

Features

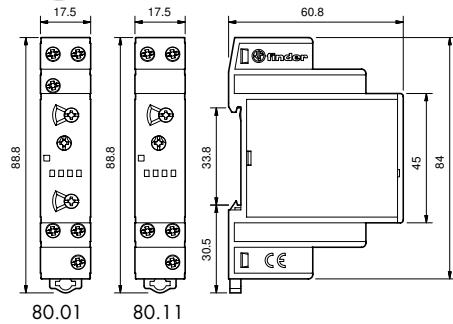
Multi-function and mono-function timer range

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

- 17.5 mm wide
- Six time scales from 0.1s to 20h
- 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 HORSEPOWER AND PILOT DUTY RATINGS
SEE "General technical information" page V

Contact specification

Contact configuration	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current A	16/30	16/30
Rated voltage/Maximum switching voltage V AC	250/400	250/400
Rated load AC1 VA	4,000	4,000
Rated load AC15 (230 V AC) VA	750	750
Single phase motor rating (230 V AC) kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V A	16/0.3/0.12	16/0.3/0.12
Minimum switching load mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material	AgCdO	AgCdO

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	12...240	24...240
	V DC	12...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 1.8 / < 1	< 1.8 / < 1
Operating range	AC	(10.2...265)V	(17...265)V
	DC	(10.2...265)V	(17...265)V

Technical data

Specified time range	(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...20)h		
Repeatability %	± 1	± 1	± 1
Recovery time ms	≤ 50	≤ 50	≤ 50
Minimum control impulse ms	50	—	—
Setting accuracy-full range %	± 5	± 5	± 5
Electrical life at rated load in AC1 cycles	100·10 ³	100·10 ³	100·10 ³
Ambient temperature range °C	-10...+50	-10...+50	-10...+50
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)	CE	cULus	PC

80.01



80.11

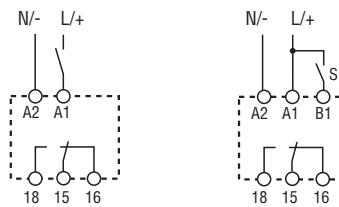


- Multi-voltage
- Multi-function

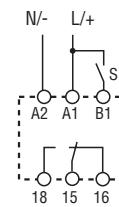
- Multi-voltage
- Mono-function

AI: ON delay
DI: ON pulse
SW: Symmetrical recycling: ON start
BE: Signal OFF delay
CE: Signal ON and OFF delay
DE: Signal ON pulse

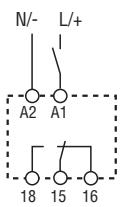
AI: ON delay



Wiring diagram
(without signal START)



Wiring diagram
(with signal START)



Wiring diagram
(without signal START)

Features

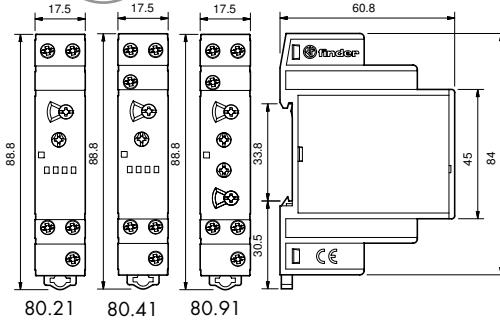
Mono-function timer range

80.21 - ON pulse, multi-voltage
 80.41 - Signal OFF delay, multi-voltage
 80.91 - Asymmetrical recycling, multi-voltage

- 17.5 mm wide
- Six time scales from 0.1s to 20h
- 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 HORSEPOWER AND PILOT DUTY RATINGS
 SEE "General technical information" page V

Contact specification

Contact configuration	1 CO (SPDT)	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current A	16/30	16/30	16/30
Rated voltage/Maximum switching voltage V AC	250/400	250/400	250/400
Rated load AC1 VA	4,000	4,000	4,000
Rated load AC15 (230 V AC) VA	750	750	750
Single phase motor rating (230 V AC) kW	0.55	0.55	0.55
Breaking capacity DC1: 30/110/220 V A	16/0.3/0.12	16/0.3/0.12	16/0.3/0.12
Minimum switching load mW (V/mA)	500 (10/5)	500 (10/5)	500 (10/5)
Standard contact material	AgCdO	AgCdO	AgCdO

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240	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	AC	(17...265)V	(17...265)V	(10.2...265)V
	DC	(17...265)V	(17...265)V	(10.2...265)V

Technical data

Specified time range	(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...20)h		
Repeatability %	± 1	± 1	± 1
Recovery time ms	≤ 50	≤ 50	≤ 50
Minimum control impulse ms	—	50	50
Setting accuracy-full range %	± 5	± 5	± 5
Electrical life at rated load in AC1 cycles	100·10 ³	100·10 ³	100·10 ³
Ambient temperature range °C	-10...+50	-10...+50	-10...+50
Protection category	IP 20	IP 20	IP 20
Approvals (according to type)			

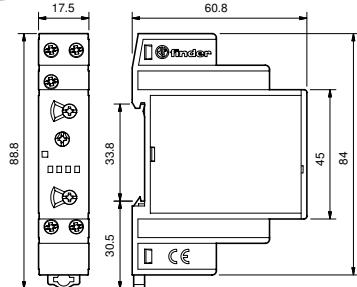
Features

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

- 17.5 mm wide
- Six time scales from 0.1s to 24h
- 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

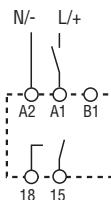
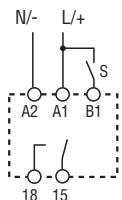


80.71



- Multi-voltage
- Multi-function

AI: ON delay
DI: ON pulse
SW: Symmetrical recycling: ON start
BE: Signal OFF delay
CE: Signal ON and OFF delay
DE: Signal ON pulse


 Wiring diagram
(without signal START)

 Wiring diagram
(with signal START)

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	AC	(19...265)V
	DC	(19...265)V

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	cycles	100·10 ⁶
Ambient temperature range	°C	-20...+50
Protection category		IP 20
Approvals (according to type)		

Features

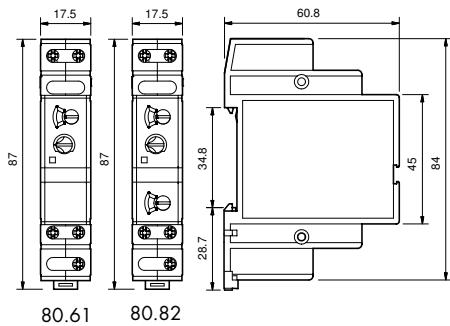
Mono-function timer range

80.61 - True OFF delay, multi-voltage

80.82 - Star-Delta timer, multi-voltage

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

80.61 / 80.82
Screw terminal



FOR UL HORSEPOWER AND PILOT DUTY RATINGS
SEE "General technical information" page V

Contact specification

Contact configuration

1 CO (SPDT)

2 NO (DPST-NO)

Rated current/Maximum peak current A

8/15

6/10

Rated voltage/Maximum switching voltage V AC

250/400

250/400

Rated load AC1 VA

2,000

1,500

Rated load AC15 (230 V AC) VA

400

300

Single phase motor rating (230 V AC) kW

0.3

—

Breaking capacity DC1: 30/110/220 V A

8/0.3/0.12

6/0.2/0.12

Minimum switching load mW (V/mA)

300 (5/5)

500 (12/10)

Standard contact material

AgNi

AgNi

Supply specification

Nominal voltage (U_N) V AC (50/60 Hz)

24...240

12...240

V DC

24...240

12...240

Rated power AC/DC VA (50 Hz)/W

< 0.6 / < 0.6

< 1.3 / < 0.8

Operating range AC

(17...265)V

(10.2...265)V

DC

(17...265)V

(10.2...265)V

Technical data

Specified time range

(0.1...1)s, (0.5...5)s, (1...10)s, (2...20)s

(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min

Repeatability %

± 1

± 1

Recovery time ms

≤ 50

≤ 50

Minimum control impulse ms

300 (A1-A2)

—

Setting accuracy-full range %

± 5

± 5

Electrical life at rated load in AC1 cycles

100·10³

60·10³

Ambient temperature range °C

-10...+50

-10...+50

Protection category

IP 20

IP 20

Approvals (according to type)



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												Versions			
Type												0 = Standard 2 = Standard (for type 80.61 only)			
0 = Multi-function (AI, DI, SW, BE, CE, DE)															
1 = ON delay (AI)															
2 = ON pulse (DI)															
4 = Signal OFF delay (BE)															
6 = True OFF delay (BI)															
7 = Multi-function with solid state output (AI, DI, SW, BE, CE, DE)															
8 = Star-Delta (SD)															
9 = Asymmetrical recycling ON starting (LI, LE)															

Technical data

Insulation

Dielectric strength		80.01/11/21/41/82/91	80.61/71
	between input and output circuit	V AC 4,000	2,500
	between open contacts	V AC 1,000	1,000

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	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
on start terminal (B1)	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 B

Other data

Current absorption on signal control (B1)	< 1 mA		
Power lost to the environment	without contact current	W 1.4	
	with rated current	W 3.2	
 Screw torque		Nm 0.8	
Max. wire size		solid cable	stranded cable
	mm ² 1x6 / 2x4	1x4 / 2x2.5	
	AWG 1x10 / 2x12	1x12 / 2x14	

Accessories



020.24

Sheet of marker tags, for types 80.61/82, plastic, 24 tags, 9x17 mm

020.24



060.72

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

060.72

Functions

U = Supply voltage

S = Signal switch

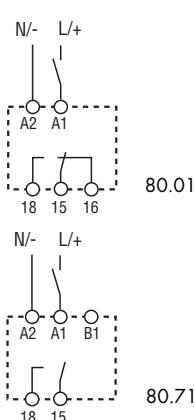
 = Output contact

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

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

Wiring diagram

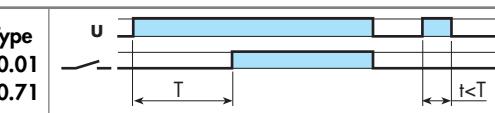
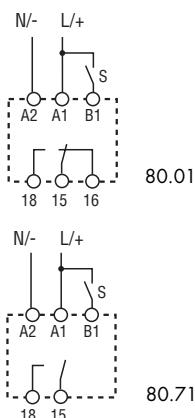
Without signal START



Without signal Start = Start via contact in supply line (A1).

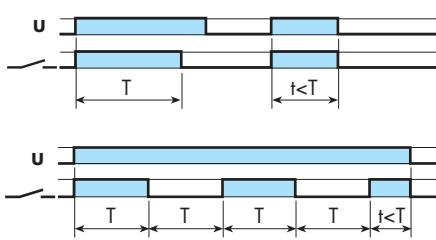
With signal Start = Start via contact into control terminal (B1).

With signal START



(A) ON delay.

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

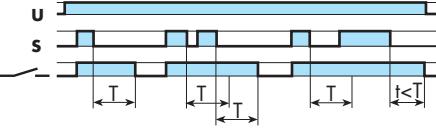


(D) ON pulse.

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

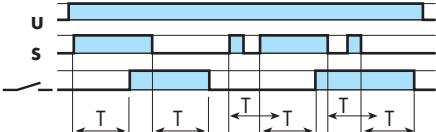
(SW) Symmetrical recycling: ON start.

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



(BE) Signal OFF delay.

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



(CE) Signal ON and OFF delay.

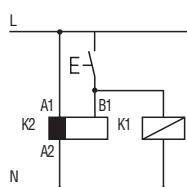
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.



(DE) Signal ON pulse.

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

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 signal start terminal B1.

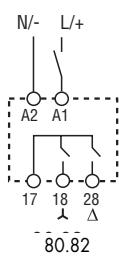
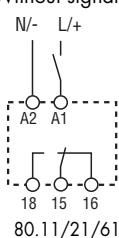
* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).

** 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

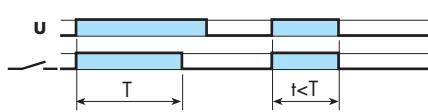
Without signal START



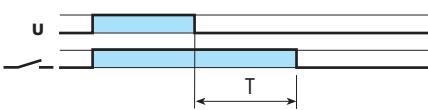
Type
80.11



80.21



80.61



80.82

(AI) ON delay.

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

(DI) ON pulse.

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

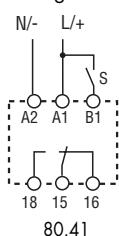
(BI) True OFF delay (power OFF).

Apply power to timer (minimum 300ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.

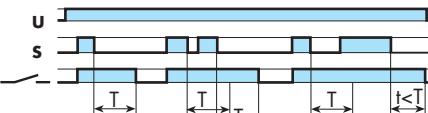
(SD) Star - delta.

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

With signal START



80.41

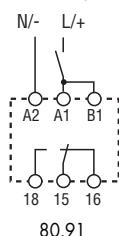


(BE) Signal OFF delay.

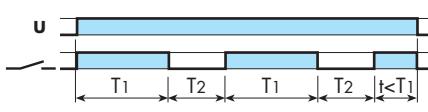
Power is permanently applied to the timer.

The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

Without signal START

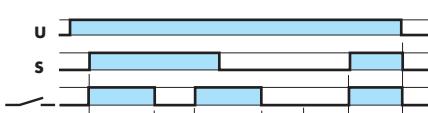


80.91



(LI) Asymmetrical recycling (ON start).

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ON (T1) and OFF (T2) times are independently adjustable.

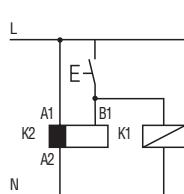
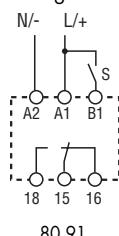


(LE) Signal asymmetrical recycling (ON start)

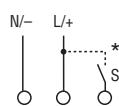
Power is permanently applied to the timer.

Closing Signal Switch (S) causes the output contacts to transfer immediately and cycle between ON (T1) and OFF (T2), until opened.

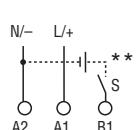
With signal START



- Possible to control an external load, such as another relay coil or timer, connected to the signal start 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

