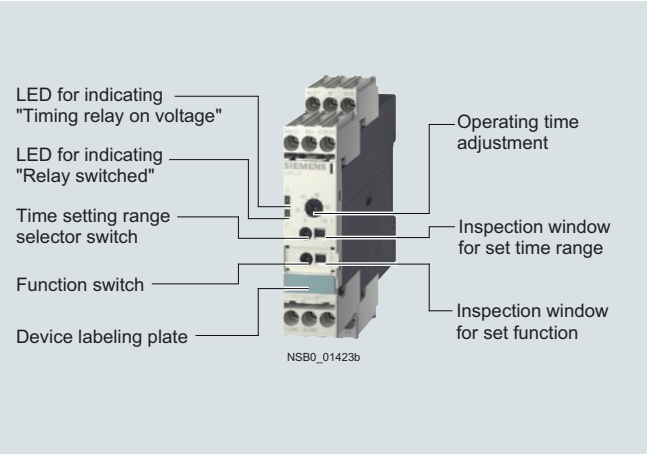
SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

Overview



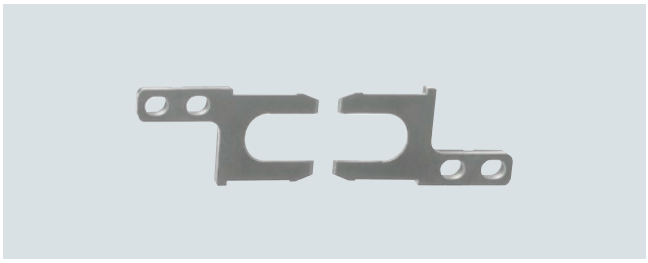
SIRIUS 3RP15 timing relays

Standards

The timing relays comply with:

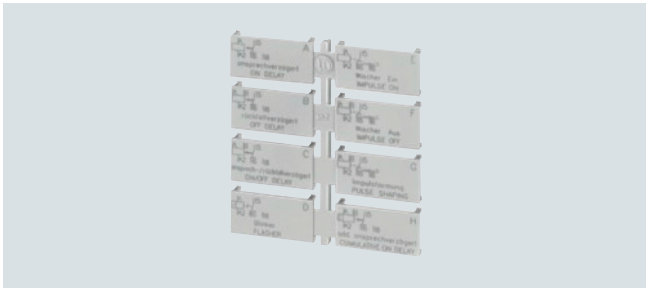
- EN 60721-3-3 "Environmental conditions"
- EN 61812-1 "Specified time relays for industrial use"
- EN 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- EN 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

Accessories



Push-in lugs for screw fixing

Sealable cover



Label set for marking the multifunction relay

Order No. scheme

Digit of the Order No.	1st - 5th	6th	7th		8th	9th	10th	11th	12th
	□□□□□	□	□	–	□	□	□	□	0
Timing relays in industrial enclosure, 22.5mm	**3 R P 1 5**								
Functions/time setting ranges		□	□						
Connection type					□				
Contacts						□			
Rated control supply voltage							□	□	
Example	**3 R P 1 5**	**0**	**5**	**–**	**1**	**A**	**A**	**4**	**0**

Note:

The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.

For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.

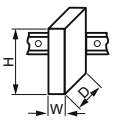
Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Enclosure version

All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to EN 60715 or for screw mounting.

Technical specifications

Type			3RP15 05, 3RP15 1., 3RP15 25, 3RP15 3., 3RP15 4., 3RP15 5., 3RP15 6., 3RP15 7.	3RP15 27
Dimensions (W x H x D)				
• For 2 terminal blocks				
- Screw terminals		mm	22.5 x 83 x 90	
- Spring-type terminals		mm	22.5 x 84 x 90	
• For 4 terminal blocks				
- Screw terminals		mm	22.5 x 102 x 110	
- Spring-type terminals		mm	22.5 x 103 x 110	
Rated insulation voltage Pollution degree 3, overvoltage category III		V AC	300; 500 to 3RP15 05-1BT10	
Permissible ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-40 ... +80	
Operating range at excitation[1]			0.85 ... 1.1 x U_s at V AC/DC, 50/60 Hz 0.8 ... 1.25 x U_s 24 V DC 0.95 ... 1.05 times the rate frequency	
Rated operational current I_e				
• AC-140, DC-13		A	--	0.01 ... 0.6
• AC-15 at 24 ... 400 V, 50 Hz		A	3[2]	--
• DC-13 at				
- 24 V		A	1	--
- 125 V		A	0.2	--
- 250 V		A	0.1	--
Uninterrupted thermal current I_{th}		A	5	--
Mechanical endurance Operating cycles			30 x 10^6	100 x 10^6
Electrical endurance Operating cycles at I_e			1 x 10^5	100 x 10^6
Connection type			**Screw terminals**	
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid		mm^2	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)	
• Tightening torque		Nm	0.8 ... 1.2	
Connection type			**Spring-type terminals**	
• Solid		mm^2	2 x (0.25 ... 1.5)	
• Finely stranded, with end sleeves according to DIN 46228		mm^2	2 x (0.25 ... 1.5)	
• Finely stranded		mm^2	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)	

[1] If nothing else is stated.

[2] For 3RP15 05-.R: NC contact --> I_e = 1 A.

SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

Selection and ordering data

Solid-state timing relays for general use in control systems and mechanical engineering with:
- 1 or 2 CO contacts
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 101


3RP15 05-1BP30


3RP15 11-1AP30


3RP15 25-1BW30


3RP15 27-1EM30


3RP15 05-2BP30


3RP15 11-2AP30


3RP15 25-2BW30

Version	Time setting range *t* adjustable by rotary switch to	Rated control supply voltage U_s AC 50/60 Hz V	Rated control supply voltage U_s DC V	DT	Screw terminals Order No.	Price per PU	DT	Spring-type terminals Order No.	Price per PU
3RP15 05 timing relays, multifunction, 15 time setting ranges									
The functions can be adjusted by means of rotary switches. Insert labels can be used to adjust different functions of the 3RP15 05 timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B. For functions see 3RP19 01 label set, page 8/52.									
With LED and									
1 CO contact, 8 functions	0.05 ... 1 s	--	12	A	**3RP15 05-1AA40**			**--**	
	0.15 ... 3 s	24/100 ... 127	24	▶	**3RP15 05-1AQ30**		C	**3RP15 05-2AQ30**	
	0.5 ... 10 s	24/200 ... 240	24	▶	**3RP15 05-1AP30**		A	**3RP15 05-2AP30**	
	1.5 ... 30 s	24 ... 240[5]	24 ... 240[2]	▶	**3RP15 05-1AW30**		A	**3RP15 05-2AW30**	
2 CO contacts, 16 functions	0.05 ... 1 min	24/100 ... 127	24	▶	**3RP15 05-1BQ30**		A	**3RP15 05-2BQ30**	
	5 ... 100 s	24/200 ... 240	24	▶	**3RP15 05-1BP30**		A	**3RP15 05-2BP30**	
	0.15 ... 3 min	24 ... 240[5]	24 ... 240[2]	▶	**3RP15 05-1BW30**		A	**3RP15 05-2BW30**	
	0.5 ... 10 min	400 ... 440	--	A	**3RP15 05-1BT20**			**--**	
	1.5 ... 30 min								
2 CO contacts, positively driven and hard gold-plated. 8 functions[3][4]	0.05 ... 1 h	24 ... 240	24 ... 240	▶	**3RP15 05-1RW30**		A	**3RP15 05-2RW30**	
	5 ... 100 min								
	0.15 ... 3 h								
	0.5 ... 10 h								
	1.5 ... 30 h								
	5 ... 100 h								
	∞ [1]								
3RP15 1. timing relays, ON-delay, 1 time setting range									
With LED and 1 CO contact	0.5 ... 10 s	24/100 ... 127	24	▶	**3RP15 11-1AQ30**		C	**3RP15 11-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 11-1AP30**		A	**3RP15 11-2AP30**	
	1.5 ... 30 s	24/100 ... 127	24	▶	**3RP15 12-1AQ30**		C	**3RP15 12-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 12-1AP30**		A	**3RP15 12-2AP30**	
	5 ... 100 s	24/100 ... 127	24	▶	**3RP15 13-1AQ30**		C	**3RP15 13-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 13-1AP30**		A	**3RP15 13-2AP30**	
3RP15 25 timing relays, ON-delay, 15 time setting ranges									
With LED and									
1 CO contact	0.05 ... 1 s	24/100 ... 127	24	▶	**3RP15 25-1AQ30**		C	**3RP15 25-2AQ30**	
	0.15 ... 3 s	24/200 ... 240	24	▶	**3RP15 25-1AP30**		A	**3RP15 25-2AP30**	
2 CO contacts	0.5 ... 10 s	42 ... 48/60	42 ... 48/60[5]	A	**3RP15 25-1BR30**			**--**	
	1.5 ... 30 s	24/100 ... 127	24	▶	**3RP15 25-1BQ30**		X	**3RP15 25-2BQ30**	
	0.05 ... 1 min	24/200 ... 240	24	▶	**3RP15 25-1BP30**		A	**3RP15 25-2BP30**	
	5 ... 100 s	24 ... 240[5]	24 ... 240[2]	▶	**3RP15 25-1BW30**		A	**3RP15 25-2BW30**	
	0.15 ... 3 min								
	0.5 ... 10 min								
	1.5 ... 30 min								
	0.05 ... 1 h								
	5 ... 100 min								
	0.15 ... 3 h								
	0.5 ... 10 h								
	1.5 ... 30 h								
	5 ... 100 h								
	∞ [1]								
3RP15 27 timing relays, ON-delay, two-wire design, 4 time setting ranges									
1 NO contact (semiconductor)	0.05 ... 1 s	24 ... 66	24 ... 66[5]	A	**3RP15 27-1EC30**		C	**3RP15 27-2EC30**	
	0.2 ... 4 s	90 ... 240	90 ... 240[5]	▶	**3RP15 27-1EM30**		C	**3RP15 27-2EM30**	
	1.5 ... 30 s								
	12 ... 240 s								

[1] With switch position ∞ no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.
[2] Operating range 0.7 to 1.1 x U_s.
[3] Positively driven: NO and NC are never closed simultaneously; contact gap ≥ 0.5 mm is ensured, minimum make-break capacity 12 V, 3 mA.
[4] The changeover contacts are actuated simultaneously, as a result of which only 8 functions are selectable (no wye-delta, no instantaneous contact).
[5] Operating range 0.8 to 1.1 x U_s.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 101


3RP15 33-1AP30


3RP15 40-1BB31


3RP15 55-1AP30


3RP15 60-1SP30


3RP15 76-2NP30


3RP15 33-2AP30


3RP15 40-2BB31

Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s AC 50/60 Hz V	Rated control supply voltage U_s DC V	DT	Screw terminals Order No.	Screw terminals Price per PU	DT	Spring-type terminals Order No.	Spring-type terminals Price per PU
3RP15 3. timing relays, OFF-delay, with auxiliary voltage, 1 time setting range									
With LED and 1 CO contact The same potential must be applied to terminals A and B	0.5 ... 10 s	24/100 ... 127	24	A	**3RP15 31-1AQ30**		C	**3RP15 31-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 31-1AP30**		C	**3RP15 31-2AP30**	
	1.5 ... 30 s	24/100 ... 127	24	A	**3RP15 32-1AQ30**		C	**3RP15 32-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 32-1AP30**		A	**3RP15 32-2AP30**	
	5 ... 100 s	24/100 ... 127	24	A	**3RP15 33-1AQ30**		C	**3RP15 33-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 33-1AP30**		C	**3RP15 33-2AP30**	
3RP15 40 timing relays, OFF-delay, without auxiliary voltage, 9 time setting ranges[1]									
With LED and									
1 CO contact	0.05 ... 1 s 0.15 ... 3 s 0.3 ... 6 s 0.5 ... 10 s 1.5 ... 30 s 3 ... 60 s 5 ... 100 s 15 ... 300 s 30 ... 600 s	24	24[2]	▶	**3RP15 40-1AB31**		A	**3RP15 40-2AB31**	
		100 ... 127	100 ... 127	▶	**3RP15 40-1AJ31**		A	**3RP15 40-2AJ31**	
		200 ... 240	200 ... 240	▶	**3RP15 40-1AN31**		A	**3RP15 40-2AN31**	
		24 ... 240	24 ... 240	▶	**3RP15 40-1AW31**		A	**3RP15 40-2AW31**	
2 CO contacts		24	24[2]	▶	**3RP15 40-1BB31**		A	**3RP15 40-2BB31**	
		100 ... 127	100 ... 127	A	**3RP15 40-1BJ31**		A	**3RP15 40-2BJ31**	
		200 ... 240	200 ... 240	▶	**3RP15 40-1BN31**		C	**3RP15 40-2BN31**	
		24 ... 240	24 ... 40	▶	**3RP15 40-1BW31**		A	**3RP15 40-2BW31**	
3RP15 55 timing relays, clock-pulse relay, 15 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ [3]	42 ... 48/60	42...48/60[4]	A	**3RP15 55-1AR30**		C	**3RP15 55-2AR30**	
		24/100 ... 127	24	▶	**3RP15 55-1AQ30**		C	**3RP15 55-2AQ30**	
		24/200 ... 240	24	▶	**3RP15 55-1AP30**		A	**3RP15 55-2AP30**	
3RP15 60 timing relays, wye-delta function, dead interval 50 ms and overtravel time, 1 time setting range									
3 NO contacts (common contact root terminal 17)	Wye-delta 1 ... 20 s , coasting time (idling) 30 ... 600 s	24/100 ... 127	24	A	**3RP15 60-1SQ30**			**--**	
		24/200 ... 240	24	▶	**3RP15 60-1SP30**		C	**3RP15 60-2SP30**	
3RP15 7. timing relays, wye-delta function[5], dead interval 50 ms, 1 time setting range									
1 NO contact instantaneous and 1 NO contact delayed (common contact root terminal 17)	1 ... 20 s	24/100 ... 127	24	▶	**3RP15 74-1NQ30**		C	**3RP15 74-2NQ30**	
		24/200 ... 240	24	▶	**3RP15 74-1NP30**		A	**3RP15 74-2NP30**	
		200 ... 240/ 380 ... 440	--	B	**3RP15 74-1NM20**		B	**3RP15 74-2NM20**	
	3 ... 60 s	24/100 ... 127	24	▶	**3RP15 76-1NQ30**		A	**3RP15 76-2NQ30**	
		24/200 ... 240	24	▶	**3RP15 76-1NP30**		A	**3RP15 76-2NP30**	
		200 ... 240/ 380 ... 440	--	X	**3RP15 76-1NM20**		X	**3RP15 76-2NM20**	

For accessories, see page 8/52.

1) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control voltage once results in contact changeover to the correct setting.

2) Operating range 0.7 to 1.25 x U_s.

3) With switch position ∞ no timing. For test purposes (ON/OFF function) on site. For dead time "infinite", the relay is always off. For pulse time "infinite", the relay is always on.

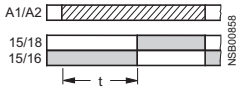
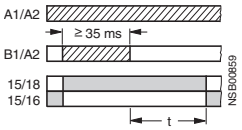
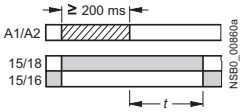
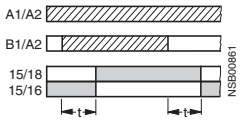
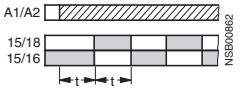
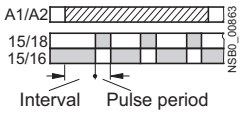
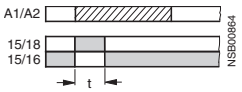
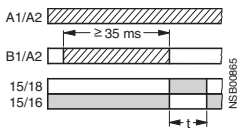
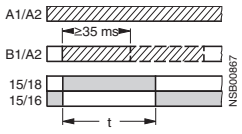
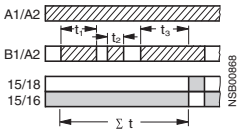
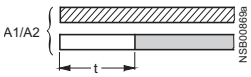
4) Operating range 0.8 to 1.1 x U_s.

5) For example circuit see note on Technical Information on page 8/1.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

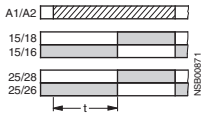
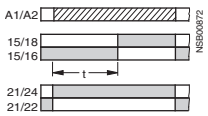
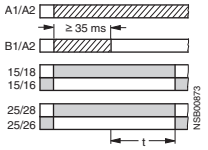
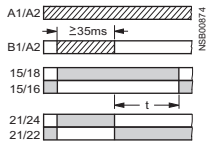
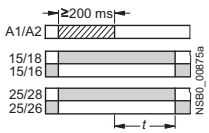
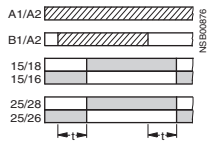
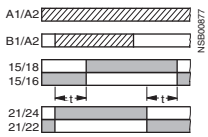
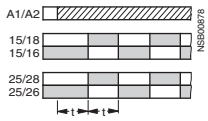
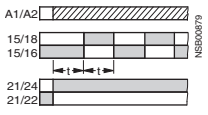
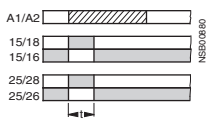
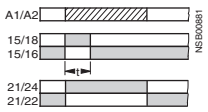
3RP15 and 3RP20 function table

Function	Function chart	3RP20 timing relay and 3RP19 01 label set		3RP15 timing relay and 3RP19 01 label set									
	Timing relay energized Contact closed Contact open	3RP20 05-.A	3RP20 25	3RP15 05-.A 3RP19 01-0A	Identification letter	3RP15 1.	3RP15 25	3RP15 27	3RP15 3.	3RP15 40	3RP15 55	3RP15 7.
1 CO contact												
ON-delay		■	■	■	A	■	■					
OFF-delay With auxiliary voltage		■		■	B[1]				■			
OFF-delay without auxiliary voltage *Observe minimum ON period for correct operation. For 3RP15 40-..W31 U_S 24 to 40 V AC/DC: 400 ms and U_S > 40 to 240 V AC/DC: 200 ms.*										■		
ON-delay and OFF-delay with auxiliary voltage ($t = t_{on} = t_{off}$)		■		■	C[1]							
Flashing, starting with interval (pulse/interval 1:1)		■		■	D							
Clock-pulse, starting with interval (dead time, pulse time, and time setting ranges each separately adjustable)											■	
Passing make contact		■		■	E							
Passing break contact with auxiliary voltage		■		■	F[1]							
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■		■	G[1]							
Additive ON-delay with auxiliary voltage		■		■	H[1]							
1 NO contact (semiconductor)												
ON-delay The two-wire timing relay is connected in series with the load. Timing begins after application of the exciting voltage. The semi-conductor output then becomes conducting, and the load is under power.								■				

[1] Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero. This does not apply to G and H, which are not retriggerable.

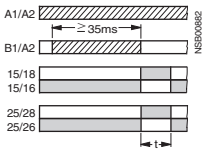
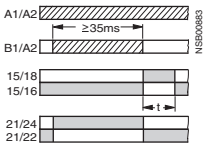
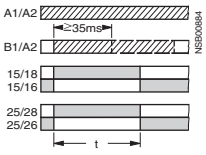
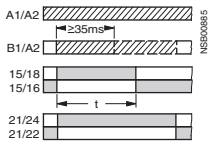
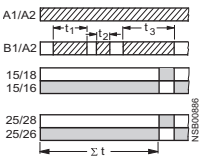
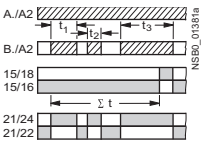
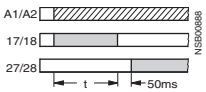
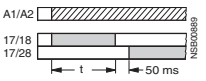
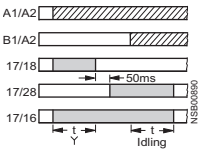
■ Function is possible

General data

Function	Function chart	3RP20 timing relay and 3RP19 01 label set		3RP15 timing relay and 3RP19 01 label set										
	Timing relay energized Contact closed Contact open	3RP20 05-.B	3RP20 25	3RP15 05-.B 3RP19 01-0B	3RP15 05-.R 3RP19 01-0A	Identification letter	3RP15 1.	3RP15 25	3RP15 27	3RP15 3.	3RP15 40	3RP15 55	3RP15 60	3RP15 7.
2 CO contacts														
ON-delay		■		■	■	A		■						
ON-delay and instantaneous contact		■		■		A●								
OFF-delay with auxiliary voltage		■		■	■	B[1]								
OFF-delay with auxiliary voltage and instantaneous contact		■		■		B[1]								
OFF-delay without auxiliary voltage											■			
ON-delay and OFF-delay with auxiliary voltage ($t = t_{on} = t_{off}$)		■		■	■	C[1]								
ON-delay and OFF-delay with auxiliary voltage and instantaneous contact ($t = t_{on} = t_{off}$)		■		■		C●[1]								
Flashing, starting with interval (pulse/interval 1:1)		■		■	■	D								
Flashing, starting with interval (pulse/interval 1:1) and instantaneous contacts		■		■		D●								
Passing make contact		■		■	■	E								
Passing make contact and instantaneous contact		■		■		E●								

For footnote see page 8/31.

■ Function is possible

Function	Function chart	3RP20 timing relay and 3RP19 01 label set		3RP15 timing relay and 3RP19 01 label set												
	Timing relay energized Contact closed Contact open	3RP20 05-.B	3RP20 25	3RP15 05-.B 3RP19 01-0B	3RP15 05-.R 3RP19 01-0A	Identification letter	3RP15 1.	3RP15 25	3RP15 27	3RP15 3.	3RP15 40	3RP15 55	3RP15 60	3RP15 7.
2 CO contacts (continued)														
Passing break contact with auxiliary voltage		■		■	■	F[1]								
Passing break contact with auxiliary voltage and instantaneous contact		■		■		F●[1]								
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■		■	■	G[1]								
Pulse-forming with auxiliary voltage and instantaneous contact) (pulse generation at the output does not depend on duration of energizing)		■		■		G●[1]								
Additive ON-delay with auxiliary voltage					■	H[1]								
Additive ON-delay with auxiliary voltage and instantaneous contact		■		■		H●[1]								
Wye-delta function		■		■		Y Δ								
2 NO contacts														
Wye-delta function Y Δ														■
3 NO contacts														
Wye-delta function with overtravel function[2] (idling)													■	

[1] Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero. This does not apply to G, G● and H, H●, which are not retriggerable.

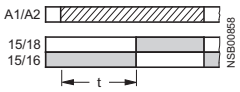
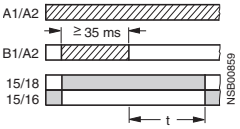
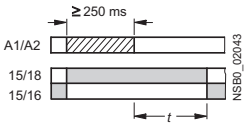
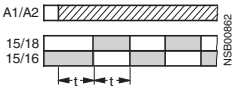
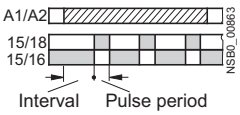
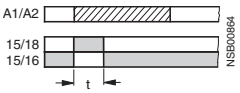
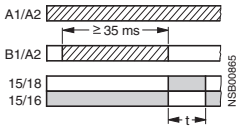
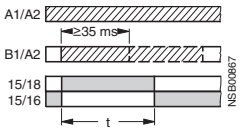
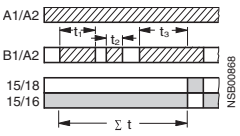
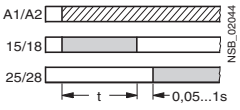
[2] For function diagrams showing the various possibilities of operation of the 3RP15 60-1S.30, see page 8/35.

■ Function is possible

8

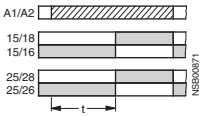
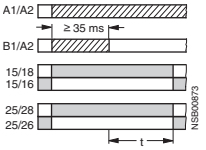
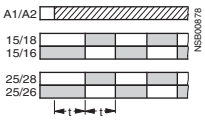
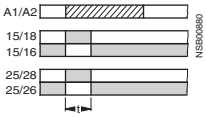
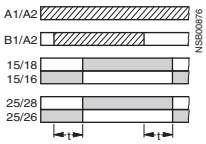
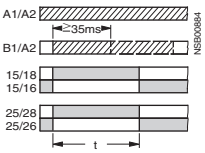
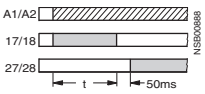
General data

7PV15 function table

Function	Function chart	7PV15 timing relays						
	Timing relay energized Contact closed Contact open	7PV15 08-1A	Identification letter	7PV15 11 7PV15 12 7PV15 13 7PV15 18	7PV15 38	7PV15 40	7PV15 58	7PV15 78
1 CO contact								
ON-delay		■	A	■				
OFF-delay with auxiliary voltage		■	B		■			
OFF-delay without auxiliary voltage						■		
Flashing, starting with interval (pulse/interval 1:1)		■	C					
Clock-pulse, starting with interval (dead time, pulse time, and time setting ranges each separately adjustable)							■	
Passing make contact		■	D					
Passing break contact with auxiliary voltage		■	E					
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■	F					
Additive ON-delay with auxiliary voltage		■	G					
2 NO contacts								
Wye-delta function								■

Note:

With the 7PV15 08-1A multifunction relay the identification letters A to G are printed on the front alongside the rotary selector switch. The related function can be found in the form of a bar graph on the side of the device.

Function	Function chart	7PV15 timing relays	
	Timing relay energized Contact closed Contact open	7PV15 08-1B	Identification letter
2 CO contacts			
ON-delay		■	A
OFF-delay with auxiliary voltage		■	B
Flashing, starting with interval (pulse/interval 1:1)		■	C
Passing make contact		■	D
ON-delay and OFF-delay with auxiliary voltage		■	H
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■	F
Fixed pulse after response delay		■	I

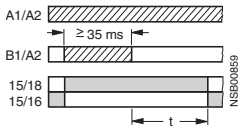
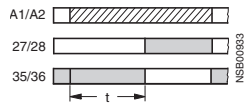
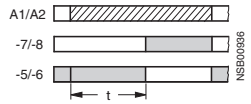
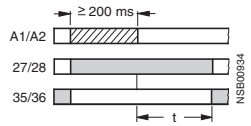
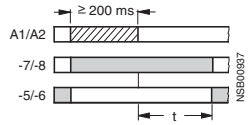
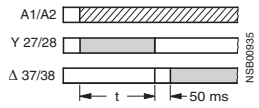
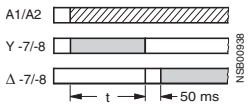
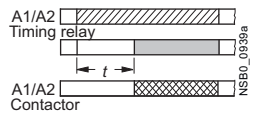
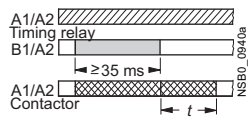
■ Function is possible

Note:

With the 7PV15 08-1B multifunction relay the identification letters A to D, F, H and I are printed on the front alongside the rotary selector switch. The related function can be found in the form of a bar graph on the side of the device.

General data

Function table 3RT19 16, 3RT19 26

Function	Function chart	3RT19 16 timing relays						3RT19 26 timing relays				
	Timing relay energized Contact closed Contact open	3RT19 16-2C	3RT19 16-2D	3RT19 16-2E	3RT19 16-2F	3RT19 16-2G	3RT19 16-2L	3RT19 26-2C	3RT19 26-2D	3RT19 26-2E	3RT19 26-2F	3RT19 26-2G
1 CO contact												
OFF-delay with auxiliary voltage (varistor integrated)							■					
1 NO contact + 1 NC contact												
ON-delay (varistor integrated)				■								
ON-delay										■		
OFF-delay Without auxiliary voltage (varistor integrated)					■							
OFF-delay without auxiliary voltage											■	
2 NO contacts												
Wye-delta function (varistor integrated) 1 NO delayed, 1 NO instantaneous, dead time 50 ms (varistor integrated)						■						
Wye-delta function 1 NO delayed, 1 NO instantaneous, dead time 50 ms (varistor integrated)												■
1 NO contact (semiconductor)												
ON-delay Two-wire version (varistor integrated)		■						■				
OFF-delay with auxiliary voltage (varistor integrated)			■						■			

■ Function is possible

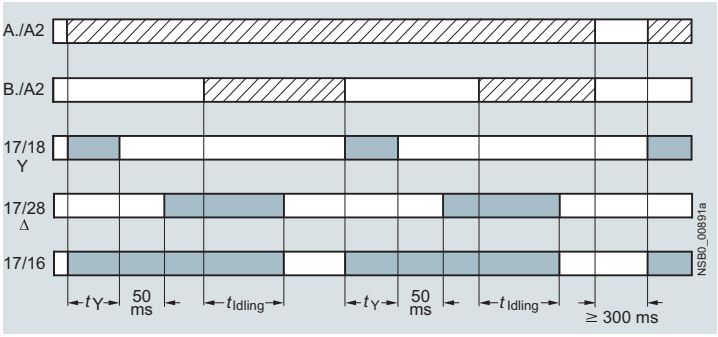
3RP15 function table

Possibilities of operation of the 3RP15 60-1S.30 timing relay

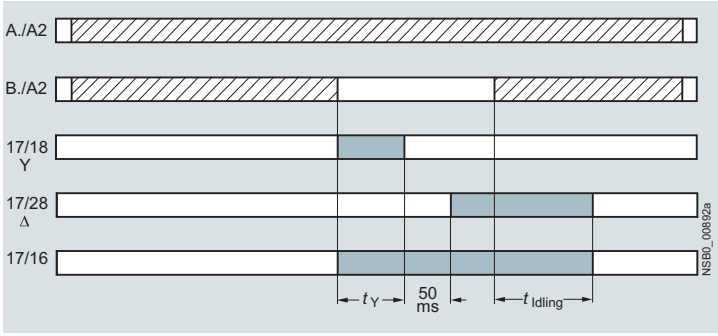
Timing relay energized
Contact closed
Contact open

t_Y = Star time 1 ... 20 s
t_{Idling} = Idling time (coasting time) 30 ... 600 s

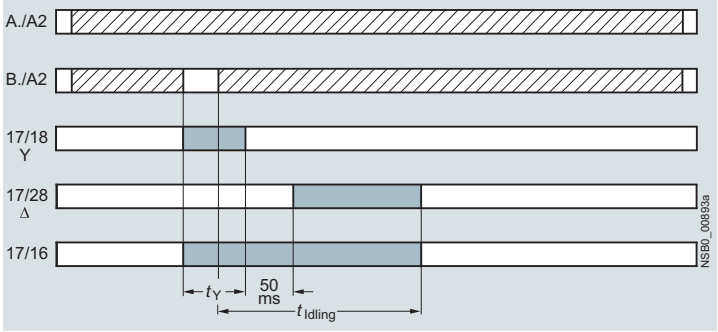
Operation 1



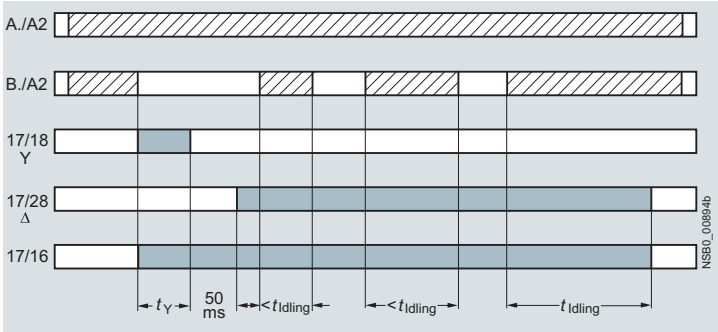
Operation 2



Operation 3



Operation 4



Note:

The following applies to all operations: The pressure switch controls the timing via B./A2.

Operation 1:
Start contact B./A2 is open when control supply voltage A./A2 is applied.

The control supply voltage is applied to A./A2 and there is no control signal on B./A2. This starts the Y Δ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time t_{Idling} (30 to 600 s) has elapsed, the output relays (17/16 and 17/28) are reset. If the control signal on B./A2 is switched off (minimum OFF period 270 ms), a new timing is started.

Comments:

Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/16 close.

Operation 2:
Start contact B./A2 is closed when control supply voltage A./A2 is applied.

If the control signal B./A2 is already present when the control supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.

Operation 3:
Start contact B./A2 closes while star time is running.

If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.

Operation 4:
Start contact B./A2 opens while delta time is running and is applied again.

If the control signal on B./A2 is applied and switched off again during the delta time, although the idling time has not yet elapsed, the idling time (coasting time) is reset to zero. If the control signal is re-applied to B./A2, the idling time is restarted.

Application example based on standard operation (operation 1): For example, use of 3RP15 60 for compressor control

Frequent starting of compressors strains the network, the machine, and the increased costs for the operator. The new timing relay prevents frequent starting at times when there is high demand for compressed air. A special control circuit prevents the compressor from being switched off immediately when the required air pressure in the tank has been reached. Instead, the valve in the intake tube is closed and the compressor runs in "Idling" mode for a specific time which can be set from 30 ... 600 s.

If the pressure falls within this time, the motor does not have to be restarted again, but can return to nominal load operation from no-load operation.

If the pressure does not fall within this idling time, the motor is switched off.

The pressure switch controls the timing via B./A2.

The supply voltage is applied to A./A2 and the start contact B./A2 is open, i.e. there is no control signal on B./A2 when the supply voltage is applied. The pressure switch signals "too little pressure in system" and starts the timing by way of terminal B./A2. The compressor is started, enters Y Δ operation, and fills the pressure tank.

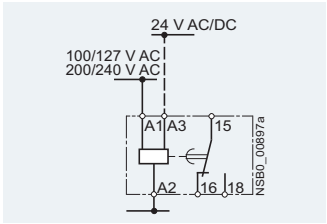
When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (overtravel time) is started, and the compressor enters no-load operation for the set period of time between 30 to 600 s. The compressor is then switched off. The compressor is only restarted if the pressure switch responds again (low pressure).

8

SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

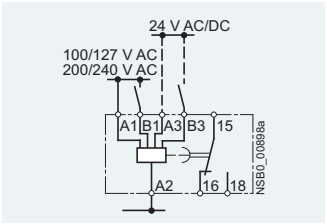
3RP15 internal circuit diagrams (terminal designation to DIN 46199, Part 5)

3RP15 05-.A, 3RP15 1., 3RP15 25-.A



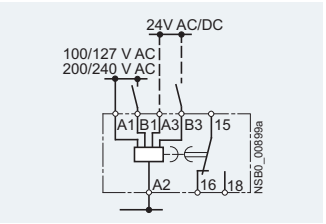
ON-delay

3RP15 05-.A, 3RP15 3.-.A



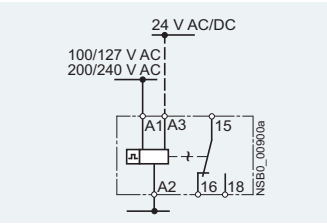
OFF-delay
with auxiliary voltage

3RP15 05-.A



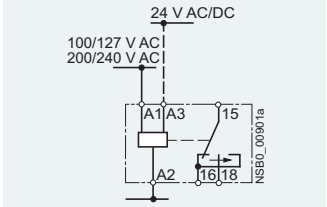
ON-delay and OFF-delay
with auxiliary voltage

3RP15 05-.A



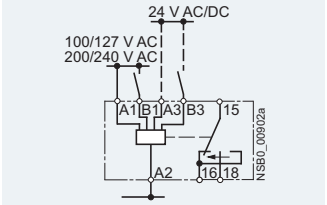
Flashing

3RP15 05-.A



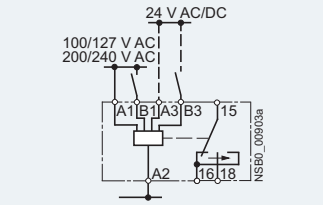
Passing make contact

3RP15 05-.A



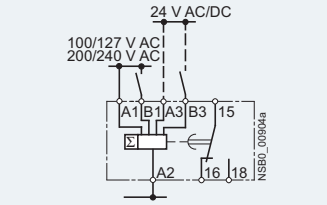
Passing break contact
with auxiliary voltage

3RP15 05-.A



Pulse-forming
with auxiliary voltage

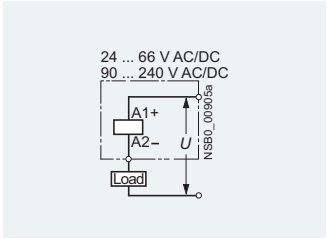
3RP15 05-.A



Additive ON-delay
with auxiliary voltage

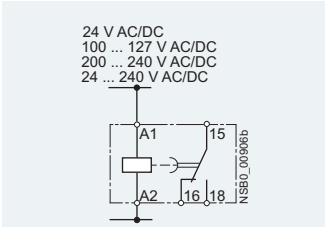
3RP15 27

24 ... 66 V AC/DC, 90 ... 240 V AC/DC



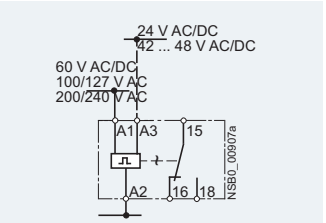
ON-delay,
two-wire version

3RP15 40-.A



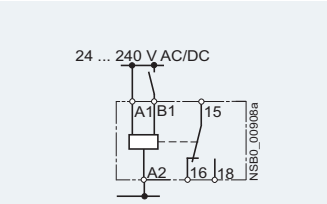
OFF-delay
without auxiliary voltage

3RP15 55



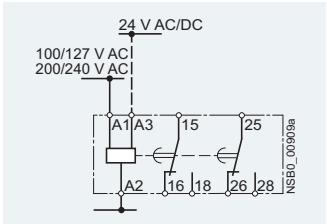
Clock-pulse relay

3RP15 05-.AW30



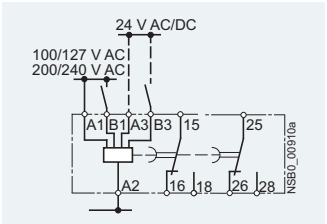
Multifunction relay
(same functions as 3RP15 05-1A)

3RP15 05-.B, 3RP15 25-1B



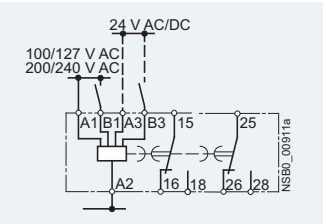
ON-delay, 3RP15 25-1B
also for 42 ... 48/60 V AC/DC
(see page 8/39 3RP15 25-1BR30)

3RP15 05-.B



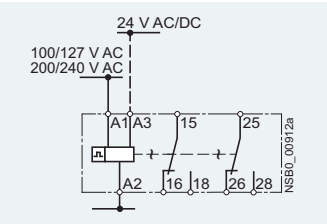
OFF-delay with auxiliary voltage

3RP15 05-.B



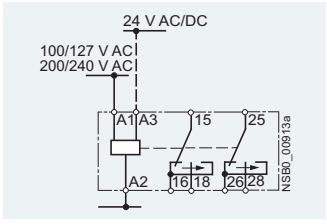
ON-delay and OFF-delay
with auxiliary voltage

3RP15 05-.B



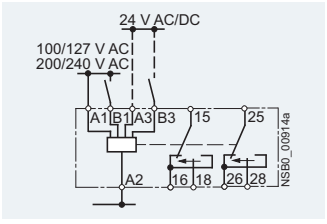
Flashing

3RP15 05-.B



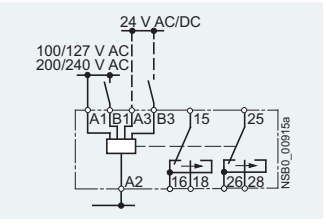
Passing make contact

3RP15 05-.B



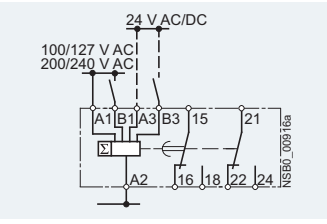
Passing break contact
with auxiliary voltage

3RP15 05-.B



Pulse-forming with auxiliary voltage

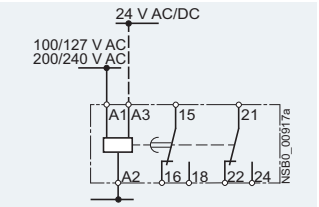
3RP15 05-.B



Additive ON-delay with auxiliary
voltage and instantaneous contact

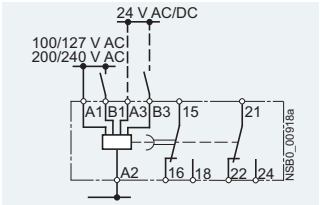
3RP15 internal circuit diagrams (terminal designation acc. to DIN 46199, Part 5) continued

3RP15 05-.B



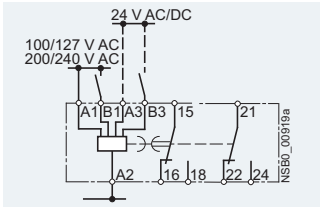
ON-delay and instantaneous contact

3RP15 05-.B



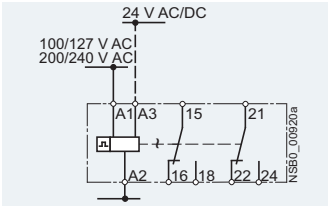
OFF-delay with auxiliary voltage and instantaneous contact

3RP15 05-.B



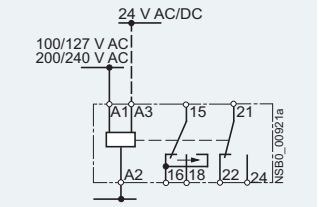
ON-delay and OFF-delay with auxiliary voltage and instantaneous contact

3RP15 05-.B



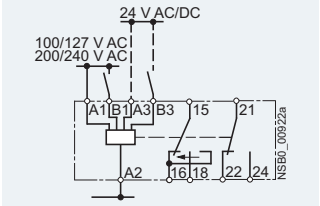
Flashing and instantaneous contact

3RP15 05-.B



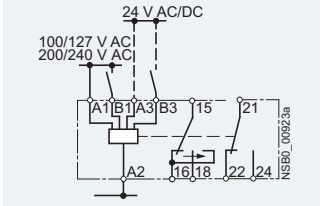
Passing make contact and instantaneous contact

3RP15 05-.B



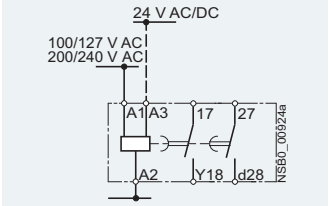
Passing break contact with auxiliary voltage and instantaneous contact

3RP15 05-.B



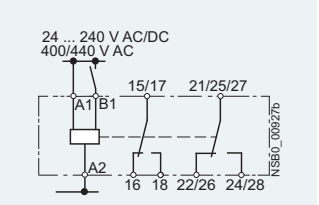
Pulse-forming with auxiliary voltage and instantaneous contact

3RP15 05-.B



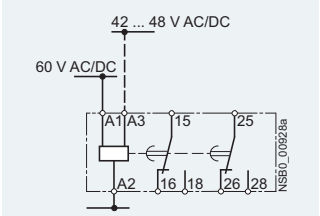
Wye-delta function

3RP15 05-.BW30/-1BT20/-.RW30



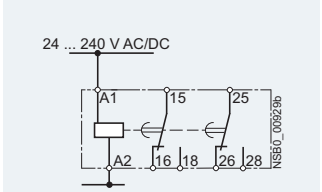
Multifunction relay
(for functions see function table)

3RP15 25-. BR30



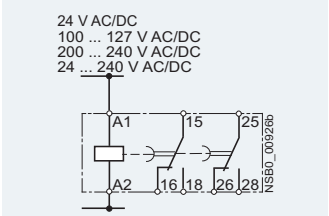
ON-delay

3RP15 25-. BW30



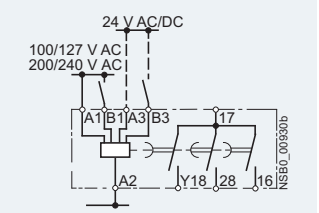
ON-delay

3RP15 40-.B



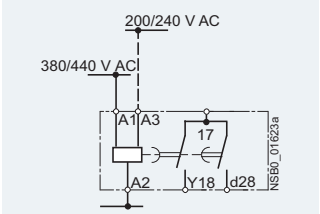
OFF-delay without auxiliary voltage

3RP15 60-. S



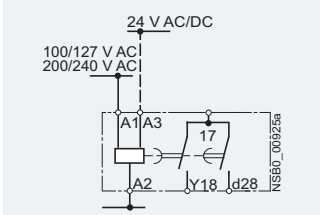
Wye-delta timing relay with overtravel function (idling)

3RP15 7.-.M20



Wye-delta timing relay

3RP15 74, 3RP15 76



Wye-delta timing relay