

Industrial Automation Catalog Section - U906

Timers

Timers

Selection Guide

Timing Diagrams Overview

RTE Series — Analog Timers

Instructions





For up-to-date information, or to request a full copy of this catalog, contact us at **www.idec.com** or **800-262-IDEC.**

Due to continuous product improvements, specifications are subject to change without notice.



Selection Guide

Selection Guide: RTE, GT3A, GT3D, and GT3F Series

| Series Model | | RTE | GT3A | GT3D | GT3F |
|---------------------------------|---------------|---|---|--|---|
| Page | | G-8 | G-15 | G-24 | G-38 |
| Appearance | |  |  |  |  |
| Mode of Operation | | ON-delay Interval OFF-delay Single-shot | Multi-mode | Multi-mode | True OFF-delay |
| Time Range | | 0.1 second to 10 hours | 0.05 second to 180 hours | 0.01 second to 99.9 hours | 0.05 to 600 seconds |
| Contact Configuration | Delayed | DPDT | SPDT, DPDT | SPDT, DPDT | SPDT, DPDT |
| | Instantaneous | — | SPDT | SPDT | — |
| Repeat Accuracy | | ±0.25% maximum | ±0.2% maximum | ±0.3% maximum | ±0.4% maximum |
| Contact Load Rating (resistive) | | 240V AC, 10A | GT3A-1, -2: 250V AC, 3A GT3A-3, -4, -5, -6: 240V AC, 5A | GT3D-1, -2: 250V AC, 3A GT3D-3, -4, -5, -6: 240V AC, 5A | 250V AC, 5A |
| Rated Operating Voltage | | 120V AC 12V AC/DC 24V AC/DC | 100 to 240V AC 12V AC/DC 24V AC/DC | 100 to 240V AC 12V DC 24V AC/DC | 100 to 240V AC 24V AC/DC |
| Approvals | | UL listed TUV CSA CE | UL recognized TUV CSA CE | UL recognized TUV CSA CE | UL recognized TUV CSA CE |

G



1. For Timing Diagrams Overview, see page G-4.
2. For all series specific instructions, accessories, and dimensions, see the individual series section.



RTE Series:
UL Listed
File No. E67770



GT3 and GT5 Series:
UL Recognized
File No. E55996



Cert. No. BL980113332391 (LVD, all GT3)
Cert. No. E9950913332317 (EMC, GT3A)
Cert. No. E9971113332388 (EMC, other GT3)
Cert. No. E9950913332316 (EMC, RTE)
Cert. No. BL960813332355 (LVD, RTE)

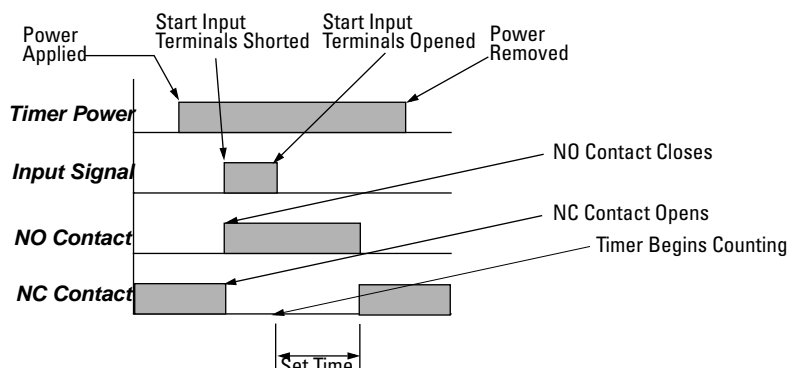


CSA Certified
File No. LR58183
LR96764
LR83814



Timing Diagrams Overview

Guide to Reading Timing Function Diagrams



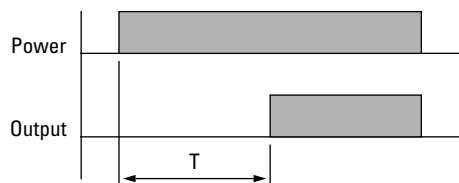
1. If power is disconnected during actual timing, most electronic timers reset to the preset time, ready for the re-application of supply voltage (except for GT3F "true OFF Delay").
2. NO = Normally open.
3. NC = Normally closed.

Timing Function Diagrams Overview

ON-Delay 1 (power start)

When voltage is applied to the coil, the relay contacts remain in the **off state** and the set time begins. When the set time has elapsed, the relay contacts transfer to the **on state**. The contacts remain in the on state until the timer is reset. The timer is reset by removing the coil voltage. Applicable models: RTE-P(B)1, GT3A-1, -2, -3, GT3D-1, -2, -3, -4, and GE1A.

G

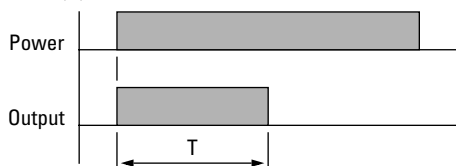


| Type No. | GT3A-1, -2, -3 | GT3D-1, -2, -3, -4 | RTE-*1** |
|----------|----------------|--------------------|---------------------|
| Mode | A | 1-A | Dip switch to right |
| See Page | G-15 | G-24 | G-8 |

| Type No. | GE1A | GT5P | GT5Y |
|----------|------|------|------|
| See Page | G-57 | G-61 | G-66 |

Interval 1 (power start)

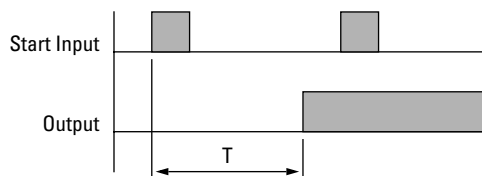
When voltage is applied to the coil, the relay contacts transfer immediately to the **on state** and the set time begins. When the set time has elapsed, the relay contacts transfer to the **off state**. The contacts remain in the off state until the timer is reset. The timer is reset by removing the coil voltage. Applicable models: RTE-P(B)1, GT3A-1, -2, -3, and GT3D-1, -2, -3, -4.



| Type No. | GT3A-1, -2, -3 | GT3D-1, -2, -3, -4 | RTE-*1** |
|----------|----------------|--------------------|--------------------|
| Mode | B | 1-B | Dip switch to left |
| See Page | G-15 | G-24 | G-8 |

ON-Delay 2 (signal start)

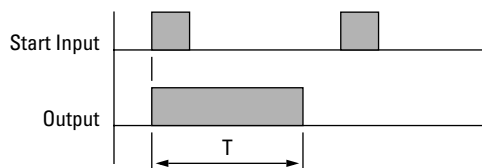
Voltage is applied to the coil at all times. When a start input is supplied, the relay contacts remain in the **off state** and the set time begins. When the set time has elapsed, the relay contacts transfer to the **on state**. The contacts remain in the on state until the timer is reset. The timer is reset by applying a reset input or by removing the coil voltage. Applicable models: GT3A-4 and GT3D-4.



| Type No. | GT3A-4 | GT3D-4 |
|----------|--------|--------|
| Mode | A | 2-A |
| See Page | G-15 | G-24 |

Interval 2 (signal start)

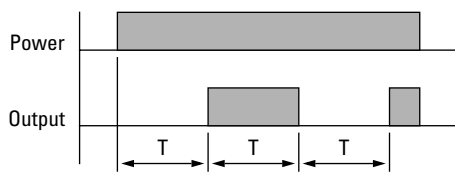
Voltage is applied to the coil at all times. When a start signal is supplied, the relay contacts transfer immediately to the **on state** and the set time begins. When the set time has elapsed, the relay contacts transfer to the **off state**. The contacts remain in the off state until the timer is reset. The timer is reset by applying a reset input or by removing the coil voltage. Applicable models: GT3A-5 and GT3D-4.



| Type No. | GT3A-5 | GT3D-4 |
|----------|--------|--------|
| Mode | A | 2-E |
| See Page | G-15 | G-24 |

Cycle 1 (power start, OFF first)

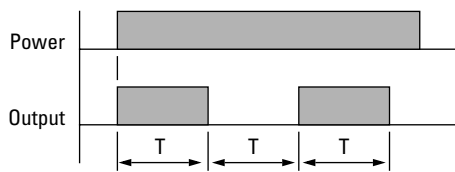
When voltage is applied to the coil, the contacts remain in the **off state** and the set time begins. At the end of the set time, the contacts transfer to the **on state** and remain in the **on state** until the set time elapses. The timer cycles between the two states until power is removed from the coil. Removing the coil voltage resets the timer. The set time for both the **on state** and the **off state** is the same. Applicable models: GT3A-1, -2, -3 and GT3D-1, -2, -3, -4.



| Type No. | GT3A-1, -2, -3 | GT3D-1, -2, -3, -4 |
|----------|----------------|--------------------|
| Mode | C | 1-C |
| See Page | G-15 | G-24 |

Cycle 3 (power start, ON first)

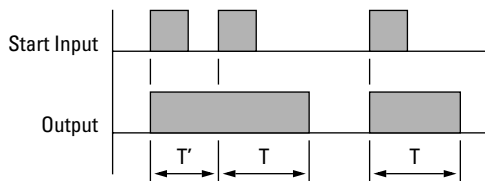
When voltage is applied to the coil, the contacts immediately transfer to the **on state** and the set time begins. At the end of the set time, the contacts transfer to the **off state** and remain in the **off state** until the set time elapses. The timer cycles between the two states until power is removed from the coil. Removing the coil voltage resets the timer. The set time for both the **off state** and the **on state** is the same. Applicable models: GT3A-1, -2, -3 and GT3D-1, -2, -3, -4.



| Type No. | GT3A-1, -2, -3 | GT3D-1, -2, -3, -4 |
|----------|----------------|--------------------|
| Mode | D | 1-D |
| See Page | G-15 | G-24 |

One Shot 1 (signal start, retriggeable)

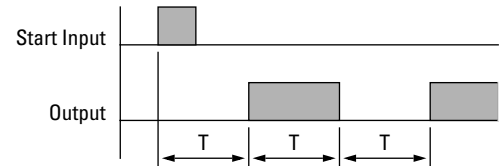
Voltage is applied to the coil at all times. When a start signal is supplied, the contacts immediately transfer to the **on state** and the set time begins. If another start signal is supplied (**before set time has elapsed**) the set time restarts, as the contacts remain in the **on state**. Successive pulses at a frequency greater than the set time will cause the contacts to remain in the "ON state" indefinitely. When the set time has elapsed the contacts transfer back to the **off state**. The contacts remain in the **off state** until the next start signal is supplied (no reset is necessary). The timer can be reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-6 and GT3D-4.



| Type No. | GT3A-6 | GT3D-4 |
|----------|--------|--------|
| Mode | A | 3-C |
| See Page | G-15 | G-24 |

Cycle 2 (signal start, OFF first)

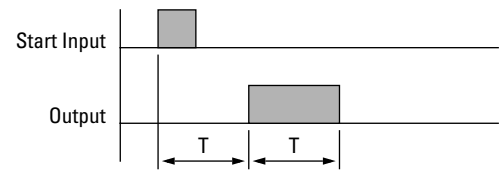
Voltage is applied to the coil at all times. When a start signal is supplied, the relay contacts remain in the **off state** and the set time begins. At the end of the set time, the contacts transfer to the **on state** and remain in the **on state** until the set time elapses. The timer cycles between the two states until the timer is reset. The set time for both the **on state** and the **off state** are the same. The timer is reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-4 and GT3D-4.



| Type No. | GT3A-4 | GT3D-4 |
|----------|--------|--------|
| Mode | B | 2-B |
| See Page | G-15 | G-24 |

One Shot Cycle (signal start)

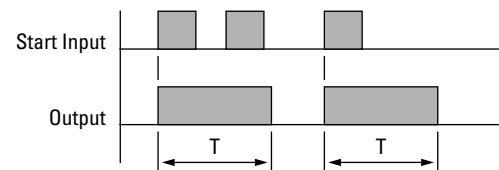
Voltage is applied to the coil at all times. When a start signal is supplied, the contacts remain in the **off state** and the set time begins. At the end of the set time, the contacts transfer to the **on state** and remain in the **on state** for the set time. After the set time has elapsed, the contacts return to the **off state**. The contacts remain in the **off state** until the timer is reset. The timer is reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-5 and GT3D-4.



| Type No. | GT3A-5 | GT3D-4 |
|----------|--------|--------|
| Mode | B | 2-F |
| See Page | G-15 | G-24 |

One Shot 2 (signal start)

Voltage is applied to the coil at all times. When a start signal is supplied, the contacts immediately transfer to the **on state** and the set time begins. If another start signal is supplied (**before set time has elapsed**), the set time will not be affected. When the set time has elapsed, the contacts transfer back to the **off state**. The contacts remain in the **off state** until the next start signal is supplied (no reset is necessary). The timer can be reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-6, GT3D-4, and RTE-P(B)2.



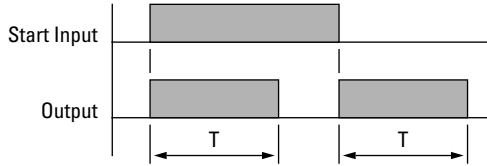
| Type No. | GT3A-6 | GT3D-4 | RTE-*2* |
|----------|--------|--------|--------------------|
| Mode | C | 3-E | Dip switch to left |
| See Page | G-15 | G-24 | G-8 |



1. T = set time, T' = shorter than set time, T_s = one shot output time
2. For more detailed timing diagrams, see specifications for individual timer models.

Signal ON/OFF-Delay 1

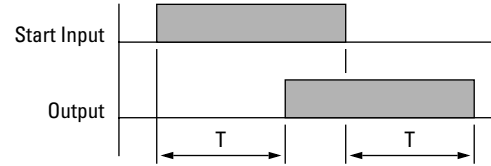
Voltage is supplied to the coil at all times. When a maintained start signal is supplied, the contacts immediately transfer to the **on state** and the set time begins. When the set time has elapsed, the contacts transfer to the **off state**. The contacts remain in the **off state** until the start signal is removed. The contacts transfer back to the **on state** and remain in the **on state** for the set time. When the set time has elapsed, the contacts transfer to the **off state** and remain in the **off state** until the start signal is supplied again (no reset is necessary). The timer is reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-4 and GT3D-4.



| Type No. | GT3A-4 | GT3D-4 |
|----------|--------|--------|
| Mode | C | 2-C |
| See Page | G-15 | G-24 |

Signal ON/OFF-Delay 2

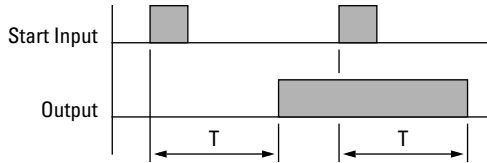
Voltage is supplied to the coil at all times. When a maintained start signal is supplied, the contacts remain in the **off state** and the set time begins. When the set time has elapsed, the contacts transfer to the **on state**. The contacts remain in the **on state** until the start signal is removed. Once the start signal is removed, the contacts remain in the **on state** and the set time begins again. Once the set time has elapsed, the contacts transfer back to the **off state**. The timer is ready for the next start signal. The timer is reset by the application of a reset signal or removal of power. Applicable models: GT3A-5 and GT3D-4.



| Type No. | GT3A-5 | GT3D-4 |
|----------|--------|--------|
| Mode | C | 3-A |
| See Page | G-15 | G-24 |

Signal ON/OFF-Delay 3

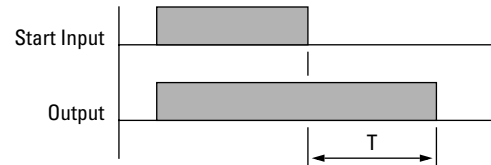
Voltage is supplied to the coil at all times. When a momentary start signal is supplied, the contacts remain in the **off state** and the set time begins. When the set time has elapsed, the contacts transfer to the **on state**. The contacts remain in the **on state** until another momentary input is supplied. The contacts then remain in the **on state** for the set time. When the set time has elapsed, the contacts transfer to the **off state** and remain in the **off state** until the start signal is supplied again (no reset is necessary). The timer is reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-6 and GT3D-4.



| Type No. | GT3A-6 | GT3D-4 |
|----------|--------|--------|
| Mode | D | 3-F |
| See Page | G-15 | G-24 |

Signal OFF-Delay 1

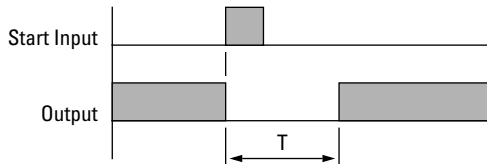
Voltage is applied to the coil at all times. When a start signal is supplied, the contacts immediately transfer to the **on state**. The set time begins **when the start signal is removed**. When the set time has elapsed, the contacts transfer to the **off state**. The contacts remain in the **off state** until the next start signal is supplied (no reset is necessary). The timer can be reset by application of a reset input or by removing coil voltage. Applicable models: RTE-P(B)2, GT3A-4, and GT3D-4.



| Type No. | GT3A-4 | GT3D-4 | RTE-*2* |
|----------|--------|--------|---------------------|
| Mode | D | 2-D | Dip switch to right |
| See Page | G-15 | G-24 | G-8 |

One Shot ON-Delay (signal start)

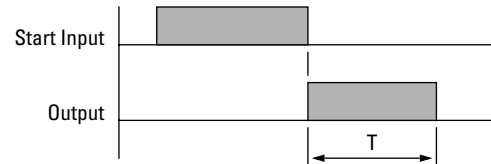
When voltage is applied to the coil, the preset time is initiated and the contacts remain in the **off state** for the preset time. Following the preset time, the contacts transfer to the **on state**, and remain in the **on state** until the start input is supplied. Following the start input, the contacts transfer to the **off state** for the preset time. After the preset time has elapsed, the contacts transfer back to the **on state** and remain there until either the next start input is supplied or the timer is reset. The timer can be reset by either a reset input or removal of the coil voltage. Applicable models: GT3A-6 and GT3D-4.



| Type No. | GT3A-6 | GT3D-4 |
|----------|--------|--------|
| Mode | B | 3-D |
| See Page | G-15 | G-24 |

Signal OFF-Delay 2

Voltage is applied to the coil at all times. When a maintained start signal is supplied, the contacts remain in the **off state**. When the "start signal is removed", the contacts transfer to the "ON state" and the set time begins. When the set time has elapsed, the contacts transfer back to the **off state**. They remain in the **off state** until the next start signal is supplied (no reset is necessary). The timer can be reset by application of a reset input or by removing coil voltage. Applicable models: GT3A-5 and GT3D-4.



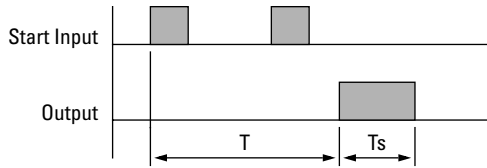
| Type No. | GT3A-5 | GT3D-4 |
|----------|--------|--------|
| Mode | D | 3-B |
| See Page | G-15 | G-24 |



1. T = set time, T' = shorter than set time, Ts = one shot output time
2. For more detailed timing diagrams, see specifications for individual timer models.

ON-Delay One-Shot Output 1 (signal start)

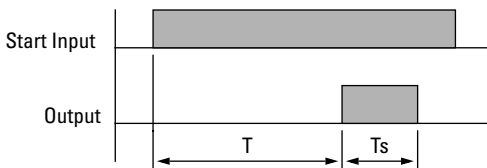
Voltage is applied to the coil at all times. When a momentary start signal is supplied, the contacts remain in the off state and the preset time begins. Following the preset time, the contacts transfer to the on state and remain in the on state for the one-shot preset time. Following the one-shot preset time, the contacts transfer back to the off state and remain there until the timer is reset. The timer can be reset by applying either a reset input or removal of the coil voltage. Applicable model: GT3D-8.



| Type No. | GT3D-8 |
|----------|--------|
| Mode | 1 |
| See Page | G-24 |

ON-Delay One-Shot Output 2 (signal start)

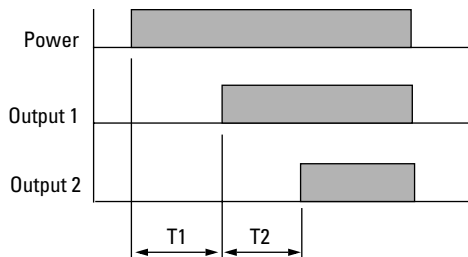
Voltage is applied to the coil at all times. When a maintained start signal is supplied, the contacts remain in the **off state** and the preset time begins. Following the preset time (**start input is still present**), the contacts transfer to the **on state** and remain in the **on state** for the one-shot preset time. When the one-shot preset time has elapsed, contacts transfer back to the **off state** and remain there until timer is reset. The timer can be reset by a reset input, removal of the coil voltage or removal of start input. Applicable model: GT3D-8.



| Type No. | GT3D-8 |
|----------|--------|
| Mode | 3 |
| See Page | G-24 |

Sequential Start (power start)

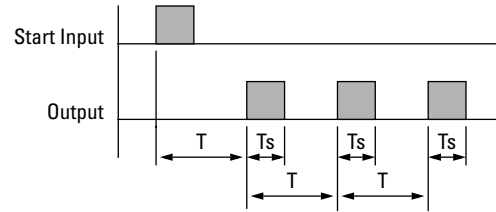
When voltage is applied to the coil, both contacts remain in the OFF state and the set time, T₁, begins. When T₁ has elapsed, output 1 comes on and T₂ begins. When T₂ has elapsed, output 2 comes on. Both outputs remain on until power is removed from the coil. Applicable model: GT3W-A.



| Type No. | GT3W-A |
|----------|--------|
| Mode | AA |
| See Page | G-46 |

Cycle One-Shot Output (signal start)

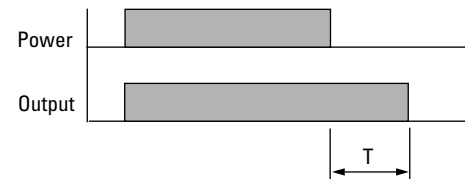
Voltage is applied to the coil at all times. When a momentary start signal is supplied, the contacts remain in the **off state** and the preset time begins. Following the preset time, the contacts transfer to the **on state**. The contacts remain in the **on state** for the one-shot preset time. After the one-shot preset time has elapsed, the contacts transfer back to the **off state**. The contacts remain in the **off state** for the preset time minus the one-shot preset time. The timer cycles between **on and off states** until the timer is reset by a reset input or removal of the coil voltage. Applicable model: GT3D-8.



| Type No. | GT3D-8 |
|----------|--------|
| Mode | 2 |
| See Page | G-24 |

True Power-OFF Delay

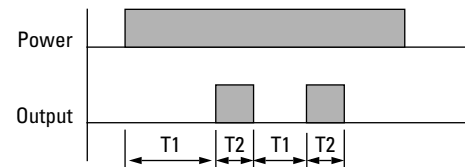
When voltage is applied, output comes on immediately; when voltage is removed from the coil, the timer begins timing (internal capacitors power the timing circuit). When time has expired, contacts transfer back to the OFF state. If power is reapplied before the elapsed time has expired, the timing function will reset back to the starting point. Applicable models: GT3F-1, 2.



| Type No. | GT3F-1, 2 |
|----------|-----------------|
| Mode | Power OFF-Delay |
| See Page | G-38 |

Recycler Outputs (power start)

When voltage is applied to the coil, both contacts remain in the off state and time T₁ begins. When T₁ has elapsed, both contacts transfer to the ON state and T₂ begins. When T₂ has elapsed, both contacts transfer back to the OFF state and T₁ begins again. The cycle continues until power is removed, at which time both contacts transfer back to the OFF state. Applicable model: GT3W-A.



| Type No. | GT3W-A |
|----------|--------|
| Mode | BB |
| See Page | G-46 |



1. T = set time, T' = shorter than set time, Ts = one shot output time
2. For more detailed timing diagrams, see specifications for individual timer models.

RTE Series — Analog Timers



Key features of the RTE series include:

- 16 time ranges and 4 timing functions
- ON-delay, interval, OFF-delay, one-shot
- Time delays up to 10 hours
- Space-saving package (1.63" x 1.42" x 3.03")
- High repeat accuracy of $\pm 0.25\%$
- Power saving 2.2VA consumption
- ON and timing OUT LED indicators
- Standard 8- or 11-pin and 11-blade termination
- 2 form C delayed output contacts
- 10A Contact Rating



UL Listed
File No. E67770



CSA Certified
File No. LR83814



Cert. No. E9950913332316 (EMC, RTE)
Cert. No. BL960813332355 (LVD, RTE)

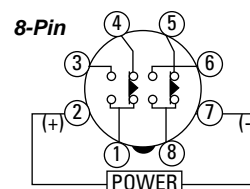
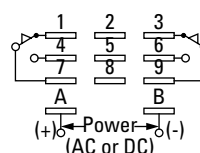


Internal Circuits

Blade Terminals

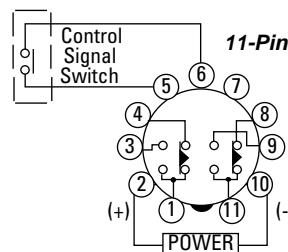
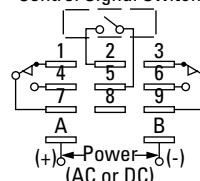
Pin Terminals

ON-Delay/Interval



OFF-Delay/One-Shot

Control Signal Switch



Do not apply voltage to terminals 2 and 5.



Do not apply voltage to terminals 5 and 6.

Specifications

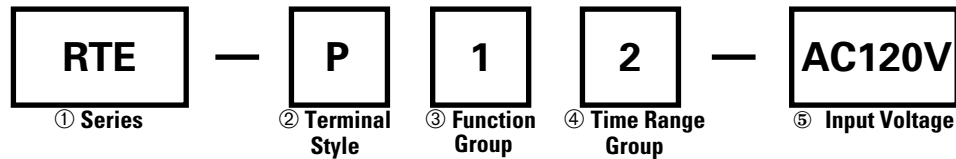
| | |
|------------------------------|--|
| Contact Configuration | 2 Form C, DPDT (delay outputs) |
| Input Voltage | 120V AC, 50/60Hz 12V AC/DC 24V AC/DC |
| Contact Load Rating | 10A resist. at 240V AC, 30V DC 7A induct. at 240V AC, 30V DC 1/6 HP at 120V AC 1/3 HP at 240V AC |
| Power Consumption | ON-delay/interval AC: 1.6VA to 2.2VA DC: 0.9W to 1.2W OFF-delay/single-shot AC: 1.6VA to 2.2VA DC: 0.9W to 1.2W |
| Repeat Accuracy | $\pm 0.25\%$ maximum, 10ms |
| Voltage Accuracy | $\pm 1\%$ maximum, ± 30 ms |
| Temperature Error | $\pm 2\%$ maximum, ± 30 ms |
| Setting Error | $\pm 10\%$ maximum |
| Reset Time | 0.1s maximum |
| Insulation Resistance | 100 M Ω minimum |
| Dielectric Strength | 1500V AC, 1 minute (except between contacts of same pole) |
| Vibration Resistance | 6N (approximate 6G) |
| Shock Resistance | 500N (approximate 50G) |
| Operating Temperature | -20°C to +65°C |
| Operating Humidity | 45 to 85% RH |

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RTE DimensionsG-14

Part Numbering Guide

RTE series part numbers are composed of 5 part number codes. When ordering a RTE series part, select one code from each category.
Example: RTE-P12-AC120V



Part Numbers: RTE Series

| | Description | Part Number Code | Remarks |
|--------------------|-------------------------|------------------|--|
| ① Series | RTE series | RTE | For internal circuits, see previous page. |
| ② Terminal Style | Pin | P | Select one only. |
| | Blade | B | |
| ③ Function Group | ON-delay/interval | 1 | Each function group has two timing functions. See page G-10. |
| | OFF-delay/one-shot | 2 | |
| ④ Time Range Group | 0.1s to 10 minutes | 1 | Each time group has 8 selectable ranges. See page G-13. |
| | 0.1 minutes to 10 hours | 2 | |
| ⑤ Input Voltage | 120V AC, 50/60Hz | AC120V | |
| | 12V AC/DC | 12V | |
| | 24V AC/DC | 24V | |

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Part Number List

Part Numbers

| Mode of Operation | Time Range | Part No. | |
|--------------------|---------------------------|----------|---------|
| | | Pin | Blade |
| ON-Delay/Interval | 0.1 seconds to 10 minutes | RTE-P11 | RTE-B11 |
| | 0.1 minutes to 10 hours | RTE-P12 | RTE-B12 |
| OFF-Delay/One-Shot | 0.1s to 10 minutes | RTE-P21 | RTE-B21 |
| | 0.1 minutes to 10 hours | RTE-P22 | RTE-B22 |

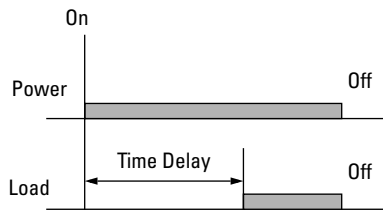


1. After basic part number, insert input voltage.
2. For schematics, see page G-8.
3. For timing diagrams, see page G-10.
4. All timers have multiple time ranges. For a list of ranges, see page G-13.
5. For socket and accessory information, see page G-11.

Timing Diagrams

ON-Delay (delay on make):

When power is applied to the input terminals, the time delay period begins. At the end of the time delay period, the output contacts transfer. Removing power prompts a reset.

**ON-Delay (RTE-P1, RTE-B1)**

Timer Power

(Terminal No.)
Pin Blade
(2-7) (A-B)

Delayed NC Contacts

(1-4) (7-1)

Delayed NO Contacts

(1-3) (7-4)

Delayed NC Contacts

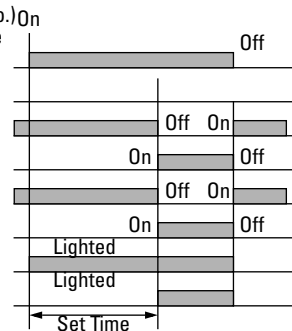
(8-5) (9-3)

Delayed NO Contacts

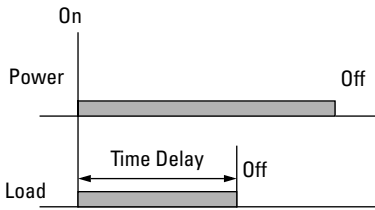
(8-6) (9-6)

On Indicator

OUT Indicator

**Interval:**

When power is applied to the input terminals, the output contacts instantly transfer and the time delay period begins. At the end of the time delay period, the output contacts de-energize. Removing power prompts a reset.

**Interval (RTE-P1, RTE-B1)**

Timer Power

(Terminal No.)
Pin Blade
(2-7) (A-B)

Delayed NC Contacts

(1-4) (7-1)

Delayed NO Contacts

(1-3) (7-4)

Delayed NC Contacts

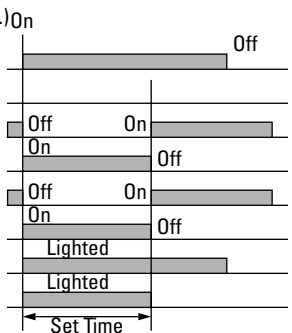
(8-5) (9-3)

Delayed NO Contacts

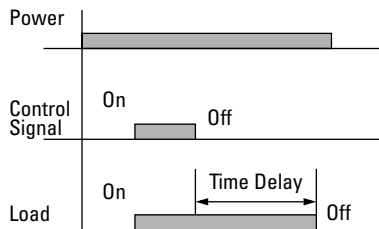
(8-6) (9-6)

On Indicator

OUT Indicator

**OFF-Delay (delay on break):**

Power must be applied at all times to the input terminal. On closure of a normally open control signal switch, the output contacts transfer and remain in this position. When the control switch is reopened, the time delay period begins. At the end of the time delay period, the output contacts transfer back to original position. Reset occurs when the control signal switch is closed.

**OFF-Delay (RTE-P2, RTE-B2)**

Timer Power

(Terminal No.)
Pin Blade
(2-10) (A-B)

Control Signal

(5-6) (2-5)

Delayed NC Contacts

(1-4) (7-1)

Delayed NO Contacts

(1-3) (7-4)

Delayed NC Contacts

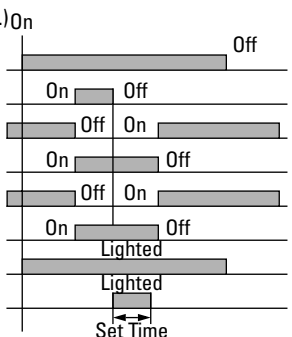
(8-11) (9-3)

Delayed NO Contacts

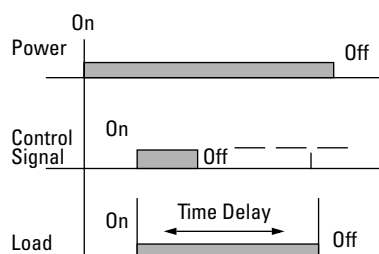
(9-11) (9-6)

On Indicator

OUT Indicator

**One-Shot:**

Power must be applied at all times to the input terminals. On momentary or maintained closure of a normally open control signal switch, the output contacts transfer and the time delay period begins. At the end of the delay period, the output contacts transfer back to the original positions. The timer is then ready for the next timing cycle.

**Single-Shot (RTE-P2, RTE-B2)**

Timer Power

(Terminal No.)
Pin Blade
(2-10) (A-B)

Control Signal

(5-6) (2-5)

Delayed NC Contacts

(1-4) (7-1)

Delayed NO Contacts

(1-3) (7-4)

Delayed NC Contacts

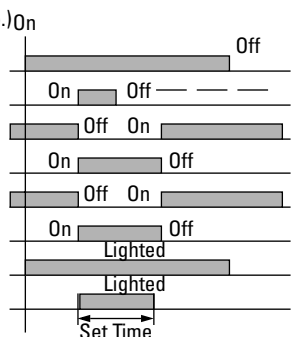
(8-11) (9-3)

Delayed NO Contacts

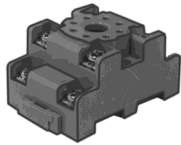

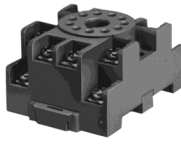
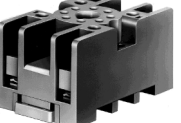

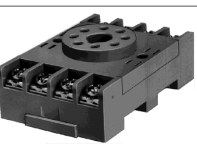




(9-11) (9-6)

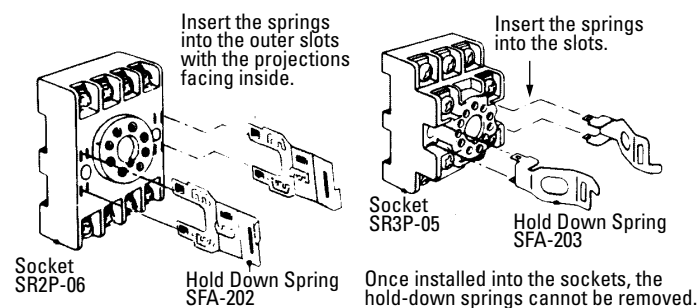
On Indicator

OUT Indicator







DIN Rail Mounting Accessories
Part Numbers: DIN Rail/Surface Mount Sockets and Hold-Down Springs

| DIN Rail Mount Socket | | | | Applicable Hold-Down Springs | |
|-----------------------------------|---|--|----------|---|----------|
| Style | Appearance | Use with Timers | Part No. | Appearance | Part No. |
| 8-Pin Screw Terminal (dual tier) |  | RTE-P11 RTE-P12 | SR2P-05 |  | SFA-203 |
| 11-Pin Screw Terminal (dual tier) |  | RTE-P21 RTE-P22 | SR3P-05 | | |
| 8-Pin Fingersafe Socket |  | RTE-P11 RTE-P12 | SR2P-05C | | |
| 11-Pin FingerSafe Socket |  | RTE-P21 RTE-P22 | SR3P-05C | | |
| 8-Pin Screw Terminal |  | RTE-P11 RTE-P12 | SR2P-06 |  | SFA-202 |
| 11-Pin Screw Terminal |  | RTE-P21 RTE-P22 | SR3P-06 | | |
| 11-Blade Screw Terminal |  | RTE-B11 RTE-B12 RTE-B21 RTE-B22 | SR3B-05 | | |
| DIN Mounting Rail Length 1000mm |  | — | BNDN1000 | | |

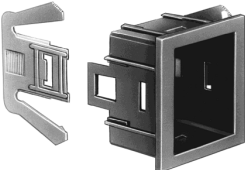



Installation of Hold-Down Springs
DIN Rail Mount Socket


Panel Mounting Accessories

Part Numbers: Panel Mount Sockets and Hold-Down Springs

| Panel Mount Socket | | | | Applicable Hold-Down Springs | |
|--------------------------|---|--|----------|---|----------|
| Style | Appearance | Use with Timers | Part No. | Appearance | Part No. |
| 8-Pin Solder Terminal |  | RTE-P11 RTE-P12 | SR2P-51 |  | SFA-402 |
| 11-Pin Solder Terminal |  | RTE-P21 RTE-P22 | SR3P-51 | | |
| 11-Blade Solder Terminal |  | RTE-B11 RTE-B12 RTE-B21 RTE-B22 | SR3B-51 | | |

Part Numbers: Flush Panel Mount Adapter and Sockets that use an Adapter

| Accessory | Description | Appearance | Use with | Part No. |
|---|---|---|--------------------|-----------|
| Panel Mount Adapter | Adaptor for flush panel mounting RTE timers |  | All RTE timers | RTB-G01 |
| Sockets for use with Panel Mount Adapter | 8-pin screw terminal |  (Shown: SR6P-M08G for Wiring Socket Adapter) | RTE-P11 RTE-P12 | SR6P-M08G |
| | 11-pin screw terminal | | RTE-P21 RTE-P22 | SR6P-M11G |
| | 8-pin solder terminal |  | RTE-P11 RTE-P12 | SR6P-S08 |
| | 11-pin solder terminal |  | RTE-P21 RTE-P22 | SR6P-S11 |



No hold down clips are available for flush panel mounting applications.

Instructions

Each RTE series electronic timer is available with two functions (operation modes) and eight time ranges. Start by determining which timing function and what time range suits your application.

Function Programming

1. Face Plate Removal

Bend the faceplate slightly and pop out the bottom edge (figure 1).

2. Timing Function Selection

Select the function by moving the DIP switch to the right or left position (Figure 2). Refer to the table below noting that the function group is the first digit in the part number. After the face plate is replaced, the DIP switch will be visible through the window if it is in the left position. (This is helpful for determining in which mode the timer is set, without removing the faceplate.)

| Function Group | DIP Switch Position | |
|----------------|---------------------|-----------|
| | Left | Right |
| 1 | Interval | ON-Delay |
| 2 | One-Shot | OFF-Delay |

Time Range Programming

1. Time Range Selection

Select the appropriate timer range by rotating the digital switch (figure 2). Refer to the table below and note that the time range group is the second digit in the part number.

| Time Range Group | Digital Switch Setting | | | | | | | |
|------------------|------------------------|---------|--------|---------|---------|---------|--------|---------|
| | 0 (*8) | 1** (9) | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | 1s | 3s | 6s | 10s | 60s | 30s | 5 min. | 10 min. |
| 2 | 1 min. | 3 min. | 6 min. | 10 min. | 60 min. | 30 min. | 5 hrs. | 10 hrs. |

*The time setting is the same when the digital switch is at 0 or 8.

** The time setting is the same when the digital switch is at 1 or 9.

2. Faceplate Configuration

Rotate the wheel in the faceplate to correspond with the time range selected in the previous step (figure 3).

| Time Range Group | Time Range | | | | Face Plate Color |
|------------------|------------|---------|---------|---------|------------------|
| 1 | 3s | 6s | 30s | 60s | Yellow |
| | 1s | 10s | 5 min. | 10 min. | Pink |
| 2 | 3 min. | 6 min. | 30 min. | 60 min. | Violet |
| | 1 min. | 10 min. | 5 hrs. | 10 hrs. | Blue |

3. Replacing Faceplate

Bend faceplate slightly and replace on the timer (figure 4). The digital switch setting should be visible through a window in the faceplate.

RTE-P21-AC120V

Function Group

Time Range Group

Figure 1

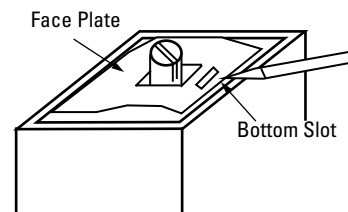


Figure 2

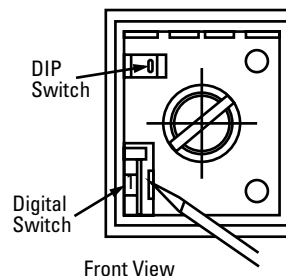


Figure 3

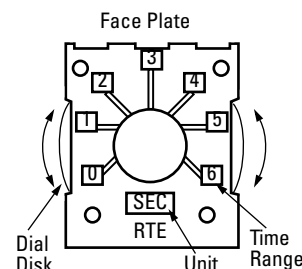
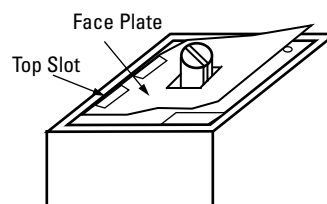


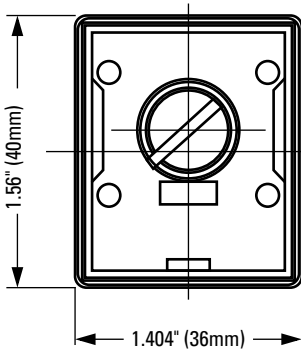
Figure 4



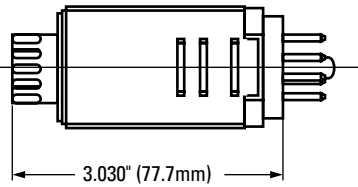
Dimensions

Dimensions in inches (mm)

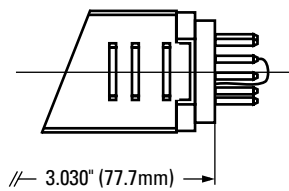
Front View



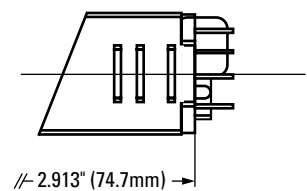
8-Pin Terminal



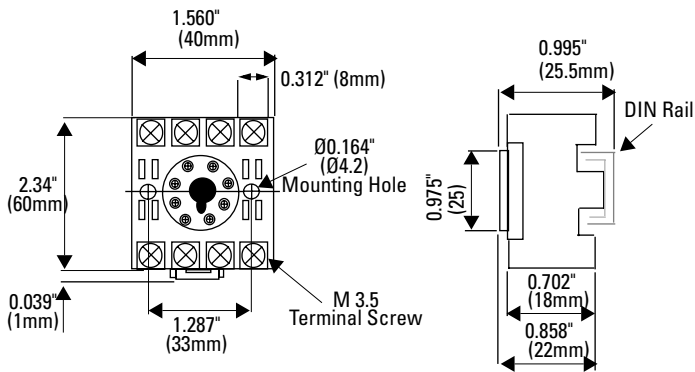
11-Pin Terminal



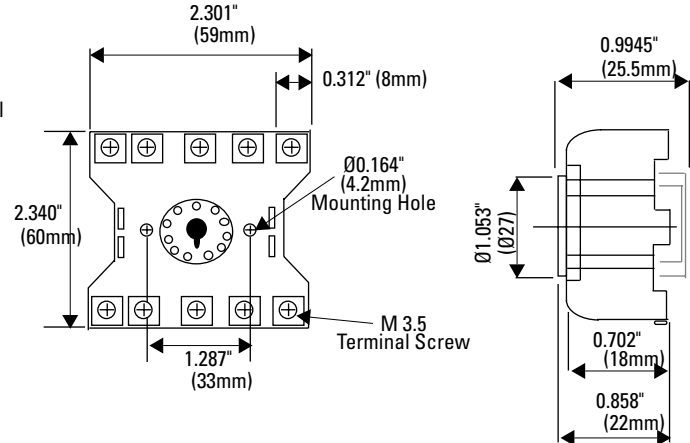
11-Blade Terminal



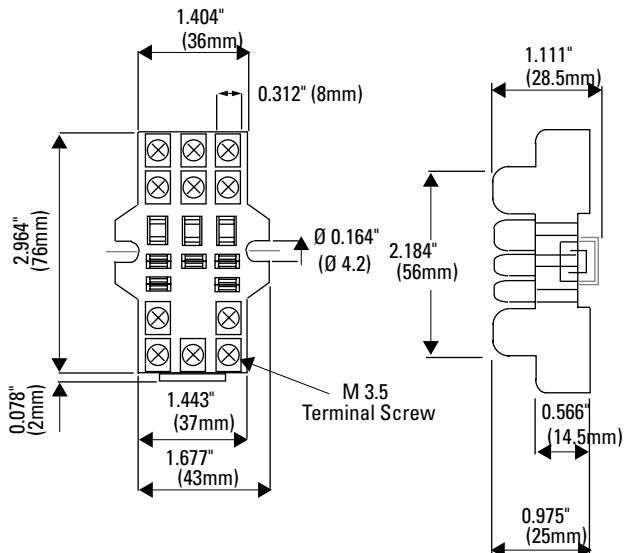
SR2P-06 Socket



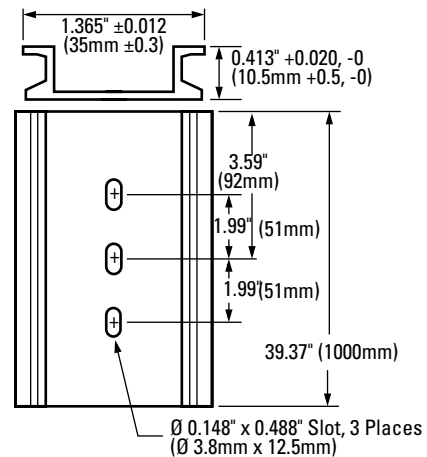
SR3P-06 Socket



SR3B-05 Socket



BNDN1000 DIN Rail



General Instructions for All Timer Series

Load Current

With inductive, capacitive, and incandescent lamp loads, inrush current more than 10 times the rated current may cause welded contacts and other undesired effects. The inrush current and steady-state current must be taken into consideration when specifying a timer.

Contact Protection

Switching an inductive load generates a counter-electromotive force (back EMF) in the coil. The back EMF will cause arcing, which may shorten the contact life and cause imperfect contact. Application of a protection circuit is recommended to safeguard the contacts.

Temperature and Humidity

Use the timer within the operating temperature and operating humidity ranges and prevent freezing or condensation. After the timer has been stored below its operating temperature, leave the timer at room temperature for a sufficient period of time to allow it to return to operating temperatures before use.

Environment

Avoid contact between the timer and sulfurous or ammonia gases, organic solvents (alcohol, benzene, thinner, etc.), strong alkaline substances, or strong acids. Do not use the timer in an environment where such substances are prevalent. Do not allow water to run or splash on the timer.

Vibration and Shock

Excessive vibration or shocks can cause the output contacts to bounce, the timer should be used only within the operating extremes for vibration and shock resistance. In applications with significant vibration or shock, use of hold down springs or clips is recommended to secure a timer to its socket.

Time Setting

The time range is calibrated at its maximum time scale; so it is desirable to use the timer at a setting as close to its maximum time scale as possible. For a more accurate time delay, adjust the control knob by measuring the operating time with a watch before application.

Input Contacts

Use mechanical contact switch or relay to supply power to the timer. When driving the timer with a solid-state output device (such as a two-wire proximity switch, photoelectric switch, or solid-state relay), malfunction may be caused by leakage current from the solid-state device. Since AC types comprise a capacitive load, the SSR dielectric strength should be two or more times the power voltage when switching the timer power using an SSR.

Generally, it is desirable to use mechanical contacts whenever possible to apply power to a timer or its signal inputs. When using solid state devices, be cautious of inrushes and back-EMF that may exceed the ratings on such devices. Some timers are specially designed so that signal inputs switch at a lower voltage than is used to power the timer (models designated as "B" type).

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Timing Accuracy Formulas

Timing accuracies are calculated from the following formulas:

Repeat Error

$$= \pm \frac{1}{2} \times \frac{\text{Maximum Measured Value} - \text{Minimum Measured Value}}{\text{Maximum Scale Value}} \times 100\%$$

Voltage Error

$$= \pm \frac{T_v - T_r}{T_r} \times 100\%$$

T_v : Average of measured values at voltage V

T_r : Average of measured values at the rated voltage

Temperature Error

$$= \pm \frac{T_t - T_{20}}{T_{20}} \times 100\%$$

T_t : Average of measured values at $t^\circ\text{C}$

T_{20} : Average of measured values at 20°C

Setting Error

$$= \pm \frac{\text{Average of Measured Values} - \text{Set Value}}{\text{Maximum Scale Value}} \times 100\%$$



The maximum scale value of the GT3P equals the preset time for one cycle.