

Timing Relays

3RP25 / 3RP20 / 7PV15

Overview



7PV15, SIRIUS 3RP25 and SIRIUS 3RP20 timing relays

Electronic timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. Their fully developed concept and space-saving, compact design make the SIRIUS 3RP timing relays ideal modules for control cabinet, switchgear and control manufacturers in the industry.

With their narrow design, the 7PV15 timing relays are ideal in particular for use in heating, ventilation and air-conditioning systems and in compressors. All 7PV15 timing relays in this enclosure version are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60175. The enclosure complies with DIN 43880.

Benefits

- Clear-cut basic range with five basic units in the case of the 7PV15 timing relays, and seven basic units in the case of the 3RP timing relays
- Logistic advantages provided by versions with wide voltage range and wire setting range
- No tools required for assembly or disassembly on standard mounting rails
- Cadmium-free relay contacts
- Recyclable, halogen-free enclosure
- Optimum price/performance ratio
- Versions with logical separation
- Low variance: One design for distribution boards and for control cabinets
- Compliance with EMC requirements for buildings
- Environmentally friendly laser inscription instead of printing containing solvents
- Timing relays suitable for the 3RT miniature contactors allow smaller tier spacing
- Versions with screw terminals or alternatively with spring-type terminals

Application

Timing relays with ON-delay

- Interference pulse suppression (gating of interference pulses)
- Gradual startup of motors so as not to overload the power supply

Timing relays with OFF-delay

- Generation of overtravel functions following removal of voltage
- Gradual, delayed shutdown, e.g. of motors or fans, to allow a plant to be shut down selectively

Wye-delta timing relay

- Switchover of motors from wye to delta with a dead interval of 50 ms to prevent phase-to-phase short circuits

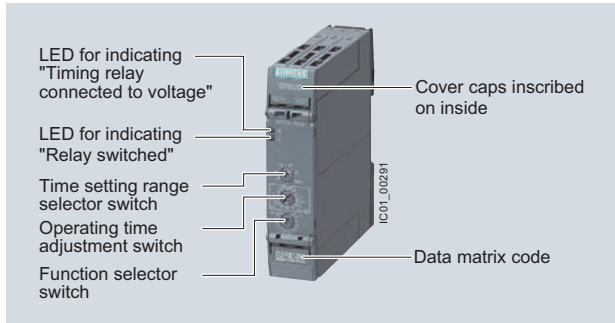
Multifunctional timing relays

- Maximum flexibility, with a device for every application
- Available with relay and semiconductor output

Timing Relays

3RP25 timing relays

Overview



SIRIUS 3RP25 timing relays

Electronic timing relays for general use in control systems and mechanical engineering with:

- 1 or 2 CO, 1 NO (semiconductor) or 3 NO
- Monofunction or multifunction
- Combination voltage
- Wide voltage range
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1/DIN VDE 0435 Part 201 "Specified time relays for industrial use"
- IEC 61000-6-2, IEC 61000-6-3 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

3RP2505 multifunctional timing relays

The functions of the 3RP2505 multifunctional timing relays can be set by means of the function selector switch. Whether both CO contacts are switched in parallel or one CO contact with a delay and one instantaneously and the choice of time setting range are set by means of the time setting range selector switch. The exact operating time can be adjusted with the operating time switch.

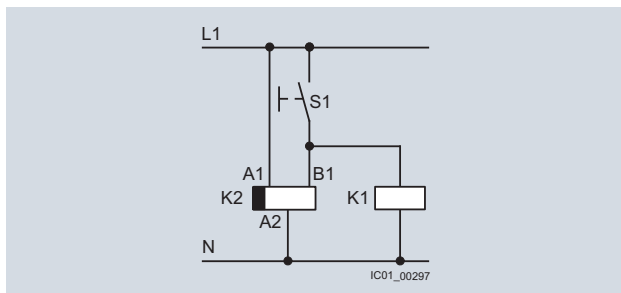
With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay.

The same potential must be applied to terminals A. and B.

Functions, [see the overview of functions on page 11/22](#).

Note:

The activation of loads parallel to the start input is permissible when using AC/DC control voltage ([see diagram](#)).



Diagram

Accessories



Push-in lugs for wall mounting



Sealable cover 17.5 mm

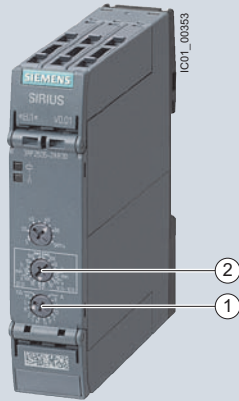


Sealable cover 22.5 mm

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

Two setting options for implementing the multifunctions (A-M):



- ① Determination of 13 functions by the setting A to M, with 1 CO, 1 NO, 2 CO that switch in parallel.
- ② Extended function variance by selecting the time range and determining, whether 2 CO switch in parallel or whether 1 CO switches with delay + 1 CO switches immediately (1 CO + 1 CO)

Setting the functions on the device

Overview of functions of the 3RP2505 multifunctional timing relay

Identification letter	13 functions 1 CO, 1 NO (semiconductor) or 2 CO switched in parallel	27 functions 13 functions (A - M) 2 CO switched in parallel + 13 functions (A - M) 1 CO delayed + 1 CO instantaneous (1 CO + 1 CO) and wye-delta function
A	ON-delay	ON-delay and instantaneous contact
B	OFF-delay with control signal	OFF-delay with control signal and instantaneous contact
C	ON-delay/OFF-delay with control signal	ON-delay/OFF-delay with control signal and instantaneous contact
D	Flashing, symmetrical, starting with interval	Flashing, symmetrical, starting with interval and instantaneous contact
E	Passing make contact, interval relay	Passing make contact, interval relay and instantaneous contact
F	Retriggerable interval relay with deactivated control signal (passing break contact with control signal)	Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact
G	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal)	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact
H	Additive ON-delay, instantaneous OFF with control signal	Additive ON-delay, instantaneous OFF with control signal and instantaneous contact
I	Additive ON-delay with control signal	Additive ON-delay with control signal and instantaneous contact
J	Flashing, symmetrical, starting with pulse	Flashing, symmetrical, starting with pulse and instantaneous contact
K	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
L	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
M	Retriggerable interval relay with activated control signal (watchdog)	Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)
--	--	Wye-delta function

Note:

Conversion tool e.g. from 3RP15 to 3RP25, see
www.siemens.com/sirius/conversion-tool.

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

Article No. scheme

Digit of the Article No.	1 st - 5 th	6 th	7 th		8 th	9 th	10 th	11 th	12 th
	□□□□□	□	□	-	□	□	□	□	0
Timing relays in industrial enclosure 17.5 mm and 22.5 mm	3 R P 25								
Functions/time setting ranges		□	□						
Connection type					□				
Contacts						□			
Rated control supply voltage							□	□	
Example	3 R P 25	0	5	-	1	A	W	3	0

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

Benefits

- Easy stock keeping and logistics thanks to low variance of devices
- Reduced space requirement in the control cabinet thanks to variants in width 17.5 mm and 22 mm
- Consistent for all functions thanks to wide voltage range from 12 to 240 V AC/DC
- Up to 27 functions according to IEC 61812 in the multifunctional timing relay with wide voltage range
- Multifunctional timing relay with semiconductor output for high switching frequencies, bounce-free and wear-free switching

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 IEC 60715 or for screw fixing.

Timing Relays



3RP25 timing relays, 17.5 mm and 22.5 mm

Technical specifications

Type	3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.	3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.
Width	mm 17.5	22.5
Height	mm 100	100
Depth	mm 90	90



Type		3RP25...-AB30, 3RP25...-AW30, 3RP25...-BB30, 3RP25...-BW30, 3RP25...-NW30, 3RP25...-SW30	3RP25...-BT20, 3RP25...-NM20	3RP25...-CW30	3RP25...-EW30	3RP25...-RW30
Insulation voltage For overvoltage category III According to IEC 60664 For pollution degree 3, rated value	V AC	300	500	300	--	300
Ambient temperature • During operation • During storage	°C	-25 ... +60 -40 ... +85				-40 ... +70
Operating range factor Of the control supply voltage, rated value • At AC - At 50 Hz - At 60 Hz • At DC		0.85 ... 1.1 0.85 ... 1.1 0.85 ... 1.1	--	0.85 ... 1.1	0.85 ... 1.1	0.7 ... 1.1 0.7 ... 1.1 0.7 ... 1.1
Switching capacity current With inductive load	A	0.01 ... 3	0.01 ... 3	0.01 ... 1	0.01 ... 6	0.01 ... 3
Operational current of the auxiliary contacts • At AC-15 - At 24 V - At 250 V - At 400 V • At DC-12 - At 24 V - At 125 V - At 250 V • At DC-13 - At 24 V - At 125 V - At 250 V	A	3 3 --	3 3 3	1 1 --	-- -- --	3 3 --
Uninterrupted thermal current I_{th}	A	5	5	1	0.6	5
Mechanical endurance (Operating cycles) Typical		10 x 10 ⁶				
Electrical endurance For AC-15 at 230 V, typical		1 x 10 ⁵				

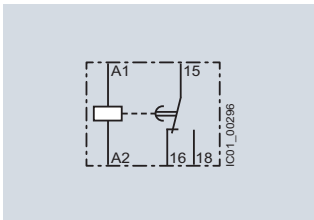
Type	3RP25	
Connection type	 Screw terminals	
• Design of thread of connection screw	M3	
• Solid	mm ²	1 x (0.5 ... 4.0)/2 x (0.5 ... 2.5)
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 4)/2 x (0.5 ... 1.5)
• Solid for AWG cables	AWG	1 x (20 ... 12), 2 x (20 ... 14)
• Stranded for AWG cables	AWG	1 x (20 ... 12), 2 x (20 ... 14)
• Tightening torque	Nm	0.6 ... 0.8
Connection type	 Spring-type terminals	
• Solid	mm ²	1 x (0.5 ... 4)
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 2.5)
• AWG cables, solid	AWG	1 x (20 ... 12)

Timing Relays

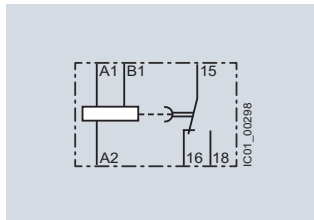
3RP25 timing relays, 17.5 mm and 22.5 mm

Internal circuit diagrams 3RP25

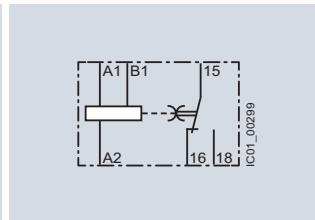
Multifunction 3RP2505-.A, 13 functions, 1 CO



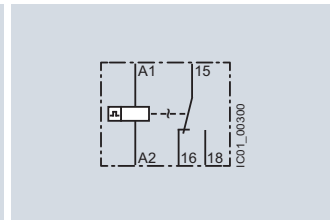
3RP2505-.A (A)
ON-delay



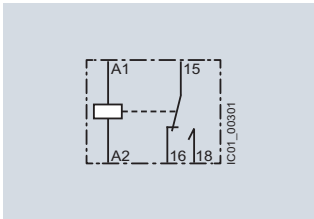
3RP2505-.A (B)
OFF-delay with control signal



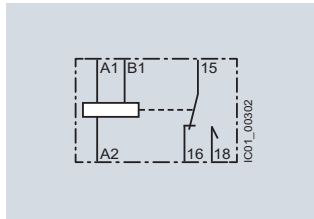
3RP2505-.A (C)
ON-delay/OFF-delay
with control signal



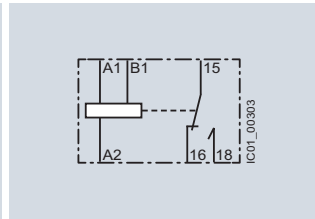
3RP2505-.A (D)
Flashing, symmetrical,
starting with interval



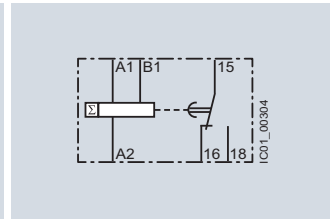
3RP2505-.A (E)
Passing make contact, interval relay



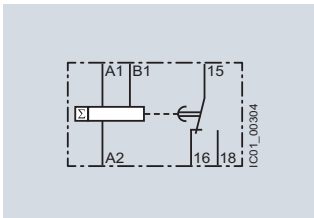
3RP2505-.A (F)
Retriggerable interval relay with
deactivated control signal (passing
break contact with control signal)



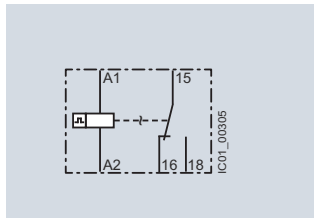
3RP2505-.A (G)
Passing make contact with
control signal, not retriggerable
(pulse-forming with control signal)



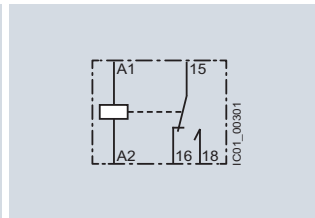
3RP2505-.A (H)
Additive ON-delay, instantaneous OFF
with control signal



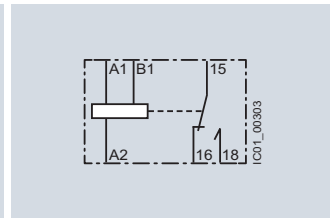
3RP2505-.A (I)
Additive ON-delay with control signal



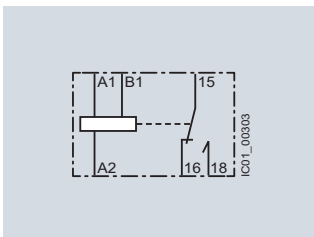
3RP2505-.A (J)
Flashing, symmetrical,
starting with pulse



3RP2505-.A (K)
Pulse-delayed (fixed pulse (at 1 s)
and settable pulse delay)



3RP2505-.A (L)
Pulse-delayed with control signal (fixed
pulse (at 1 s) and settable pulse delay)

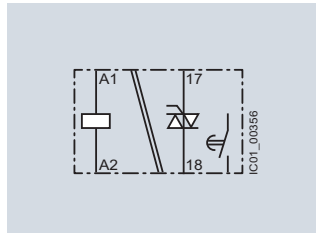


3RP2505-.A (M)
Retriggerable interval relay with
activated control signal (watchdog)

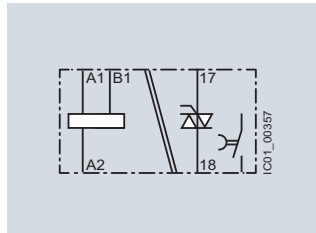
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

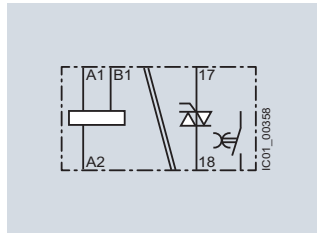
Multifunction 3RP2505-.C, 13 functions, 1 NO (semiconductor)



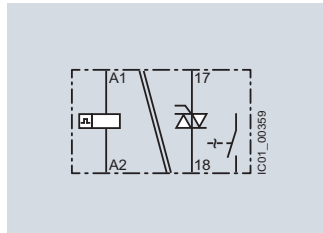
3RP2505-.C (A)
ON-delay



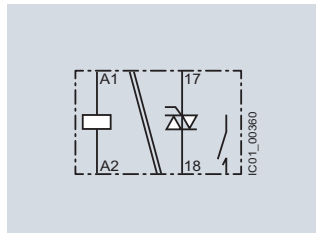
3RP2505-.C (B)
OFF-delay with control signal



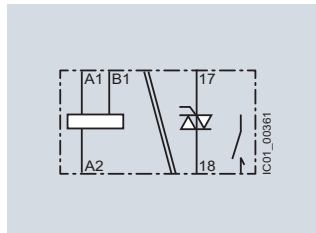
3RP2505-.C (C)
ON-delay/OFF-delay
with control signal



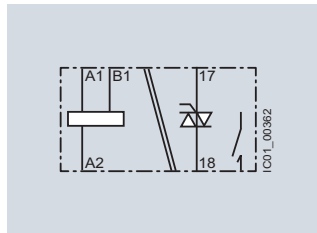
3RP2505-.C (D)
Flashing, symmetrical,
starting with interval



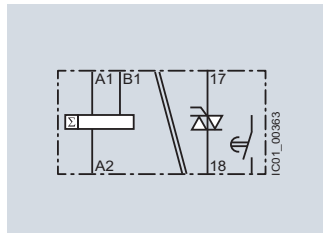
3RP2505-.C (E)
Passing make contact, interval relay



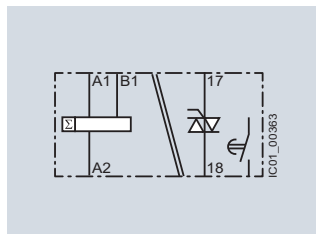
3RP2505-.C (F)
Retriggerable interval relay with
deactivated control signal (passing
break contact with control signal)



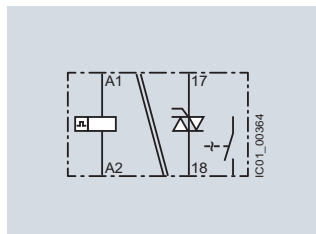
3RP2505-.C (G)
Passing make contact with
control signal, not retriggerable
(pulse-forming with control signal)



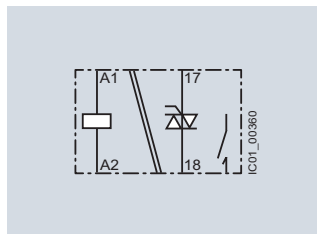
3RP2505-.C (H)
Additive ON-delay, instantaneous OFF
with control signal



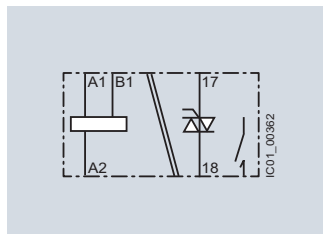
3RP2505-.C (I)
Additive ON-delay with control signal



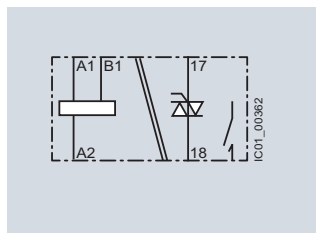
3RP2505-.C (J)
Flashing, symmetrical,
starting with pulse



3RP2505-.C (K)
Pulse-delayed (fixed pulse at 1 s)
and settable pulse delay)



3RP2505-.C (L)
Pulse-delayed with control signal (fixed
pulse at 1 s) and settable pulse delay)

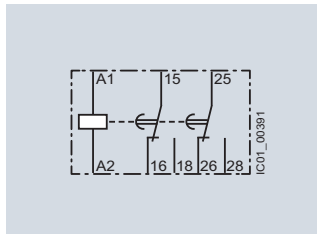


3RP2505-.C (M)
Retriggerable interval relay with
activated control signal (watchdog)

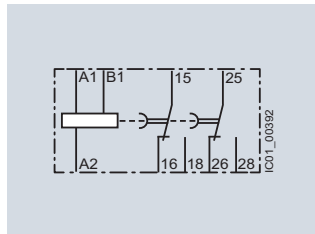
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

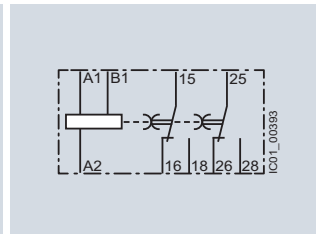
Multifunction 3RP2505-.B, 27 functions, 2 CO switched in parallel with delay/
multifunction 3RP2505-.R, 13 functions, 2 CO positively driven, and switched in parallel with delay (see also note below)



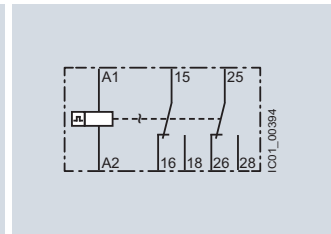
3RP2505-.B (A)
ON-delay



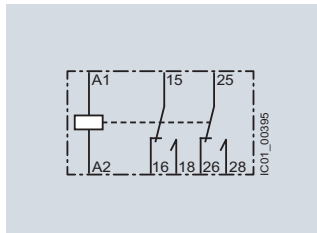
3RP2505-.B (B)
OFF-delay with control signal



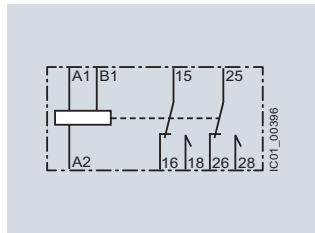
3RP2505-.B (C)
ON-delay/OFF-delay
with control signal



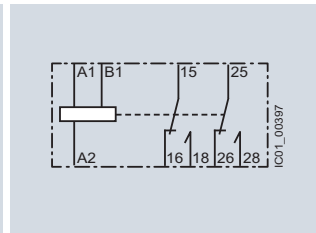
3RP2505-.B (D)
Flashing, symmetrical,
starting with interval



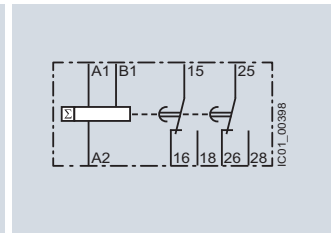
3RP2505-.B (E)
Passing make contact, interval relay



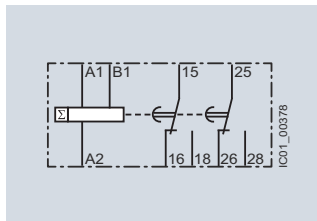
3RP2505-.B (F)
Retriggerable interval relay with
deactivated control signal (passing
break contact with control signal)



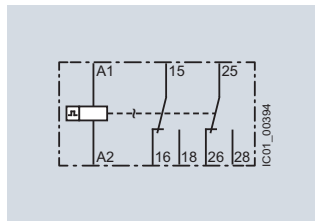
3RP2505-.B (G)
Passing make contact with
control signal, not retriggerable
(pulse-forming with control signal)



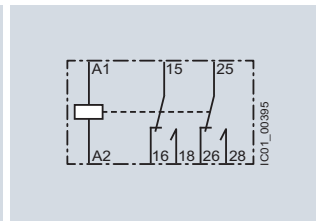
3RP2505-.B (H)
Additive ON-delay, instantaneous OFF
with control signal



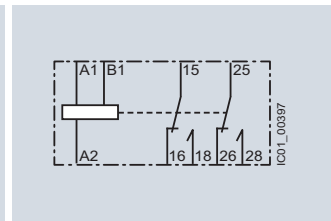
3RP2505-.B (I)
Additive ON-delay with control signal



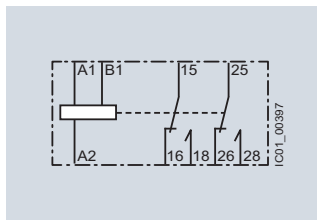
3RP2505-.B (J)
Flashing, symmetrical,
starting with pulse



3RP2505-.B (K)
Pulse-delayed (fixed pulse (at 1 s)
and settable pulse delay)



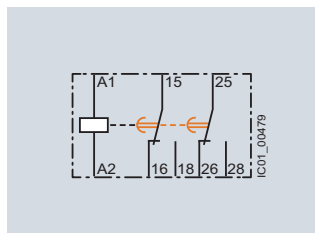
3RP2505-.B (L)
Pulse-delayed with control signal (fixed
pulse (at 1 s) and settable pulse delay)



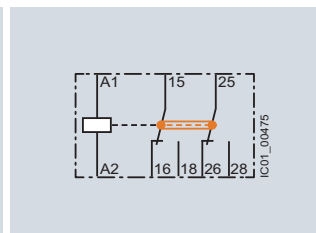
3RP2505-.B (M)
Retriggerable interval relay with
activated control signal (watchdog)

Note:

3RP2505-.RW30 has 13 functions (A to M) like 3RP2505-.B switched in parallel with delay, but with positively driven contacts. The circuit diagrams are identical except for the representation of the symbols for these contacts, see also the example on the right for 3RP2505-.RW30 of the function (A) with ON-delay.



3RP2505-.B (A)
ON-delay

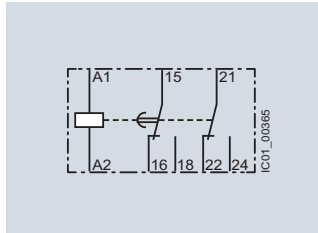


3RP2505-.R (A)
with positively driven contacts
ON-delay

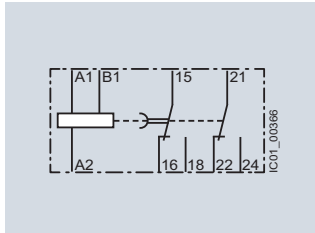
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

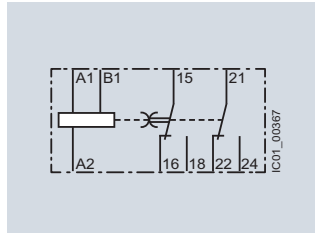
Multifunction 3RP2505-.B, 27 functions, 1 CO delayed + 1 CO instantaneous (continued)



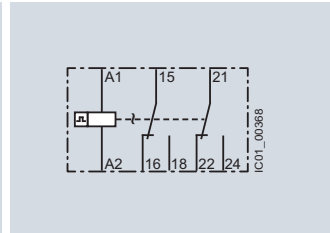
3RP2505-B (A)
ON-delay and instantaneous contact



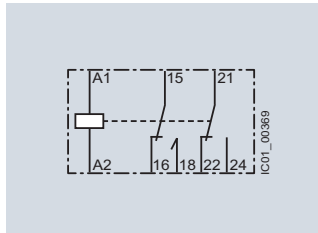
3RP2505-B (B)
OFF-delay with control signal and instantaneous contact



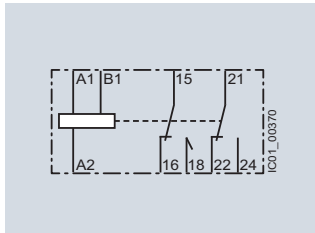
3RP2505-B (C)
ON-delay/OFF-delay with control signal and instantaneous contact



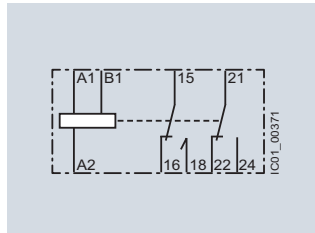
3RP2505-B (D)
Flashing, symmetrical, starting with interval and instantaneous contact



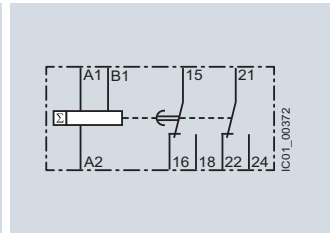
3RP2505-B (E)
Passing make contact, interval relay and instantaneous contact



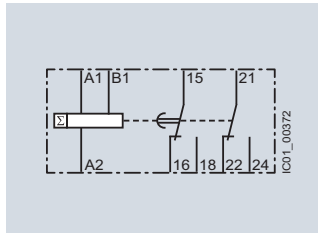
3RP2505-B (F)
Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact



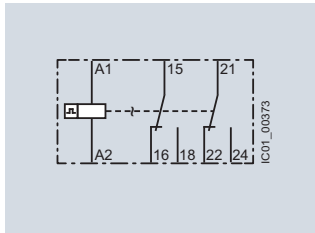
3RP2505-B (G)
Passing make contact with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact



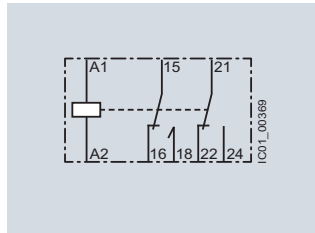
3RP2505-B (H)
Additive ON-delay, instantaneous OFF with control signal and instantaneous contact



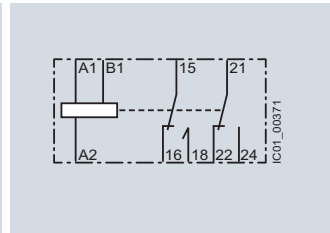
3RP2505-B (I)
Additive ON-delay with control signal and instantaneous contact



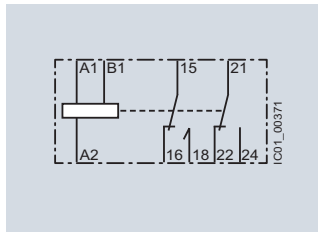
3RP2505-B (J)
Flashing, symmetrical, starting with pulse and instantaneous contact



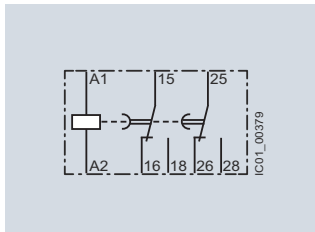
3RP2505-B (K)
Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact



3RP2505-B (L)
Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact



3RP2505-B (M)
Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)

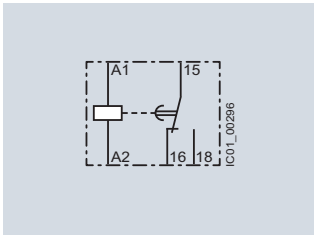


3RP2505-B
Wye-delta function

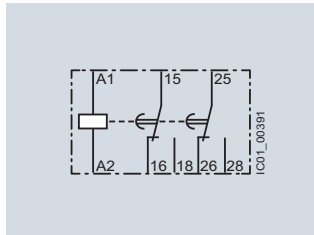
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

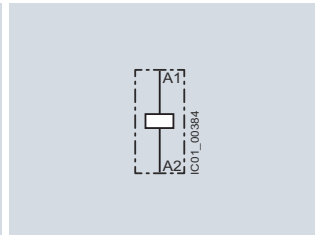
Monofunctions 3RP251. up to 3RP257.¹⁾



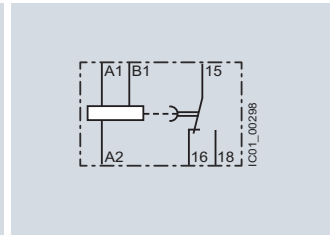
3RP251., 3RP2525-A
ON-delay



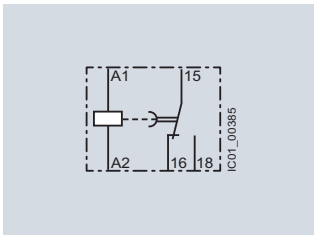
3RP2525-B
ON-delay



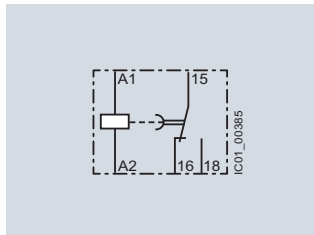
3RP2527
ON-delay, two-wire design



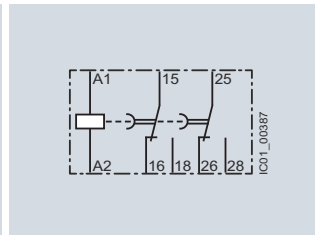
3RP2535
OFF-delay with control signal



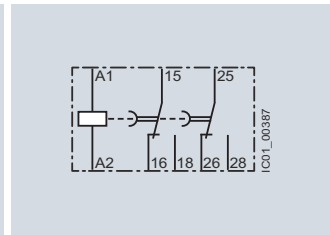
3RP2540-A (N)¹⁾
OFF-delay



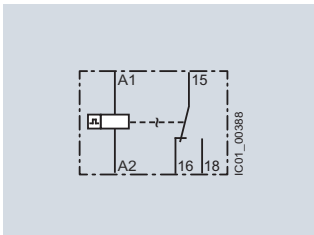
3RP2540-A (O)¹⁾
Positive passing make contact



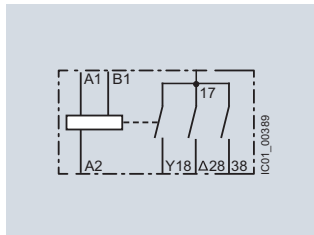
3RP2540-B (N)¹⁾
OFF-delay



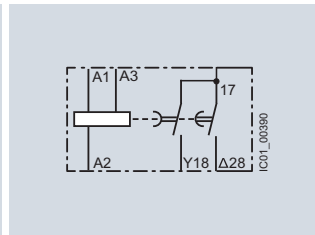
3RP2540-B (O)¹⁾
Positive passing make contact



3RP2555
Flashing, asymmetrical, starting with interval (clock-pulse relay)



3RP2560
Wye-delta function with overtravel function (idling)



3RP257.
Wye-delta function

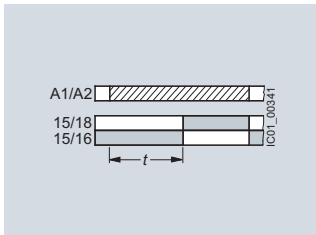
¹⁾ 3RP2540 has a double function:
Function N = OFF-delay
Function O = Positive passing make contact.

Timing Relays

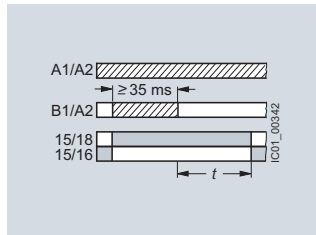
3RP25 timing relays, 17.5 mm and 22.5 mm

3RP25 function diagrams

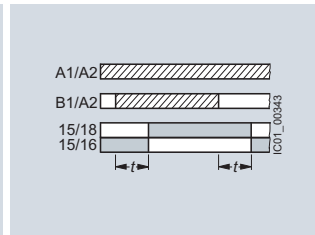
Multifunction 3RP2505-.A, 1 CO, 13 functions and 3RP2505-.C, 1 NO (semiconductor), 13 functions



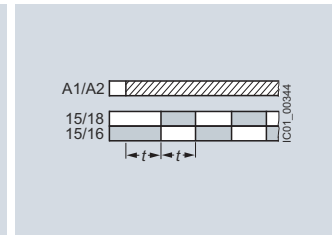
A
ON-delay



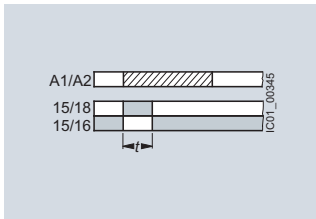
B
OFF-delay with control signal



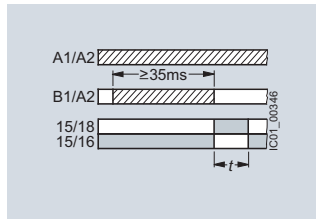
C
ON-delay/OFF-delay with control signal



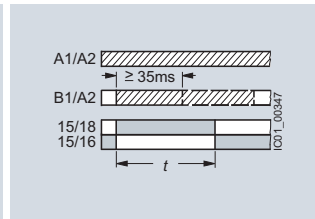
D
Flashing, symmetrical, starting with interval



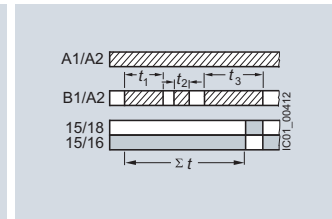
E
Passing make contact, interval relay



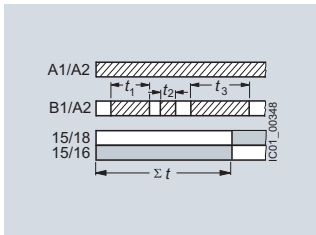
F
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



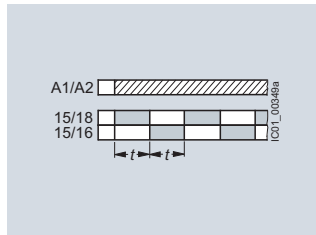
G
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



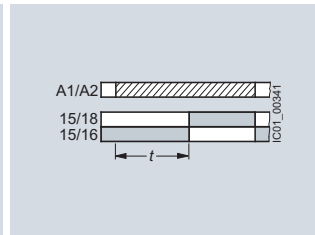
H
Additive ON-delay, instantaneous OFF with control signal



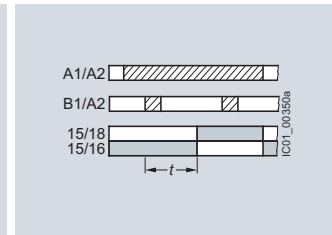
I
Additive ON-delay, with control signal



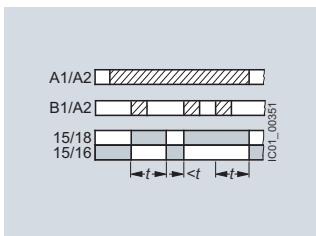
J
Flashing, symmetrical, starting with pulse



K
Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)



L
Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)



M
Retriggerable interval relay with activated control signal (watchdog)

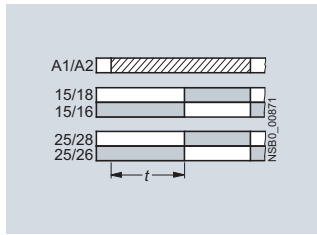
Legend

- A ... M** Identification letters
- Timing relay energized
- Contact closed
- Contact open

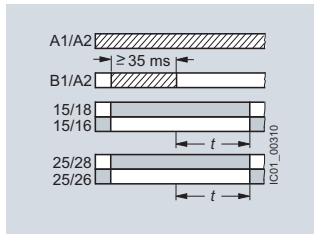
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

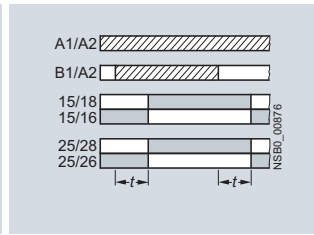
Multifunction 3RP2505-.B, 13 functions, 2 CO positively driven and switched in parallel with delay



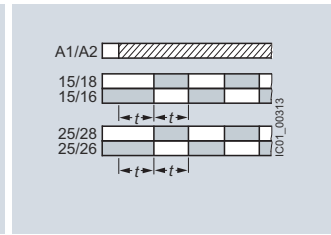
A
ON-delay



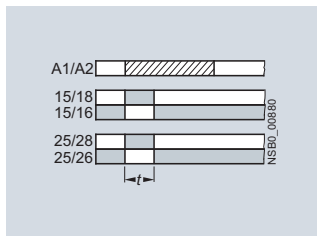
B
OFF-delay with control signal



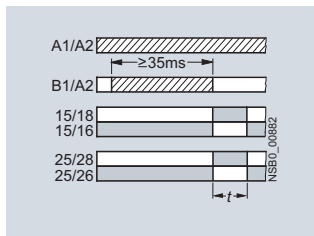
C
ON-delay/OFF-delay
with control signal



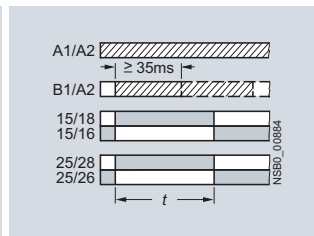
D
Flashing, symmetrical,
starting with interval



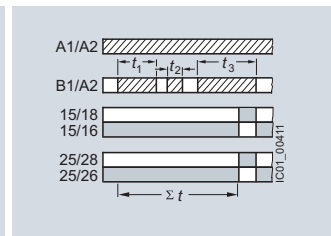
E
Passing make contact, interval relay



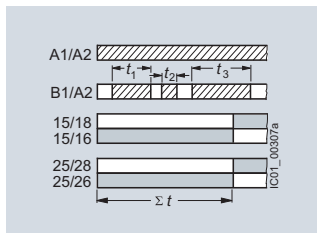
F
Retriggerable interval relay with
deactivated control signal (passing
break contact with control signal)



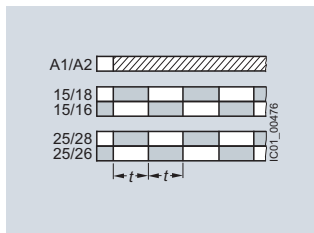
G
Passing make contact with
control signal, not retriggerable
(pulse-forming with control signal)



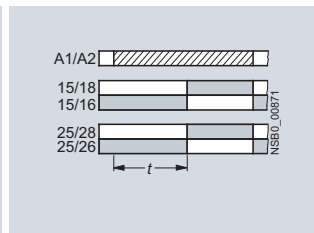
H
Additive ON-delay, instantaneous OFF
with control signal



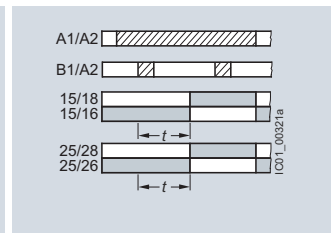
I
Additive ON-delay with control signal



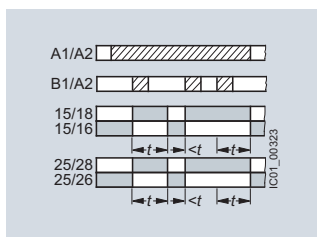
J
Flashing, symmetrical,
starting with pulse



K
Pulse-delayed (fixed pulse at 1 s
and settable pulse delay)



L
Pulse-delayed with control signal (fixed
pulse at 1 s and settable pulse delay)



M
Retriggerable interval relay with
activated control signal (watchdog)

Legend

- A ... M Identification letters
- ▨ Timing relay energized
- Contact closed
- Contact open

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

RELAYS, INTERFACES & CONVERTERS 11

Multifunction 3RP2505-.B, 27 functions, 2 CO

<p>A</p> <p>2 CO switched in parallel</p> <p>ON-delay</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>ON-delay and instantaneous contact</p>	<p>B</p> <p>2 CO switched in parallel</p> <p>1 CO delayed + 1 CO instantaneous</p> <p>OFF-delay with control signal</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>OFF-delay with control signal and instantaneous contact</p>
<p>C</p> <p>2 CO switched in parallel</p> <p>ON-delay/OFF-delay with control signal</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>ON-delay/OFF-delay with control signal and instantaneous contact</p>	<p>D</p> <p>2 CO switched in parallel</p> <p>Flashing, symmetrical, starting with interval</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>Flashing, symmetrical, starting with interval and instantaneous contact</p>
<p>E</p> <p>2 CO switched in parallel</p> <p>Passing make contact, interval relay</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>Passing make contact, interval relay and instantaneous contact</p>	<p>F</p> <p>2 CO switched in parallel</p> <p>Retriggerable interval relay with deactivated control signal (passing break contact with control signal)</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact</p>
<p>G</p> <p>2 CO switched in parallel</p> <p>Passing make contact with control signal, not retriggerable (pulse-forming with control signal)</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>Passing make contact with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact</p>	<p>H</p> <p>2 CO switched in parallel</p> <p>Additive ON-delay, instantaneous OFF with control signal</p>	<p>1 CO delayed + 1 CO instantaneous</p> <p>Additive ON-delay, instantaneous OFF with control signal and instantaneous contact</p>

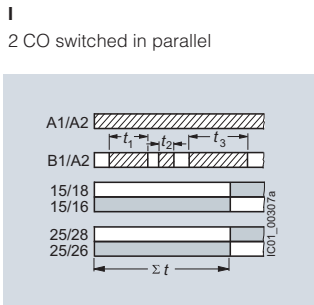
Legend

- A ... M Identification letters
- ▨ Timing relay energized
- Contact closed
- Contact open

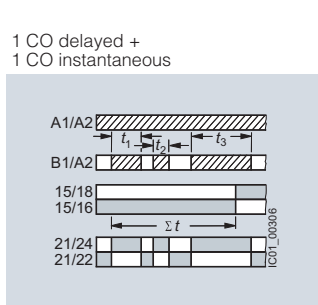
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

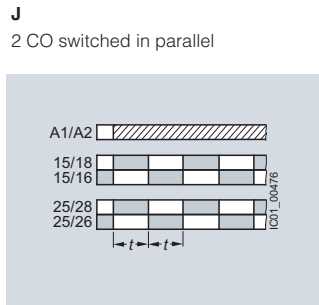
Multifunction 3RP2505-.B, 27 functions, 2 CO (continued)



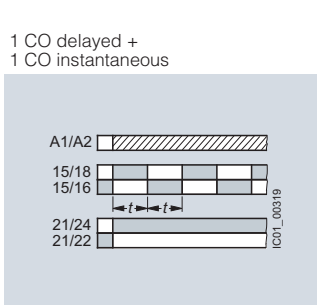
Additive ON-delay with control signal



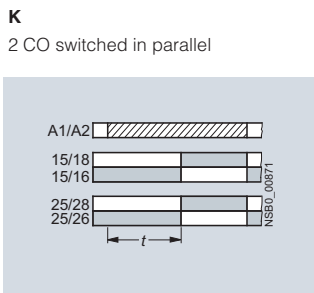
Additive ON-delay with control signal and instantaneous contact



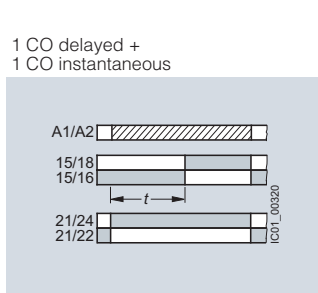
Flashing, symmetrical, starting with pulse



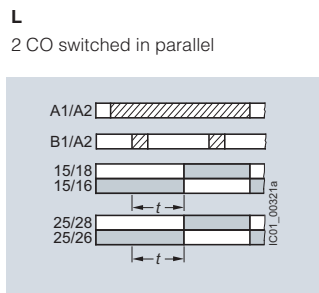
Flashing, symmetrical, starting with pulse and instantaneous contact



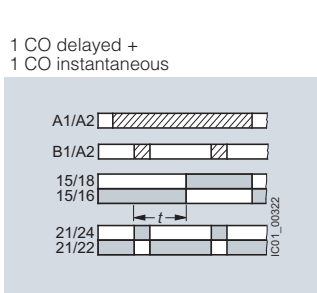
Pulse-delayed (fixed pulse at 1 s and settable pulse delay)



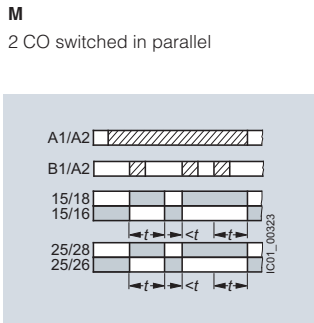
Pulse-delayed (fixed pulse at 1 s and settable pulse delay) and instantaneous contact



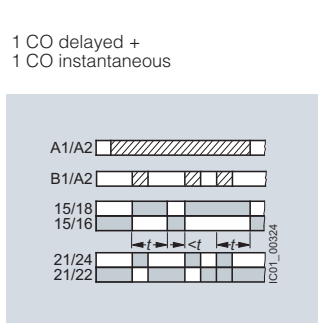
Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay)



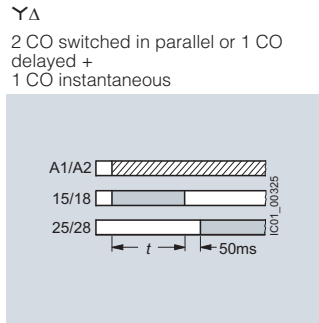
Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay) and instantaneous contact



Retriggerable interval relay with activated control signal (watchdog)



Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)



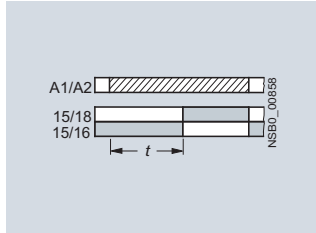
Wye-delta function

- Legend**
- A ... M** Identification letters
 - ▨ Timing relay energized
 - Contact closed
 - Contact open

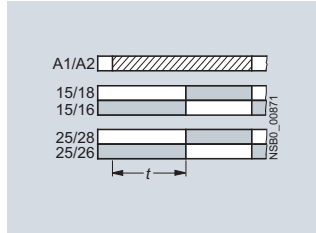
Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

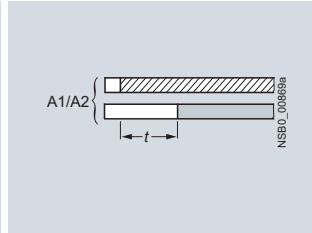
Monofunctions 3RP251.. up to 3RP257.¹⁾



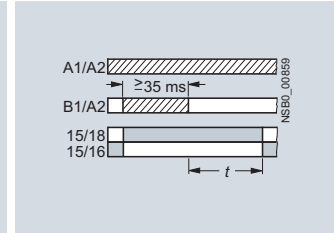
3RP251..AW30, 1 CO, ON-delay



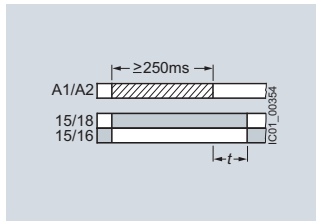
3RP2525..W30, 2 CO, ON-delay



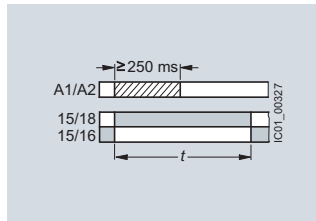
3RP2527..EW30, 1 NO (semiconductor), ON-delay



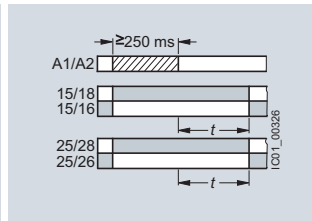
3RP2535..AW30, 1 CO, OFF-delay with control signal



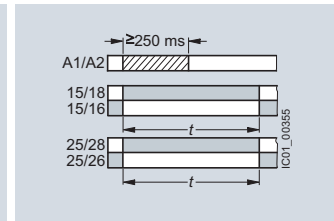
3RP2540..A.30, 1 CO, OFF-delay (N)¹⁾



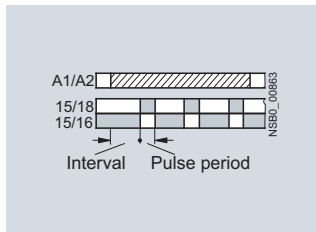
3RP2540..A.30, 1 CO, positive passing make contact (O)¹⁾



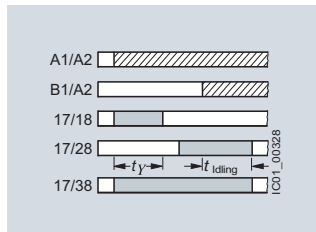
3RP2540..B.30, 2 CO, OFF-delay (N)¹⁾



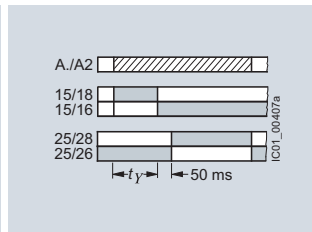
3RP2540..B.30, 2 CO, positive passing make contact (O)¹⁾



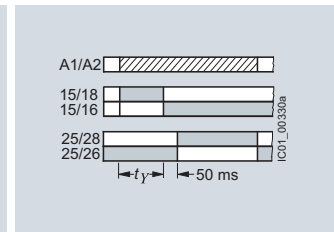
3RP2555..AW30, 1 CO, flashing, asymmetrical, starting with interval (clock-pulse relay)



3RP2560..SW30, 3 NO, wye-delta function with overtravel function (idling)



3RP257..NM20, 2 NO, wye-delta function



3RP257..NM30, 2 NO, wye-delta function

Legend

- Timing relay energized
- Contact closed
- Contact open

¹⁾ 3RP2540 has a double function:
Function N = OFF-delay
Function O = positive passing make contact.

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

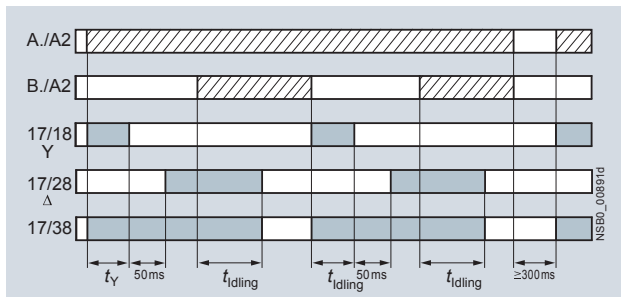
Possibilities of operation of the 3RP2560-.SW30 timing relay

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 $\Upsilon\Delta$ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time t_{idling} (30 ... 600 s) has elapsed, the output relays (17/38 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.

Note:

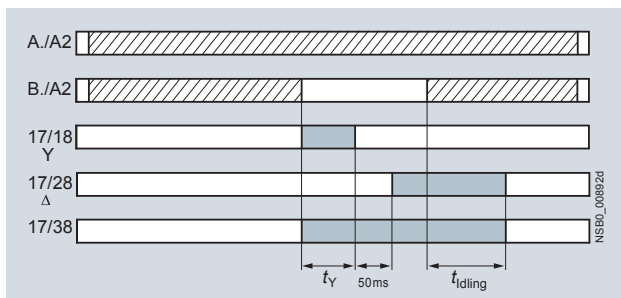
Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/16 close.



Operation 1

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

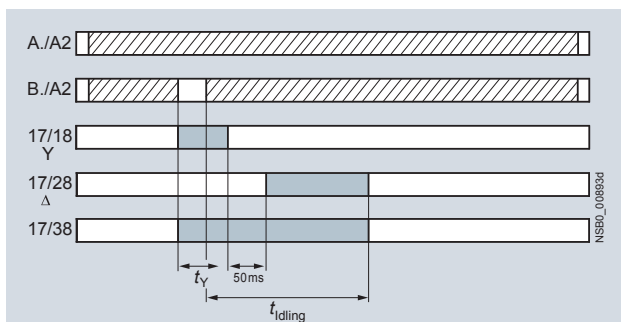
If the control signal B./A2 is already present when the control supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.



Operation 2

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

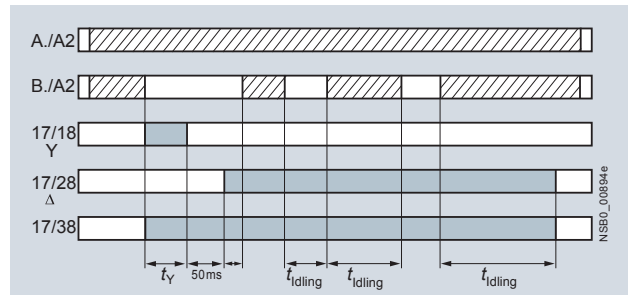
If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.



Operation 3

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.



Operation 4

Legend

- Timing relay energized
- Contact closed
- Contact open

t_Y = Star time 1 ... 20 s

t_{idling} = Idling time (coasting time) 30 ... 600 s

Note:

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

Application example based on standard operation

(operation 1): For example, use of 3RP2560 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, i.e. in no-load operation 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 control 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 control 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 $\Upsilon\Delta$ operation, and fills the pressure tank.

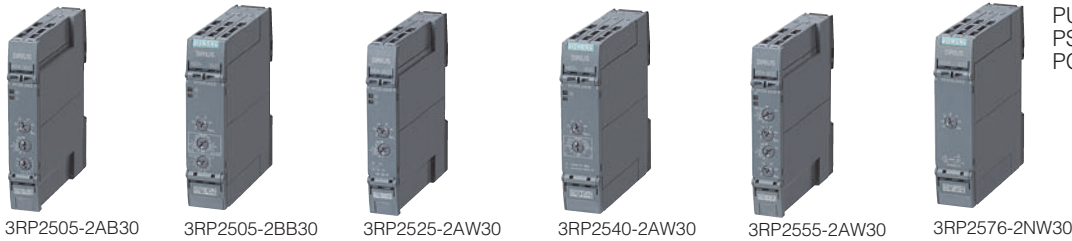
When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (coasting time) is started, and the compressor enters no-load operation for the set period of time from 30 ... 600 s. The compressor is then switched off. The compressor is only restarted if the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

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

RELAYS, INTERFACES & CONVERTERS 11

Selection and ordering data



PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 41H

Number of NO contacts		Number of CO contacts		Semi-conduc-tor output	Adjustable time	Control supply voltage		DT	Screw terminals		DT	Spring-type terminals (push-in)	
Instan-taneous switch-ing	De-layed switch-ing	Instan-taneous switch-ing	De-layed switch-ing			At AC 50/60 Hz	At DC		Article No.	Price per PU		Article No.	Price per PU

3RP2505-.A and 3RP2505-.C timing relays, 13 functions

The functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay. The same potential must be applied to terminals A. and B. Functions, [see the overview of functions on page 10/41](#)

0	0	0	1	--	0.05 s ... 100 h	24	24	A	3RP2505-1AB30	A	3RP2505-2AB30
						12 ... 240	12 ... 240	A	3RP2505-1AW30	A	3RP2505-2AW30
0	1	0	0	✓	0.05 s ... 100 h	12 ... 240	12 ... 240	A	3RP2505-1CW30	A	3RP2505-2CW30

3RP2505-.R timing relays suitable for railway applications, 13 functions

Start of delivery planned for 11/2015

The functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay. The same potential must be applied to terminals A. and B. Functions, [see the overview of functions on page 10/41](#)

0	0	--	2 ¹⁾	--	0.05 s ... 100 h	24 ... 240	24 ... 240	A	3RP2505-1RW30	A	3RP2505-2RW30
---	---	----	-----------------	----	------------------	------------	------------	---	----------------------	---	----------------------

3RP2505-.B timing relay, 27 functions

The functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay. The same potential must be applied to terminals A. and B. Functions, [see the overview of functions on page 10/41](#)

0	0	--	2 ²⁾	--	0.05 s ... 100 h	24	24	A	3RP2505-1BB30	A	3RP2505-2BB30
						400 ... 440	--	A	3RP2505-1BT20	A	3RP2505-2BT30
						12 ... 240	12 ... 240	A	3RP2505-1BW30	A	3RP2505-2BW30

3RP251. and 3RP252. timing relays, ON-delay

0	0	0	1	--	0.5 ... 10 s	12 ... 240	12 ... 240	A	3RP2511-1AW30	A	3RP2511-2AW30
					1 ... 30 s	12 ... 240	12 ... 240	A	3RP2512-1AW30	A	3RP2512-2AW30
					5 ... 100 s	12 ... 240	12 ... 240	A	3RP2513-1AW30	A	3RP2513-2AW30
					0.05 s ... 100 h	12 ... 240	12 ... 240	A	3RP2525-1AW30	A	3RP2525-2AW30

0	0	0	2	--	0.05 s ... 100 h	24	24	A	3RP2525-1BB30	A	3RP2525-2BB30
						12 ... 240	12 ... 240	A	3RP2525-1BW30	A	3RP2525-2BW30

0	1	0	0	✓	0.05 s ... 240 s	12 ... 240	12 ... 240	A	3RP2527-1EW30	A	3RP2527-2EW30
---	---	---	---	---	------------------	------------	------------	---	----------------------	---	----------------------

3RP2535 timing relays, OFF-delay with control signal

0	0	0	1	--	0.05 s ... 100 h	12 ... 240	12 ... 240	A	3RP2535-1AW30	A	3RP2535-2AW30
---	---	---	---	----	------------------	------------	------------	---	----------------------	---	----------------------

3RP2540 timing relays, OFF-delay, without control signal, non-volatile, passing make contact

0	0	0	1	--	0.05 s ... 600 s	24	24	A	3RP2540-1AB30	A	3RP2540-2AB30
						12 ... 240	12 ... 240	A	3RP2540-1AW30	A	3RP2540-2AW30

0	0	0	2	--	0.05 s ... 600 s	24	24	A	3RP2540-1BB30	A	3RP2540-2BB30
						12 ... 240	12 ... 240	A	3RP2540-1BW30	A	3RP2540-2BW30

3RP2555 timing relays, clock-pulse relay, flashing, asymmetrical

0	0	0	1	--	0.05 s ... 100 h	12 ... 240	12 ... 240	A	3RP2555-1AW30	A	3RP2555-2AW30
---	---	---	---	----	------------------	------------	------------	---	----------------------	---	----------------------

3RP2560 timing relays, wye-delta function with overtravel function (idling)

1	2	0	0	--	1 ... 20 s	12 ... 240	12 ... 240	A	3RP2560-1SW30	A	3RP2560-2SW30
---	---	---	---	----	------------	------------	------------	---	----------------------	---	----------------------

3RP257. timing relays, wye-delta function

1	1	0	0	--	1 ... 20 s	380 ... 440 ³⁾	--	A	3RP2574-1NM20	A	3RP2574-2NM20
						12 ... 240	12 ... 240	A	3RP2574-1NW30	A	3RP2574-2NW30

1	1	0	0	--	3 ... 60 s	380 ... 440 ³⁾	--	A	3RP2576-1NM20	A	3RP2576-2NM20
						12 ... 240	12 ... 240	A	3RP2576-1NW30	A	3RP2576-2NW30

- ✓ Available
- Not available

1) Positively-driven contacts.

2) Optionally 1 CO delayed + 1 CO instantaneous.




3) With 3RP2574-.NM20 and 3RP2576-.NM20, connection of 200 ... 240 V AC, 50/60 Hz control voltage is also possible.

For accessories, [see page 11/37](#).

Timing Relays

3RP25 timing relays, 17.5 mm and 22.5 mm

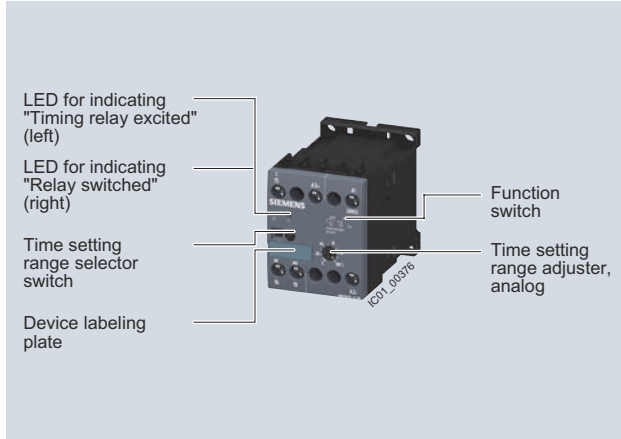
Accessories

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Accessories for enclosures							
Sealing covers							
 3ZY1321-1AA00		• 17.5 mm	A	3ZY1321-1AA00	1	5 units	41L
 3ZY1321-2AA00		• 22.5 mm	A	3ZY1321-2AA00	1	5 units	41L
 3ZY1311-0AA00		Push-in lugs For wall mounting	A	3ZY1311-0AA00	1	10 units	41L
 3ZY1440-0AA00		Coding pins For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; enable the mechanical coding of terminals	A	3ZY1440-1AA00	1	12 units	41L
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure							
Removable terminals							
 3ZY1122-1BA00		• 2-pole, screw terminals 1 x 4 mm ²	A	Screw terminals  3ZY1122-1BA00	1	6 units	41L
 3ZY1122-2BA00		• 2-pole, push-in terminals 1 x 4 mm ²	A	Spring-type terminals (push-in)  3ZY1122-2BA00	1	6 units	41L
Tools for opening spring-type terminals							
 3RA2908-1A		Screwdrivers For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	A	Spring-type terminals  3RA2908-1A	1	1 unit	41B

Timing Relays

3RP20 timing relays, 45 mm

Overview



SIRIUS 3RP20 timing relays

SIRIUS 3RP20 electronic timing relays for use in control systems and mechanical engineering with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Time relays for industrial and residential use"
- IEC 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- IEC 60947-1, Appendix N "Protective separation"

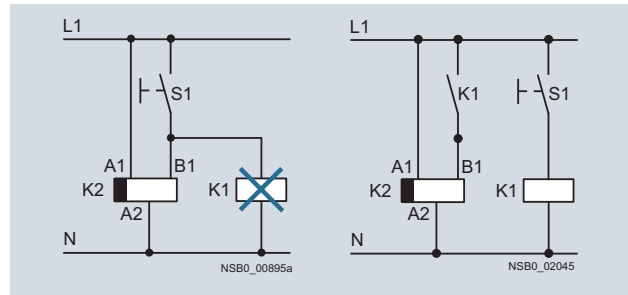
Multifunction

The functions of the 3RP2005 multifunctional timing relays can be set by means of the function selector switch. Insert labels can be used to adjust different functions of the 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 3RP2901 label set, page 11/43.

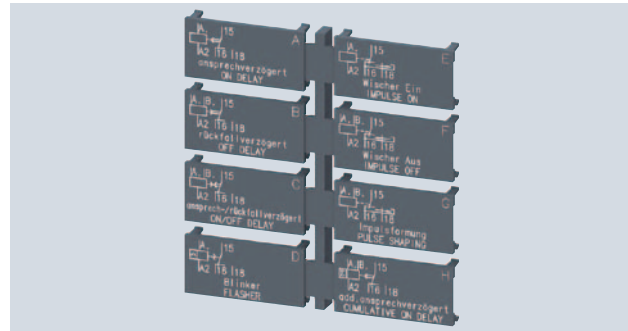
Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage (see diagrams).



Diagrams

Accessories



Label set for marking the multifunctional relay

Article No. scheme

Digit of the Article No.	1st - 5th	6th	7th	8th	9th	10th	11th	12th
	□□□□□	□	□	-	□	□	□	0
SIRIUS timing relays, enclosure 45 mm	3 R P 2 0							
Functions/time setting ranges	□ □							
Connection type					□			
Contacts					□			
Rated control supply voltage					□ □			
Example	3 R P 2 0 5 - 1 A P 3 0							

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

Benefits

- Suitable for 3RT miniature contactors
- Uniform design
- Ideal for small distance between standard mounting rails and/or for low mounting depth, e.g. in control boxes
- Labels are used on the multifunctional time relay to document the function that has been set

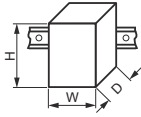


Timing Relays

3RP20 timing relays, 45 mm

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.

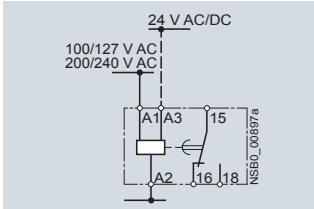
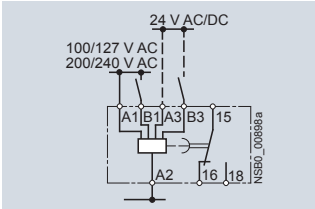
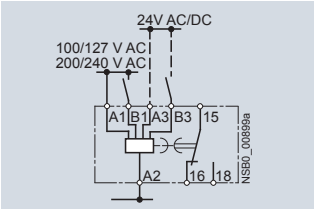
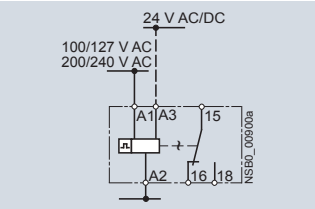
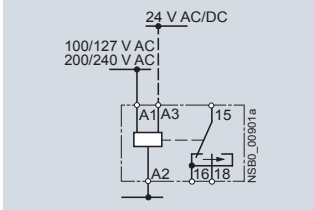
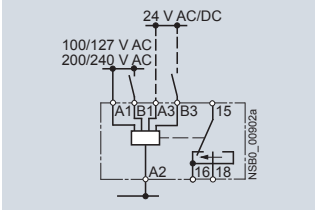
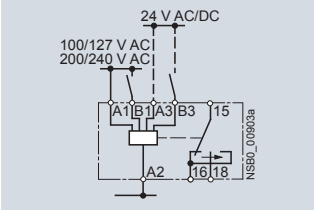
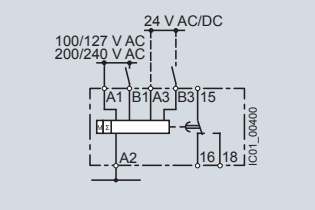
Technical specifications

Type	3RP2005, 3RP2025	
Dimensions (W x H x D)		mm 45 x 57 x 73
Rated insulation voltage Pollution degree 3 Overvoltage category III	V AC	300
Permissible ambient temperature • During operation • During storage	°C	-25 ... +60 -40 ... +85
Operating range at excitation¹⁾		0.85 ... 1.1 x U _s at AC; 0.8 ... 1.25 x U _s at DC; 0.95 ... 1.05 times the rated frequency
Mechanical endurance	Operating cycles	10 x 10 ⁶
Electrical endurance at I₆	Operating cycles	1 x 10 ⁵
Connection type	 Screw terminals	
• Terminal screw • Solid • Finely stranded with end sleeve • Stranded • AWG cables • Tightening torque	mm ² mm ² AWG AWG Nm	M3 (for standard screwdriver, size 2 and Pozidriv 2) 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ 2 x (18 ... 14) 0.8 ... 1.2
Connection type	 Spring-type terminals	
• Solid • Finely stranded with end sleeve • Finely stranded without end sleeve • AWG cables, solid or stranded • Max. external diameter of the conductor insulation	mm ² mm ² mm ² AWG mm	2 x (0.25 ... 2.5) 2 x (0.25 ... 1.5) 2 x (0.25 ... 2.5) 2 x (24 ... 14) 3.6

¹⁾ If nothing else is stated.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

3RP20 internal circuit diagrams

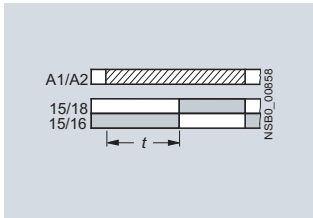
			
3RP2005, 3RP2025 ON-delay	3RP2005 OFF-delay with control signal	3RP2005 ON-delay and OFF-delay with control signal	3RP2005 Flashing, starting with interval
			
3RP2005 Passing make contact	3RP2005 Passing break contact with control signal	3RP2005 Pulse-forming with control signal	3RP2005 Additive ON-delay with control signal

Timing Relays

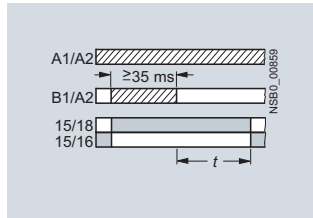
3RP20 timing relays, 45 mm

3RP20 function diagrams and 3RP2901 label set

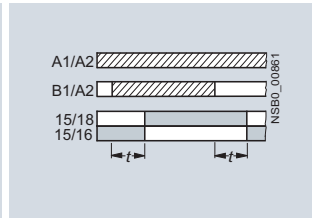
1 CO contact



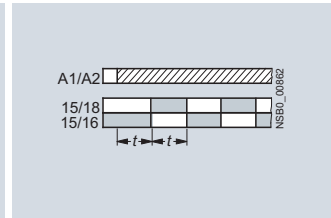
A
3RP2005-.A, 3RP2025
ON-delay



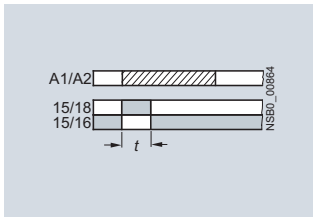
B¹⁾
3RP2005-.A
OFF-delay with control signal



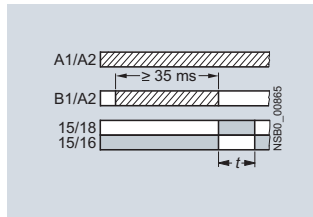
C¹⁾
3RP2005-.A
ON-delay and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



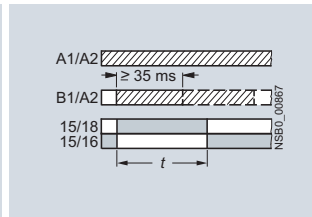
D
3RP2005-.A
Flashing, starting with interval
(pulse/interval 1:1)



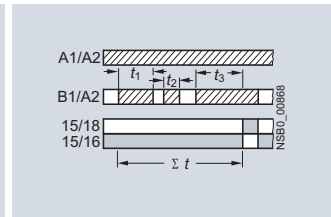
E
3RP2005-.A
Passing make contact



F¹⁾
3RP2005-.A
Passing break contact
with control signal



G¹⁾
3RP2005-.A
Pulse-forming with control signal
(pulse generation at the output does
not depend on duration of energizing)



H¹⁾
3RP2005-.A
Additive ON-delay with control signal

Legend

A ... H Identification letters for 3RP2005

Timing relay energized

Contact closed

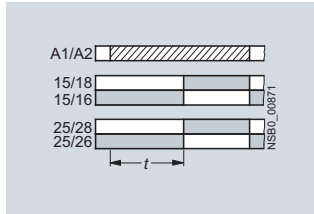
Contact open

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 (retriggerable). This does not apply to G, G● and H●, which are not retriggerable.

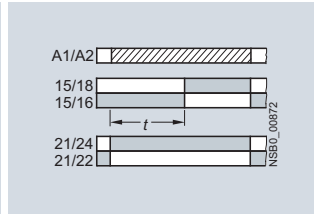
Timing Relays

3RP20 timing relays, 45 mm

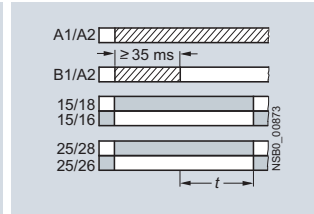
2 CO contacts



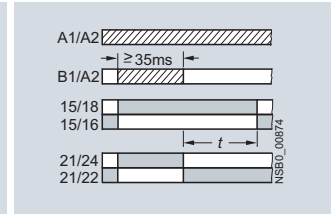
A
3RP2005-.B
ON-delay



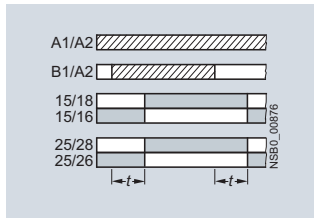
A•
3RP2005-.B
ON-delay and instantaneous contact



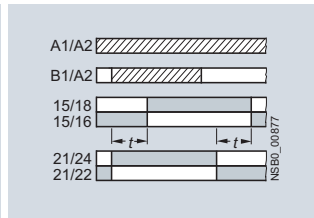
B¹⁾
3RP2005-.B
OFF-delay with control signal



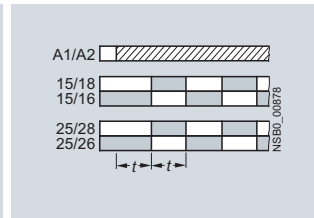
B•¹⁾
3RP2005-.B
OFF-delay with control signal
and instantaneous contact



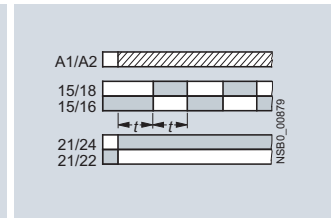
C¹⁾
3RP2005-.B
ON-delay and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



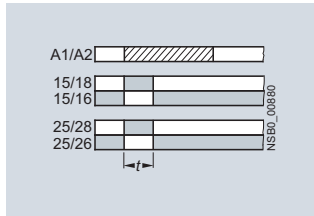
C•¹⁾
3RP2005-.B
ON-delay and OFF-delay
with control signal and instantaneous
contact
($t = t_{on} = t_{off}$)



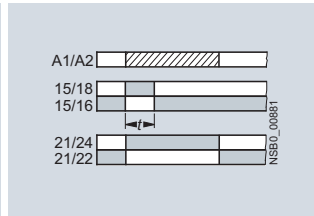
D
3RP2005-.B
Flashing, starting with interval
(pulse/interval 1:1)



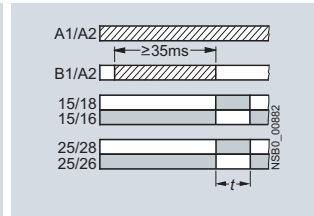
D•
3RP2005-.B
Flashing, starting with interval
(pulse/interval 1:1) and instantaneous
contact



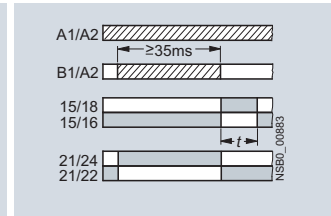
E
3RP2005-.B
Passing make contact



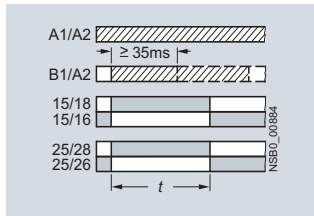
E•
3RP2005-.B
Passing make contact and
instantaneous contact



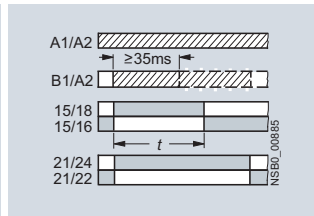
F¹⁾
3RP2005-.B
Passing break contact
with control signal



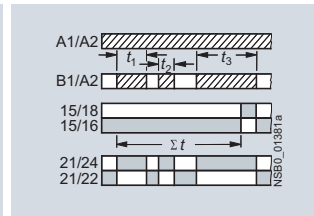
F•¹⁾
3RP2005-.B
Passing break contact
with control signal
and instantaneous contact



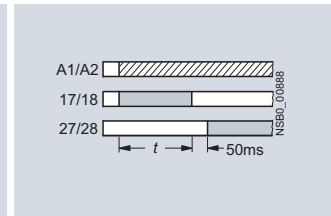
G¹⁾
3RP2005-.B
Pulse-forming with control signal
(pulse generation at the output does
not depend on duration of energizing)



G•¹⁾
3RP2005-.B
Pulse-forming with control signal
and instantaneous contact (pulse
generation at the output does not
depend on duration of energizing)



H¹⁾
3RP2005-.B
Additive ON-delay with control signal
and instantaneous contact



YΔ
3RP2005-.B
Wye-delta function

Legend

A ... H Identification letters for 3RP2005

Timing relay energized

Contact closed

Contact open

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 (retriggerable). This does not apply to G, G• and H•, which are not retriggerable.

Timing Relays

3RP20 timing relays, 45 mm

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3RP2005-1AP30



3RP2005-1BW30



3RP2005-2AP30



3RP2025-2BW30

Version	Time setting range t	Rated control supply voltage U_s		DT	Screw terminals	DT	Spring-type terminals
		50/60 Hz AC	DC				
		V	V		Article No.	Price per PU	Article No. Price per PU

3RP2005 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 3RP2005 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 [3RP2901 label set](#), page 11/43.

With LED and 1 CO contact ¹⁾ , 8 functions	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s	24/100 ... 127 24/200 ... 240	24 24	▶	3RP2005-1AQ30 3RP2005-1AP30	A	3RP2005-2AQ30 3RP2005-2AP30
With LED and 2 CO contacts, 16 functions	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 ∞ ²⁾	24 ... 240 ³⁾	24 ... 240 ⁴⁾	▶	3RP2005-1BW30	A	3RP2005-2BW30

3RP2025. timing relays, ON-delay, 15 time setting ranges

With LED and 1 CO contact ¹⁾	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 ∞ ²⁾	24/100 ... 127 24/200 ... 240	24 24	▶	3RP2025-1AQ30 3RP2025-1AP30	▶	3RP2025-2AQ30 3RP2025-2AP30
---	--	----------------------------------	----------	---	--	---	--

For accessories, see page 11/43.

- 1) Units with protective separation.
- 2) 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.
- 3) Operating range 0.8 to 1.1 x U_s .
- 4) Operating range 0.7 to 1.1 x U_s .

Timing Relays

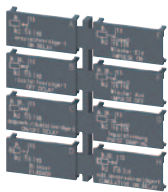
3RP20 timing relays, 45 mm

Accessories

Version	Function	Identifi- cation letter	Use	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----------	-------------------------------	-----	----	-------------	-----------------	-------------------------	-----	----

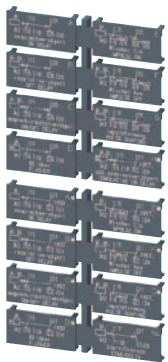
Label sets for 3RP20

Accessories for 3RP20 (not included in the scope of supply).
The label set offers the possibility of labeling timing relays
with the set function in English and German.



3RP2901-0A

1 label set (1 unit) with 8 functions	ON-delay	A		C	3RP2901-0A		1	5 units	41H
	OFF-delay with control signal	B	For devices with 1 CO						
	ON-delay and OFF-delay with control signal	C							
	Flashing, starting with interval	D							
	Passing make contact	E							
	Passing break contact with control signal	F							
	Pulse-forming with control signal	G							
	Additive ON-delay with control signal	H							



3RP2901-0B

1 label set (1 unit) with 16 functions	ON-delay	A		C	3RP2901-0B		1	5 units	41H
	OFF-delay with control signal	B	For devices with 2 CO contacts						
	ON-delay and OFF-delay with control signal	C							
	Flashing, starting with interval	D							
	Passing make contact	E							
	Passing break contact with control signal	F							
	Pulse-forming with control signal	G							
	ON-delay and instantaneous con- tact	A•							
	OFF-delay with control signal and instantaneous contact	B•							
	ON-delay and OFF-delay with control signal and instantaneous contact	C•							
	Flashing, starting with interval, and instantaneous contact	D•							
	Passing make contact and instan- taneous contact	E•							
	Passing break contact with control signal and instantaneous contact	F•							
	Pulse-forming with control signal and instantaneous contact	G•							
	Additive ON-delay with control signal and instantaneous contact	H•							
	Wye-delta function	YΔ							

Blank inscription labels for 3RP20

Blank labels, 20 mm x 7 mm, pastel turquoise ¹⁾			For 3RP20	D	3RT1900-1SB20		100	340 units	41B
---	--	--	-----------	---	----------------------	--	-----	-----------	-----

¹⁾ PC labeling system for individual inscription of unit
labeling plates available from:
murrplastik Systemtechnik GmbH

Timing Relays

7PV15 timing relays in enclosure, 17.5 mm

RELAYS, INTERFACES & CONVERTERS 11

Overview



7PV15 timing relay

Electronic timing relays for general use and in control systems, mechanical engineering and infrastructure with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

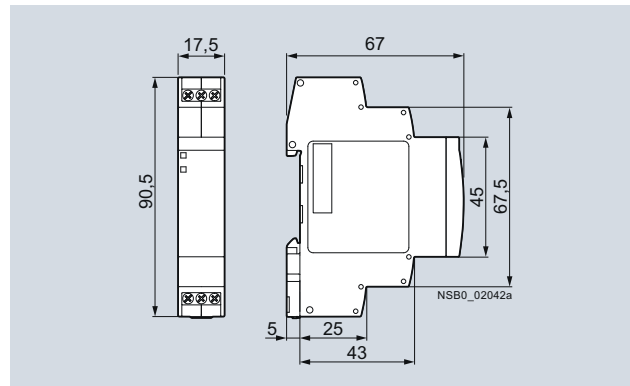
- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Time relays for industrial and residential use"
- IEC 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Built-in equipment for electrical installations; overall dimensions and related mounting dimensions"

Multifunction

The functions of the 7PV1508-1A multifunctional timing relays can be set by means of rotary switches. The identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Enclosure version

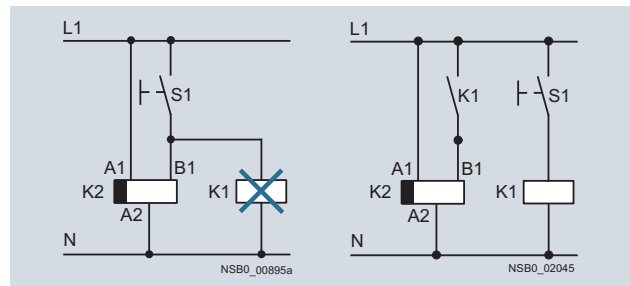
All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715. The enclosure complies with DIN 43880, 1 MW.



Dimensions

Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage (see diagrams).



Diagrams

Article No. scheme

Digit of the Article No.	1 st - 5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th
	□□□□□	□	□	-	□	□	□	0
Timing relays in industrial enclosure, 17.5 mm	7 P V 1 5							
Functions/time setting ranges	□ □							
Connection type					□			
Contacts					□			
Rated control supply voltage					□	□		
Example	7 P V 1 5 0 8 - 1 A W 3 0							

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

Timing Relays

7PV15 timing relays in enclosure, 17.5 mm


Benefits

- Wide voltage range 12 to 240 V AC/DC
- High switching capacity, e.g. AC-15 at 230 V, 3 A
- Combination voltage, e.g. 24 V AC/DC and 200 to 240 V AC
- Changes to the time setting range during operation
- Changes to the function in the de-energized state
- High level of functionality and a high repeat accuracy of timer settings
- Integrated surge suppressor
- Function charts printed on the side of the device for reliable device adjustment

Application

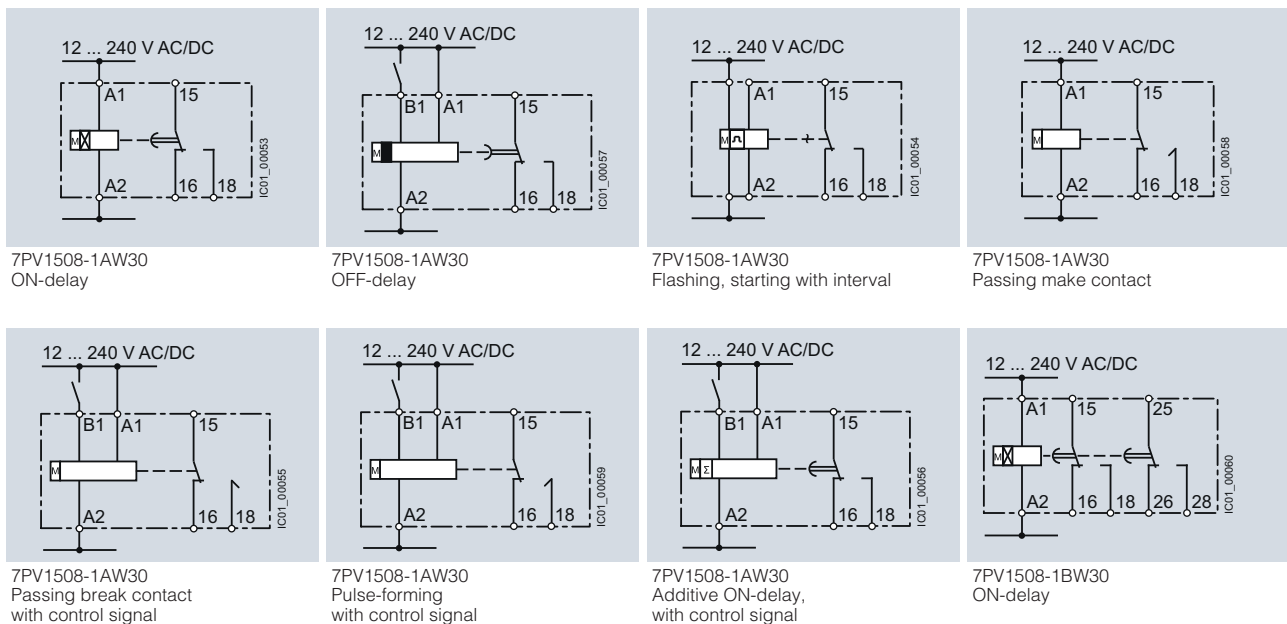
Timing relays are used in control, starting and protective circuits for all switching operations involving time delays, e.g. in non-residential buildings, airports, industrial buildings etc.

Technical specifications

Type	7PV15	
Rated insulation voltage Pollution degree 2, overvoltage category III	V AC	300
Permissible ambient temperature	°C	-25 ... +55
• During operation	°C	-40 ... +70
Operating range at excitation¹⁾	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 rated frequency	
Rated operational current I_e	A	3
• AC-15 at 24 ... 240 V, 50 Hz	A	1
• DC-13 at	A	0.2
- 24 V		
- 125 V		
Uninterrupted thermal current I_{th}	A	5
Mechanical endurance	Operating cycles	1 x 10 ⁶
Electrical endurance at I_e	Operating cycles	1 x 10 ⁵
Connection type	 Screw terminals	
• Terminal screw	M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid	mm ²	1 x (0.2 ... 2.5)
• Finely stranded with end sleeve	mm ²	1 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm ²	1 x (0.2 ... 1.5)
• AWG cables, solid or stranded	AWG	1 x (24 ... 14)
• Tightening torque	Nm	0.4 ... 0.5

¹⁾ If nothing else is stated.

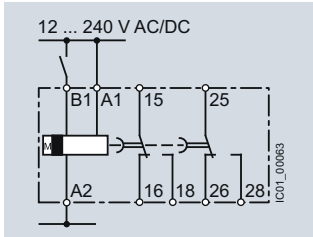
7PV15 internal circuit diagrams



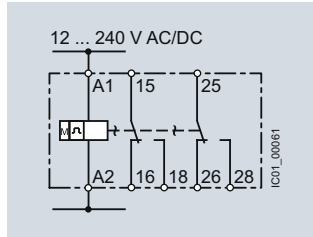
Timing Relays

7PV15 timing relays in enclosure, 17.5 mm

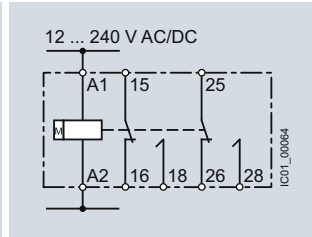
7PV15 internal circuit diagrams (continued)



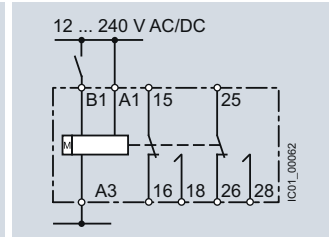
7PV1508-1BW30
OFF-delay
with control signal



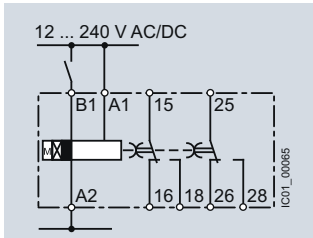
7PV1508-1BW30
Flashing,
starting with interval



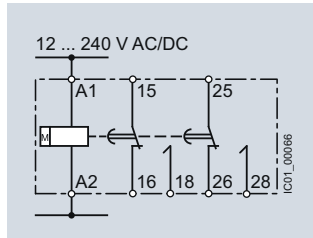
7PV1508-1BW30
Passing make contact



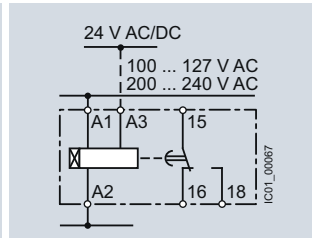
7PV1508-1BW30
Pulse-forming
with control signal



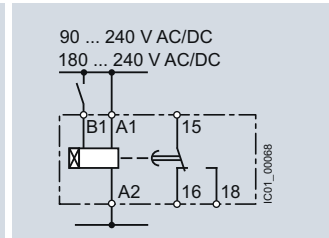
7PV1508-1BW30
ON and OFF-delay



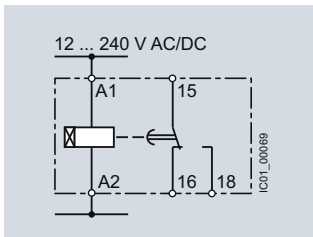
7PV1508-1BW30
Fixed pulse after ON-delay



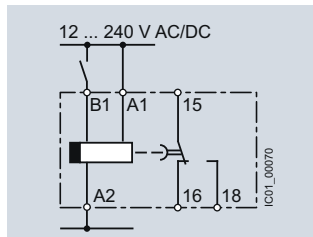
7PV151.-1AQ30, 7PV151.-1AP30
ON-delay



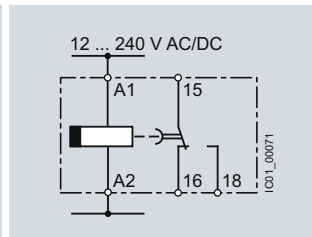
7PV1518-1AJ30, 7PV1518-1AN30
ON-delay



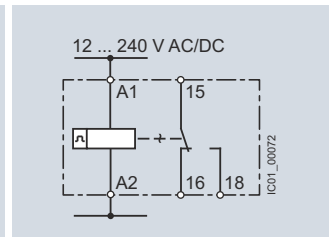
7PV1518-1AW30
ON-delay



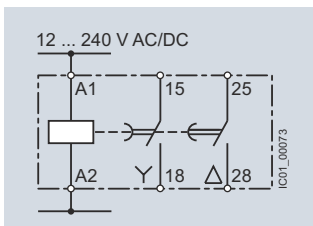
7PV1538-1AW30
OFF-delay
with control signal



7PV1540-1AW30
OFF-delay
without control signal



7PV1558-1AW30
Clock-pulse relay



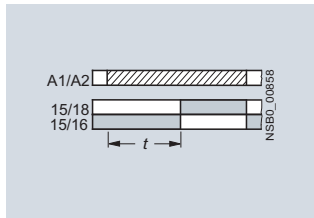
7PV1578-1BW30
Wye-delta

Timing Relays

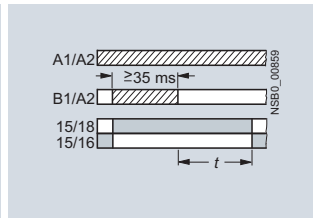
7PV15 timing relays in enclosure, 17.5 mm

7PV15 function diagrams

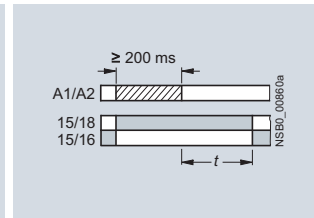
1 CO contact



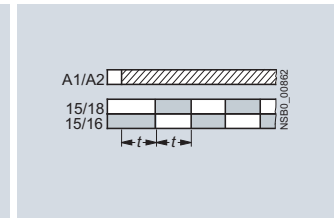
A
7PV1508-1A, 7PV1511, 7PV1512,
7PV1513, 7PV1518
ON-delay



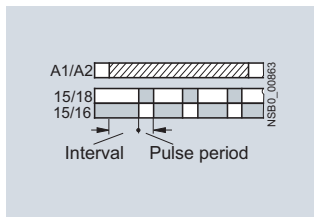
B¹⁾
7PV1508-1A, 7PV1538
OFF-delay with control signal



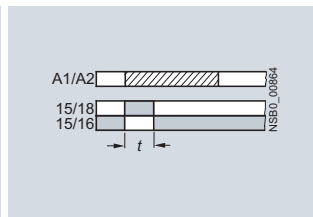
--
7PV1540
OFF-delay without control signal



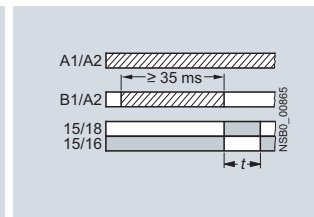
C
7PV1508-1A
Flashing, starting with interval
(pulse/interval 1:1)



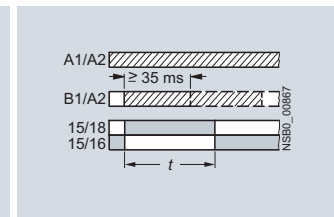
--
7PV1558
Clock-pulse, starting with interval
(dead period, pulse time, and time
setting ranges each separately
adjustable)



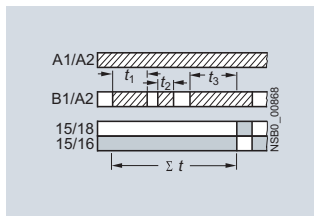
D
7PV1508-1A
Passing make contact



E¹⁾
7PV1508-1A
Passing break contact with control
signal



F¹⁾
7PV1508-1A
Pulse-forming with control signal
(pulse generation at the output does
not depend on duration of energizing)



G¹⁾
7PV1508-1A
Additive ON-delay with control signal

Legend

A ... G Identification letters for 7PV1508

- Timing relay energized
- Contact closed
- Contact open

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 (retriggerable). This does not apply to E, F and G, which are not retriggerable.

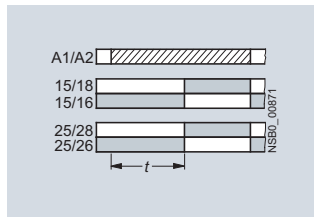
Note:

With the 7PV1508-1A multifunctional relay the identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

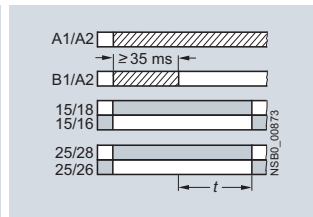
Timing Relays

7PV15 timing relays in enclosure, 17.5 mm

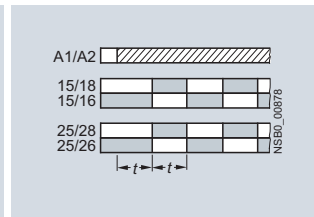
2 CO contacts



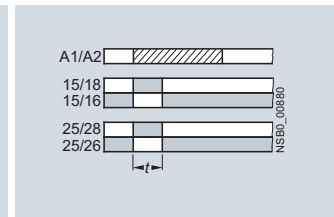
A
7PV1508-1B
ON-delay



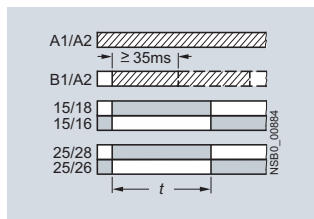
B¹⁾
7PV1508-1B
OFF-delay with control signal



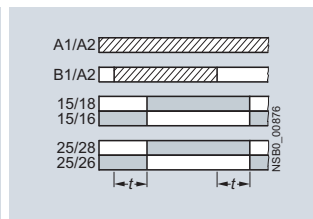
C
7PV1508-1B
Flashing, starting with interval
(pulse/interval 1:1)



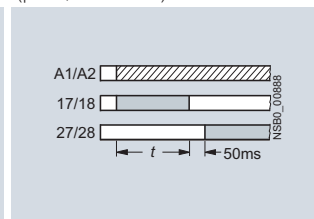
D
7PV1508-1B
Passing make contact



F¹⁾
7PV1508-1B
Pulse-forming with control signal
(pulse generation at the output does not depend on duration of energizing)

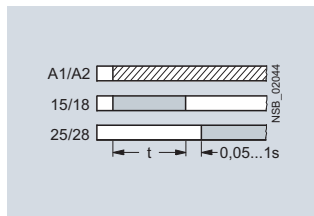


H¹⁾
7PV1508-1B
ON-delay and OFF-delay
with control signal



I
7PV1508-1B
Fixed pulse after ON-delay

2 NO contacts



--
7PV1578
Wye-delta function²⁾

Legend

A ... D, F, H, I Identification letters for 7PV1508

- Timing relay energized
- Contact closed
- Contact open

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 (retriggerable). This does not apply to E, F and G, which are not retriggerable.

²⁾ With 7PV1578 the contacts 16 and 26 are not needed for the wye-delta function.

Note:

With the 7PV1508-1B multifunctional relay the identification letters A to D, F, H, I are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Timing Relays

7PV15 timing relays in enclosure, 17.5 mm

Selection and ordering data



Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		50/60 Hz AC V	DC V	Article No.	Price per PU		

7PV1508 timing relays, multifunction, 7 time setting ranges

The functions can be adjusted by means of rotary switches. The same potential must be applied to terminals A. and B.

With LED and 1 CO contact, 7 functions	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s	12 ... 240	12 ... 240	▶	7PV1508-1AW30	1	1 unit	41H
With LED and 2 CO contacts, 7 functions	30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV1508-1BW30	1	1 unit	41H

7PV151. timing relays, ON-delay, 1 time setting range

With LED and 1 CO contact	0.05 ... 1 s	24/200 ... 240	24	▶	7PV1511-1AP30	1	1 unit	41H
	0.5 ... 10 s	24/100 ... 127	24	▶	7PV1512-1AQ30	1	1 unit	41H
		24/200 ... 240	24	▶	7PV1512-1AP30	1	1 unit	41H
	5 ... 100 s	24/100 ... 127	24	▶	7PV1513-1AQ30	1	1 unit	41H
		24/200 ... 240	24	▶	7PV1513-1AP30	1	1 unit	41H

7PV1518 timing relays, ON-delay, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1518-1AW30	1	1 unit	41H
	0.5 ... 10 s	90 ... 127	90 ... 127	▶	7PV1518-1AJ30	1	1 unit	41H
	5 ... 100 s	180 ... 240	180 ... 240	▶	7PV1518-1AN30	1	1 unit	41H
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							

7PV1538 timing relays, OFF-delay, with control signal, 7 time setting range

With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1538-1AW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							

7PV1540 timing relays, OFF-delay, without control signal, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1540-1AW30	1	1 unit	41H
	0.15 ... 3s							
	0.3 ... 6 s							
	0.5 ... 10 s							
	1.5 ... 30 s							
	3 ... 60 s							
	5 ... 100 s							

7PV1558 timing relays, clock-pulse relay, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1558-1AW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							

7PV1578 timing relays, wye-delta function, 7 time setting ranges

With LED and 2 NO contacts, dead interval 0.05 ... 1 s adjustable	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1578-1BW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							