

FINDER'S RANGE OF DIN MOUNTED TIMERS

80 & 83 SERIES

MULTI-VOLTAGE & MULTI-FUNCTION



CARREL-ELECTRADE LTD

not just products... solutions!

Proudly 100% New Zealand owned and operated

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Carrel-Electrade Ltd is the new force in Electrical Control and Automation in New Zealand. As manufacturers, importers and distributors of electrical equipment the company has more than 60 years of history and experience behind it, cementing its status as one of New Zealand's major suppliers of specialised electrical measuring and control equipment to industry.

The company maintains long-standing values such as service, dependability and reliability coupled with flair, ingenuity and innovation. We believe our advantage is our innovation and manufacturing flexibility on demand.

Our range of products provide customers with cost effective solutions from the not so difficult to the most complex problems, and services both broad industry and the power supply/power generation sectors.

Carrel-Electrade Ltd is New Zealand's only manufacturer of analogue panel instruments, timber moisture meters and electrical transducers.

Our T Series and LP Series electrical transducers, as with all products we manufacture, have been designed to meet the requirements of international standards and meticulous attention is paid to the quality and robustness of the units.

The latest range of "intelligent" transducers feature the ability to communicate directly with PLC's, computers and SCADA systems.

Our design and development team has wide experience in analogue and digital circuitry and we specialise in measuring and monitoring electrical systems.

In addition to standard products we work closely with end users to develop specialised measuring equipment to meet specific needs. These projects may involve the adaptation of standard products, or completely new designs. When coupled with the experience and expertise of our technical and sales staff and our national distribution network with warehouses in Auckland and Christchurch, Carrel-Electrade Ltd truly offer...

not just products... solutions!



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Features

Mono-function and multi-function timer range

83.62 - Power off-delay, multi-voltage, 2 Pole

83.82 - Star-Delta, multi-voltage, star and delta output contacts

83.91 - Asymmetrical flasher, multi-voltage, 1 Pole

- 22.5 mm wide
- Time scales:
Type 83.62 - 0.05s to 3 minutes
Type 83.82 / 83.91 - 0.05 s to 10 days
- Wide supply range (24...240)V AC / DC
- 35 mm rail (EN 60715) mount

- * (0.05...2)s, (1...16)s, (8...70)s, (50...180)s
- ** (0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d
- *** 0.05 s, 0.2 s, 0.3 s, 0.45 s, 0.6 s, 0.75 s, 0.85 s, 1 s

For outline drawing see page 5

Contact specification

Contact configuration	2 CO (DPDT)	2 NO (DPST-NO)	1 CO (SPDT)
Rated current/Maximum peak current A	8/15	16/30	16/30
Rated voltage/Maximum switching voltage V AC	250/400	250/400	250/400
Rated load AC1 VA	2,000	4,000	4,000
Rated load AC15 (230 V AC) VA	400	750	750
Single phase motor rating (230 V AC) kW	0.3	0.5	0.5
Breaking capacity DC1: 30/110/220 V A	8/0.3/0.12	16/0.3/0.12	16/0.3/0.12
Minimum switching load mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material	AgNi	AgNi	AgNi

Supply specification




Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240	24...240
	V DC	24...220	24...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 1.5 / < 2	< 1.5 / < 2	< 1.5 / < 2
Operating range	V AC	16.8...265	16.8...265	16.8...265
	V DC	16.8...242	16.8...265	16.8...265

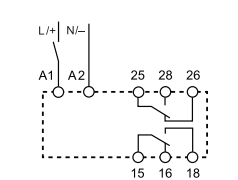
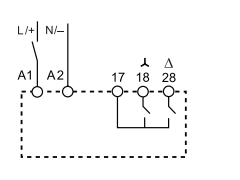
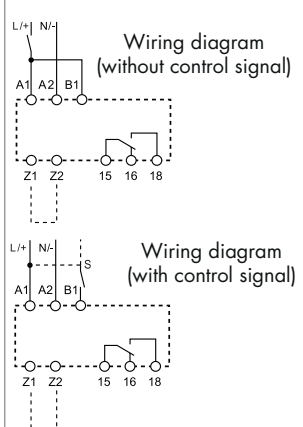
Technical data

Specified time range		*	**
Repeatability %		± 1	± 1
Recovery time ms		—	200
Minimum control impulse ms		500 ms (A1 - A2)	50
Setting accuracy-full range %		± 5	± 5
Electrical life at rated load in AC1 cycles		100·10 ³	50·10 ³
Ambient temperature range °C		-20...+60	-20...+60
Protection category		IP 20	IP 20

Approvals (according to type)



<p>83.62</p>  <p>• Multi-voltage • Mono-function • 2 pole</p>	<p>83.82</p>  <p>• Multi-voltage • Mono-function • 2 pole • Transfer time can be regulated (0.05...1)s ***</p>	<p>83.91</p>  <p>• Multi-voltage • Multi-function</p>
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<p>BI: Power off-delay (True off-delay)</p>  <p>Wiring diagram (without control signal)</p>	<p>SD: Star-delta</p>  <p>Wiring diagram (without control signal)</p>	<p>LI: Asymmetrical flasher (starting pulse on) LE: Asymmetrical flasher (starting pulse on) with control signal PI: Asymmetrical flasher (starting pulse off) PE: Asymmetrical flasher (starting pulse off) with control signal</p>  <p>Wiring diagram (without control signal)</p> <p>Wiring diagram (with control signal)</p>
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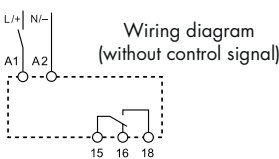
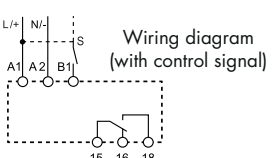
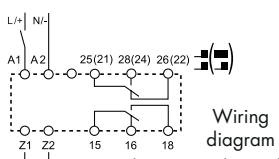
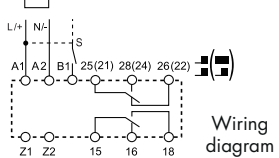
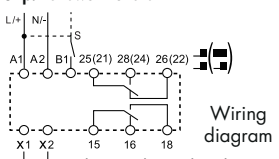
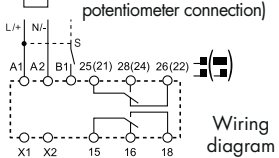
Features

Multi-function timer range

- 83.01 - Multi-function & multi-voltage, 1 Pole
- 83.02 - Multi-function & multi-voltage, 2 Pole (timed + instantaneous options), external time setting potentiometer option
- 83.52 - Multi-function & multi-voltage, 2 Pole (timed + instantaneous options), external time setting potentiometer option, pause function option

- 22.5 mm wide
- Eight time scales from 0.05s to 10 days
- High input/output isolation
- Wide supply range (24...240)V AC/DC
- 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
- Multi-voltage versions with "PWM clever" technology

For outline drawing see page 5

	83.01	83.02	83.52
	 <ul style="list-style-type: none"> • Multi-voltage • Multi-function 	 <ul style="list-style-type: none"> • Multi-voltage • Multi-function • Timing can be regulated using ext. Potentiometer • 2 timed contacts or 1 timed + 1 instantaneous contact 	 <ul style="list-style-type: none"> • Multi-voltage • Multi-function • Timing can be regulated using ext. Potentiometer • 2 timed contacts or 1 timed + 1 instantaneous contact • 3 functions with pause option
	<p>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 WD: Watchdog (Retriggerable interval with control signal on)</p>	<p>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 WD: Watchdog (Retriggerable interval with control signal on)</p>	<p>AE: On-delay with control signal Eea: Interval with control signal off (retriggerable) FE: Interval with control signal on and off GE: Pulse delayed with control signal on IT: Timing step BEp: Off-delay with control signal and pause signal DEp: Interval with control signal on and pause signal SHp: "Shower" function</p>
	<p>Wiring diagram (without control signal)</p>  <p>Wiring diagram (with control signal)</p> 	<p>Wiring diagram (without control signal)</p>  <p>Wiring diagram (with control signal)</p> 	<p>Wiring diagram (with control signal and external potentiometer connection)</p>  <p>Wiring diagram (with control signal and pause signal)</p> 
Contact specification			
Contact configuration	1 CO (SPDT)	2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A 16/30	A 12/30	A 12/30
Rated voltage/Maximum switching voltage V AC	250/400	250/400	250/400
Rated load AC1	VA 4,000	VA 3,000	VA 3,000
Rated load AC15 (230 V AC)	VA 750	VA 750	VA 750
Single phase motor rating (230 V AC)	kW 0.5	kW 0.5	kW 0.5
Breaking capacity DC1: 30/110/220 V	A 16/0.3/0.12	A 12/0.3/0.12	A 12/0.3/0.12
Minimum switching load	mW (V/mA) 300 (5/5)	mW (V/mA) 300 (5/5)	mW (V/mA) 300 (5/5)
Standard contact material	AgNi	AgNi	AgNi
Supply specification			
Nominal voltage (U _N)	V AC (50/60 Hz) 24...240	V AC (50/60 Hz) 24...240	V AC (50/60 Hz) 24...240
	V DC 24...240	V DC 24...240	V DC 24...240
Rated power AC/DC	VA (50 Hz)/W < 1.5 / < 2	VA (50 Hz)/W < 2 / < 2	VA (50 Hz)/W < 2 / < 2
Operating range	V AC 16.8...265	V AC 16.8...265	V AC 16.8...265
	V DC 16.8...265	V DC 16.8...265	V DC 16.8...265
Technical data			
Specified time range	(0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d		
Repeatability	% ± 1	% ± 1	% ± 1
Recovery time	ms 200	ms 200	ms 200
Minimum control impulse	ms 50	ms 50	ms 50
Setting accuracy-full range	% ± 5	% ± 5	% ± 5
Electrical life at rated load in AC1	cycles 50·10 ³	cycles 60·10 ³	cycles 60·10 ³
Ambient temperature range	°C -20...+60	°C -20...+60	°C -20...+60
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)			

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Accessories



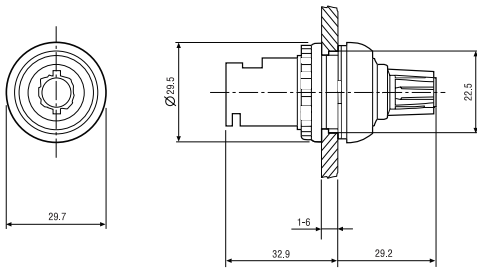
060.72

Sheet of marker tags, for types 83.01/11/21/41/62/82, plastic, 72 tags, 6x12 mm	060.72
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087.02.2

Potentiometer usable as external potentiometer for type 83.02/52 10 kΩ / 0.25 W linear, IP66	087.02.2
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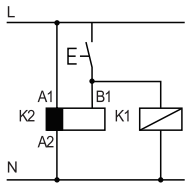


Functions

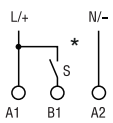


LED*	Supply voltage	NO output contact	Contacts	
			Open	Closed
	OFF	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open (Timing in Progress)	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Closed	15 - 16 25 - 26	15 - 18 25 - 28

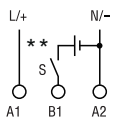
* The LED on type 83.62 is illuminated when supply voltage is supplied to timer.



• 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 control signal (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

Ordering information

Example: 83 series, modular timers, 1 CO (SPDT) - 16 A, supply rated at (24...240)V AC/DC.

8 3 . 0 1 . 0 . 2 4 0 . 0 0 0 0

Series

Type

- 0 = Multi-function (AI, DI, GI, SW, BE, CE, DE, WD)
 1 = On-delay (AI)
 2 = Interval (DI)
 4 = Off-delay with control signal (BE)
 5 = Multi-function (AE, EEa, FE, GE, IT, BEp, DEp, SHp)
 6 = Power off-delay (True off-delay) (BI)
 8 = Star-delta (SD)
 9 = Asymmetrical flasher (LI, LE, PI, PE)

Versions

0000 = Standard

Supply voltage

240 = (24 ... 240)V AC/DC

Supply version

0 = AC (50/60 Hz)/DC

No. of poles

1 = 1 CO (SPDT)

2 = 2 CO (DPDT) for 83.02, 83.52 and 83.62

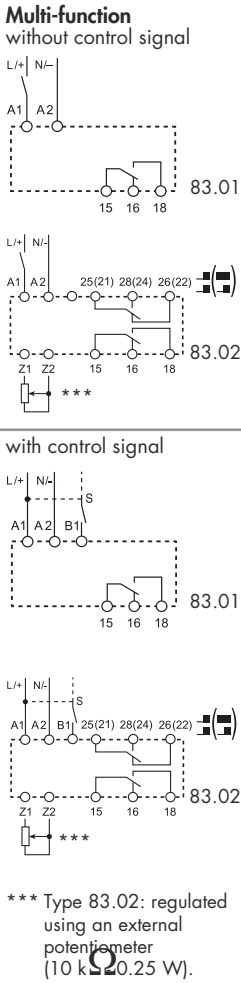
2 = 2 NO (DPST-NO) for 83.82

Technical data

Insulation					
Dielectric strength	between input and output circuit	V AC	4,000		
	between open contacts	V AC	1,000		
Insulation (1.2/50 µs) between input and output		kV	6		
EMC specifications					
Type of test		Reference standard	83.01/02/52/11/21/41/82/91	83.62	
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 ÷ 1,000 MHz)	EN 61000-4-3	10 V/m	10 V/m	
	(1,000 ÷ 2,700 MHz)	EN 61000-4-3	3 V/m	3 V/m	
Fast transients (burst) (5-50 ns, 5 and 100 kHz)	on Supply terminals	EN 61000-4-4	7 kV	6 kV	
	on control signal terminal (B1)	EN 61000-4-4	7 kV	6 kV	
Surges (1.2/50 µs) on Supply terminals	common mode	EN 61000-4-5	6 kV	6 kV	
	differential mode	EN 61000-4-5	6 kV	4 kV	
	on control signal terminal (B1)	common mode	EN 61000-4-5	6 kV	6 kV
		differential mode	EN 61000-4-5	4 kV	4 kV
Radio-frequency common mode	(0.15 ÷ 80 MHz)	EN 61000-4-6	10 V	10 V	
	on Supply terminals (80 ÷ 230 MHz)	EN 61000-4-6	10 V	10 V	
Radiated and conducted emission		EN 55022	class A	class A	
Other data					
Current absorption on control signal (B1)			< 1 mA		
	- max cable length (capacity of ≤ 0 nF / 100 m)		150 m		
	- when applying a control signal to B1, which is different from the supply voltage at A1/A2		B1 is isolated from A1 and A2 by an opto-coupler, and can therefore be operated at a voltage other than the supply voltage. If using a control signal of between (24... 48)V DC and a supply voltage of (24...240)V AC, ensure that the signal – is connected to A2 and the + is applied to B1, and that L is applied to B1 and N to A2.		
External potentiometer for 83.02/52			Use a 10 k Ω , 25 W linear potentiometer. Maximum cable length 10 m. When using an external potentiometer, the timer automatically use its setting in place of the internal setting. Consider the voltage potential at the potentiometer to be the same as the timer supply voltage.		
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	
		mm ²	1x6 / 2x4	1x4 / 2x2.5	
		AWG	1x10 / 2x12	1x12 / 2x14	

Functions

Wiring diagram



U = Supply voltage S = Signal switch — = Output contact

<p>Type 83.01</p>	<p>(AI) On-delay. Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.</p> <p>(DI) Interval. Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.</p> <p>(GI) Pulse delayed. Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5s.</p> <p>(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).</p>
<p>Type 83.02</p>	<p>(BE) Off-delay with control signal. Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.</p> <p>(CE) On- and off-delay with control signal. Power is permanently applied to the timer. Closing the control signal (S) initiates the preset delay, after which time the output contacts transfer. Opening the control signal initiates the same preset delay, after which time the output contacts reset.</p> <p>(DE) Interval with control signal on. Power is permanently applied to the timer. On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.</p> <p>(WD) Watchdog (Retriggerable interval with control signal on). Power is permanently applied to the timer. On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset; subsequent closures of control signal during the delay will extend the time. If the closure of the control signal (S) is longer than the preset time (T) then the output contacts reset.</p>

NOTE: The timing function must be set when the timer is de-energised. Or for the 83.02/52, when the contact mode selector is in the OFF position.

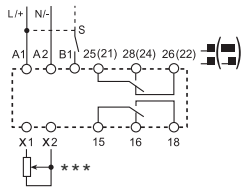
83.02 type

Contact mode selector	Functions without control signal (example: AI)	Functions with control signal (example: BE)
<p>2 timed contacts</p>	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>
<p>OFF</p>	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>
<p>1 timed + 1 instantaneous contact</p>	<p>The output contact 15-18 follows the timing function The output contact 21-24 follows the power supply (U)</p>	<p>The output contact 15-18 follows the timing function The output contact 21-24 follows the control signal (S)</p>

Functions

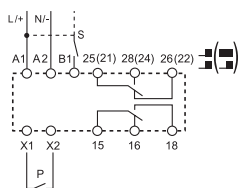
Wiring diagram

Multi-function with control signal



*** Regulated using an external potentiometer (10 kΩ 20.25 W).

with control signal and pause signal



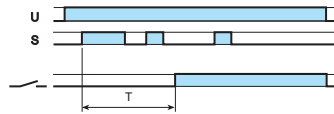
Type 83.52

U = Supply voltage

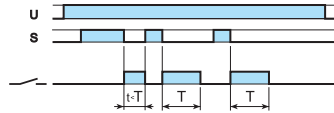
S = Signal switch

P = Pause switch

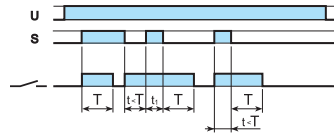
— = Output contact



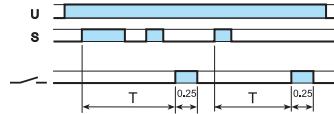
(AE) On-delay with control signal.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which times the output contacts transfer and remain so until the power is removed.



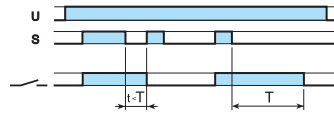
(EEa) Interval with control signal off (retriggerable).
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.



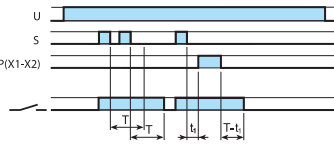
(FE) Interval with control signal on and off.
Power is permanently applied to the timer. Both the opening and the closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the preset delay has elapsed.



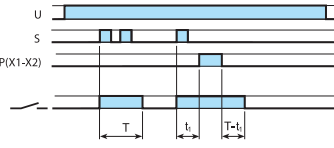
(GE) Pulse delayed with control signal on.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which the output contacts transfer. Reset occurs after a fixed time of 0.25s.



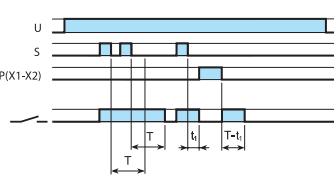
(IT) Timing step.
Closing the Signal Switch (S) the output contacts transfer and remain so, after S opening, for the duration of the preset delay, after which they reset. During the timing period it is possible to immediately open the contact with a further impulse on S.



(BEp) Off-delay with control signal and pause 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 the output contacts reset. Closure of the pause switch (X1-X2) will immediately halt the timing process, but the elapsed time will be retained. The current state of the output contacts will be maintained. On opening of the pause switch, timing resumes from the retained value.



(DEp) Interval with control signal on and pause signal.
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. Closure of the pause switch (X1-X2) will immediately halt the timing process, but the elapsed time will be retained. The current state of the output contacts will be maintained. On opening of the pause switch, timing resumes from the retained value.



(SHp) "Shower" function (Off-delay with control signal and pause 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 the output contacts reset. Closure of the pause switch (X1-X2) will immediately halt the timing process, but the elapsed time will be retained. During the pause, the output contacts 15-18 and 25-28 will be open. On opening of the pause switch, timing resumes from the retained value and the output contacts will take the previous condition.

83.52 type

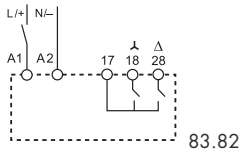
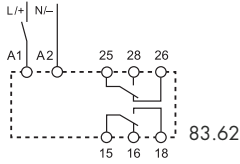
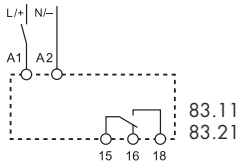
Contact mode selector	Functions with control signal and pause signal (example: BEp)	Function SHp
2 timed contacts 	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>
OFF 	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>
1 timed + 1 instantaneous contact 	<p>The output contact 15-18 follows the timing function The output contact 21-24 follows the control signal (S)</p>	<p>The output contact 15-18 follows the timing function. The output contact 21-24 is always open, unless during the pause, when is closed</p>

Functions

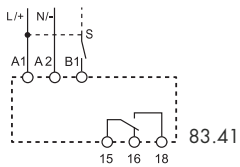
Wiring diagram

Mono-function

without control signal

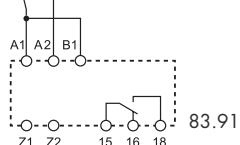


with control signal (S)



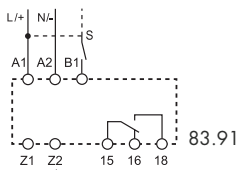
Asymmetrical recycler

without control signal



Z1-Z2 open: (LI) function
Z1-Z2 linked: (PI) function

with control signal



Z1-Z2 open: (LE) function
Z1-Z2 linked: (PE) function

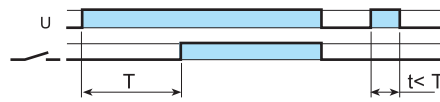
U = Supply voltage

S = Signal switch

— = Output contact

Type

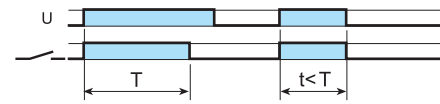
83.11



(AI) On-delay.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

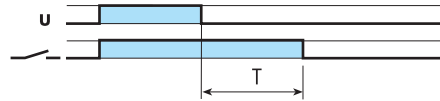
83.21



(DI) Interval.

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

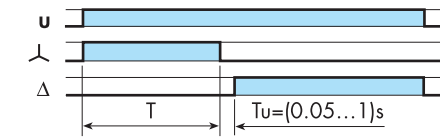
83.62



(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.

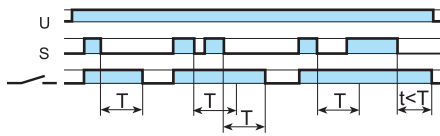
83.82



(SD) Star-delta.

Apply power to timer. The star contact (λ) closes immediately. After preset delay has elapsed the star contact (λ) resets. After a further time (settable from 0.05s to 1s) the delta contact (Δ) closes and remains in that position, until reset on power off.

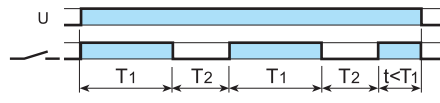
83.41



(BE) Off-delay with control signal.

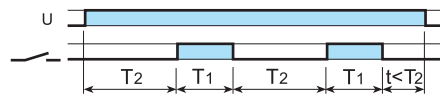
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.

83.91



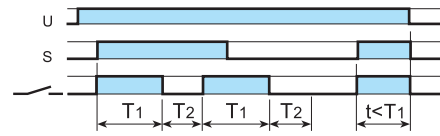
(LI) Asymmetrical flasher (starting pulse on) - (Z1-Z2 open).

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ON and OFF times are independently adjustable.



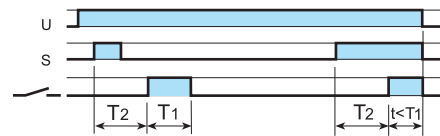
(PI) Asymmetrical flasher (starting pulse off) - (Z1-Z2 linked).

Apply power to timer. Output contacts transfer after time T1 has elapsed and cycle between OFF and ON for as long as power is applied. The ON and OFF times are independently adjustable.



(LE) Asymmetrical flasher (starting pulse on) with control signal - (Z1-Z2 open).

Power is permanently applied to the timer. Closing control signal (S) causes the output contacts to transfer immediately and cycle between ON and OFF, until opened.



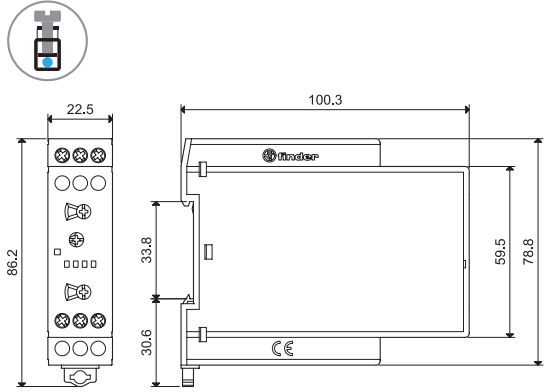
(PE) Asymmetrical flasher (starting pulse off) with control signal - (Z1-Z2 linked).

Power is permanently applied to the timer. Closing the control signal (S) initiates delay T1 after which the output contacts transfer and continue to cycle between OFF and ON, until the control signal is opened.

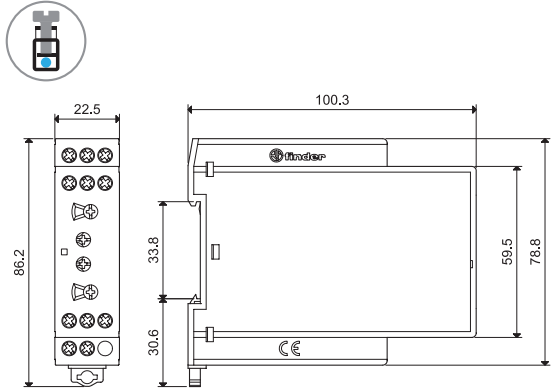


Outline drawings

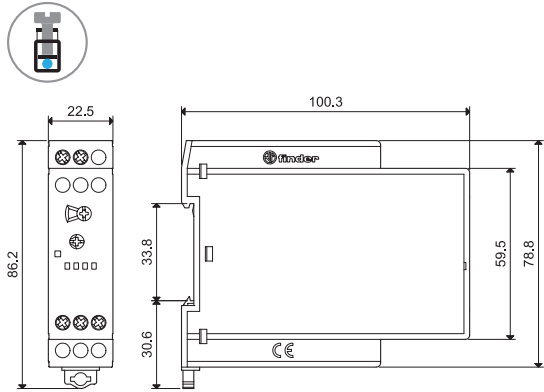
83.01
Screw terminal



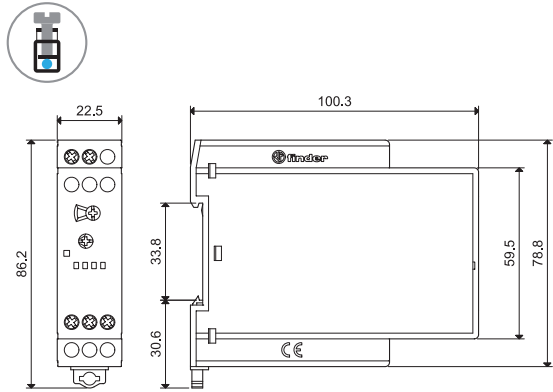
83.02/52
Screw terminal



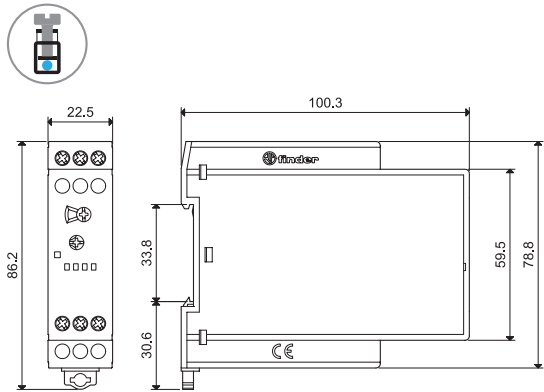
83.11
Screw terminal



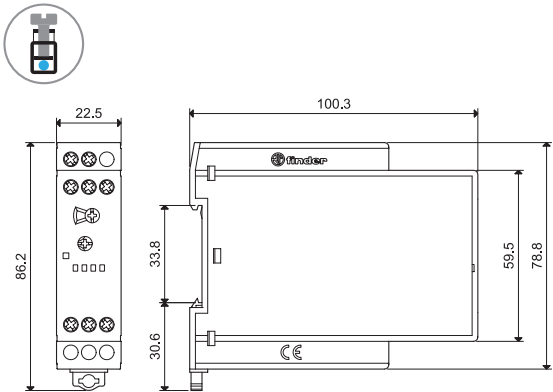
83.21
Screw terminal



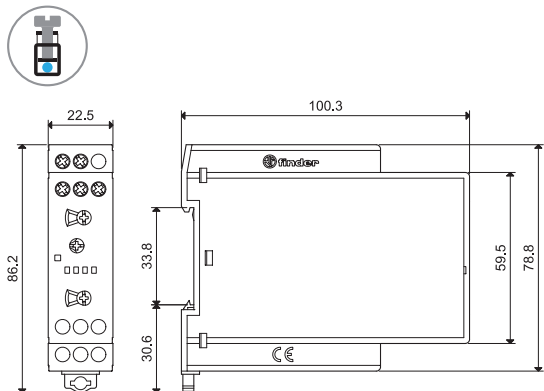
83.41
Screw terminal



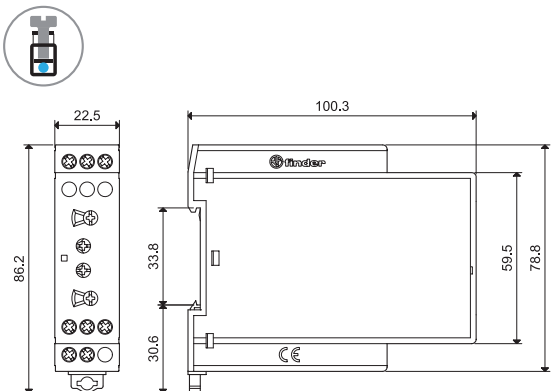
83.62
Screw terminal



83.82
Screw terminal



83.91
Screw terminal



Features

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 3 min (type 80.61)
- Six time scales from 0.1s 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 6

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	2,000	1,500
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	100·10 ³	60·10 ³
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 20	IP 20

Approvals (according to type)





80.61

- Multi-voltage
- Mono-function

BI: Power off-delay (True off-delay)



Wiring diagram
(without control signal)



80.82

- Multi-voltage
- Mono-function
- Transfer time can be regulated (0.05...1)s

SD: Star-delta



Wiring diagram
(without control signal)

Features

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 0.1s to 24h
- 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 6

	80.21	80.41	80.91
	<ul style="list-style-type: none"> • Multi-voltage • Mono-function 	<ul style="list-style-type: none"> • Multi-voltage • Mono-function 	<ul style="list-style-type: none"> • 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	4,000	4,000	4,000
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	AgCdO	AgCdO	AgCdO
Supply specification			
Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...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
	V DC	16.8...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	± 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	50·10 ³	50·10 ³	50·10 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	PG
			UL
			RINA
			UL US

Features

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



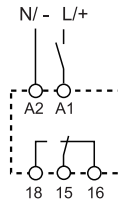
FOR UL RATINGS SEE:
"General technical information" page **V**

For outline drawing see page 6

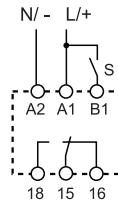


- Multi-voltage
- Multi-function

- 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)

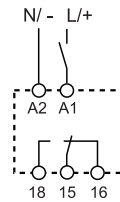


Wiring diagram
(with control signal)



- Multi-voltage
- Mono-function

- AI:** On-delay



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	4,000	4,000
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	AgCdO	AgCdO

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	50·10 ³	50·10 ³
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 20	IP 20

Approvals (according to type)



Functions

U = Supply voltage

S = Signal switch

— = Output contact

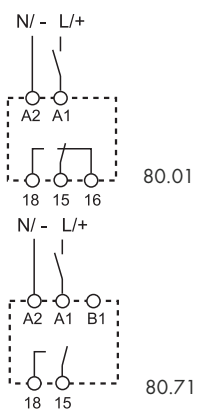
LED*	Supply voltage	NO output contact	Contacts	
			Open	Closed
	OFF	Open	15 - 18	15 - 16
	ON	Open	15 - 18	15 - 16
	ON	Open (Timing in Progress)	15 - 18	15 - 16
	ON	Closed	15 - 16	15 - 18

* 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.

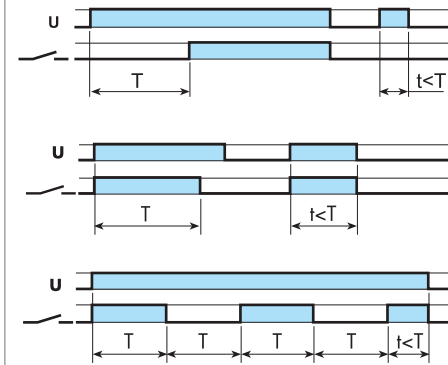
Wiring diagram

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

Without control signal



Type
80.01
80.71

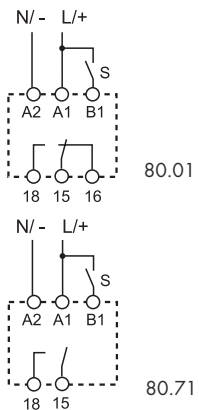


(AI) On-delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

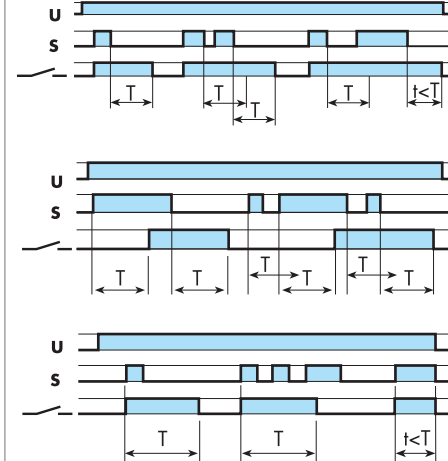
(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

(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
80.71



(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.

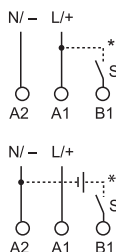
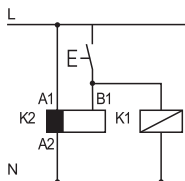
(DE) Interval with control signal on.
Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

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.

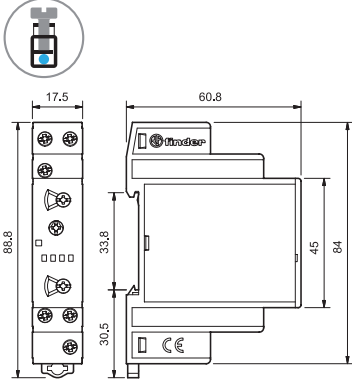
* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).

** 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

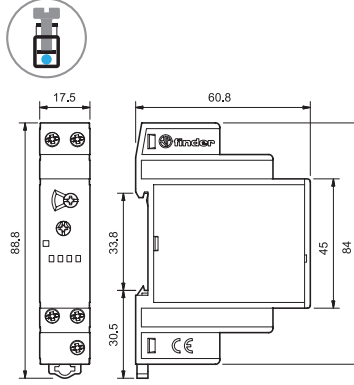


Outline drawings

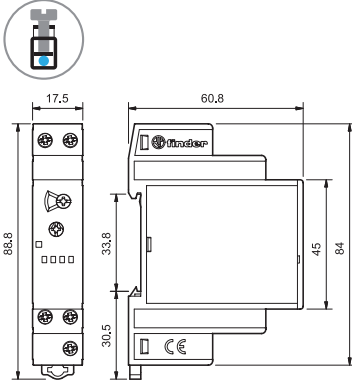
80.01
Screw terminal



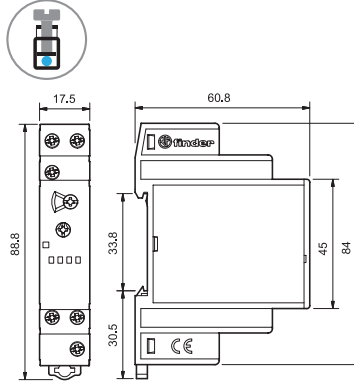
80.11
Screw terminal



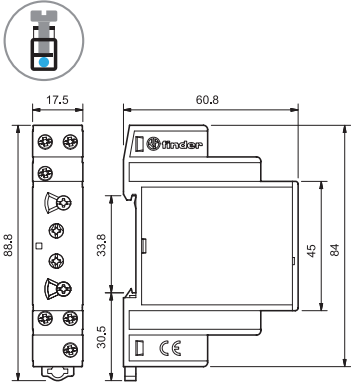
80.21
Screw terminal



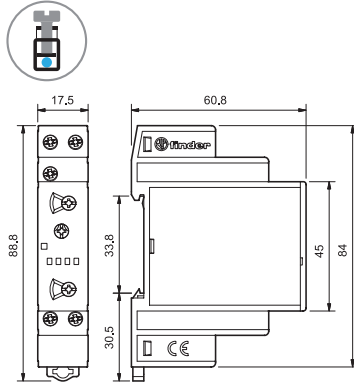
80.41
Screw terminal



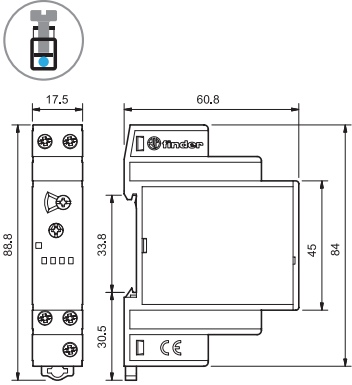
80.91
Screw terminal



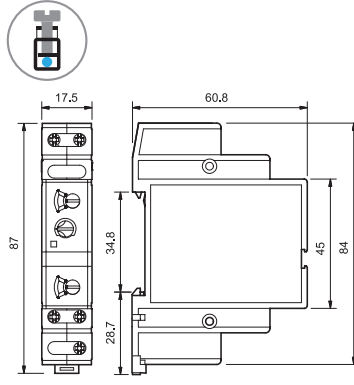
80.71
Screw terminal



80.61
Screw terminal



80.82
Screw terminal



H

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

Supply voltage

- 240 = (12 ... 240)V AC/DC (80.01, 80.91)
- 240 = (24 ... 240)V AC/DC (80.11, 80.21, 80.41, 80.71, 80.82)
- 240 = (24...240)V AC, (24...220)V DC (80.61)

Supply version

0 = AC (50/60 Hz)/DC

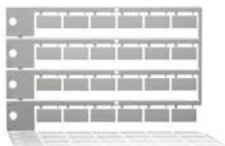
No. of poles

- 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			80.01/11/21/41/82/91	80.61	80.71
	between input and output circuit	V AC	4,000	2,500	2,500
	between open contacts	V AC	1,000	1,000	—
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	80.82
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 ÷ 1,000 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	
		mm ²	1x6 / 2x4	1x4 / 2x2.5	
		AWG	1x10 / 2x12	1x12 / 2x14	

Accessories



Sheet of marker tags, for types 80.82, plastic, 24 tags, 9x17 mm

020.24

020.24



Sheet of marker tags, for types 80.01/11/21/41/61/71, plastic, 72 tags, 6x12 mm

060.72

060.72

