

GT5P Series – ON Delay Timers

Key features of the GT5P series include:

- SPDT, 5A contacts
- 8-pin, octal base
- 9 time ranges
- Repeat error ±0.2% maximum
- Control settings by hand or screwdriver
- Power ON and timing out LED indicators
- Uses the same sockets and hold down clips as IDEC's RR2P 8-pin relays



UL Recognized
File No. E55996



CSA Certified
File No. LR66809



Specifications

| | |
|---|---|
| Rated Operating Voltage | 100 to 120V AC (50/60Hz) 200 to 240V AC (50/60Hz) 24V AC/DC 12V DC |
| Voltage Tolerance | AC type: ±15% DC type: ±10% (ripple 10% maximum) |
| Contact Rating | Resistive load 120V AC/24V DC, 5A 240V AC, 3A |
| | Inductive load 240V AC, 0.8A 120V AC, 1.4A 24V DC, 1.7A |
| Allowable Contact Power (resistive load) | 960VA AC 120W DC |
| Contact Form | SPDT |
| Voltage | 250V AC, 150V DC |
| Repeat Error | ±0.2% ±10msec |
| Voltage Error | ±0.5% ±10msec |
| Temperature Error | ±3% maximum (over -10 to 50°C, reference temperature 20°C) |
| Setting Error | ±10% maximum |
| Reset Time | When turning power off after time up: 0.1 sec maximum When turning power off before time up: 1 sec maximum |
| Insulation Resistance | 100MΩ minimum |
| Dielectric Strength | 2000V AC, 1 minute (except between contacts of the same pole) |
| Vibration Resistance | 100N (approximate 10G) |
| Shock Resistance | Operating extremes: 100N (approximate 10G) Damage limits: 500N (approximate 50G) |
| Power Consumption | 100V AC type: 1.5VA (at 50Hz) 200V AC type: 1.6VA (at 50Hz) 24V DC type: 0.9W |
| Electrical Life | 100,000 operations minimum (at rated load) |
| Mechanical Life | 20,000,000 operations minimum |
| Operating Temperature | -10 to +50°C |
| Operating Humidity | 45 to 85% RH |

1. Inductive load (reference), cos φ = 0.3 to 0.4 or L/R = 15msec.
2. Minimum applicable load: 5VDC/10mA (reference).

Switches & Pilot Lights
Display Lights
Relays & Sockets
Timers
Terminal Blocks
Circuit Breakers

Part Numbering List

| Mode of Operation | Contact | Output | Rated Voltage | Time Range | Complete Part No. |
|-------------------|---------|-----------------------------------|----------------|------------|-------------------|
| ON-Delay | SPDT | 24V DC/120V AC, 5A 240V AC, 3A | 100 to 120V AC | 1S | — |
| | | | | 3S | GT5P-N3SA100 |
| | | | | 6S | — |
| | | | | 10S | GT5P-N10SA100 |
| | | | | 30S | GT5P-N30SA100 |
| | | | | 60S | GT5P-N60SA100 |
| | | | | 3M | GT5P-N3MA100 |
| | | | | 6M | GT5P-N6MA100 |
| | | | | 10M | GT5P-N10MA100 |
| | | | 200 to 240V AC | 1S | GT5P-N1SA200 |
| | | | | 3S | — |
| | | | | 6S | GT5P-N6SA200 |
| | | | | 10S | GT5P-N10SA200 |
| | | | | 30S | GT5P-N30SA200 |
| | | | | 60S | GT5P-N60SA200 |
| | | | | 3M | GT5P-N3MA200 |
| | | | | 6M | GT5P-N6MA200 |
| | | | | 10M | GT5P-N10MA200 |
| | | | 24V AC/DC | 1S | GT5P-N1SAD24 |
| | | | | 3S | — |
| | | | | 6S | GT5P-N6SAD24 |
| | | | | 10S | GT5P-N10SAD24 |
| | | | | 30S | — |
| | | | | 60S | GT5P-N60SAD24 |
| | | | | 3M | — |
| | | | | 6M | GT5P-N6MAD24 |
| | | | | 10M | GT5P-N10MAD24 |
| | | | 12V DC | 1S | — |
| | | | | 3S | — |
| | | | | 6S | — |
| | | | | 10S | GT5P-N10SD12 |
| | | | | 30S | GT5P-N30SD12 |
| | | | | 60S | GT5P-N60SD12 |
| | | | | 3M | — |
| | | | | 6M | — |
| | | | | 10M | GT5P-N10MD12 |



For sockets and accessories, see page 851.

Switches & Pilot Lights

Display Lights

Relays & Sockets

Timers

Terminal Blocks

Circuit Breakers

Timing Diagram/Schematic/Electrical Life Curves

Switches & Pilot Lights

Display Lights

Relays & Sockets

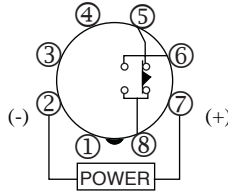
Timers

Terminal Blocks

Circuit Breakers

SPDT

Operation Mode

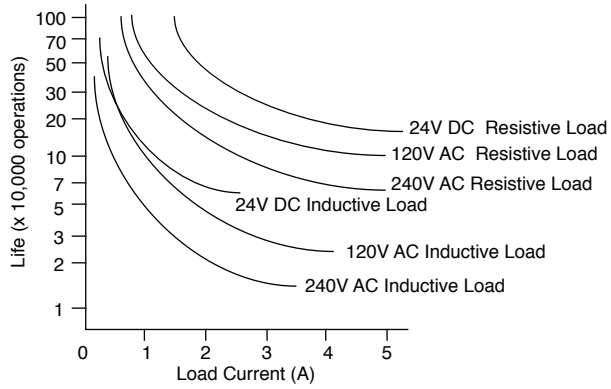


Do not apply voltage to terminals 1, 3, and 4.

ON-Delay

| Item | Terminal Number | Operation |
|-----------------|-----------------|-------------------------------------|
| Set Time | | ← Operation → |
| Power | 2 - 7 (8p) | [Bar chart showing power pulse] |
| Delayed Contact | 5 - 8 (8p) (NC) | [Bar chart showing delayed pulse] |
| | 6 - 8 (8p) (NO) | [Bar chart showing delayed pulse] |
| Indicator | POWER | [Bar chart showing indicator pulse] |
| | OUT | [Bar chart showing indicator pulse] |

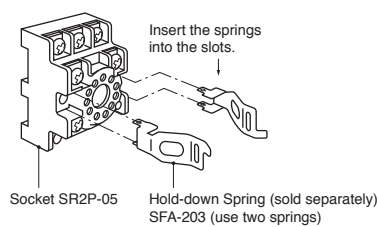
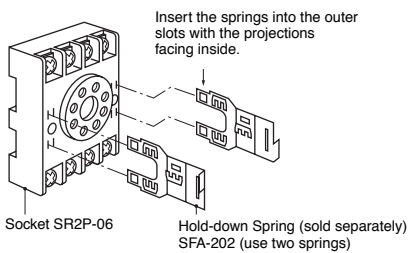
Electrical Life Curves



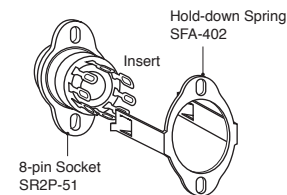
Accessories
Mounting

| Mounting Accessories and Sockets | | | | | Applicable Hold-Down Springs | |
|---|----------------------------------|------------|-----------------|----------|-------------------------------------|----------|
| | Style | Appearance | Use with Timers | Part No. | Appearance | Part No. |
| DIN Rail/ Surface Mounting Accessories | 8-Pin Screw Terminal (dual tier) | | GT5P | SR2P-05 | | SFA-203 |
| | 8-Pin Fingersafe Socket | | GT5P | SR2P-05C | | |
| | 8-Pin Screw Terminal | | GT5P | SR2P-06 | | SFA-202 |
| | DIN Mounting Rail Length 1000mm | | — | BNDN1000 | | |
| Part Numbers: Mounting Accessories and Sockets | | | | | Applicable Hold-Down Springs | |
| Mounting Accessories | 8-Pin Solder Terminal | | | SR2P-51 | | SFA-402 |

Installation of Hold-Down Springs
DIN Rail Mount Socket



Panel Mount Socket



Switches & Pilot Lights

Display Lights

Relays & Sockets

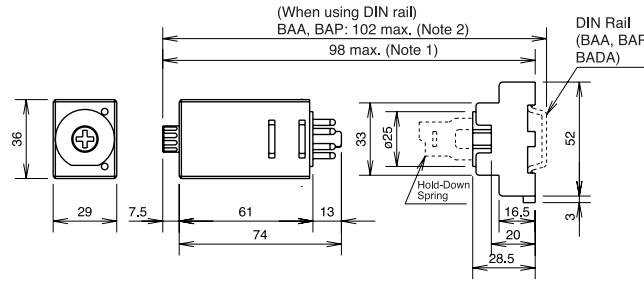
Timers

Terminal Blocks

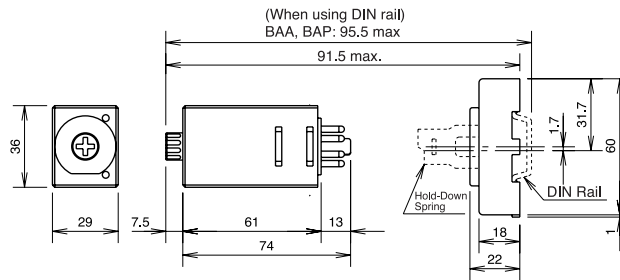
Circuit Breakers

Dimensions

GT5P Timer, 8-Pin with SR2P-05



GT5P Timer, 8-Pin with SR2P-06



GT5Y Series – ON Delay Timers

Key features of the GT5Y series include:

- 4PDT, 3A or DPDT, 5A contacts
- 4 time ranges
- Repeat error $\pm 0.2\%$ maximum
- Control settings by hand or screwdriver
- Power ON and timing out LED indicators
- Uses the same sockets and hold-down clips as IDEC's RY4S and RU series relays



UL, c-UL Listed
File No. E55996

Specifications

| | | GT5Y-2 | GT5Y-4 |
|--------------------------------|---|---|---|
| Rated Operating Voltage | | 100 to 120V AC (50/60Hz) 200 to 240V AC (50/60Hz) 24V DC 24V AC 12V DC | |
| Contact Form | | DPDT | 4PDT |
| Rated Load | Resistive Load | 220V AC, 5A 30V DC, 5A | 220V AC, 3A 30V DC, 3A |
| | Inductive Load | 220V AC, 2A 30V DC, 2.5A | 220V AC, 0.8A 30V DC, 1.5A |
| Allowable Contact Power | Resistive Load | 1100VA AC 150W DC | 660VA AC 90W DC |
| | Inductive Load Cos $\phi = 0.3$ L/R = 7msec | 440VA AC 75W DC | 176VA AC 45W DC |
| Allowable Voltage | | 250V AC, 125V DC | |
| Allowable Current | | 5A | 3A |
| Temperature Error | | $\pm 3\%$ maximum (over -10 to 50°C , reference temperature 20°C) | |
| Setting Error | | $\pm 10\%$ maximum | |
| Reset Time | | When turning power off after time up: 0.1 second maximum When turning power off before time up: 1 second maximum | |
| Insulation Resistance | | 100M Ω minimum | |
| Dielectric Strength | | 2,000V AC, 1 minute (except between contacts of the same pole) | |
| Vibration Resistance | | 100N (approximate 10G) | |
| Shock Resistance | | Operating extremes: 100N (approximate 10G) Damage limits: 500N (approximate 50G) | |
| Power Consumption | | 100V AC type: 1.5VA (at 50Hz) 200V AC type: 1.6VA (at 50Hz) 24V DC type: 0.9W | |
| Electrical Life | | 500,000 operations minimum (220V AC, 5A) | 200,000 operations minimum (110V AC, 3A) |
| Mechanical Life | | 50,000,000 operations minimum | |
| Operating Temperature | | -10 to $+50^\circ\text{C}$ | |
| Operating Humidity | | 45 to 85% RH | |



1. Minimum applicable load: GT5Y-2: 5V DC, 20mA (reference value); GT5Y-4: 5V DC, 10mA (reference value).
2. Inductive load: cos $\phi = 0.3$, L/R=7msec.

Part Numbering List

Switches & Pilot Lights

Display Lights

Relays & Sockets

Timers

| Mode of Operation | Contact | Output | Rated Voltage | Time Range | Complete Part No. | | | |
|-------------------|---------------|------------------------|----------------|---------------|--------------------|----------------|---------------|---------------|
| ON-Delay | DPDT | 220V AC/ 30V DC, 5A | 100 to 120V AC | 1S/10S/1M/10M | GT5Y-2SN1A100 | | | |
| | | | | 3S/30S/3M/30M | GT5Y-2SN3A100 | | | |
| | | | | 6S/60S/6M/60M | GT5Y-2SN6A100 | | | |
| | | | 200 to 240V AC | 1S/10S/1M/10M | 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 | | | |
| | | | 24V AC | 1S/10S/1M/10M | GT5Y-2SN1A24 | | | |
| | | | | 3S/30S/3M/30M | GT5Y-2SN3A24 | | | |
| | | | | 6S/60S/6M/60M | GT5Y-2SN6A24 | | | |
| | | | | 4PDT | 220V AC/30V DC, 3A | 100 to 120V AC | 1S/10S/1M/10M | GT5Y-4SN1A100 |
| | | | | | | | 3S/30S/3M/30M | GT5Y-4SN3A100 |
| | | | | | | | 6S/60S/6M/60M | GT5Y-4SN6A100 |
| 200 to 240V AC | 1S/10S/1M/10M | GT5Y-4SN1A200 | | | | | | |
| | 3S/30S/3M/30M | GT5Y-4SN3A200 | | | | | | |
| | 6S/60S/6M/60M | GT5Y-4SN6A200 | | | | | | |
| 12V DC | 1S/10S/1M/10M | — | | | | | | |
| | 3S/30S/3M/30M | GT5Y-4SN3D12 | | | | | | |
| | 6S/60S/6M/60M | — | | | | | | |
| 24V DC | 1S/10S/1M/10M | GT5Y-4SN1D24 | | | | | | |
| | 3S/30S/3M/30M | GT5Y-4SN3D24 | | | | | | |
| | 6S/60S/6M/60M | GT5Y-4SN6D24 | | | | | | |
| 24V AC | 1S/10S/1M/10M | GT5Y-4SN1A24 | | | | | | |
| | 3S/30S/3M/30M | GT5Y-4SN3A24 | | | | | | |
| | 6S/60S/6M/60M | GT5Y-4SN6A24 | | | | | | |



For sockets and accessories, see page 856.

Terminal Blocks

Circuit Breakers

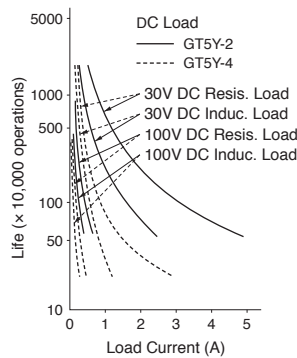
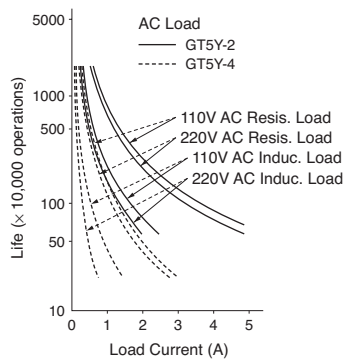
Timing Ranges

| Code | Scale | Time Range Indication | | Time Range |
|------|---------|-----------------------|---|--------------------------|
| 1S | 0 to 10 | x 0.1 | S | 0.1 second to 1 second |
| 10S | | x 1 | S | 0.2 second to 10 seconds |
| 1M | | x 0.1 | M | 1.2 seconds to 1 minute |
| 10M | | x 1 | M | 12 seconds to 10 minutes |
| 3S | 0 to 3 | x 1 | S | 0.1 second to 3 seconds |
| 30S | | x 10 | S | 0.5 second to 30 seconds |
| 3M | | x 1 | M | 3 seconds to 3 minutes |
| 30M | | x 10 | M | 30 seconds to 30 minutes |
| 6S | 0 to 6 | x 1 | S | 0.1 second to 6 seconds |
| 60S | | x 10 | S | 1 second to 60 seconds |
| 6M | | x 1 | M | 6 seconds to 6 minutes |
| 60M | | x 10 | M | 1 minute to 60 minutes |

Timing Diagram/Schematics/Electrical Life Curves

| | GT5Y-2 | GT5Y-4 | | | | | | | | | | | | | | | | | | | |
|---|---|-------------|------|-----------------|-----------|----------|--|--|-------|---------|--|-----------------|--------------------------------------|--|--------------------------------------|--|-----------|-------|--|-----|--|
| | DPDT | 4PDT | | | | | | | | | | | | | | | | | | | |
| Internal Connections (bottom view) | | | | | | | | | | | | | | | | | | | | | |
| Operation Mode: ON-Delay | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal Number</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Set Time</td> <td></td> <td></td> </tr> <tr> <td>Power</td> <td>13 - 14</td> <td></td> </tr> <tr> <td rowspan="2">Delayed Contact</td> <td>1 - 9, 2 - 10 3 - 11, 4 - 12 (NC)</td> <td></td> </tr> <tr> <td>5 - 9, 6 - 10 7 - 11, 8 - 12 (NO)</td> <td></td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td></td> </tr> <tr> <td>OUT</td> <td></td> </tr> </tbody> </table> <p>For an explanation of timing modes, see page 794.</p> | | Item | Terminal Number | Operation | Set Time | | | Power | 13 - 14 | | Delayed Contact | 1 - 9, 2 - 10 3 - 11, 4 - 12 (NC) | | 5 - 9, 6 - 10 7 - 11, 8 - 12 (NO) | | Indicator | POWER | | OUT | |
| Item | Terminal Number | Operation | | | | | | | | | | | | | | | | | | | |
| Set Time | | | | | | | | | | | | | | | | | | | | | |
| Power | 13 - 14 | | | | | | | | | | | | | | | | | | | | |
| Delayed Contact | 1 - 9, 2 - 10 3 - 11, 4 - 12 (NC) | | | | | | | | | | | | | | | | | | | | |
| | 5 - 9, 6 - 10 7 - 11, 8 - 12 (NO) | | | | | | | | | | | | | | | | | | | | |
| Indicator | POWER | | | | | | | | | | | | | | | | | | | | |
| | OUT | | | | | | | | | | | | | | | | | | | | |





Electrical Life Curves



Accessories

DIN Rail Mounting Accessories

DIN Rail/Surface Mount Sockets and Hold-Down Springs

| DIN Rail Mount Socket | | | Applicable Hold-Down Springs | |
|--------------------------------------|---|----------|---|----------|
| Style | Appearance | Part No. | Appearance | Part No. |
| 14-Blade Screw Terminal |  | SY4S-05 |  | SFA-202 |
| 14-Blade Screw Terminal (fingersafe) |  | SY4S-05C | | |
| DIN Mounting Rail Length 1000mm |  | BNDN1000 | | |





Panel Mounting Accessories

Part Numbers: Panel Mount Socket and Hold-Down Springs

| Panel Mount Socket | | | Applicable Hold-Down Springs | |
|--------------------------|---|----------|---|----------|
| Style | Appearance | Part No. | Appearance | Part No. |
| 14-Blade Solder Terminal |  | SY4S-51 |  | SFA-302 |

PCB Mounting Accessories

Part Numbers: PCB Mount Sockets with Applicable Hold-Down Springs

| PCB Mount Socket | | | Applicable Hold-Down Springs | |
|------------------------|---|----------|---|-----------|
| Style | Appearance | Part No. | Appearance | Part No. |
| 14 Blade, PCB Terminal |  | SY4S-61 |  | SFA-302 |
| 14 Blade, PCB Terminal |  | SY4S-62 |  | SY4S-02F1 |

Switches & Pilot Lights

Display Lights

Relays & Sockets

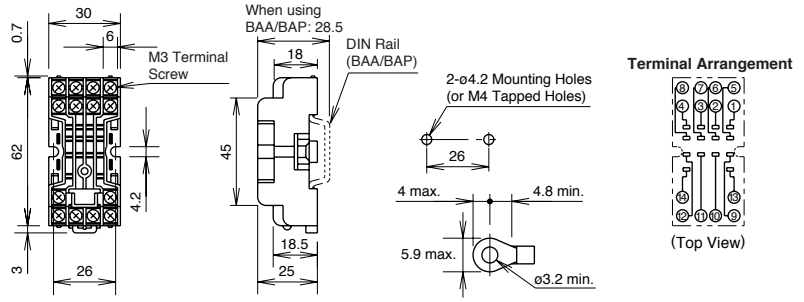
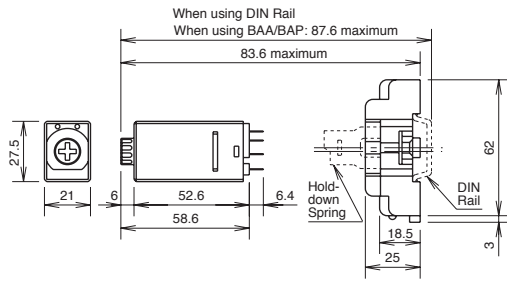
Timers

Terminal Blocks

Circuit Breakers

Dimensions

GT5Y Timer, Blade with SY4S-05



Switches & Pilot Lights

Display Lights

Relays & Sockets

Timers

Terminal Blocks

Circuit Breakers

General Instructions for All Timer Series

Switches & Pilot Lights

Load Current

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

Contact Protection

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

Temperature and Humidity

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

Environment

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

Display Lights

Relays & Sockets

Vibration and Shock

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

Time Setting

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

Input Contacts

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

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

Timing Accuracy Formulas

Timing accuracies are calculated from the following formulas:

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

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

T_v: Average of measured values at voltage V
T_r: Average of measured values at the rated voltage

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

T_t: Average of measured values at °C
T₂₀: Average of measured values at 20°C

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

Timers

Terminal Blocks

Circuit Breakers