Multi-function and mono-function timer range

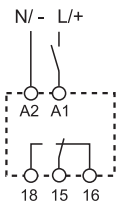
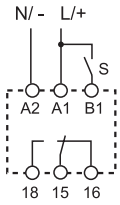
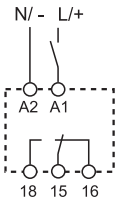
80.01 - Multi-function & multi-voltage
80.11 - On-delay, multi-voltage

- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- 35 mm rail (EN 60715) mount
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology

80.01 / 80.11
Screw terminal

For UL ratings see: "General technical information" page V

For outline drawing see page 7

	80.01	80.11
		
	• Multi-voltage • Multi-function	• Multi-voltage • Mono-function
	AI: On-delay **DI:** Interval **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	**AI:** On-delay
	 Wiring diagram (without control signal)	 Wiring diagram (with control signal)	 Wiring diagram (without control signal)

Contact specification			
Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	16/30
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	4000
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi
Supply specification			
Nominal voltage (U_N)	V AC (50/60 Hz)	12…240	24…240
	V DC	12…240	24…240
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1	< 1.8/< 1
Operating range	V AC	10.8…265	16.8…265
	V DC	10.8…265	16.8…265
Technical data			
Specified time range		(0.1…2)s, (1…20)s, (0.1…2)min, (1…20)min, (0.1…2)h, (1…24)h	
Repeatability	%	± 1	± 1
Recovery time	ms	100	100
Minimum control impulse	ms	50	—
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	$50 \cdot 10^3$	$50 \cdot 10^3$
Ambient temperature range	°C	–10…+50	–10…+50
Protection category		IP 20	IP 20
Approvals (according to type)			

H

Mono-function timer range

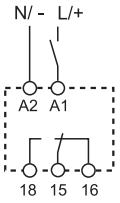
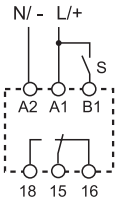
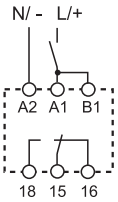
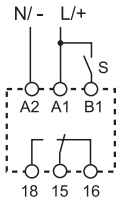
80.21 - Interval, multi-voltage
80.41 - Off-delay with control signal, multi-voltage
80.91 - Asymmetrical flasher, multi-voltage

- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- 35 mm rail (EN 60715) mount
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology

80.21 / 80.41 / 80.91
Screw terminal

For UL ratings see:
"General technical information" page V

For outline drawing see page 7

	80.21	80.41	80.91
			
	• Multi-voltage • Mono-function	• Multi-voltage • Mono-function	• Multi-voltage • Mono-function
	DI: Interval	**BE:** Off-delay with control signal	**LI:** Asymmetrical flasher (starting pulse on) **LE:** Asymmetrical flasher (starting pulse on) with control signal
			 
	Wiring diagram (without control signal)	Wiring diagram (with control signal)	Wiring diagram (without control signal) / Wiring diagram (with control signal)
Contact specification			
Contact configuration	1 CO (SPDT)	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current A	16/30	16/30	16/30
Rated voltage/ Maximum switching voltage V AC	250/400	250/400	250/400
Rated load AC1 VA	4000	4000	4000
Rated load AC15 (230 V AC) VA	750	750	750
Single phase motor rating (230 V AC) kW	0.55	0.55	0.55
Breaking capacity DC1: 30/110/220 V A	16/0.3/0.12	16/0.3/0.12	16/0.3/0.12
Minimum switching load mW (V/mA)	500 (10/5)	500 (10/5)	500 (10/5)
Standard contact material	AgNi	AgNi	AgNi
Supply specification			
Nominal voltage (U_N) V AC (50/60 Hz)	24…240	24…240	12…240
V DC	24…240	24…240	12…240
Rated power AC/DC VA (50 Hz)/W	< 1.8/< 1	< 1.8/< 1	< 1.8/< 1
Operating range V AC	16.8…265	16.8…265	10.8…265
V DC	16.8…265	16.8…265	10.8…265
Technical data			
Specified time range	(0.1…2)s, (1…20)s, (0.1…2)min, (1…20)min, (0.1…2)h, (1…24)h		
Repeatability %	± 1	± 1	± 1
Recovery time ms	100	100	100
Minimum control impulse ms	—	50	50
Setting accuracy-full range %	± 5	± 5	± 5
Electrical life at rated load in AC1 cycles	$50 \cdot 10^3$	$50 \cdot 10^3$	$50 \cdot 10^3$
Ambient temperature range °C	–10…+50	–10…+50	–10…+50
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)	CE EAC LR RINA cULus		

Multi-function and multi-voltage solid-state output timer

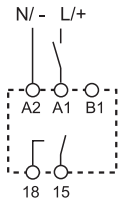
- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- 35 mm rail (EN 60715) mount
- Multi-voltage output (24…240 V AC/DC), independent from the input voltage
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage input with "PWM clever" technology

80.71
Screw terminal

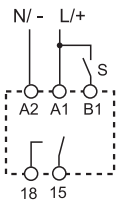
80.71

- Multi-voltage
- Multi-function

AI: On-delay
DI: Interval
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



Wiring diagram
(without control signal)



Wiring diagram
(with control signal)

For outline drawing see page 7

Output circuit		
Contact configuration		1 NO (SPST-NO)
Rated current	A	1
Rated voltage	V AC/DC	24…240
Switching voltage range	V AC/DC	19…265
Rated load AC15	A	1
Rated load DC1	A	1
Minimum switching current	mA	0.5
Max. "OFF-state" leakage current	mA	0.05
Max. "ON-state" voltage drop	V	2.8
Input circuit		
Nominal voltage (U_N)	V AC (50/60 Hz)	24…240
	V DC	24…240
Rated power	VA (50 Hz)/W	1.3/1.3
Operating range	V AC	19…265
	V DC	19…265
Technical data		
Specified time range		(0.1…2)s, (1…20)s, (0.1…2)min, (1…20)min, (0.1…2)h, (1…24)h
Repeatability	%	± 1
Recovery time	ms	100
Minimum control impulse	ms	50
Setting accuracy-full range	%	± 5
Electrical life	cycles	$100 \cdot 10^6$
Ambient temperature range	°C	–20…+50
Protection category		IP 20
Approvals (according to type)		CE EAC LR RINA

H

Mono-function timer range

80.61 - Power off-delay (True off-delay), multi-voltage

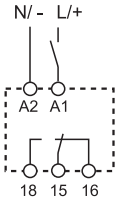
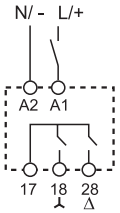
80.82 - Star-delta, multi-voltage

- 17.5 mm wide
- Rotary range selector, and timing trimmer
- Four time scales from 0.05s to 180 s (type 80.61)
- Six time scales from 0.1 s to 20min (type 80.82)
- High input/output isolation
- 35 mm rail (EN 60715) mount

80.61 / 80.82
Screw terminal

For UL ratings see:
"General technical information" page V

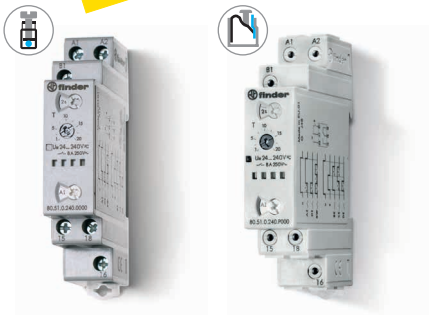
For outline drawing see page 7

	80.61	80.82
		
	• Multi-voltage • Mono-function	• Multi-voltage • Mono-function • Transfer time can be regulated (0.05…1)s
	BI: Power off-delay (True off-delay)	**SD:** Star-delta
		
	Wiring diagram (without control signal)	Wiring diagram (without control signal)
Contact specification		
Contact configuration	1 CO (SPDT)	2 NO (DPST-NO)
Rated current/Maximum peak current A	8/15	6/10
Rated voltage/ Maximum switching voltage V AC	250/400	250/400
Rated load AC1 VA	2000	1500
Rated load AC15 (230 V AC) VA	400	300
Single phase motor rating (230 V AC) kW	0.3	—
Breaking capacity DC1: 30/110/220 V A	8/0.3/0.12	6/0.2/0.12
Minimum switching load mW (V/mA)	300 (5/5)	500 (12/10)
Standard contact material	AgNi	AgNi
Supply specification		
Nominal voltage (U_N) V AC (50/60 Hz)	24…240	24…240
V DC	24…220	24…240
Rated power AC/DC VA (50 Hz)/W	< 0.6/< 0.6	< 1.3/< 0.8
Operating range V AC	16.8…265	16.8…265
V DC	16.8…242	16.8…265
Technical data		
Specified time range	(0.05…2)s, (1…16)s, (8…70)s, (50…180)s	(0.1…2)s, (1…20)s, (0.1…2)min, (1…20)min
Repeatability %	± 1	± 1
Recovery time ms	—	100
Minimum control impulse ms	500 (A1-A2)	—
Setting accuracy-full range %	± 5	± 5
Electrical life at rated load in AC1 cycles	$100 \cdot 10^3$	$60 \cdot 10^3$
Ambient temperature range °C	–10…+50	–10…+50
Protection category	IP 20	IP 20
Approvals (according to type)	CE EAC LR RINA cULus	

Multi-function and multi-voltage

- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- 35 mm rail (EN 60715) mount
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology

NEW **80.51**

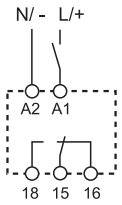


- Multi-voltage (24…240) V AC/DC
- Multi-function

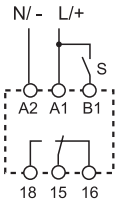
80.51.0.240.0000
Screw terminal

80.51..0.240.P000
Push-in terminal

AI: On-delay
DI: Interval
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



Wiring diagram
(without control signal)



Wiring diagram
(with control signal)

For UL ratings see:
"General technical information" page V

For outline drawing see page 7

Contact specification		
Contact configuration		1 CO (SPDT)
Rated current/Maximum peak current	A	8/16
Rated voltage/ Maximum switching voltage	V AC	250/400
Rated load AC1	VA	2000
Rated load AC15 (230 V AC)	VA	400
Single phase motor rating (230 V AC)	kW	0.3
Breaking capacity DC1: 30/110/220 V	A	8/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)
Standard contact material		AgNi
Supply specification		
Nominal voltage (U_N)	V AC (50/60 Hz)	24…240
	V DC	24…240
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1
Operating range	V AC	17…265
	V DC	17…265
Technical data		
Specified time range		(0.1…2)s, (1…20)s, (0.1…2)min, (1…20)min, (0.1…2)h, (1…24)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	$100 \cdot 10^3$
Ambient temperature range	°C	–10…+50
Protection category		IP 20
Approvals (according to type)		CE EAC cULus

Ordering information

Example: 80 series, modular timers, 1 CO (SPDT) - 16 A, supply rated at (12…240)V AC/DC.

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

Series

Type
0 = Multi-function (AI, DI, SW, BE, CE, DE)
1 = On-delay (AI)
2 = Interval (DI)
4 = Off-delay with control signal (BE)
6 = Power off-delay (True off-delay) (BI)
7 = Multi-function with solid state output (AI, DI, SW, BE, CE, DE)
8 = Star-delta (SD)
9 = Asymmetrical flasher (LI, LE)

Versions
0 = Standard
P = Push-in (only for 80.51)

Supply voltage
240 = (12…240)V AC/DC (80.01, 80.91)
240 = (24…240)V AC/DC (80.11, 80.21, 80.41, 80.51, 80.71, 80.82)
240 = (24…240)V AC, (24…220)V DC (80.61)

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

No. of poles
1 = 1 CO (SPDT)
1 = 1 NO (SPST-NO), type 80.71 only
2 = 2 NO (DPST-NO), type 80.82 only

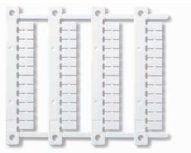
Technical data

Insulation					
Dielectric strength			**80.01/11/21/41/51/82/91**	**80.61**	**80.71**
	between input and output circuit	V AC	4000	2500	2500
	between open contacts	V AC	1000	1000	—
Insulation (1.2/50 µs) between input and output		kV	6	4	4
EMC specifications					
Type of test			**Reference standard**	**80.01/11/21/41/61/71/91**	**80.51/82**
Electrostatic discharge	contact discharge		EN 61000-4-2	4 kV	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	4 kV	4 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	4 kV	4 kV
	differential mode		EN 61000-4-5	4 kV	4 kV
on start terminal (B1)	common mode		EN 61000-4-5	4 kV	4 kV
	differential mode		EN 61000-4-5	4 kV	4 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 A
Other data					
Current absorption on signal control (B1)			< 1 mA		
Power lost to the environment	without contact current	W	1.4		
	with rated current	W	3.2		
Screw torque		Nm	0.8		
Max. wire size			solid cable	stranded cable	
		mm²	1 x 6 / 2 x 4	1 x 4 / 2 x 2.5	
		AWG	1 x 10 / 2 x 12	1 x 12 / 2 x 14	

Accessories

020.24

Sheet of marker tags, for types 80.82, plastic, 24 tags, 9 x 17 mm	020.24



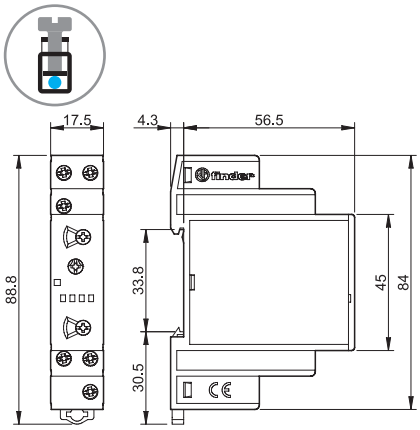
060.48

Sheet of marker tags (CEMBRE Thermal transfer printers) for relays types 80.01/11/21/41/51/61/71 (48 tags), 6 x 12 mm	060.48

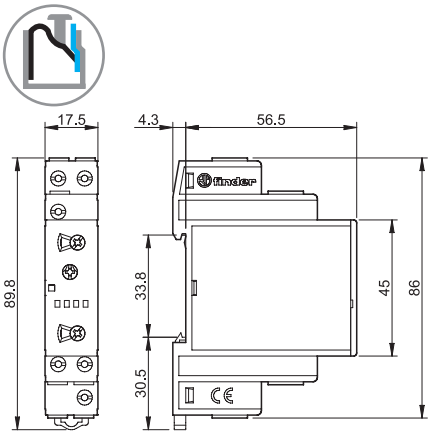
XII-2017, www.findernet.com

Outline drawings

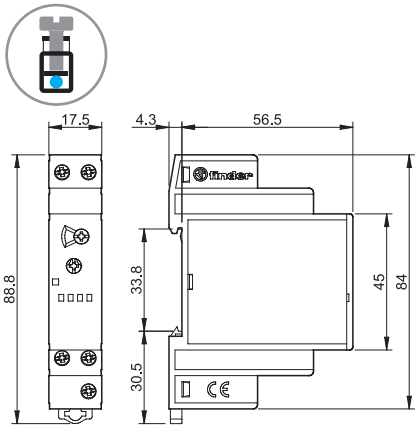
80.01/80.51
Screw terminal



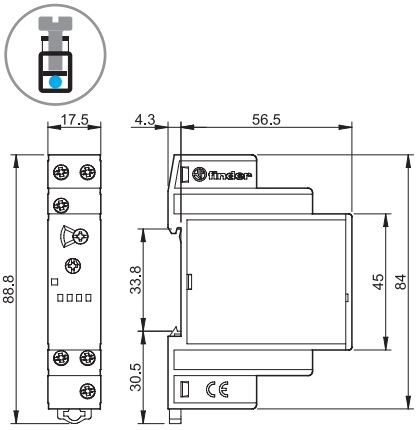
80.51
Push-in terminal



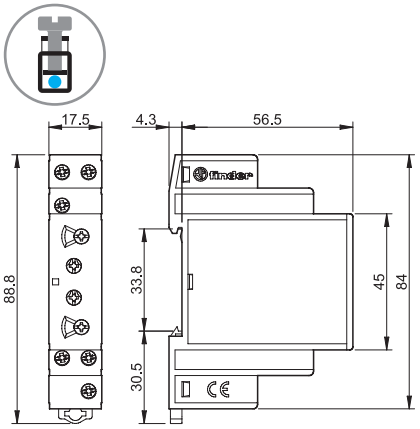
80.11/80.21/80.61
Screw terminal



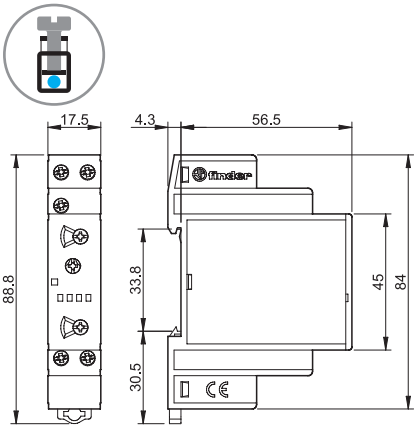
80.41
Screw terminal



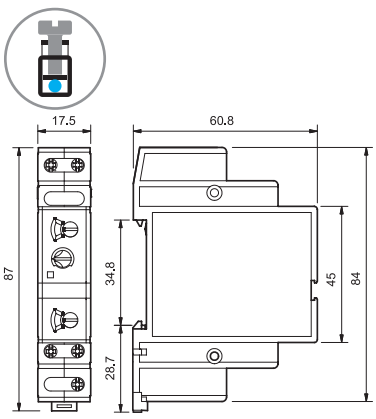
80.91
Screw terminal



80.71
Screw terminal



80.82
Screw terminal



H

Functions

U = Supply voltage

S = Signal switch

= Output contact

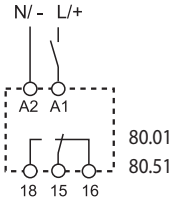
LED*	Supply voltage	NO output contact	Contacts Open	Contacts Closed
	OFF	Open	15 - 18	15 - 16
	ON	Open	15 - 18	15 - 16
	ON	Open (Timing in Progress)	15 - 18	15 - 16
	ON	Closed	15 - 16	15 - 18

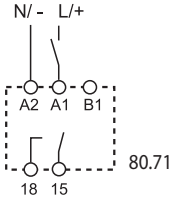
* The LED on type 80.61 is illuminated only when the supply voltage is applied to the timer; during the timing period the LED is not illuminated.

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

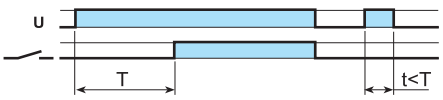
Wiring diagram

Without control signal

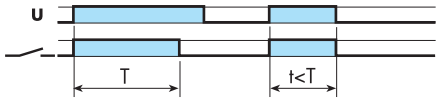




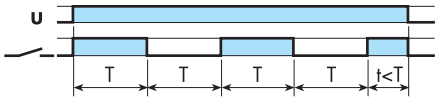
Type
80.01
80.51
80.71



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

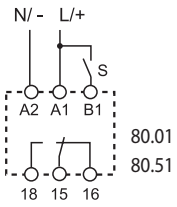


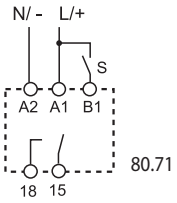
(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



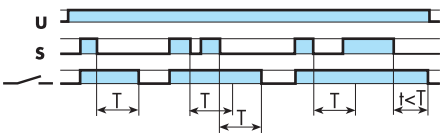
(SW) Symmetrical flasher (starting pulse on).
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

With control signal

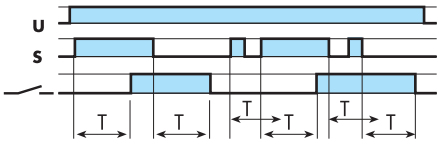




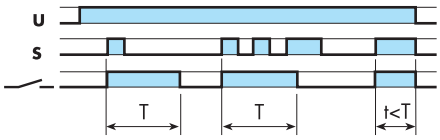
80.01
80.51
80.71



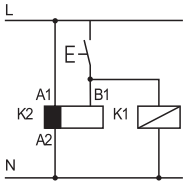
(BE) Off-delay with control signal.
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



(CE) On- and off-delay with control signal.
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.

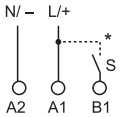


(DE) Interval with control signal on.
Power is permanently applied to the timer.
On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

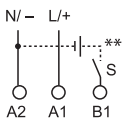


NOTE: The function must be set before energising the timer.

• Possible to control an external load, such as another relay coil or timer, connected to the control signal terminal B1.



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



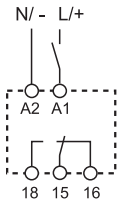
** A voltage other than the supply voltage can be applied to the command Start (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

XII-2017, www.findernet.com

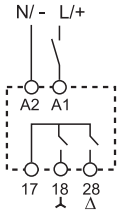
Functions

Wiring diagram

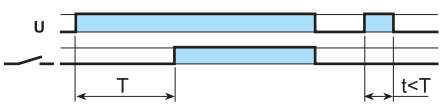
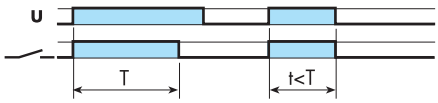
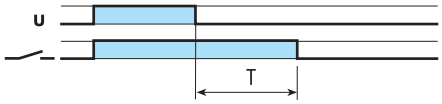
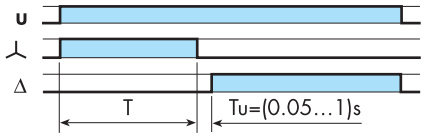
Without control signal



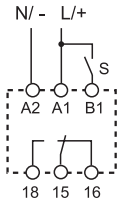
80.11/21/61



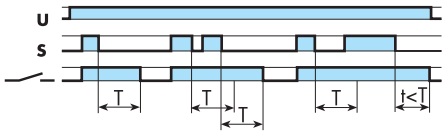
80.82

Type		
80.11		**(AI) On-delay.** Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.
80.21		**(DI) Interval.** Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.
80.61		**(BI) Power off-delay (True off-delay).** Apply power to timer (minimum 500 ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.
80.82		**(SD) Star-delta.** Apply power to timer. The star contact (人) closes immediately. After preset delay has elapsed the star contact (人) resets. After a further transfer time variable from (0.05…1)s the delta contact (Δ) closes and remains in that position, until reset on power off.

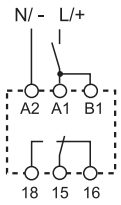
With control signal



80.41

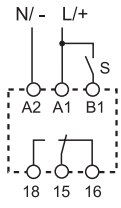
80.41		**(BE) Off-delay with control signal.** Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

Without control signal

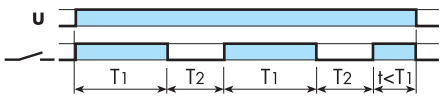
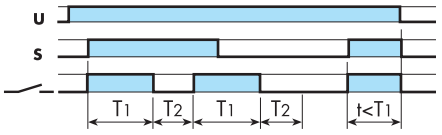


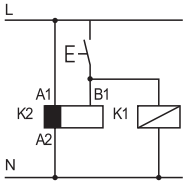
80.91

With control signal

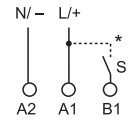


80.91

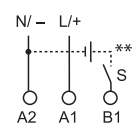
80.91		**(LI) Asymmetrical flasher (starting pulse on).** Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ON (T_1) and OFF (T_2) times are independently adjustable.
		**(LE) Asymmetrical flasher (starting pulse on) with control signal** Power is permanently applied to the timer. Closing Signal Switch (S) causes the output contacts to transfer immediately and cycle between ON (T_1) and OFF (T_2), until opened.



• Possible to control an external load, such as another relay coil or timer, connected to the control signal terminal B1.



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



** A voltage other than the supply voltage can be applied to the command Start (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

H