Panel heaters

Type 7H.51.0.230.0025
- Heating power 25 W

Type 7H.51.0.230.0050
- Heating power 50 W

- Nominal voltage (110...230)V AC/DC
- Safe touch
- PTC resistor, self regulating heating system
- Clip for 35 mm rail (EN 60715) mount

7H.51.0025/0050
Screw terminal

	7H.51.0.230.0025	7H.51.0.230.0050
		
	• Heating power 25 W • Nominal voltage (110…230)V AC/DC • Safe touch	• Heating power 50 W • Nominal voltage (110…230)V AC/DC • Safe touch

* At 20°C ambient temperature
** Except upper protection grille

For outline drawings see page 7

Heating specification			
Heating power *	W	25	50
Heater		PTC resistor, self-regulating heating system	
Surface temperature**	°C	≤ 100	≤ 100
Housing		Plastic according to UL94 – V0, black	
Supply specification			
Nominal voltage (U_N)	V AC (50/60 Hz)/DC	110…230	110…230
Rated current	A	0.13	0.20
Operating range	V AC/DC	88…253	88…253
Technical data			
Radiator		Alluminium profile	
Electrical connection		Screw terminals	
Fitting position		Vertical	
Ambient temperature	°C	–45…+50	–45…+50
Protection category		IP 20	IP 20
Approvals (according to type)		CE EAC cULus	

Panel heaters

Type 7H.51.0.230.0100
- Heating power 100 W

Type 7H.51.0.230.0150
- Heating power 150 W

- Nominal voltage (110...230)V AC/DC
- Safe touch
- PTC self regulating heating system
- Clip for 35 mm rail (EN 60715) mount

7H.51.0100/0150
Screw terminal

		7H.51.0.230.0100	7H.51.0.230.0150
			
		• Heating power 100 W • Nominal voltage (110…230)V AC/DC • Safe touch	• Heating power 150 W • Nominal voltage (110…230)V AC/DC • Safe touch
* At 20°C ambient temperature ** Except upper protection grille For outline drawings see page 8			
Heating specification			
Heating power *	W	100	150
Heater		PTC resistor, self-regulating heating system	
Surface temperature**	°C	≤ 80	≤ 80
Housing		Plastic according to UL94 – V0, black	
Supply specification			
Nominal voltage (U_N)	V AC (50/60 Hz)/DC	110…230	110…230
Rated current	A	0.45	0.70
Operating range	V AC/DC	88…253	88…253
Technical data			
Radiator		Alluminium profile	
Electrical connection		Screw terminals	
Fitting position		Vertical	
Ambient temperature	°C	–45…+50	–45…+50
Protection category		IP 20	IP 20
Approvals (according to type)		CE EAC cULus	

Panel heaters fan assisted

Type 7H.51.8.xxx.0250
- Heating power 250 W

Type 7H.51.8.xxx.0400
- Heating power 400 W

- Nominal voltage 120 or 230 V AC
- Safe touch
- PTC resistor, self regulating heating system
- Fast wiring terminals
- Clip for 35 mm rail (EN 60715) mount

7H.51.0250/0400
Push-in terminal

NEW **7H.51.8.xxx.0250**

- Heating power 250 W
- Nominal voltage 120 or 230 V AC
- Fan assisted

NEW **7H.51.8.xxx.0400**

- Heating power 400 W
- Nominal voltage 120 or 230 V AC
- Fan assisted

* At 20°C ambient temperature
** Except upper protection grille

For outline drawings see page 8

Heating specification					
Heating power *	W	250		400	
Heater		PTC resistor, self-regulating heating system			
Surface temperature**	°C	≤ 30		≤ 30	
Air flow rate	m^3/h	30			
Fan - Life time at 25 °C	h	50 000		50 000	
Housing		Plastic according to UL94 – V0, black			
Supply specification					
Nominal voltage (U_N)	V AC (50/60 Hz)	120	230	120	230
Rated current	A	2	1	3	1.7
Operating range	V AC	98…132	184…253	98…132	184…253
Technical data					
Radiator		Alluminium profile			
Electrical connection		Screwless terminal			
Fitting position		Vertical			
Ambient temperature	°C	-40…+50		-40…+50	
Protection category		IP 20		IP 20	
Approvals (according to type)		CE EAC cULus			

Ordering information

Example: 7H series, Panel heaters, heating power 50 W, 110…230 V AC/DC.

7	H	.	5	1	.	0	.	2	3	0	.	0	0	5	0

Series

Type
51 = Panel heaters safe touch

Supply version
0 = AC (50/60 Hz)/DC
8 = AC (50/60 Hz) only fan assisted version

Supply voltage
230 = 110…230 V
120 = 120 V only fan assisted version
230 = 230 V only fan assisted version

Heater power
0025 = 25 W
0050 = 50 W
0100 = 100 W
0150 = 150 W
0250 = 250 W
0400 = 400 W

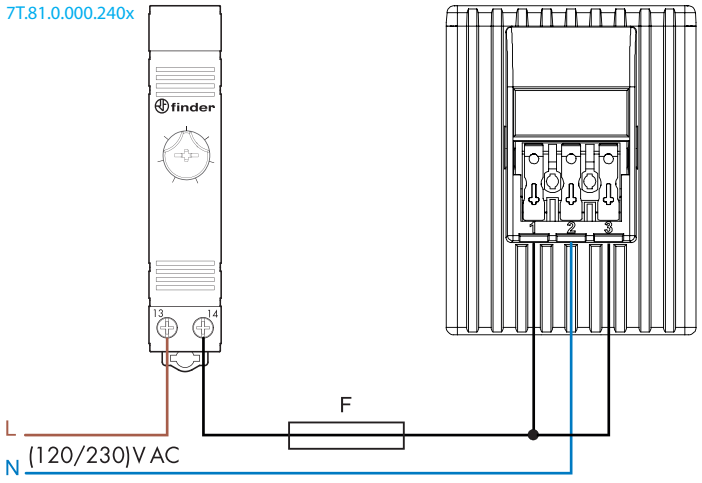
General data

G

Terminals		solid cable	stranded cable
Max. wire size (push-in terminals)	mm²	2 x 1.5	2 x 1.5
	AWG	2 x 16	2 x 16
Max. wire size (screw terminals)	mm²	1 x 2.5	1 x 1.5
	AWG	1 x 12	1 x 16
Screw torque	Nm	0.5	

Wiring diagrams

Fan assisted version



1 = L (heater)
2 = N
3 = L (fan)

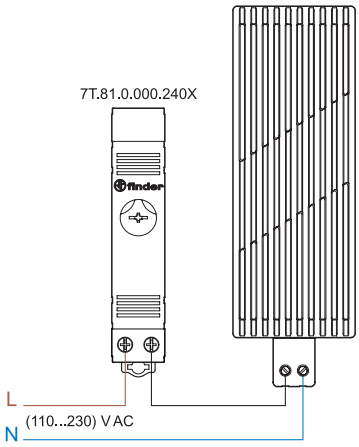
F = aM 10 A @120 V AC
aM 6.3 A @230 V AC

NOTE: Separate supply (L) terminals for the heater and the internal fan allow them to be powered independently.
So,dependent on the specific situation, the installer might wish the heating element to be controlled by an upstream thermostat but require the fan to run continuously (although the latter will significantly reduce the product's life).

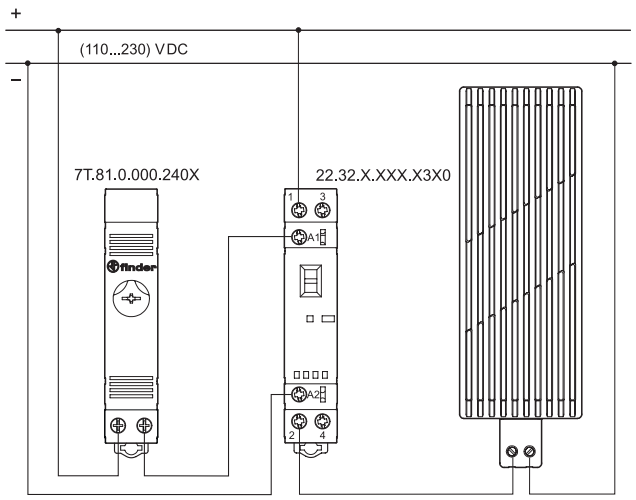
Wiring diagrams

NOT Fan assisted versions

AC version



DC version



SAFETY NOTE

For reasons of safety and performance , heaters must be mounted in the following way:

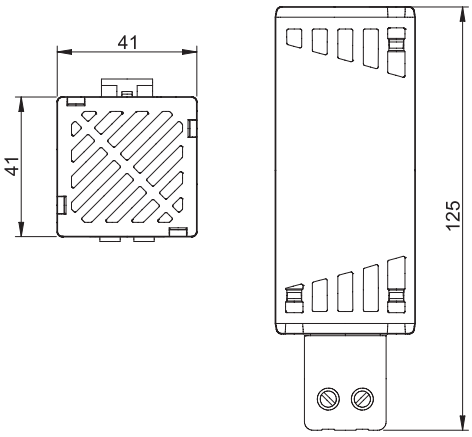
1. keep a distance of 100 mm. from components above and below and of 60 mm from side components
2. install vertically (cables below heater) in the bottom part of cabinet
3. do not mount heaters over easily inflammable materials
4. do not operate in corrosive ambient air

WARNING

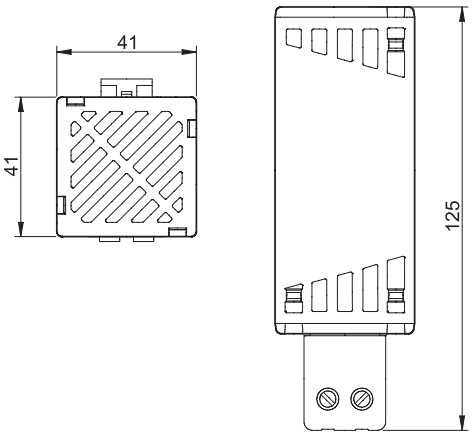
Do not cover the heater.
The 7H.51 Heater surface is very hot for 15-20 minutes after disconnecting.
During working and maintenance, don't touch it.
Caution: risk of burns, temperatur of the side less than +100 °C..

Outline drawings

Type 7H.51.0025
Screw terminal

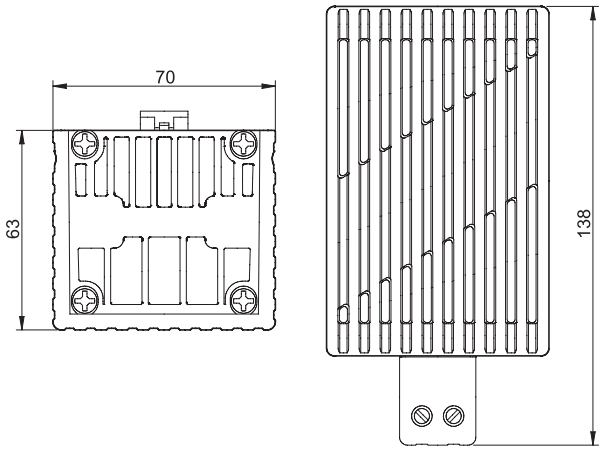


Type 7H.51.0050
Screw terminal

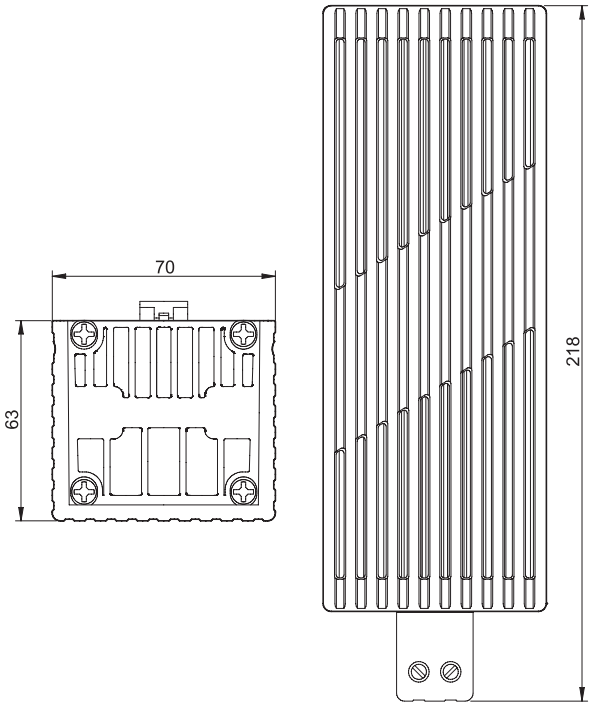


Outline drawings

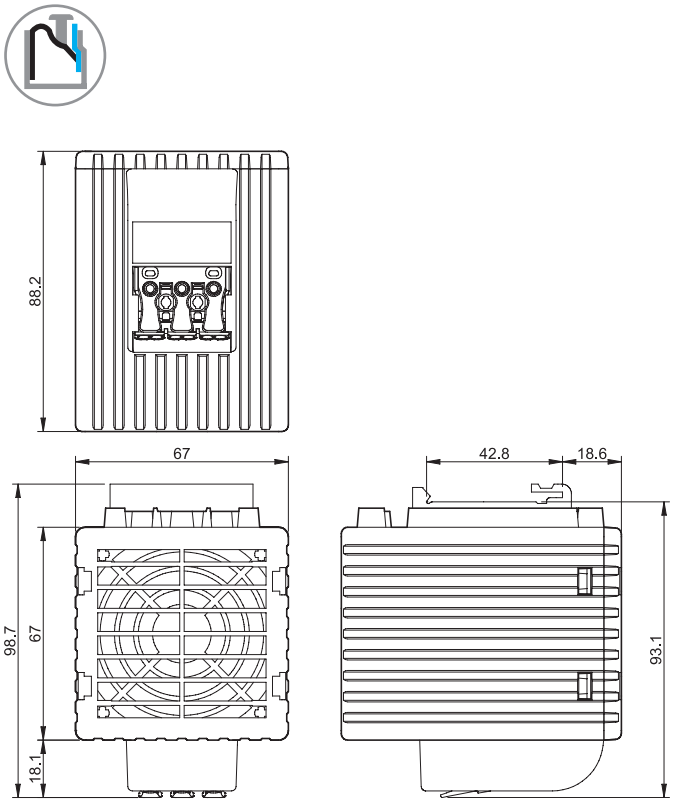
Type 7H.51.0100
Screw terminal



Type 7H.51.0150
Screw terminal



Types 7H.51.0250 / 0400
Push-in terminal



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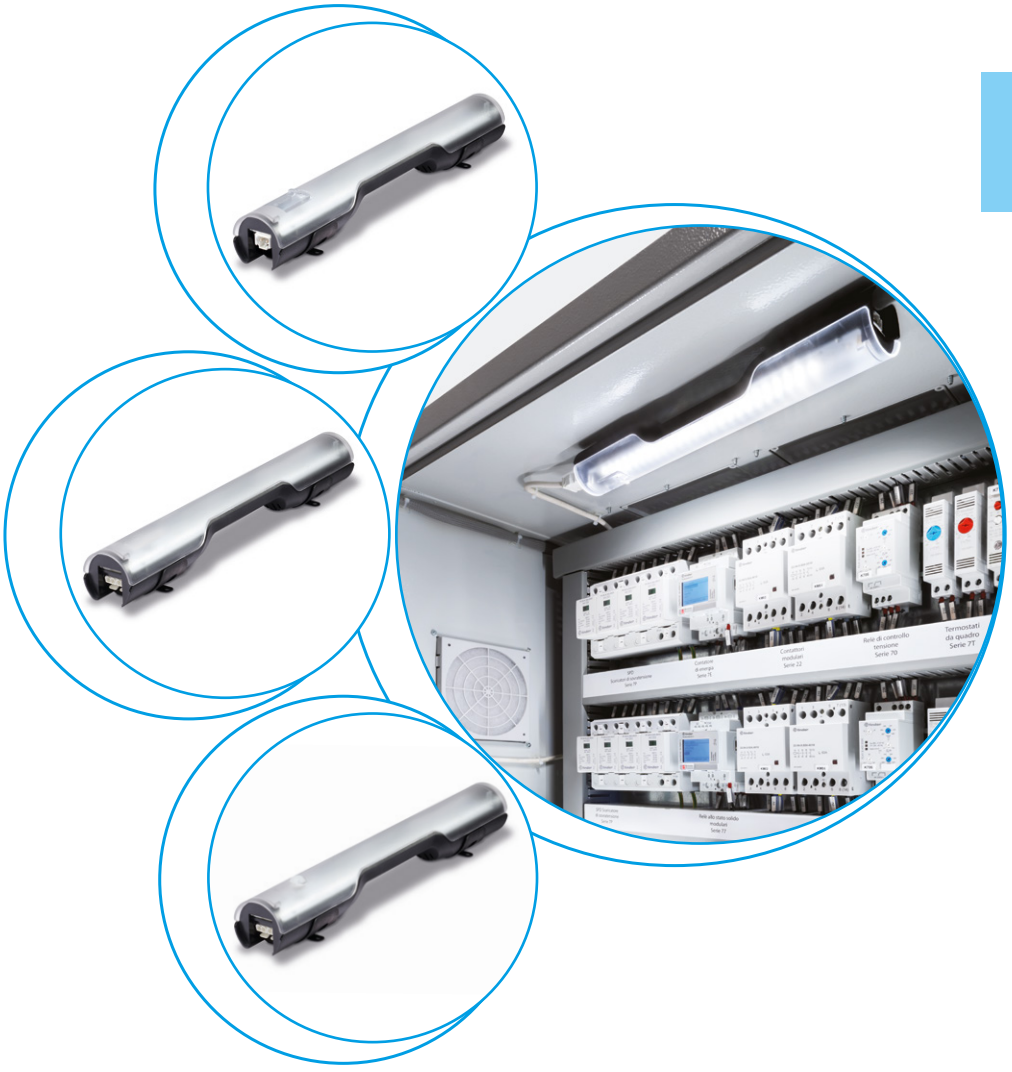
finder
SWITCH TO THE FUTURE

LED panel light

7L
SERIES



Panels for electrical distribution

Control panels

LED light for electrical panels

Type 7L.43.0.xxx.0x00
- 600 lumens
- Direct magnetic mounting or through a screw-fixed metallic support

- Low power consumption
- Radiation angle 120°
- Colour temperature 5000 K
- Push-in terminals for the connection to a single unit
- Plug-in terminals for the connection to a single or multiple units (up to 7 lamps)
- Design by Minelli - Fossati

NEW **7L.43.0.xxx.0x00**

- 600 lumens, 6 W
- Without ON/OFF switch or movement detector

For outline drawing see page 8

Lamp Data		
Type of lamp		LED, viewing angle 120°, Light colour: daylight white, colour temperature: 5000 K
Luminous flux	lm	600
Life time	h	60000
Electrical Data		
Operating voltage	V AC (50/60 Hz)/DC	12…48 - 110…240
Operating range	V AC/DC	9.6…52.8 - 88…264
Nominal current @230 V AC	mA	39
Nominal current @24 V DC	mA	200
Rated power of the lamp @230 V AC	W	6
Rated power of the lamp @24 V DC	W	6
General data		
Connection cable to the lamp		Sheathed cable 2 x 1.5 mm², flexible with push-in or socket
Interconnectors from lamp to lamp		Sheathed cable 2 x 1.5 mm², flexible with plug and socket
Socket and plug		2-pole with interlock
Type of mounting		Magnetic or clip fixing
Housing		Plastic, transparent
Ambient temperature	°C	–30…+55
Protection class		II
Protection category		IP 20
Approvals (according to type)		CE cULus

7L SERIES
LED panel light

LED light for electrical panels

Type 7L.43.0.xxx.1x00
- 600 lumens
- Direct magnetic mounting or through a screw-fixed metallic support

Type 7L.46.0.xxx.1x00
- 1200 lumens
- Direct magnetic mounting or through a screw-fixed metallic support

- Low power consumption
- Radiation angle 120°
- Colour temperature 5000 K
- Push-in terminals for the connection to a single unit
- Plug-in terminals for the connection to a single or multiple units (up to 7 lamps)
- Design by Minelli - Fossati

NEW **7L.43.0.xxx.1x00**

- 600 lumens, 6 W
- With ON/OFF switch

NEW **7L.46.0.xxx.1x00**

- 1200 lumens, 9 W
- With ON/OFF switch

For outline drawing see page 9

Lamp Data			
Type of lamp		LED, viewing angle 120°, Light colour: daylight white, colour temperature: 5000 K	
Luminous flux	lm	600	1200
Life time	h	60000	
Electrical Data			
Operating voltage	V AC (50/60 Hz)/DC	12…48 - 110…240	
Operating range	V AC/DC	9.6…52.8 - 88…264	
Nominal current @230 V AC	mA	39	54
Nominal current @24 V DC	mA	200	300
Rated power of the lamp @230 V AC	W	6	9
Rated power of the lamp @24 V DC	W	6	9
General data			
Connection cable to the lamp		Sheathed cable 2 x 1.5 mm², flexible with push-in or socket	
Interconnectors from lamp to lamp		Sheathed cable 2 x 1.5 mm², flexible with plug and socket	
Socket and plug		2-pole with interlock	
Type of mounting		Magnetic or clip fixing	
Housing		Plastic, transparent	
Ambient temperature	°C	–30…+55	
Protection class		II	
Protection category		IP 20	
Approvals (according to type)		CE cULus	

LED light for electrical panels

Type 7L.43.0.xxx.2x00
- 600 lumens
- Direct magnetic mounting or through a screw-fixed metallic support

Type 7L.46.0.xxx.2x00
- 1200 lumens
- Direct magnetic mounting or through a screw-fixed metallic support

- Low power consumption
- Radiation angle 120°
- Colour temperature 5000 K
- Push-in terminals for the connection to a single unit
- Plug-in terminals for the connection to a single or multiple units (up to 7 lamps)
- Design by Minelli - Fossati

NEW **7L.43.0.xxx.2x00**

- 600 lumens, 6 W
- With movement detector

NEW **7L.46.0.xxx.2x00**

- 1200 lumens, 9 W
- With movement detector

For outline drawing see page 10

Lamp Data			
Type of lamp		LED, viewing angle 120°, Light colour: daylight white, colour temperature: 5000 K	
Luminous flux	lm	600	1200
Life time	h	60000	
Light ON time after last detection	min	3	
Electrical Data			
Operating voltage	V AC (50/60 Hz)/DC	12…48 - 110…240	
Operating range	V AC/DC	9.6…52.8 - 88…264	
Nominal current @230 V AC	mA	39	54
Nominal current @24 V DC	mA	200	300
Rated power of the lamp @230 V AC	W	6	9
Rated power of the lamp @24 V DC	W	6	9
General data			
Connection cable to the lamp		Sheathed cable 2 x 1.5 mm², flexible with push-in or socket	
Interconnectors from lamp to lamp		Sheathed cable 2 x 1.5 mm², flexible with plug and socket	
Socket and plug		2-pole with interlock	
Type of mounting		Magnetic or clip fixing	
Housing		Plastic, transparent	
Ambient temperature	°C	–30…+55	
Protection class		II	
Protection category		IP 20	
Approvals (according to type)		CE cULus	

Ordering information

Example: Series 7L, LED light with magnetic fixing, ON/OFF switch, supply voltage 12…48V AC/DC and push-in terminals.

7	L	.	4	3	.	0	.	0	2	4	.	1	1	0	0

Series

Type
43 = LED lamp 600 lumens
46 = LED lamp 1200 lumens

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

Supply voltage
024 = (12…48)V AC/DC
230 = (110…240)V AC/DC

Connections
1 = Push-in terminals for the connection to a single unit
2 = Plug-in terminals for the connection to a single or multiple units

Switching
0 = Without ON/OFF switch or movement detector
1 = Switching via ON/OFF switch
2 = Switching via movement detector

All types

7L.43.0.024.0100	7L.46.0.024.1100
7L.43.0.024.0200	7L.46.0.024.1200
7L.43.0.024.1100	7L.46.0.024.2100
7L.43.0.024.1200	7L.46.0.024.2200
7L.43.0.024.2100	7L.46.0.230.1100
7L.43.0.024.2200	7L.46.0.230.1200
7L.43.0.230.0100	7L.46.0.230.2100
7L.43.0.230.0200	7L.46.0.230.2200
7L.43.0.230.1100	
7L.43.0.230.1200	
7L.43.0.230.2100	
7L.43.0.230.2200	

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Accessories

07L.11 (included in the box)

07L.12 (not included)

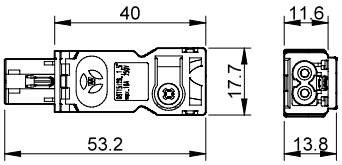
0 7 L . 1 1

Type

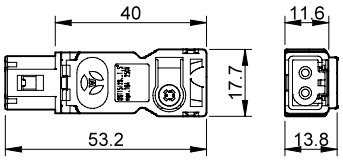
Sockets and plugs, coded, for connection to a 2-pole cable (2 x 1.5 mm²), e.g. H05VV-F, 2 x 1.5 mm²
11 = Socket, loose for input side
12 = Plug, loose for output side

Outline drawings

Type 07L.11

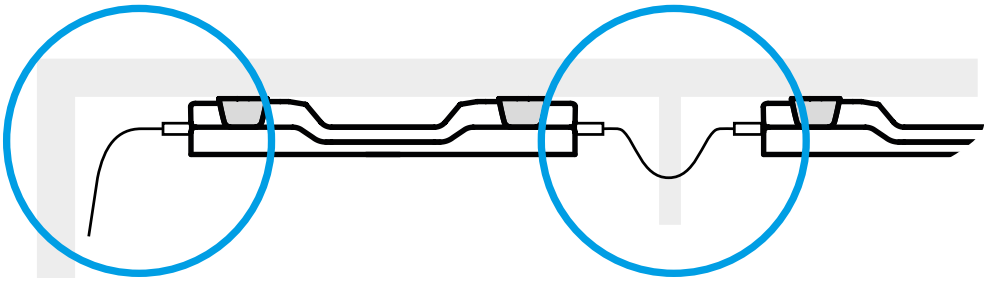


Type 07L.12



Connections

Quick and simple wiring system via **push-in terminals** for the connection to a single unit, or via **plug-in terminals** for the connection to a single or multiple units.



Multiple connection (up to 7 lamps)

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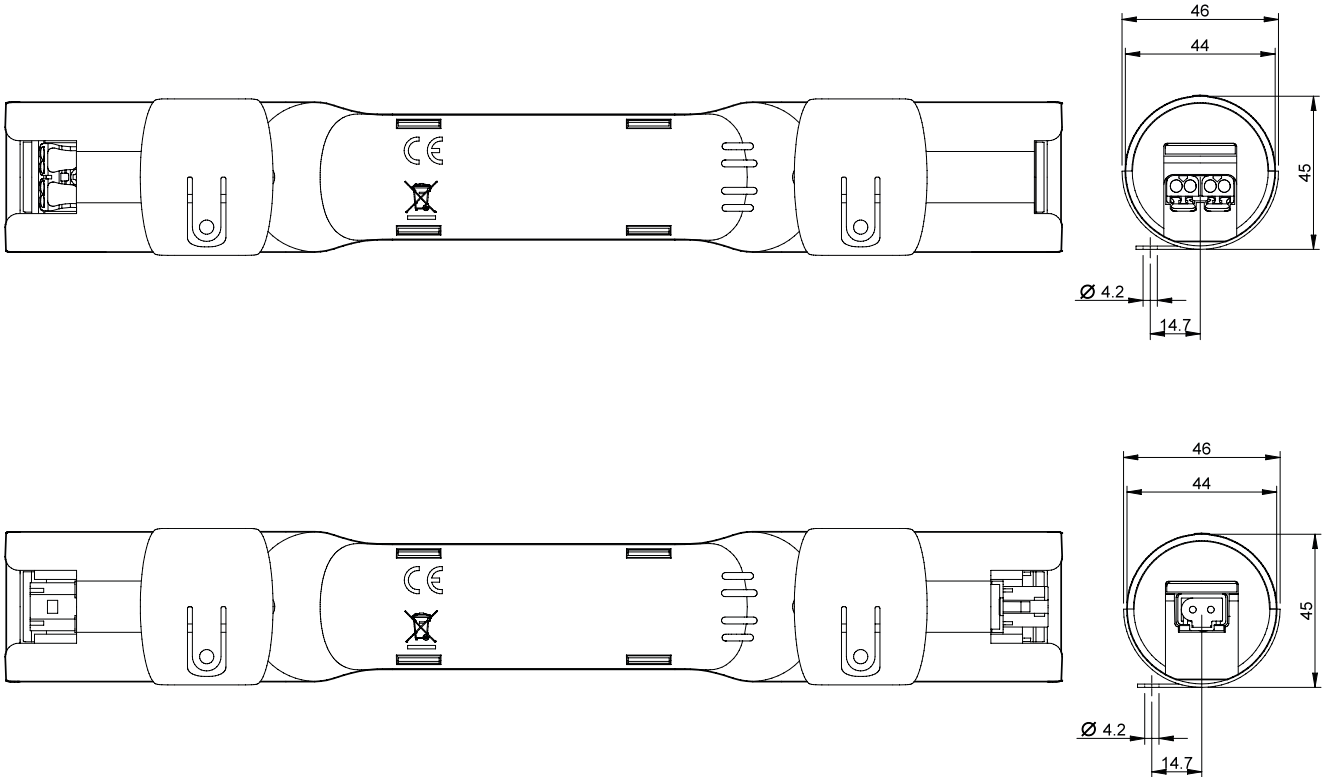
Outline drawings

Types 7L.4x.0.xxx.0100/0200



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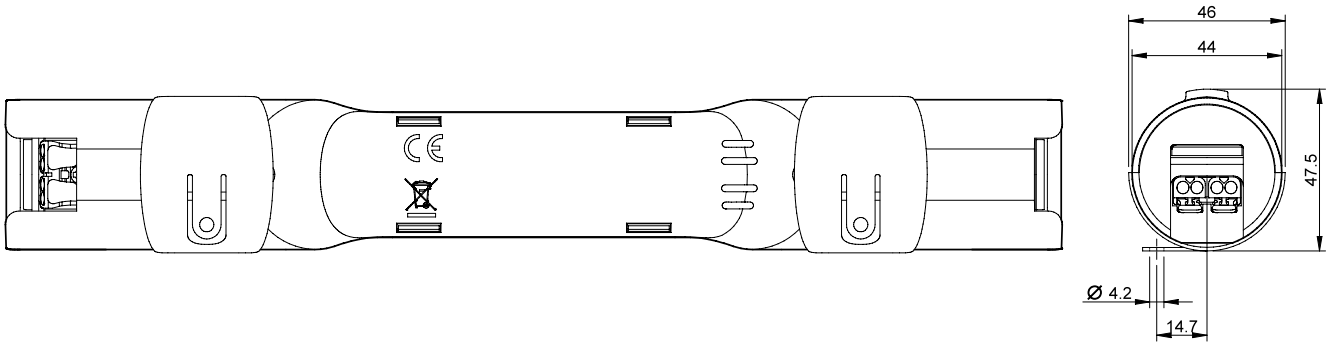
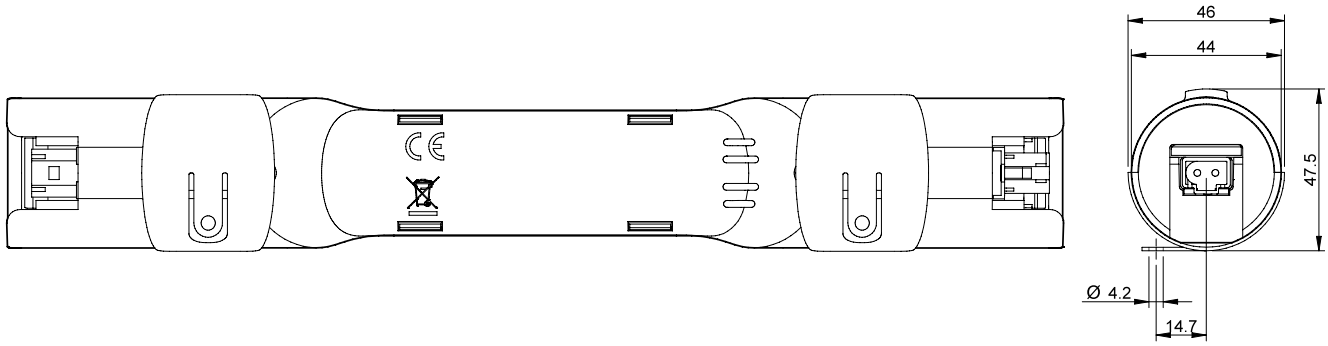
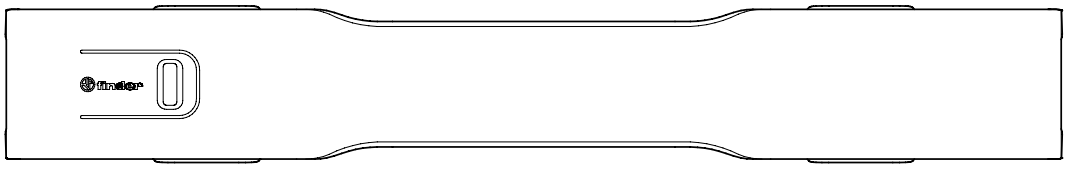
Outline drawings

Types 7L.4x.0.xxx.1100 / 1200







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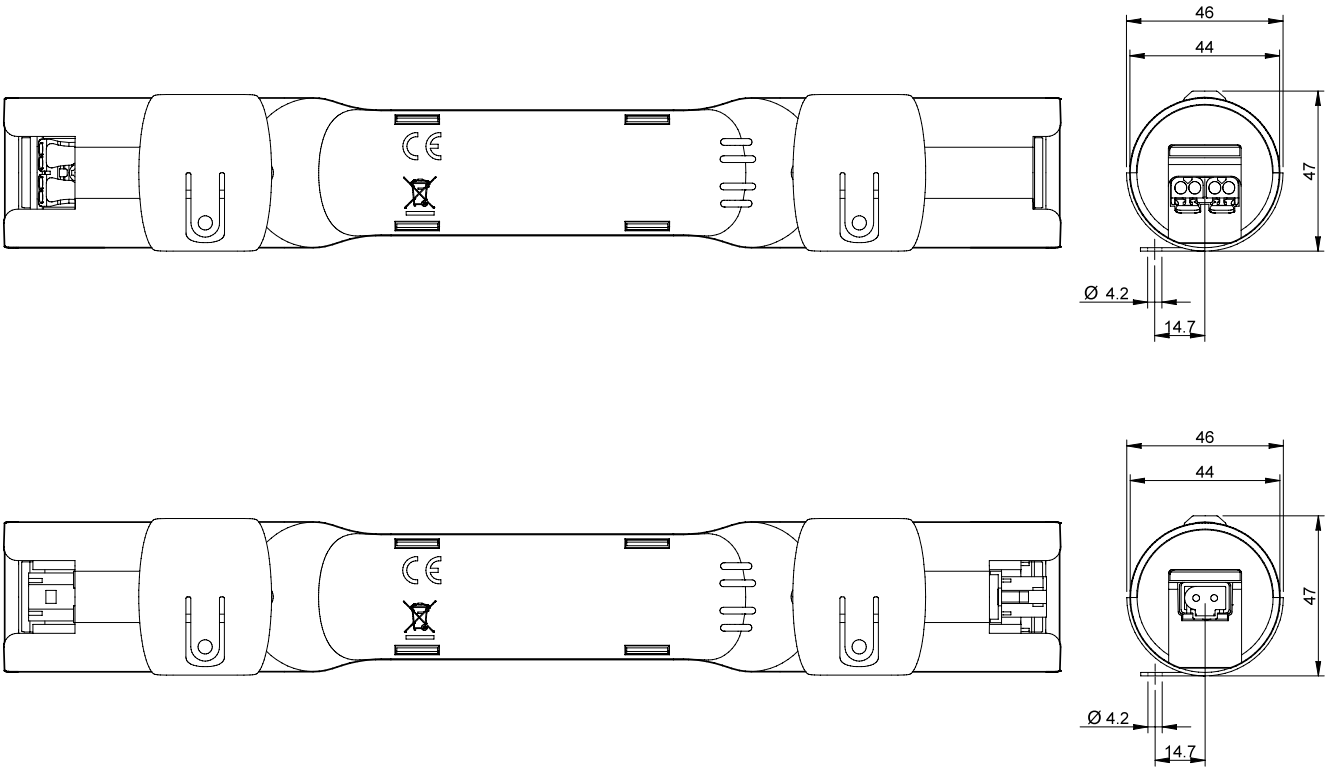
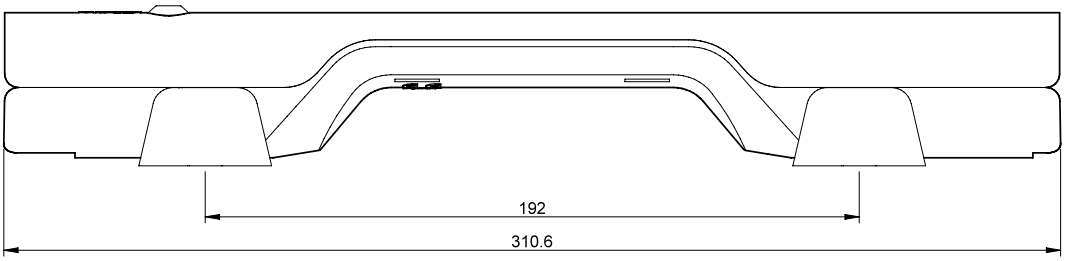
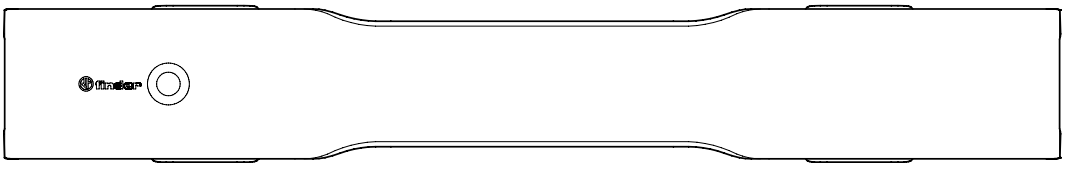
Outline drawings

Types 7L.4x.0.xxx.2100 / 2200







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finder
SWITCH TO THE FUTURE

Modular timers
1 - 6 - 8 - 16 A

- Building automation
- Elevators and lifts
- Automation for blinds, grilles and shutters
- Hoists and cranes
- Panels for electrical distribution
- Door and gate openers

80
SERIES

Multi-function and mono-function timer range

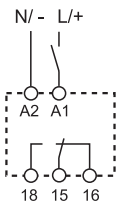
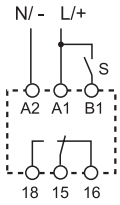
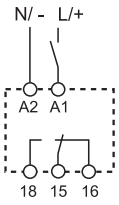
80.01 - Multi-function & multi-voltage
80.11 - On-delay, multi-voltage

- 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 9

	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	–20…+60	–20…+60
Protection category		IP 20	IP 20
Approvals (according to type)			

H

Mono-function timer range

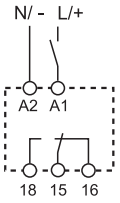
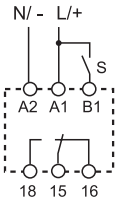
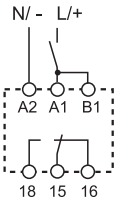
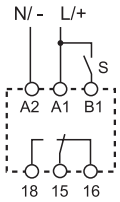
80.21 - Interval, multi-voltage
80.41 - Off-delay with control signal, multi-voltage
80.91 - Asymmetrical flasher, multi-voltage

- 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 9

	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	–20…+60	–20…+60	–20…+60
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

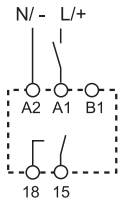
- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- 35 mm rail (EN 60715) mount
- Multi-voltage output (24…240 V AC/DC), independent from the input voltage
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors,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

80.71
Screw terminal

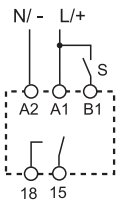
80.71

- 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 9

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

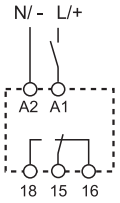
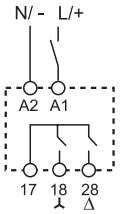
80.82 - Star-delta, multi-voltage

- 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 9

	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	–20…+60	–20…+60
Protection category		IP 20	IP 20
Approvals (according to type)			

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

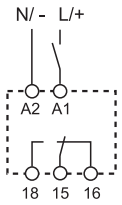
NEW **80.51**

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

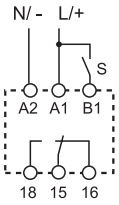
80.51.0.240.0000
Screw terminal

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 9

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	–20…+60
Protection category		IP 20
Approvals (according to type)		CE EAC cULus

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)
5 = Multi-function (AI, DI, SW, BE, CE, DE)
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)

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

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

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)

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

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

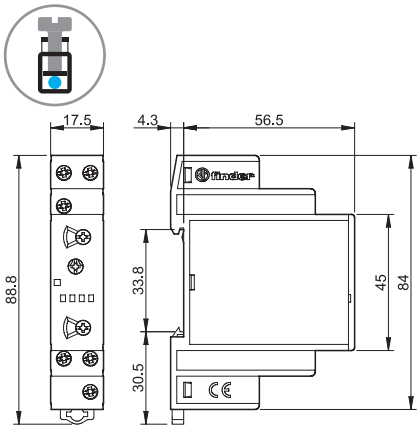
Other data			
Current absorption on signal control (B1)			< 1 mA
Power lost to the environment	without contact current	W	1.4
	with rated current	W	3.2

Terminals		**Screw terminals**	**Push-in terminals**
Wire strip length	mm	10	10
Screw torque	Nm	0.8	—
Min. wire size		solid cable	solid cable
	mm²	0.5	0.75
	AWG	20	18
Max. wire size		solid cable	solid cable
	mm²	1 x 6 / 2 x 4	1 x 1.5 / 2 x 1.5
	AWG	1 x 10 / 2 x 12	1 x 16 / 2 x 16
Min. wire size		stranded cable	stranded cable
	mm²	0.5	0.75
	AWG	20	18
Max. wire size		stranded cable	stranded cable
	mm²	1 x 4 / 2 x 2.5	1 x 2.5 / 2 x 2.5
	AWG	1 x 12 / 2 x 14	1 x 14 / 2 x 14

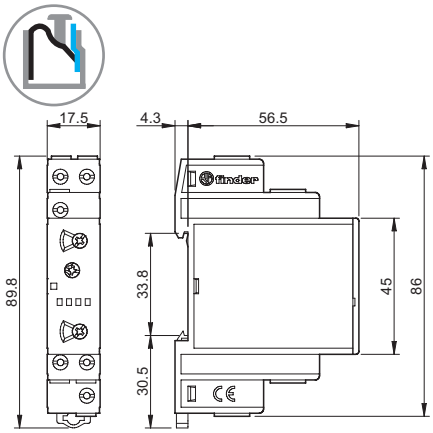
H

Outline drawings

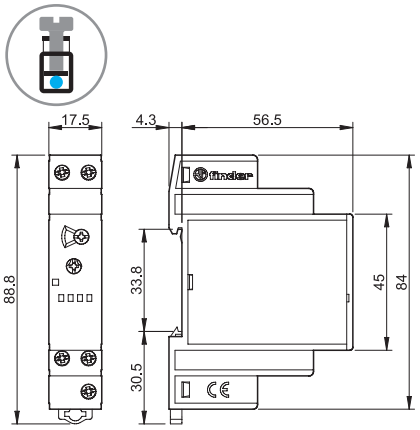
Types 80.01/80.51
Screw terminal



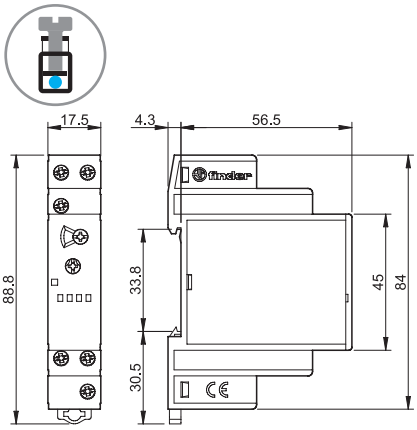
Type 80.51
Push-in terminal



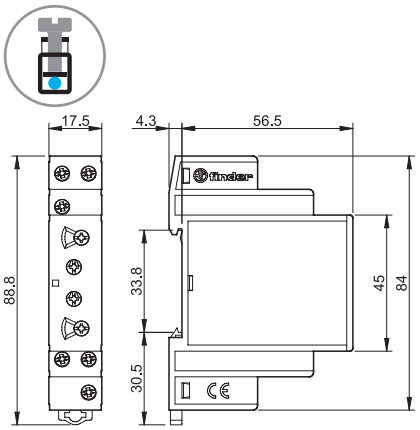
Types 80.11/80.21/80.61
Screw terminal



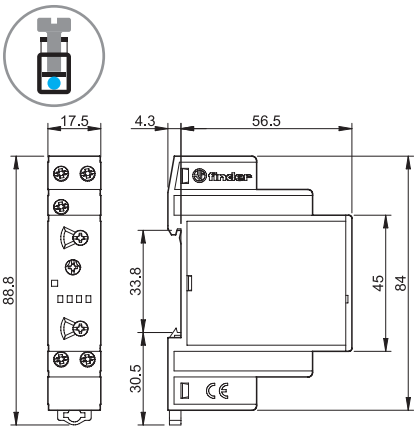
Type 80.41
Screw terminal



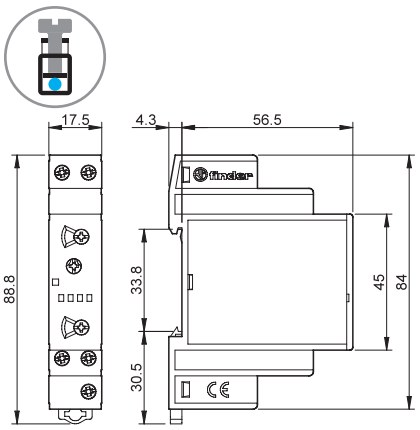
Type 80.91
Screw terminal



Type 80.71
Screw terminal



Type 80.82
Screw terminal



Functions

U = Supply voltage

S = Signal switch

= Output contact

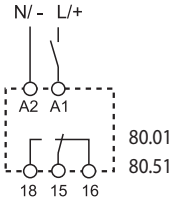
LED*	Supply voltage	NO output contact	Contacts Open	Contacts Closed
	OFF	Open	15 - 18	15 - 16
	ON	Open	15 - 18	15 - 16
	ON	Open (Timing in Progress)	15 - 18	15 - 16
	ON	Closed	15 - 16	15 - 18

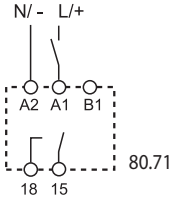
* The LED on type 80.61 is illuminated only when the supply voltage is applied to the timer; during the timing period the LED is not illuminated.

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

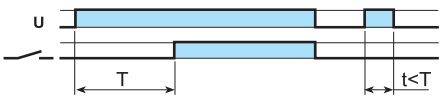
Wiring diagram

Without control signal

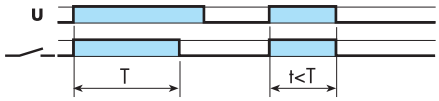




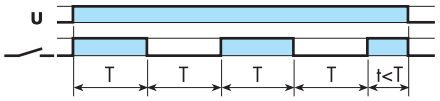
Type
80.01
80.51
80.71



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

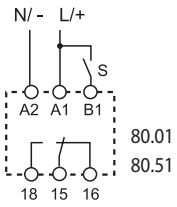


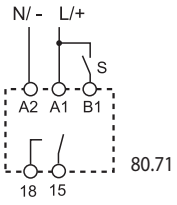
(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



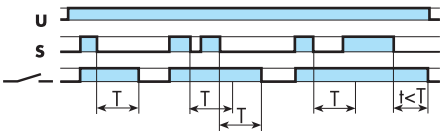
(SW) Symmetrical flasher (starting pulse on).
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

With control signal

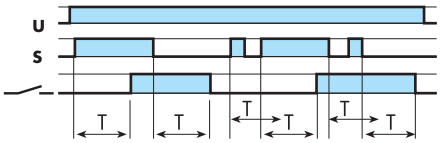




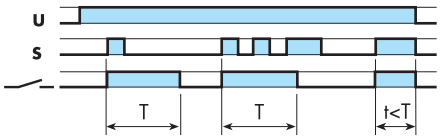
80.01
80.51
80.71



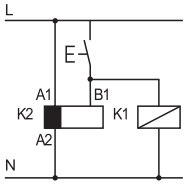
(BE) Off-delay with control signal.
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



(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.

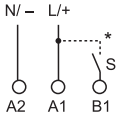


(DE) Interval with control signal on.
Power is permanently applied to the timer.
On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

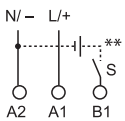


NOTE: The function must be set before energising the timer.

• 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).

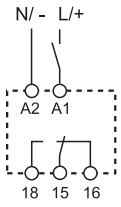


** A voltage other than the supply voltage can be applied to the command Start (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

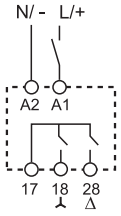
Functions

Wiring diagram

Without control signal

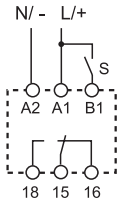


80.11/21/61



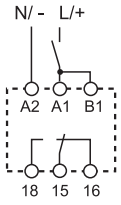
80.82

With control signal



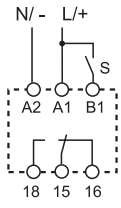
80.41

Without control signal

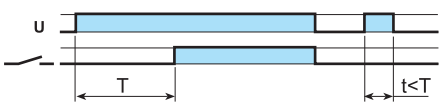
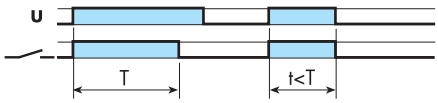
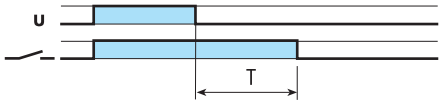
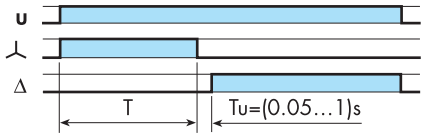
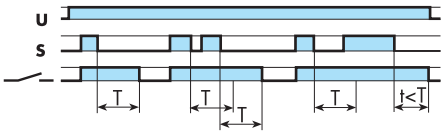
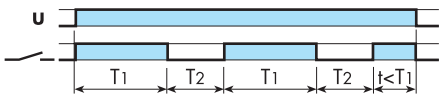
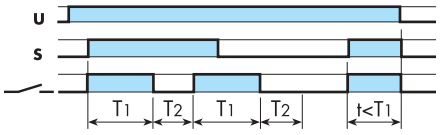


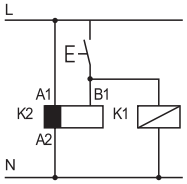
80.91

With control signal

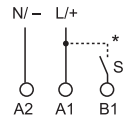


80.91

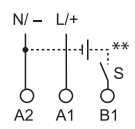
Type		
80.11		**(AI) On-delay.** Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.
80.21		**(DI) Interval.** Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.
80.61		**(BI) Power 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 (⅄) closes immediately. After preset delay has elapsed the star contact (⅄) 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.
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.
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.



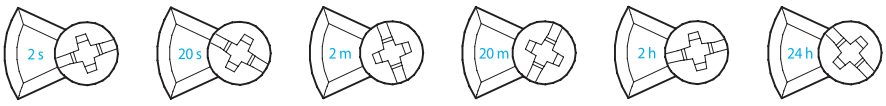
* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).



** 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

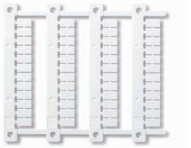
Times scales

Rotary switch position series 80



(0.1…2)s (1…20)s (0.1…2)min (1…20)min (0.1…2)h (1…24)h

Accessories



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

H

finder
SWITCH TO THE FUTURE

Modular timers 16 A

- Control panels
- Milk processing plant
- Punches, cleaners, planers and sanders
- Hoists and cranes
- Shipyards
- Door and gate openers

81
SERIES

Multi-function and multi-voltage timer

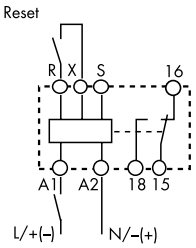
- One module 17.5 mm wide housing
- Seven functions (4 with supply start and 3 with control signal)
- Additional Reset function
- Six time ranges from 0.1 s to 10 h
- 35 mm rail (EN 60715) mounting

81.01
Screw terminal

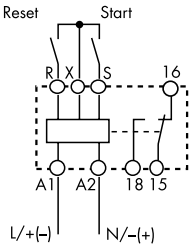
81.01

- Multi-voltage (DC non polarized)
- Multi-function
- 35 mm rail (EN 60715) mounting

AI: On-delay
DI: Interval
SW: Symmetrical flasher (starting pulse on)
SP: Symmetrical flasher (starting pulse off)
BE: Off-delay with control signal
DE: Interval with control signal on
EEb: Interval with control signal off



Wiring diagram
(supply START)



Wiring diagram
(control signal)

For outline drawing see page 4

Contact specification		
Contact configuration		1 CO (SPDT)
Rated current/Maximum peak current	A	16/30
Rated voltage/ Maximum switching voltage	V AC	250/400
Rated load AC1	VA	4000
Rated load AC15 (230 V AC)	VA	750
Single phase motor rating (230 V AC)	kW	0.55
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)
Standard contact material		AgCdO
Supply specification		
Nominal voltage (U_N)	V AC (50/60 Hz)	12…230
	V DC	12…230 (non polarized)
Rated power AC/DC	VA (50 Hz)/W	< 2/< 2
Operating range	V AC	10.8…250
	V DC	10.8…250
Technical data		
Specified time range		(0.1…1)s, (1…10)s, (10…60)s, (1…10)min, (10…60)min, (1…10)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

H

Ordering information

Example: 81 series, modular timer multi-voltage, 1 CO (SPDT) - 16 A, supply rated at (12…230)V AC/DC.

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

Series

Type
0 = Multi-function
(AI, DI, SW, SP, BE, DE, EEb)

No. of poles
1 = 1 CO (SPDT)

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

Supply voltage
230 = (12…230)V AC/DC

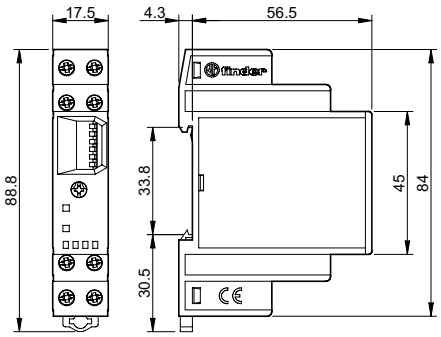
Technical data

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 ÷ 1000 MHz)			EN 61000-4-3	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals			EN 61000-4-4	4 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	4 kV
	differential mode		EN 61000-4-5	4 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6	10 V
Radiated and conducted emission			EN 55022	class A
Other data				
Current absorption on signal control (B1)			< 1 mA (S-X)	< 1 mA (R-X)
Voltage potential on the input terminal R - X and S -X			Not galvanic separation from the supply voltage on A1 - A2	
Power lost to the environment	without contact current	W	1.3	
	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

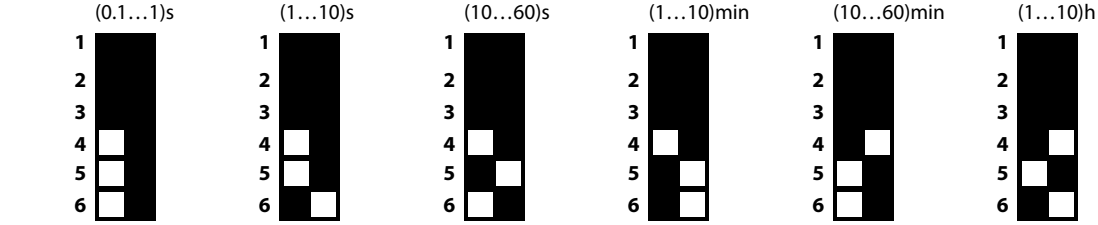
Outline drawings

Type 81.01

Screw Terminal



Time range setting



NOTE: time range and function must be set before energising the timer.

Functions

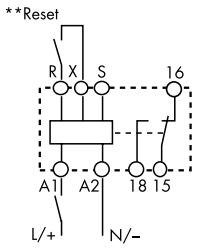
U = Supply voltage
S = Signal switch
R = Reset
= Output contact

LED (green)	LED (red)	Supply voltage	NO output contact	Contacts	
				Open	Closed
		OFF	Open	15 - 18	15 - 16
		ON	Open	15 - 18	15 - 16
		ON	Closed	15 - 16	15 - 18

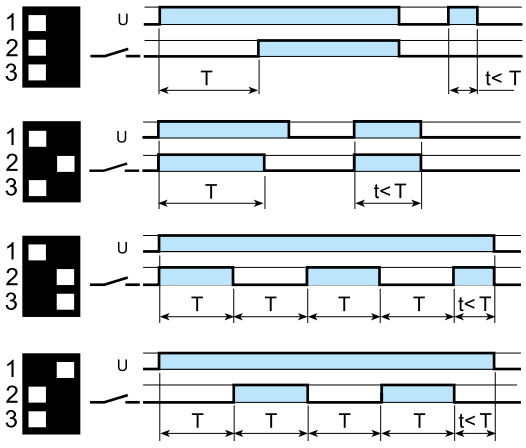
Supply Start = Start via contact in supply line (A1).
Control signal = Start via contact into control terminal (X-S).

Wiring diagram

Supply START



** Connection of the Reset (R-X) is optional



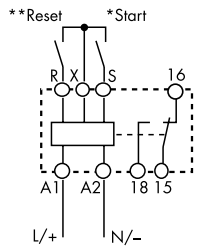
(AI) On-delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

(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).

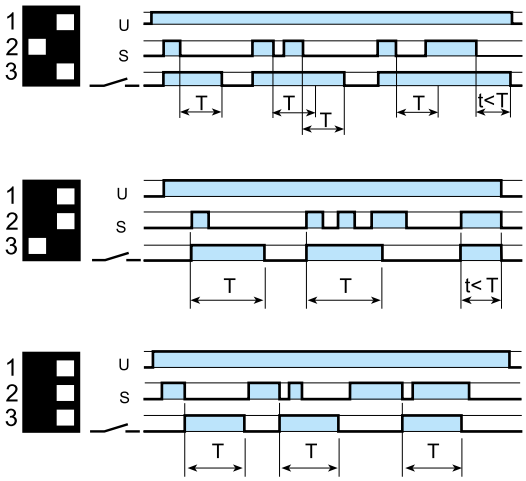
(SP) Symmetrical flasher (starting pulse off).
Apply power to timer. First transfer of contact occurs after preset time has elapsed. The timer now cycles between OFF and ON as long as power is applied. The ratio is 1:1 (time on = time off).

Control signal



* Terminals R, S & X must not be directly connected to the timer supply voltage, but they should be considered to be at supply voltage potential for the purposes of insulation.

** Connection of the Reset (R-X) is optional



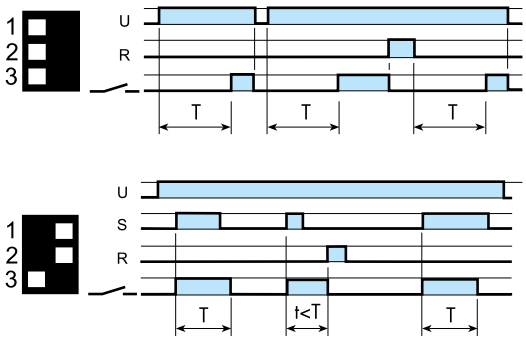
(BE) Off-delay with control signal.
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

(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.

(EEb) Interval with control signal off.
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.

RESET function (R)

For each and every function and time range, the timer is immediately reset when the reset switch is closed.



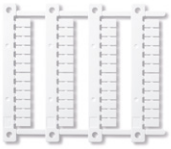
Example:
Supply START; ON delay function
Closing the external reset switch immediately resets the timer. Opening the reset switch re-initiates the timing function.

Example:
Control signal; ON pulse function.
Closing the external reset switch terminates the interval time and resets the timer. To re-start, it is necessary to open the reset switch, before closing the control signal contact.

Accessories

019.01

Identification tag, for type 81.01, plastic, 1 tag, 17 x 25.5 mm	019.01



060.48

Sheet of marker tags (CEMBRE Thermal transfer printers) for type 81.01, plastic, 48 tags, 6 x 12 mm	060.48

finder
SWITCH TO THE FUTURE

Modular timers
8 - 12 - 16 A

- Panels for electrical distribution
- Automatic car-washes
- Packaging machines
- Pump control
- Industrial refrigeration
- Fountains

83
SERIES

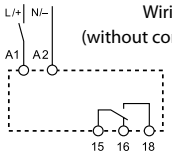
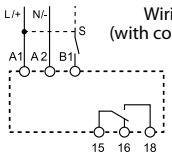
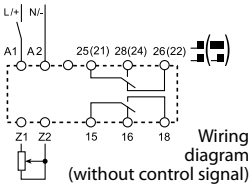
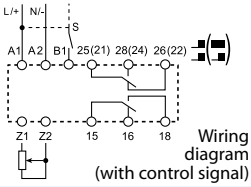
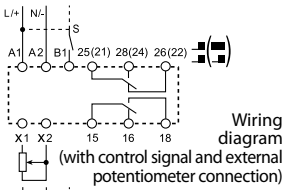
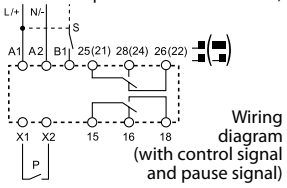
Multi-function timer range

Type 83.01
- Multi-function & multi-voltage
- 1 Pole

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

Type 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 0.05 s 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
- Complies with EN 45545-2:2013 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)

	83.01	83.02	83.52
			
	• Multi-voltage • Multi-function	• Multi-voltage • Multi-function • Timing can be regulated using ext. Potentiometer • 2 timed contacts or 1 timed + 1 instantaneous contact	• 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
	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)	**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)	**AE:** On-delay with control signal **GE:** Pulse delayed with control signal on **IT:** Timing step **FE:** Interval with control signal on and off **EEa:** Interval with control signal off (retriggerable) **DEp:** Interval with control signal on and pause signal **BEp:** Off-delay with control signal and pause signal **SHp:** "Shower" function
	Wiring diagram (without control signal)  Wiring diagram (with control signal) 	Wiring diagram (without control signal)  Wiring diagram (with control signal) 	Wiring diagram (with control signal and external potentiometer connection)  Wiring diagram (with control signal and pause signal) 
[1] Short term (10 min) + 70°C For outline drawing see page 7			

Contact specification				
Contact configuration		1 CO (SPDT)	2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	16/30	12/30	12/30
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/400
Rated load AC1	VA	4000	3000	3000
Rated load AC15 (230 V AC)	VA	750	750	750
Single phase motor rating (230 V AC)	kW	0.5	0.5	0.5
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	12/0.3/0.12	12/0.3/0.12
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…240	24…240	24…240
Rated power AC/DC	VA (50 Hz)/W	< 1.5/< 2	< 2/< 2	< 2/< 2
Operating range	V AC	16.8…265	16.8…265	16.8…265
	V DC	16.8…265	16.8…265	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	200	200
Minimum control impulse	ms	50	50	50
Setting accuracy-full range	%	± 5	± 5	± 5
Electrical life at rated load in AC1	cycles	$50 \cdot 10^3$	$60 \cdot 10^3$	$60 \cdot 10^3$
Ambient temperature range	°C	–20…+60[1]	–20…+60[1]	–20…+60[1]
Protection category		IP 20	IP 20	IP 20
Approvals (according to type)				

H

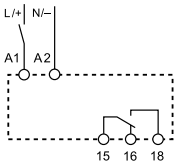
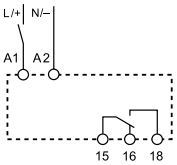
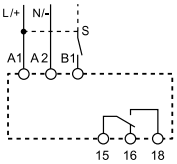
Mono-function timer range

Type 83.11
- ON-delay, multi-voltage

Type 83.21
- Interval, multi-voltage

Type 83.41
- Off-delay with control signal, multi-voltage

- 1 Pole
- 22.5 mm wide
- Eight time scales from 0.05 s 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
- Complies with EN 45545-2:2013 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)

	83.11	83.21	83.41
			
	• Multi-voltage • Mono-function	• Multi-voltage • Mono-function	• Multi-voltage • Mono-function
	AI: On-delay	**DI:** Interval	**BE:** Off-delay with control signal
			
[(1)] Short term (10 min) + 70°C For outline drawing see page 7	Wiring diagram (without 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	0.5	0.5	0.5
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)	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…240	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…265	16.8…265	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	200	200
Minimum control impulse ms	—	—	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	–20…+60[(1)]	–20…+60[(1)]	–20…+60[(1)]
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)	CE EAC LR RINA cULus		

Mono-function and multi-function timer range

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

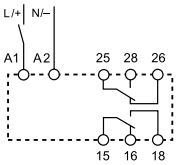
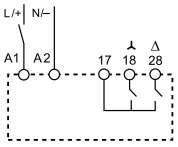
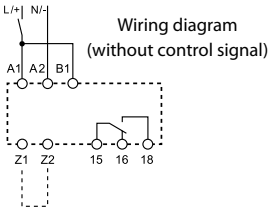
Type 83.82
- Star-Delta, multi-voltage, star and delta output contacts

Type 83.91
- Asymmetrical flasher, multi-voltage, 1 Pole

- 22.5 mm wide
- Time scales:
  Type 83.62 - 0.05 s 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
- Complies with EN 45545-2:2013 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)

* (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

(1) Short term (10 min) + 70°C
For outline drawing see page 7

	83.62	83.82	83.91
			
	• Multi-voltage • Mono-function • 2 pole	• Multi-voltage • Mono-function • 2 pole • Transfer time can be regulated (0.05…1)s***	• Multi-voltage • Multi-function
	BI: Power off-delay (True off-delay)	**SD:** Star-delta	**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
			
	Wiring diagram (without control signal)	Wiring diagram (without control signal)	
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	2000	4000	4000
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	± 1
Recovery time ms	—	200	200
Minimum control impulse ms	500 ms (A1 - A2)	—	50
Setting accuracy-full range %	± 5	± 5	± 5
Electrical life at rated load in AC1 cycles	$100 \cdot 10^3$	$50 \cdot 10^3$	$50 \cdot 10^3$
Ambient temperature range °C	–20…+60(1)	–20…+60(1)	–20…+60(1)
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)	CE EAC LR RINA cULus		

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, GE, IT, FE, EEa, DEp, BEp, 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

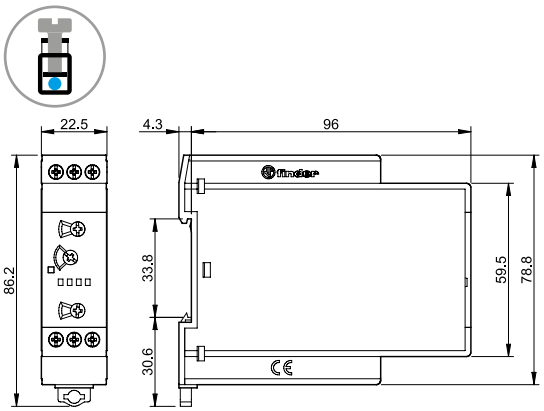
Technical data

Insulation					
Dielectric strength	between input and output circuit	V AC	4000		
	between open contacts	V AC	1000		
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 ÷ 1000 MHz)		EN 61000-4-3	10 V/m	10 V/m
	(1000 ÷ 2700 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 ≤ 10 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 kΩ / ≥ 0.25 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	
		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	

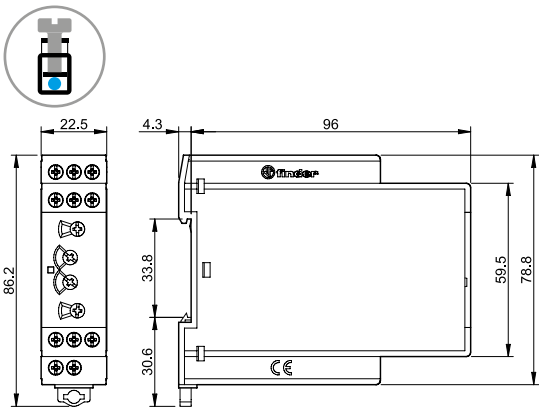
H

Outline drawings

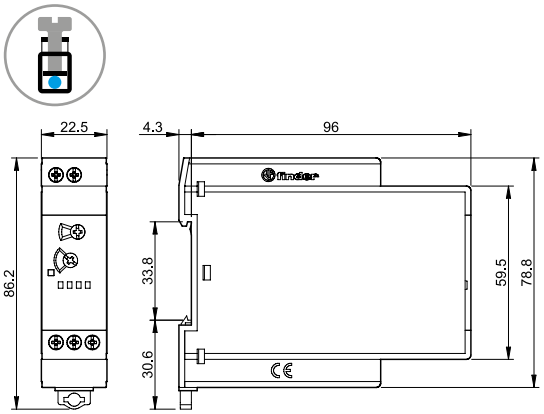
Type 83.01
Screw terminal



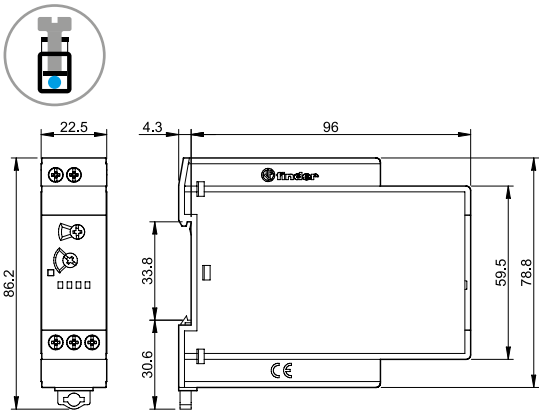
Types 83.02/52
Screw terminal



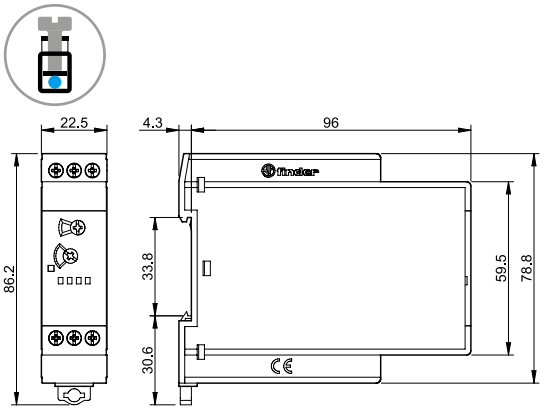
Type 83.11
Screw terminal



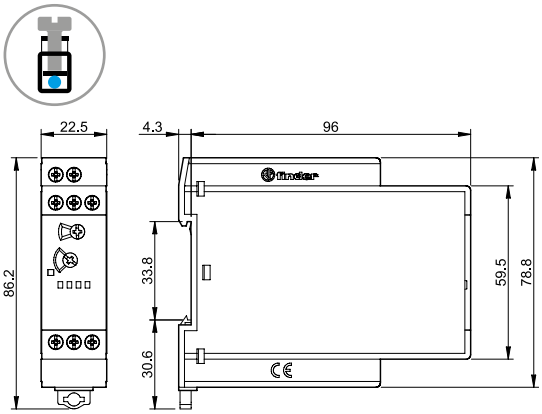
Type 83.21
Screw terminal



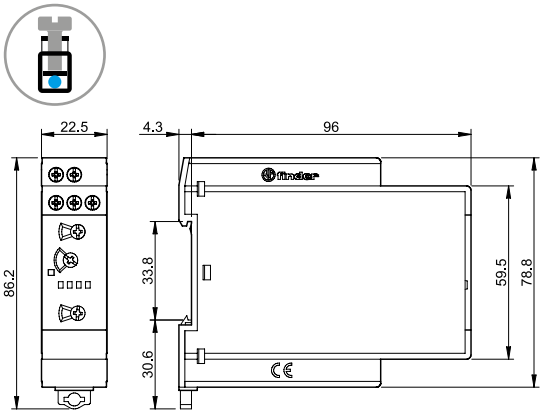
Type 83.41
Screw terminal



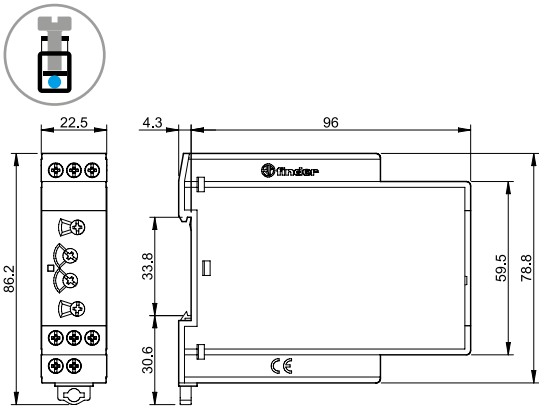
Type 83.62
Screw terminal



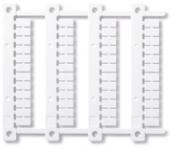
Type 83.82
Screw terminal



Type 83.91
Screw terminal



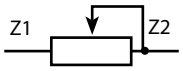
Accessories



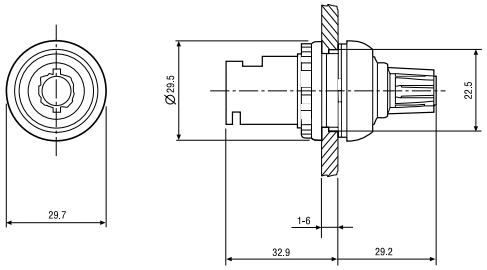
060.48

Sheet of marker tags (CEMBRE Thermal transfer printers) for relays types 83.01/11/21/41/62/82, plastic, 48 tags, 6 x 12 mm	060.48

087.02.2



Potentiometer usable as external potentiometer for type 83.02/52 10 kΩ / 0.25 W linear, IP 66	087.02.2

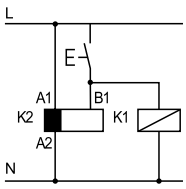


Functions

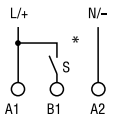
H

LED*	Supply voltage	NO output contact	Contacts Open	Contacts 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

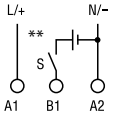
* The LED on type 83.62 is illuminated when supply voltage is supplied to timer.



• 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

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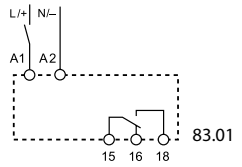
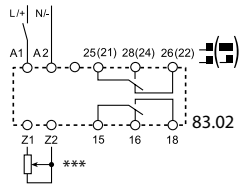
Functions

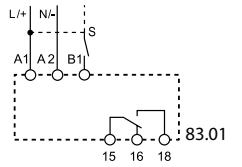
Wiring diagram | **U** = Supply voltage | **S** = Signal switch | = Output contact

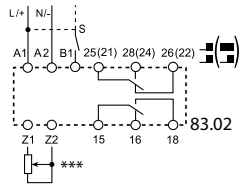
Multi-function
without control signal





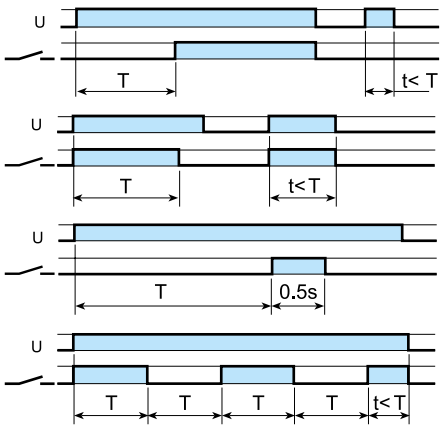
with control signal





*** Type 83.02: regulated using an external potentiometer (10 kΩ - 0.25 W).

Type
83.01
83.02

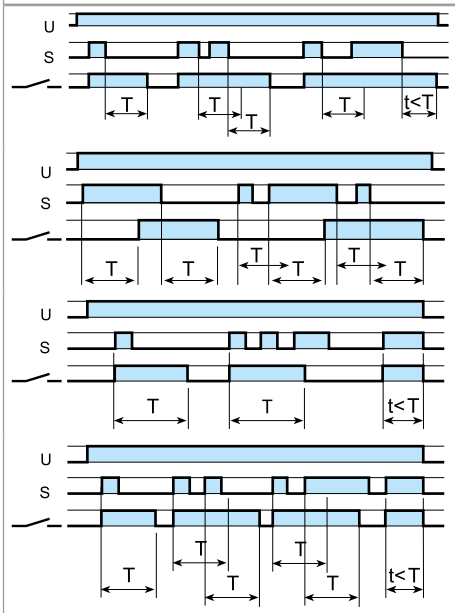


(AI) On-delay.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

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

(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).



(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.

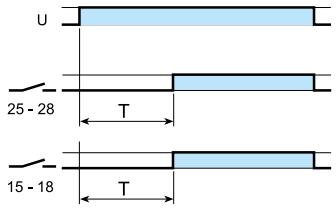
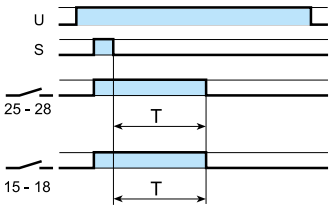
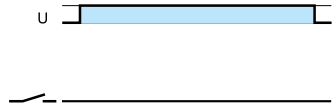
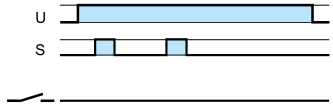
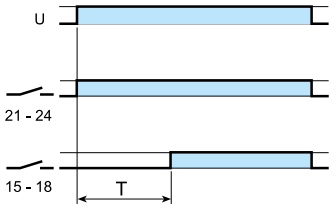
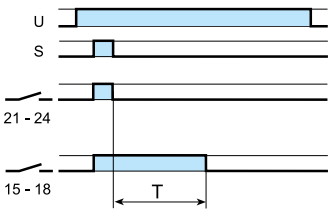
(CE) On- and off-delay with control signal.
Power is permanently applied to the timer.
Closing the control signal (S) initiates the preset delay, after which time the output contacts transfer. Opening the control signal initiates the same preset delay, after which time the output contacts reset.

(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.

(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.

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

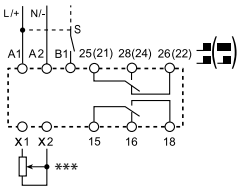
Contact mode selector	Functions without control signal (example: AI)	Functions with control signal (example: BE)
2 timed contacts 	 Both output contacts (15-18 and 25-28) follow the timing function	 Both output contacts (15-18 and 25-28) follow the timing function
OFF 	 Both output contacts [15-18 and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

Functions

Wiring diagram

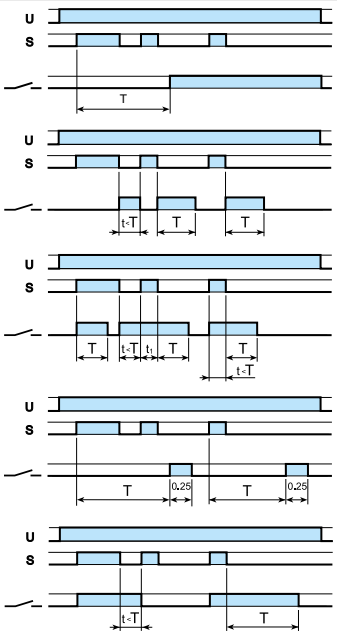
U = Supply voltage **S** = Signal switch **P** = Pause switch = Output contact

Multi-function
with control signal



*** Regulated using an external potentiometer (10 kΩ - 0.25 W).

Type 83.52



(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.

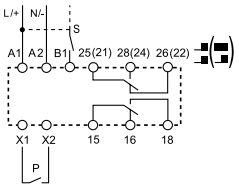
(EEa) Interval with control signal off (retriggerable).
Power is permanently applied to the timer.
On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

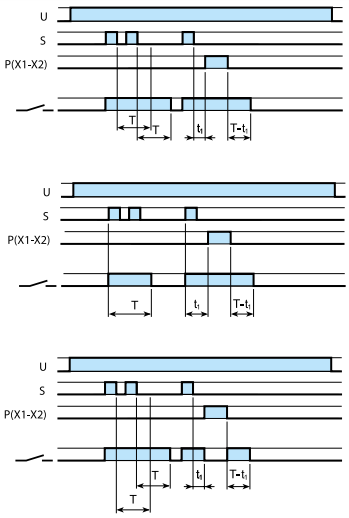
(FE) Interval with control signal on and off.
Power is permanently applied to the timer.
Both the opening and the closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the preset delay has elapsed.

(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 0.25 s.

(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 immediate open the contact with a further impulse on S.

with control signal and pause signal



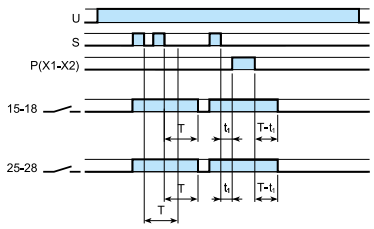
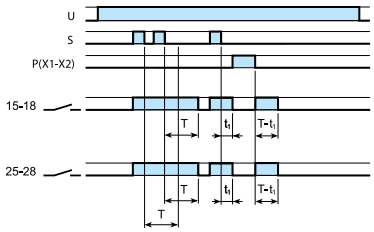
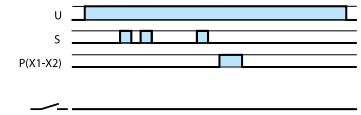
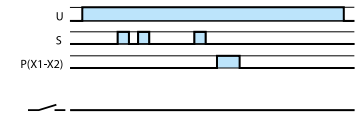
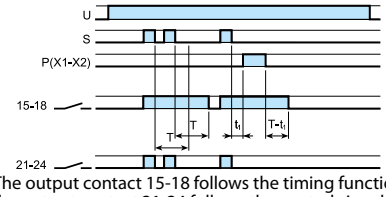
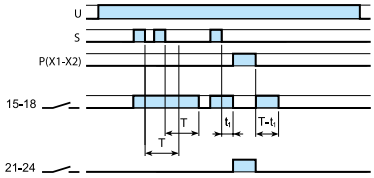


(BEp) Off-delay with control signal and pause signal.
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the signal switch initiates the preset delay, after which the output contacts reset. Closure of the pause switch (X1-X2) 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.

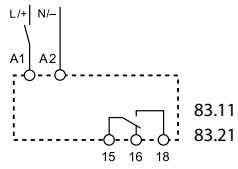
83.52 type

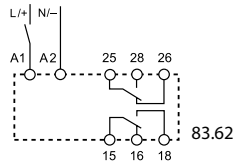
Contact mode selector	Functions with control signal and pause signal (example: BEp)	Function SHp
2 timed contacts 	 Both output contacts (15-18 and 25-28) follow the timing function	 Both output contacts (15-18 and 25-28) follow the timing function
OFF 	 Both output contacts [15-18 and 25(21)-28(24)]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

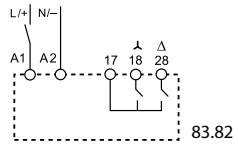
Functions

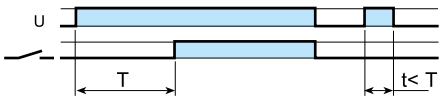
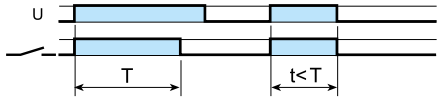
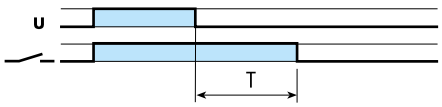
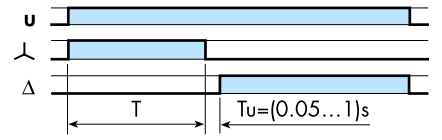
Wiring diagram | **U** = Supply voltage | **S** = Signal switch | = Output contact

Mono-function
without control signal

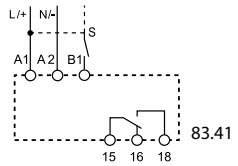


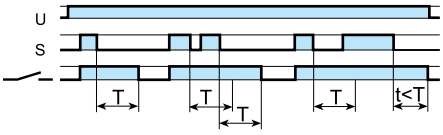




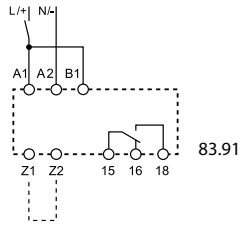
Type		
83.11		**(AI) On-delay.** Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.
83.21		**(DI) Interval.** Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.
83.62		**(BI) Power 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 (⅄) closes immediately. After preset delay has elapsed the star contact (⅄) resets. After a further time (settable from 0.05 s to 1 s) the delta contact (Δ) closes and remains in that position, until reset on power off.

with control signal (S)



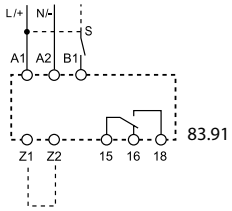
Type		
83.41		**(BE) Off-delay with control signal.** Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.

Asymmetrical recycler
without control signal

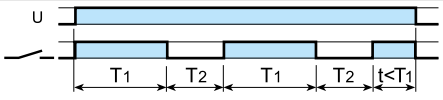
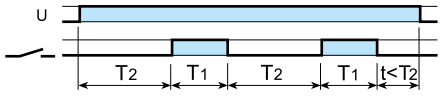
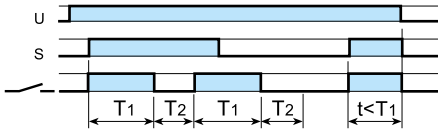
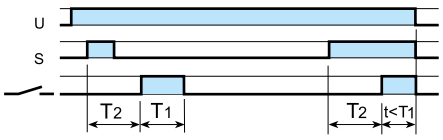


Z1-Z2 open: **(LI)** function
Z1-Z2 linked: **(PI)** function

with control signal

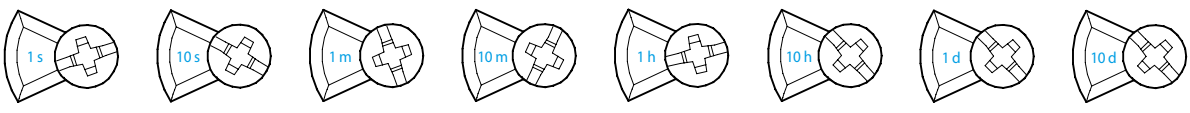


Z1-Z2 open: **(LE)** function
Z1-Z2 linked: **(PE)** function

Type		
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.

Times scales

Rotary switch position series 83



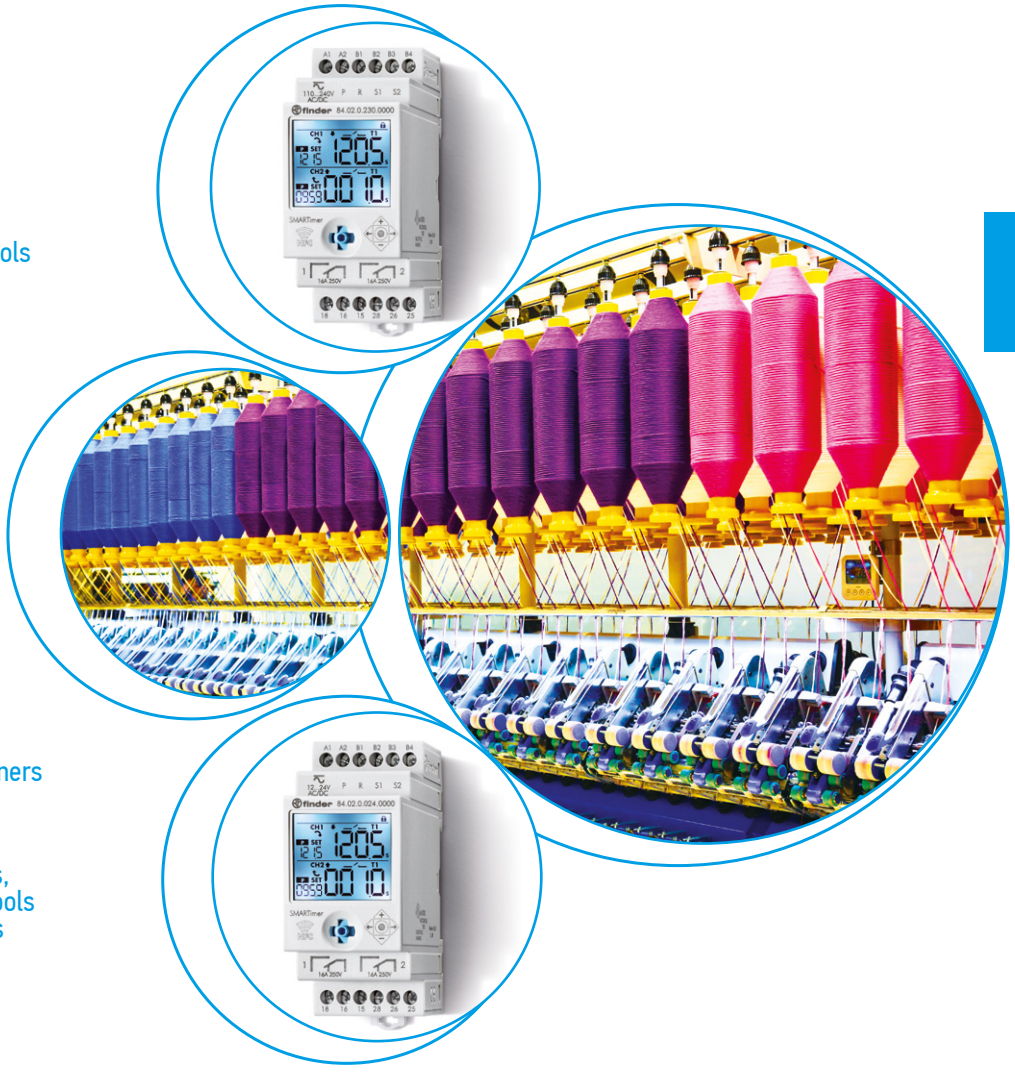
(0.05…1)s | (0.5…10)s | (0.05…1)min | (0.5…10)min | (0.05…1)h | (0.5…10)h | (0.05…1)d | (0.5…10)d

H

finder
SWITCH TO THE FUTURE

SMARTimer, digital timer 16 A

- Timers and lighting controls
- Automatic car-washes
- Labelling machines
- Industrial furnaces and ovens
- Punches, cleaners, planers and sanders
- Discotheques, swimming pools and fountains



84
SERIES

Multi-function SMARTimer

Type 84.02
- 1 CO (16 A) + 1 CO (16 A)

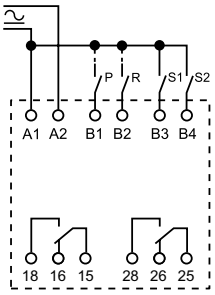
- 2 in 1: two independent channels
- Two supply version available: 12…24 V AC/DC and 110…240 V AC/DC (not polarized)
- Two programming modes: "Smart" mode via smartphone with NFC communication or "Classic" mode via the joystick
- Wide backlit display for easy reading all information during the programming phase and during normal operation
- Flexibility: possible to create new specific functions, mixing the 30 available functions on each channel
- High precision and possibility of choice in time set-up:
  - Time units; 0.1 seconds, seconds, minutes, hours
  - Set-time to 4 digits, anywhere between 000.1 second and 9999 hours
- Large display allows easy viewing: set time, current time, timing in progress, input command state, output state
- Two independent Start inputs - one per channel
- One common Reset input (select to apply to either, or both, channels)
- One common Pause input (select to apply to either, or both, channels)
- PIN to protect access to programming session
- Up or Down timing modes
- Type 84.02.0.024.0000: it's possible to directly connect timer input to proximity sensors (both PNP and NPN)
- 35 mm rail (EN 60715) mount

Screw terminal

For outline drawing see page 5

84.02

- 2 CO 16 A output contacts
- Digital Timer "Two in one": two totally independent programmable channels, in a single product



Wiring diagram

Contact specification			
Contact configuration		2 CO (DPDT)	
Rated current/Maximum peak current	A	16/30	
Rated voltage/ Maximum switching voltage	V AC	250/400	
Rated load AC1	VA	4000	
Rated load AC15 (230 V AC)	VA	1000	
Single phase motor rating (230 V AC)	kW	0.55	
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	
Minimum switching load	mW (V/mA)	300 (5/5)	
Standard contact material		AgNi	
Supply specification			
Nominal voltage (U_N)	V DC/AC (50/60 Hz)	12…24	110…240
Rated power AC/DC	VA (50 Hz)/W	2.2/1.2	4/1.6
Operating range	V DC/AC	10…30	90…264
Technical data			
Specified time range		0.1s…9999h	
Repeatability	%	± 0.05	
Recovery time	ms	40*	
Minimum control impulse	ms	40	
Setting accuracy	%	± 0.05	
Electrical life at rated load in AC1	cycles	$100 \cdot 10^3$	
Ambient temperature range	°C	–20…+50	
Protection category		IP 20	
Approvals (according to type)		CE EAC cULus	

* Applies where timer function is controlled by an input to B terminal(s). Where power-off is used to reset the timer, the recovery time can increase up to 500 ms, depending on supply voltage.

Ordering information

Example: 84 series, SMARTimer, 2 CO - 16 A, supply rated at (110…240)V AC/DC.

8 4	.	0	2	.	0	.	2 3 0	.	0	0	0	0
Series		Type	No. of poles		Supply version		Supply voltage		Versions			

Series

Type
0 = 2 Channel multi-function SMARTimer

No. of poles
2 = 2 CO (DPST)

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

Supply voltage
230 = (110…240)V AC/DC (not polarized)
024 = (12…24)V AC/DC (not polarized)

Versions
0 = Standard

Technical data

Insulation					
Dielectric strength	between input and output circuit	V AC	4000		
	between open contacts	V AC	1000		
	between input/output and display	V AC	2000		
Insulation (1.2/50 µs) between input and output		kV	6		
EMC specifications					
Type of test			**Reference standard**	**84.02.0.230**	**84.02.0.024**
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	2 kV
	differential mode		EN 61000-4-5	4 kV	1.5 kV
on start terminal (B1…B4)	common mode		EN 61000-4-5	4 kV	2 kV
	differential mode		EN 61000-4-5	3 kV	1 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6	10 V	10 V
Radiated and conducted emission			EN 55022	class B	class B
Other data					
Current absorption on control terminals (B1…B4)			< 2.4 mA (0.230), < 5.5 mA (0.024)		
Power lost to the environment	without contact current	W	1.6		
	with rated current	W	3.6		
Screw torque		Nm	0.8		
Max. wire size			solid cable	stranded cable	
		mm^2	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	

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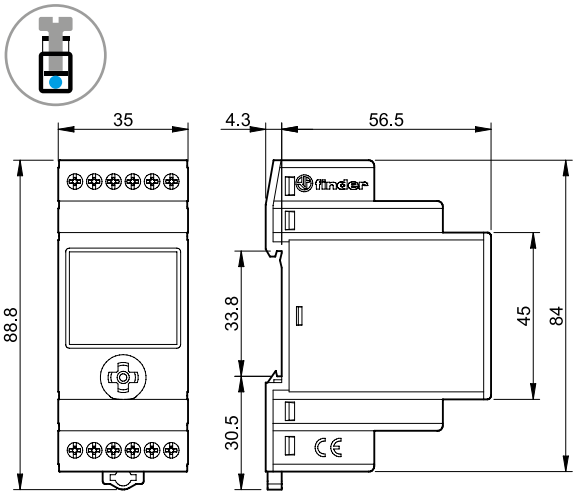
Outline drawing

Type 84.02
Screw terminal



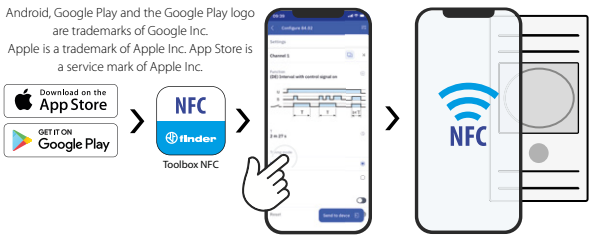
Two programming modes

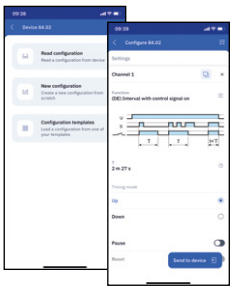
"Smart"

Mode via smartphones with NFC communication using Finder toolbox Android App.

"Classic"

Mode via the joystick





Finder Toolbox for programming
Once the App FINDER Toolbox is downloaded and installed, you can read an existing program, or program your device with maximum flexibility, changing the smallest details and saving your program directly to your smartphone.
At this point you simply touch the time switch with the smartphone to transfer the data.

Finder Toolbox for reference
Finder Toolbox provides all technical data sheets and news from Finder.

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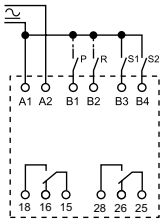
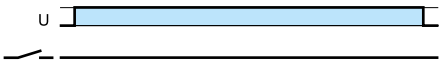
Functions

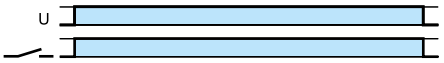
Wiring diagram



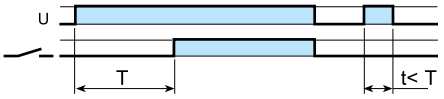
Type 84.02



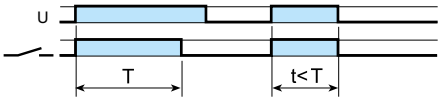
(OFF) Relay OFF.
The output contact stays permanently open.



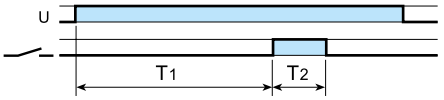
(ON) Relay ON.
The output contact stays permanently closed.



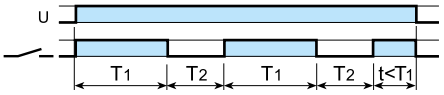
(AI) On-delay.
Apply power to timer. Output contact transfers after preset time has elapsed. Reset occurs when power is removed.



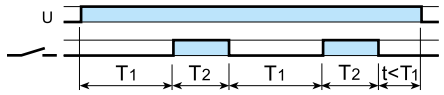
(DI) Interval.
Apply power to timer. Output contact transfers immediately. After the preset time has elapsed, contact resets.



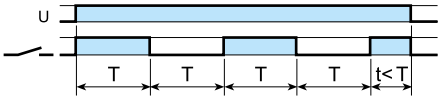
(GI) Pulse delayed.
Apply power to timer. Output contact transfers after time T1 has elapsed. Reset occurs after T2 time.



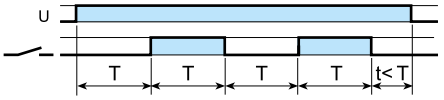
(LI) Asymmetrical flasher (starting pulse on).
Apply power to timer. Output contact transfers immediately and cycle between ON and OFF for as long as power is applied. The ON and OFF times are independently adjustable.



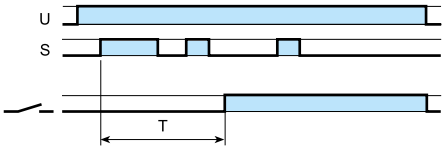
(PI) Asymmetrical flasher (starting pulse off).
Apply power to timer. Output contact transfers after time T1 has elapsed and cycle between OFF and ON for as long as power is applied. The ON and OFF times are independently adjustable.



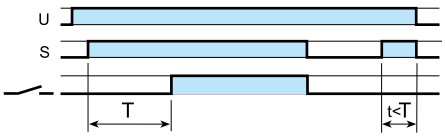
(SW) Symmetrical flasher (starting pulse on).
Apply power to timer. Output contact transfers immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).



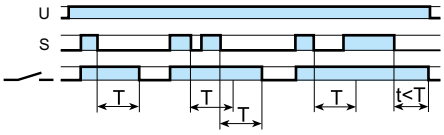
(SP) Symmetrical flasher (starting pulse off).
Apply power to timer. First transfer of contact occurs after preset time has elapsed. The timer now cycles between OFF and ON as long as power is applied. The ratio is 1:1 (time on = time off).



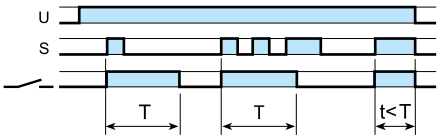
(AE) On-delay with control signal.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which the output contact transfers and remains so until the power is removed.



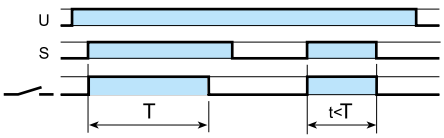
(AC) On-delay with maintained control signal.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which the output contact transfers and remains so, until the Signal Switch (S) is opened. If the Signal Switch (S) opens during the timing, the function will reset.



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



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



(DC) Interval with maintained control signal.
Power is permanently applied to the timer. On closure of Signal Switch (S), the output contact transfers and remain so for the duration of the preset delay, unless the Signal Switch opens before the preset time has elapsed in which case the output contact resets immediately.

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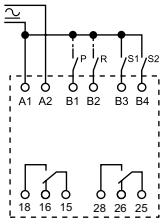
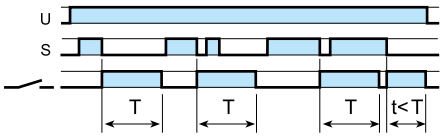
Functions

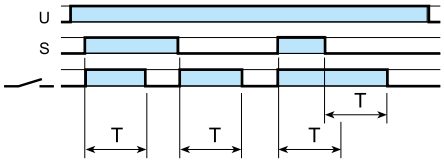
Wiring diagram



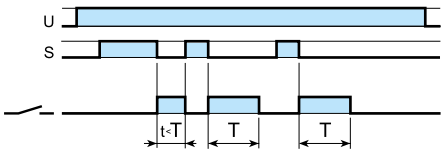
Type 84.02



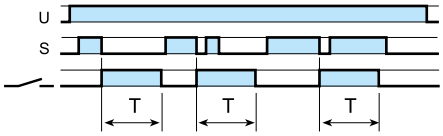
(EE) Interval with control signal off.
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contact transfers, and remain so for the duration of the preset delay, after which it resets.



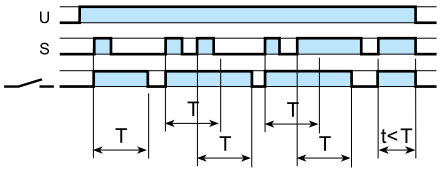
(FE) Interval with control signal on and off.
Power is permanently applied to the timer. Both the opening and the closing of the Signal Switch (S) initiates the transfer of the output contact (or extends the time). In both instances the contact resets after the preset delay has elapsed.



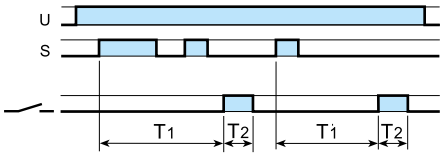
(EEa) Interval with control signal off (retriggerable).
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contact transfers, and remain so for the duration of the preset delay, after which it resets.



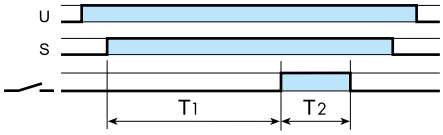
(EEb) Interval with control signal off.
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contact transfers, and remain so for the duration of the preset delay, after which it resets.



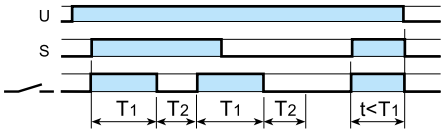
(WD) Watchdog
(retriggerable interval with control signal on).
Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contact transfers, and remain so for the duration of the preset delay, after which it resets; subsequent closures of Signal Switch during the delay will extend the time. If the closure of the Signal Switch (S) is longer than the preset time (T) then the output contact resets.



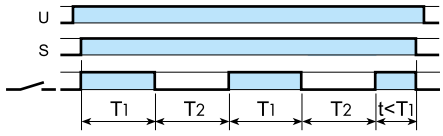
(GE) Pulse delayed with control signal on.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates T1 delay, after which the output contact transfers. Reset occurs after T2 time.



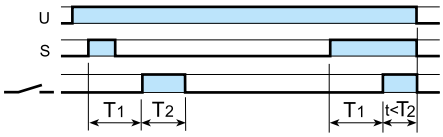
(GC) Pulse delayed with maintained control signal.
Power is permanently applied to the timer. On closure of Signal Switch (S), the output contact will transfer after time T1 has elapsed. Reset occurs after T2 time. If the Signal Switch (S) opens during T1 /T2, the timing function/output contact will reset.



(LE) Asymmetrical flasher (starting pulse on) with control signal.
Power is permanently applied to the timer. Closing Signal Switch (S) causes the output contact to transfer immediately and cycle between ON and OFF, until opened.



(LC) Asymmetrical flasher (starting pulse on) with maintained control signal.
Power is permanently applied to the timer. On closure of Signal Switch (S), the output contact transfers immediately and cycles between ON and OFF for as long as the control signal is applied. The ON and OFF times are independently adjustable. After the Signal Switch (S) is opened, the output contact resets.

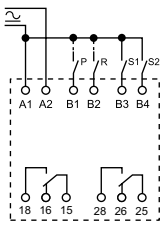


(PE) Asymmetrical flasher (starting pulse off) with control signal.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates delay T1 after which the output contact transfers and continues to cycle between OFF and ON, until the Signal Switch is opened.

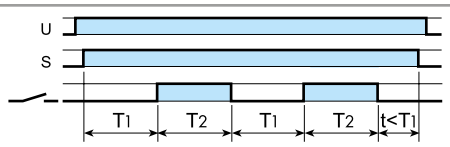
H

Functions

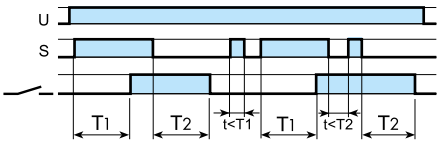
Wiring diagram



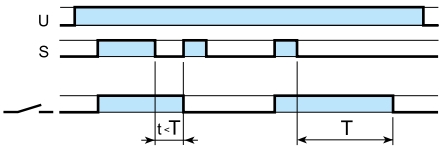
Type 84.02



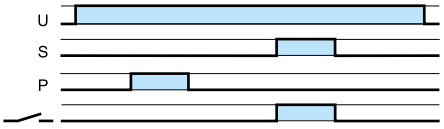
(PC) Asymmetrical flasher (starting pulse off) with maintained control signal.
Power is permanently applied to the timer. On closure of Signal Switch (S), the output contact transfers after time T1 has elapsed and cycles between OFF and ON for as long as the control signal is applied. The OFF and ON times are independently adjustable. After the Signal Switch (S) is opened, the output contact resets.



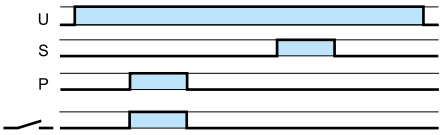
(CEb) On and off independent delays with control signal.
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay T1, after which the output contact transfers. Opening the Signal switch initiates the preset delay T2, after which the output contact resets.



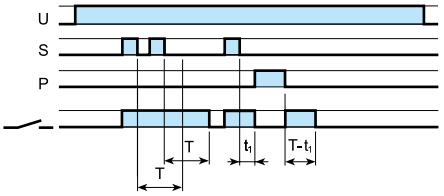
(IT) Timing step.
Closing the Signal Switch (S) the output contact transfers and remains so after S opening, for the duration of the preset delay, after which it resets. During the timing period it is possible to immediate open the contact with a further impulse on S.



(SS) Monostable controlled by Signal switch.
The output contact follows the status of Signal Switch (S).

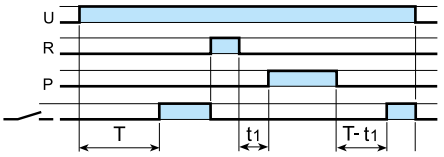


(PS) Monostable controlled by Pause switch.
The output contact follows the status of Pause Switch (P).



(SHp) "Shower" (off-delay with control signal and pause signal).
Power is permanently applied to the timer. The output contact transfers immediately on closure of the Signal Switch (S). Opening the signal switch initiates the preset delay, after which the output contact resets. Closure of the Pause Switch (P) will immediately halt the timing process, but the elapsed time will be retained. During the pause, the output contact will be open. On opening of the Pause Switch, timing resumes from the retained value and the output contact will take the previous condition.

PAUSE and RESET options



Ex. **(AI)** function

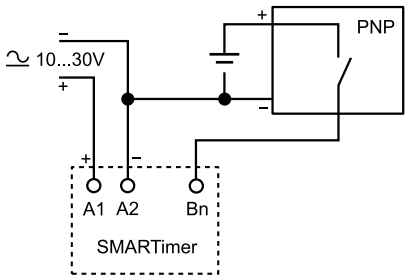
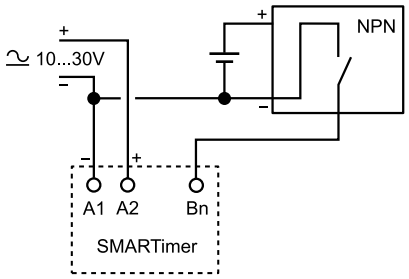
(P) PAUSE option*
Closure of the pause switch will immediately halt the timing process, but the elapsed time will be retained. The current state of the output contacts will be maintained. On opening of the pause switch, timing resumes from the retained value.

(R) RESET option*
For each and every function and time range, the timer is immediately reset when the reset switch is closed.

* Select to apply to either, or both, channels.

Interfacing the SMARTimer with proximity PNP-NPN sensors

Wiring diagram

With PNP sensors		It is possible to directly connect the output of proximity sensors (either PNP or NPN types) to the inputs of the 24V version of the SMARTimer.
With NPN sensors		

H

finder
SWITCH TO THE FUTURE

Miniature plug-in timers 7 - 10 A

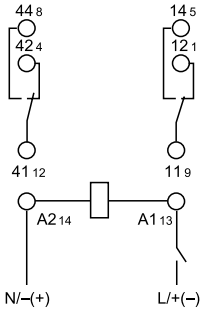
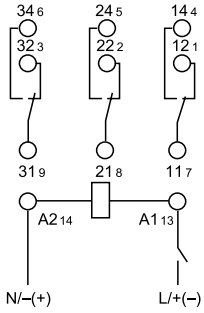
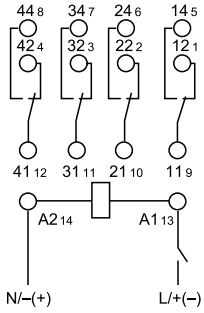
- Timers and lighting controls
- Medical and dentistry
- Drying kilns
- Elevators and lifts
- Panels for electrical distribution
- Control panels

85
SERIES

Plug-in timer

85.02 - 2 Pole 10 A
85.03 - 3 Pole 10 A
85.04 - 4 Pole 7 A

- Multifunctions
- Seven time scales, from 0.05 s to 100 h
- 94 series sockets for 35 mm rail (EN 60715) mount with push-in and screw terminal

	85.02	85.03	85.04
			
	• 2 pole, 10 A • AC/DC supply non polarized • Plug-in for use with 94 series sockets	• 3 pole, 10 A • AC/DC supply non polarized • Plug-in for use with 94 series sockets	• 4 pole, 7 A • AC/DC supply non polarized • Plug-in for use with 94 series sockets
	AI: On-delay **DI:** Interval **SW:** Symmetrical flasher (starting pulse on) **GI:** Pulse delayed	**AI:** On-delay **DI:** Interval **SW:** Symmetrical flasher (starting pulse on) **GI:** Pulse delayed	**AI:** On-delay **DI:** Interval **SW:** Symmetrical flasher (starting pulse on) **GI:** Pulse delayed
			
	Wiring diagram (without control signal)	Wiring diagram (without control signal)	Wiring diagram (without control signal)

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

For outline drawing see page 4

Contact specification				
Contact configuration		2 CO (DPDT)	3 CO (3PDT)	4 CO (4PDT)
Rated current/Maximum peak current	A	10/20	10/20	7/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/250
Rated load AC1	VA	2500	2500	1750
Rated load AC15 (230 V AC)	VA	500	500	350
Single phase motor rating (230 V AC)	kW	0.37	0.37	0.125
Breaking capacity DC1: 30/110/220 V	A	10/0.25/0.12	10/0.25/0.12	7/0.25/0.12
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)	230…240	230…240	230…240
	V AC/DC	12 - 24 - 48 - 110…125 (non polarized)		
Rated power AC/DC	VA (50 Hz)/W	2/2	2/2	2/2
Operating range	AC	(0.85…1.1)U_N	(0.85…1.1)U_N	(0.85…1.1)U_N
	DC	(0.85…1.1)U_N	(0.85…1.1)U_N	(0.85…1.1)U_N
Technical data				
Specified time range		(0.05…1)s, (0.5…10)s, (5…100)s, (0.5…10)min, (5…100)min, (0.5…10)h, (5…100)h		
Repeatability	%	± 2	± 2	± 2
Recovery time	ms	≤ 20	≤ 20	≤ 20
Minimum control impulse	ms	—	—	—
Setting accuracy-full range	%	± 5	± 5	± 5
Electrical life at rated load in AC1	cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Ambient temperature range	°C	–20…+60	–20…+60	–20…+60
Protection category		IP 40	IP 40	IP 40
Approvals (according to type)				

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85 SERIES
Miniature plug-in timers 7 - 10 A

Ordering information

Example: 85 series timer, 4 CO (4PDT), 24 V AC/DC supply voltage, AI, DI, GI, SW functions.

8 5	.	0	4	.	0	.	0 2 4	.	0	0	0	0

Series

Type
0 = Multifunction (AI, DI, GI, SW)*
* AI = On-delay
DI = Interval
GI = Pulse delayed
SW = Symmetrical flasher (starting pulse on)

No. of poles
2 = 2 pole - 10 A
3 = 3 pole - 10 A
4 = 4 pole - 7 A

Supply voltage
012 = 12 V AC/DC
024 = 24 V AC/DC
048 = 48 V AC/DC
125 = (110…125)V AC/DC
240 = (230…240)V AC

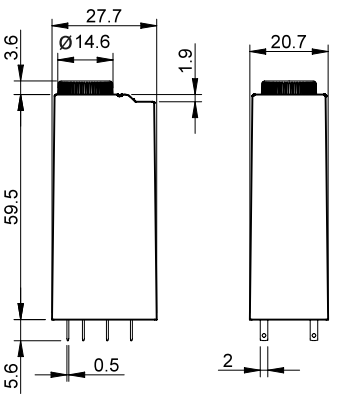
Supply version
0 = AC (50/60 Hz)/DC
8 = AC (50/60 Hz) for 240 V only

Technical data

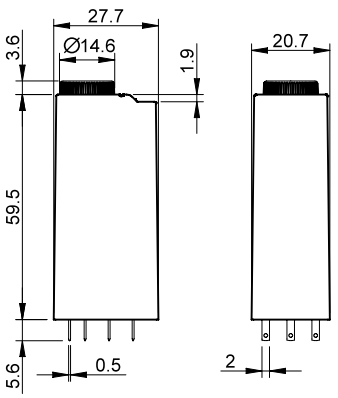
Insulation					
Dielectric strength			**85.02, 85.03**		**85.04**
	between input and output circuit	V AC	2000		2000
	between open contacts	V AC	1000		1000
	between adjacent contacts	V AC	2000		1550
Insulation (1.2/50 µs) between input and output		kV	6		4
EMC specifications					
Type of test			**Reference standard**		
Electrostatic discharge	contact discharge		EN 61000-4-2		n.a.
	air discharge		EN 61000-4-2		8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)			EN 61000-4-3		15 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals			EN 61000-4-4		4 kV
Surges (1.2/50 µs) on	common mode		EN 61000-4-5		4 kV
Supply terminals	differential mode		EN 61000-4-5		2 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6		10 V
Power-frequency (50 Hz)			EN 61000-4-8		30 A/m
Radiated and conducted emission			EN 55022		class B
Other data					
Power lost to the environment	without contact current	W	1.6		
	with rated current	W	3.7 (85.02)	4.7 (85.03)	3.6 (85.04)

Outline drawings

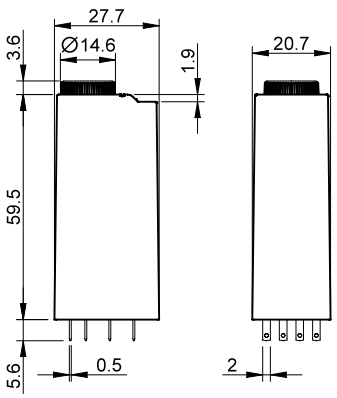
Type 85.02



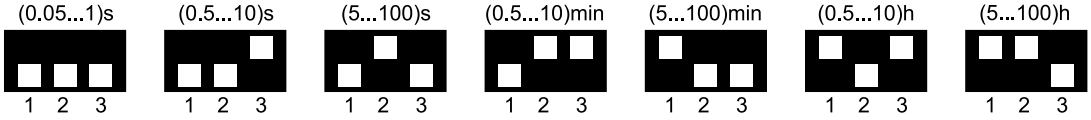
Type 85.03



Type 85.04



Times scales



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

Functions

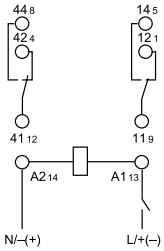
U = Supply voltage

= Output contact

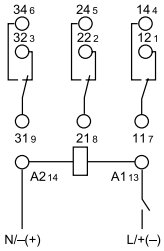
LED	Supply voltage	NO (SPDT-NO) output contact	Contacts	
			Open	Closed
	OFF	Open	x1 - x4	x1 - x2
	ON	Open	x1 - x4	x1 - x2
	ON	Open (Timing in Progress)	x1 - x4	x1 - x2
	ON	Closed	x1 - x2	x1 - x4

Wiring diagram

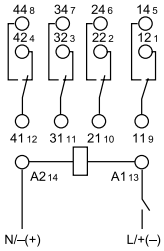
Type: 85.02, 85.03, 85.04



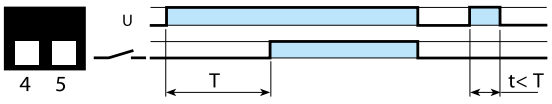
85.02



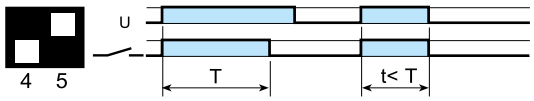
85.03



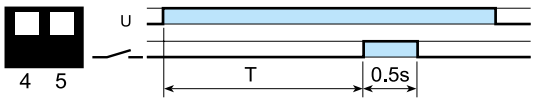
85.04



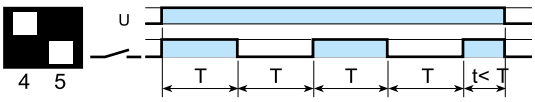
(AI) On-delay.
Apply power to timer.
Output contacts transfer after preset time has elapsed.
Reset occurs when power is removed.



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



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



(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).

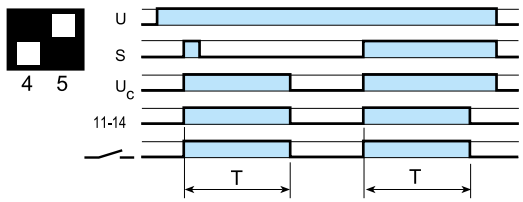
U = Supply voltage

S = Signal switch

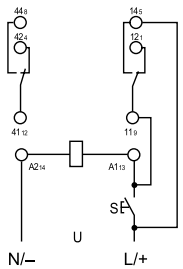
U_c = Supply voltage to the timer

11-14 = Self-holding contact

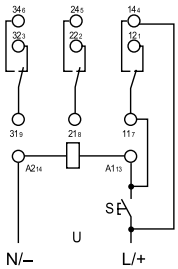
= Output contact



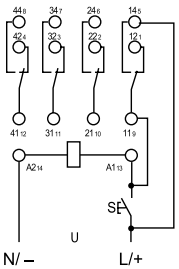
Signal ON Pulse
On mometary closure of Signal Switch (S) > 50 ms, the output contacts transfer and remain so (with self-holding on contact 11-14) for the duration of the preset delay, after which they reset.



85.02



85.03



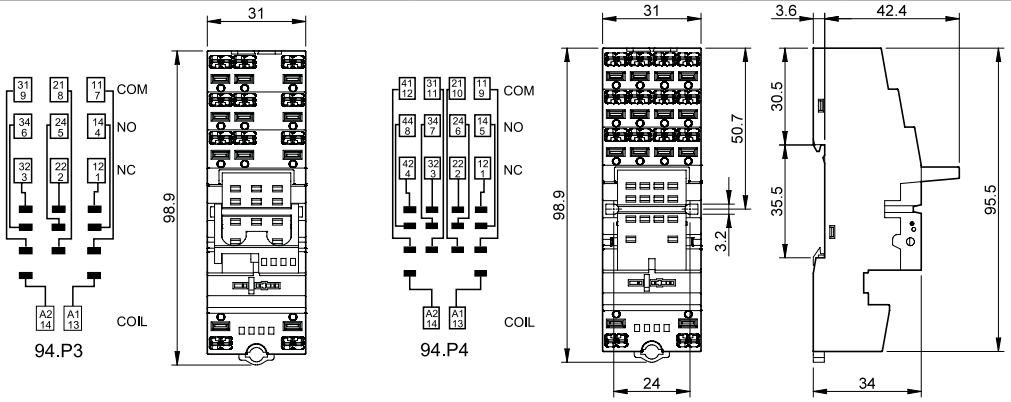
85.04

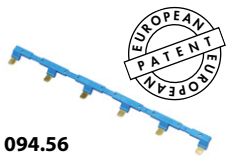
94 SERIES
Sockets and accessories for 85 series timers

94.P4

Approvals
(according to type):

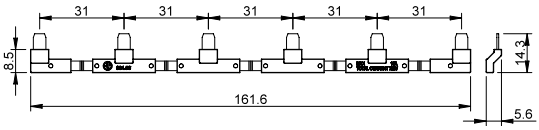
Push-in terminal socket panel or 35 mm (EN 60715) rail mount		**94.P3** **Blue**	**94.P4** **Blue**
For timer type		85.03	85.02, 85.04
Accessories			
Metal retaining clip		094.81	
6-way jumper link		094.56	
Identification tag		094.00.4	
2-way jumper link		094.52.1	
2-way jumper link		097.52	
Marker tag holder		097.00	
Sheet of marker tags for marker tag holder 097.00 , 48 tags, 6 x 12 mm for CEMBRE thermal transfer printers		060.48	
Technical data			
Rated values		10 A - 250 V	
Dielectric strength		2 kV AC	
Protection category		IP 20	
Ambient temperature	°C	–40…+70	
Wire strip length	mm	8	
Min. wire size for 94.P3 and 94.P4 sockets		solid wire	stranded wire
	mm²	0.5	0.5
	AWG	21	21
Max. wire size for 94.P3 and 94.P4 sockets		solid wire	stranded wire
	mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
	AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14





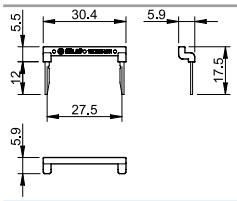
094.56

6-way jumper link for 94.P3 and 94.P4 sockets	094.56 (blue)
Rated values	10 A - 250 V



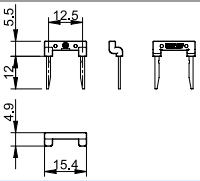
094.52.1

2-way jumper link for 94.P3 and 94.P4 sockets	094.52.1
Rated values	10 A - 250 V



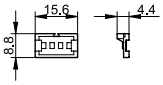
097.52

2-way jumper link for 94.P3 and 94.P4 sockets	097.52
Rated values	10 A - 250 V



097.00

Marker tag holder for 94.P3 and 94.P4 sockets	097.00



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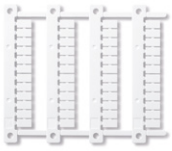
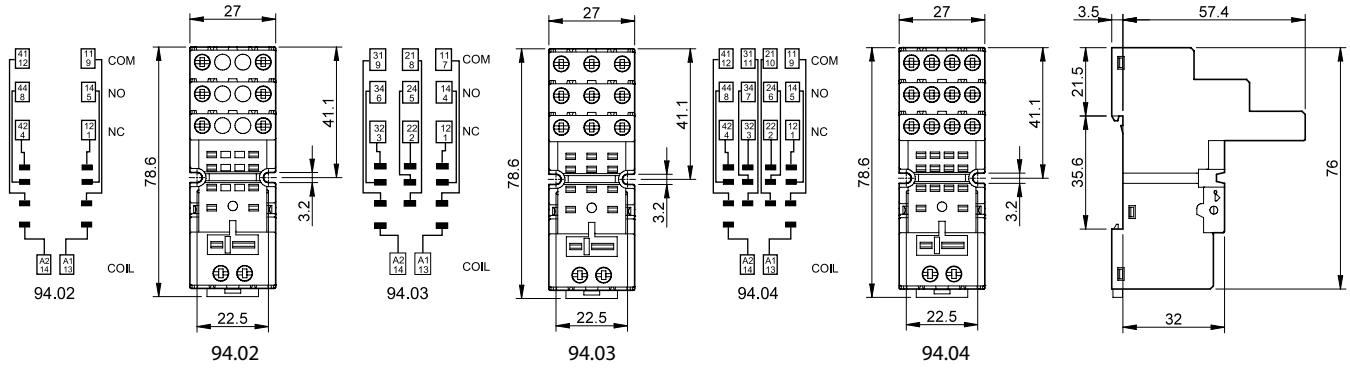
94.04

Approvals (according to type):



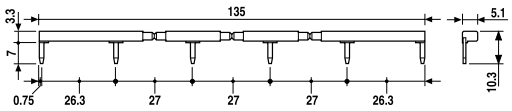
060.48

Screw terminal (Box clamp) socket panel or 35 mm (EN 60715) rail mount		**94.02 Blue**	**94.02.0 Black**	**94.03 Blue**	**94.03.0 Black**	**94.04 Blue**	**94.04.0 Black**
For timer type		85.02		85.03		85.04	
Accessories							
Metal retaining clip		094.81					
6-way jumper link		094.06	094.06.0	094.06	094.06.0	094.06	094.06.0
Identification tag		094.00.4					
Marker tag holder		097.00					
Sheet of marker tags marker tag holder 097.00 , 48 tags, 6 x 12 mm for CEMBRE thermal transfer printers		060.48					
Technical data							
Rated values		10 A - 250 V					
Dielectric strength		2 kV AC					
Protection category		IP 20					
Ambient temperature	°C	–40…+70					
Screw torque	Nm	0.5					
Wire strip length	mm	8					
Max. wire size for 94.02/03/04 sockets		solid wire			stranded wire		
	mm²	1 x 6 / 2 x 2.5			1 x 4 / 2 x 2.5		
	AWG	1 x 10 / 2 x 14			1 x 12 / 2 x 14		



094.06

6-way jumper link for 94.02, 94.03 and 94.04 sockets	094.06 (blue)	094.06.0 (black)
Rated values	10 A - 250 V	



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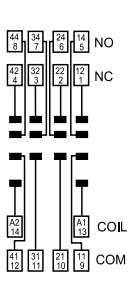
94 SERIES
Sockets and accessories for 85 series timers

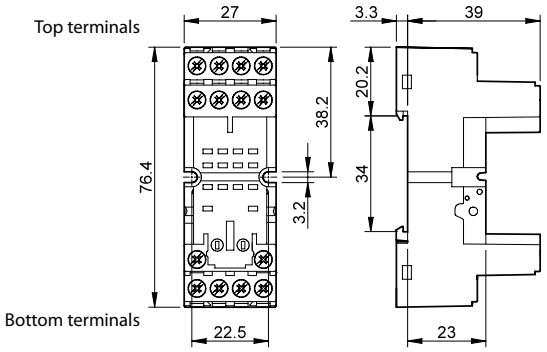
94.84.2

Approvals
(according to type):

Screw terminal (Box clamp) socket panel or 35 mm (EN 60715) rail mount	**94.84.2 Blue**	**94.84.20 Black**
For timer type	85.02, 85.04	
Accessories		
Metal retaining clip (supplied with socket - packaging code SMA)	094.81	
6-way jumper link	094.06	094.06.0
Identification tag	094.80.3	
Technical data		
Rated values	10 A - 250 V	
Dielectric strength	2 kV AC	
Protection category	IP 20	
Ambient temperature °C	–40…+70	
Screw torque Nm	0.5	
Wire strip length mm	7	
Max. wire size for 94.84.2 socket	solid wire	stranded wire
mm²	1 x 6 / 2 x 2.5	1 x 4 / 2 x 2.5
AWG	1 x 10 / 2 x 14	1 x 12 / 2 x 14



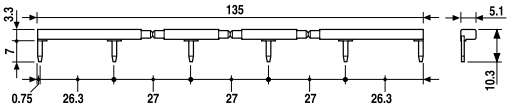
94.84.2



94.84.2

094.06

6-way jumper link for 94.84.2 socket	094.06 (blue)	094.06.0 (black)
Rated values	10 A - 250 V	



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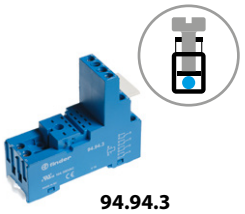
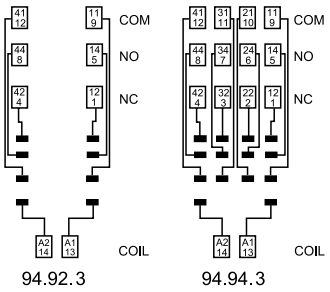
VI-2021, www.findernet.com

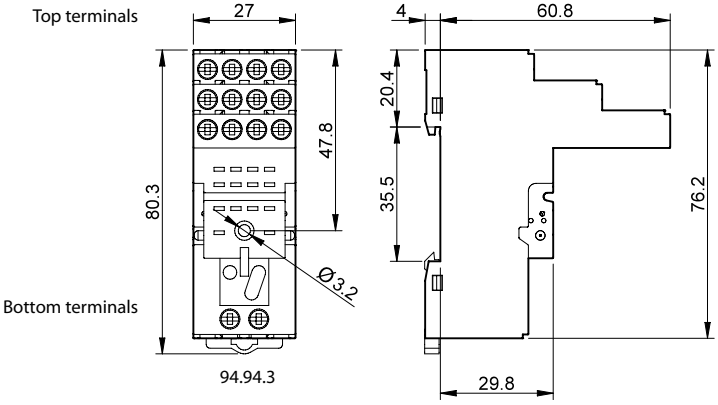


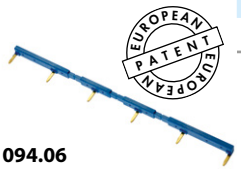
94.94.3

Approvals (according to type):

Screw terminal (Box clamp) socket panel or 35 mm rail mount		**94.92.3 (blue)**	**94.92.30 (black)**	**94.94.3 (blue)**	**94.94.30 (black)**
For timer type		85.02		85.04	
Accessories					
Metal retaining clip		094.81			
6-way jumper link		094.06	094.06.0	094.06	094.06.0
Identification tag		094.80.3			
Technical data					
Rated values		10 A - 250 V			
Dielectric strength		2 kV AC			
Protection category		IP 20			
Ambient temperature	°C	–25…+70			
Screw torque	Nm	0.5			
Wire strip length	mm	8			
Max. wire size for 94.92.3 and 94.94.3 sockets		solid wire		stranded wire	
	mm²	1 x 6 / 2 x 2.5		1 x 4 / 2 x 2.5	
	AWG	1 x 10 / 2 x 14		1 x 12 / 2 x 14	

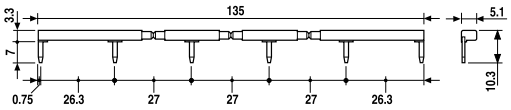






094.06

6-way jumper link for 94.92.3 and 94.94.3 sockets	094.06 (blue)	094.06.0 (black)
Rated values	10 A - 250 V	



H

94 SERIES
Sockets and accessories for 85 series timers

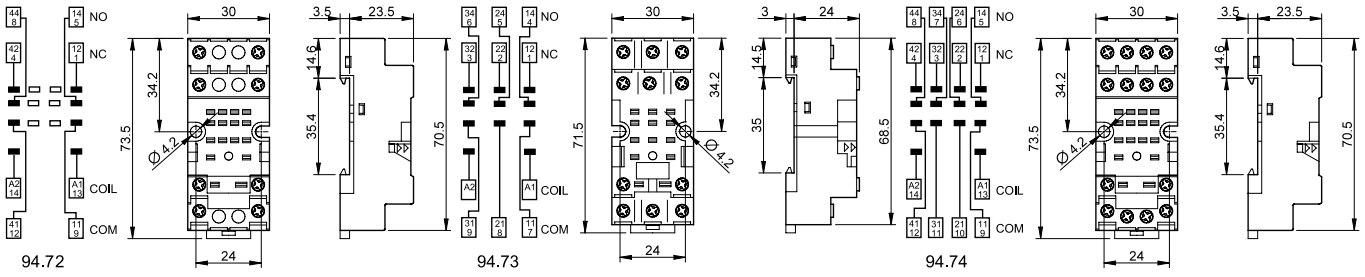
94.74

Approvals
(according to type):

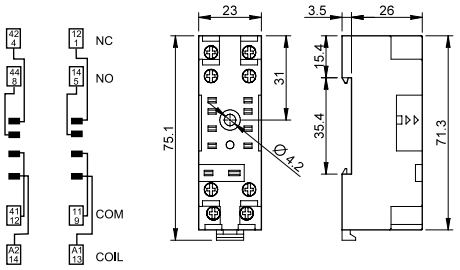
94.82

Approvals
(according to type):

Screw terminal (Plate clamp) socket panel or 35 mm rail (EN 60715) mount		**94.72** **Blue**	**94.72.0** **Black**	**94.73** **Blue**	**94.73.0** **Black**	**94.74** **Blue**	**94.74.0** **Black**
For timer type		85.02		85.03		85.02, 85.04	
Accessories							
Metal retaining clip (supplied with timer)		094.81					
Screw terminal socket panel or 35 mm rail (EN 60715) mount		**94.82** **Blue**			**94.82.0** **Black**		
For timer type		85.02			85.02		
Accessories							
Metal retaining clip (supplied with timer)		094.81					
Technical data							
Rated values		10 A - 250 V					
Dielectric strength		2 kV AC					
Protection category		IP 20					
Ambient temperature	°C	–40…+70					
Screw torque	Nm	0.5					
Wire strip length	mm	8 (94.72, 94.73, 94.74)			9 (94.82)		
Max. wire size for 94.72, 94.73, 94.74 and 94.82 sockets		solid wire			stranded wire		
	mm²	1 x 2.5 / 2 x 1.5			1 x 2.5 / 2 x 1.5		
	AWG	1 x 14 / 2 x 16			1 x 14 / 2 x 16		



94.72 94.73 94.74



94.82 94.82

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finder
SWITCH TO THE FUTURE

Timer modules

- Machines for ceramics
- Machines for paper processing
- Printing machines
- Packaging machines
- Wood-processing machines
- Milk processing plant
- Textile machines

86
SERIES

Timer modules for use in conjunction with relay & socket.

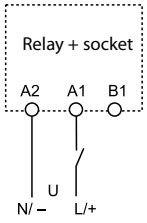
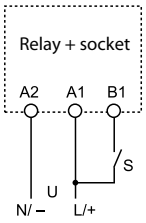
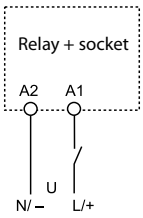
86.00 - Multi-function & multi-voltage timer module

86.30 - Bi-function & multi-voltage timer module

- Timer module type 86.00 for 90, 92, 96 series sockets and type 86.30 for 90, 92, 94, 95, 96, 97 series sockets
- Wide supply voltage range: 12…240 V AC/DC (86.00) 12…24 V AC/DC or 230…240 V AC (86.30)
- LED indicator
- Atex versions available

* For Atex versions, refer to the "Other data" table on the page 4

For outline drawing see page 5

	86.00	86.30
		
	• Time scale: from 0.05 s to 100 h • Multi-function • Plug-in for use with 90.02, 90.03, 92.03 and 96.04 sockets	• Time scale: from 0.05 s to 100 h • Bi-function • Plug-in for use with 90.02, 90.03, 92.03, 94.P3, 94.P4, 94.02, 94.03, 94.04, 95.P3, 95.P5, 95.03, 95.05, 96.02, 96.04, 97.P1, 97.P2, 97.01 and 97.02 sockets
	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 **EE:** Interval with control signal off **FE:** Interval with control signal on and off	**AI:** On-delay **DI:** Interval
	 Wiring diagram (without control signal)	 Wiring diagram (with control signal)
		 Wiring diagram

Contact specification*					
Contact configuration		See 56, 60 and 62 series relays Note: Do not use with relays 62.3x.x012.x300 and 62.3x.x012.x600	See 40, 46, 55, 56, 60 and 62 series relays		
Rated current/Maximum peak current	A				
Rated voltage/ Maximum switching voltage	V AC				
Rated load AC1	VA				
Rated load AC15 (230 V AC)	VA				
Single phase motor rating (230 V AC)	kW				
Breaking capacity DC1: 30/110/220 V	A				
Minimum switching load	mW (V/mA)				
Standard contact material					
Supply specification*					
Nominal voltage (U_N)	V AC (50/60 Hz)	12…240	12…24	110…125	230…240
	V DC	12…240	12…24	—	—
Rated power AC/DC	W	1.2	0.15		
Operating range	V AC (50/60 Hz)	10.2…265	9.6…33.6	88…137	184…265
	DC	10.2…265	9.6…33.6	—	—
Technical data					
Specified time range		(0.05…1)s, (0.5…10)s, (5…100)s, (0.5…10)min, (5…100)min, (0.5…10)h, (5…100)h			
Repeatability	%	± 1	± 1		
Recovery time	ms	≤ 50	≤ 50		
Minimun control impulse	ms	50	—		
Setting accuracy full range	%	± 5	± 5		
Electrical life at rated load in AC1	cycles	See 56, 60 and 62 series relays	See 40, 46, 55, 56, 60 and 62 series relays		
Ambient temperature range	°C	–20…+50	–20…+50		
Protection category		IP 20	IP 20		
Approvals (according to type)		CE Ex EAC cULus			

Ordering information

Example: 86 series multi-function timer module, (12…240)V AC/DC supply voltage.

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

Series

Type
0 = Multi-function (AI, DI, SW, BE, CE, DE, EE, FE)
3 = Bi-function (AI, DI)

No. of poles
See 40, 46, 55, 56, 60 and 62 series relays
Poles for chosen relay/socket combination - according to chart below

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

Supply voltage
024 = (12…24)V AC/DC (86.30 only)
120 = (110…125)V AC (86.30 only)
240 = (12…240)V AC/DC (86.00 only)
240 = (12…48) V AC/DC (86.00.0.240.0073 only)
240 = (230…240)V AC (86.30 only)

Combinations

Number of poles	Relay type	Socket type	Timer module
1	40.31	95.P3/95.03	86.30
1	40.51/61	95.P5/95.05	86.30
1	46.61	97.P1/97.01	86.30
2	40.52/40.62	95.P5/95.05	86.30
2	46.52	97.P2/97.02	86.30
2	55.32	94.P4/94.02	86.30
2	56.32	96.02	86.30
2	60.12	90.02	86.00/86.30
2	62.32	92.03	86.00/86.30
3	55.33	94.P3/94.03	86.30
3	60.13	90.03	86.00/86.30
3	62.33	92.03	86.00/86.30
4	55.34	94.P4/94.04	86.30
4	56.34	96.04	86.00/86.30

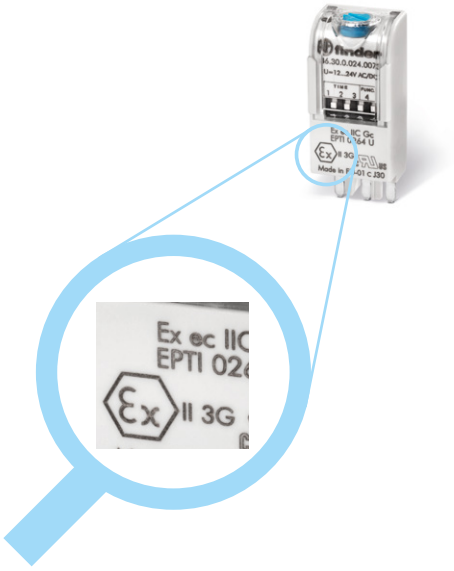
H

Other data Timer ATEX versions

Code available	Nominal voltage	Operating range	Use temperature
86.00.0.240.0073	12-48 V AC/DC	10.2…60 V AC/DC	–20…+50°C
86.30.0.024.0073	12-24 V AC/DC	9.6…33.6 V AC/DC	–20…+50°C

Markings - ATEX versions - ATEX, II 3G Ex ec IIC Gc

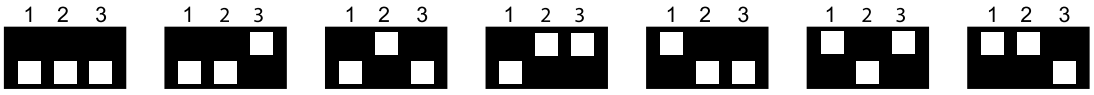
MARKING		
Ex Specific marking of explosion protection		
II Component for surface plant (different from mines)		
3 Category 3: normal level of protection		
GAS	**G** Explosive atmosphere due to presence of combustible gas vapour or mist	
	Ex ec Increased security	
	IIC Gas group	
	Gc Equipment Protection Level	
–20 °C ≤ Ta ≤ +50 °C Ambient temperature		
EPTI 17 ATEX 0264 U EPTI: laboratory which issues the CE type certificate 17: year of issue of certificate 0264: number of CE type certificate		
U: ATEX component		



Technical data

EMC specifications					
Type of test			**Reference standard**	**86.00**	**86.30**
Electrostatic discharge	contact discharge		EN 61000-4-2	4 kV	n.a.
	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	2 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	4 kV	2 kV
	differential mode		EN 61000-4-5	4 kV	1 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6	10 V	10 V
Radiated and conducted emission			EN55022	class B	class B
Other data			**86.00**	**86.30**	
Current absorption on signal control (B1)		mA	1	—	
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)	0.2	
	with rated current		See 56, 60 and 62 series relays	See 40, 46, 55, 56, 60, 62 series relays	

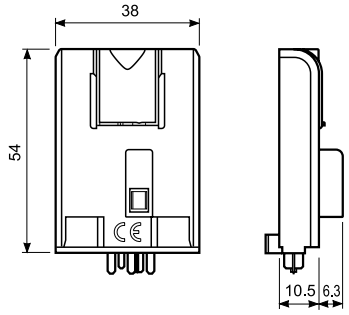
Times scales



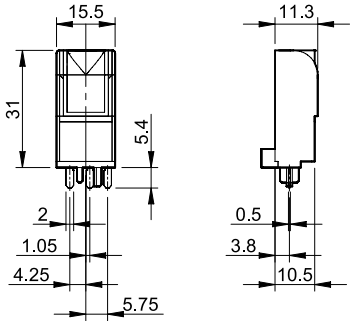
NOTE: Time scales and functions must be set before energising the timer.
To achieve the minimum time setting of 0.05 seconds it is necessary to use one of the functions with control signal.
When setting very short times it may be necessary to take into account the operate time of the relay used.

Outline drawings

Type 86.00



Type 86.30



H

Functions

U = Supply voltage

S = Signal switch

= Output contact

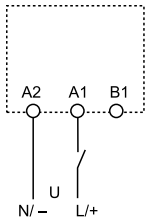
LED Type 86.00	LED Type 86.30	Supply voltage	NO output contact
		OFF	Open
		ON	Open
		ON	Open (Timing in Progress)
		ON	Closed

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

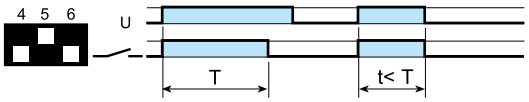
Wiring diagram

Type 86.00

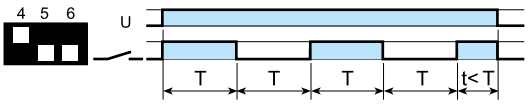
Without control signal



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

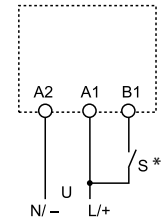


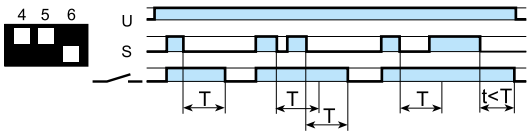
(DI) Interval.
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



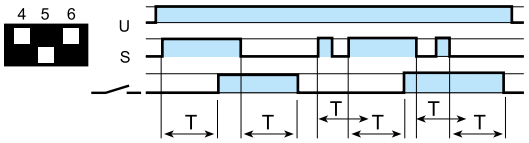
(SW) Symmetrical flasher (starting pulse on).
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

With control signal

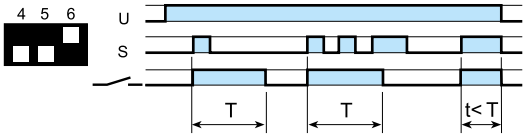




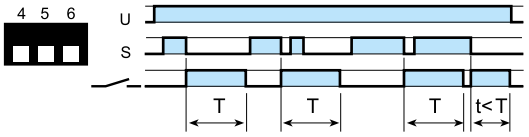
(BE) Off-delay with control signal.
Power is permanently applied to the timer.
The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



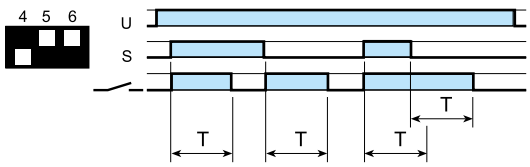
(CE) On- and off-delay with control signal.
Power is permanently applied to the timer.
Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.



(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.



(EE) Interval with control signal off.
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.

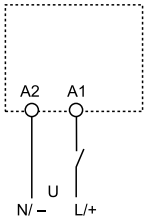


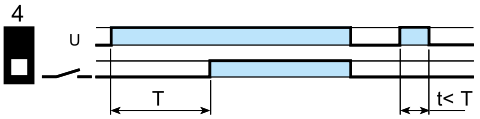
(FE) Interval with control signal on and off.
Power is permanently applied to the timer.
Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

* With DC supply, positive polarity has to be conneted to B1 terminal (according to EN 60204-1).
Switch S should be exclusively used to provide the control signal to terminal B1. (Do not connect any other load at this point).

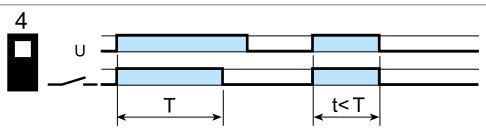
Wiring diagram

Type 86.30





(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.

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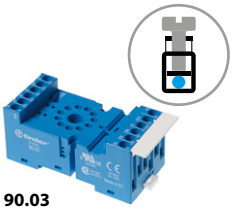
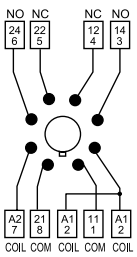


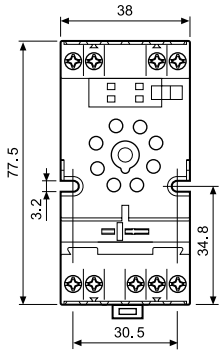
90.03

Approvals
(according to type):

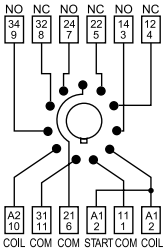
Screw terminal (Box clamp) socket panel or 35 mm rail (EN 60715) mount		**90.02** **Blue**	**90.02.0** **Black**	**90.03** **Blue**	**90.03.0** **Black**
For relay type		60.12		60.13	
Accessories					
Metal retaining clip		090.33			
6-way jumper link		090.06			
Identification tag		090.00.2			
Timer module		86.00, 86.30			
Technical data					
Double terminal A1 (for easy start connection)		—			
Rated values		10 A - 250 V			
Dielectric strength		2 kV AC			
Protection category		IP 20			
Ambient temperature	°C	–40…+70			
Screw torque	Nm	0.6			
Wire strip length	mm	10			
Max. wire size for 90.02 and 90.03 sockets		solid wire		stranded wire	
	mm²	1 x 6 / 2 x 2.5		1 x 4 / 2 x 2.5	
	AWG	1 x 10 / 2 x 14		1 x 12 / 2 x 14	



90.02

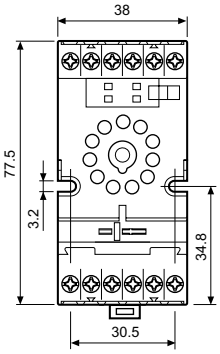


90.02

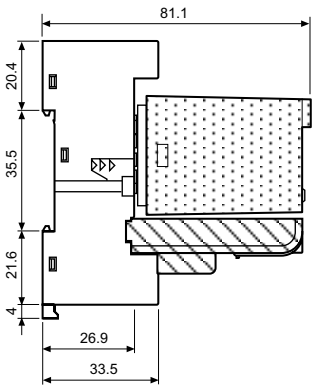


90.03

90.03



90.03



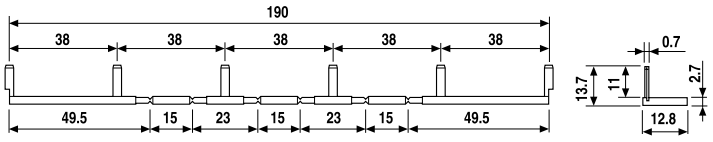
90.03 + 60.13 + 86.00

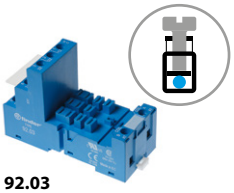
H

090.06

Approvals
(according to type):

6-way jumper link for 90.02 and 90.03 sockets	090.06
Rated values	10 A - 250 V



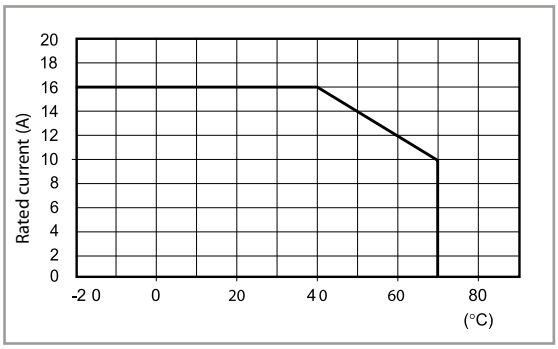


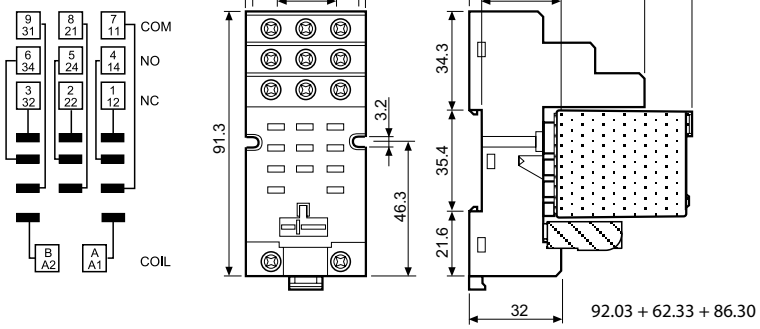
92.03

Approvals
(according to type):

Screw terminal (Box clamp) socket panel or 35 mm rail (EN 60715) mount		**92.03** **Blue**	**92.03.0** **Black**
For relay type		62.32, 62.33	
Accessories			
Metal retaining clip (supplied with socket - packaging code SMA)		092.71	
Identification tag		092.00.2	
Timer modules		86.00, 86.30	
Technical data			
Rated values		16 A - 250 V	
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature	°C	–40…+70 (see diagram L92)	
Screw torque	Nm	0.8	
Wire strip length	mm	10	
Max. wire size for 92.03 socket		solid wire	stranded wire
	mm²	1 x 10 / 2 x 4	1 x 6 / 2 x 4
	AWG	1 x 8 / 2 x 12	1 x 10 / 2 x 12

L 92 - Rated current v ambient temperature





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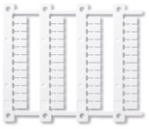
X-2019, www.findernet.com

94.P4

Approvals (according to type):

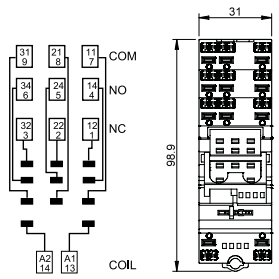
Certain relay/socket combinations

094.91.3

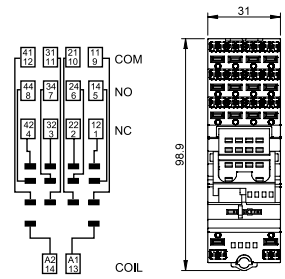


060.48

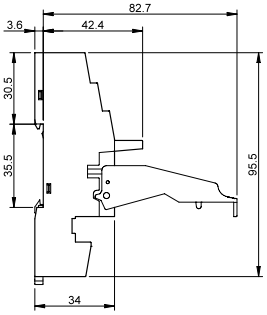
Push-in terminal socket panel or 35 mm (EN 60715) rail mount		**94.P3** **Blue**	**94.P4** **Blue**
For relay type		55.33	55.32, 55.34
Accessories			
Metal retaining clip		094.71	
Plastic retaining and release clip (supplied with socket - packaging code SPA)		094.91.3	
6-way jumper link		094.56	
Identification tag		094.00.4	
2-way jumper link		094.52.1	
2-way jumper link		097.52	
Marker tag holder		097.00	
Timer modules (see table below)		86.30	
Sheet of marker tags for plastic retaining and release clip 094.91.3 and for marker tag holder 097.00 , 48 tags, 6 x 12 mm for CEMBRE thermal transfer printers		060.48	
Technical data			
Rated values		10 A - 250 V	
Dielectric strength		2 kV AC	
Protection category		IP 20	
Ambient temperature	°C	–40…+70	
Wire strip length	mm	8	
Min. wire size for 94.P3 and 94.P4 sockets		solid wire	stranded wire
	mm²	0.5	0.5
	AWG	21	21
Max. wire size for 94.P3 and 94.P4 sockets		solid wire	stranded wire
	mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
	AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14



94.P3

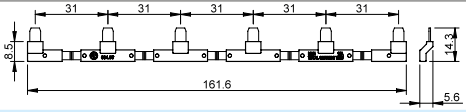


94.P4



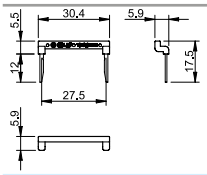
094.56

6-way jumper link for 94.P3 and 94.P4 sockets	094.56 (blue)
Rated values	10 A - 250 V



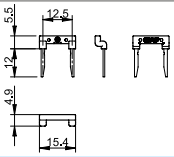
094.52.1

2-way jumper link for 94.P3 and 94.P4 sockets	094.52.1
Rated values	10 A - 250 V



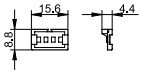
097.52

2-way jumper link for 94.P3 and 94.P4 sockets	097.52
Rated values	10 A - 250 V



097.00

Marker tag holder for 94.P3 and 94.P4 sockets	097.00



86.30

86 series timer modules	
(12…24)V AC/DC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.0.024.0000
(110…125)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.120.0000
(230…240)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.240.0000

Approvals (according to type):

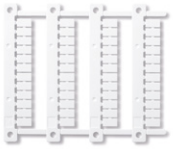
H

94.04

Approvals (according to type):

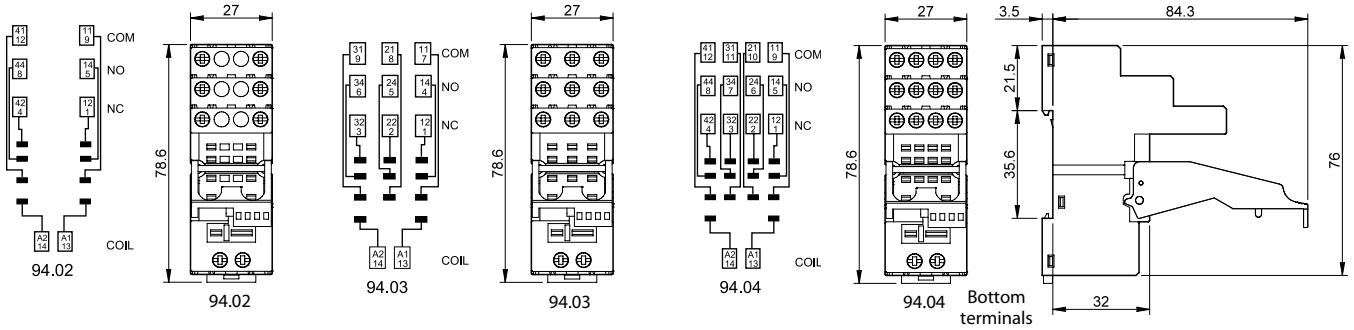
Certain relay/socket combinations

094.91.3



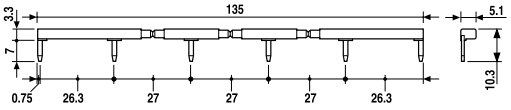
060.48

Screw terminal (Box clamp) socket panel or 35 mm (EN 60715) rail mount		**94.02 Blue**	**94.02.0 Black**	**94.03 Blue**	**94.03.0 Black**	**94.04 Blue**	**94.04.0 Black**
For relay type		55.32		55.33		55.32, 55.34	
Accessories							
Metal retaining clip		094.71					
Plastic retaining and release clip (supplied with socket - packaging code SPA)		094.91.3	094.91.30	094.91.3	094.91.30	094.91.3	094.91.30
6-way jumper link		094.06	094.06.0	094.06	094.06.0	094.06	094.06.0
Identification tag		094.00.4					
Marker tag holder		097.00					
Timer modules (see table below)		86.30					
Sheet of marker tags for plastic retaining and release clip 094.91.3 and for marker tag holder 097.00 , 48 tags, 6 x 12 mm for CEMBRE thermal transfer printers		060.48					
Technical data							
Rated values		10 A - 250 V					
Dielectric strength		2 kV AC					
Protection category		IP 20					
Ambient temperature	°C	–40…+70					
Screw torque	Nm	0.5					
Wire strip length	mm	8					
Max. wire size for 94.02/03/04 sockets		solid wire			stranded wire		
	mm²	1 x 6 / 2 x 2.5			1 x 4 / 2 x 2.5		
	AWG	1 x 10 / 2 x 14			1 x 12 / 2 x 14		



094.06

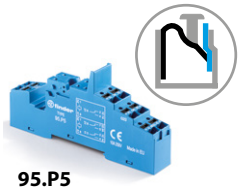
6-way jumper link for 94.02, 94.03 and 94.04 sockets	094.06 (blue)	094.06.0 (black)
Rated values	10 A - 250 V	



86.30

86 series timer modules	
(12…24)V AC/DC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.0.024.0000
(110…125)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.120.0000
(230…240)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.240.0000

Approvals (according to type):

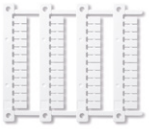


95.P5

Approvals (according to type):

RINA

095.91.3

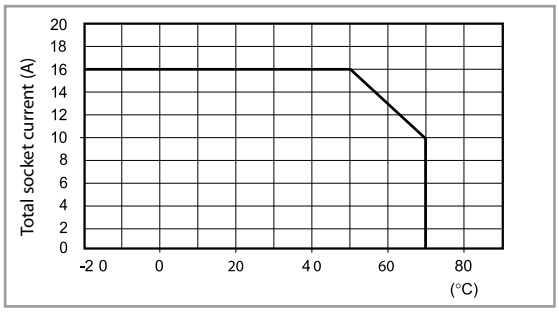


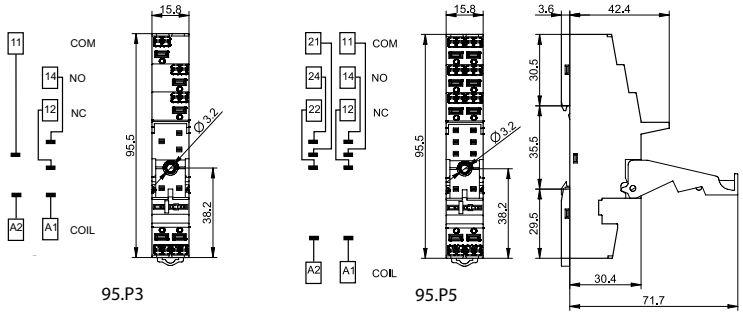
060.48

Push-in terminals socket panel or 35 mm rail mount		**95.P3**	**95.P5**
For relay type		40.31	40.51/ 52/ 61/ 62
Accessories			
Metal retaining clip		095.71	
Plastic retaining and release clip (supplied with socket - packaging code SPA)		095.91.3	
8-way jumper link		097.58	
2-way jumper link (12.5 mm pitch)		097.52	
2-way jumper link (4.6 mm pitch)		097.42	
Marker tag holder (for tags 060.48 type)		097.00	
Timer modules (see table below)		86.30	
Identification tag		095.00.4	
Sheet of marker tags for plastic retaining and release clip 095.91.3 and for marker tag holder 097.00, 48 tags, 6 x 12 mm, for CEMBRE thermal transfert printer		060.48	
Technical data			
Rated values		10 A - 250 V*	
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature	°C	–40…+70 (see diagram L95)	
Wire strip length	mm	8	
Min. wire size for 95.P3 and 95.P5 sockets		solid wire	stranded wire
	mm²	0.5	0.5
	AWG	21	21
Max. wire size for 95.P3 and 95.P5 sockets		solid wire	stranded wire
	mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
	AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14

* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).
With the relay 40.51 the change-over contact will be 21-12-14.

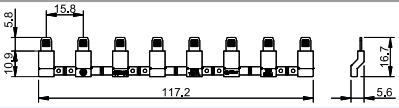
L 95 - Total socket current v ambient temperature





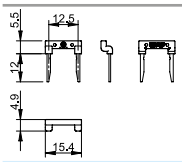
097.58

8-way jumper link for 95.P3 and 95.P5 sockets	097.58
Rated values	10 A - 250 V



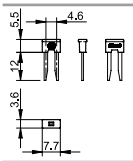
097.52

2-way jumper link for 95.P3 and 95.P5 sockets	097.52
Rated values	10 A - 250 V



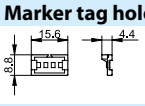
097.42

2-way jumper link for 95.P3 and 95.P5 sockets	097.42
Rated values	10 A - 250 V



097.00

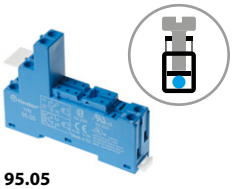
Marker tag holder for 95.P3 and 95.P5 sockets	097.00



86.30

86 series timer modules	
(12…24)V AC/DC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.0.024.0000
(110…125)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.120.0000
(230…240)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.240.0000

Approvals (according to type):

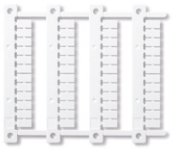


95.05

Approvals (according to type):

Screw terminal (Box clamp) socket panel or 35 mm rail mount		95.03 (blue)	95.03.0 (black)	95.05 (blue)	95.05.0 (black)
For relay type		40.31		40.51, 40.52, 40.61, 40.62	
Accessories					
Metal retaining clip		095.71			
Plastic retaining and release clip (supplied with socket - packaging code SPA)		095.01	095.01.0	095.01	095.01.0
8-way jumper link		095.18	095.18.0	095.18	095.18.0
Marker tag holder (for tags 060.48 type)		097.00			
Identification tag		095.00.4			
Timer modules (see table below)		86.30			
Sheet of marker tags for plastic retaining and release clip 095.01 and for marker tag holder 097.00, 48 tags, 6 x 12 mm, for CEMBRE thermal transfer printers		060.48			
Technical data					
Rated values		10 A - 250 V*			
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts			
Protection category		IP 20			
Ambient temperature	°C	–40…+70 (see diagram L95)			
Screw torque	Nm	0.5			
Wire strip length	mm	8			
Max. wire size for 95.03 and 95.05 sockets		solid wire		stranded wire	
	mm²	1 x 6 / 2 x 2.5		1 x 4 / 2 x 2.5	
	AWG	1 x 10 / 2 x 14		1 x 12 / 2 x 14	

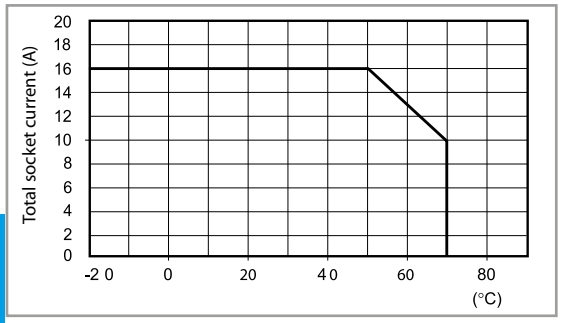
095.01

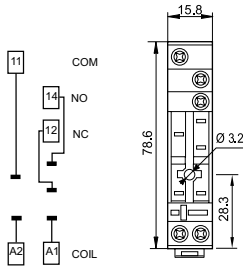


060.48

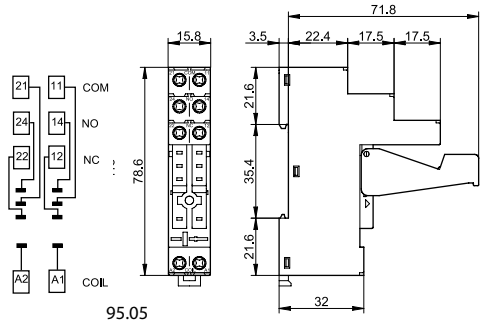
* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).

L 95 - Total socket current v ambient temperature



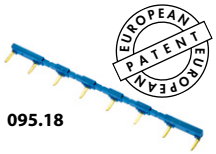


95.03

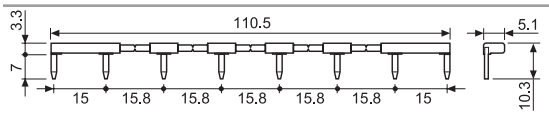


95.05

8-way jumper link for 95.03 and 95.05 sockets	095.18 (blue)	095.18.0 (black)
Rated values	10 A - 250 V	



095.18



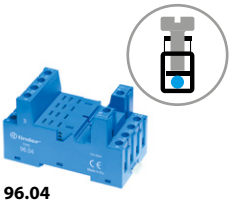
86 series timer modules	
(12…24)V AC/DC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.0.024.0000
(110…125)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.120.0000
(230…240)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.240.0000

86.30

Approvals (according to type):

96.02

Approvals (according to type):

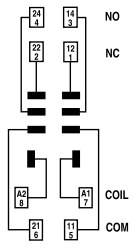


96.04

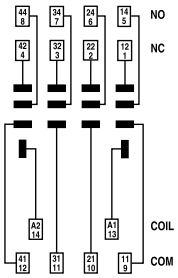
Approvals (according to type):

094.91.3

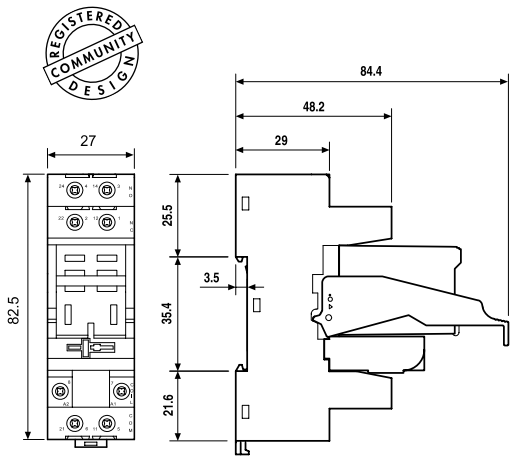
Screw terminal (Box clamp) socket panel or 35 mm rail (EN 60715) mount		**96.02** **Blue**	**96.02.0** **Black**	**96.04** **Blue**	**96.04.0** **Black**
For relay type		56.32		56.34	
Accessories					
Metal retaining clip (supplied with socket - packaging code SMA)		094.71		096.71	
Plastic retaining and release clip (supplied with socket - packaging code SPA)		094.91.3	094.91.30	—	—
6-way jumper link		094.06	094.06.0	—	—
Identification tag		095.00.4		090.00.2	
Timer modules		86.30		86.00, 86.30	
Technical data					
Rated values		12 A - 250 V			
Dielectric strength		2 kV AC			
Protection category		IP 20			
Ambient temperature	°C	–40…+70			
Screw torque	Nm	0.8			
Wire strip length	mm	8			
Max. wire size for 96.02/04 sockets		solid wire		stranded wire	
	mm²	1 x 6 / 2 x 2.5		1 x 4 / 2 x 2.5	
	AWG	1 x 10 / 2 x 14		1 x 12 / 2 x 14	



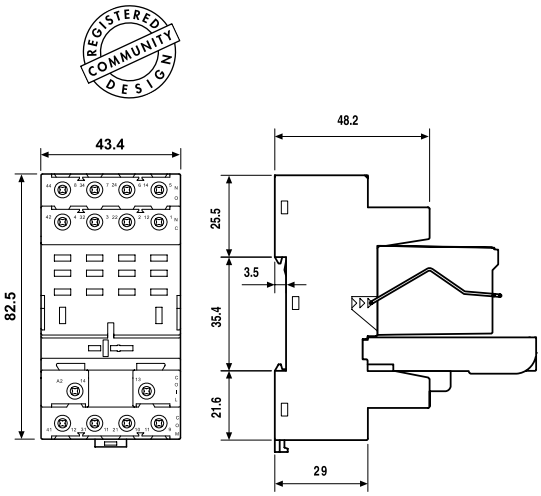
96.02



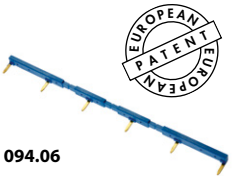
96.04



96.02 — 96.02 + 56.32 + 094.91.3 + 86.30

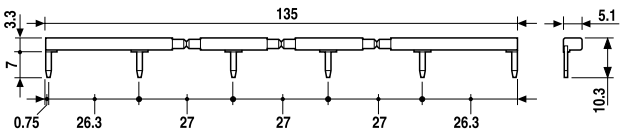


96.04 — 96.04 + 56.34 + 096.71 + 86.00

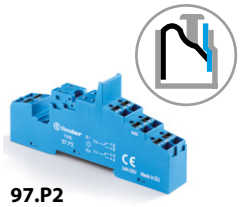


094.06

6-way jumper link for 96.02 socket	094.06 (blue)	094.06.0 (black)
Rated values	10 A - 250 V	



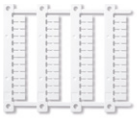
H



97.P2

Approvals
(according to type):

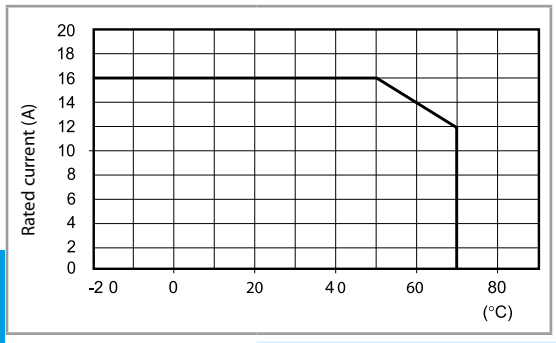
097.01

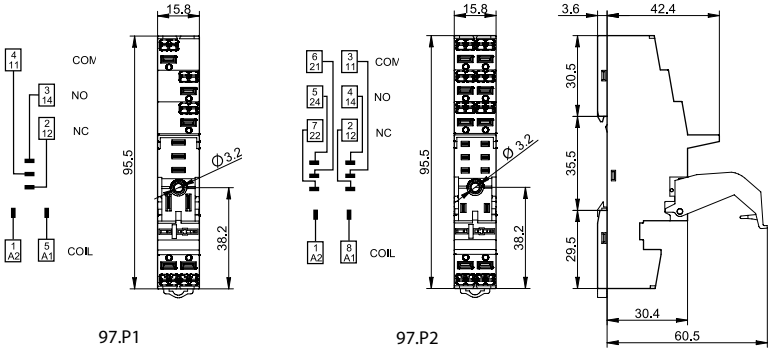


060.48

Push-in terminal socket panel or 35 mm rail (EN 60715) mount		**97.P1**	**97.P2**
For relay type		46.61	46.52
Accessories			
Plastic retaining and release clip (supplied with socket - packaging code SPA)		097.01	
Metal retaining clip		097.71	
Identification tag		095.00.4	
8-way jumper link		097.58	
2-way jumper link		097.52	
2-way jumper link		097.42	
Marker tag holder		097.00	
Timer modules (see table below)		86.30	
Sheet of marker tags for marker tag holder 097.00, 48 tags, 6 x 12 mm, for CEMBRE thermal transfer printers		060.48	
Technical data			
Rated values		16 A-250 V AC	8 A-250 V AC
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature	°C	–40…+70 (see diagram L97)	
Wire strip length	mm	8	
Min. wire size for 97.P1 and 97.P2 socket		solid wire	stranded wire
	mm²	0.5	0.5
	AWG	21	21
Max. wire size for 97.P1 and 97.P2 socket		solid wire	stranded wire
	mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
	AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14

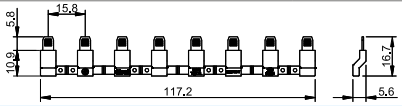
L 97 - Rated current v ambient temperature





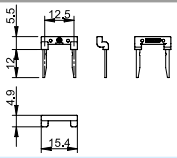
097.58

8-way jumper link for 97.P1 and 97.P2 sockets	097.58
Rated values	10 A - 250 V



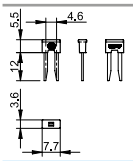
097.52

2-way jumper link for 97.P1 and 97.P2 sockets	097.52
Rated values	10 A - 250 V



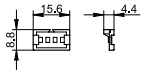
097.42

2-way jumper link for 97.P1 and 97.P2 sockets	097.42
Rated values	10 A - 250 V



097.00

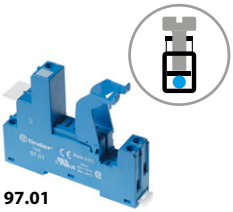
Marker tag holder for 95.P3 and 95.P5 sockets	097.00



86.30

86 series timer modules	
(12…24)V AC/DC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.0.024.0000
(110…125)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.120.0000
(230…240)V AC; Bi-function: AI, DI; (0.05 s…100 h)	86.30.8.240.0000

Approvals (according to type):



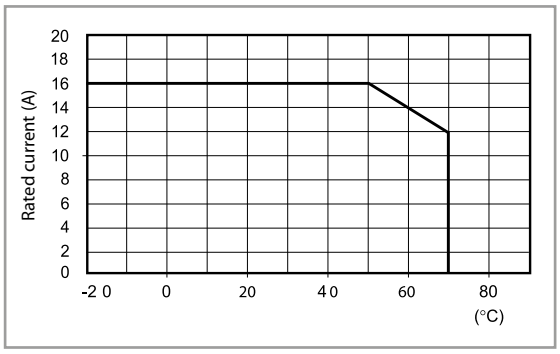
97.01

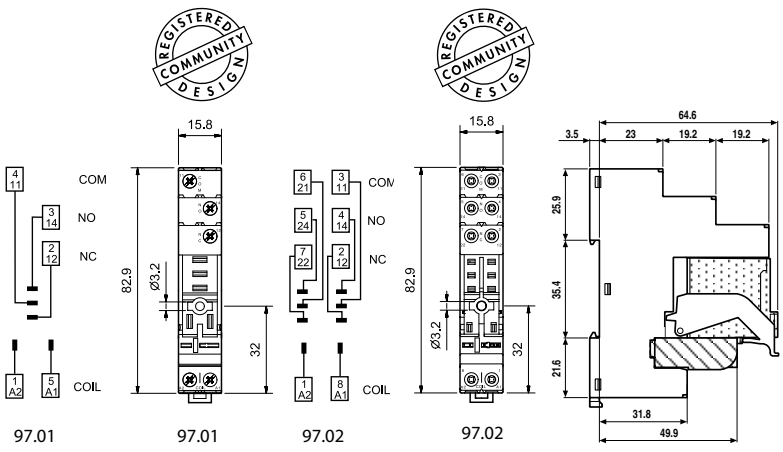
Approvals
(according to type):

097.01

Screw terminal socket panel or 35 mm rail (EN 60715) mount		**97.01** **Blue**	**97.02** **Blue**
For relay type		46.61	46.52
Accessories			
Plastic retain and eject clip (supplied with socket - packaging code SPA)		097.01	
8-way jumper link		095.18 (blue)	095.18.0 (black)
Identification tag		095.00.4	
Timer modules		86.30	
Technical data			
Rated current		16 A - 250 V AC	8 A - 250 V AC
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature	°C	–40…+70 (see diagram L97)	
Screw torque	Nm	0.8	
Wire strip length	mm	8	
Max. wire size for 97.01 and 97.02 sockets		solid wire	stranded wire
	mm²	1 x 6 / 2 x 2.5	1 x 4 / 2 x 2.5
	AWG	1 x 10 / 2 x 14	1 x 12 / 2 x 14

L 97 - Rated current v ambient temperature
(for 46.61 relay / 97.01 socket combination)

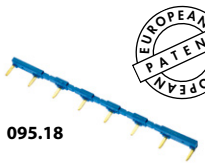




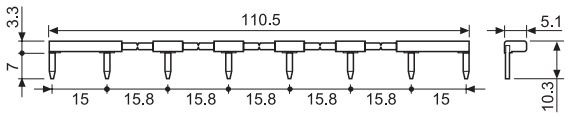
97.02 + 46.52 + 097.01
+ 86.30

H

8-way jumper link for 97.01 and 97.02 sockets	095.18 (blue)	095.18.0 (black)
Rated values	10 A - 250 V	



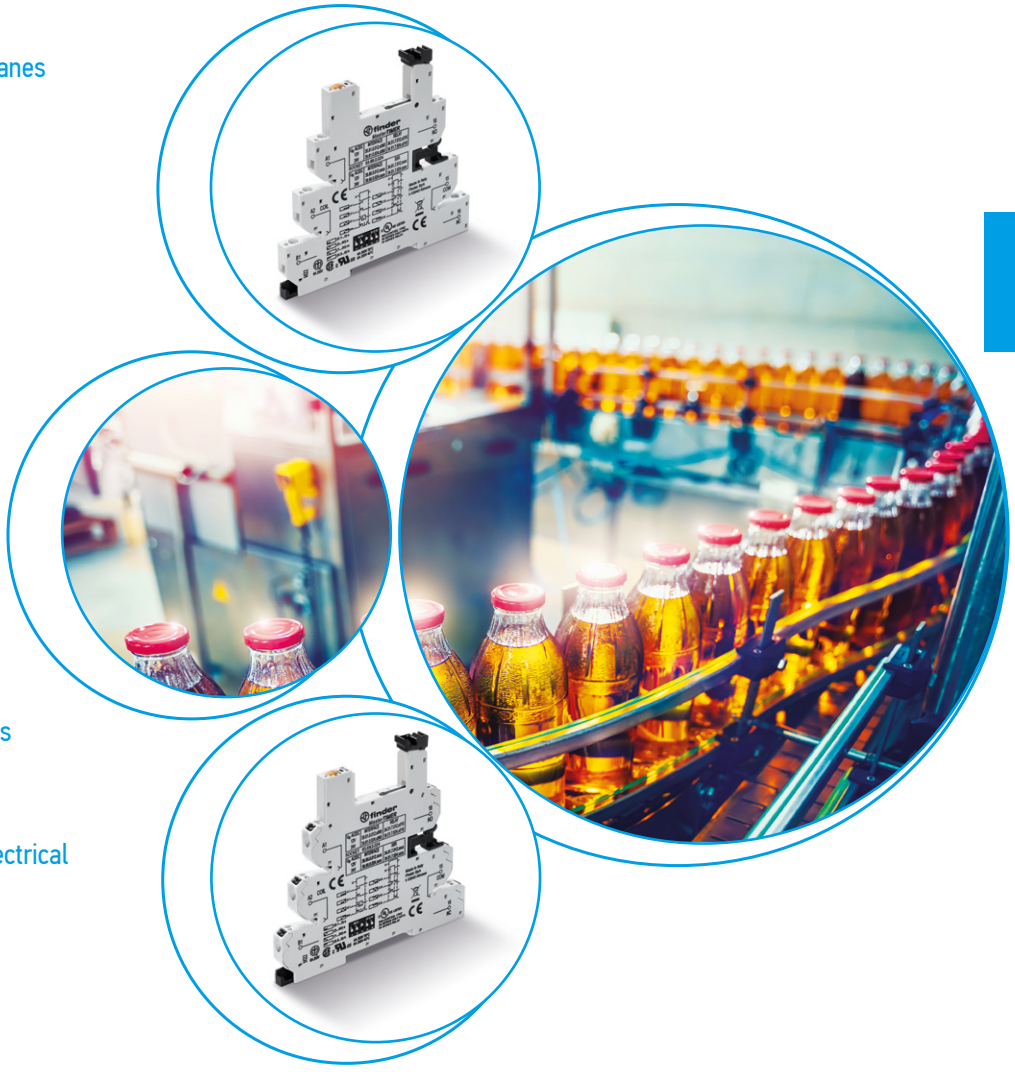
095.18



finder
SWITCH TO THE FUTURE

Timed socket for 34 series

- Hoists and cranes
- Packaging machines
- Traffic light controls
- Bottling plant
- Carousel warehouses
- Control panels
- Panels for electrical distribution
- Labelling machines



93
SERIES