## Overview


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

**More information**

Homepage, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RP

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 relays***

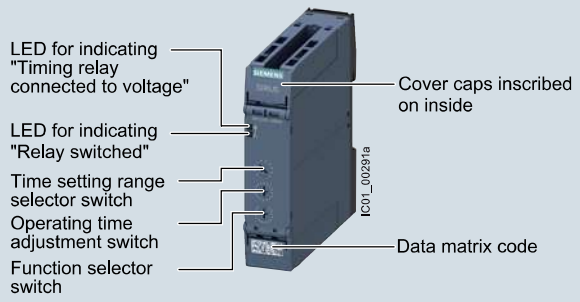
- Switching over motors from Wye to delta with a dead interval of 50 ms to prevent phase-to-phase short circuits

***Multifunctional timing relays***

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

## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

### Overview




SIRIUS 3RP25 timing relays

**More information**

Homepage, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RP25
For the conversion tool, e.g. from 3RP15 to 3RP25, see www.siemens.com/sirius/conversion-tool

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 or wide voltage range
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

### *Article No. scheme*

| Product versions | | Article number | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Timing relays** | | **3RP25** | □ | □ | – | □ | □ | □ | □ | **0** |
| Product function/ time setting ranges | Multifunction | | **0** | **5** | | | | | | 7 time ranges 0.05 s ... 100 h |
| | ON-delay | | **1** | **1** | | | | | | 1 time range 0.5 ... 10 s |
| | | | **1** | **2** | | | | | | 1 time range 1 ... 3 s |
| | | | **1** | **3** | | | | | | 1 time range 5 ... 100 s |
| | | | **2** | **5** | | | | | | 7 time ranges 0.05 s ... 100 h |
| | | | **2** | **7** | | | | | | 4 time ranges 0.05 s... 240 s |
| | OFF-delay with control signal | | **3** | **5** | | | | | | 7 time ranges 0.05 s ... 100 h |
| | OFF-delay without control signal, non-volatile, passing make contact | | **4** | **0** | | | | | | 7 time ranges 0.05 s ... 600 s |
| | Clock-pulse relay, flashing, asymmetrical | | **5** | **5** | | | | | | 7 time ranges 0.05 s ... 100 h |
| | Wye-delta function with coasting function (idling) | | **6** | **0** | | | | | | Wye-delta 1 ... 20 s, coasting time (idling) 600 s |
| | Wye-delta function | | **7** | **4** | | | | | | 1 time range 1 ... 20 s |
| | | | **7** | **6** | | | | | | 1 time range 3 ... 60 s |
| Connection type | Screw terminals | | | | | **1** | | | | |
| | Spring-type terminals (push-in) | | | | | **2** | | | | |
| Contacts | 1 CO | | | | | | **A** | | | |
| | 2 CO | | | | | | **B** | | | |
| | Semiconductors (transistor NPN) | | | | | | **C** | | | |
| | Semiconductors (thyristor), two-wire | | | | | | **E** | | | |
| | 1 NO + 1 NO (SD) | | | | | | **N** | | | |
| | 2 CO positively driven | | | | | | **R** | | | |
| | 3 NO | | | | | | **S** | | | |
| Control supply voltage | 24 V AC/DC | | | | | | | **B** | **3** | |
| | 200 ... 240 V/380 ... 440 V AC | | | | | | | **M** | **2** | |
| | 400 ... 440 V AC | | | | | | | **T** | **2** | |
| | 12 ... 240 V AC/DC or 24 ... 240 V AC/DC (3RP2505-.RW30) | | | | | | | **W** | **3** | |
| Example | | **3RP25** | **0** | **5** | **–** | **1** | **A** | **B** | **3** | **0** |

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

### *3RP2505 multifunctional timing relays*

**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

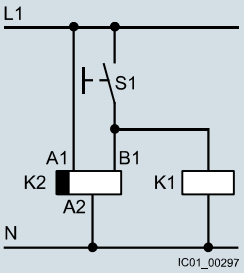
The functions of the 3RP2505 multifunctional timing relays can be set by means of the function selector switch. Whether both CO contacts are switched in parallel or one CO contact with a delay and one instantaneously and the choice of time setting range are set by means of the time setting range selector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

Note:

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




Diagram

Overview of functions

| Identification letter | **13 functions**<br><br>1 CO contact (1 CO), 1 NO contact (1 NO) semiconductor,<br>2 CO contacts switched in parallel (2 CO) or<br>2 CO contacts positively driven and switched in parallel with delay (2 CO) | **27 functions**<br><br>13 functions (A - M) 2 CO contacts switched in parallel (2 CO) +<br>13 functions (A - M) 1 CO delayed contact + 1 CO instantaneous contact<br>(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 |

## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

### 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

***Standards and approvals***

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1/DIN VDE 0435 Part 2021 "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"

### Application

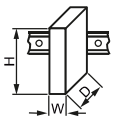
Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

***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.

## Technical specifications

| More information | |
|---|---|
| Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16354/td | Internal circuit diagrams, see CAx Download Manager https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline |
| Manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830 | FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16354/faq |

| Article number | | **3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.** | **3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.** |
|---|---|---|---|
| **Width x height x depth**   | mm | 17.5 x 100 x 90 | 22.5 x 100 x 90 |

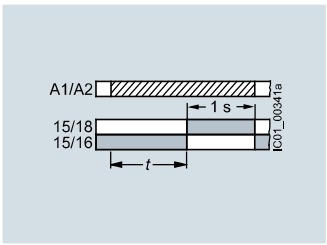
| Article number | | **3RP25..-.AB30, 3RP25..-.AW30, 3RP25..-.BB30, 3RP25..-.BW30, 3RP25..-.NW30, 3RP25..-.SW30** | **3RP25..-.BT20, 3RP25..-.NM20** | **3RP25..-.CW30** | **3RP25..-.EW30** | **3RP25..-.RW30** |
|---|---|---|---|---|---|---|
| **General technical specifications** | | | | | | |
| **Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3, rated value** | V AC | 300 | 500 | 300 | -- | 300 |
| **Ambient temperature** | | | | | | |
| • During operation | °C | -25 ... +60 | | | | -40 ... +70 |
| • During storage | °C | -40 ... +85 | | | | |
| **Operating range factor of the control supply voltage, rated value** | | | | | | |
| • At AC | | | | | | |
| - At 50 Hz | | 0.85 ... 1.1 | | | | 0.7 ... 1.1 |
| - At 60 Hz | | 0.85 ... 1.1 | | | | 0.7 ... 1.1 |
| • At DC | | 0.85 ... 1.1 | -- | 0.85 ... 1.1 | 0.85 ... 1.1 | 0.7 ... 1.1 |
| **Switching capacity current with inductive load** | A | 0.01 ... 3 | 0.01 ... 3 | 0.01 ... 1 | 0.01 ... 0.6 | 0.01 ... 3 |
| **Operational current of the auxiliary contacts** | | | | | | |
| • At AC-15 | | | | | | |
| - At 24 V | A | 3 | 3 | 1 | -- | 3 |
| - At 250 V | A | 3 | 3 | 1 | -- | 3 |
| - At 400 V | A | -- | 3 | -- | -- | -- |
| • At DC-12 | | | | | | |
| - At 24 V | A | -- | -- | 1 | -- | -- |
| - At 125 V | A | -- | -- | 1 | -- | -- |
| - At 250 V | A | -- | -- | 1 | -- | -- |
| • At DC-13 | | | | | | |
| - At 24 V | A | 1 | 1 | -- | -- | 1 |
| - At 125 V | A | 0.2 | 0.2 | -- | -- | 0.2 |
| - At 250 V | A | 0.1 | 0.1 | -- | -- | 0.1 |
| **Thermal current** | A | 5 | 5 | 1 | 0.6 | 5 |
| **Mechanical endurance (operating cycles)** | | 10 000 000 | | | | |
| **Electrical endurance (operating cycles) for AC-15 at 230 V** | | 100 000 | | 300 000 | 100 000 | |

| Article number | | **3RP25..-1...0** | **3RP25..-2...0** |
|---|---|---|---|
| **Type of electrical connection for auxiliary and control circuits** | | **Screw terminals** | **Spring-type terminals (push-in)** |
| **Design of thread of connection screw** | | M3 | -- |
| **Tightening torque** | Nm | 0.6 ... 0.8 | -- |
| **Type of connectable conductor cross-sections** | | | |
| • Solid | | 1x (0.5 ... 4 mm²), 2 x (0.5 ... 2.5 mm²) | 1x (0.5 ... 4 mm²) |
| • Finely stranded with end sleeve | | 1x (0.5 ... 4 mm²), 2 x (0.5 ... 1.5 mm²) | 1x (0.5 ... 2.5 mm²) |
| • For AWG cables | | | |
| - Solid | | 1x (20 ... 12), 2 x (20 ... 14) | 1x (20 ... 12) |
| - Stranded | | 1x (20 ... 12), 2 x (20 ... 14) | 1x (20 ... 12) |

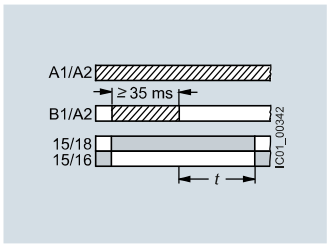
## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

### *3RP25 function diagrams*

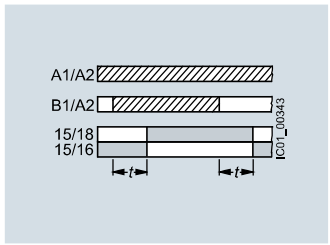
Multifunction 3RP2505-.A, 1 CO, 13 functions and 3RP2505-.C, 1 NO (semiconductor), 13 functions



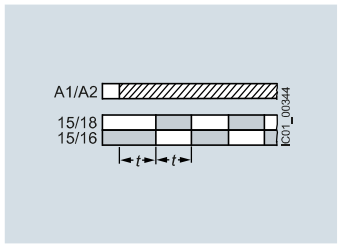

**A**
ON-delay



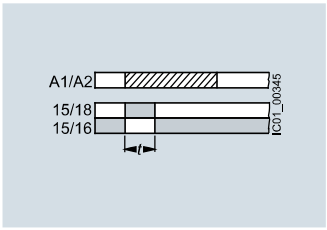

**B**
OFF-delay with control signal



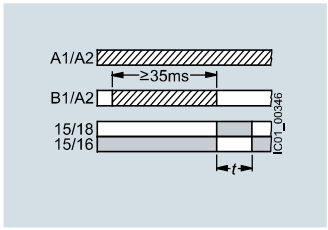

**C**
ON-delay/OFF-delay with control signal



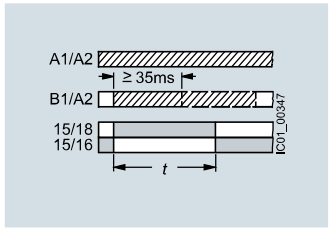

**D**
Flashing, symmetrical, starting with interval



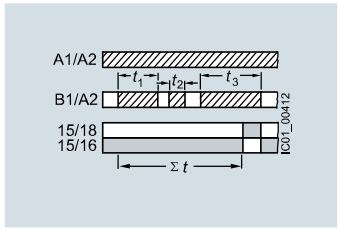

**E**
Passing make contact, interval relay



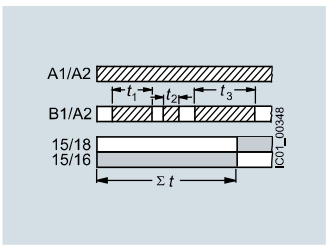

**F**
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



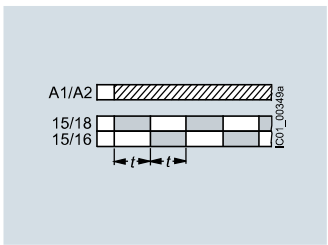

**G**
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



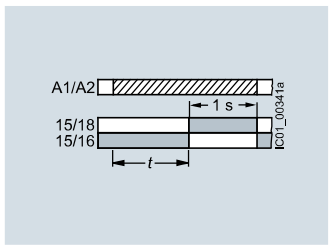

**H**
Additive ON-delay, instantaneous OFF with control signal



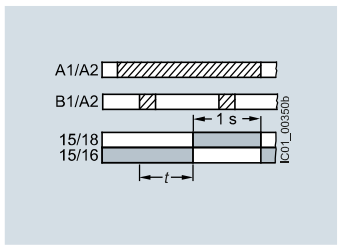

**I**
Additive ON-delay with control signal



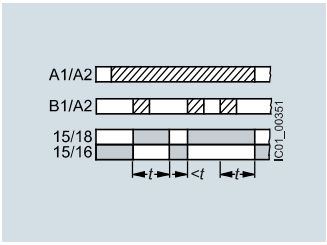

**J**
Flashing, symmetrical, starting with pulse




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



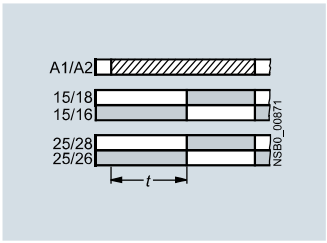

**L**
Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)



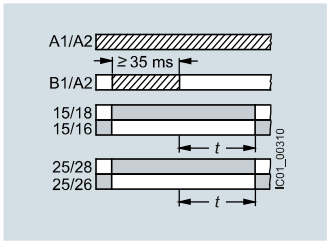

**M**
Retriggerable interval relay with activated control signal (watchdog)

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

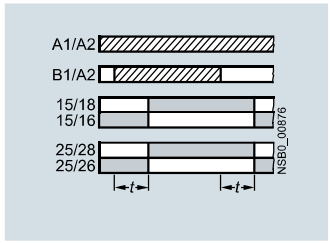
Multifunction 3RP2505-.B, 13 functions, 2 CO positively driven and switched in parallel with delay



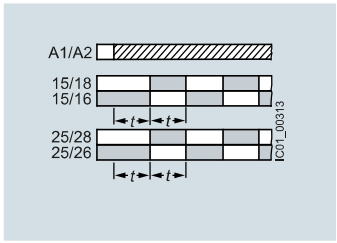

**A**
ON-delay



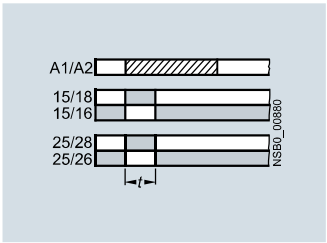

**B**
OFF-delay with control signal



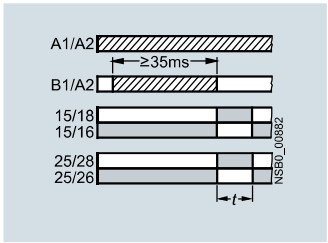

**C**
ON-delay/OFF-delay with control signal



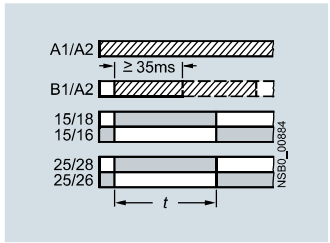

**D**
Flashing, symmetrical, starting with interval



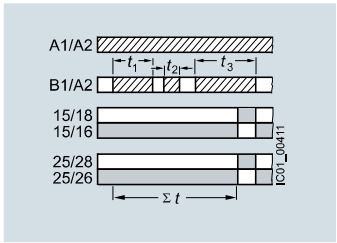

**E**
Passing make contact, interval relay



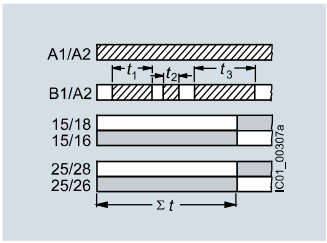

**F**
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



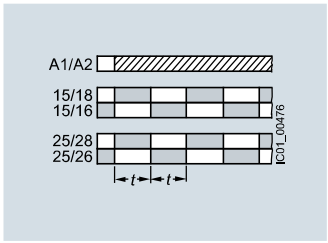

**G**
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



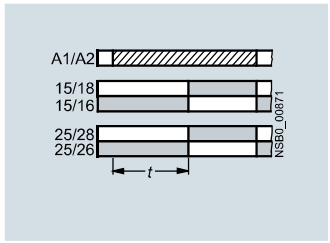

**H**
Additive ON-delay, instantaneous OFF with control signal



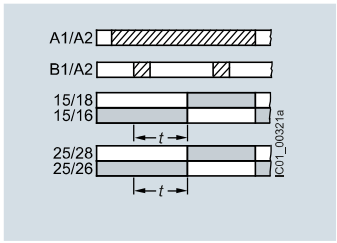

**I**
Additive ON-delay with control signal



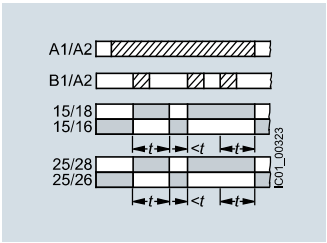

**J**
Flashing, symmetrical, starting with pulse




**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

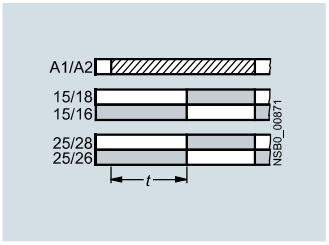
10

## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

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

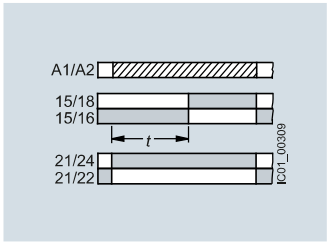
**A**

2 CO contacts switched in parallel




ON-delay

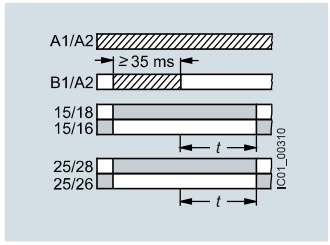
1 delayed CO contact + 1 instantaneous CO contact




ON-delay and instantaneous contact

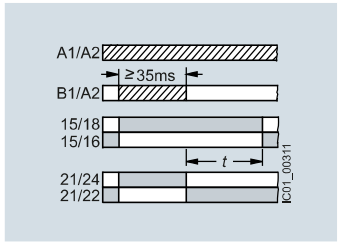
**B**

2 CO contacts switched in parallel




OFF-delay with control signal

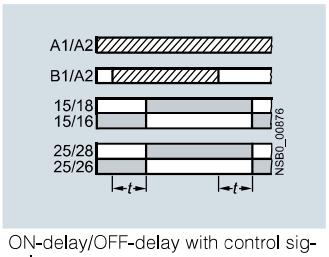
1 delayed CO contact + 1 instantaneous CO contact




OFF-delay with control signal and instantaneous contact

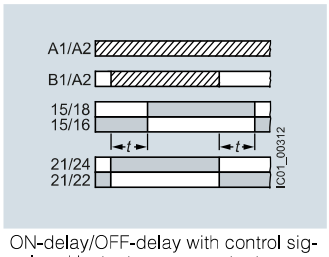
**C**

2 CO contacts switched in parallel




ON-delay/OFF-delay with control signal

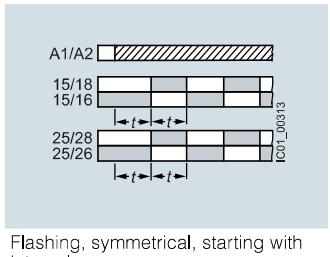
1 delayed CO contact + 1 instantaneous CO contact




ON-delay/OFF-delay with control signal and instantaneous contact

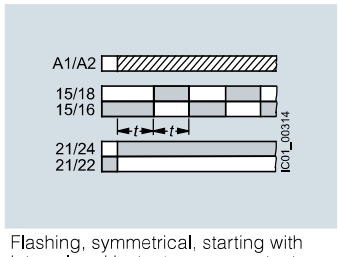
**D**

2 CO contacts switched in parallel




Flashing, symmetrical, starting with interval

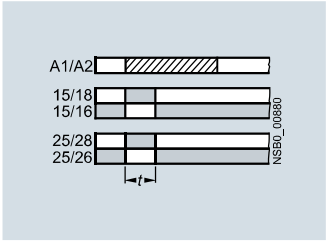
1 delayed CO contact + 1 instantaneous CO contact




Flashing, symmetrical, starting with interval and instantaneous contact

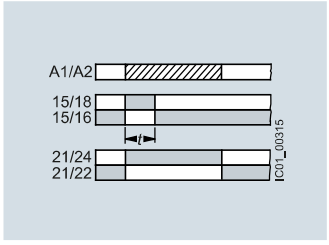
**E**

2 CO contacts switched in parallel




Passing make contact, interval relay

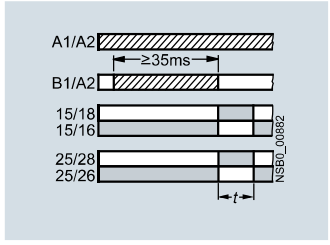
1 delayed CO contact + 1 instantaneous CO contact




Passing make contact, interval relay and instantaneous contact

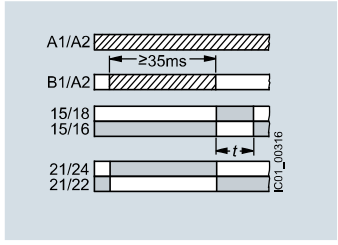
**F**

2 CO contacts switched in parallel




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

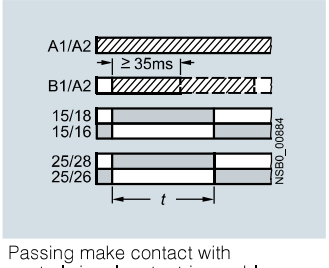
1 delayed CO contact + 1 instantaneous CO contact




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

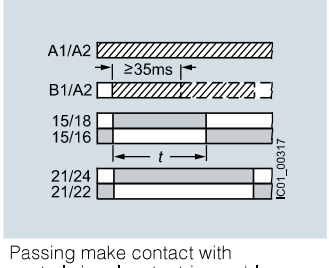
**G**

2 CO contacts switched in parallel




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

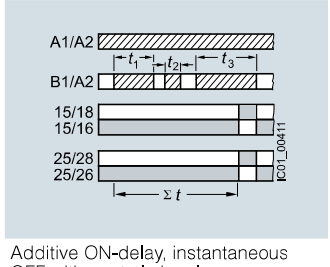
1 delayed CO contact + 1 instantaneous CO contact




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

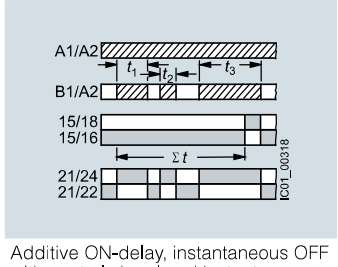
**H**

2 CO contacts switched in parallel




Additive ON-delay, instantaneous OFF with control signal

1 delayed CO contact + 1 instantaneous CO contact




Additive ON-delay, instantaneous OFF with control signal and instantaneous contact

Legend

**A ... H** Identification letters

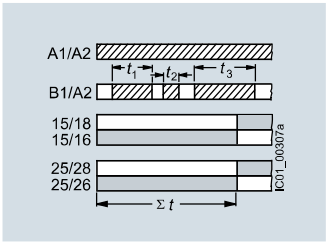
- Timing relay energized
- Contact closed
- Contact open

10

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

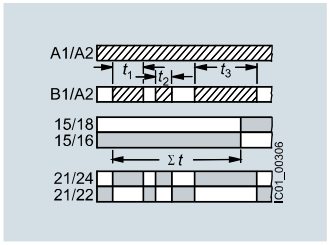
**I**

2 CO contacts switched in parallel




Additive ON-delay with control signal

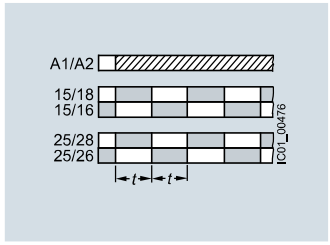
1 delayed CO contact +
1 instantaneous CO contact




Additive ON-delay with control signal and instantaneous contact

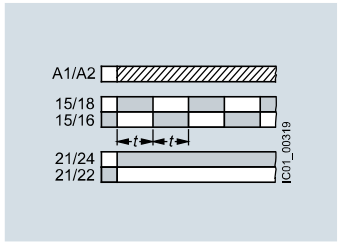
**J**

2 CO contacts switched in parallel




Flashing, symmetrical, starting with pulse

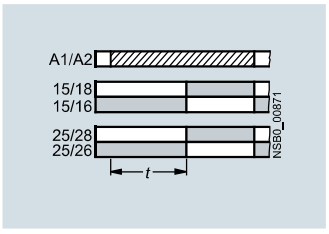
1 delayed CO contact +
1 instantaneous CO contact




Flashing, symmetrical, starting with pulse and instantaneous contact

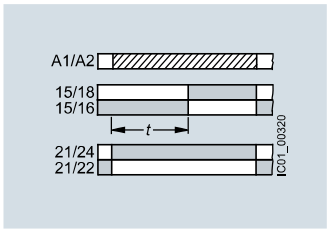
**K**

2 CO contacts switched in parallel




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

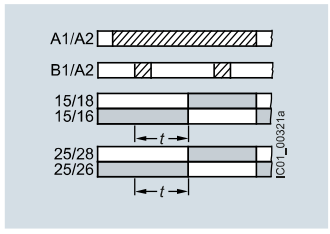
1 delayed CO contact +
1 instantaneous CO contact




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

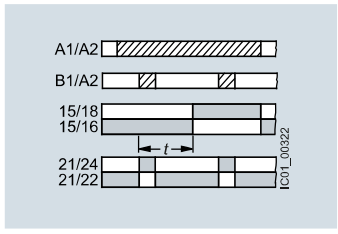
**L**

2 CO contacts switched in parallel




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

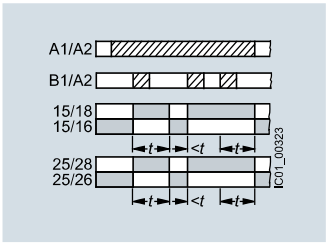
1 delayed CO contact +
1 instantaneous CO contact




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

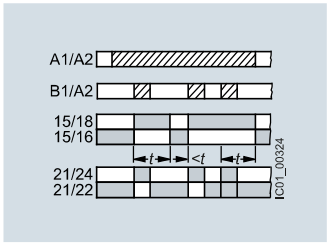
**M**

2 CO contacts switched in parallel




Retriggerable interval relay with activated control signal (watchdog)

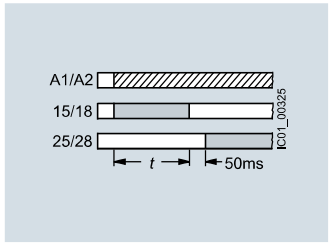
1 delayed CO contact +
1 instantaneous CO contact




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

**Y△**

2 CO contacts switched in parallel or
1 delayed CO contact +
1 instantaneous CO contact




Wye-delta function

Legend

**I ... M** Identification letters

Timing relay energized

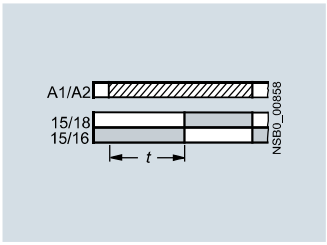
Contact closed

Contact open

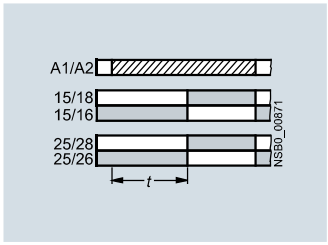
10

## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

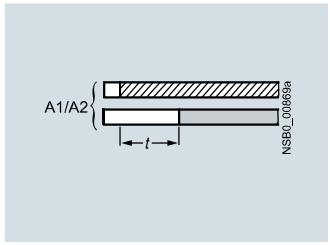
Monofunctions 3RP251. to 3RP257.[1)]



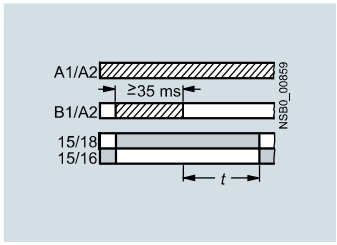

3RP251.-.AW30, 1 CO, ON-delay



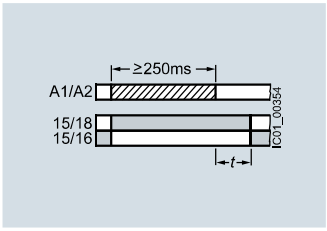

3RP2525-..W30, 2 CO, ON-delay



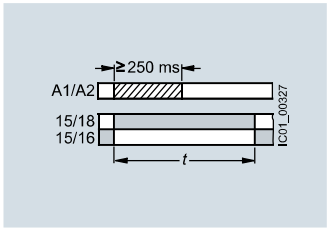

3RP2527-.EW30, 1 NO (semiconductor), ON-delay



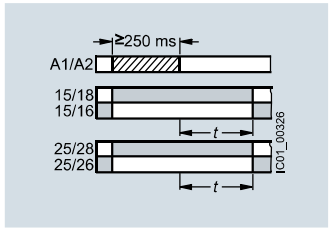

3RP2535-.AW30, 1 CO, OFF-delay with control signal



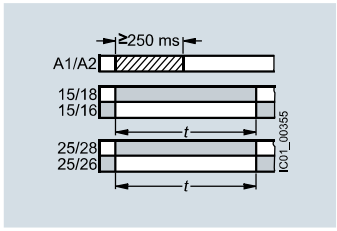

3RP2540-.A.30, 1 CO, OFF-delay (N)[1)]



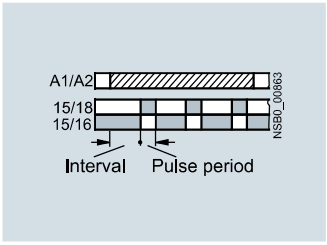

3RP2540-.A.30, 1 CO, positive passing make contact (O)[1)]



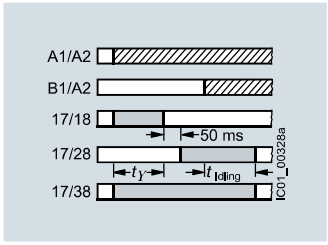

3RP2540-.B.30, 2 CO, OFF-delay (N)[1)]



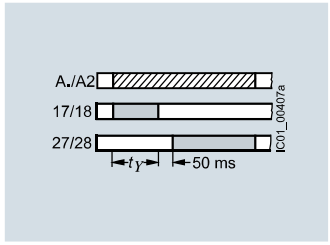

3RP2540-.B.30, 2 CO, positive passing make contact (O)[1)]



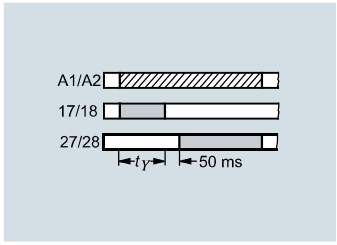

3RP2555-.AW30, 1 CO, flashing, asymmetrical, starting with interval (clock-pulse relay)




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

10

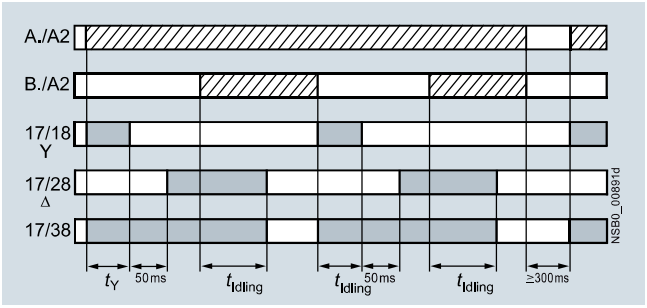
***Possibilities of operation of the 3RP2560-.SW30 timing relay***

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 Y/Δ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time $t_{Idling}$ (30 ... 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:

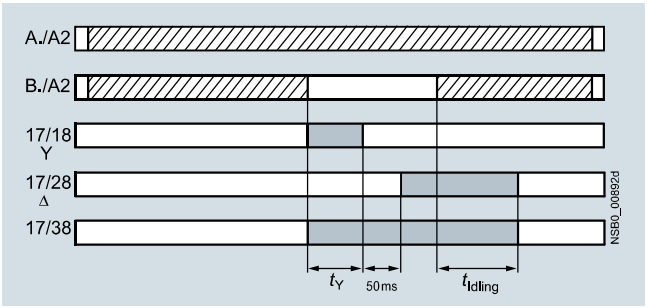
Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/38 close.




Operation 1

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

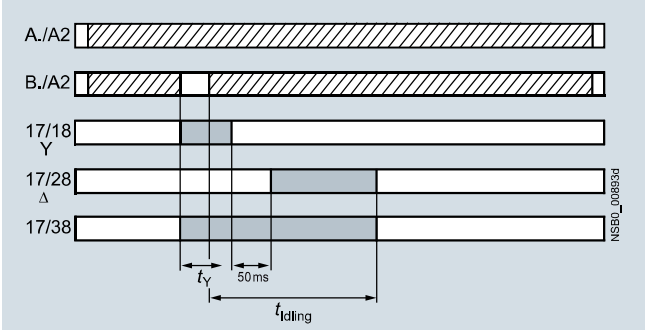
If the control signal B./A2 is already present when the control supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.




Operation 2

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

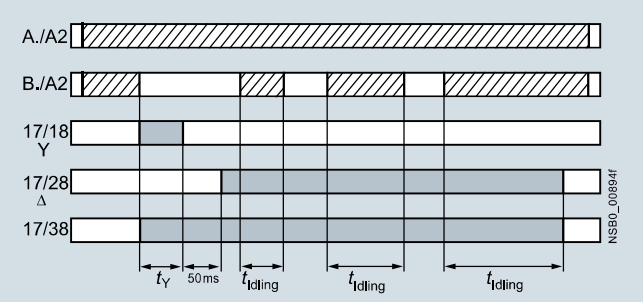
If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.




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 Y/Δ operation, and fills the pressure tank.

When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (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).

## SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

### Selection and ordering data


3RP2505-2AB30


3RP2505-2BB30


3RP2525-2AW30


3RP2540-2AW30


3RP2555-2AW30


3RP2576-2NW30

| Number of NO contacts: Instantaneous switching | Number of NO contacts: Delayed switching | Number of CO contacts: Instantaneous switching | Number of CO contacts: Delayed switching | Semiconductor output | Adjustable time | Control supply voltage: At 50/60 Hz AC | Control supply voltage: At DC | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | V | V | d | | | | | |
| **13 functions** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | No | 0.05 s ... 100 h | 24 | 24 | 2 | **3RP2505-□AB30** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2505-□AW30** | | 1 | 1 unit | 41H |
| 0 | 1 | 0 | 0 | Yes | 0.05 s ... 100 h | 12 ... 240 | 12 ... 240 | 2 | **3RP2505-□CW30** | | 1 | 1 unit | 41H |
| **13 functions, suitable for railway applications** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 2[1] | No | 0.05 s ... 100 h | 24 ... 240 | 24 ... 240 | 2 | **3RP2505-□RW30** | | 1 | 1 unit | 41H |
| **27 functions** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 2[2] | No | 0.05 s ... 100 h | 24 | 24 | 2 | **3RP2505-□BB30** | | 1 | 1 unit | 41H |
| | | | | | | 400 ... 440 | -- | 2 | **3RP2505-□BT20** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2505-□BW30** | | 1 | 1 unit | 41H |
| **ON-delay** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | No | 0.5 ... 10 s | 12 ... 240 | 12 ... 240 | 2 | **3RP2511-□AW30** | | 1 | 1 unit | 41H |
| | | | | | 1 ... 30 s | 12 ... 240 | 12 ... 240 | 2 | **3RP2512-□AW30** | | 1 | 1 unit | 41H |
| | | | | | 5 ... 100 s | 12 ... 240 | 12 ... 240 | 2 | **3RP2513-□AW30** | | 1 | 1 unit | 41H |
| | | | | | 0.05 s ... 100 h | 12 ... 240 | 12 ... 240 | 2 | **3RP2525-□AW30** | | 1 | 1 unit | 41H |
| 0 | 0 | 0 | 2 | No | 0.05 s ... 100 h | 24 | 24 | 2 | **3RP2525-□BB30** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2525-□BW30** | | 1 | 1 unit | 41H |
| 0 | 1 | 0 | 0 | Yes | 0.05 s... 240 s | 12 ... 240 | 12 ... 240 | 2 | **3RP2527-□EW30** | | 1 | 1 unit | 41H |
| **OFF-delay with control signal** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | No | 0.05 s ... 100 h | 12 ... 240 | 12 ... 240 | 2 | **3RP2535-□AW30** | | 1 | 1 unit | 41H |
| **OFF-delay without control signal, non-volatile, passing make contact** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | No | 0.05 s ... 600 s | 24 | 24 | 2 | **3RP2540-□AB30** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2540-□AW30** | | 1 | 1 unit | 41H |
| 0 | 0 | 0 | 2 | No | 0.05 s ... 600 s | 24 | 24 | 2 | **3RP2540-□BB30** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2540-□BW30** | | 1 | 1 unit | 41H |
| **Clock-pulse relay, flashing, asymmetrical** | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | No | 0.05 s ... 100 h | 12 ... 240 | 12 ... 240 | 2 | **3RP2555-□AW30** | | 1 | 1 unit | 41H |
| **Wye-delta function with coasting function (idling)** | | | | | | | | | | | | | |
| 1 | 2 | 0 | 0 | No | 1 ... 20 s | 12 ... 240 | 12 ... 240 | 2 | **3RP2560-□SW30** | | 1 | 1 unit | 41H |
| **Wye-delta function** | | | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | No | 1 ... 20 s | 380 ... 440[3] | -- | 2 | **3RP2574-□NM20** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2574-□NW30** | | 1 | 1 unit | 41H |
| 1 | 1 | 0 | 0 | No | 3 ... 60 s | 380 ... 440[3] | -- | 2 | **3RP2576-□NM20** | | 1 | 1 unit | 41H |
| | | | | | | 12 ... 240 | 12 ... 240 | 2 | **3RP2576-□NW30** | | 1 | 1 unit | 41H |

**Type of electrical connection**

- Screw terminals
- Spring-type terminals (push-in)

1 2

[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.

Notes:

For accessories, see page 10/49.

In the case of 3RP2505, 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 included in the scope of supply. The same potential must be applied to terminals A. and B.
For functions, see the overview of functions on page 10/39.



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

## Accessories

**More information**

You can find information on configuring and dimensioning the accessories in the manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830

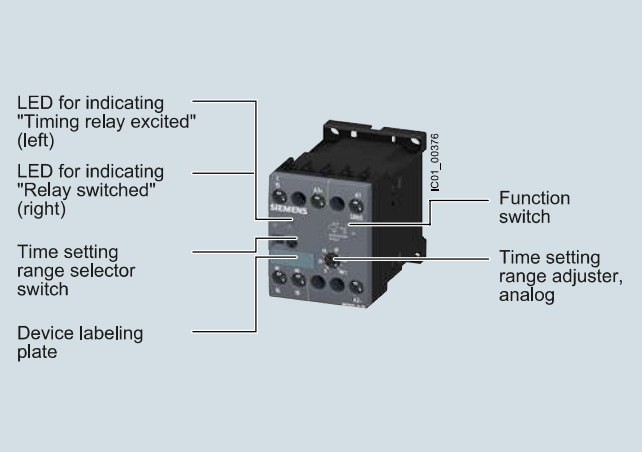
| | Version | SD d | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|---|---|---|---|---|---|
| **Accessories for enclosures** | | | | | | | |
|  3ZY1321-1AA00 | **Sealing covers**<br>• 17.5 mm | 2 | **3ZY1321-1AA00** | | 1 | 5 units | 41L |
|  3ZY1321-2AA00 | • 22.5 mm | 2 | **3ZY1321-2AA00** | | 1 | 5 units | 41L |
|  3ZY1311-0AA00 | **Push-in lugs**<br>For wall mounting | 2 | **3ZY1311-0AA00** | | 1 | 10 units | 41L |
|  3ZY1440-1AA00 | **Coding pins**<br>For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; they enable the mechanical coding of terminals | 2 | **3ZY1440-1AA00** | | 1 | 12 units | 41L |
| **Terminals for SIRIUS devices in the industrial standard mounting rail enclosure** | | | | | | | |
|  3ZY1122-1BA00 | **Removable terminals** | | **Screw terminals** | | | | |
| | • 2-pole, 1 x 4 mm² | 2 | **3ZY1122-1BA00** | | 1 | 6 units | 41L |
|  3ZY1122-2BA00 | | | **Spring-type terminals (push-in)** | | | | |
| | • 2-pole, 1 x 4 mm² | 2 | **3ZY1122-2BA00** | | 1 | 6 units | 41L |
| **Tools for opening spring-type terminals** | | | | | | | |
|  3RA2908-1A | **Screwdrivers**<br>For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated | 2 | **Spring-type terminals (push-in)**<br>**3RA2908-1A** | | 1 | 1 unit | 41B |

10

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

## SIRIUS 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 "Specified time relays for industrial 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"

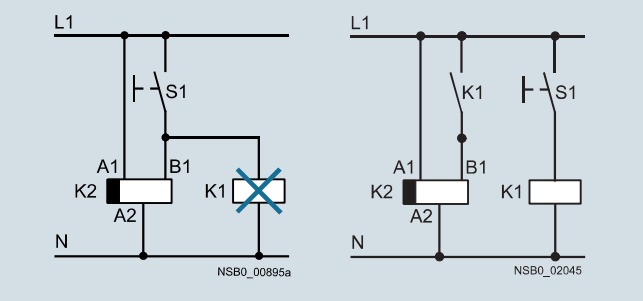
#### *Multifunction*

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 10/55.

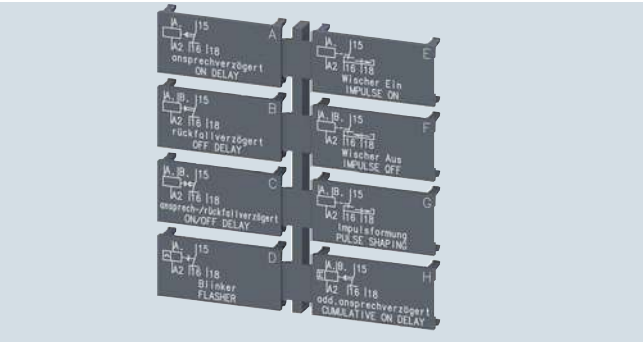
Note:

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*

| Product versions | | Article number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SIRIUS timing relays, 45 mm enclosure** | | **3RP20** | □ | □ | – | □ | □ | □ | **3** | **0** | |
| Product function/ time setting ranges | Multifunction | | **0** | **5** | | | | | | | 15 time ranges 0.05 s... 100 h |
| | ON-delay | | **2** | **5** | | | | | | | 15 time ranges 0.05 s... 100 h |
| Connection type | Screw terminals | | | | | **1** | | | | | |
| | Spring-type terminals | | | | | **2** | | | | | |
| Contacts | 1 CO | | | | | | **A** | | | | |
| | 2 CO | | | | | | **B** | | | | |
| Control supply voltage | 24 V AC/DC/100 ... 127 V AC | | | | | | | **Q** | | | Combination voltage |
| | 24 V AC/DC/200 ... 240 V AC | | | | | | | **P** | | | Combination voltage |
| | 24 ... 240 V AC/DC | | | | | | | **W** | | | Wide voltage range |
| Example | | **3RP20** | **0** | **5** | **–** | **1** | **A** | **P** | **3** | **0** | |

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

## Benefits

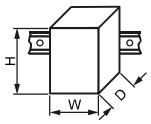
- Suitable for 3RT miniature contactors
- Uniform design
- Ideal for small distance between standard mounting rails and/or for low mounting depth, e.g. in control boxes
- Labels are used on the multifunctional time relay to document the function that has been set

## 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

| More information | |
|---|---|
| Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16356/td | Internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/11647144 |
| Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/11647144 | FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16356/faq |

| **Type** | | | **3RP2005, 3RP2025** |
|---|---|---|---|
| Dimensions (W x H x D) |  | mm | 45 x 57 x 73 |
| **Rated insulation voltage**<br>Pollution degree 3<br>Overvoltage category III | | V AC | 300 |
| **Permissible ambient temperature** | | | |
| • During operation | | °C | -25 ... +60 |
| • During storage | | °C | -40 ... +85 |
| **Operating range of excitation**[1] | | | 0.85 ... 1.1 x $U_s$ at AC; 0.8 ... 1.25 x $U_s$ at DC;<br>0.95 ... 1.05 times the rated frequency |
| **Mechanical endurance** | | Operating cycles | 10 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 | | $mm^2$ | 2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2] |
| • Finely stranded with end sleeve | | $mm^2$ | 2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2] |
| • Stranded | | AWG | 2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2] |
| • AWG cables | | AWG | 2 x (18 ... 14) |
| • Tightening torque | | Nm | 0.8 ... 1.2 |
| **Connection type** | | | **Spring-type terminals** |
| • Solid | | $mm^2$ | 2 x (0.25 ... 2.5) |
| • Finely stranded with end sleeve | | $mm^2$ | 2 x (0.25 ... 1.5) |
| • Finely stranded without end sleeve | | $mm^2$ | 2 x (0.25 ... 2.5) |
| • AWG cables, solid or stranded | | AWG | 2 x (24 ... 14) |
| • Max. external diameter of the conductor insulation | | mm | 3.6 |

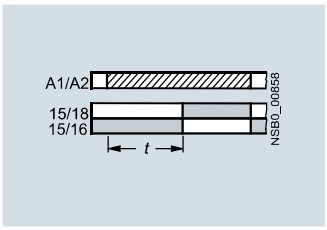
1) If nothing else is stated.

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

## SIRIUS 3RP20 timing relays, 45 mm

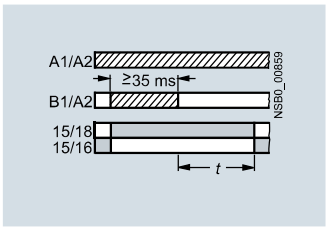
### *3RP20 function diagrams and 3RP2901 label set*

1 CO contact



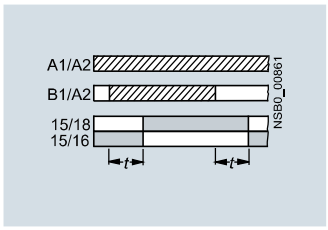

**A**

3RP2005-.A, 3RP2025
ON-delay



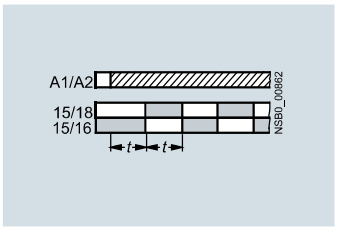

**B**[1)]

3RP2005-.A
OFF-delay with control signal



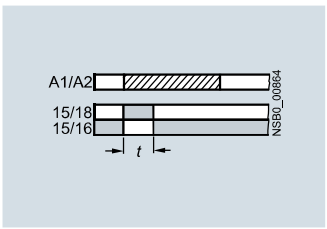

**C**[1)]

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



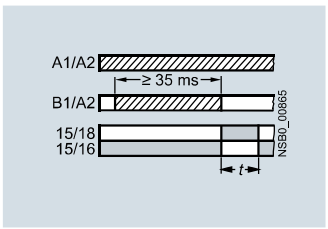

**D**

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



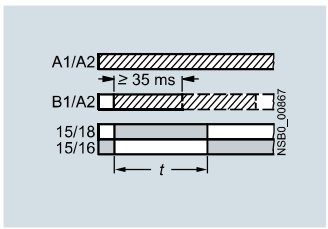

**E**

3RP2005-.A
Passing make contact



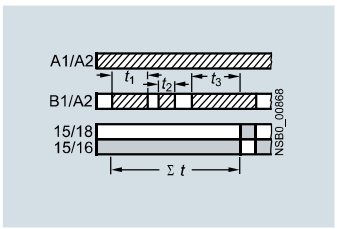

**F**[1)]

3RP2005-.A
Passing break contact with control signal




**G**[1)]

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




**H**[1)]

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

Legend

**A ... H** Identification letters for 3RP2005

Timing relay energized

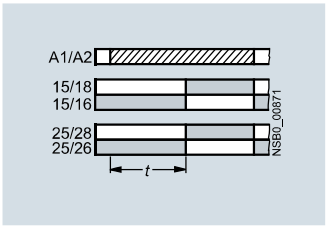
Contact closed

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.

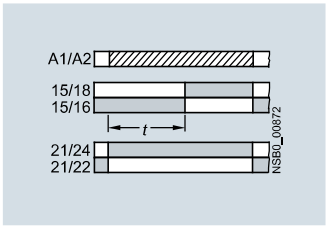
10

2 CO contacts



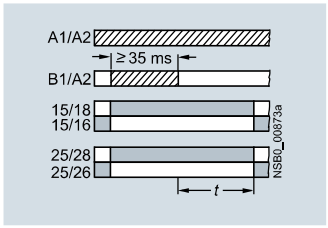

**A**

3RP2005-.B
ON-delay



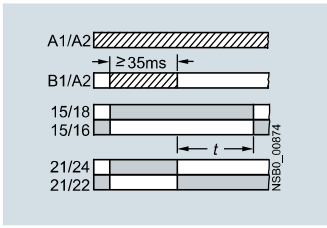

**A●**

3RP2005-.B
ON-delay and instantaneous contact



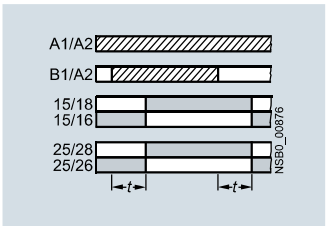

**B**[1)]

3RP2005-.B
OFF-delay with control signal



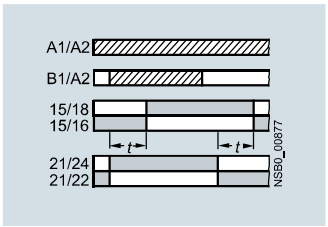

**B●**[1)]

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



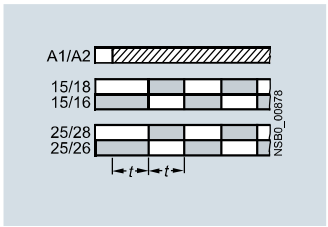

**C**[1)]

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



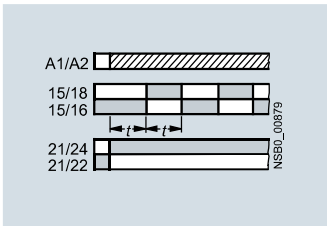

**C●**[1)]

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



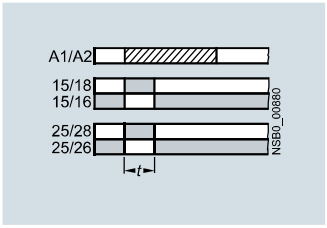

**D**

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



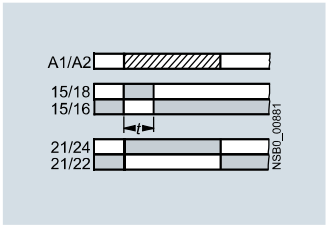

**D●**

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



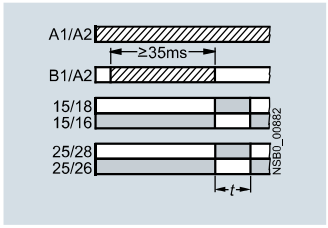

**E**

3RP2005-.B
Passing make contact



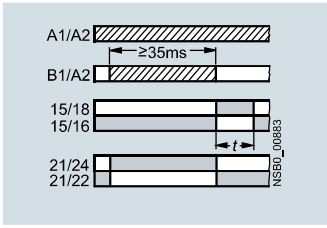

**E●**

3RP2005-.B
Passing make contact and instantaneous contact



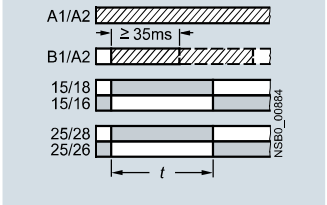

**F**[1)]

3RP2005-.B
Passing break contact
with control signal



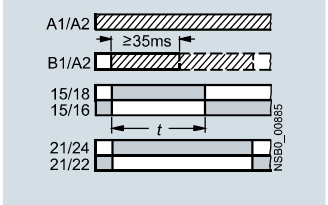

**F●**[1)]

3RP2005-.B
Passing break contact with control signal and instantaneous contact



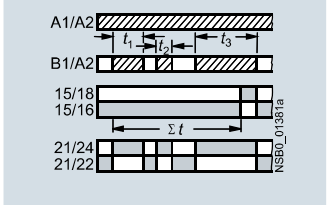

**G**[1)]

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



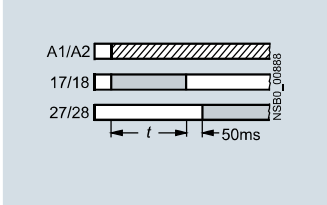

**G●**[1)]

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




**H●**[1)]

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




**Y△**

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.

## SIRIUS 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 $U_S$ 50/60 Hz AC V | Rated control supply voltage $U_S$ DC V | SD d | Screw terminals Article No. | Screw terminals Price per PU | SD d | Spring-type terminals Article No. | Spring-type terminals 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 3RP2505 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 10/55. | | | | | | | | | |
| With LED and 1 CO contact[1], 8 functions | 0.05 ... 1 s<br>0.15 ... 3 s<br>0.5 ... 10 s<br>1.5 ... 30 s<br>0.05 ... 1 min<br>5 ... 100 s<br>0.15 ... 3 min<br>0.5 ... 10 min<br>1.5 ... 30 min<br>0.05 ... 1 h<br>5 ... 100 min<br>0.15 ... 3 h<br>0.5 ... 10 h<br>1.5 ... 30 h<br>5 ... 100 h<br>∞ [2] | 24/100 ... 127<br>24/200 ... 240 | 24<br>24 | ▶<br>▶ | **3RP2005-1AQ30**<br>**3RP2005-1AP30** | | 2<br>▶ | **3RP2005-2AQ30**<br>**3RP2005-2AP30** | |
| With LED and 2 CO contacts, 16 functions | | 24 ... 240[3] | 24 ... 240[4] | ▶ | **3RP2005-1BW30** | | 2 | **3RP2005-2BW30** | |
| **3RP2025. timing relays, ON-delay, 15 time setting ranges** | | | | | | | | | |
| With LED and 1 CO contact[1] | 0.05 ... 1 s<br>0.15 ... 3 s<br>0.5 ... 10 s<br>1.5 ... 30 s<br>0.05 ... 1 min<br>5 ... 100 s<br>0.15 ... 3 min<br>0.5 ... 10 min<br>1.5 ... 30 min<br>0.05 ... 1 h<br>5 ... 100 min<br>0.15 ... 3 h<br>0.5 ... 10 h<br>1.5 ... 30 h<br>5 ... 100 h<br>∞ [2] | 24/100 ... 127<br>24/200 ... 240 | 24<br>24 | ▶<br>▶ | **3RP2025-1AQ30**<br>**3RP2025-1AP30** | | ▶<br>▶ | **3RP2025-2AQ30**<br>**3RP2025-2AP30** | |

For accessories, see page 10/55.

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 $U_S$.



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

## Accessories

| | Version | Function | Identification letter | Use | SD d | 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 can be used to label timing relays with the set function in English and German. | | | | | | | | | |
|  3RP2901-0A | 1 label set (1 unit) with 8 functions | • ON-delay | A | For devices with 1 CO | 10 | **3RP2901-0A** | | 1 | 5 units | 41H |
| | | • OFF-delay with control signal | B | | | | | | | |
| | | • 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 | For devices with 2 CO | 10 | **3RP2901-0B** | | 1 | 5 units | 41H |
| | | • OFF-delay with control signal | B | | | | | | | |
| | | • 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 contact | 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 instantaneous 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 | Y Δ | | | | | | | |
| **Blank inscription labels for 3RP20** | | | | | | | | | | |
| | Blank inscription labels, 20 mm x 7 mm, pastel turquoise[1)] | | | For 3RP20 | 20 | **3RT1900-1SB20** | | 100 | 340 units | 41B |

1) PC labeling system for individual inscription of unit labeling plates available from: Conta-Clip Verbindungstechnik GmbH, see page 16/15.



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

## 7PV15 timing relays, 17.5 mm

### 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:

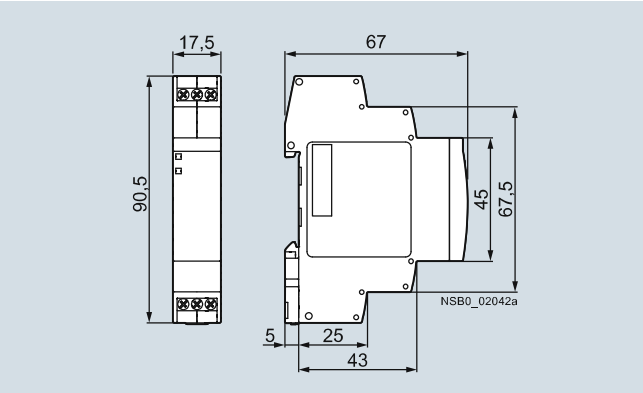
- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Built-in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

#### *Multifunction*

The functions of the 7PV1508-1A multifunctional timing relay 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*

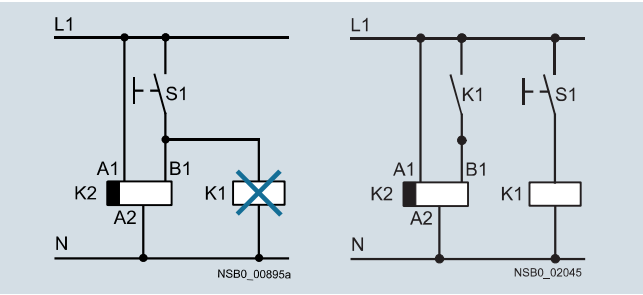
All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715. The enclosure complies with DIN 43880, 1 MW.




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***

| Product versions | | Article number | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Timing relays in industrial enclosure, 17.5 mm** | | **7PV15** | □ | □ | – | 1 | □ | □ | 3 | 0 |
| Product function/ time setting ranges | Multifunction | | **0** | **8** | | | | | | | 7 time ranges 0.05 s ... 100 h |
| | ON-delay | | **1** | **1** | | | | | | | 1 time range 0.05 ... 1 s |
| | | | **1** | **2** | | | | | | | 1 time range 0.5 ... 10 s |
| | | | **1** | **3** | | | | | | | 1 time range 5 ... 100 s |
| | | | **1** | **8** | | | | | | | 7 time ranges 0.05 s ... 100 h |
| | OFF-delay with control signal | | **3** | **8** | | | | | | | 7 time ranges 0.05 s ... 100 h |
| | OFF-delay without control signal | | **4** | **0** | | | | | | | 7 time ranges 0.05 s ... 100 s |
| | Clock-pulse relay | | **5** | **8** | | | | | | | 7 time ranges 0.05 s ... 100 h |
| | Wye-delta function | | **7** | **8** | | | | | | | 7 time ranges 0.05 s ... 100 h |
| Contacts | e.g. A = 1 CO contact | | | | | | □ | | | | |
| Control supply voltage | e.g. W = 12 ... 240 V AC/DC | | | | | | | □ | | | Combination voltage |
| Example | | **7PV15** | **0** | **8** | **–** | **1** | **A** | **W** | **3** | **0** | |

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

## 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 functional buildings, airports, building industry, etc.

## Technical specifications

| More information | |
|---|---|
| Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16358/td | Operating instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/35210295 |

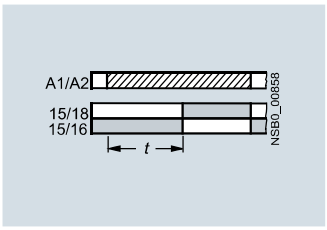
| Type | | 7PV15 |
|---|---|---|
| **Rated insulation voltage**<br>Pollution degree 2, overvoltage category III | V AC | 300 |
| **Permissible ambient temperature** | | |
| • During operation | °C | -25 ... +55 |
| • During storage | °C | -40 ... +70 |
| **Operating range of excitation**[1] | | 0.85 ... 1.1 x $U_s$ at V AC/DC, 50/60 Hz<br>0.8 ... 1.25 x $U_s$ at 24 V DC;<br>0.95 ... 1.05 times the rated frequency |
| **Rated operational current $I_e$** | | |
| • AC-15 at 24 ... 240 V, 50 Hz | A | 3 |
| • DC-13 at | | |
| - 24 V | A | 1 |
| - 125 V | A | 0.2 |
| **Uninterrupted thermal current $I_{th}$** | A | 5 |
| **Mechanical endurance** | Operating cycles | 1 x $10^7$ |
| **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 timing relays, 17.5 mm

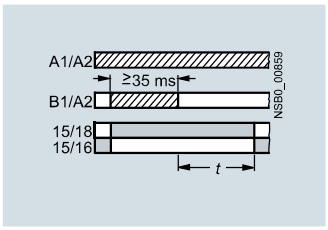
### *7PV15 function diagrams*

1 CO contact




**A**

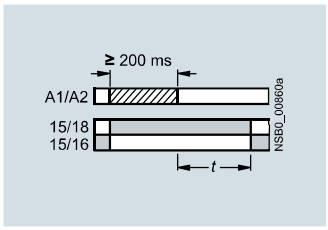
7PV1508-1A, 7PV1511, 7PV1512, 7PV1513, 7PV1518
ON-delay




**B**[1)]

7PV1508-1A, 7PV1538

OFF-delay with control signal

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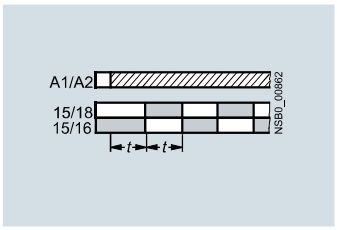
7PV1540

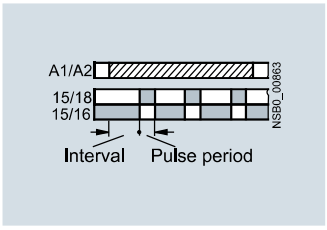
OFF-delay without control signal




**C**

7PV1508-1A

Flashing, starting with interval (pulse/interval 1:1)

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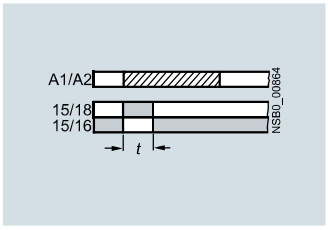
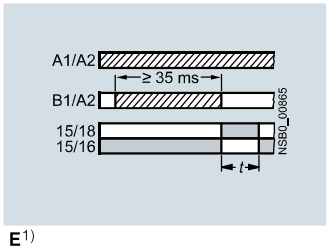
7PV1558
Clock-pulse, starting with interval (dead period, pulse time, and time setting ranges each separately adjustable)



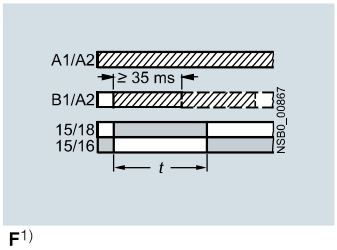

**D**

7PV1508-1A
Passing make contact



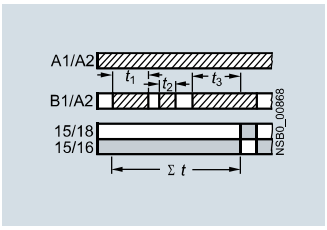

**E**[1)]

7PV1508-1A
Passing break contact with control signal




**F**[1)]

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




**G**[1)]

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

Legend

**A ... G** Identification letters for 7PV1508

Timing relay energized

Contact closed

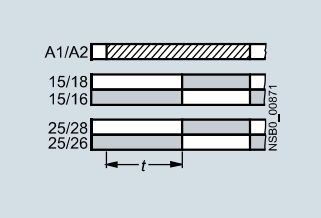
Contact open

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:

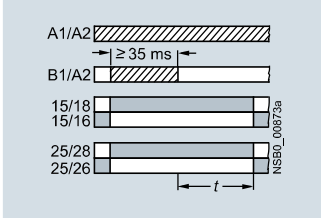
With the 7PV1508-1A multifunctional timing relay the identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

## 2 CO contacts



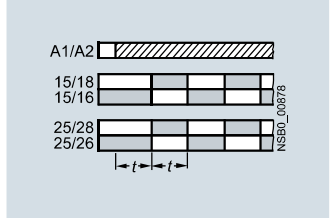

**A**

7PV1508-1B
ON-delay



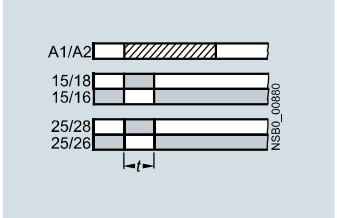

**B**[1)]

7PV1508-1B
OFF-delay with control signal



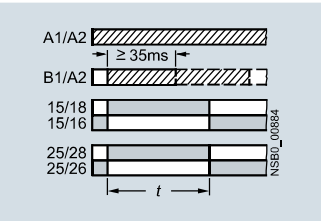

**C**

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



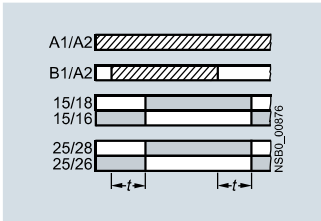

**D**

7PV1508-1B
Passing make contact



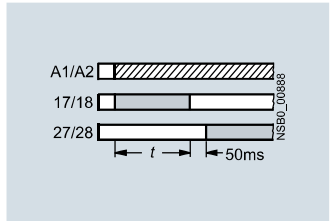

**F**[1)]

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




**H**[1)]

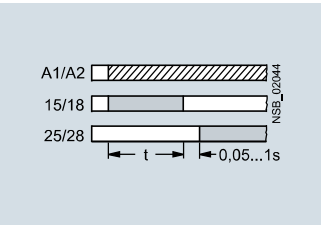
7PV1508-1B
ON-delay and OFF-delay with control signal




**I**

7PV1508-1B
Fixed pulse after ON-delay

## 2 NO contacts

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7PV1578
Wye-delta function[2)]

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 timing 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.

## 7PV15 timing relays, 17.5 mm

### Selection and ordering data


7PV1508-1AW30


7PV1512-1AP30


7PV1518-1AW30


7PV1538-1AW30


7PV1540-1AW30


7PV1558-1AW30


7PV1578-1BW30

| Version | Time setting range $t$ adjustable by rotary switch to | Rated control supply voltage $U_s$ 50/60 Hz AC V | Rated control supply voltage $U_s$ DC V | SD d | Screw terminals Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|---|---|---|---|---|---|---|---|
| **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<br>0.5 ... 10 s<br>5 ... 100 s<br>30 s ... 10 min<br>3 min ... 1 h<br>30 min ... 10 h<br>5 ... 100 h | 12 ... 240 | 12 ... 240 | ▶ | **7PV1508-1AW30** | | 1 | 1 unit | 41H |
| With LED and 2 CO contacts, 7 functions | | 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<br>0.5 ... 10 s<br>5 ... 100 s<br>30 s ... 10 min<br>3 min ... 1 h<br>30 min ... 10 h<br>5 ... 100 h | 12 ... 240 | 12 ... 240 | ▶ | **7PV1518-1AW30** | | 1 | 1 unit | 41H |
| | | 90 ... 127 | 90 ... 127 | ▶ | **7PV1518-1AJ30** | | 1 | 1 unit | 41H |
| | | 180 ... 240 | 180 ... 240 | ▶ | **7PV1518-1AN30** | | 1 | 1 unit | 41H |
| **7PV1538 timing relays, OFF-delay, with control signal, 7 time setting ranges** | | | | | | | | | |
| With LED and 1 CO contact | 0.05 ... 1 s<br>0.5 ... 10 s<br>5 ... 100 s<br>30 s ... 10 min<br>3 min ... 1 h<br>30 min ... 10 h<br>5 ... 100 h | 12 ... 240 | 12 ... 240 | ▶ | **7PV1538-1AW30** | | 1 | 1 unit | 41H |
| **7PV1540 timing relays, OFF-delay, without control signal, 7 time setting ranges** | | | | | | | | | |
| With LED and 1 CO contact | 0.05 ... 1 s<br>0.15 ... 3s<br>0.3 ... 6 s<br>0.5 ... 10 s<br>1.5 ... 30 s<br>3 ... 60 s<br>5 ... 100 s | 12 ... 240 | 12 ... 240 | ▶ | **7PV1540-1AW30** | | 1 | 1 unit | 41H |
| **7PV1558 timing relays, clock-pulse relay, 7 time setting ranges** | | | | | | | | | |
| With LED and 1 CO contact | 0.05 ... 1 s<br>0.5 ... 10 s<br>5 ... 100 s<br>30 s ... 10 min<br>3 min ... 1 h<br>30 min ... 10 h<br>5 ... 100 h | 12 ... 240 | 12 ... 240 | ▶ | **7PV1558-1AW30** | | 1 | 1 unit | 41H |
| **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<br>0.5 ... 10 s<br>5 ... 100 s<br>30 s ... 10 min<br>3 min ... 1 h<br>30 min ... 10 h<br>5 ... 100 h | 12 ... 240 | 12 ... 240 | ▶ | **7PV1578-1BW30** | | 1 | 1 unit | 41H |





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

## Overview


SIRIUS 3RT19 timing relay

SIRIUS 3RT19 electronic timing relays for mounting onto contactors with:

- 1 NO and 1 NC or 2 NO
- Monofunction
- Monovoltage
- Single or selectable time setting ranges

Simply by being plugged in place, the SIRIUS 3RT19 timing relays enable different functionalities required for the assembly of starters to be realized in the feeder. At the same time the timing relays for mounting onto contactors reduce the wiring work required within the feeder and save space in the control cabinet.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two plug-in contacts to actuate the contactor underneath by means of a semiconductor after the set time has elapsed.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A1/A2.

The switching state feedback is performed by a mechanical switching state indicator (plunger).

### *Article No. scheme*

| Product versions | | Article number |
|---|---|---|
| **Time module and contactor control unit** | | **3RT19 □ □ – 2 □ □ □ 1** |
| Size | e.g. 26 = S6 to S12 | □ □ |
| Version | e.g. E = ON-delay | □ |
| Control supply voltage | e.g. J = 24 V AC/DC | □ |
| Time range | e.g. 1 = 0.05 ... 1 s | □ |
| Example | | **3RT19 2 6 – 2 E J 1 1** |

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

## SIRIUS 3RT19 timing relays for mounting onto 3RT1 contactors

### Technical specifications

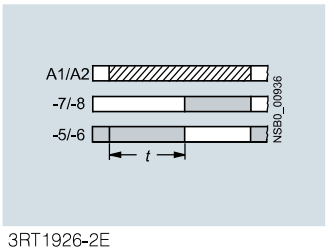
| More information | |
|---|---|
| Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16361/td<br>Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/ps/16361/man | FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16361/faq |

**According to IEC 61812-1/DIN VDE 0435-2021**

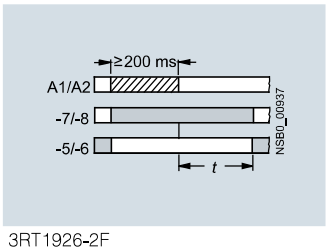
| Type | | Electronic timing relay blocks with semiconductor output<br>3RT19.6-2C,<br>3RT19.6-2D | Solid-state time-delay auxiliary switch blocks<br>3RT19.6-2E,<br>3RT19.6-2F,<br>3RT19.6-2G |
|---|---|---|---|
| **Rated insulation voltage $U_i$**<br>Pollution degree 3<br>Overvoltage category III acc. to VDE 0110 | V AC | 300 | |
| **Permissible ambient temperature** | | | |
| • During operation | °C | -25 ... +60 | |
| • During storage | °C | -40 ... +80 | |
| **Operating range of excitation** | | 0.8 ... 1.1 x $U_S$,<br>0.95 ... 1.05 times the rated frequency | 0.85 ... 1.1 x $U_S$,<br>0.95 ... 1.05 times the rated frequency |
| **Rated operational currents $I_e$** | | | |
| • Load current | A | 0.3 for 3RT1916; 0.5 for 3RT1926 | -- |
| • AC-15, 24 ... 400 V, 50 Hz | A | -- | 3 |
| • DC-13, 24 V | A | -- | 1 |
| • DC-13, 125 V | A | -- | 0.2 |
| • DC-13, 250 V | A | -- | 0.1 |
| **Mechanical endurance** | Operating cycles | 100 x $10^6$ | 10 x $10^6$ |
| **Electrical endurance at $I_e$** | Operating cycles | 100 x $10^6$ | 1 x $10^5$ |
| **Connection type** | | **Screw terminals** | |
| • Terminal screw | | M3 (for standard screwdriver, size 2 and Pozidriv 2) | |
| • Solid | $mm^2$ | 1 x (0.5 ... 4)/2 x (0.5 ... 2.5) | |
| • Finely stranded with end sleeve | $mm^2$ | 1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5) | |
| • AWG cables, solid or stranded | AWG | 2 x (20 ... 14) | |
| • Tightening torque | Nm | 0.8 ... 1.2 | |

### *3RT1926 function diagrams*

1 NO contact + 1 NC contact

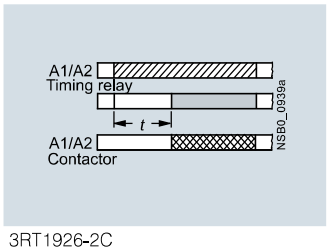



3RT1926-2E
ON-delay

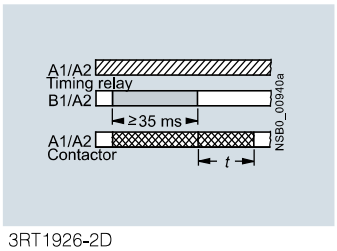



3RT1926-2F
OFF-delay without control signal

1 NO contact (semiconductor)

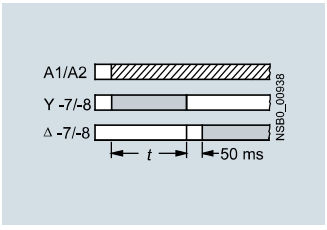



3RT1926-2C
ON-delay
two-wire design (varistor integrated)




3RT1926-2D
OFF-delay
with control signal (varistor integrated)

2 NO contacts




3RT1926-2G
Wye-delta function
1 NO delayed, 1 NO instantaneous,
dead time 50 ms (varistor integrated)

Legend
- Timing relay energized
- Contact closed
- Contact open
- Contactor coil energized

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## Selection and ordering data

| For contactors | Version | Time setting range $t$ | Rated control supply voltage $U_s$ | SD | Screw terminals | | PU (UNIT, SET, M) | PS* | PG |
|---|---|---|---|---|---|---|---|---|---|
| Type | | s | V | d | Article No. | Price per PU | | | |
| **For sizes S6 to S12[1]** | | | | | | | | | |
| 3RT10, 3RT14 | **Terminal designations acc. to EN 46199-5** | | | | | | | | |
| | • ON-delay | | | | | | | | |
| | 1 NO + 1 NC | 0.05 ... 1 | 24 AC/DC | 10 | **3RT1926-2EJ11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2EJ21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 2 | **3RT1926-2EJ31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 100 ... 127 AC | 15 | **3RT1926-2EC11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2EC21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 10 | **3RT1926-2EC31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 200 ... 240 AC | 5 | **3RT1926-2ED11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2ED21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 5 | **3RT1926-2ED31** | | 1 | 1 unit | 41H |
| | • OFF-delay without control signal[2] | | | | | | | | |
| | 1 NO + 1 NC | 0.05 ... 1 | 24 AC/DC | ▶ | **3RT1926-2FJ11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2FJ21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | ▶ | **3RT1926-2FJ31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 100 ... 127 AC | 5 | **3RT1926-2FK11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2FK21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 5 | **3RT1926-2FK31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 200 ... 240 AC | 5 | **3RT1926-2FL11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | 2 | **3RT1926-2FL21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 2 | **3RT1926-2FL31** | | 1 | 1 unit | 41H |
| | • Wye-delta function (varistor integrated) | | | | | | | | |
| | 1 NO delayed + 1 NO instanta-neous, dead time 50 ms | 1.5 ... 30 | 24 AC/DC | ▶ | **3RT1926-2GJ51** | | 1 | 1 unit | 41H |
| | | | 100 ... 127 AC | ▶ | **3RT1926-2GC51** | | 1 | 1 unit | 41H |
| | | | 200 ... 240 AC | ▶ | **3RT1926-2GD51** | | 1 | 1 unit | 41H |
| **For sizes S0 to S3, with semiconductor output** | | | | | | | | | |
| 3RT20[2] | **For mounting onto coil terminals on top of the contactors**<br>The electrical connection between the relay block and the corresponding contactor is established by screwing the two connecting pins of the timing relay block to coil terminals A1/A2 on top of the contactor. | | | | | | | | |
| | • ON-delay, two-wire design (varistor integrated) | | | | | | | | |
| | | 0.05 ... 1 | 24 ... 66 AC/DC | 5 | **3RT1926-2CG11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | 5 | **3RT1926-2CG21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 5 | **3RT1926-2CG31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 90 ... 240 AC/DC | ▶ | **3RT1926-2CH11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | ▶ | **3RT1926-2CH21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | ▶ | **3RT1926-2CH31** | | 1 | 1 unit | 41H |
| | • OFF-delay with control signal (varistor integrated) | | | | | | | | |
| | | 0.05 ... 1 | 24 ... 66 AC/DC | 10 | **3RT1926-2DG11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | 5 | **3RT1926-2DG21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 20 | **3RT1926-2DG31** | | 1 | 1 unit | 41H |
| | | 0.05 ... 1 | 90 ... 240 AC/DC | 5 | **3RT1926-2DH11** | | 1 | 1 unit | 41H |
| | | 0.5 ... 10 | | 5 | **3RT1926-2DH21** | | 1 | 1 unit | 41H |
| | | 5 ... 100 | | 10 | **3RT1926-2DH31** | | 1 | 1 unit | 41H |


3RT1926-2...


3RT1926-2C...


3RT1926-2D...

1) The terminals A1 and A2 for the rated control supply voltage of the solid-state time-delay auxiliary switch block must be connected to the corresponding contactor by connecting cables.

2) Not for 3RT104 contactor with 24 to 42 V rated control supply voltage.

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