

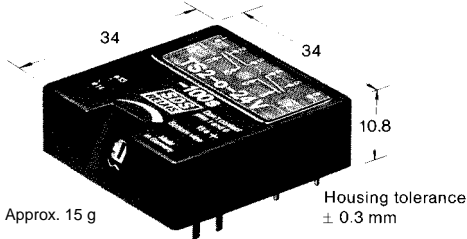
Discontinued

TS

Panasonic
ideas for life

**NEW PCB TIME DELAY RELAY
TIME-ON OR TIME-OFF DELAY
OR PULSE RELAY**

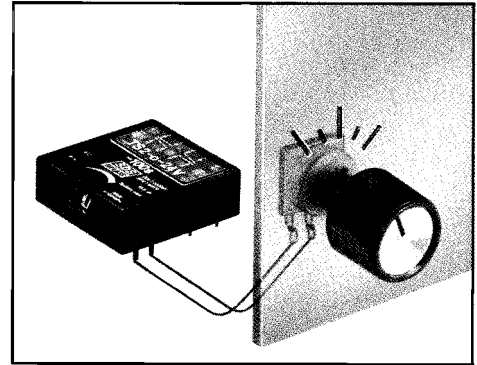
TS-RELAYS



Approx. 15 g
Housing material: CRASTIN SK-615 FR Polycarbonate
Basic grid 2.54 mm
PCB hole dia. \varnothing 1.3 mm \pm 0.1 mm

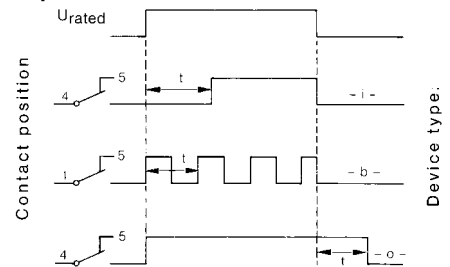
- The elegant solution to time delay problems.
- High repeat accuracy and reliability.
- Not susceptible to external disturbance.
- Increase in timing delay by using an external capacitor with time-off delay device – o –.
- No auxiliary power supply required with time-off delay operation.
- No „first cycle effect“, with the time-on delay device. The first and following operations are of the same duration.

| Characteristics | | Remarks | |
|---|---|--|---|
| Contact arrangement | (NO = normally open, NC = normally closed, CO = changeover) | 2NO2NC (2CO)/3NO1NC (2NO1CO)/4NO | |
| Max. make/rated/break current | A | 20 / 5 / 5 | |
| Voltage switching range | V | 10 ⁵ -250 | |
| Power switching range | W (VA) | 10 ¹⁰ -100 (1000) | |
| Contact material | | AuAg10 | See also the S relay data sheet |
| Volumetric/contact resistance | m Ω | 30/10 | |
| Operational life ¹⁾ | | | |
| | 5 A, 1000 VA/5 A, 100 W switching ops. | 6 · 10 ⁴ /3 · 10 ⁵ | |
| | 4 A, 1000 VA/0.1 A, 1 W switching ops. | 10 ⁵ /2 · 10 ⁵ | |
| Voltage withstand: cont./cont.- control circuitry | V _{eff} | 750 / 1500 | |
| Insulation resistance: cont./cont.- control circuitry | Ω | 10 ¹³ /10 ¹⁰ | |
| Shock-, vibration resistance | g, g/Hz | 50, 20 / 1000 | Independant of position |
| Life of trimmer | | >100 operations | Typically 1000 ops. |
| Type of protection | Potentiometer/Contacts | | dust tight / IP50 |
| Storage temperature | °C | -20 / +85 | |
| Permiss. ambient temp. at max. load | °C | -20 / +65 | Consequently, time tol.: < 4% with -i- devices 25% with -o- devices |
| Min. control pulse duration at rated voltage. | ms | 100 | |



| Operating characteristics | | | | | | | | |
|---|---------------------|----------------------|---|---------------------|---|---------|------------|-------|
| Type: -i- "on" delay -b- pulse relay | Operating voltage V | Current consumpt. mA | Type: -o- "off" delay | Operating voltage V | Current consumpt. mA | | | |
| TS2-/TS3-/TS4 -i/-b- 5 V | 4.0 - 9.0 | 40 | TS2-/TS3-/TS4 -o- 5 V | 4.0 - 9.0 | 31 | | | |
| TS2-/TS3-/TS4 -i/-b- 12 V | 8.5 - 18.0 | 20 | TS2-/TS3-/TS4 -o- 12 V | 8.5 - 18.0 | 23 | | | |
| TS2-/TS3-/TS4 -i/-b- 24 V | 17.0 - 30.0 | 11 | TS2-/TS3-/TS4 -o- 24 V | 18.0 - 28.0 | 23 | | | |
| Rated time: „on“ delay „i“ | 0 s +) | 10 s | 100 s | 800 s | Rated time: „off“ delay „o“ | 0 s +) | 10 s | 100 s |
| Minimum timing range [s] typical at rated voltage | 1-1000 | 0.3-10 | 1-100 | 8-800 | Minimum timing range [s] typical at rated voltage | 0.3-100 | 0.3-10 | 1-100 |
| Time tolerance at U _{rated} \pm 10% < 1% | | | Time tolerance at U _{rated} \pm 10% | | | - | approx 20% | |
| pulse relay „b“ pulse frequency 0.04 ... 5 Hz* | | | Time delay increase with C _{ext} per μ F** | | | - | 1.5 s | 4.7 s |

Operation



+ The trimmer is omitted on the -i/-o- devices. This must be replaced by an external potentiometer. The time delay thus achievable is 20s per 100 k Ω with the -i- devices and approx 20s per 1 M Ω with the -o- devices. The minimum time delays are 1s (with -i-) and 0.3 s (with -o-).
* With the -o- device, the pulse frequency is 5 Hz. max., and is inversely proportional to R_{ext} (e.g. at 12 k Ω the pulse frequency is 1 Hz).
** Connect C_{ext} between pins 12 and 13!

Connection diagrams (bottom view) Warning! No reverse battery protection Warning! pins 1 and 6 may not be connected. Pins 7 and 12 are negative and connected internally

| | | | | | |
|---|---|---|---|---|---|
| <p>TS2-i, -o- or -b - 5, 12, 24 V - 0 s</p> <p>0 < R_{ext} < 5 MΩ</p> | <p>TS3-i, -o- or -b - 5, 12, 24 V - 0 s</p> <p>0 < R_{ext} < 5 MΩ</p> | <p>TS4-i, -o- or -b - 5, 12, 24 V - 0 s</p> <p>0 < R_{ext} < 5 MΩ</p> | <p>TS2-i, -o- or -b - 5, 12, 24 V - 10 s or - 100 s - i - 800 s, - b - 25 s</p> | <p>TS3-i, -o- or -b - 5, 12, 24 V - 10 s or - 100 s - i - 800 s, - b - 25 s</p> | <p>TS4-i, -o- or -b - 5, 12, 24 V - 10 s or - 100 s - i - 800 s, - b - 25 s</p> |
|---|---|---|---|---|---|

Ordering example

TS 2 - i - 24 V - 10 s

Type _____
i = time-„on“ o = time-„off“ delay
b = pulse relay _____
Rated voltage _____
Rated time _____

Note:
Excitation voltage ripple should be maintained below 5% by use of appropriate smoothing.
Strong external magnetic fields influence relay data.
1) Data concerning operational life is based on resistive loads and ambient temperature of 20-30°C.

TR-W Wiping function on request

With surge voltages (1.2/50 μ sec) over DC 500V TS-i. b. w relays may not operate as intended.

Please initialise relays required state whenever power is turned on. The statements for latching relays in our General Application Guidelines are applicable.

单击下面可查看定价，库存，交付和生命周期等信息

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