

Timers Multi-function Type S 110

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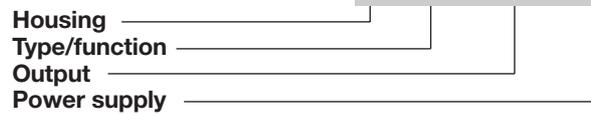
- 4 selectable functions:
 - Delay on operate
 - Interval timer
 - Symmetrical recycler (ON- or OFF-time first)
- 4 selectable time ranges: 0.15 s to 800 s
- Automatic start
- Knob-adjustable time within range
- Oscillator-controlled time circuit
- Repeatability deviation: $\leq 1\%$
- Output: 10 A SPDT or 8 A DPDT relay
- Plug-in type module
- S -housing
- LED-indication for relay and supply on
- AC or DC power supply

Product Description

Multi-function, plug-in time relay with 4 selectable time ranges up to 800 s and 4 selectable modes of operation. Available in several voltages for applications monitored by power supply.

Ordering Key

S 110 156 024



Type Selection

| Plug | Output | Time range | Supply: 24 VAC | Supply: 115 VAC | Supply: 230 VAC | Supply: 24 VDC |
|----------|--------|--------------|----------------------|----------------------|----------------------|----------------------|
| Circular | SPDT | 0.15 s-800 s | S 110 156 024 | S 110 156 115 | S 110 156 230 | S 110 156 724 |
| | DPDT | 0.15 s-800 s | S 110 166 024 | S 110 166 115 | S 110 166 230 | S 110 166 724 |

Time Specifications

| | | | |
|------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------|
| Time ranges Selectable by DIP-switch | 0.15 - 3 s 0.6 - 12 s 5 - 100 s 40 - 800 s | Repeatability deviation | $\leq 1\%$ |
| Time range accuracy | 0 to +10% on max. min. actual time \leq min. set time | Time variation Within rated power supply and ambient temperature | $\leq 0.05\%/V$ $\leq 0.2\%/^{\circ}C$ |
| | | Reset Time and/or relay | Power supply interruption min. 200 ms |

Output Specifications

| | S 110 156 | S 110 166 |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Output Basic electrical insulation | SPDT relay 250 VAC (rms) (contact/electronics) | DPDT relay 250 VAC (rms) (contacts/elec., contact/contact) |
| Contact ratings (AgCdO) Resistive loads | μ (micro gap) AC 1 10 A/250 VAC (2500 VA) DC 1 1 A/250 VDC (250 W) or 10 A/25 VDC (250 W) | μ (micro gap) 8 A/250 VAC (2000 VA) 0.4 A/250 VDC (100 W) 4 A/25 VDC (100 W) |
| Small inductive loads | AC 15 2.5 A/230 VAC DC 13 5 A/24 VDC | 2.5 A/230 VAC 5 A/24 VDC |
| Mechanical life | $\geq 30 \times 10^6$ operations | $\geq 30 \times 10^6$ operations |
| Electrical life | AC 1 $\geq 2.5 \times 10^5$ operations (at max. load) | $\geq 2.5 \times 10^5$ operations (at max. load) |
| Operating frequency | ≤ 7200 operations/h | ≤ 7200 operations/h |
| Insulation voltages Rated insulation voltage Rated transient protection volt. | ≥ 2.0 kVAC (rms)(contact/electronics) 4 kV (1.2/50 μ s) (contact/electronics) (IEC 60664) | ≥ 2.0 kVAC (rms) (contact/electronics) 4 kV (1.2/50 μ s) (contact/electronics) (IEC 60664) |



Supply Specifications

| | |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------|
| Power supply AC types | Installation cat. III (IEC 60664) |
| Rated operational voltage through pins 2 & 10 | 230 230 VAC ± 15%, 45 to 65 Hz 115 115 VAC ± 15%, 45 to 65 Hz 024 24 VAC ± 15%, 45 to 65 Hz |
| Drop-out tolerance | ≥ 40 ms |
| Rated insulation voltage | ≥ 2.0 kVAC (rms) (supply/elec.) |
| Rated transient protection volt. | 4 kV (1.2/50 µs) (line/neutral) |
| Power supply DC type | Installation cat. III (IEC 60664) |
| Rated operational voltage 724 | 24 VDC ± 15% (pin 2 pos.) |
| Rated insulation voltage | None |
| Rated transient protection volt. | 800 V (1.2/50 µs) |
| Consumption | AC supply 2.5 VA DC supply 1.5 W |

General Specifications

| | |
|------------------------|--------------------------------|
| Power ON delay | ≤ 200 ms |
| Power OFF delay | ≥ 200 ms |
| Indication for | |
| Power supply ON | LED, green |
| Output ON | LED, red |
| Environment | |
| Degree of protection | IP 20 B |
| Pollution degree | 2 (IEC 60664) |
| Operating temperature | -20° to +50°C (-4° to +122°F) |
| Storage temperature | -50° to +85°C (-58° to +185°F) |
| Weight | 125 g |
| Approvals | UL, CSA |
| CE-marking | Yes |

Mode of Operation

Delay on operate

The time period starts when power supply is applied. At the end of the set time period, the relay operates and does not release until power supply is interrupted for at least 200 ms.

riod, the relay releases. At the end of the second set time period (similar to the first), the relay operates again.

This sequence continues with equal ON- and OFF-time periods until power supply is interrupted.

Interval timer

The relay operates and the time period starts when power supply is applied. At the end of the set time period, the relay releases. A new operation starts when reapplying power supply after an interruption of at least 200 ms.

Recycler

OFF-time period first

The time period starts when power supply is applied. At the end of the first set time period, the relay operates. At the end of the second set time period (similar to the first), the relay releases.

Recycler

ON-time period first

When power supply is applied the relay operates and the time period starts. At the end of the first set time pe-

This sequence continues with equal OFF- and ON-time periods until power supply is interrupted.

Accessories

| | | |
|--------------------|-------|----------------------------------------------------------|
| Socket◇ | S 411 | For further information refer to "Accessories". |
| Hold down spring◇ | HF | |
| Mounting rack | SM 13 | |
| Socket cover | BB 4 | For other AC/DC voltages refer to "General Information". |
| Potentiometer lock | PL 3 | |

Function/Time Setting

Selection of function

DIP-switch selector (1 & 2).

- Delay on operate
- Interval timer
- Recycler, ON-time first
- Recycler, OFF-time first

Selection of time ranges

DIP-switch selector (3 & 4).

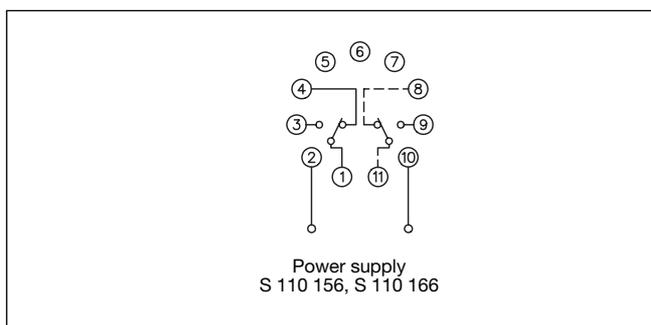
- | | |
|------------|--|
| 0.15 - 3 s | |
| 0.6 - 12 s | |
| 5 - 100 s | |
| 40 - 800 s | |

Time setting

Knob-adjustable on scale in per cent of max. time.

DIP-switches are placed behind a small removable front plate on the time relay.

Wiring Diagram



Operation Diagram

