

RTE Series – Analog Timers

Key features:

- 20 time ranges and 10 timing functions
- Time delays up to 600 hours
- Space-saving package
- High repeat accuracy of $\pm 0.2\%$
- ON and timing OUT LED indicators
- Standard 8- or 11-pin and 11-blade termination
- 2 form C delayed output contacts
- 10A Contact Rating



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



UL Listed
File No. E66043



General Specifications

| | | | | |
|---|---|--------------------------------------|--------------|-------------|
| Operation System | Solid state CMOS Circuit | | | |
| Operation Type | Multi-Mode | | | |
| Time Range | 0.1sec to 600 hours | | | |
| Pollution Degree | 2 (IE60664-1) | | | |
| Over voltage category | III (IE60664-1) | | | |
| Rated Operational Voltage | AF20 | 100-240V AC(50/60Hz) | | |
| | AD24 | 24V AC(50/60Hz)/24V DC | | |
| | D12 | 12V DC | | |
| Voltage Tolerance | AF20 | 85-264V AC(50/60Hz) | | |
| | AD24 | 20.4-26.4V AC(50/60Hz)/21.6-26.4V DC | | |
| | D12 | 10.8-13.2V DC | | |
| Input off Voltage | Rated Voltage x10% minimum | | | |
| Ambient Operating Temperature | -20 to +65°C (without freezing) | | | |
| Ambient Storage and Transport Temperature | -30 to +75°C (without freezing) | | | |
| Relative Humidity | 35 to 85%RH (without condensation) | | | |
| Atmospheric Pressure | 80kPa to 110kPa (Operating), 70kPa to 110kPa (Transport) | | | |
| Reset Time | 100msec maximum | | | |
| Repeat Error | $\pm 0.2\%$, $\pm 20\text{msec}^*$ | | | |
| Voltage Error | $\pm 0.2\%$, $\pm 20\text{msec}^*$ | | | |
| Temperature Error | $\pm 0.5\%$, $\pm 20\text{msec}^*$ | | | |
| Setting Error | $\pm 10\%$ maximum | | | |
| Insulation Resistance | 100M Ω minimum (500V DC) | | | |
| 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 55Hz amplitude 0.5mm ² hours in each of 3 axes | | | |
| Shock Resistance | Operating extremes: 98m/sec ² (10G) | | | |
| | Damage limits: 490m/sec ² (50G) | | | |
| Degree of Protection | 3 times in each of 3 axes | | | |
| | IP40 (enclosure) (IEC60529) | | | |
| Power Consumption (Approx.) | TYPE | RTE-P1, -B1 | | RTE-P2, -B2 |
| | | AF20 | 120V AC/60Hz | 6.5VA |
| | 240V AC/60Hz | | 11.6VA | 11.6VA |
| | 24V AC 60Hz/DC | | 3.4VA/1.7W | 3.5VA/1.7W |
| D12 | 1.6W | 1.6W | | |
| Mounting Position | Free | | | |
| Dimensions | RTE-P1, P2 | 40Hx 36W x 77.9D mm | | |
| | RTE-B1, B2 | 40Hx 36W x 74.9D mm | | |
| Weight (Approx.) | RTE-P1 | RTE-P2 | RTE-B1, -B2 | |
| | 87g | 89g | 85g | |

Contact Ratings

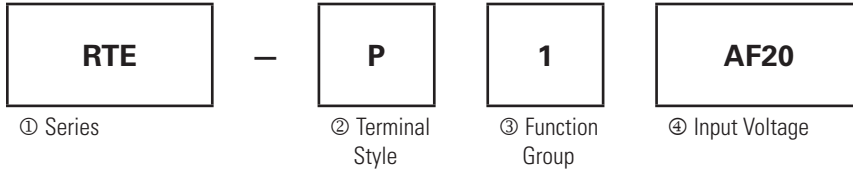
| | | |
|---|-------------------------------|---------------------------------|
| Contact Configuration | 2 Form C, DPDT (Delay output) | |
| Allowable Voltage / Allowable Current | 240V AC, 30V DC / 10A | |
| Maximum Permissible Operating Frequency | 1800 cycles per hour | |
| Rated Load | Resistive | 10A 240V AC, 30V DC |
| | Inductive | 7A 240V AC, 30V DC |
| | Horse Power Rating | 1/6 HP 120V AC, 1/3 HP 240V AC |
| Life | Electrical | 500,000 op. minimum (Resistive) |
| | Mechanical | 50,000,000 op. minimum |



*For the value of the error against a preset time, whichever the largest, applies.

Part Numbering Guide

RTE series part numbers are composed of 4 part number codes. When ordering a RTE series part, select one code from each category.
 Example: **RTE-P1AF20**



Part Numbers: RTE Series

| | Description | Part Number Code | Remarks |
|------------------|---|------------------|---|
| ① Series | RTE series | RTE | For internal circuits, see next page. |
| ② Terminal Style | Pin | P | Select one only. |
| | Blade | B | |
| ③ Function Group | ON-delay, interval, cycle OFF, cycle ON | 1 | Each function group has different timing functions. |
| | ON-delay, cycle OFF, cycle ON, signal ON/OFF delay, OFF-delay, one-shot | 2 | See page 940. |
| ④ Input Voltage | 100 to 240V AC(50/60Hz) | AF20 | |
| | 24V AC(50/60Hz)/24V DC | AD24 | |
| | 12V DC | D12 | |

Part Numbers

| Voltage | Power Triggered | | Start Input Triggered | |
|-------------|-----------------|------------|-----------------------|------------|
| | 8-Pin | Blade | 11-Pin | Blade |
| 12V DC | RTE-P1D12 | RTE-B1D12 | RTE-P2D12 | RTE-B2D12 |
| 24V AC/DC | RTE-P1AD24 | RTE-B1AD24 | RTE-P2AD24 | RTE-B2AD24 |
| 100-240V AC | RTE-P1AF20 | RTE-B1AF20 | RTE-P2AF20 | RTE-B2AF20 |

Time Range Determined by Time Range Selector and Dial Selector

| | Dial | 0 - 1 | 0 - 3 | 0 - 10 | 0 - 30 | 0 - 60 |
|-------|----------|-----------------|-----------------|------------------|------------------|------------------|
| Range | Second | 0.1 sec - 1 sec | 0.1 sec - 3 sec | 0.2 sec - 10 sec | 0.6 sec - 30 sec | 1.2 sec - 60 sec |
| | Minute | 1.2 sec - 1 min | 3.6 sec - 3 min | 12 sec - 10 min | 36 sec - 30 min | 1.2 min - 60 min |
| | Hour | 1.2 min - 1 hr | 3.6 min - 3 hr | 12 min - 10 hr | 36 min - 30 hr | 1.2 hr - 60 hr |
| | 10 Hours | 12 min - 10 hr | 36 min - 30 hr | 2 hr - 100 hr | 6 hr - 300 hr | 12 hr - 600 hr |

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

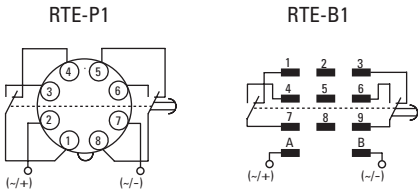
Contactors

Terminal Blocks

Circuit Breakers

Timing Diagrams

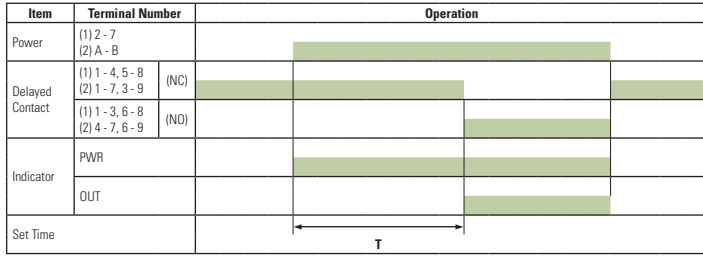
RTE-P1, -B1



1. RTE-B1: Do not apply voltage to terminals #2, #5 & #8.
2. IDEC sockets are as follows: RTE-P1: SR2P-06* pin type socket, RTE-B1: SR3B-05* blade type socket, (*-may be followed by suffix letter A,B,C or U).

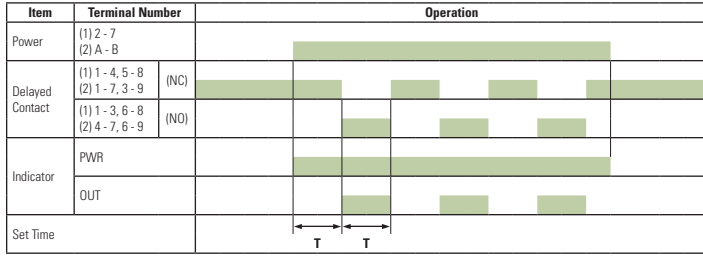
A: ON-Delay 1 (power start)

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.



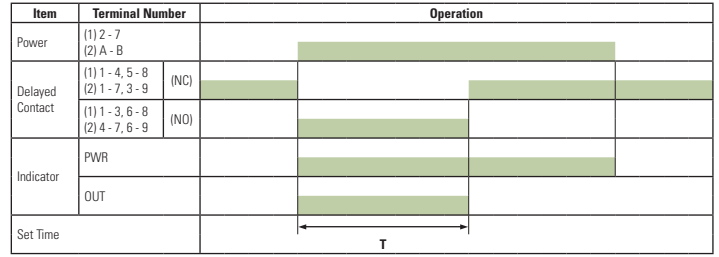
C: Cycle 1 (power start, OFF first)

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 (duty ratio 1:1).



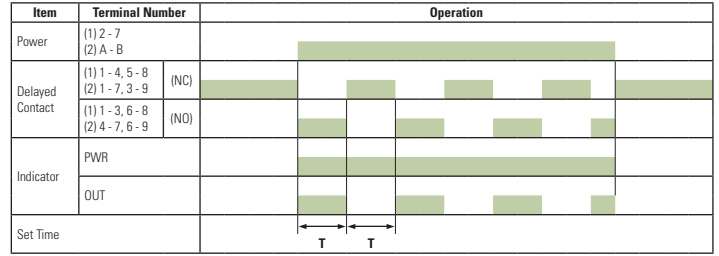
B: Interval (power start)

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.



D: Cycle 3 (power start, ON first)

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 On = Time Off



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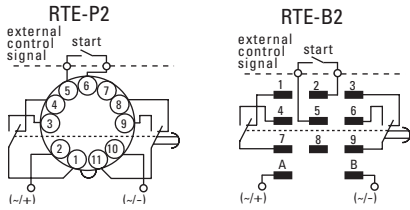
Contactors

Terminal Blocks

Circuit Breakers

Timing Diagrams con't

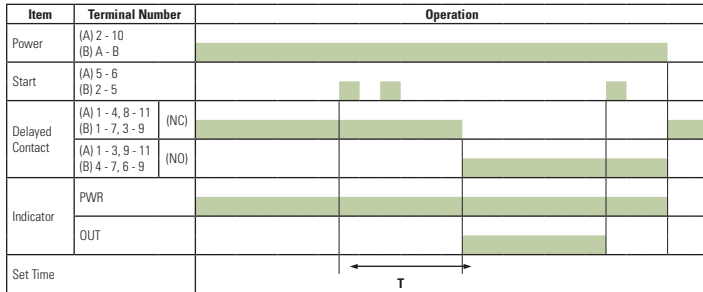
RTE-P2, -B2



1. RTE-P2: Do not apply voltage to terminals #5, #6 & #7.
2. RTE-B2: Do not apply voltage to terminals #2, #5 & #8.
3. IDEC sockets are as follows: RTE-P2: SR3P-05* pin type socket, RTE-B2: SR3B-05* blade type socket, (*-may be followed by suffix letter A,B,C or U).

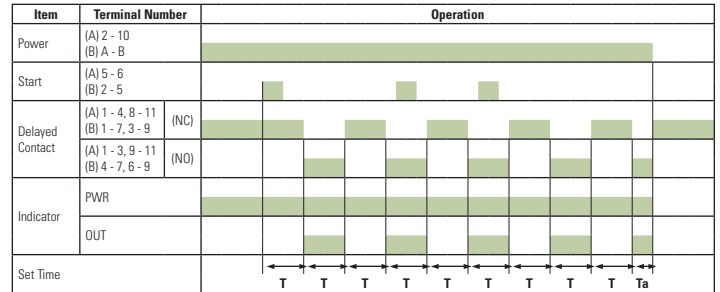
A: ON-Delay 2 (signal start)

When a preset time has elapsed after the start input turned on while power is on, the NO output contact goes on.



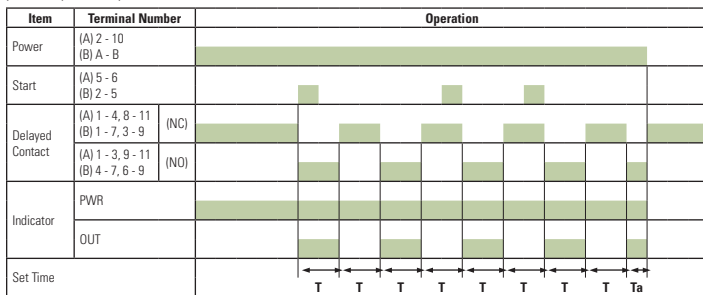
B: Cycle 2 (signal start, OFF first)

When the start input turns on while power is on, the output oscillates at a preset cycle (duty ratio 1:1), starting while the NO contact off.



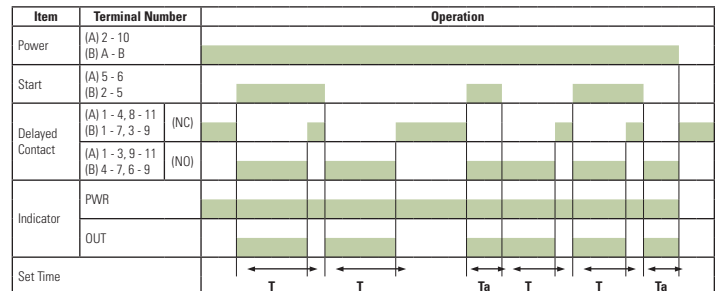
C: Cycle 4 (signal start, ON first)

When the start input turns on while power is on, the NO contact goes on. The output oscillates at a preset cycle (duty ratio 1:1).



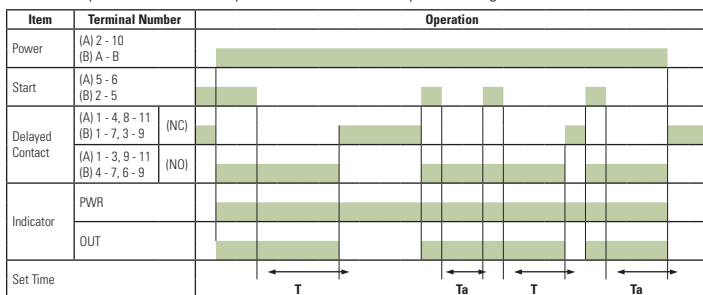
D: Signal ON/OFF-Delay

When the start input turns on while power is on, the NO output contact goes on. When a preset time has elapsed while the start input remains on, the output contact goes off. When the start input turns off, the NO contact goes on again. When a preset time has elapsed after the start input turned off, the NO contact goes off.



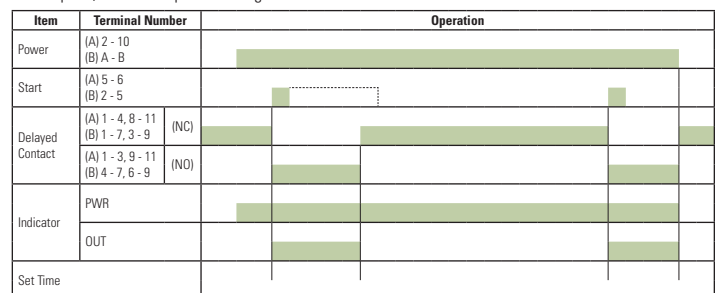
E: Signal OFF-Delay

When power is turned on while the start input is on, the NO output contact goes on. When a preset time has elapsed after the start input turned off, the NO output contact goes off.



F: One-Shot (signal start)

When the start input turns on while power is on, the NO output contact goes on. When a preset time has elapsed, the NO output contact goes off.



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

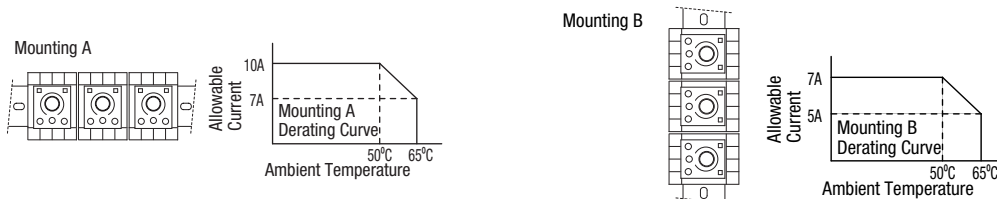
Timers

Contactors

Terminal Blocks

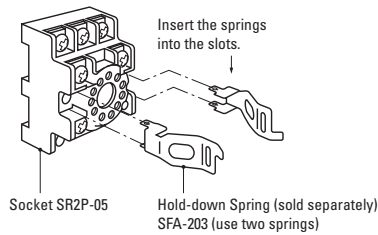
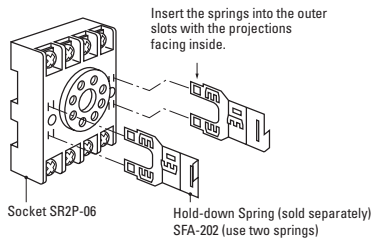
Circuit Breakers

Temperature Derating Curves

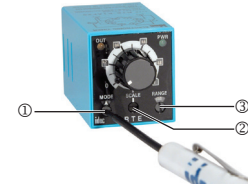


Instructions

Installation of Hold-Down Springs DIN Rail Mount Socket



Switch Settings



- ① Operator Mode Selector
- ② Scale Selector
- ③ Time Range Selector

1. Turn the selectors securely using a flat screwdriver 4mm wide (maximum). Note that incorrect setting may cause malfunction. Do not turn the selectors beyond their limits.
2. Since changing the setting during timer operation may cause malfunction, turn power off before changing.

Safety Precautions

Special expertise is required to use Electronic Timers.

- All Electronic Timers are manufactured under IDEC's rigorous quality control system, but users must add a backup or fail safe provision to the control system when using the Electronic Timer in applications where heavy damage or personal injury may occur should the Electronic Timer fail.
- Install the Electronic Timer according to instructions described in this catalog.
- Make sure that the operating conditions are as described in the specifications. If you are uncertain about the specifications, contact IDEC in advance.
- In these directions, safety precautions are categorized in order of importance under Warning and Caution.

Warnings

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

- Turn power off to the Electronic timer before starting installation, removal, wiring, maintenance, and inspection on the Electronic Timer.
- Failure to turn power off may cause electrical shocks or fire hazard.

- Do not use the Electronic Timer for an **emergency stop circuit** or **interlocking circuit**. If the Electronic Timer should fail, a machine malfunction, breakdown, or accident may occur.

Caution

Caution notices are used where inattention might cause personal injury or damage to equipment.

- The Electronic Timer is designed for installation in equipment. Do not install the Electronic Timer outside equipment.
- Install the Electronic Timer in environments described in the specifications. If the Electronic Timer is used in places where it will be subjected to high-temperature, high-humidity, condensation, corrosive gases, excessive vibrations, or excessive shocks, then electrical shocks, fire hazard, or malfunction could result.
- Use an IEC60127-approved fuse and circuit breaker on the power and output line outside the Electronic Timer.
- Do not disassemble, repair, or modify the Electronic Timer.
- When disposing of the Electronic Timer, do so as industrial waste.

Accessories

DIN Rail Mounting Accessories

DIN Rail/Surface Mount Sockets and Hold-Down Springs

| Style | DIN Rail Mount Socket | | | Applicable Hold-Down Springs | |
|-----------------------------------|-----------------------|------------------|-------------|------------------------------|-------------|
| | Appearance | Use with Timers | Part Number | Appearance | Part Number |
| 11-Pin Screw Terminal (dual tier) | | RTE-P2 | SR3P-05 | | SFA-203 |
| 11-Pin FingerSafe Socket | | | SR3P-05C | | |
| 8-Pin Screw Terminal | | RTE-P1 | SR2P-06 | | SFA-202 |
| 8-Pin Fingersafe Socket | | | SR2P-05C | | |
| 11-Blade Screw Terminal | | RTE-B1 RTE-B2 | SR3B-05 | | |
| DIN Mounting Rail Length 1000mm | | — | BNDN1000 | | |

Panel Mounting Accessories

Flush Panel Mount Adapter and Sockets that use an Adapter

| Accessory | Description | Appearance | Use with | Part No. |
|--|---|--|----------------|-----------|
| Panel Mount Adapter | Adaptor for flush panel mounting RTE timers | | All RTE timers | RTB-G01 |
| Sockets for use with Panel Mount Adapter | 8-pin screw terminal | (Shown: SR6P-M08G Wiring Socket Adapter) | RTE-P1 | SR6P-M08G |
| | 11-pin screw terminal | | RTE-P2 | SR6P-M11G |
| | 8-pin solder terminal | | RTE-P1 | SR6P-S08 |
| | 11-pin solder terminal | | RTE-P2 | SR6P-S11 |

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

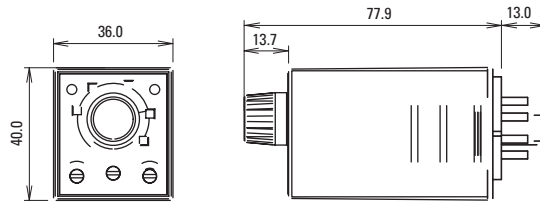
Timers

Contactors

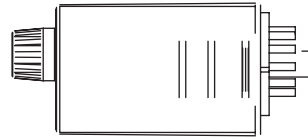
Terminal Blocks

Circuit Breakers

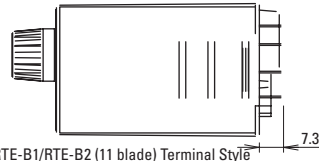
Dimensions



RTE-P1 (8 pin) Terminal Style



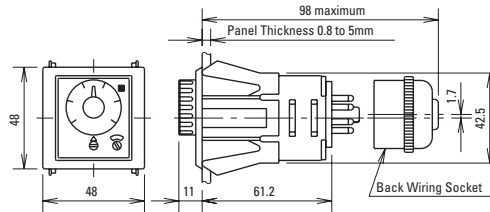
RTE-P2 (11 pin) Terminal Style



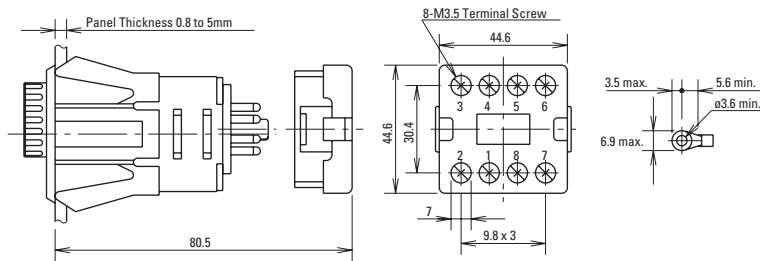
RTE-B1/RTE-B2 (11 blade) Terminal Style

Panel Mount Adapter

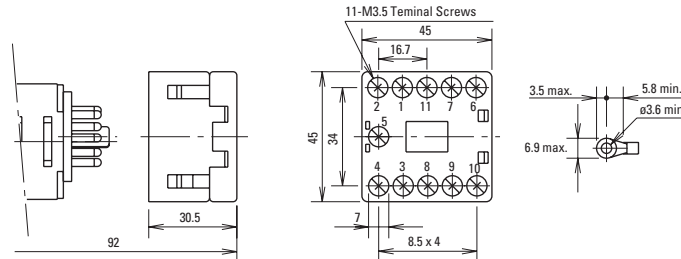
RTE Timer, 8-Pin and 11-Pin with SR6P-S08 or SR6P-S11



RTE Timer, 8-Pin with SR6P-M08G



RTE Timer, 11-Pin with SR6P-M11G



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