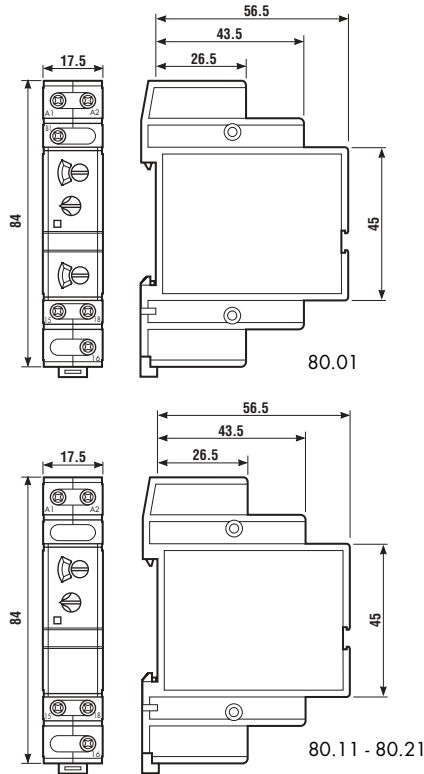
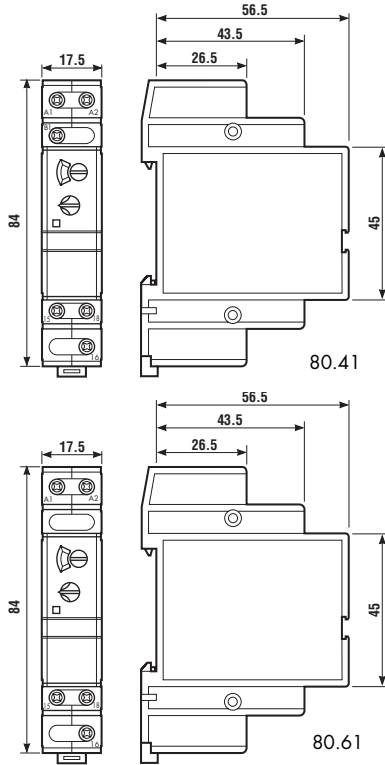


- Mono-function and multi-function versions available
- Rotary selector
- 7.5 mm wide
- Six time scales from 0.1 s to 20h
- 35 mm rail (EN 50022) mount
- High input/output insulation



	80.01	80.11	80.21
	- Multi-voltage - Multi-function	- Mono-voltage - Mono-function	- Mono-voltage - Mono-function
	<b>AI:</b> ON delay <b>DI:</b> ON pulse <b>SW:</b> Symmetrical recycler: ON start <b>BE:</b> Signal OFF delay <b>CE:</b> Signal ON and OFF delay <b>DE:</b> Signal ON pulse	<b>AI:</b> ON delay	<b>DI:</b> ON pulse
	 wiring diagram (without signal START)	 wiring diagram (without signal START)	 wiring diagram (without signal START)
<b>Contact specifications</b>			
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 in AC1	VA 4,000	4,000	4,000
Rated load in AC15 (230 V AC)	VA 750	750	750
Single phase motor rating (230 V AC)	kW 0.55	0.55	0.55
Breaking capacity in 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
<b>Supply specifications</b>			
Nominal voltage	V AC (50/60 Hz) 12...240	24 - 110...125 - 230...240	24 - 110...125 - 230...240
	V DC 12...240	24 - 110...125	24 - 110...125
Rated power AC/DC	VA (50 Hz)/W < 1.8 / < 1.4	< 1.8 / < 0.6	< 1.8 / < 0.6
Operating range	AC (10.2...265)V	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>
	DC (10.2...265)V	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>
<b>Technical data</b>			
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 <sup>3</sup>	100·10 <sup>3</sup>	100·10 <sup>3</sup>
Ambient temperature range	°C -10...+50	-10...+50	-10...+50
Protection category	IP 20	IP 20	IP 20
<b>Approvals</b> (according to type):			GOST

- Mono-function and multi-function versions available
- Rotary selector
- 17.5 mm wide
- Six time scales from 0.1s to 20h
- 35 mm rail (EN 50022) mount
- High input/output insulation

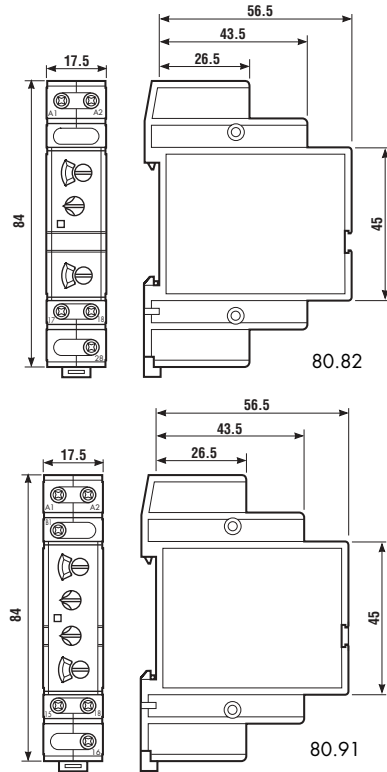


	80.41	80.61
	- Mono-voltage - Mono-function	- Multi-voltage - Mono-function
	<b>BE:</b> Signal OFF delay	<b>BI:</b> True Off Delay
	wiring diagram (with signal START)	wiring diagram (without signal START)
<b>Contact specifications</b>		
Contact configuration	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A 16/30	8/15
Rated voltage/Maximum switching voltage V AC	250/400	250/400
Rated load in AC1	VA 4,000	2,000
Rated load in AC15 (230 V AC)	VA 750	400
Single phase motor rating (230 V AC)	kW 0.55	0.3
Breaking capacity in DC1: 30/110/220 V A	16/0.3/0.12	8/0.3/0.12
Minimum switching load	mW(V/mA) 500 (10/5)	300 (5/5)
Standard contact material	AgCdO	AgNi
<b>Supply specifications</b>		
Nominal voltage	V AC (50/60 Hz) 24 - 110...125 - 230...240	24...240
	V DC 24 - 110...125	24...240
Rated power AC/DC	VA (50 Hz)/W < 1.8/ < 0.6	< 0.6/ < 0.6
Operating range	AC (0.85...1.1)U <sub>N</sub>	(17...265)V
	DC (0.85...1.1)U <sub>N</sub>	(17...265)V
<b>Technical data</b>		
Specified time range	See below*	See below**
Repeatability	% ± 1	± 1
Recovery time	ms ≤ 50	≤ 50
Minimum control impulse	ms 50	300 (A1-A2)
Setting accuracy-full range	% ± 5	± 5
Electrical life at rated load in AC1	cycles 100·10 <sup>3</sup>	100·10 <sup>3</sup>
Ambient temperature range	°C -10...+50	-10...+50
Protection category	IP 20	IP 20
<b>Approvals</b> (according to type):		GOST

\*Type 80.41:  
(0.1...2)s, (1...20)s,  
(0.1...2)min, (1...20)min,  
(0.1...2)h, (1...20)h

\*\*Type 80.61:  
(0.1...1)s, (0.5...5)s,  
(2...20)s, (0.2...2)min

- Mono-function and multi-function versions available
- Rotary selector
- 17.5 mm wide
- Six time scales from 0.1s to 20h
- 35 mm rail (EN 50022) mount
- High input/output insulation



## 80.82

## 80.91

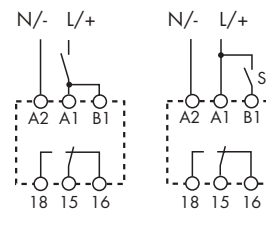
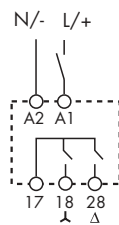


- Multi-voltage
- Mono-function
- Transfer time can be regulated (0.05...1)s

- Multi-voltage
- Mono-function

**SD:** Star-Delta

**L:** Asymmetrical recycler (ON starting)  
**LE:** Signal asymmetrical recycler (ON starting)



wiring diagram (without signal START)

wiring diagram (without signal START)    wiring diagram (with signal START)

Contact specifications			
Contact configuration		2 NO (DPST-NO)	1 CO (SPDT)
Rated current/Maximum peak current	A	6/10	16/30
Rated voltage/Maximum switching voltage V AC		250/400	250/400
Rated load in AC1	VA	1,500	4,000
Rated load in AC15 (230 V AC)	VA	300	750
Single phase motor rating (230 V AC)	kW	—	0.55
Breaking capacity in DC1: 30/110/220 V A		6/0.2/0.12	16/0.3/0.12
Minimum switching load	mW(V/mA)	500 (12/10)	500 (10/5)
Standard contact material		AgNi	AgCdO
Supply specifications			
Nominal voltage	V AC (50/60 Hz)	12...240	12...240
	V DC	12...240	12...240
Rated power AC/DC	VA (50 Hz)/W	< 1.3/ < 0.8	< 1.8/ < 1.4
Operating range	AC	(10.2...265)V	(10.2...265)V
	DC	(10.2...265)V	(10.2...265)V
Technical data			
Specified time range		See below*	See below**
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	≤ 50
Minimum control impulse	ms	50	50
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	60·10 <sup>3</sup>	100·10 <sup>3</sup>
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 20	IP 20
<b>Approvals</b> (according to type):		<b>CE</b>	GOST

\*Type 80.82:  
 (0.1...2)s, (1...20)s,  
 (0.1...2)min, (1...20)min

\*\*Type 80.91:  
 (0.1...2)s, (1...20)s,  
 (0.1...2)min, (1...20)min,  
 (0.1...2)h, (1...20)h

## ORDERING INFORMATION

Example: a 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 = ON pulse (DI)
- 4 = Signal OFF delay (BE)
- 6 = True OFF delay (BI)
- 8 = Star-Delta (SD)
- 9 = Asymmetrical recycler ON starting (LI, LE)

**No. of poles**

- 1 = 1 CO (SPDT)
- 2 = 2 NO (DPST-NO), only 80.82 type

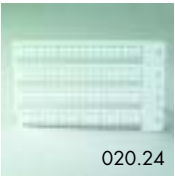
**Supply voltage**

- 024 = 24 V AC/DC
- 240 = (230...240)V AC (80.11, 80.21, 80.41)
- 240 = (12 ... 240)V AC/DC (80.01, 80.82, 80.91)
- 240 = (24 ... 240)V AC/DC (80.61)
- 125 = (110...125)V AC/DC (80.11, 80.21, 80.41)

**Supply version**

- 0 = AC (50/60 Hz)/DC (80.01, 80.61, 80.82, 80.91)
- 8 = AC (50/60 Hz) (80.11, 80.21, 80.41)

## ACCESSORIES



020.24

<b>Sheet of marker tags</b> (24 tags), 9x17 mm, for types 80.01/11/21/41/61/82	020.24
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## 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
	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	

### INSULATION

	80.01/11/21/41/82/91	80.61	
Dielectric strength	- between input and output circuit	4,000	2,500
	- between open contacts	1,000	1,000
	Insulation (1.2/50 µs) between input and output	6	4

### 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		
Max wire size	solid cable	mm <sup>2</sup>	1x6 / 2x4	stranded cable	1x4 / 2x2.5
		AWG	1x10 / 2x12		1x12 / 2x14
	Screw torque	Nm	0.8		

## FUNCTIONS

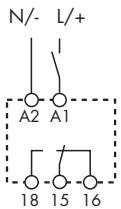
<p><b>U</b> = Supply voltage</p> <p><b>S</b> = Signal switch</p> <p> = Output contact</p>	LED*	Supply voltage	NO output contact	Contacts		
		OFF	Open	Open	15 - 18	15 - 16
		ON	Open	Open	15 - 18	15 - 16
		ON	Open (Timing in Progress)	Open	15 - 18	15 - 16
		ON	Closed	Closed	15 - 16	15 - 18

\* 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.

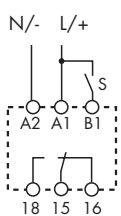
Without signal Start = Start via contact in supply line (A1).  
 With signal Start = Start via contact into control terminal (B1).

### Wiring diagram

Without signal  
START



With signal START



**Type 80.01**

**(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.

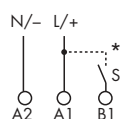
**(SW) Symmetrical recycler: ON start.**  
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

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

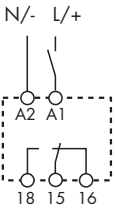


- \* - With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).
- A voltage other than the supply voltage can be applied to the command Start (B1), example:  
 A1 - A2 = 230 V AC  
 B1 - A2 = 12 V DC

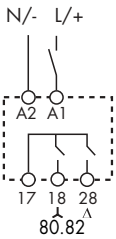
**FUNCTIONS**

**Wiring diagram**

Without signal START

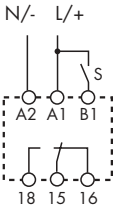


80.11/21/61



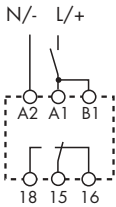
80.82

With signal START



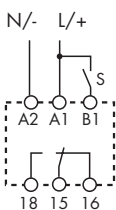
80.41

Without signal START



**80**

With signal START

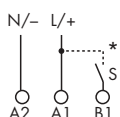


80.91

<p><b>Type 80.11</b></p>	<p><b>(AI) ON delay.</b> Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.</p>
<p><b>80.21</b></p>	<p><b>(DI) ON pulse.</b> Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.</p>
<p><b>80.61</b></p>	<p><b>(BI) True OFF delay (power OFF).</b> Apply power to timer (minimum 300ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.</p>
<p><b>80.82</b></p>	<p><b>(SD) Star - delta.</b> 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.</p>
<p><b>80.41</b></p>	<p><b>(BE) Signal OFF delay.</b> 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.</p>

<p><b>80.91</b></p>	<p><b>(LI) Asymmetrical recycler (ON starting).</b> 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.</p> <p><b>(LE) Signal asymmetrical recycler (ON starting)</b> Power is permanently applied to the timer. Closing Signal Switch (S) causes the output contacts to transfer immediately and cycle between ON and OFF, until opened.</p>
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NOTE: time scales and functions must be set before energising the timer.



- \* - 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