












# Timer (Selection Guide)

| Classification                        |                        | GT3 Series Multi-function Timers  |  |  |   |   |
|---------------------------------------|------------------------|---|--|--|---|---|
|                                       |                        | Multi-mode (Analog Setting)   |  | OFF Delay<br>(8-pin Terminal)  | Star-Delta<br>(8-pin Terminal)  | Twin-Timer<br>(8-pin Terminal)  |
|                                       |                        | 8-pin   | With Inputs<br>(11-pin)  |  |   |   |
| Part No.<br>(Rated voltage code in □) |                        | (1) GT3A-1 □<br>(2) GT3A-2 □<br>(3) GT3A-3 □  | (4) GT3A-4 □<br>(5) GT3A-5 □<br>(6) GT3A-6 □   | (1) GT3F-1 □<br>(2) GT3F-2 □   | (1) GT3S-1 □<br>(2) GT3S-2 □  | (1) GT3W-A □  |
| Shape                                 |                        |    |   |         |                  |    |
| Operation System                      |                        | Solid-state CMOS circuitry  |  | Solid-state CMOS circuitry   |   |   |
| Operation Mode                        |                        | ON Delay<br>Interval ON<br>Cycle<br>Cycle ON  | (4) ON Delay, Cycle,<br>Signal ON/OFF Delay,<br>Signal OFF Delay<br>(5) Interval ON, One Shot<br>Cycle, Signal ON/<br>OFF Delay, Signal OFF<br>Delay<br>(6) One Shot, One Shot<br>ON Delay, One Shot,<br>Signal ON/OFF Delay | (1) Power OFF Delay<br>(with reset input)<br>(2) Power OFF Delay                         | Star-Delta  | (1) Sequential Start,<br>Coarse/Fine Adjust-<br>ment, Instantaneous<br>Cycle, Cycle Inver-<br>sion, Interval ON,<br>Interval ON Delay,<br>Sequential Interval |
| Time Ranges                           |                        | 0.1 sec to 180 hours  |  | 0.1 sec to 600 sec   | Star: 0.05 to 100 sec<br>Star-Delta: 0.05 sec<br>0.1 sec<br>0.25 sec<br>0.5 sec                     | 0.1 sec to 6 hours<br>0.1 sec to 300 hours  |
| Contact                               |                        | (1) Delayed SPDT<br>(2) Delayed SPDT<br>+ Instantaneous<br>SPDT<br>(3) Delayed DPDT   | Delayed DPDT<br>(11-pin)   | (1) Delayed SPDT<br>(2) Delayed DPDT   | (1) Delayed = Star:1NO,<br>Delta:1NO<br>(2) Delayed = Star:1NO,<br>Delta:1NO<br>Instantaneous = 1NO | Delayed SPDT +<br>Delayed SPDT  |
| Output                                |                        | (1)(2)<br>240V AC, 3A<br>120V AC/30V DC, 5A<br>(resistive load)   | (3)(4)(5)(6)<br>240V AC/24V DC, 5A<br>(resistive load)   | (1) 250V AC/24V DC,<br>5A (resistive load)<br>(2) 250V AC/24V DC,<br>3A (resistive load) | 250V AC/30V DC, 5A<br>(resistive load)<br>250V AC, 1.5A/30V<br>DC, 2A (inductive<br>load)           | 240V AC, 3A<br>120V AC/30V DC, 5A<br>(resistive load)   |
| Timing<br>Accu-<br>racy               | Repeat Error           | ±0.2%, ±10 ms (Note)  |  | ±0.2%, ±10 ms (Note)   | ±0.2%, ±10 ms (Note)  | ±0.2%, ±10 ms (Note)  |
|                                       | Setting Error          | ±10%  |  | ±10%   | ±10%  | ±10%  |
|                                       | Voltage Error          | ±0.2%, ±10 ms (Note)  |  | ±0.2%, ±10 ms (Note)   | ±0.2%, ±30 ms (Note)  | ±0.2%, ±10 ms (Note)  |
|                                       | Temperature Er-<br>ror | ±0.2%, ±10 ms (Note)  |  | ±0.2%, ±10 ms (Note)   | ±0.2%, ±10 ms (Note)  | ±0.2%, ±10 ms (Note)  |
| Reset Time                            |                        | 60 ms maximum   |  | –  | 500 ms maximum  | 60 ms maximum   |
| Rated Voltage                         |                        | 100 to 240V AC (50/60Hz)<br>24V AC (50/60Hz)/24V DC   |  | 100 to 240V AC<br>(50/60Hz)<br>24V AC (50/60Hz)/24V DC                                   | 100 to 240V AC<br>(50/60Hz)   | 100 to 240V AC<br>(50/60Hz) 24V AC<br>(50/60Hz)/24V DC  |
| External Connection                   |                        | <ul style="list-style-type: none"> <li>Pin Terminals</li> <li>Socket (DIN rail mount screw terminal, panel mount screw terminal, solder terminal)</li> <li>Snap Mounting Adapter</li> </ul> |  |  |   |   |
| Life                                  | Mechanical             | 20,000,000 operations minimum   |  | 3,000,000<br>operations minimum  | 20,000,000<br>operations minimum  | 20,000,000<br>operations minimum  |
|                                       | Electrical             | 100,000 operations minimum  |  | 100,000 operations<br>minimum  | 100,000 operations<br>minimum   | 100,000 operations<br>minimum   |
| Input                                 |                        | –   | No-voltage contact<br>inputs/Transistor inputs<br>24V DC, 1 mA maximum   | (1) No-voltage contact<br>inputs/Transistor<br>6V DC, 0.6 mA maxi-<br>mum                | –   | –   |
| Power Consumption<br>(Approx.)        |                        | 4.0VA (Delayed DPDT, 200V AC, 60Hz)<br>0.7W (Delayed DPDT, 24V DC)  |  | 2.3VA (100V AC, 60Hz)<br>0.2W (24V DC)   | 4.0VA (200V AC, 60Hz)   | 5.1VA (200V AC, 60Hz)<br>0.9W (24V DC)  |
| Operating Temperature                 |                        | –10 to +50°C (no freezing)  |  |  |   |   |
| Operating Humidity                    |                        | 35 to 85% RH (no condensation)  |  |  |   |   |
| Storage Temperature                   |                        | –30 to +70°C (no freezing)  |  |  |   |   |
| Storage Humidity                      |                        | 35 to 85% RH (no condensation)  |  |  |   |   |
| Dimensions (Body)(mm)                 |                        | 40H × 36W × 72.2D   |  | 40H × 36W × 72.2D  | 40H × 36W × 72.2D   | 40H × 36W × 70D   |
| Weight (Approx.)                      |                        | (1)63g (2)73g (3)79g  |  | 80g  | (1)68g (2)75g   | 73g   |
| Standards                             |                        | UL, c-UL, CE  |  | UL, c-UL, CE   | UL, c-UL, CE  | UL, c-UL, CE  |
| Page                                  |                        | 5   |  | 7  | 11  | 13  |
| Page                                  |                        | 5   |  | 7  | 11  | 13  |

Note: The largest value becomes the error against a preset value depending on the time range.

# Timer (Selection Guide)



| GT5 Series Miniature Electronic Timers   |   |
|--|---|
| GT5Y<br>(Solder Terminal)  | GT5P<br>(8-pin Terminal)  |
| (1) GT5Y-2S [ * ]<br>(2) GT5Y-4S [ * ]<br>Operation mode, time range,<br>and rated voltage code in [ * ]   | (1) GT5P [ * ]<br>Operation mode, time range,<br>and rated voltage code in [ * ]  |
|   |    |
| RC oscillator  |   |
| (1)(2) ON Delay, Interval, or<br>Cycle available on both types   | ON Delay, Cycle, or One Shot<br>available   |
| <ul style="list-style-type: none"> <li>On Delay: 0.1 sec to 60 min</li> <li>Interval: 0.1 sec to 10 min</li> <li>Cycle: 0.1 sec to 10 min</li> </ul>           | <ul style="list-style-type: none"> <li>On Delay: 0.1 sec to 10 min</li> <li>Cycle: 0.1 sec to 10 sec</li> <li>One Shot: 0.1 sec to 10 sec</li> </ul>        |
| (1) Delayed DPDT<br>(2) Delayed 4PDT   | Delayed SPDT  |
| (1) 220V AC/30V DC, 5A<br>(resistive load)<br>(2) 220V AC/30V DC, 3A<br>(resistive load)   | 240V AC, 3A<br>120V AC/30V DC, 5A<br>(resistive load)   |
| ±0.2%, ±20 ms (Note)   | ±0.2%, ±10 ms (Note)  |
| ±10% maximum   | ±10% maximum  |
| ±0.5%, ±20 ms (Note)   | ±0.5%, ±20 ms (Note)  |
| ±3% maximum  | ±3% maximum   |
| 100 ms maximum   | 100 ms maximum  |
| 100 to 120V AC,<br>200 to 240V AC (50/60Hz),<br>12/24V DC  | 100 to 120V AC,<br>200 to 240V AC (50/60Hz),<br>12V DC, 24V AC (50/60Hz)  |
| <ul style="list-style-type: none"> <li>Solder Terminal</li> <li>Socket { DIN Rail Mount Screw Terminal<br/>Panel Mount Solder<br/>PC Board Terminal</li> </ul> | <ul style="list-style-type: none"> <li>Pin Terminal</li> <li>Socket { DIN Rail Mount Screw Terminal<br/>Panel Mount Solder<br/>Wrapping Terminal</li> </ul> |
| 50,000,000 operations<br>minimum   | 20,000,000 operations<br>minimum  |
| (1) 500,000 operations minimum<br>(2) 200,000 operations minimum   | 100,000 operations minimum  |
| -  | -   |
| 1.6VA (100V AC, 60Hz)<br>1.4VA (200V AC, 60Hz)<br>1.0W (24V DC)  | <ul style="list-style-type: none"> <li>Excluding One Shot</li> <li>2.3VA (100V AC, 60Hz)</li> <li>3.9VA (200V AC, 60Hz)</li> <li>0.5W (24V DC)</li> </ul>   |
| -10 to +50°C (no freezing)   | -10 to +50°C (no freezing)  |
| 35 to 85% RH (no condensation)   | 35 to 85% RH (no condensation)  |
| -30 to +80°C (no freezing)   | -30 to +70°C (no freezing)  |
| 35 to 85% RH (no condensation)   | 35 to 85% RH (no condensation)  |
| 27.5H × 21W × 58.6D  | 36H × 29W × 69D   |
| 50g  | 49g   |
| UL, c-UL, CE   | UL, CSA, CE   |
| 23   | 25  |

| GE1A Series Electronic Timers   |  |
|---|--|
| GE1A-B  | GE1A-C   |
| 4 different time ranges   |  |
| GE1A①②③   | GE1A①②③  |
| ①Contact code<br>②Time range code<br>③Rated voltage code  | ①Contact code<br>②Time range code<br>③Rated voltage code   |
|   |   |
| RC oscillator   |  |
| ON delay<br>(Instantaneous contact)   | ON delay   |
| 10H (0.1 min to 10 hours)<br>30H (0.3 min to 30 hours)  |  |
| Delayed + Instantaneous   | Delayed  |
| 240V AC/5A, 24V DC/5A<br>(resistive load)   |  |
| ±0.2% ±10 ms maximum  |  |
| ±10% maximum  |  |
| ±0.5% ±10 ms maximum  |  |
| ±3% maximum   |  |
| 100 ms minimum  |  |
| 100 to 110V AC, 200 to 200V AC, 220 to 240V AC, 24V AC/DC   |  |
| <ul style="list-style-type: none"> <li>Octal Pin Terminal</li> <li>Socket (Din rail mount socket, Panel mount socket, PC board mount socket)</li> </ul>                     |  |
| GE1A-B: 10,000,000 operations minimum<br>GE1A-C: 5,000,000 operations minimum   |  |
| 100,000 operations minimum  |  |
| -   |  |
| 7.7 VA, 6.6 VA (220V AC, 60/50Hz)<br>7.0 VA, 6.0 VA (200V AC, 60/50Hz)<br>3.8 VA, 3.3 VA (110V AC, 60/50Hz)<br>3.5 VA, 3.0 VA (100V AC, 60/50Hz)<br>1.6 VA/1.0W (24V AC/DC) | 8.0 VA, 7.0 VA (220V AC, 60/50Hz)<br>8.0 VA, 7.0 VA (200V AC, 60/50Hz)<br>3.5 VA, 3.0 VA (110V AC, 60/50Hz)<br>3.5 VA, 3.0 VA (100V AC, 60/50Hz)<br>2.0 VA/ 0.8W (24V AC/DC) |
| -   |  |
| -   |  |
| -   |  |
| -   |  |
| 48H × 48W × 95.2D   |  |
| 101g  | 95g  |
| UL, c-UL, TÜV, CE   |  |
| 30  |  |

# GT3 series Multi-function Timers

## Wide Variety Including OFF Delay and Star-Delta

- Universal AC power voltage 100 to 240V AC
- Solid-state CMOS circuitry ensures high accuracy
- Easy-to-view operation indicator
- DIN 48mm square panel mount adapter for snap mounting
- Complies with safety standards. UL/c-UL listed.
- Complies with EN standard

| Applicable Standards     | Mark  | File No. or Organization          |
|--------------------------|---|-----------------------------------|
| UL508<br>CSA C22.2 No.14 |  | UL/c-UL Listed<br>File No. E55996 |
| EN61812-1                |  | EU Low Voltage Directive          |

[Multi-mode]

- Instantaneous operation at zero setting
- Multi-mode, and universal AC power voltage cover 96 types by one timer



### Multi-Mode (Analog Setting)

For details, see pages 5 to 10.

| Operation Mode   | Model         | Contact                              | Time Range              | Output                                | Operating Voltage | Part No.   |
|--|---------------|--------------------------------------|-------------------------|---------------------------------------|-------------------|------------|
| On Delay<br>Interval ON<br>Cycle OFF<br>Cycle ON                         | GT3A-1        | Delayed SPDT                         | 0.1 sec to<br>180 hours | 240V AC, 3A<br>120V AC/<br>30V DC, 5A | 100 to 240V AC    | GT3A-1AF20 |
|  | GT3A-2        | Delayed SPDT +<br>Instantaneous SPDT |                         |                                       | 100 to 240V AC    | GT3A-2AF20 |
|  |               |                                      |                         |                                       | 24V AC/24V DC     | GT3A-2AD24 |
| GT3A-3   | Delayed DPDT  | 240V AC/<br>24V DC, 5A               | 100 to 240V AC          | GT3A-3AF20                            |                   |            |
| ON Delay<br>Cycle<br>Signal ON/OFF Delay<br>Signal OFF Delay             | With<br>Input | GT3A-4                               | 0.1 sec to<br>180 hours | 240V AC/<br>24V DC, 5A                | 100 to 240V AC    | GT3A-4AF20 |
|  |               |                                      |                         |                                       | 24V AC/24V DC     | GT3A-4AD24 |
| Interval ON<br>One Shot Cycle<br>Signal ON/OFF Delay<br>Signal OFF Delay | With<br>Input | GT3A-5                               | 0.1 sec to<br>180 hours | 240V AC/<br>24V DC, 5A                | 100 to 240V AC    | GT3A-5AF20 |
|  |               |                                      |                         |                                       | 24V AC/24V DC     | GT3A-5AD24 |
| One Shot<br>One Shot ON Delay<br>One Shot<br>Signal ON/OFF Delay         | With<br>Input | GT3A-6                               | 0.1 sec to<br>180 hours | 240V AC/<br>24V DC, 5A                | 100 to 240V AC    | GT3A-6AF20 |
|  |               |                                      |                         |                                       | 24V AC/24V DC     | GT3A-6AD24 |

### OFF Delay

For details, see pages 11 to 12.

| Operation Mode  | Model                  | Contact | Time Range            | Output                 | Operating Voltage | Part No.   |
|-----------------|------------------------|---------|-----------------------|------------------------|-------------------|------------|
| Power OFF Delay | With<br>Reset Input    | GT3F-1  | 0.1 sec to<br>600 sec | 250V AC/<br>24V DC, 5A | 100 to 240V AC    | GT3F-1AF20 |
|                 |                        |         |                       |                        | 24V AC/24V DC     | GT3F-1AD24 |
| Power OFF Delay | Without<br>Reset Input | GT3F-2  | 0.1 sec to<br>600 sec | 250V AC/<br>24V DC, 3A | 100 to 240V AC    | GT3F-2AF20 |
|                 |                        |         |                       |                        | 24V AC/24V DC     | GT3F-2AD24 |

### Star-Delta

For details, see pages 13 to 14.

| Operation Mode | Model  | Contact   | Time Range                                    | Output                 | Operating Voltage | Part No.   |
|----------------|--------|---|---|------------------------|-------------------|------------|
| Star-Delta     | GT3S-1 | Delayed Star: SPST-NO<br>Delta: SPST-NO                           | Star: 0.05 to 100 sec<br>Star-Delta: 0.05 sec | 250V AC/<br>30V DC, 5A | 100 to 240V AC    | GT3S-1AF20 |
|                | GT3S-2 | Delayed Star: SPST-NO<br>Delta: SPST-NO<br>Instantaneous: SPST-NO | 0.1 sec<br>0.25 sec<br>0.5 sec                |                        |                   | GT3S-2AF20 |

### Twin-Timer

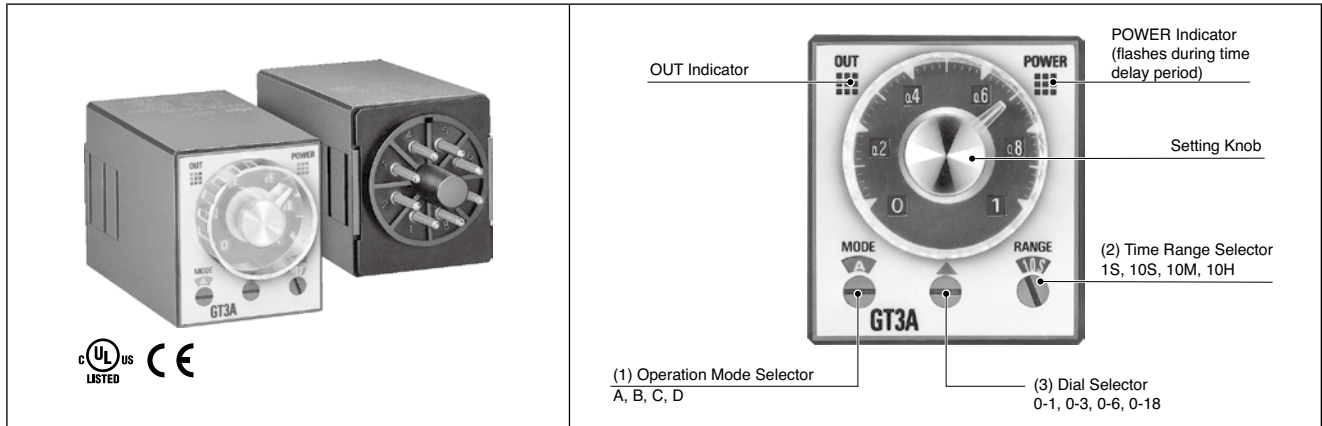
For details, see pages 15 to 16.

| Operation Mode   | Model  | Contact  | Time Range   | Output         | Operating Voltage | Part No.      |
|--|--------|--|--|----------------|-------------------|---------------|
| Serial Activation<br>Coarse/Fine Adjust-<br>ment Setting<br>Instantaneous<br>Cycle<br>Cycle<br>Cycle Inversion<br>Interval ON<br>Interval ON Delay<br>Serial Interval ON | GT3W-A | Delayed SPDT<br>+<br>Delayed SPDT                  | T1: 0.1 sec to 6 hours<br>T2: 0.1 sec to 6 hours     | 240V AC, 3A    | 100 to 240V AC    | GT3W-A11AF20N |
|  |        |  |  |                | 24V AC/24V DC     | GT3W-A11AD24N |
|  |        |  | T1: 0.1 sec to 6 hours<br>T2: 0.1 sec to 300 hours   | 100 to 240V AC | GT3W-A13AF20N     |               |
|  |        |  |  | 24V AC/24V DC  | GT3W-A13AD24N     |               |
|  |        | T1: 0.1 sec to 300 hours<br>T2: 0.1 sec to 6 hours | 120V AC/<br>30V DC, 5A                               | 100 to 240V AC | GT3W-A31AF20N     |               |
|  |        |  |  | 24V AC/24V DC  | GT3W-A31AD24N     |               |
|  |        |  | T1: 0.1 sec to 300 hours<br>T2: 0.1 sec to 300 hours | 100 to 240V AC | GT3W-A33AF20N     |               |
|  |        |  |  | 24V AC/24V DC  | GT3W-A33AD24N     |               |

# GT3 Series Multi-Mode (Analog Setting)

## GT3A-1, -2, -3 (8-Pin)

Four Selectable Operation Modes in One Timer: ON Delay, Interval ON, Cycle, Cycle ON



| (1) Operation Mode   | Rated Voltage  | Time Ranges   | Output  | Contact                              | Part No.   |
|--|----------------|---|---|--------------------------------------|------------|
| A: ON Delay<br>B: Interval ON<br>C: Cycle OFF<br>D: Cycle ON | 100 to 240V AC | 0.1 sec to 180 hours<br>See Time Ranges<br>for details. | 240V AC, 3A<br>120V AC/30V DC, 5A<br>(resistive load) | Delayed SPDT                         | GT3A-1AF20 |
|  | 100 to 240V AC |   |   | Delayed SPDT +<br>Instantaneous SPDT | GT3A-2AF20 |
|  | 24V AC/24V DC  |   | 240V AC/24V DC, 5A<br>(resistive load)                | Delayed DPDT                         | GT3A-2AD24 |
|  | 100 to 240V AC |   |   |                                      | GT3A-3AF20 |
|  | 24V AC/24V DC  |   |   | GT3A-3AD24                           |            |

### Time Ranges

| (2) Range | (3) Dial          |                    |                    |                      |
|-----------|-------------------|--------------------|--------------------|----------------------|
|           | 0 - 1             | 0 - 3              | 0 - 6              | 0 - 18               |
| 1S        | 0.1 sec to 1 sec  | 0.1 sec to 3 sec   | 0.1 sec to 6 sec   | 0.2 sec to 18 sec    |
| 10S       | 0.1 sec to 10 sec | 0.3 sec to 30 sec  | 0.6 sec to 60 sec  | 1.8 sec to 180 sec   |
| 10M       | 6 sec to 10 min   | 18 sec to 30 min   | 36 sec to 60 min   | 108 sec to 180 min   |
| 10H       | 6 min to 10 hours | 18 min to 30 hours | 36 min to 60 hours | 108 min to 180 hours |

### Contact Ratings

| Model                       | GT3A-1, GT3A-2  | GT3A-3                                  |
|-----------------------------|---|---|
| Rated Load                  | 240V AC, 3A<br>(resistive load)<br>120V AC/30V DC, 5A<br>(resistive load) | 240V AC/24V DC, 5A<br>(resistive load)  |
| Maximum Switching Power     | AC: 960VA<br>DC: 120W   | AC: 1200VA<br>DC: 120W                  |
| Maximum Switching Voltage   | 250V AC/150V DC   |   |
| Maximum Switching Current   | 5A  |   |
| Maximum Switching Frequency | 600 operations/hour   | 600 operations/hour                     |
| Minimum Applicable Load     | 5V DC, 10 mA (reference value)  |   |
| External Protection Element | Fuse 250V, 5A   |   |
| Life                        | Electrical  | 100,000 operations minimum (rated load) |
|                             | Mechanical  | 20,000,000 operations minimum           |

### General Specifications

| Model                       | GT3A-1  | GT3A-2                                      | GT3A-3     |            |       |
|-----------------------------|---|---|------------|------------|-------|
| Operation System            | Solid-state CMOS circuitry  |   |            |            |       |
| Operation                   | Multi-Mode  |   |            |            |       |
| Time Range                  | 0.1 sec to 180 hours  |   |            |            |       |
| Pollution Degree            | 2 (IEC60664-1)  |   |            |            |       |
| Overvoltage Category        | III (IEC60664-1)  |   |            |            |       |
| Rated Voltage               | AF20  | 100 to 240V AC (50/60Hz)                    |            |            |       |
|                             | AD24  | 24V AC (50/60Hz)/24V DC                     |            |            |       |
| Voltage Range               | AF20  | 85 to 264V AC (50/60Hz)                     |            |            |       |
|                             | AD24  | 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC |            |            |       |
| Reset Voltage               | Rated voltage × 10% minimum   |   |            |            |       |
| Operating Temperature       | -10 to +50°C (no freezing)  |   |            |            |       |
| Storage Temperature         | -30 to +70°C (no freezing)  |   |            |            |       |
| Operating Humidity          | 35 to 85% RH (no condensation)  |   |            |            |       |
| Storage Humidity            | 35 to 85% RH (no condensation)  |   |            |            |       |
| Altitude                    | 0 to 2000m (operation)<br>0 to 3000m (transportation)   |   |            |            |       |
| Reset Time                  | 60 ms maximum   |   |            |            |       |
| Repeat Error                | ±0.2%, ±10 ms maximum (Note)  |   |            |            |       |
| Voltage Error               | ±0.2%, ±10 ms maximum (Note)  |   |            |            |       |
| Temperature Error           | ±0.2%, ±10 ms maximum (Note)  |   |            |            |       |
| Setting Error               | ±10% maximum  |   |            |            |       |
| Insulation Resistance       | 100 MΩ minimum (500V DC megger)   |   |            |            |       |
| Dielectric Strength         | Between power and output terminals:<br>2000V AC, 1 minute   |   |            |            |       |
|                             | Between contacts of different poles:<br>2000V AC, 1 minute  |   |            |            |       |
|                             | Between contacts of the same pole:<br>750V AC, 1 minute (GT3A-1, 2)<br>1000V AC, 1 minute (GT3A-3)  |   |            |            |       |
| Vibration Resistance        | GT3A-1/-2/-3: Damage limits: 10 to 55 Hz,<br>amplitude 0.75mm, 2 hours each in 3 directions   |   |            |            |       |
|                             | GT3A-1/-2: Operating extremes: 10 to 55 Hz,<br>amplitude 0.75mm, 2 hours each in 3 directions<br>GT3A-3: Operating extremes: 10 to 55 Hz,<br>amplitude 0.41mm, 2 hours each in 3 directions |   |            |            |       |
| Shock Resistance            | Operating extremes: 98 m/s <sup>2</sup> ,<br>Damage limits: 490 m/s <sup>2</sup> ,<br>3 shocks each in 6 directions   |   |            |            |       |
| Degree of Protection        | IP40 (timer), IP20 (socket) (IEC60529)  |   |            |            |       |
| Power Consumption (approx.) | AF20  | 100V AC<br>60Hz                             | 2.9VA      | 2.5VA      | 2.2VA |
|                             |   | 200V AC<br>60Hz                             | 4.7VA      | 4.3VA      | 4.0VA |
|                             | AD24 (AC/DC)  | 1.3VA/0.5W                                  | 2.0VA/0.8W | 1.8VA/0.7W |       |
| Dimensions                  | 40H × 36W × 72.2D mm  |   |            |            |       |
| Weight (approx.)            | 63g   | 73g   | 79g        |            |       |

Note: The largest value becomes the error against a preset value depending on the time range.

# GT3 Series Multi-Mode (Analog Setting)

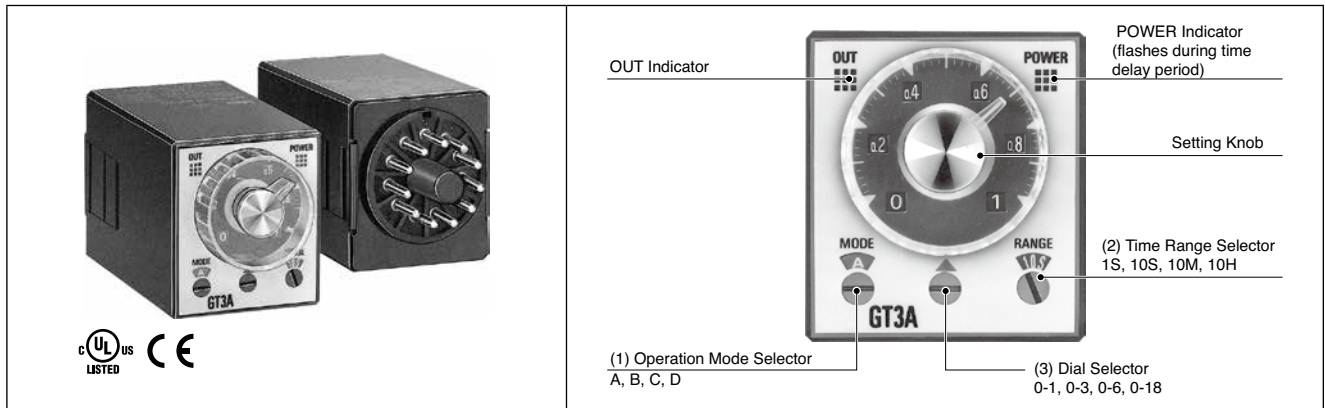
## Operation Chart

|  |                 | Operation Chart                 |           |  |                                   |  |  |                                 |  |  |  |
|--|-----------------|---------------------------------|-----------|--|-----------------------------------|--|--|---------------------------------|--|--|--|
| Part No.   |                 | GT3A-1 <input type="checkbox"/> |           |  | GT3A-2 <input type="checkbox"/>   |  |  | GT3A-3 <input type="checkbox"/> |  |  |  |
| Contact  |                 | Delayed SPDT                    |           |  | Delayed SPDT + Instantaneous SPDT |  |  | Delayed DPDT                    |  |  |  |
| Internal Connection  |                 |                                 |           |  |                                   |  |  |                                 |  |  |  |
| Operation Mode Selection   |                 |                                 |           |  |                                   |  |  |                                 |  |  |  |
| <b>On Delay</b><br><br><b>MODE</b><br><br>Set timer for desired delay, apply power to coil. Contacts transfer after preset time has elapsed, and remain in transferred position until timer is reset. Reset occurs with removal of power.  | Item            | Terminal No.                    | Operation |  |                                   |  |  |                                 |  |  |  |
|  | Power           | 2-7                             |           |  |                                   |  |  |                                 |  |  |  |
|  | Delayed Contact | 5-8 (NC)<br>6-8 (NO)            |           |  |                                   |  |  |                                 |  |  |  |
|  | Indicator       | POWER<br>OUT                    |           |  |                                   |  |  |                                 |  |  |  |
| <b>Interval ON</b><br><br><b>MODE</b><br><br>Set timer for desired delay, apply power to coil. Contacts transfer immediately, and return to original position after preset time has elapsed. Reset occurs with removal of power.   | Item            | Terminal No.                    | Operation |  |                                   |  |  |                                 |  |  |  |
|  | Power           | 2-7                             |           |  |                                   |  |  |                                 |  |  |  |
|  | Delayed Contact | 5-8 (NC)<br>6-8 (NO)            |           |  |                                   |  |  |                                 |  |  |  |
|  | Indicator       | POWER<br>OUT                    |           |  |                                   |  |  |                                 |  |  |  |
| <b>Cycle OFF (OFF start)</b><br><br><b>MODE</b><br><br>Set timer for desired delay, apply power to coil. First transfer of contacts occurs after preset delay has elapsed, after the next elapse of preset delay contacts return to original position. The timer now cycles between on and off as long as power is applied. The ratio is 1:1. Time Off = Time On | Item            | Terminal No.                    | Operation |  |                                   |  |  |                                 |  |  |  |
|  | Power           | 2-7                             |           |  |                                   |  |  |                                 |  |  |  |
|  | Delayed Contact | 5-8 (NC)<br>6-8 (NO)            |           |  |                                   |  |  |                                 |  |  |  |
|  | Indicator       | POWER<br>OUT                    |           |  |                                   |  |  |                                 |  |  |  |
| <b>Cycle ON (ON start)</b><br><br><b>MODE</b><br><br>Functions in same manner as Mode C, with the exception that first transfer of contacts occurs as soon as power is applied. The ratio is 1:1. Time Off = Time On   | Item            | Terminal No.                    | Operation |  |                                   |  |  |                                 |  |  |  |
|  | Power           | 2-7                             |           |  |                                   |  |  |                                 |  |  |  |
|  | Delayed Contact | 5-8 (NC)<br>6-8 (NO)            |           |  |                                   |  |  |                                 |  |  |  |
|  | Indicator       | POWER<br>OUT                    |           |  |                                   |  |  |                                 |  |  |  |

# GT3 Series Multi-Mode (Analog Setting)

## GT3A-4, -5, -6 (11-Pin)

Four Selectable Operation Modes with Start, Gate, and Reset Inputs for External Control



| (1) Operation Mode  | Rated Voltage Code | Time Ranges   | Output  | Contact      | Input                  | Part No.   |
|---|--------------------|---|---|--------------|------------------------|------------|
| A: ON Delay      B: Cycle OFF<br>C: Signal ON Delay    D: Signal OFF Delay              | 100 to 240V AC     | 0.1 sec to 180 hours<br>See Time Ranges for details | 240V AC, 5A<br>24V DC, 5A<br>(resistive load) | Delayed DPDT | Start<br>Reset<br>Gate | GT3A-4AF20 |
|   | 24V AC/24V DC      |   |   |              |                        | GT3A-4AD24 |
| A: Interval ON      B: One-Shot Cycle,<br>C: Signal ON/OFF Delay    D: Signal OFF Delay | 100 to 240V AC     |   |   |              |                        | GT3A-5AF20 |
|   | 24V AC/24V DC      |   |   |              |                        | GT3A-5AD24 |
| A: One-Shot    B: One-Shot ON Delay<br>C: One-Shot    D: Signal ON/OFF Delay            | 100 to 240V AC     |   |   |              |                        | GT3A-6AF20 |
|   | 24V AC/24V DC      |   |   |              |                        | GT3A-6AD24 |

## Time Ranges

| (2) Range | (3) Dial          |                    |                    |                      |
|-----------|-------------------|--------------------|--------------------|----------------------|
|           | 0 - 1             | 0 - 3              | 0 - 6              | 0 - 18               |
| 1S        | 0.1 sec to 1 sec  | 0.1 sec to 3 sec   | 0.1 sec to 6 sec   | 0.2 sec to 18 sec    |
| 10S       | 0.1 sec to 10 sec | 0.3 sec to 30 sec  | 0.6 sec to 60 sec  | 1.8 sec to 180 sec   |
| 10M       | 6 sec to 10 min   | 18 sec to 30 min   | 36 sec to 60 min   | 108 sec to 180 min   |
| 10H       | 6 min to 10 hours | 18 min to 30 hours | 36 min to 60 hours | 108 min to 180 hours |

## Contact Ratings

|                             |                                     |   |
|-----------------------------|-------------------------------------|---|
| Rated Load                  | 240V AC/24V DC, 5A (resistive load) |   |
| Maximum Switching Power     | AC: 1200VA<br>DC: 120W              |   |
| Maximum Switching Voltage   | 250V AC/150V DC                     |   |
| Maximum Switching Current   | 5A                                  |   |
| Maximum Switching Frequency | 600 operations/hour                 |   |
| Minimum Applicable Load     | 5V DC, 10 mA (reference value)      |   |
| External Protection Element | Fuse 250V, 5A                       |   |
| Life                        | Electrical                          | 100,000 operations minimum (rated load) |
|                             | Mechanical                          | 20,000,000 operations minimum           |

## Input Specifications

|             |   |   |
|-------------|---|---|
| Start Input | The start input initiates delayed operation and controls output status.                             | No-voltage contact inputs and NPN open collector transistor inputs are applicable.<br>24V DC, 1 mA maximum<br>Input response time:<br>50 ms maximum |
| Reset Input | When the reset input goes on (L level), the timer is reset to the original time (time at power-on). |   |
| Gate Input  | The time delay operation is suspended while the gate input is on (L level).                         |   |

## General Specifications

|                             |   |   |
|-----------------------------|---|---|
| Operation System            | Solid-state CMOS circuitry  |   |
| Operation                   | Multi-mode with inputs (11 pins)  |   |
| Time Range                  | 0.1 sec to 180 hours  |   |
| Pollution Degree            | 2 (IEC60664-1)  |   |
| Overvoltage Category        | III (IEC60664-1)  |   |
| Rated Voltage               | AF20  | 100 to 240V AC (50/60Hz)                      |
|                             | AD24  | 24V AC (50/60Hz)/24V DC                       |
| Voltage Range               | AF20  | 85 to 264V AC (50/60Hz)                       |
|                             | AD24  | 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC   |
| Reset Voltage               | Rated voltage × 10% minimum   |   |
| Operating Temperature       | -10 to +50°C (no freezing)  |   |
| Storage Temperature         | -30 to +70°C (no freezing)  |   |
| Operating Humidity          | 35 to 85% RH (no condensation)  |   |
| Storage Humidity            | 35 to 85% RH (no condensation)  |   |
| Altitude                    | 0 to 2000m (operation)<br>0 to 3000m (transportation)   |   |
| Reset Time                  | 60 ms maximum   |   |
| Repeat Error                | ±0.2%, ±10 ms (Note)  |   |
| Voltage Error               | ±0.2%, ±10 ms (Note)  |   |
| Temperature Error           | ±0.2%, ±10 ms (Note)  |   |
| Setting Error               | ±10% maximum  |   |
| Insulation Resistance       | 100MΩ minimum (500V DC megger)  |   |
| Dielectric Strength         | Between power and output terminals:<br>2000V AC, 1 minute   |   |
|                             | Between contacts of different poles:<br>2000V AC, 1 minute  |   |
|                             | Between contacts of the same pole:<br>1000V AC, 1 minute  |   |
| Vibration Resistance        | Damage Limits: 10 to 55 Hz, amplitude 0.75 mm, 2 hours each in 3 directions<br>Operating extremes: 10 to 55 Hz, amplitude 0.41mm, 2 hour each in 3 directions |   |
| Shock Resistance            | Operating extremes: 98 m/s <sup>2</sup><br>Damage limits: 490 m/s <sup>2</sup><br>3 shocks each in 6 directions   |   |
| Degree of Protection        | IP40 (timer), IP20 (socket) (IEC60529)  |   |
| Power Consumption (Approx.) | AF20  | 2.2VA (100V AC/60Hz),<br>4.1VA (200V AC/60Hz) |
|                             | AD24  | 1.8VA (AC)/0.7W (DC)                          |
| Dimensions                  | 40H × 36W × 72.2D mm  |   |
| Weight (approx.)            | 80g   |   |

Note: The largest value becomes the error against a preset value depending on the time range.

# GT3 Series Multi-Mode (Analog Setting)

## Operation Chart

GT3A-4

Note: While the gate input is on during time delay operation, the POWER indicator flashing slows down.

| Contact  |              | Operation Chart  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|--|--------------|--|--|------|--------------|-----------|-------|------|--------------------------|-------|-------|---------------------|-------|---------------------|------|---------------------|-----------------|----------|---------------------|----------|--------------------|-----------|---------------------|-----------|-------|--|-----|-----------------------|----------|--|--|
| Internal Connection  |              | Delayed DPDT   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  |              |  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| <p>Operation Mode Selection</p> <p>On Delay</p> <p>Power is applied to timer at all times. Set time for desired delay. When start input is supplied time delay starts, contacts transfer after preset time has elapsed. Contacts remain in transferred position until timer is reset.</p>  |              | <p>Note: T = Set time<br/>Ta = Shorter than set time<br/>T = T' + T''</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L [Pulse]</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L [Pulse]</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L [Pulse]</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td>9-11 (NO)</td> <td>[High during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Flashing, slows down during gate pulse]</td> </tr> <tr> <td>OUT</td> <td>[Pulsed during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>T, Ta, T', T''</td> </tr> </tbody> </table> |  | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L [Pulse] | Reset | 7-2 ON or L [Pulse] | Gate | 5-2 ON or L [Pulse] | Delayed Contact | 4-1 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | 9-11 (NO) | [High during delay] | Indicator | POWER | [Flashing, slows down during gate pulse] | OUT | [Pulsed during delay] | Set Time |  | T, Ta, T', T''   |
| Item   | Terminal No. | Operation  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Power  | 2-10         | [Continuous high signal]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Input  | Start        | 6-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Reset        | 7-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Gate         | 5-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Delayed Contact  | 4-1 (NC)     | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 3-1 (NO)     | [Low during delay]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 9-11 (NO)    | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Indicator  | POWER        | [Flashing, slows down during gate pulse]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | OUT          | [Pulsed during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Set Time   |              | T, Ta, T', T''   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| <p>Cycle</p> <p>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts transfer after preset time has elapsed and remain in transferred position until preset time elapses a second time. The timer will now continue to cycle in above manner until reset applied.</p>   |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L [Pulse]</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L [Pulse]</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L [Pulse]</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td>9-11 (NO)</td> <td>[High during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Flashing, slows down during gate pulse]</td> </tr> <tr> <td>OUT</td> <td>[Pulsed during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>T, T, T, T, T, T, T, Ta, T, T, T, T', T'', T, T, T, T, T</td> </tr> </tbody> </table>                                 |  | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L [Pulse] | Reset | 7-2 ON or L [Pulse] | Gate | 5-2 ON or L [Pulse] | Delayed Contact | 4-1 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | 9-11 (NO) | [High during delay] | Indicator | POWER | [Flashing, slows down during gate pulse] | OUT | [Pulsed during delay] | Set Time |  | T, T, T, T, T, T, T, Ta, T, T, T, T', T'', T, T, T, T, T |
| Item   | Terminal No. | Operation  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Power  | 2-10         | [Continuous high signal]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Input  | Start        | 6-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Reset        | 7-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Gate         | 5-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Delayed Contact  | 4-1 (NC)     | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 3-1 (NO)     | [Low during delay]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 9-11 (NO)    | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Indicator  | POWER        | [Flashing, slows down during gate pulse]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | OUT          | [Pulsed during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Set Time   |              | T, T, T, T, T, T, T, Ta, T, T, T, T', T'', T, T, T, T, T   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| <p>Signal ON/OFF Delay</p> <p>For this mode a maintained pushbutton is required for start input. Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts will transfer immediately. After preset time (with start input still present) contacts will transfer back to original position. Remove start signal, at this time contacts will again transfer. Contacts will transfer to original position after preset time. Timer is reset by initiation of reset input.</p> |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L [Pulse]</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L [Pulse]</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L [Pulse]</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td>9-11 (NO)</td> <td>[High during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Flashing, slows down during gate pulse]</td> </tr> <tr> <td>OUT</td> <td>[Pulsed during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>T, T, Ta, T, Ta, Ta, T, T', T'', Ta</td> </tr> </tbody> </table>  |  | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L [Pulse] | Reset | 7-2 ON or L [Pulse] | Gate | 5-2 ON or L [Pulse] | Delayed Contact | 4-1 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | 9-11 (NO) | [High during delay] | Indicator | POWER | [Flashing, slows down during gate pulse] | OUT | [Pulsed during delay] | Set Time |  | T, T, Ta, T, Ta, Ta, T, T', T'', Ta                      |
| Item   | Terminal No. | Operation  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Power  | 2-10         | [Continuous high signal]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Input  | Start        | 6-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Reset        | 7-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Gate         | 5-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Delayed Contact  | 4-1 (NC)     | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 3-1 (NO)     | [Low during delay]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 9-11 (NO)    | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Indicator  | POWER        | [Flashing, slows down during gate pulse]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | OUT          | [Pulsed during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Set Time   |              | T, T, Ta, T, Ta, Ta, T, T', T'', Ta  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| <p>Signal OFF Delay</p> <p>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. When start input is removed time delay starts. After preset time contacts transfer back to original position. Timer is reset by initiation of reset input.</p>  |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L [Pulse]</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L [Pulse]</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L [Pulse]</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td>9-11 (NO)</td> <td>[High during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Flashing, slows down during gate pulse]</td> </tr> <tr> <td>OUT</td> <td>[Pulsed during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>T, Ta, Ta, T, T', T''</td> </tr> </tbody> </table>  |  | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L [Pulse] | Reset | 7-2 ON or L [Pulse] | Gate | 5-2 ON or L [Pulse] | Delayed Contact | 4-1 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | 9-11 (NO) | [High during delay] | Indicator | POWER | [Flashing, slows down during gate pulse] | OUT | [Pulsed during delay] | Set Time |  | T, Ta, Ta, T, T', T''                                    |
| Item   | Terminal No. | Operation  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Power  | 2-10         | [Continuous high signal]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Input  | Start        | 6-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Reset        | 7-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | Gate         | 5-2 ON or L [Pulse]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Delayed Contact  | 4-1 (NC)     | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 3-1 (NO)     | [Low during delay]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | 9-11 (NO)    | [High during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Indicator  | POWER        | [Flashing, slows down during gate pulse]   |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
|  | OUT          | [Pulsed during delay]  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |
| Set Time   |              | T, Ta, Ta, T, T', T''  |  |      |              |           |       |      |                          |       |       |                     |       |                     |      |                     |                 |          |                     |          |                    |           |                     |           |       |  |     |                       |          |  |  |



# GT3 Series Multi-Mode (Analog Setting)

GT3A-5

| Contact             |              | Operation Chart   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|---------------------|--------------|---|------|--------------|-----------|-------|------|--------------------------|-------|-------|-------------|-------|-------------|------|-------------|-----------------|----------|---------------------|-----------|---------------------|----------|--------------------|-----------|-------|-----------------|-----|---------------------|----------|--|--|
|                     |              | Delayed DPDT  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Internal Connection |              | <p>Note: T = Set time<br/>                     Ta = Shorter than set time<br/> <math>T = T' + T''</math></p>  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     |              | Operation Mode Selection  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Interval ON         |              | <p>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. After preset delay contacts return to original position. Timer is reset by initiation of reset input.</p>  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>8-11 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Pulsed signal]</td> </tr> <tr> <td>OUT</td> <td>[High during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timing diagram with T, Ta, T', T'' markers]</td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L | Reset | 7-2 ON or L | Gate | 5-2 ON or L | Delayed Contact | 4-1 (NC) | [High during delay] | 8-11 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | Indicator | POWER | [Pulsed signal] | OUT | [High during delay] | Set Time |  | [Timing diagram with T, Ta, T', T'' markers] |
| Item                | Terminal No. | Operation   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Power               | 2-10         | [Continuous high signal]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Input               | Start        | 6-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Reset        | 7-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Gate         | 5-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Delayed Contact     | 4-1 (NC)     | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 8-11 (NC)    | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 3-1 (NO)     | [Low during delay]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Indicator           | POWER        | [Pulsed signal]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | OUT          | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Set Time            |              | [Timing diagram with T, Ta, T', T'' markers]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| One-Shot Cycle      |              | <p>Power is applied to timer at all times. Set timer for desired delay, initiate start input. After preset time has elapsed contacts will transfer. Contacts will transfer to their original position after preset time elapses a second time. Timer is reset by initiation of reset input.</p>   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>8-11 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Pulsed signal]</td> </tr> <tr> <td>OUT</td> <td>[High during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timing diagram with T, Ta, T', T'' markers]</td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L | Reset | 7-2 ON or L | Gate | 5-2 ON or L | Delayed Contact | 4-1 (NC) | [High during delay] | 8-11 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | Indicator | POWER | [Pulsed signal] | OUT | [High during delay] | Set Time |  | [Timing diagram with T, Ta, T', T'' markers] |
| Item                | Terminal No. | Operation   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Power               | 2-10         | [Continuous high signal]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Input               | Start        | 6-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Reset        | 7-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Gate         | 5-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Delayed Contact     | 4-1 (NC)     | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 8-11 (NC)    | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 3-1 (NO)     | [Low during delay]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Indicator           | POWER        | [Pulsed signal]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | OUT          | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Set Time            |              | [Timing diagram with T, Ta, T', T'' markers]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Signal ON/OFF Delay |              | <p>For this mode a maintained pushbutton is required for start input. Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts will transfer immediately. After preset time (with start input still present) contacts will transfer back to original position. Remove start signal, at this time contacts will again transfer. Contacts will transfer to original position after preset time. Timer is reset by initiation of reset input.</p>   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>8-11 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Pulsed signal]</td> </tr> <tr> <td>OUT</td> <td>[High during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timing diagram with T, Ta, T', T'' markers]</td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L | Reset | 7-2 ON or L | Gate | 5-2 ON or L | Delayed Contact | 4-1 (NC) | [High during delay] | 8-11 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | Indicator | POWER | [Pulsed signal] | OUT | [High during delay] | Set Time |  | [Timing diagram with T, Ta, T', T'' markers] |
| Item                | Terminal No. | Operation   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Power               | 2-10         | [Continuous high signal]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Input               | Start        | 6-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Reset        | 7-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Gate         | 5-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Delayed Contact     | 4-1 (NC)     | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 8-11 (NC)    | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 3-1 (NO)     | [Low during delay]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Indicator           | POWER        | [Pulsed signal]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | OUT          | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Set Time            |              | [Timing diagram with T, Ta, T', T'' markers]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Signal OFF Delay    |              | <p>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. When start input is removed time delay starts. After preset time contacts transfer back to original position. Timer is reset by initiation of reset input.</p>   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     |              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-10</td> <td>[Continuous high signal]</td> </tr> <tr> <td rowspan="3">Input</td> <td>Start</td> <td>6-2 ON or L</td> </tr> <tr> <td>Reset</td> <td>7-2 ON or L</td> </tr> <tr> <td>Gate</td> <td>5-2 ON or L</td> </tr> <tr> <td rowspan="3">Delayed Contact</td> <td>4-1 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>8-11 (NC)</td> <td>[High during delay]</td> </tr> <tr> <td>3-1 (NO)</td> <td>[Low during delay]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td>[Pulsed signal]</td> </tr> <tr> <td>OUT</td> <td>[High during delay]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timing diagram with T, Ta, T', T'' markers]</td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power | 2-10 | [Continuous high signal] | Input | Start | 6-2 ON or L | Reset | 7-2 ON or L | Gate | 5-2 ON or L | Delayed Contact | 4-1 (NC) | [High during delay] | 8-11 (NC) | [High during delay] | 3-1 (NO) | [Low during delay] | Indicator | POWER | [Pulsed signal] | OUT | [High during delay] | Set Time |  | [Timing diagram with T, Ta, T', T'' markers] |
| Item                | Terminal No. | Operation   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Power               | 2-10         | [Continuous high signal]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Input               | Start        | 6-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Reset        | 7-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | Gate         | 5-2 ON or L   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Delayed Contact     | 4-1 (NC)     | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 8-11 (NC)    | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | 3-1 (NO)     | [Low during delay]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Indicator           | POWER        | [Pulsed signal]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
|                     | OUT          | [High during delay]   |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |
| Set Time            |              | [Timing diagram with T, Ta, T', T'' markers]  |      |              |           |       |      |                          |       |       |             |       |             |      |             |                 |          |                     |           |                     |          |                    |           |       |                 |     |                     |          |  |  |

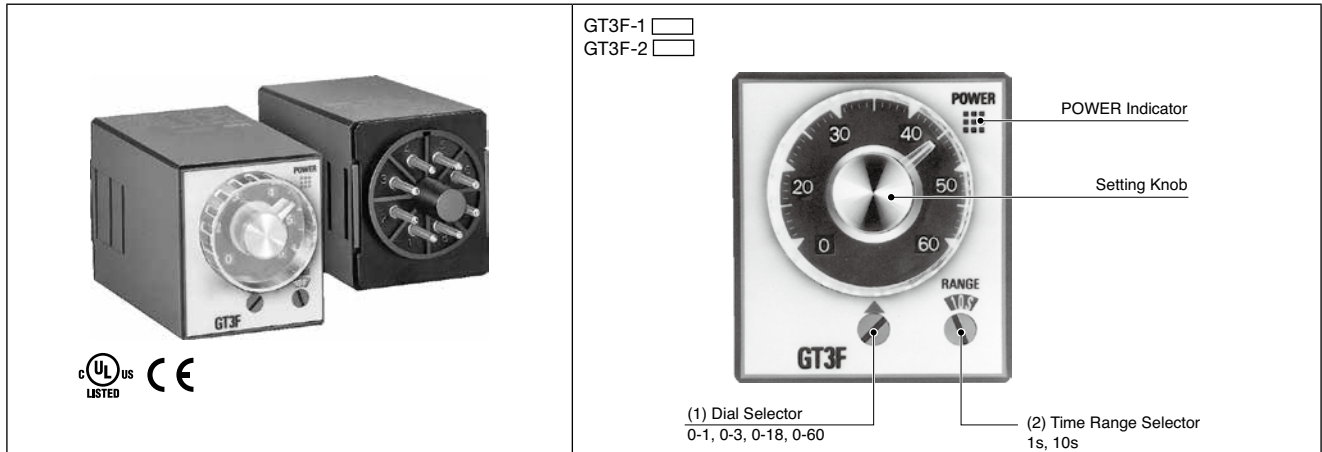
# GT3 series Multi-Mode (Analog Setting)

GT3A-6

|  |           | Operation Chart   |             |  |
|--|-----------|---|-------------|--|
| Contact  |           | Delayed DPDT  |             |  |
| Internal Connection  |           |   |             |  |
|  |           | <p>Note: T = Set time<br/>                     Ta = Shorter than set time<br/>                     T = T' + T''</p> |             |  |
| Operation Mode Selection   |           |   |             |  |
| <b>One Shot</b><br><br><br><br>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. After preset time has elapsed contacts transfer back to original position. Reset occurs with initiation of reset input.   | Item      | Terminal No.  | Operation   |  |
|  | Power     | 2-10  |             |  |
|  | Input     | Start   | 6-2 ON or L |  |
|  |           | Reset   | 7-2 ON or L |  |
|  |           | Gate  | 5-2 ON or L |  |
| Delayed Contact  | 4-1 (NC)  | 8-11 (NO)   |             |  |
|  | 3-1 (NO)  | 9-11 (NO)   |             |  |
|  | Indicator | POWER   |             |  |
|  | OUT       |   |             |  |
| Set Time   |           |   |             |  |
| <b>One Shot ON Delay</b><br><br><br><br>Set timer for desired delay. When power is applied preset time begins and contacts transfer after preset time has elapsed (no start input needed at this time). Start input is now supplied, this causes the contacts to transfer back to original position. Contacts will remain in this position for preset time, after which they will transfer again. Contacts will now remain in this position until: reset, start input is applied again or power is removed.                  | Item      | Terminal No.  | Operation   |  |
|  | Power     | 2-10  |             |  |
|  | Input     | Start   | 6-2 ON or L |  |
|  |           | Reset   | 7-2 ON or L |  |
|  |           | Gate  | 5-2 ON or L |  |
| Delayed Contact  | 4-1 (NC)  | 8-11 (NO)   |             |  |
|  | 3-1 (NO)  | 9-11 (NO)   |             |  |
|  | Indicator | POWER   |             |  |
|  | OUT       |   |             |  |
| Set Time   |           |   |             |  |
| <b>One Shot</b><br><br><br><br>Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. After preset time has elapsed contacts transfer back to original position. Reset occurs with initiation of reset input.   | Item      | Terminal No.  | Operation   |  |
|  | Power     | 2-10  |             |  |
|  | Input     | Start   | 6-2 ON or L |  |
|  |           | Reset   | 7-2 ON or L |  |
|  |           | Gate  | 5-2 ON or L |  |
| Delayed Contact  | 4-1 (NC)  | 8-11 (NO)   |             |  |
|  | 3-1 (NO)  | 9-11 (NO)   |             |  |
|  | Indicator | POWER   |             |  |
|  | OUT       |   |             |  |
| Set Time   |           |   |             |  |
| <b>Signal ON/OFF Delay</b><br><br><br><br>For this mode a maintained pushbutton is required for start input. Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts will transfer immediately. After preset time (with start input still present) contacts will transfer back to original position. Remove start signal, at this time contacts will again transfer. Contacts will transfer to original position after preset time. Timer is reset by initiation of reset input. | Item      | Terminal No.  | Operation   |  |
|  | Power     | 2-10  |             |  |
|  | Input     | Start   | 6-2 ON or L |  |
|  |           | Reset   | 7-2 ON or L |  |
|  |           | Gate  | 5-2 ON or L |  |
| Delayed Contact  | 4-1 (NC)  | 8-11 (NO)   |             |  |
|  | 3-1 (NO)  | 9-11 (NO)   |             |  |
|  | Indicator | POWER   |             |  |
|  | OUT       |   |             |  |
| Set Time   |           |   |             |  |

## GT3F-1/GT3F-2 (8-Pin)

Specifically designed for Power OFF Delay. Reset Inputs are available.



| (1) Operation Mode | Rated Voltage Code | Time Ranges        | Output             | Contact      | Input   | Part No.   |
|--------------------|--------------------|--------------------|--------------------|--------------|---------|------------|
| Power OFF Delay    | 100 to 240V AC     | 0.1 sec to 600 sec | 250V AC/24V DC, 5A | Delayed SPDT | Reset   | GT3F-1AF20 |
|                    | 24V AC/24V DC      |                    |                    |              |         | GT3F-1AD24 |
|                    | 100 to 240V AC     |                    | 250V AC/24V DC, 3A | Delayed DPDT | Without | GT3F-2AF20 |
|                    | 24V AC/24V DC      |                    |                    |              |         | GT3F-2AD24 |

## Time Ranges

### GT3F-1/GT3F-2

| (2) Range | (3) Dial | 0 - 1             | 0 - 3             | 0 - 18             | 0 - 60            |
|-----------|----------|-------------------|-------------------|--------------------|-------------------|
| 1S        |          | 0.1 sec to 1 sec  | 0.1 sec to 3 sec  | 0.2 sec to 18 sec  | 0.6 sec to 60 sec |
| 10S       |          | 0.1 sec to 10 sec | 0.3 sec to 30 sec | 1.8 sec to 180 sec | 6 sec to 600 sec  |

|                          |               |
|--------------------------|---------------|
| Timeout Repeat Cycle     | 3 sec minimum |
| Reset Input Repeat Cycle | 3 sec minimum |

## Contact Ratings

| Model                       | GT3F-1                              | GT3F-2                                  |
|-----------------------------|-------------------------------------|---|
| Rated Load                  | 250V AC/24V DC, 5A (resistive load) | 250V AC/24V DC, 3A (resistive load)     |
| Minimum Switching Power     | AC: 1250VA<br>DC: 150W              | AC: 750VA<br>DC: 90W                    |
| Minimum Switching Voltage   | 250V AC/125V DC                     |   |
| Minimum Switching Current   | 5A                                  | 3A                                      |
| Maximum Switching Frequency | 1800 operations/hour                |   |
| Minimum Applicable Load     | 5V DC, 10 mA                        | 5V DC, 100 mA                           |
| External Protection Element | Fuse 250V, 5A                       | Fuse 250V, 3A                           |
| Life                        | Electrical                          | 100,000 operations minimum (rated load) |
|                             | Mechanical                          | 3,000,000 operations minimum            |

## Input Specifications

|             |   |
|-------------|---|
| Reset Input | The contact is reset by turning the reset input on (L level). No-voltage contact input and NPN open collector transistor input are applicable.<br>6V DC, 0.6 mA maximum<br>Input Response Time (AC):<br>ON: 50 ms maximum<br>OFF: 1 sec maximum |
|-------------|---|

## General Specifications

|   |  |  |
|---|--|--|
| Operation System                        | Solid-state CMOS circuitry   |  |
| Operation                               | Power OFF delay  |  |
| Time Range                              | 0.1 sec to 600 hours   |  |
| Pollution Degree                        | 2 (IEC60664-1)   |  |
| Overvoltage Category                    | III (IEC60664-1)   |  |
| Rated Voltage                           | AF20   | 100 to 240V AC (50/60Hz)                     |
|   | AD24   | 24V AC (50/60Hz)/24V DC                      |
| Voltage Range                           | AF20   | 85 to 264V AC (50/60Hz)                      |
|   | AD24   | 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC  |
| Time Delay Operation Start Voltage      | Rated Voltage × 10% minimum  |  |
| Minimum Power Application Time (Note 1) | 0.4 sec (time range: 180 sec or less)<br>1 sec (time range: 600 sec)   |  |
| Operating Temperature                   | -10 to +50°C (no freezing)   |  |
| Storage Temperature                     | -30 to +70°C (no freezing)   |  |
| Operating Humidity                      | 35 to 85% RH (no condensation)   |  |
| Storage Humidity                        | 35 to 85% RH (no condensation)   |  |
| Altitude                                | 0 to 2000m (operation)<br>0 to 3000m (transportation)  |  |
| Repeat Error                            | ±0.2%, ±10 ms (Note 2)   |  |
| Voltage Error                           | ±0.2%, ±10 ms (Note 2)   |  |
| Temperature Error                       | ±0.2%, ±10 ms (Note 2)   |  |
| Setting Error                           | ±10%   |  |
| Insulation Resistance                   | 100 MΩ min. (500V DC megger)   |  |
| Dielectric Strength                     | Between power and output terminals:<br>2000V AC, 1 minute  |  |
|   | Between contacts of different poles:<br>2000V AC, 1 minute   |  |
|   | Between contacts of the same pole:<br>1000V AC, 1 minute   |  |
| Vibration Resistance                    | Damage limits/operating extremes:<br>10 to 55Hz, amplitude 0.75 mm,<br>2 hours each in 3 directions              |  |
| Shock Resistance                        | Operating extremes: 98 m/s <sup>2</sup> , Damage limits:<br>490 m/s <sup>2</sup> , 3 shocks each in 6 directions |  |
| Degree of Protection                    | IP40 (timer), IP20 (socket) (IEC60529)   |  |
| Power Consumption (approx.)             | AF20   | 1.1 VA (100V AC/60Hz), 2.3 VA (200V AC/60Hz) |
|   | AD24   | 0.7 VA (AC)/0.2W (DC)                        |
| Dimensions                              | 40H × 36W × 72.2D mm   |  |
| Weight (approx.)                        | GT3F-1   | 77g  |
|   | GT3F-2   | 79g  |

Note 1: An inrush current flows during minimum power application time.  
AF20: Approx. 0.4A, AD24: Approx. 1.2A

Note 2: The largest value becomes the error against a preset value depending on the time range.

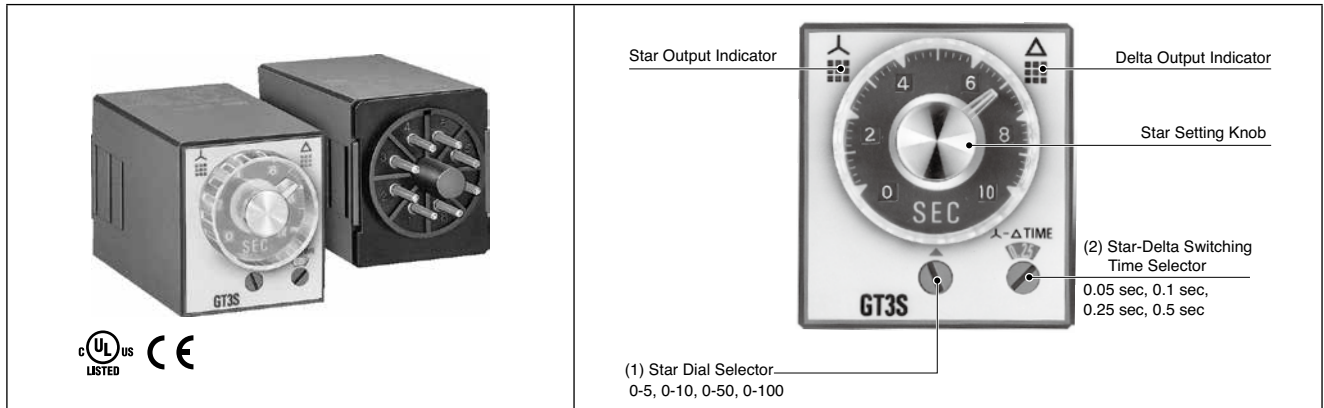
# GT3 Series Power OFF Delay

## Operation Chart

| Contact   | Internal Connection           | Operation Chart  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
|---|-------------------------------|--|------|--------------|-----------|-------|-----|--|-----------------|---------------|--|-----------------|----------|-----------|----------|--|-----------|-------|--|----------|--|--|
| <p>GT3F-1</p> <p>Delayed SPDT Output with Reset Input</p> | <p>(~)/(+)</p> <p>(~)/(-)</p> | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td></td> </tr> <tr> <td>Reset Input</td> <td>4-1 ON</td> <td></td> </tr> <tr> <td rowspan="2">Delayed Contact</td> <td>5-8 (NC)</td> <td></td> </tr> <tr> <td>6-8 (NO)</td> <td></td> </tr> <tr> <td>Indicator</td> <td>POWER</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td></td> </tr> </tbody> </table> <p> <b>T</b> = Set time<br/> <b>T<sub>a</sub></b> = Shorter than set time<br/> <b>T<sub>s</sub></b> = 1 sec<br/> <b>T<sub>r</sub></b> = Minimum power application time         </p> <ul style="list-style-type: none"> <li>• 0.4 sec (time range: 180 sec or less)</li> <li>• 1 sec (time range: 600 sec or less)</li> <li>• When power turns on, the NO output contact goes on. When a preset time has elapsed after the power has been turned off, the NO output contact goes off.</li> <li>• The contact is reset by turning the reset input on.</li> </ul> | Item | Terminal No. | Operation | Power | 2-7 |  | Reset Input     | 4-1 ON        |  | Delayed Contact | 5-8 (NC) |           | 6-8 (NO) |  | Indicator | POWER |  | Set Time |  |  |
| Item  | Terminal No.                  | Operation  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Power   | 2-7                           |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Reset Input   | 4-1 ON                        |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Delayed Contact   | 5-8 (NC)                      |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
|   | 6-8 (NO)                      |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Indicator   | POWER                         |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Set Time  |                               |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| <p>GT3F-2</p> <p>Delayed DPDT Output</p>                  | <p>(~)/(+)</p> <p>(~)/(-)</p> | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td></td> </tr> <tr> <td rowspan="2">Delayed Contact</td> <td>5-8, 4-1 (NC)</td> <td></td> </tr> <tr> <td>6-8, 3-1 (NO)</td> <td></td> </tr> <tr> <td>Indicator</td> <td>POWER</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td></td> </tr> </tbody> </table> <p> <b>T</b> = Set time<br/> <b>T<sub>r</sub></b> = Minimum power application time         </p> <ul style="list-style-type: none"> <li>• 0.4 sec (time range: 180 sec or less)</li> <li>• 1 sec (time range: 600 sec or less)</li> <li>• When power turns on, the NO output contact goes on. When a preset time has elapsed after the power has been turned off, the NO output contact goes off.</li> </ul>  | Item | Terminal No. | Operation | Power | 2-7 |  | Delayed Contact | 5-8, 4-1 (NC) |  | 6-8, 3-1 (NO)   |          | Indicator | POWER    |  | Set Time  |       |  |          |  |  |
| Item  | Terminal No.                  | Operation  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Power   | 2-7                           |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Delayed Contact   | 5-8, 4-1 (NC)                 |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
|   | 6-8, 3-1 (NO)                 |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Indicator   | POWER                         |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |
| Set Time  |                               |  |      |              |           |       |     |  |                 |               |  |                 |          |           |          |  |           |       |  |          |  |  |

## GT3S-1/GT3S-2 (8-Pin)

### Star-Delta Output Mode



| (1) Operation Mode | Rated Voltage  | Time Range   | Output                                     | Contact  | Part No.   |
|--------------------|----------------|--|--|--|------------|
| Star-Delta         | 100 to 240V AC | Star: 0.05 to 100 sec<br>Star-Delta switching time<br>0.05 sec<br>0.10 sec<br>0.25 sec<br>0.50 sec | 250V AC/<br>30V DC, 5A<br>(resistive load) | Star: Delayed SPST-NO<br>Delta: Delayed SPST-NO                          | GT3S-1AF20 |
|                    |                |  |  | Star: Delayed SPST-NO<br>Delta: Delayed SPST-NO<br>Instantaneous SPST-NO | GT3S-2AF20 |

### Time Ranges

| ① Star Dial Selector |                  | ② Star-Delta Switching Time Selector |          |
|----------------------|------------------|--------------------------------------|----------|
| Dial                 | Time Range       | Indication                           | Time     |
| 0 - 5                | 0.05 sec - 5 sec | 0.05                                 | 0.05 sec |
| 0 - 10               | 0.1 sec - 10 sec | 0.1                                  | 0.1 sec  |
| 0 - 50               | 0.5 sec - 50 sec | 0.25                                 | 0.25 sec |
| 0 - 100              | 1 sec - 100 sec  | 0.5                                  | 0.5 sec  |

### Contact Ratings

|                             |  |
|-----------------------------|--|
| Rated Load                  | 250V AC/30V DC, 5A (resistive load)<br>250V AC, 1.5A/30V DC, 2A (inductive load) |
| Maximum Switching Power     | AC: 1250VA<br>DC: 150W   |
| Maximum Switching Voltage   | 250V AC/125V DC  |
| Maximum Switching Current   | 5A   |
| Maximum Switching Frequency | 600 operations/hour  |
| Minimum Applicable Load     | 5V DC, 100mA (reference value)   |
| External Protection Element | Fuse 250V, 5A  |
| Life                        | Electrical   |
|                             | Mechanical   |
|                             | 100,000 operations minimum (rated load)  |
|                             | 20,000,000 operations minimum  |

### General Specifications

|                             |   |  |
|-----------------------------|---|--|
| Operation System            | Solid-state CMOS circuitry  |  |
| Operation                   | Star-delta  |  |
| Time Range                  | Star side: 0.05 sec to 100 sec<br>Star delta switching time: 0.05, 0.1, 0.25, 0.5 sec                               |  |
| Pollution Degree            | 2 (IEC60664-1)  |  |
| Overvoltage Category        | III (IEC60664-1)  |  |
| Rated Voltage               | 100 to 240V AC (50/60Hz)  |  |
| Voltage Range               | 85 to 264V AC (50/60Hz)   |  |
| Reset Voltage               | Rated Voltage × 10% minimum   |  |
| Operating Temperature       | -10 to +50°C (no freezing)  |  |
| Storage Temperature         | -30 to +70°C (no freezing)  |  |
| Operating Humidity          | 35 to 85% RH (no condensation)  |  |
| Storage Humidity            | 35 to 85% RH (no condensation)  |  |
| Altitude                    | 0 to 2000m (operation)<br>0 to 3000m (transportation)   |  |
| Reset Time                  | 500 ms maximum  |  |
| Repeat Error                | ±0.2%, ±10 ms (Note)  |  |
| Voltage Error               | ±0.2%, ±30 ms (Note)  |  |
| Temperature Error           | ±0.2%, ±10 ms (Note)  |  |
| Setting Error               | ±10% maximum  |  |
| Insulation Resistance       | 100 MΩ minimum (500V DC megger)   |  |
| Dielectric Strength         | Between power and output terminals:<br>2000V AC, 1 minute   |  |
|                             | Between contacts of different poles:<br>2000V AC, 1 minute  |  |
|                             | Between contacts of the same pole:<br>1000V AC, 1 minute  |  |
| Vibration Resistance        | Damage limits/operating extremes:<br>10 to 55 Hz, amplitude 0.75 mm,<br>2 hours each in 3 directions                |  |
| Shock Resistance            | Operating extremes: 98 m/s <sup>2</sup> ,<br>Damage limits: 490 m/s <sup>2</sup> ,<br>3 shocks each in 6 directions |  |
| Degree of Protection        | IP40 (timer), IP20 (socket) (IEC60529)  |  |
| Power Consumption (approx.) | GT3S-1AF20  | GT3S-2AF20                                   |
|                             | 2.3VA (100V AC/60Hz)<br>4.0VA (200V AC/60Hz)  | 2.3VA (100V AC/60Hz)<br>3.8VA (200V AC/60Hz) |
| Dimensions                  | 40H × 36W × 72.2D mm  |  |
| Weight (approx.)            | GT3S-1AF20  | GT3S-2AF20                                   |
|                             | 68g   | 75g  |

Note: The largest value becomes the error against a preset value depending on the time range.

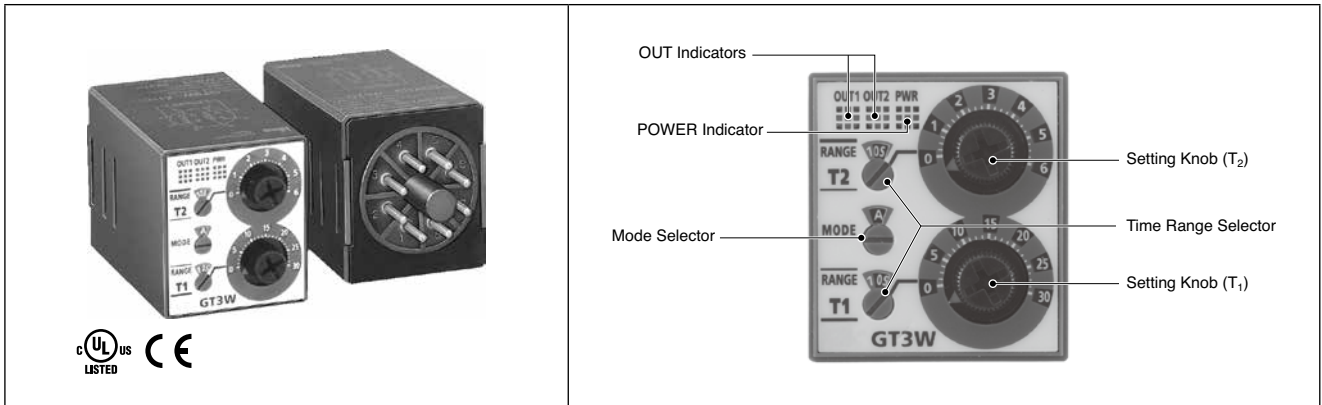
# GT3 Series Star-Delta

## Operation Chart

| Contact   | Internal Connection | Operation Chart   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
|---|---------------------|---|------|--------------|-----------|-------|-----|---------------|----------------------|----------|-----------------------|-----------------------|----------|-----------------------|-----------------------|----------|--------------------------------|-----------|---------------|---------------|-------|------------------------------------|----------|--|------------------------------------|
| GT3S-1<br>Star : Delayed SPST-NO<br>Delta: Delayed SPST-NO                          |                     | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> </tr> <tr> <td>Star Delayed Contact</td> <td>8-5 (NO)</td> <td>[Delayed pulse at T1]</td> </tr> <tr> <td>Delta Delayed Contact</td> <td>8-6 (NO)</td> <td>[Delayed pulse at T2]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>Star</td> <td>[Pulse at T1]</td> </tr> <tr> <td>Delta</td> <td>[Pulse at T2]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timeline with T1, T2, T3 markers]</td> </tr> </tbody> </table> <p>The star delayed contact goes on when power is turned on and goes off after a set time for the star contact (<math>T_1</math>).</p> <p>The delta contact goes on after star-delta switching time (<math>T_2</math>) and goes off when power is turned off.</p> <ul style="list-style-type: none"> <li>• <math>T_1</math> = Star ON time (Set Time), <math>T_2</math> = Star-delta switching time, <math>T_3</math> = Star ON time</li> </ul>   | Item | Terminal No. | Operation | Power | 2-7 | [Power pulse] | Star Delayed Contact | 8-5 (NO) | [Delayed pulse at T1] | Delta Delayed Contact | 8-6 (NO) | [Delayed pulse at T2] | Indicator             | Star     | [Pulse at T1]                  | Delta     | [Pulse at T2] | Set Time      |       | [Timeline with T1, T2, T3 markers] |          |  |                                    |
| Item  | Terminal No.        | Operation   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Power   | 2-7                 | [Power pulse]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Star Delayed Contact  | 8-5 (NO)            | [Delayed pulse at T1]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Delta Delayed Contact   | 8-6 (NO)            | [Delayed pulse at T2]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Indicator   | Star                | [Pulse at T1]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
|   | Delta               | [Pulse at T2]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Set Time  |                     | [Timeline with T1, T2, T3 markers]  |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| GT3S-2<br>Star : Delayed SPST-NO<br>Delta: Delayed SPST-NO<br>Instantaneous SPST-NO |                     | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> </tr> <tr> <td>Star Delayed Contact</td> <td>8-5 (NO)</td> <td>[Delayed pulse at T1]</td> </tr> <tr> <td>Delta Delayed Contact</td> <td>8-6 (NO)</td> <td>[Delayed pulse at T2]</td> </tr> <tr> <td>Instantaneous contact</td> <td>3-1 (NO)</td> <td>[Instantaneous pulse at start]</td> </tr> <tr> <td rowspan="2">Indicator</td> <td>Star</td> <td>[Pulse at T1]</td> </tr> <tr> <td>Delta</td> <td>[Pulse at T2]</td> </tr> <tr> <td>Set Time</td> <td></td> <td>[Timeline with T1, T2, T3 markers]</td> </tr> </tbody> </table> <p>The star delayed contact goes on when power is turned on and goes off after a set time for the star contact (<math>T_1</math>).</p> <p>The delta contact goes on after star-delta switching time (<math>T_2</math>) and goes off when power is turned off.</p> <p>Instantaneous contact goes on when power is turned on and goes off when power is turned off.</p> <ul style="list-style-type: none"> <li>• <math>T_1</math> = Star ON time (Set Time), <math>T_2</math> = Star-delta switching time, <math>T_3</math> = Star ON time</li> </ul> | Item | Terminal No. | Operation | Power | 2-7 | [Power pulse] | Star Delayed Contact | 8-5 (NO) | [Delayed pulse at T1] | Delta Delayed Contact | 8-6 (NO) | [Delayed pulse at T2] | Instantaneous contact | 3-1 (NO) | [Instantaneous pulse at start] | Indicator | Star          | [Pulse at T1] | Delta | [Pulse at T2]                      | Set Time |  | [Timeline with T1, T2, T3 markers] |
| Item  | Terminal No.        | Operation   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Power   | 2-7                 | [Power pulse]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Star Delayed Contact  | 8-5 (NO)            | [Delayed pulse at T1]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Delta Delayed Contact   | 8-6 (NO)            | [Delayed pulse at T2]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Instantaneous contact   | 3-1 (NO)            | [Instantaneous pulse at start]  |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Indicator   | Star                | [Pulse at T1]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
|   | Delta               | [Pulse at T2]   |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |
| Set Time  |                     | [Timeline with T1, T2, T3 markers]  |      |              |           |       |     |               |                      |          |                       |                       |          |                       |                       |          |                                |           |               |               |       |                                    |          |  |                                    |

## GT3W-A11, -A13, -A31, A33

### Multi-range Twin-Timer with 8 operation modes



| (1) Operation Mode  | Rated Voltage  | Time Ranges          |                      | Part No.      |
|---|----------------|----------------------|----------------------|---------------|
|   |                | T <sub>1</sub>       | T <sub>2</sub>       |               |
| Sequential Start<br>Coarse/Fine Adjustment<br>Instantaneous Cycle | 100 to 240V AC | 0.1 sec to 6 hours   | 0.1 sec to 6 hours   | GT3W-A11AF20N |
|   | 24V AC/24V DC  |                      |                      | GT3W-A11AD24N |
| Cycle<br>Cycle Inversion  | 100 to 240V AC | 0.1 sec to 300 hours | 0.1 sec to 300 hours | GT3W-A13AF20N |
|   | 24V AC/24V DC  |                      |                      | GT3W-A13AD24N |
| Interval ON<br>Interval ON Delay                                  | 100 to 240V AC | 0.1 sec to 6 hours   | 0.1 sec to 6 hours   | GT3W-A31AF20N |
|   | 24V AC/24V DC  |                      |                      | GT3W-A31AD24N |
| Sequential Interval   | 100 to 240V AC | 0.1 sec to 300 hours | 0.1 sec to 300 hours | GT3W-A33AF20N |
|   | 24V AC/24V DC  |                      |                      | GT3W-A33AD24N |

### Time Ranges

| 0.1 sec to 6 hours  |                    |                   | 0.1 sec to 300 hours |        |                        |
|---------------------|--------------------|-------------------|----------------------|--------|------------------------|
| Time Range Selector | Scale              | Time Range        | Time Range Selector  | Scale  | Time Range             |
| 1S                  | 0 - 1              | 0.1 sec to 1 sec  | 1S                   | 0 - 3  | 0.1 sec to 3 sec       |
| 10S                 |                    | 0.3 sec to 10 sec | 1M                   |        | 3.8 sec to 3 min       |
| 10M                 |                    | 15 sec to 10 min  | 1H                   |        | 3.8 min to 3 hours     |
| 1S                  | 0 - 6              | 0.1 sec to 6 sec  | 1S                   | 0 - 30 | 0.6 sec to 30 sec      |
| 10S                 |                    | 1.3 sec to 60 sec | 1M                   |        | 38 sec to 30 min       |
| 1M                  |                    | 7.5 sec to 1 min  | 1H                   |        | 38 min to 30 hours     |
| 10M                 |                    | 75 sec to 60 min  | 10H                  |        | 6.3 hours to 300 hours |
| 1H                  | 7.5 min to 6 hours |                   |                      |        |                        |

### Contact Ratings

|                             |  |   |
|-----------------------------|--|---|
| Rated Load                  | 240V AC, 3A (resistive load)<br>120V AC/ 30V DC, 5A (resistive load) |   |
| Maximum Switching Power     | AC: 960VA<br>DC: 120W  |   |
| Maximum Switching Voltage   | 250V AC/150V DC  |   |
| Maximum Switching Current   | 5A   |   |
| Maximum Switching Frequency | 600 operations/hour  |   |
| Minimum Applicable Load     | 5V DC, 10mA (reference value)  |   |
| External Protection Element | Fuse 250V, 5A  |   |
| Life                        | Electrical   | 100,000 operations minimum (rated load) |
|                             | Mechanical   | 20,000,000 operations minimum           |

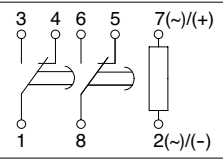
### General Specifications

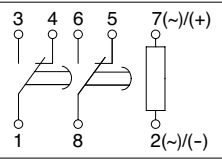
|                             |   |  |
|-----------------------------|---|--|
| Operation System            | Solid-state CMOS circuitry  |  |
| Operation                   | Multi-Mode  |  |
| Time Range                  | 0.1 sec to 300 hours  |  |
| Pollution Degree            | 2 (IEC60664-1)  |  |
| Overvoltage Category        | III (IEC60664-1)  |  |
| Rated Range                 | AF20  | 100 to 240V AC (50/60Hz)                       |
|                             | AD24  | 24V AC (50/60Hz)/ 24V DC                       |
| Voltage Range               | AF20  | 85 to 264V AC (50/60Hz)                        |
|                             | AD24  | 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC    |
| Reset Voltage               | Rated voltage × 10% minimum   |  |
| Operating Temperature       | -10 to +50°C (no freezing)  |  |
| Storage Temperature         | -30 to +70°C (no freezing)  |  |
| Operating Humidity          | 35 to 85% RH (no condensation)  |  |
| Storage Humidity            | 35 to 85% RH (no condensation)  |  |
| Altitude                    | 0 to 2000m (operation)<br>0 to 3000m (transportation)   |  |
| Reset Time                  | 60 ms maximum   |  |
| Repeat Error                | ±0.2%, ±10 ms (Note)  |  |
| Voltage Error               | ±0.2%, ±10 ms (Note)  |  |
| Temperature Error           | ±0.6%, ±10 ms (Note)  |  |
| Setting Error               | ±10%  |  |
| Insulation Resistance       | 100 MΩ minimum (500V DC megger)   |  |
| Dielectric Strength         | Between power and output terminals: 2000V AC, 1 minute  |  |
|                             | Between contacts of different poles: 2000V AC, 1 minute                                       |  |
|                             | Between contacts of the same pole: 750V AC, 1 minute  |  |
| Vibration Resistance        | Damage limits/operating extremes: 10 to 55Hz, amplitude 0.75 mm, 2 hours each in 3 directions |  |
| Shock Resistance            | Operating extremes: 98 m/s <sup>2</sup>   |  |
|                             | Damage limits: 490 m/s <sup>2</sup><br>3 shocks each in 6 directions                          |  |
| Degree of Protection        | IP40 (timer), IP20 (socket) (IEC60529)  |  |
| Power Consumption (approx.) | AF20  | 2.6VA (100V AC /60Hz)<br>5.1VA (200V AC /60Hz) |
|                             | AD24  | 1.8VA (AC)/0.9W (DC)                           |
| Dimensions                  | 40H × 36W × 70.0D mm  |  |
| Weight (approx.)            | 73g   |  |

Note: The largest value becomes the error against a preset value depending on the time range.

# GT3 Series Twin-Timer

## Operation Chart

| Operation Chart          |  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|--------------------------|--|----------------------|---------------------------------|-------------------------------|-------------|-------|-----|---------------|--|---------------------|----------------------|---------------------------------|-------------------------------|---------------------|----------------------|---------------------------------|-------------------------------|-----------|--------------|---------|--|----------|--|-------------|--|
| Contact                  | Delayed SPDT + Delayed SPDT  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Internal Connection      |   |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Operation Mode Selection |  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Sequential Start         | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON after T1]</td> <td>ON after T1</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON after T1 + T2]</td> <td>ON after T1 + T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table>   | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON after T1]                   | ON after T1                   | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2       |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON after T1]                   | ON after T1                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Coarse/Fine Adjustment   | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON after T1 + T2]</td> <td>ON after T1 + T2</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON after T1 + T2]</td> <td>ON after T1 + T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table>   | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON after T1 + T2]              | ON after T1 + T2              | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2       |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON after T1 + T2]              | ON after T1 + T2              |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Instantaneous Cycle      | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[Instantaneous ON]</td> <td>Instantaneous ON</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[OFF during T1<br/>ON during T2]</td> <td>OFF during T1<br/>ON during T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2 T1 T2</td> <td></td> </tr> </tbody> </table>                             | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [Instantaneous ON]              | Instantaneous ON              | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [Instantaneous ON]              | Instantaneous ON              |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Set Time                 |  | T1 T2 T1 T2          |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Cycle                    | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[OFF during T1<br/>ON during T2]</td> <td>OFF during T1<br/>ON during T2</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[OFF during T1<br/>ON during T2]</td> <td>OFF during T1<br/>ON during T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2 T1 T2</td> <td></td> </tr> </tbody> </table> | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [OFF during T1<br>ON during T2] | OFF during T1<br>ON during T2 |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |
| Set Time                 |  | T1 T2 T1 T2          |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |             |  |

| Operation Chart          |  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|--------------------------|--|----------------------|---------------------------------|-------------------------------|-------------|-------|-----|---------------|--|---------------------|----------------------|---------------------------------|-------------------------------|---------------------|----------------------|---------------------------------|-------------------------------|-----------|--------------|---------|--|----------|--|-------|--|
| Contact                  | Delayed SPDT + Delayed SPDT  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Internal Connection      |   |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Operation Mode Selection |  |                      |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Cycle Inversion          | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON during T1<br/>OFF during T2]</td> <td>ON during T1<br/>OFF during T2</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON during T1<br/>OFF during T2]</td> <td>ON during T1<br/>OFF during T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table> | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON during T1<br>OFF during T2] | ON during T1<br>OFF during T2 | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON during T1<br>OFF during T2] | ON during T1<br>OFF during T2 | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON during T1<br>OFF during T2] | ON during T1<br>OFF during T2 |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON during T1<br>OFF during T2] | ON during T1<br>OFF during T2 |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Interval ON              | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON during T1]</td> <td>ON during T1</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON after T1,<br/>during T2]</td> <td>ON after T1,<br/>during T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table>   | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON during T1]                  | ON during T1                  | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON after T1,<br>during T2]     | ON after T1,<br>during T2     | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON during T1]                  | ON during T1                  |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON after T1,<br>during T2]     | ON after T1,<br>during T2     |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Interval ON Delay        | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON during T1]</td> <td>ON during T1</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON after T1 + T2]</td> <td>ON after T1 + T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table>   | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON during T1]                  | ON during T1                  | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON during T1]                  | ON during T1                  |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON after T1 + T2]              | ON after T1 + T2              |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Sequential Interval      | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>2-7</td> <td>[Power pulse]</td> <td></td> </tr> <tr> <td>Delayed Contact Ry1</td> <td>1-4 (NC)<br/>1-3 (NO)</td> <td>[ON during T1 + T2]</td> <td>ON during T1 + T2</td> </tr> <tr> <td>Delayed Contact Ry2</td> <td>5-8 (NC)<br/>6-8 (NO)</td> <td>[ON after T1,<br/>during T2]</td> <td>ON after T1,<br/>during T2</td> </tr> <tr> <td>Indicator</td> <td>OUT1<br/>OUT2</td> <td>[Pulse]</td> <td></td> </tr> <tr> <td>Set Time</td> <td></td> <td>T1 T2</td> <td></td> </tr> </tbody> </table>                                   | Item                 | Terminal No.                    | Operation                     | Description | Power | 2-7 | [Power pulse] |  | Delayed Contact Ry1 | 1-4 (NC)<br>1-3 (NO) | [ON during T1 + T2]             | ON during T1 + T2             | Delayed Contact Ry2 | 5-8 (NC)<br>6-8 (NO) | [ON after T1,<br>during T2]     | ON after T1,<br>during T2     | Indicator | OUT1<br>OUT2 | [Pulse] |  | Set Time |  | T1 T2 |  |
|                          | Item   | Terminal No.         | Operation                       | Description                   |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Power  | 2-7                  | [Power pulse]                   |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry1  | 1-4 (NC)<br>1-3 (NO) | [ON during T1 + T2]             | ON during T1 + T2             |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
|                          | Delayed Contact Ry2  | 5-8 (NC)<br>6-8 (NO) | [ON after T1,<br>during T2]     | ON after T1,<br>during T2     |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Indicator                | OUT1<br>OUT2   | [Pulse]              |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |
| Set Time                 |  | T1 T2                |                                 |                               |             |       |     |               |  |                     |                      |                                 |                               |                     |                      |                                 |                               |           |              |         |  |          |  |       |  |



## Applicable Sockets & Hold-Down Springs (Optional)

### DIN Rail Mount Socket

| Item             |                       | Part No. | Ordering No. | Applicable Timer             | Package Quantity | Remarks                            |
|------------------|-----------------------|----------|--------------|------------------------------|------------------|------------------------------------|
| Socket           | 8-Pin Screw Terminal  | SR2P-06A | SR2P-06A     | GT3A-1/2/3, GT3F, GT3S, GT3W | 1                | Hold-down spring: SFA-202 (2 pcs.) |
|                  | 11-Pin Screw Terminal | SR3P-05A | SR3P-05A     | GT3A-4/5/6                   | 1                | Hold-down spring: SFA-203 (2 pcs.) |
|                  |                       | SR3P-06A | SR3P-06A     |                              | 1                | Hold-down spring: SFA-202 (2 pcs.) |
|                  |                       | SR3P-05C | SR3P-05C     |                              | 1                | Finger-safe                        |
| Hold-Down Spring |                       | SFA-202  | SFA-202PN20  | —                            | 10 sets (20 pcs) | For SR2P-06A/SR3P-06A (2 pcs/set)  |
|                  |                       | SFA-203  | SFA-203PN20  | —                            | 10 sets (20 pcs) | For SR3P-05A (2 pcs/set)           |

Note: All are UL recognized, CSA certified, and TÜV approved.



### Panel Mount Socket

| Item             |                        | Part No. | Ordering No. | Applicable Timer             | Package Quantity | Remarks               |
|------------------|------------------------|----------|--------------|------------------------------|------------------|-----------------------|
| Socket           | 8-Pin Solder Terminal  | SR2P-511 | SR2P-511     | GT3A-1/2/3, GT3F, GT3S, GT3W | 1                | —                     |
|                  | 11-Pin Solder Terminal | SR3P-511 | SR3P-511     | GT3A-4/5/6                   | 1                | —                     |
| Hold-Down Spring |                        | SFA-402  | SFA-402PN10  | —                            | 10               | For SR2P-511/SR3P-511 |

Note: SR2P-511 and SR3P-511 are UL recognized and CSA certified.



### Panel Mount Adapter and wiring Socket Adapter

Package Quantity: 1

| Item                                |                        | Part No.  |
|-------------------------------------|------------------------|-----------|
| DIN 48mm Square Panel Mount Adapter | Color: Gray            | RTB-G01   |
|                                     | Color: Beige           | RTB-M01   |
|                                     | Color: Black           | RTB-B01   |
| Wiring Socket Adapter               | 8-Pin Solder Terminal  | SR6P-S08  |
|                                     | 8-Pin Screw Terminal   | SR6P-M08G |
|                                     | 11-Pin Solder Terminal | SR6P-S11  |
|                                     | 11-Pin Screw Terminal  | SR6P-M11G |

• Finger-safe 11-pin screw wiring socket adapter (Part No.: SR6P-C11) is also available.

(8-pin Wiring Socket Adapter)  
SR6P-S08



(8-pin Screw Wiring Socket Adapter)  
SR6P-M08G



(11-pin Wiring Socket Adapter)  
SR6P-S11

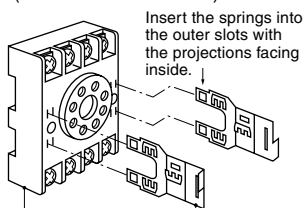


(11-pin Screw Wiring Socket Adapter)  
SR6P-M11G

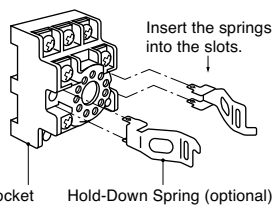


### Installation of Hold-Down Springs

(DIN Rail Mount Socket)

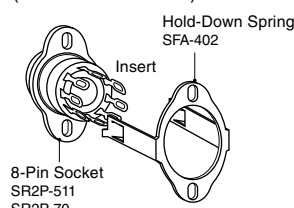


Socket SR2P-06A Hold-Down Spring (optional) SFA-202 (2 pcs/set)



Socket SR3P-05A Hold-Down Spring (optional) SFA-203 (2 pcs/set)

(Panel Mount Socket)



8-Pin Socket SR2P-511 SR2P-70

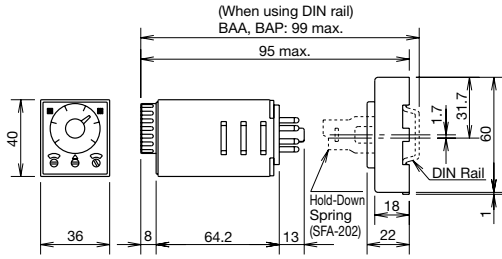
Note: Once installed into the socket, the hold-down springs cannot be removed.

# GT3 Series Multi-function Timers

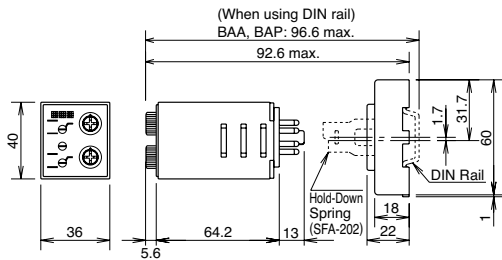
## Dimensions

When Using DIN Rail Mount Socket  
(SR2P-06A Socket)

GT3A-1, -2, -3/GT3F/GT3S (8-pin)

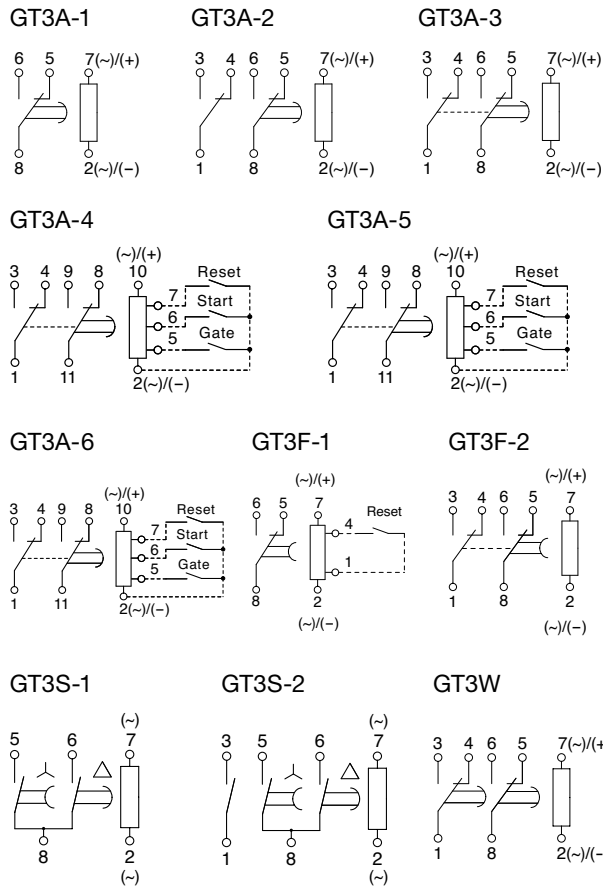


GT3W

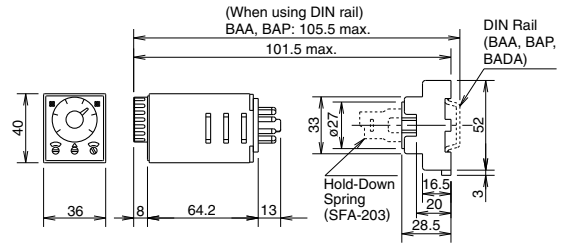


- Calculate the dimensions for mounting, referring to the diagrams of SR2P-06A on Relay Sockets catalog.

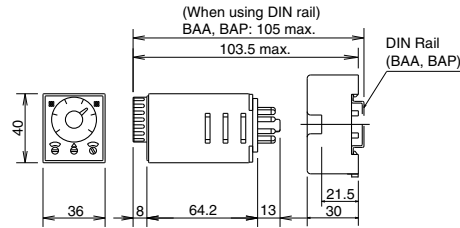
### [Internal Connections]



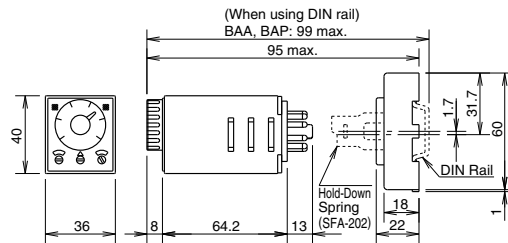
GT3A-4, -5, -6 (11-pin)  
(SR3P-05A Socket)



(SR3P-05C Socket)



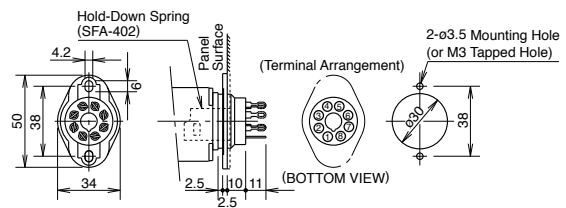
(SR3P-06A Socket)



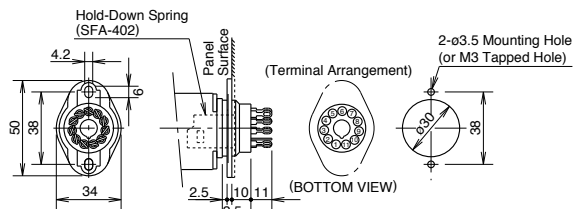
- Calculate the dimensions for mounting, referring to the diagrams in Relay Sockets catalog for SR3P-05A, SR3P-05C, and SR3P-06A.

When Using Panel Mount Socket

GT3A-1, -2, -3/GT3F/GT3S/GT3W (8-pin)  
(SR2P-511 Socket)



GT3A-4, -5, -6  
(SR3P-511 Socket)



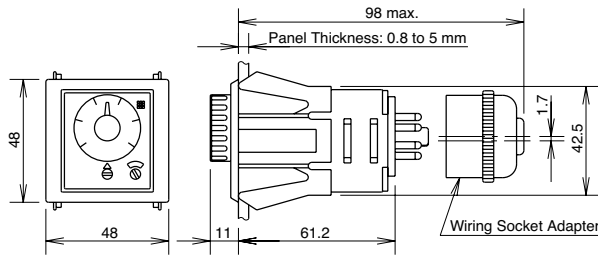
All dimensions in mm.

# GT3 Series Multi-function Timers

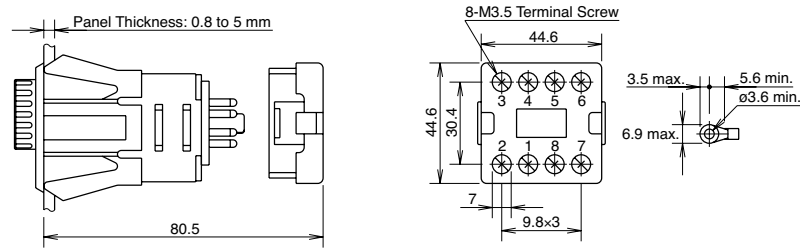
## All GT3 Series

### When using DIN 48mm-square Panel Mount Adapter

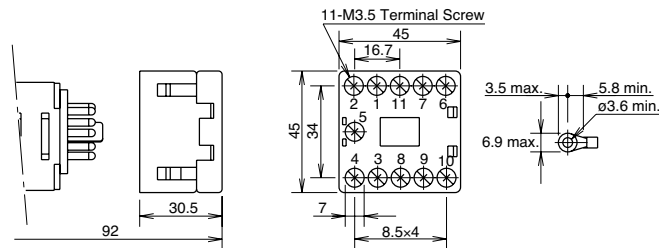
(For 8-pin solder wiring socket adapter: SR6P-S08 and 11-pin solder wiring socket adapter: SR6P-S11)



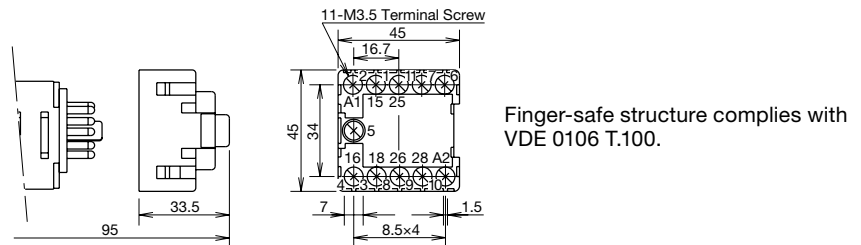
### (8-pin Screw Terminal Wiring Socket Adapter: SR6P-M08G)



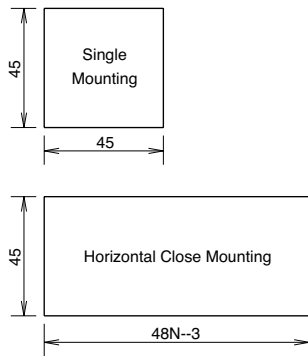
### (11-pin Screw Terminal Wiring Socket Adapter: SR6P-M11G)



### (Finger-safe 11-pin Screw Terminal Wiring Socket Adapter: SR6P-C11)



### (Mounting Hole Layout)



Tolerance: +0.5 to 0  
N: No. of timers mounted

All dimensions in mm.

# GT3 Series Instructions

## Safety Precautions

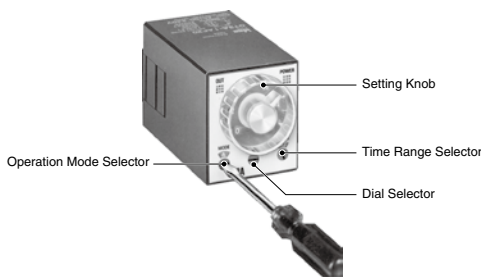
- Be sure to turn off power before mounting, removal, wiring, maintenance and inspection. Otherwise, electric shock or fire may occur.
- Be sure to use wires to meet voltage and current requirements and tighten M3.5 terminal screws to a torque of 1.0 to 1.3 N·m. Be sure to solder the terminals correctly. Loose terminal screws or incomplete soldering may cause abnormal heat and fire.
- Be sure to use timers within rated specification values. Otherwise electric shock or fire may occur.

## Instructions

### Mode Setting

#### GT3A only

The operation mode can be selected from A, B, C, and D modes using the Operation Mode Selector. The operation mode is changed from A to B, C, and D in turn by turning the Operation Mode Selector clockwise using a flat screwdriver 4 mm wide maximum and the selected mode is displayed in the window. Since this selector does not turn infinitely, turn the selector clockwise when Mode A is displayed and counterclockwise when Mode D is displayed.



#### Mode Code and Operation Mode

| MODE Code | Part No.    | GT3A-1, -2, -3      | GT3A-4              | GT3A-5              | GT3A-6      |
|-----------|-------------|---------------------|---------------------|---------------------|-------------|
|           |             | A                   | ON Delay            | ON Delay            | Interval ON |
| B         | Interval ON | Cycle               | One Shot Cycle      | One-Shot ON Delay   |             |
| C         | Cycle       | Signal ON/OFF Delay | Signal ON/OFF Delay | One-Shot            |             |
| D         | Cycle ON    | Signal OFF Delay    | Signal OFF Delay    | Signal ON/OFF Delay |             |

### Time Range Setting

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

#### 1. GT3A (Multi-Mode Analog Setting)

Time range can be selected from 1S, 10S, 10M, and 10H by turning the Time Range Selector with a flat screwdriver 4 mm wide maximum. The four different ranges of 0 to 1, 0 to 3, 0 to 6, and 0 to 18 are displayed in the six windows by turning the Dial Selector, allowing for selecting the best suited scale. Since the selectors do not turn infinitely, turn the selectors clockwise when 1S or 0-1 is displayed and counterclockwise when 10H or 0-18 is displayed.

#### Time Range Determined by Time Range Selector and Dial Selector

| Time Range | Dial Selector     |                    |                    |                      |
|------------|-------------------|--------------------|--------------------|----------------------|
|            | 0 - 1             | 0 - 3              | 0 - 6              | 0 - 18               |
| 1S         | 0.1 sec to 1 sec  | 0.1 sec to 3 sec   | 0.1 sec to 6 sec   | 0.2 sec to 18 sec    |
| 10S        | 0.1 sec to 10 sec | 0.3 sec to 30 sec  | 0.6 sec to 60 sec  | 1.8 sec to 180 sec   |
| 10M        | 6 sec to 10 min   | 18 sec to 30 min   | 36 sec to 60 min   | 108 sec to 180 min   |
| 10H        | 6 min to 10 hours | 18 min to 30 hours | 36 min to 60 hours | 108 min to 180 hours |

The set time is selected by turning the setting knob.

#### [Setting Examples]

- When the setting knob is set at 1.5, with dial 0-3 and time range 10S selected, then the set time is 15 sec (1.5 × 10S).
- When the setting knob is set at 0.2, with dial 0-1 and time range 10H selected, then the set time is 2 hours (0.2 × 10H).

#### 2. GT3F (OFF Delay)

The time range of GT3F-1 and GT3F-2 can be selected between 1S and 10S with the Time Range Selector by using a flat screw driver. The selected time range (0-1, 0-3, 0-18, or 0-60) is displayed in the six windows of the Setting Knob by turning Dial Selector which allows to set the scale. Note that the switches do not turn infinitely.

#### Time Range Determined by Time Range Selector and Dial Selector

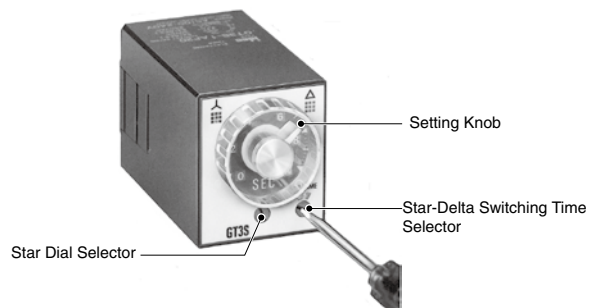
| (2) Range | (1) Dial          |                   |                    |                   |
|-----------|-------------------|-------------------|--------------------|-------------------|
|           | 0 - 1             | 0 - 3             | 0 - 18             | 0 - 60            |
| 1S        | 0.1 sec to 1 sec  | 0.1 sec to 3 sec  | 0.2 sec to 18 sec  | 0.6 sec to 60 sec |
| 10S       | 0.1 sec to 10 sec | 0.3 sec to 30 sec | 1.8 sec to 180 sec | 6 sec to 600 sec  |

The set time is selected by turning the Setting Knob.

#### [Setting Examples]

- When the setting knob is set at 2.5, with dial 0-3 and range 1S selected, then the set time is 2.5 sec (2.5 × 1S).
- When the setting knob is set at 15, with dial 0-18 and range 10S selected, then the set time is 150 sec (15 × 10S).

#### 3. GT3S (Star-Delta)



The scale range on the star side can be selected from four different ranges of 0 to 5, 0 to 10, 0 to 50, and 0 to 100 displayed in the six windows by turning the Star Dial Selector. Note that the selectors does not turn infinitely.

#### Time Range Determined by Time Range Selector and Dial Selector

| Star Dial Selector |                  | Star-Delta Switching Time Selector |          |
|--------------------|------------------|------------------------------------|----------|
| Dial               | Time Range       | Indication                         | Time     |
| 0 - 5              | 0.05 sec - 5 sec | 0.05                               | 0.05 sec |
| 0 - 10             | 0.1 sec - 10 sec | 0.1                                | 0.1 sec  |
| 0 - 50             | 0.3 sec - 50 sec | 0.25                               | 0.25 sec |
| 0 - 100            | 1 sec - 100 sec  | 0.5                                | 0.5 sec  |

The Star ON time is selected by turning the Setting Knob.

#### [Setting Examples]

- If the setting knob is set at 8, with Star Dial Selector 0-10 and Star-Delta switching time 0.1S selected, the Star ON time ( $T_1$ ) is 8 sec and the Star-Delta switching time ( $T_2$ ) is 0.1 sec.

## 4. GT3W [Twin-Timer]

Use a flat screwdriver with a diameter of 4 mm maximum to turn Time Range Selector and gain time range as shown in the table below. Note that the selectors do not turn infinitely.

### Time Range Determined by Time Range Selector and Dial Selector

| 0.1 sec to 6 hours  |       |                    | 0.1 sec to 300 hours |        |                        |
|---------------------|-------|--------------------|----------------------|--------|------------------------|
| Time Range Selector | Scale | Time Range         | Time Range Selector  | Scale  | Time Range             |
| 1S                  | 0 - 1 | 0.1 sec to 1 sec   | 1S                   | 0 - 3  | 0.1 sec to 3 sec       |
| 10S                 |       | 0.3 sec to 10 sec  | 1M                   |        | 3.8 sec to 3 min       |
| 10M                 |       | 15 sec to 10 min   | 1H                   |        | 3.8 min to 3 hours     |
| 1S                  | 0 - 6 | 0.1 sec to 6 sec   | 1S                   | 0 - 30 | 0.6 sec to 30 sec      |
| 10S                 |       | 1.3 sec to 60 sec  | 1M                   |        | 38 sec to 30 min       |
| 1M                  |       | 7.5 sec to 1 min   | 1H                   |        | 38 min to 30 hours     |
| 10M                 |       | 75 sec to 60 min   | 10H                  |        | 6.3 hours to 300 hours |
| 1H                  |       | 7.5 min to 6 hours |                      |        |                        |

Note: No blank time range can be set.



## Selector Setting

- Use a flat screwdriver with a diameter of 4 mm maximum to turn the selector. Turn the selector until it clicks. Otherwise, malfunction may occur. Also, do not rotate the selector forcibly since the selector does not turn infinitely.
- Since changing the setting during operation may cause malfunction, turn power off before changing the setting.

## Power

- Since DC types have a polarity in their power supply connection, connect the power according to wiring diagram.
- Since AC type GT3A, GT3S, and GT3W comprise a capacitive load, the SSR dielectric strength should be two or more times as large as the power voltage when switching the timer power using an SSR.

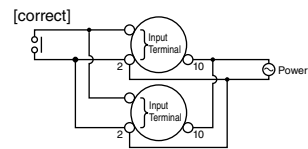
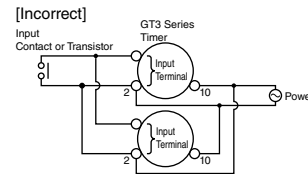
## Wiring

The GT3F, consisting of a high-impedance circuit, may not be reset due to the influence of an inductive voltage or residual voltage caused by a leakage current. In not reset, connect an RC filter or bleeder resistor between power terminals so that the voltage between power terminals can be reduced to less than 15% of the rated voltage.

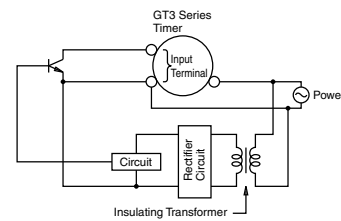
## Inputs of GT3A and GT3F

To avoid electric shock, do not touch the input signal terminal during power voltage application.

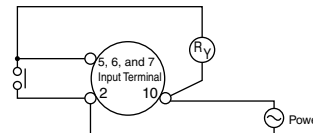
- When connecting the input signal terminals of two or more GT3A timers to the same contact or transistor, the input terminals of the same number should be connected. (Connect Terminals No. 2 in common.)
- Never apply the input signals to two or more GT3F timers using the same contact or transistor.



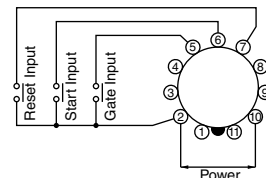
- In a transistor circuit for controlling input signals with its primary and secondary power circuits isolated, do not ground the secondary circuit.



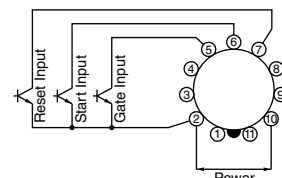
- Do not connect input signal terminals of the GT3A timer to other terminals than No. 2. Never apply voltage to input signal terminals. Otherwise, the internal circuit may be damaged.



- Do not connect input signal terminals of the GT3F timer to other terminals than No. 2. Never apply voltage to input signal terminals. Otherwise, the internal circuit may be damaged.
- Input signal lines must be made as short as possible and installed away from power cables and power lines. Shielded wires or a separate conduit should be used for input wiring.
- For contact input, use reliable gold-plated contacts to make sure that the residual voltage is less than 1V when the contacts are closed.



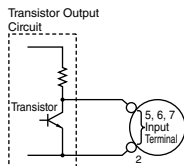
- For transistor input, use transistors with following specifications;  $V_{CE} = 40V$ ,  $V_{CES} = 1V$  or less,  $I_C = 50mA$  or more,  $I_{CBO} = 50\mu A$  or less. The resistance should be less than  $1k\Omega$  when the transistor is on. When the output transistor switches on, a signal is inputted to the timer.



# GT3 Series Instructions

## GT3A

Transistor output equipment such as proximity switches and photoelectric switches can input signals if they are voltage/current output type, power voltage ranges from 18 to 30V, and residual voltage is 1V. When the signal voltage switches from H to L, a signal is inputted to the timer.



## GT3F

Do not input signals using transistor output equipment of a voltage/current output type. Otherwise, the internal circuit may be damaged.

## Minimum Power Application Time

If the power application time to the GT3F is shorter than the minimum power application time, the output relay may not operate or the timer may operate faster than the preset time.

## Time Range Setting

Repeat error is calibrated at its maximum time scale, therefore, it is desirable to use the timer at a setting as close to its maximum time scale as possible for accurate time delay. For a more accurate time delay, adjust the setting knob by measuring the operating time before application.

## Time Accuracy

### Repeat Error

This indicates variance of operation time when operation is repeated under the same conditions. The variance is calculated from the following formula and the measurements should be done 5 times at least.

$$= \pm \frac{1}{2} \times \frac{\text{Max. measured value} - \text{Min. measured value}}{\text{Maximum scale value}} \times 100 (\%)$$

### Voltage Error

This indicates the variance of operation time when the voltage at operation current varies within allowable voltage variance.

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

$T_v$ : Average of measured operation time values at voltage V

$T_r$ : Average of measured operation time values at the rated voltage

### Temperature Error

This indicates the influence caused by the change in temperature during operation within operating temperature. This is shown with the variance of operation time.

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

$T_t$ : Average of operation times at temperature t

$T_{20}$ : Average of operation times at reference temperature (20°C)

### Setting Error

This indicates the deviation, range, and gap between actual operation time and that on scale.

$$= \pm \frac{\text{Average of measured values} - \text{Set value}}{\text{Maximum scale value}} \times 100 (\%)$$

Ex.)

GT3 setting error:  $\pm 10\%$

When the maximum scale value is 10 sec. and setting time is 1 to 3 sec., the setting error is  $\pm 1$  sec. and operating time is 1 to 3 sec. When setting a value near the lower limit, be sure to confirm the actual operating time.

## Load Current

The rated current of the contact (or control output) should not be exceeded. Especially for inductive, capacitive, and incandescent lamp loads, the inrush current as large as a few to several tens times the rated current may cause welded contacts and other troubles. The amount of inrush current as well as steady-state current must be taken into consideration.

## Contact Protection

Switching an inductive load generates a counter-electromotive force in the coil. The counter emf will cause arcing, which may shorten the contact life. Application of a protection circuit is recommended for contact protection.

## Rest Time

When turning power off after time-out or during operation, allow a rest time longer than the reset time to restart. (Each model has a different reset time.)

## Continuous Energizing

Continuous energizing for a long period of time may damage the electrical characteristics of the timer because of internal heating. Use an additional relay to the output circuit and refrain from continuous energizing of the timer.

## Dielectric Strength Test

When performing an insulation resistance or dielectric-strength test on control panels containing timers, make sure that the dielectric strength of the timer is not exceeded. In case the dielectric strength is exceeded, remove the timers from the panels.

## Operating Environment

### Temperature and Humidity

Use the timer within the operating temperature and operating humidity ranges and prevent freezing and condensation. After storing below the operation temperature, leave the timer at room temperature for a sufficient period of time before use.

### Environment

Prevent a corrosive gas such as sulfurous or ammonia gas, organic solvents (alcohol, benzene, thinner, etc.), strong alkaline substances or strong acids from touching to the timer, and do not use the timer in such an environment. Keep the timer from water splashes or steam.

### Vibration and Shock

Since excessive vibrations or shocks cause the output contacts to open, the timer should be used within the operating extremes of vibration and shock resistance. Use of hold-down springs is recommended for secure mounting on sockets.

### Noise and Static Charge

Check the operation of the timer before using in an environment with a lot of noise. Install the input signal source, input signal wiring and timer away from noise source and high-voltage wire with noise as much as possible. Also, in case of using the timer under the environment with multiple static charge (pipe transportation of molding material, power/liquid material, etc.), place the timer away from such static charge source as well.

## Others

- The GT3F does not read the preset values of each selector after power is turned off. Note that minimizing the preset time does not shorten the delay time after power is turned off.
- To make a sequence circuit by connecting timers and relays, check the timer operation sufficiently in consideration of the reset time of the timer.
- Storage temperature should range from  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ . If the product has been stored at a temperature below  $-10^{\circ}\text{C}$ , leave the product at room temperatures for more than 3 hours before using.
- Do not remove the housing.
- In the GT3 timers, latching relay is used for output relay. Shocks such as dropping during transportation or handling may cause the output to be different from the initial value. Be sure to check the output status using a tester.

# GT5Y Miniature Electronic Timers

## Four Selectable Time Ranges Delayed Output 4PDT/3A or DPDT/5A

- Three operation modes: ON Delay, Interval ON, and Cycle
- Repeat error:  $\pm 0.2\% \pm 20$  ms maximum
- Miniature size
- LED indicators for output and power
- Complies with safety standards.  
UL/c-UL listed. EN compliant.

| Applicable Standards     | Mark | File No. or Organization          |
|--------------------------|------|-----------------------------------|
| UL508<br>CSA C22.2 No.14 |      | UL/c-UL Listed<br>File No. E55996 |
| EN61812-1                |      | EU Low Voltage Directive          |



Package Quantity: 1

| Operation Mode | Contact                | Output                 | Time Ranges (4 ranges selectable) | Operating Voltage | Part No.               |                |
|----------------|------------------------|------------------------|-----------------------------------|-------------------|------------------------|----------------|
| ON Delay       | DPDT                   | 220V AC/<br>30V DC, 5A | 1S/10S/1M/10M                     | 100 to 120V AC    | GT5Y-2SN1A100          |                |
|                |                        |                        | 3S/30S/3M/30M                     |                   | GT5Y-2SN3A100          |                |
|                |                        |                        | 6S/60S/6M/60M                     |                   | GT5Y-2SN6A100          |                |
|                |                        |                        | 1S/10S/1M/10M                     |                   | 200 to 240V AC         | GT5Y-2SN1A200  |
|                |                        |                        | 3S/30S/3M/30M                     |                   |                        | GT5Y-2SN3A200  |
|                |                        |                        | 6S/60S/6M/60M                     |                   |                        | GT5Y-2SN6A200  |
|                |                        | 12V DC                 | 1S/10S/1M/10M                     | GT5Y-2SN1D12      |                        |                |
|                |                        |                        | 3S/30S/3M/30M                     | GT5Y-2SN3D12      |                        |                |
|                |                        |                        | 6S/60S/6M/60M                     | GT5Y-2SN6D12      |                        |                |
|                |                        |                        | 24V DC                            | 1S/10S/1M/10M     | GT5Y-2SN1D24           |                |
|                |                        |                        |                                   | 3S/30S/3M/30M     | GT5Y-2SN3D24           |                |
|                |                        |                        |                                   | 6S/60S/6M/60M     | GT5Y-2SN6D24           |                |
|                | 4PDT                   | 220V AC/<br>30V DC, 3A | 1S/10S/1M/10M                     | 100 to 120V AC    | GT5Y-4SN1A100          |                |
|                |                        |                        | 3S/30S/3M/30M                     |                   | GT5Y-4SN3A100          |                |
|                |                        |                        | 6S/60S/6M/60M                     |                   | GT5Y-4SN6A100          |                |
|                |                        |                        | 1S/10S/1M/10M                     |                   | 200 to 240V AC         | GT5Y-4SN1A200  |
|                |                        |                        | 3S/30S/3M/30M                     |                   |                        | GT5Y-4SN3A200  |
|                |                        |                        | 6S/60S/6M/60M                     |                   |                        | GT5Y-4SN6A200  |
|                |                        | 12V DC                 | 1S/10S/1M/10M                     | GT5Y-4SN1D12      |                        |                |
|                |                        |                        | 3S/30S/3M/30M                     | GT5Y-4SN3D12      |                        |                |
|                |                        |                        | 24V DC                            | 1S/10S/1M/10M     | GT5Y-4SN1D24           |                |
|                |                        |                        |                                   | 3S/30S/3M/30M     | GT5Y-4SN3D24           |                |
|                |                        |                        |                                   | 6S/60S/6M/60M     | GT5Y-4SN6D24           |                |
|                |                        |                        | Interval ON                       | DPDT              | 220V AC/<br>30V DC, 5A | 100 to 120V AC |
| 12V DC         | GT5Y-2SV1D12           |                        |                                   |                   |                        |                |
| 24V DC         | GT5Y-2SV1D24           |                        |                                   |                   |                        |                |
| 4PDT           | 220V AC/<br>30V DC, 3A | 100 to 120V AC         |                                   | GT5Y-4SV1A100     |                        |                |
|                |                        | 24V DC                 |                                   | GT5Y-4SV1D24      |                        |                |
|                |                        | Cycle                  |                                   | DPDT              | 220V AC/<br>30V DC, 5A | 100 to 120V AC |
| 200 to 240V AC | GT5Y-4SF1A200          |                        |                                   |                   |                        |                |
| 4PDT           | 220V AC/<br>30V DC, 3A | 200 to 240V AC         | GT5Y-4SF1A200                     |                   |                        |                |
|                |                        | 24V DC                 | GT5Y-4SF1D24                      |                   |                        |                |

Note: S and M of the time range indicate second, and minute respectively.

## Accessories

Both SY4S-05C and SM2S-05C are UL recognized, CSA certified, and TÜV approved. Others are UL recognized and CSA certified, except for SY4S-05A and SM2S-05A. When ordering, specify the Ordering No.

| Item                        | Part No.         | Ordering No. | Package Quantity | Remarks                            |  |
|-----------------------------|------------------|--------------|------------------|------------------------------------|--|
| DIN Rail Mount Socket       | Socket           | SY4S-05A     | SY4S-05A         | 1                                  | For 4PDT contact                                   |
|                             |                  | SY4S-05C     | SY4S-05C         | 1                                  | For 4PDT contact                                   |
|                             |                  | SY4S-05D     | SY4S-05D         | 1                                  | For 4PDT contact                                   |
|                             |                  | SY4S-05DF    | SY4S-05DF        | 1                                  | For 4PDT contact                                   |
|                             |                  | SU2S-11L     | SU2S-11L         | 1                                  | For DPDT contact                                   |
|                             |                  | SU4S-11L     | SU4S-11L         | 1                                  | For 4PDT contact                                   |
|                             |                  | SM2S-05A     | SM2S-05A         | 1                                  | For DPDT contact                                   |
|                             |                  | SM2S-05C     | SM2S-05C         | 1                                  | For DPDT contact                                   |
|                             |                  | SM2S-05D     | SM2S-05D         | 1                                  | For DPDT contact                                   |
|                             |                  | SM2S-05DF    | SM2S-05DF        | 1                                  | For DPDT contact                                   |
| Hold-Down Spring            | SFA-202          | SFA-202PN20  | 10 sets (20 pcs) | For SY4S-05A, SM2S-05A (2 pcs/set) |  |
|                             |                  | SFA-511      | SFA-511PN20      | 20                                 | For SY4S-05D, SY4S-05DF, SM2S-05D, SM2S-05DF       |
| Panel/PC Board Mount Socket | Socket           | SY4S-51      | SY4S-51          | 1                                  | For 4PDT contact, Solder Terminal                  |
|                             |                  | SY4S-61      | SY4S-61          | 1                                  | For 4PDT contact, PC Board Terminal                |
|                             |                  | SM2S-51      | SM2S-51          | 1                                  | For DPDT contact, Solder Terminal                  |
|                             |                  | SM2S-61      | SM2S-61          | 1                                  | For DPDT contact, PC Board Terminal                |
|                             | Hold-Down Spring | SFA-302      | SFA-302PN20      | 10 sets (20 pcs)                   | For SY4S-51, SY4S-61, SM2S-51, SM2S-61 (2 pcs/set) |

## Time Ranges

| Code | Scale   | Time Range Indication | Time Range        |
|------|---------|-----------------------|-------------------|
| 1S   | 0 to 10 | $\times 0.1$ S        | 0.1 sec to 1 sec  |
| 10S  | 0 to 10 | $\times 1$ S          | 0.2 sec to 10 sec |
| 1M   | 0 to 10 | $\times 0.1$ M        | 1.2 sec to 1 min  |
| 10M  | 0 to 10 | $\times 1$ M          | 12 sec to 10 min  |
| 3S   | 0 to 3  | $\times 1$ S          | 0.1 sec to 3 sec  |
| 30S  | 0 to 3  | $\times 10$ S         | 0.5 sec to 30 sec |
| 3M   | 0 to 3  | $\times 1$ M          | 3 sec to 3 min    |
| 30M  | 0 to 3  | $\times 10$ M         | 30 sec to 30 min  |
| 6S   | 0 to 6  | $\times 1$ S          | 0.1 sec to 6 sec  |
| 60S  | 0 to 6  | $\times 10$ S         | 1 sec to 60 sec   |
| 6M   | 0 to 6  | $\times 1$ M          | 6 sec to 6 min    |
| 60M  | 0 to 6  | $\times 10$ M         | 1 min to 60 min   |

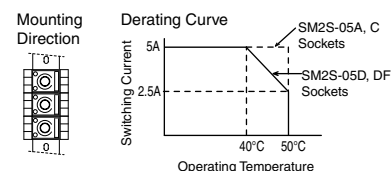
## Contact Ratings

| Part No.                    | GT5Y-4   | GT5Y-2  |
|-----------------------------|--|---|
| Contact Configuration       | 4PDT   | DPDT  |
| Rated Load                  | Resistive Load   | 220V AC, 3A<br>30V DC, 3A                                       |
|                             | Inductive Load<br>$\cos\phi=0.3$<br>L/R=7ms                    | 220V AC, 0.8A<br>30V DC, 1.5A                                   |
| Maximum Switching Voltage   | 250V AC/125V DC  | 250V AC/125V DC   |
| Maximum Switching Current   | 3A   | 5A (Note)   |
| Maximum Switching Frequency | 1800 operations/hour   | 1800 operations/hour  |
| Allowable Contact Power     | Resistive Load   | AC: 660VA<br>DC: 90W  |
|                             | Inductive Load<br>$\cos\phi=0.3$<br>L/R=7ms                    | AC: 176VA<br>DC: 45W  |
| Minimum Applicable Load     | 5V DC, 10mA (reference value)<br>24V DC, 5mA (reference value) | 5V DC, 20mA (reference value)<br>24V DC, 10mA (reference value) |
| External Protection Element | Fuse 250V 3A   | Fuse 250V 5A  |
| Life                        | Electrical   | 200,000 operations minimum (220V AC, 3A)                        |
|                             | Mechanical   | 50 million operations minimum                                   |

Note: See Operating Temperature - Maximum Switching Current Characteristics.

## Operating Temperature - Maximum Switching Current Characteristics

Check the derating curve described below when mounting more than two GT5Y-2 timers and SM2S-05\* sockets.



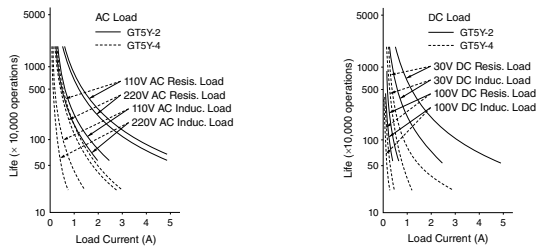
# GT5Y Miniature Electronic Timers

## General Specifications

|                                    |  |                          |          |
|------------------------------------|--|--------------------------|----------|
| Model                              | GT5Y-□SN   | GT5Y-□SV                 | GT5Y-□SF |
| Operation                          | ON Delay   | Interval                 | Cycle    |
| Pollution Degree                   | 2 (IEC60664-1)   |                          |          |
| Overvoltage Category               | III (IEC60664-1)   |                          |          |
| Rated Operational Voltage          | A200   | 200 to 240V AC (50/60Hz) |          |
|                                    | A100   | 100 to 120V AC (50/60Hz) |          |
|                                    | D24  | 24V DC                   |          |
|                                    | D12  | 12V DC                   |          |
| Voltage Range                      | A200   | 170 to 264V AC (50/60Hz) |          |
|                                    | A100   | 85 to 132V AC (50/60Hz)  |          |
|                                    | D24  | 21.6 to 26.4V DC         |          |
|                                    | D12  | 10.8 to 13.2V DC         |          |
| Reset Voltage                      | Rated Voltage × 20% minimum  |                          |          |
| Operating Temperature              | -10 to +50°C (no freezing and condensation)  |                          |          |
| Storage/Transportation Temperature | -30 to +80°C (no freezing and condensation)  |                          |          |
| Operating Humidity                 | 35 to 85% RH (no condensation)   |                          |          |
| Storage Humidity                   | 35 to 85% RH (no condensation)   |                          |          |
| Altitude                           | 0 to 2000m (operation)   |                          |          |
|                                    | 0 to 3000m (transportation)  |                          |          |
| Reset Time                         | 100 ms maximum   |                          |          |
| Repeat Error                       | ±0.2%, ±20 ms  |                          |          |
| Voltage Error                      | ±0.5%, ±20 ms  |                          |          |
| Temperature Error                  | ±3%  |                          |          |
| Setting Error                      | ±10%   |                          |          |
| Insulation Resistance              | 100 MΩ minimum (500V DC megger)  |                          |          |
| Dielectric Strength                | Between power and output terminals: 2000V AC, 1 minute   |                          |          |
|                                    | Between contacts of different poles: 2000V AC, 1 minute  |                          |          |
|                                    | Between contacts of the same pole: 1000V AC, 1 minute  |                          |          |
| Vibration Resistance               | 10 to 55 Hz, amplitude 0.75 mm, 2 hours each in 3 directions   |                          |          |
| Shock Resistance                   | Operating extremes: 98 m/s <sup>2</sup> ,<br>Damage limits: 490 m/s <sup>2</sup> , 3 shocks each in 6 directions |                          |          |
| Degree of Protection               | IP40 (timer), IP20 (socket) (IEC60529)   |                          |          |
| Power Consumption (approx.)        | A200   | 1.6 VA (200V AC/60Hz)    |          |
|                                    | A100   | 1.4 VA (100V AC/60Hz)    |          |
|                                    | D24  | 1.0W                     |          |
|                                    | D12  | 0.9W                     |          |
| Dimensions                         | 27.5H × 21.0W × 58.6D mm   |                          |          |
| Weight (approx.)                   | 50g  |                          |          |

Note: See Operating Temperature – Maximum Switching Current Characteristics.

## Electrical Life Curves

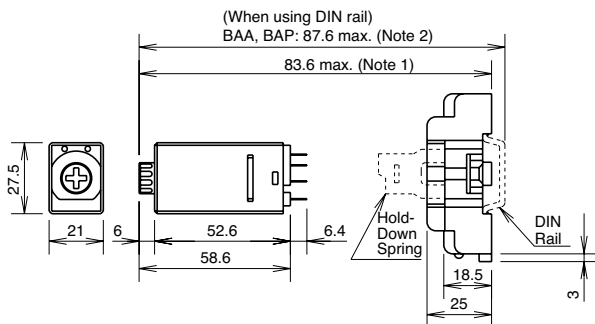


## Dimensions

(When using DIN Rail Mount Socket)

### GT5Y-4

See Relay Sockets catalog for SY4S-05A, SY4S-05C, SY4S-05D, SY4S-05DF.



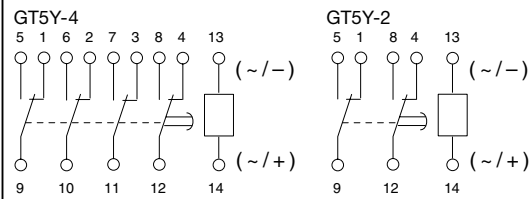
Note 1: SY4S-05A: 83.6 max., SY4S-05C: 83.6 max., SY4S-05D: 88.6 max., SY4S-05DF: 88.6 max.

Note 2: SY4S-05A: 87.8 max., SY4S-05C: 87.8 max., SY4S-05D: 92.8 max., SY4S-05DF: 92.8 max.

## Operation Charts and Internal Connections

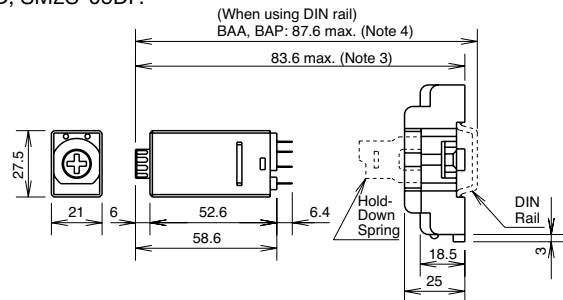
| Operation Mode | Item                       | Operation |
|----------------|----------------------------|-----------|
| ON Delay       | Terminal No. 13-14 (POWER) | Set Time  |
|                | 1-9, 3-11, 2-10, 4-12 (NC) |           |
|                | 5-9, 7-11, 6-10, 8-12 (NO) |           |
|                | POWER Indicator            |           |
|                | OUT Indicator              |           |
| Interval ON    | Terminal No. 13-14 (POWER) | Set Time  |
|                | 1-9, 3-11, 2-10, 4-12 (NC) |           |
|                | 5-9, 7-11, 6-10, 8-12 (NO) |           |
|                | POWER Indicator            |           |
|                | OUT Indicator              |           |
| Cycle          | Terminal No. 13-14 (POWER) | Set Time  |
|                | 1-9, 3-11, 2-10, 4-12 (NC) |           |
|                | 5-9, 7-11, 6-10, 8-12 (NO) |           |
|                | POWER Indicator            |           |
|                | OUT Indicator              |           |

(Internal Connections)



### GT5Y-2

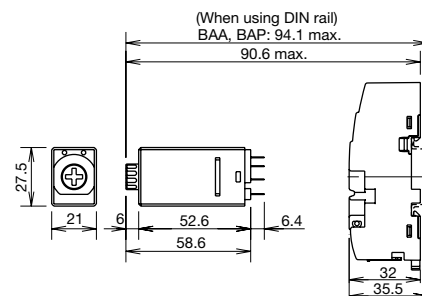
See Relay Sockets catalog for SM2S-05A, SM2S-05C, SM2S-05D, SM2S-05DF.



Note 3: SM2S-05A: 83.6 max., SM2S-05C: 83.6 max., SM2S-05D: 88.6 max., SM2S-05DF: 88.6 max.

Note 4: SM2S-05A: 87.8 max., SM2S-05C: 87.8 max., SM2S-05DN: 92.8 max., SY4S-05DF: 92.8 max.

### GT5Y-4 and SU4S-11L, GT5Y-2 and SU2S-11L






Applicable hold-down spring: SFA-202



# GT5P Miniature Electronic Timers

## Economic Efficiency Focused Delayed Output SPDT/5A

- Three operation modes: ON Delay, Cycle, and One Shot
- Repeat error:  $\pm 0.2\%$   $\pm 10$  ms maximum
- Complies with safety standards  
UL recognized, CSA certified, TÜV approved, EN compliant

| Applicable Standards | Mark  | File No. or Organization              |
|----------------------|---|---------------------------------------|
| UL508                |  | UL/c-UL recognized<br>File No. E55996 |
| CSA C22.2 No.14      |  | CSA File No. LR66809                  |
| EN61812-1            |  | EU Low Voltage Directive              |



Package Quantity: 1

| Operation Mode | Contact       | Output                                | Time Range | Operating Voltage | Part No. (Ordering No.)               |              |           |               |
|----------------|---------------|---------------------------------------|------------|-------------------|---------------------------------------|--------------|-----------|---------------|
| ON Delay       | SPDT          | 24V DC/<br>120V AC, 5A<br>240V AC, 3A | 3S         | 100 to 120V AC    | GT5P-N3SA100                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-N10SA100                         |              |           |               |
|                |               |                                       | 30S        |                   | GT5P-N30SA100                         |              |           |               |
|                |               |                                       | 60S        |                   | GT5P-N60SA100                         |              |           |               |
|                |               |                                       | 3M         |                   | GT5P-N3MA100                          |              |           |               |
|                |               |                                       | 6M         |                   | GT5P-N6MA100                          |              |           |               |
|                |               |                                       | 10M        |                   | GT5P-N10MA100                         |              |           |               |
|                |               |                                       | 1S         |                   | 200 to 240V AC                        | GT5P-N1SA200 |           |               |
|                |               |                                       | 6S         | GT5P-N6SA200      |                                       |              |           |               |
|                |               |                                       | 10S        | GT5P-N10SA200     |                                       |              |           |               |
|                |               |                                       | 30S        | GT5P-N30SA200     |                                       |              |           |               |
|                |               |                                       | 60S        | GT5P-N60SA200     |                                       |              |           |               |
|                |               |                                       | 3M         | GT5P-N3MA200      |                                       |              |           |               |
|                |               |                                       | 6M         | GT5P-N6MA200      |                                       |              |           |               |
|                |               |                                       | 10M        | GT5P-N10MA200     |                                       |              |           |               |
|                |               |                                       | Cycle      | SPDT              | 24V DC/<br>120V AC, 5A<br>240V AC, 3A | 1S           | 24V AC/DC | GT5P-N1SAD24  |
|                |               |                                       |            |                   |                                       | 6S           |           | GT5P-N6SAD24  |
|                |               |                                       |            |                   |                                       | 10S          |           | GT5P-N10SAD24 |
|                |               |                                       |            |                   |                                       | 60S          |           | GT5P-N60SAD24 |
|                |               |                                       |            |                   |                                       | 6M           |           | GT5P-N6MAD24  |
| 10M            | GT5P-N10MAD24 |                                       |            |                   |                                       |              |           |               |
| 10S            | 12V DC        | GT5P-N10SD12                          |            |                   |                                       |              |           |               |
| 30S            |               | GT5P-N30SD12                          |            |                   |                                       |              |           |               |
| 60S            |               | GT5P-N60SD12                          |            |                   |                                       |              |           |               |
| 10M            |               | GT5P-N10MD12                          |            |                   |                                       |              |           |               |
| One Shot       | SPDT          | 24V DC/<br>120V AC, 5A<br>240V AC, 3A | 3S         | 100 to 120V AC    | GT5P-F3SA100                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-F10SA100                         |              |           |               |
|                |               |                                       | 3S         | 200 to 240V AC    | GT5P-F3SA200                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-F10SA200                         |              |           |               |
|                |               |                                       | 3S         | 24V AC/DC         | GT5P-F3SAD24                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-F10SAD24                         |              |           |               |
|                |               |                                       | 3S         | 12V DC            | GT5P-F3SD12                           |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-F10SD12                          |              |           |               |
| One Shot       | SPDT          | 24V DC/<br>120V AC, 5A<br>240V AC, 3A | 3S         | 100 to 120V AC    | GT5P-P3SA100                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-P10SA100                         |              |           |               |
|                |               |                                       | 3S         | 200 to 240V AC    | GT5P-P3SA200                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-P10SA200                         |              |           |               |
| One Shot       | SPDT          | 24V DC/<br>120V AC, 5A<br>240V AC, 3A | 3S         | 24V AC/DC         | GT5P-P3SAD24                          |              |           |               |
|                |               |                                       | 10S        |                   | GT5P-P10SAD24                         |              |           |               |

Note: S and M of time range indicate second and minute respectively.

## Accessories

| Item                  | Part No.              | Ordering No. | Package Quantity | Remarks                  |                          |
|-----------------------|-----------------------|--------------|------------------|--------------------------|--------------------------|
| DIN Rail Mount Socket | Socket                | SR2P-06A     | SR2P-06A         | 1                        |                          |
|                       |                       | SR2P-05A     | SR2P-05A         | 1                        |                          |
|                       |                       | SR2P-05C     | SR2P-05C         | 1                        | UL/CSA/TÜV               |
|                       | Hold-Down Spring      | SFA-202      | SFA-202PN20      | 10 sets (20 pcs)         | For SR2P-06A (2 pcs/set) |
| SFA-203               |                       | SFA-203PN20  | 10 sets (20 pcs) | For SR2P-05A (2 pcs/set) |                          |
| Panel Mount Socket    | w/Solder Terminals    | SR2P-511     | SR2P-511         | 1                        | UL/CSA                   |
|                       | w/Wire Wrap Terminals | SR2P-70      | SR2P-70          | 1                        |                          |

## Time Ranges

| Code | Time Range        |
|------|-------------------|
| 1S   | 0.1 sec to 1 sec  |
| 3S   | 0.1 sec to 3 sec  |
| 6S   | 0.1 sec to 6 sec  |
| 10S  | 0.2 sec to 10 sec |
| 30S  | 0.5 sec to 30 sec |
| 60S  | 1 sec to 60 sec   |
| 3M   | 3 sec to 3 min    |
| 6M   | 6 sec to 6 min    |
| 10M  | 10 sec to 10 min  |

## Contact Ratings

|                           |   |  |
|---------------------------|---|--|
| Contact Configuration     | SPDT  |  |
| Maximum Switching Voltage | 250V AC, 150V DC  |  |
| Maximum Switching Current | 5A  |  |
| Maximum Switching Power   | AC: 960VA<br>DC: 120W                                   |  |
| Rated Load                | Resistive Load  | 120V AC / 24V DC, 5A<br>240V AC, 3A                  |
|                           | Inductive Load<br>$\cos\phi = 0.3 - 0.4$<br>L/R = 15 ms | 240V AC, 0.8A<br>120V AC, 1.4A<br>24V DC, 1.7A       |
| Life                      | Electrical  | 100,000 operations minimum<br>(rated resistive load) |
|                           | Mechanical  | 20,000,000 operations minimum                        |

Minimum Applicable Load: 5V DC 10 mA (reference value)

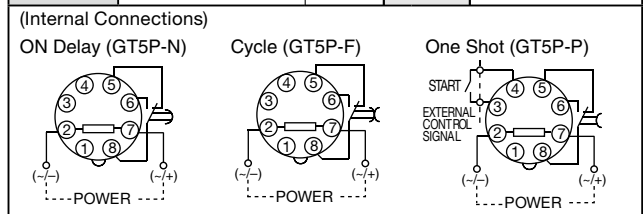
# GT5P Miniature Electronic Timers

## General Specifications

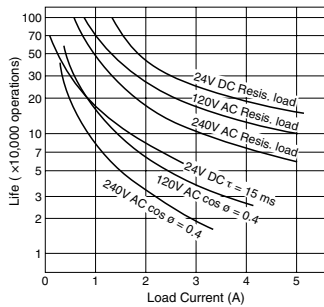
| Model                       | GT5P-N   | GT5P-F                                      | GT5P-P        |
|-----------------------------|--|---|---------------|
| Operation                   | ON Delay   | Cycle                                       | One Shot      |
| Pollution Degree            | 2 (IEC60664-1)   |   |               |
| Rated Operational Voltage   | A200   | 200 to 240V AC (50/60Hz)                    |               |
|                             | A100   | 100 to 120V AC (50/60Hz)                    |               |
|                             | AD24   | 24V AC (50Hz/60Hz)/24V DC                   |               |
|                             | D12  | 12V DC                                      |               |
| Voltage Range               | A200   | 170 to 264V AC (50/60Hz)                    |               |
|                             | A100   | 85 to 132V AC (50/60Hz)                     |               |
|                             | AD24   | 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC |               |
|                             | D12  | 10.8 to 13.2V DC                            |               |
| Operating Temperature       | -10 to +50°C (no freezing)   |   |               |
| Storage Temperature         | -30 to +70°C (no freezing)   |   |               |
| Operating Humidity          | 35 to 85% RH (no condensation)   |   |               |
| Storage Humidity            | 30 to 85% RH (no condensation)   |   |               |
| Altitude                    | 0 to 2000m (operation)<br>0 to 3000m (transportation)                            |   |               |
| Reset Time                  | 100 ms maximum   |   |               |
| Repeat Error                | ±0.2%, ±10 ms  |   |               |
| Voltage Error               | ±0.5%, ±20 ms  |   |               |
| Temperature Error           | ±3%  |   |               |
| Setting Error               | ±10%   |   |               |
| Insulation Resistance       | 100 MΩ minimum (500V DC megger)  |   |               |
| Dielectric Strength         | Between power and output terminals: 2000V AC, 1 minute                           |   |               |
|                             | Between contacts of different poles: 2000V AC, 1 minute                          |   |               |
|                             | Between contacts of the same pole: 750V AC, 1 minute                             |   |               |
| Vibration Resistance        | 10 to 55Hz, amplitude 0.75 mm, 2 hours each in 3 directions                      |   |               |
| Shock Resistance            | Operating extremes: 98 m/s <sup>2</sup> ,<br>Damage limits: 490 m/s <sup>2</sup> |   |               |
|                             |  |   |               |
| Power Consumption (approx.) | A200   | 3.9 VA (60Hz)                               | 5.6 VA (60Hz) |
|                             | A100   | 2.3 VA (60Hz)                               | 2.9 VA (60Hz) |
|                             | AD24   | 1.3 VA (60Hz)/0.5W                          |               |
|                             | D12  | 0.6W  |               |
| Dimensions                  | 36H × 29W × 81.5D mm   |   |               |
| Weight (approx.)            | 49g  |   |               |

## Operation Charts and Internal Connections

| Operation Mode | Item                       | Operation |
|----------------|----------------------------|-----------|
| On Delay       | Terminal No. 2-7 (POWER)   |           |
|                | 5-8 (NC)                   |           |
|                | 6-8 (NO)                   |           |
|                | POWER Indicator            |           |
|                | OUT Indicator              |           |
| Cycle          | Terminal No. 2-7 (POWER)   |           |
|                | 5-8 (NC)                   |           |
|                | 6-8 (NO)                   |           |
|                | POWER Indicator            |           |
|                | OUT Indicator              |           |
| One Shot       | Terminal No. 13-14 (POWER) |           |
|                | 3-4 (Start Input)          |           |
|                | 5-8 (NC)                   |           |
|                | 6-8 (NO)                   |           |
|                | OUT Indicator              |           |



## Electrical Life Curves

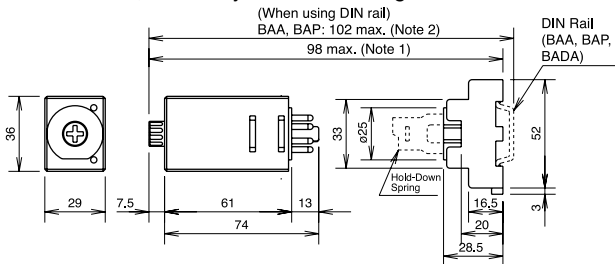


## Dimensions

(When using DIN Rail Mount Socket)

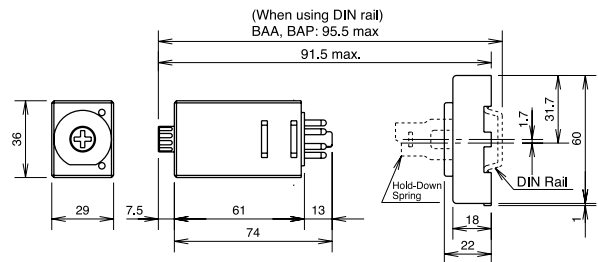
### SR2P-05A

For SR2P-05C, see Relay Sockets catalog.



Note 1: SR2P-05C: 99.5 max.  
Note 2: SR2P-05C: 103.5 max.

### SR2P-06B

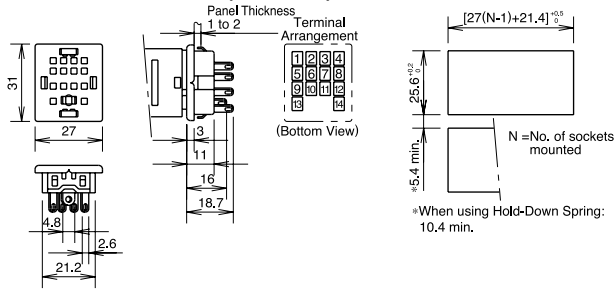


# GT5Y/GT5P Miniature Electronic Timers

## Dimensions / Mounting Hole Layout (for Panel/PC Board Mount Socket)

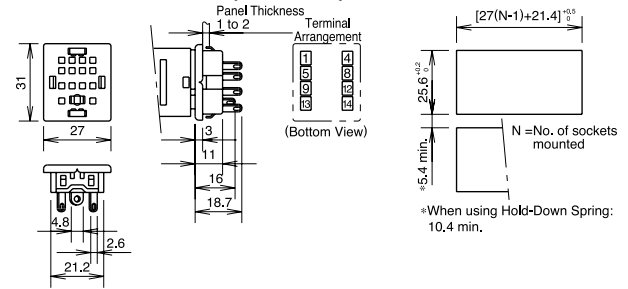
### 1. GT5Y-4

#### Panel Mount Socket (SY4S-51)

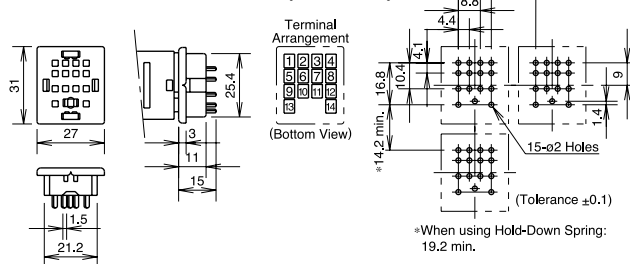


### 2. GT5Y-2

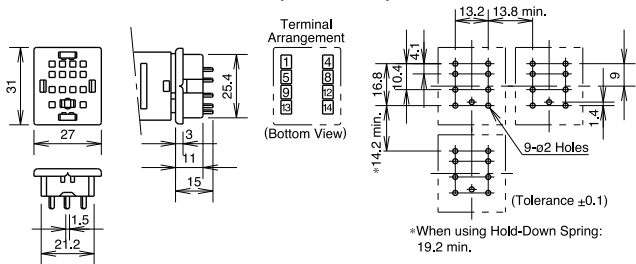
#### Panel Mount Socket (SM2S-51)



#### PC Board Mount Socket (SY4S-61)

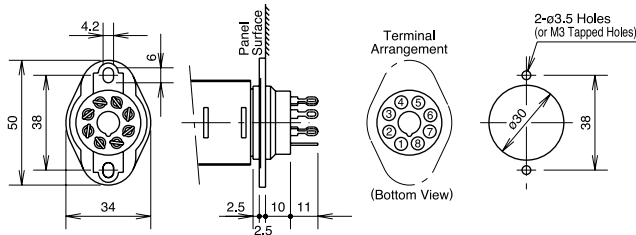


#### PC Board Mount Socket (SM2S-61)

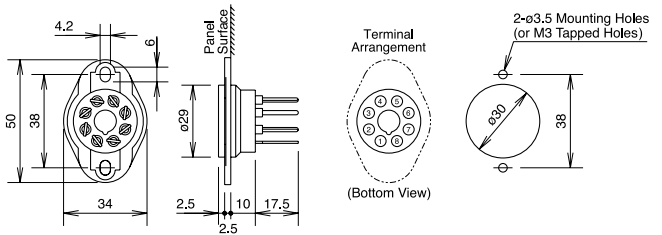


### 3. GT5P

#### Solder Terminal (SR2P-511)

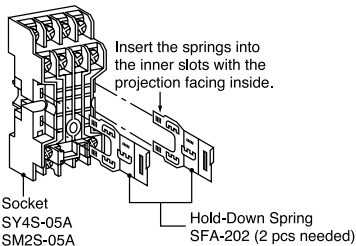


#### Wire Wrap Terminal (SR2P-70)



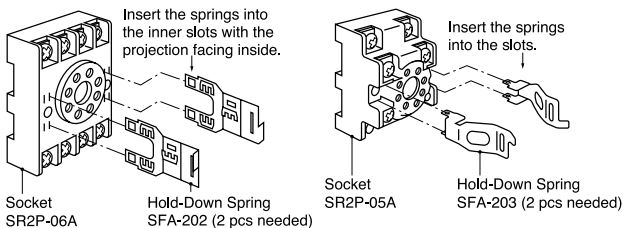
## Installation of Hold-Down Springs

### DIN Rail Mount Socket



### Recommended Tightening Torque and Terminal Screw

| Timer | Applicable Socket  | Terminal Screw | Recommended Tightening Torque |
|-------|--------------------|----------------|-------------------------------|
| GT5Y  | SY4S-05<br>SM2S-05 | M3             | 0.6 to 1.0 N·m                |



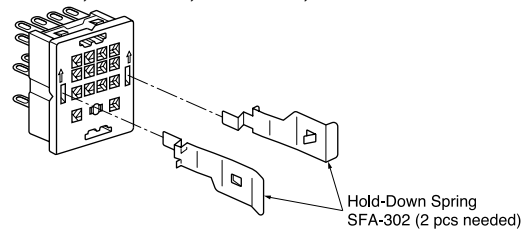
Note: Once installed into sockets, the hold-down springs cannot be removed.

### Recommended Tightening Torque and Terminal Screw

| Timer | Applicable Socket  | Terminal Screw | Recommended Tightening Torque |
|-------|--------------------|----------------|-------------------------------|
| GT5P  | SR2P-05<br>SR2P-06 | M3             | 1.0 to 1.3 N·m                |

### Panel/PC Board Mount Socket

The SFA-302 Hold-Down Springs can be installed to the SY4S-51, SY4S-61, SM2S-51, and SM2S-61 sockets.



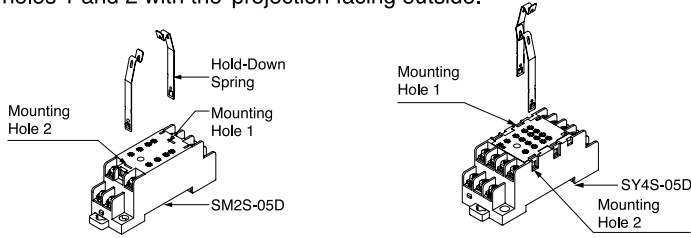
Hold-down springs cannot be installed to SR2P-511 and SR2P-70 panel mount sockets.

# GT5Y/GT5P Miniature Electronic Timers

## Installation/Removal of Hold-Down Springs

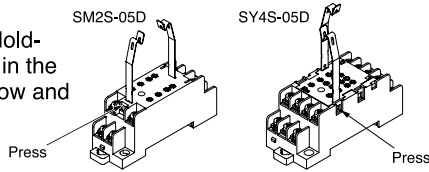
(Installation)

Insert the hold-down springs (SFA-511) into mounting holes 1 and 2 with the projection facing outside.



(Removal)

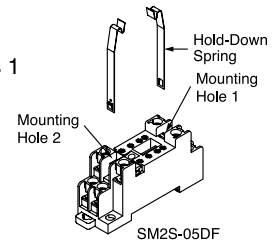
Press the projections of Hold-Down Springs (SFA-511) in the direction shown in the arrow and pull upward to remove.



## Installation/Removal of Hold-Down Springs

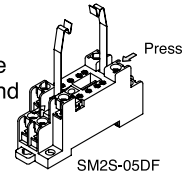
(Installation)

Insert the springs (SFA-511) into mounting holes 1 and 2 with the projection facing outside.



(Removal)

Press the projections of Hold-Down Springs (SFA-511) in the direction shown in the arrow and pull upward to remove.



Note: Apply the same method to SY4S-05DF.



## Safety Precautions

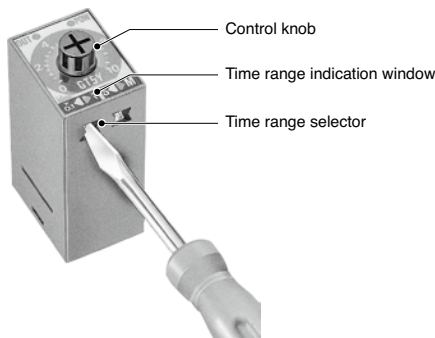
- Be sure to turn off power before mounting, removal, wiring, maintenance and inspection. Otherwise, electric shock or fire could occur.
- Be sure to use timers within rated specification values. Otherwise, electric shock or fire may occur.
- Be sure to use wires to meet voltage and current requirements and tighten M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Be sure to solder the terminals correctly. Loose terminal screws or incomplete soldering may cause abnormal heat and fire.

## Instructions

### Time Range Setting

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

On the GT5Y timers, a desired time range can be selected using the time range selectors on the side surface. Turn the multiplier and time unit selectors using a flat screwdriver until they click.



### Timing Accuracy

Timing accuracies are calculated from the following formulas:

#### Repeat Error

$$= \pm \frac{1}{2} \times \frac{\text{Max. measured value} - \text{Min. measured value}}{\text{Maximum scale value}} \times 100 (\%)$$

#### Voltage Error

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

*T<sub>v</sub>*: Average of measured values at voltage V  
*T<sub>r</sub>*: Average of measured values at the rated voltage

#### Temperature Error

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

*T<sub>t</sub>*: Average of measured values at t°C  
*T<sub>20</sub>*: Average of measured values at 20°C

#### Setting Error

$$= \frac{\text{Average of measured values} - \text{Set value}}{\text{Maximum scale value}} \times 100 (\%)$$

### Use of External Input (GT5P-P Only)

1. Do not apply voltage to external input terminals 3 and 4. Be sure not to connect external inputs to other terminals because the internal circuit may be damaged.
2. Use reliable mechanical contacts capable of switching approximately 22V DC, 1 mA to close input terminals 3 and 4. (Closed: 1 kΩ maximum, Open: 100 kΩ minimum) The input terminals should not be connected to a ground wire of other devices.
3. Do not install input lines in parallel with high-voltage or motor lines. Use shielded wires or separate conduit for input lines, and make the input lines as short as possible.

### Load Current

The rated current of the contact (or control output) should not be exceeded. Especially for inductive, capacitive, and incandescent lamp loads, the inrush current as large as a few to several tens times the rated current may cause welded contacts and other troubles. The amount of inrush current as well as steady-state current must be taken into consideration.

### Contact Protection

Switching an inductive load generates a counter-electromotive force in the coil. The counter emf will cause arcing, which may shorten the contact life. Application of a protection circuit is recommended for contact protection.

### Rest Time

When turning power off after time-out, allow a rest time of 0.1 sec, and during operation, 1 sec at least.

### Power

Since DC types are designed to operate on DC power containing 10% or less ripple, insert a smoothing circuit when using a rectified AC power to operate DC type timers.

### Continuous Energizing

Continuous energizing for a long period of time may damage the electrical characteristics of the timer because of internal heating. Use an additional relay to the output circuit and refrain from continuous energizing of the timer.

### Dielectric Strength Test

When performing an insulation resistance or dielectric strength test on control panels containing timers, make sure that the dielectric strength of the timer is not exceeded. In case the dielectric strength is exceeded, remove the timers from the panels.

### Operating Environment

#### Temperature and Humidity

Use the timer within the operating temperature and operating humidity ranges and prevent freezing and condensation. After storing below the operation temperature, leave the timer at room temperature for a sufficient period of time before use.

#### Environment

Prevent a corrosive gas such as sulfurous or ammonia gas, organic solvents (alcohol, benzene, thinner, etc.), strong alkaline substances or strong acids from touching to the timer, and do not use the timer in such an environment. Keep the timer from water splashes or steam.

#### Vibration and Shock

Since excessive vibrations or shocks cause the output contacts to open, the timer should be used within the operating extremes of vibration and shock resistance. Use of hold-down springs is recommended for secure mounting on sockets.




### Others

- Use a mechanical-contact switch or relay to supply power to the time.
- When driving the timer using a solid-state output device such as two-wire proximity switch, photoelectric switch or solid-state relay directly, malfunction may be caused by a leakage current from the solid-state device. Be sure to check thoroughly before using.
- Since AC types (such as A100 and A200) comprise a capacitive load, the SSR dielectric strength should be two or more times as large as the power voltage when switching the timer power using an SSR.
- To make a sequence circuit by connecting timer and relay, check the timer operation sufficiently in consideration of the reset time of the timer.

# GE1A series Electronic Timers

## Two different time ranges to cover a wide time range

- Large clear knob for easy time range setting
- ON Delay function
- Highly precise time control
- Instant monitoring of operation status by LED indicators.

| Applicable Standards      | Mark  | File No. or Organization           |
|---------------------------|---|------------------------------------|
| UL508<br>CSA C22.2 No. 14 |  | UL/c-UL Listed<br>File No. E204716 |
| EN61812-1                 |  | EU Low Voltage Directive           |
|                           |  | TÜV Product Service                |



## Contact Ratings

|                 |   |
|-----------------|---|
| Contact Ratings | 240V AC/5A, 24V DC/5A (resistive load)  |
| Electrical Life | 100,000 operations minimum (resistive load)                                   |
| Mechanical Life | GE1A-B: 10,000,000 operations minimum<br>GE1A-C: 5,000,000 operations minimum |

## Time Ranges

| Time Range Code | Magnification      | Time Range         |
|-----------------|--------------------|--------------------|
| 10H             | 1S                 | 0.1 sec. to 1 sec. |
|                 | 10S                | 1 sec. to 10 sec.  |
|                 | 1M                 | 0.1 min. to 1 min. |
|                 | 10M                | 1 min. to 10 min.  |
|                 | 1H                 | 0.1 hour to 1 hour |
| 30H             | 10H                | 1 hour to 10 hours |
|                 | 1S                 | 0.3 sec. to 3 sec. |
|                 | 10S                | 3 sec. to 30 sec.  |
|                 | 1M                 | 0.3 min. to 3 min. |
|                 | 10M                | 3 min. to 30 min.  |
| 1H              | 0.3 hour to 3 hour |                    |
| 10H             | 3 hour to 30 hours |                    |

10H

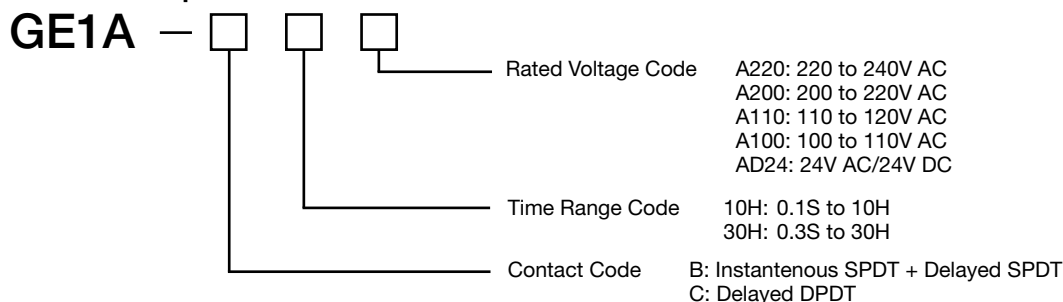


30H



| Time Range                    | Rated Voltage  | Part No.                          |               |
|-------------------------------|----------------|-----------------------------------|---------------|
|                               |                | Contact                           |               |
|                               |                | Delayed SPDT + Instantaneous SPDT | Delayed DPDT  |
| 10H<br>(0.1 sec. to 10 hours) | 220 to 240V AC | GE1A-B10HA220                     | GE1A-C10HA220 |
|                               | 200 to 220V AC | GE1A-B10HA200                     | GE1A-C10HA200 |
|                               | 110 to 120V AC | GE1A-B10HA110                     | GE1A-C10HA110 |
|                               | 100 to 110V AC | GE1A-B10HA100                     | GE1A-C10HA100 |
|                               | 24V AC/DC      | GE1A-B10HAD24                     | GE1A-C10HAD24 |
| 30H<br>(0.3 sec. to 30 hours) | 220 to 240V AC | GE1A-B30HA220                     | GE1A-C30HA220 |
|                               | 200 to 220V AC | GE1A-B30HA200                     | GE1A-C30HA200 |
|                               | 110 to 120V AC | GE1A-B30HA110                     | GE1A-C30HA110 |
|                               | 100 to 110V AC | GE1A-B30HA100                     | GE1A-C30HA100 |
|                               | 24V AC/DC      | GE1A-B30HAD24                     | GE1A-C30HAD24 |

## Part No. Development



## Specifications

| Model                     |  | GE1A-B   | GE1A-C                         |
|---------------------------|--|--|--------------------------------|
| Operation Mode            |  | ON Delay   |                                |
| Time Range                |  | 0.1 second to 30 hours   |                                |
| Rated Operational Voltage |  | 220V to 240V AC, 200 to 220V AC, 110V to 120V AC, 100 to 110V AC, 24V AC/DC                          |                                |
| Voltage Tolerance         |  | AC: 85 to 110%, DC: 90 to 110%   |                                |
| Operating Temperature     |  | -10 to +55°C (without freezing)  |                                |
| Storage Temperature       |  | -30 to +70°C (without freezing)  |                                |
| Operating Humidity        |  | 35 to 85% RH (without condensation)  |                                |
| Repeat Error              |  | ±0.2% ±10 ms maximum   |                                |
| Voltage Error             |  | ±0.5% ±10 ms maximum   |                                |
| Temperature Error         |  | ±3% maximum  |                                |
| Setting Error             |  | ±10% maximum   |                                |
| Insulation Resistance     |  | 100 MΩ minimum (500V DC megger)  |                                |
| Dielectric Strength       | Between power and output terminals       | 2,000V AC, 1 minute  |                                |
|                           | Between contact circuits                 | 750V AC, 1 minute  |                                |
|                           | Between contact circuits (opposite pole) | 2,000V AC, 1 minute  |                                |
| Vibration Resistance      |  | Damage limits: Amplitude 0.75 mm, 10 to 55 Hz<br>Operating extremes: Amplitude 0.5 mm, 10 to 55 Hz   |                                |
| Shock Resistance          | Damage limits                            | Panel mount: 490 m/s <sup>2</sup> (approx. 50G)<br>Surface mount: 249 m/s <sup>2</sup> (approx. 25G) |                                |
|                           | Operating extremes                       | 98 m/s <sup>2</sup> (approx. 10G)  |                                |
| Power Consumption         | 220V AC                                  | 7.7 VA (60 Hz), 6.6 VA (50 Hz)   | 8.0 VA (60 Hz), 7.0 VA (50 Hz) |
|                           | 200V AC                                  | 7.0 VA (60 Hz), 6.0 VA (50 Hz)   | 8.0 VA (60 Hz), 7.0 VA (50 Hz) |
|                           | 110V AC                                  | 3.8 VA (60 Hz), 3.3 VA (50 Hz)   | 3.5 VA (60 Hz), 3.0 VA (50 Hz) |
|                           | 100V AC                                  | 3.5 VA (60 Hz), 3.0 VA (50 Hz)   | 3.5 VA (60 Hz), 3.0 VA (50 Hz) |
|                           | 24V AC                                   | 1.6 VA   | 2.0 VA                         |
|                           | 24V DC                                   | 1.0W   | 0.8W                           |
| Weight (Approx.)          |  | 101g   | 95g                            |

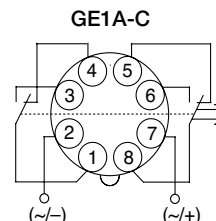
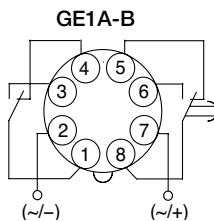
### GE1A-B

| Item                  | Terminal No. | Operation |
|-----------------------|--------------|-----------|
| Power                 | 2-7 (Power)  |           |
|                       | 5-8 (NC)     |           |
| Delayed Contact       | 6-8 (NO)     |           |
|                       | 1-4 (NC)     |           |
| Instantaneous Contact | 1-3 (NO)     |           |
|                       | POWER        |           |
| LED Indicator         | OUT          |           |

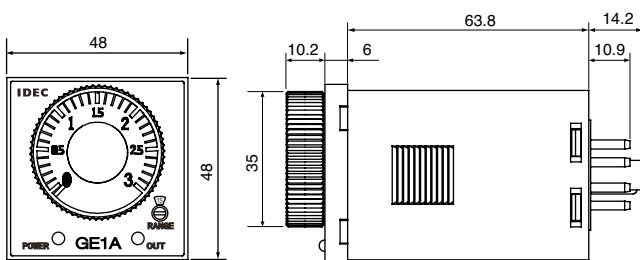
### GE1A-C

| Item            | Terminal No.  | Operation |
|-----------------|---------------|-----------|
| Power           | 2-7 (Power)   |           |
|                 | 1-4, 5-8 (NC) |           |
| Delayed Contact | 1-3, 6-8 (NO) |           |
|                 | POWER         |           |
| LED Indicator   | OUT           |           |

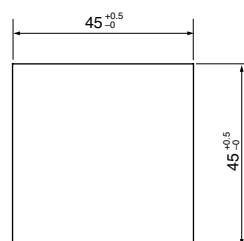
## Internal Connections



## Dimensions



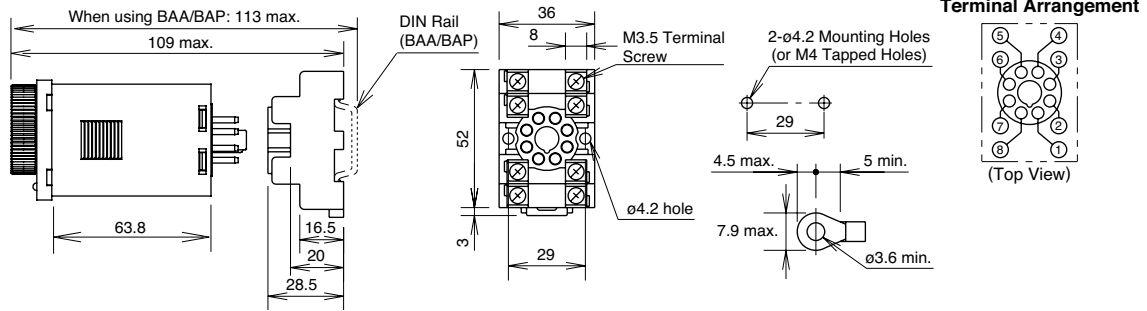
## Panel Cut-out



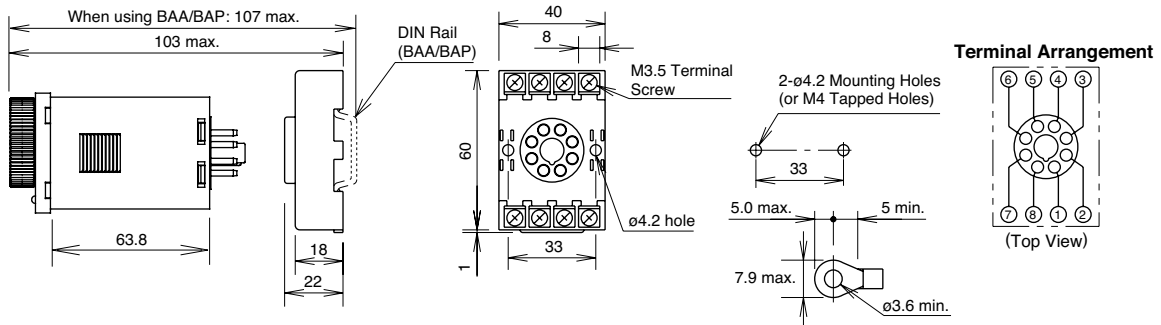
# GE1A Series Electronic Timers

## Applicable Sockets

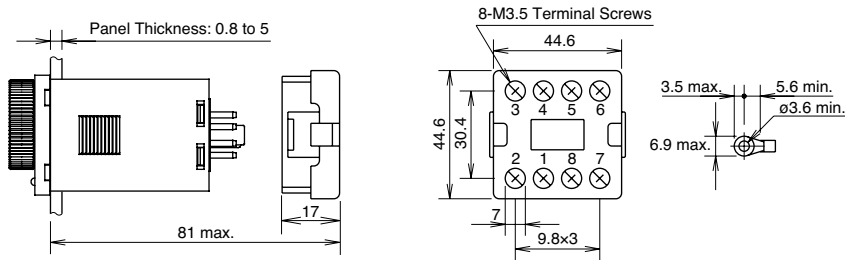
SR2P-05A (not UL/c-UL listed)



SR2P-06A





SR6P-M08G



All dimensions in mm.

## Accessories

| Name                | Shape   | Part No. |
|---------------------|---|----------|
| Panel Mount Adapter |  | GE9Z-AD  |
| Dust Cover          |  | GE9Z-C48 |

# IDEC CORPORATION

 [www.idec.com](http://www.idec.com)

### Head Office

6-64, Nishi-Miyahara-2-Chome, Yodogawa-ku, Osaka 532-0004, Japan

|                  |                               |                         |                      |                       |                             |                        |                      |
|------------------|-------------------------------|-------------------------|----------------------|-----------------------|-----------------------------|------------------------|----------------------|
| <b>USA</b>       | IDEC Corporation              | Tel: +1-408-747-0550    | opencontact@idec.com | <b>Hong Kong</b>      | IDEC Izumi (H.K.) Co., Ltd. | Tel: +852-2803-8989    | info@hk.idec.com     |
| <b>Germany</b>   | APEM GmbH                     | Tel: +49-40-25 30 54 -0 | service@eu.idec.com  | <b>China/Shanghai</b> | IDEC (Shanghai) Corporation | Tel: +86-21-6135-1515  | idec@cn.idec.com     |
| <b>Singapore</b> | IDEC Izumi Asia Pte. Ltd.     | Tel: +65-6746-1155      | info@sg.idec.com     | <b>China/Shenzhen</b> | IDEC (Shenzhen) Corporation | Tel: +86-755-8356-2977 | idec@cn.idec.com     |
| <b>Thailand</b>  | IDEC Asia (Thailand) Co., Ltd | Tel: +66-2-392-9765     | sales@th.idec.com    | <b>China/Beijing</b>  | IDEC (Beijing) Corporation  | Tel: +86-10-6581-6131  | idec@cn.idec.com     |
| <b>Australia</b> | IDEC Australia Pty. Ltd.      | Tel: +61-3-8523-5900    | sales@au.idec.com    | <b>Japan</b>          | IDEC Corporation            | Tel: +81-6-6398-2527   | marketing@idec.co.jp |
| <b>Taiwan</b>    | IDEC Taiwan Corporation       | Tel: +886-2-2698-3929   | service@tw.idec.com  |                       |                             |                        |                      |

Specifications and other descriptions in this brochure are subject to change without notice.  
2018 IDEC Corporation, All Rights Reserved.

EP1428-8 AUGUST 2018

