

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).