

Miniature control relays

■ **Description**

The HH52, 53 and 54 are a series of miniature general purpose relays specially designed for users demanding small size, sturdy construction and high electrical capacity. Mechanisms are furnished in polycarbonate dust-proof enclosures and are recommended for a multitude of electrical control applications for their reliability and compact size. Continuous duty coils, either AC or DC are available for voltages up to 240V AC or 120V DC. Contacts can be supplied in 2PDT, 3PDT, 4PDT arrangements. Continuous current ratings are 3, 5 and 7 Amps. Many terminal types are available for solder, plug-in or printed circuit board mounting.

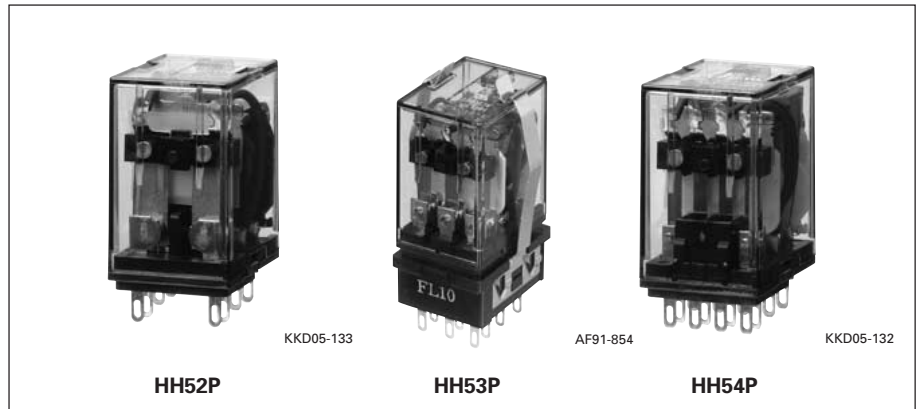
■ **Features**

- 3, 5 and 7 Amp. contacts
- 2PDT, 3PDT and 4PDT
- Reliable operation, long service life
- High dielectric strength
- Solder, PC board, wire wrap and screw terminal socket
- AC or DC coils
- Barrired contacts for opposite polarity available
- Dust proof enclosures
- Approved by UL, CSA and TÜV
 UL recognized File No:
 E42419, E90265 (Socket)
 CSA: LR 20479
 TÜV:
 License No. R9251339 (HH52)
 R9251340 (HH53)
 R9251341 (HH54)
 T9251612 (TP58, 511, 514)
 T9251425 (RZ, FX)

■ **General information**

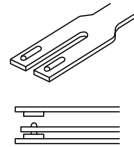
● **Contacts**

Miniature relays can be supplied with contacts that meet most electrical and mechanical contact requirements. The standard HH52, 53 and 54 series are of the single contact type as illustrated. The HH52W (2PDT) and HH54W (4PDT) relays are supplied with bifurcated contacts. These bifurcated contacts are with good conducting characteristics and are recommended where limited control power is available. The dielectric strength is 1000 volts rms 50/60Hz (between open contacts) which makes them more than adequate for power circuit use.

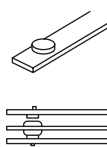


Contact arrangement are as follows:

| Type | Contact arrangement | Rated thermal current |
|-----------|---------------------|-----------------------|
| HH52U | 2PDT | 7 Amps |
| HH52, 52W | 2PDT | 5 Amps |
| HH53 | 3PDT | 5 Amps |
| HH54U | 4PDT | 5 Amps |
| HH54, 54W | 4PDT | 3 Amps |



Bifurcated contact



Single contact

● **Coils**

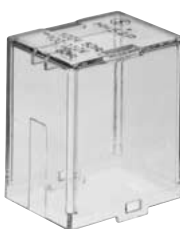
Coils are available with nominal voltages within the following ranges.

| Coil voltage | Power consumption |
|--------------|-------------------|
| 6 to 120V DC | Approx. 0.9W |
| 6 to 240V AC | Approx. 1.0VA |
| (50/60Hz) | (60Hz) |

Special purpose relays can be supplied with diode for surge suppression, for operating display devices such as LED's, and magnetically held type.

● **Enclosures**

All miniature relays are enclosed in sturdy heat-resistant polycarbonate covers providing protection against dust and dirt.

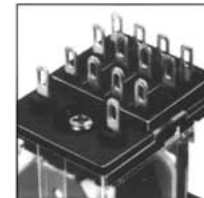


Standard

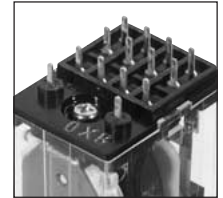


Flange mounting

● **Terminals**



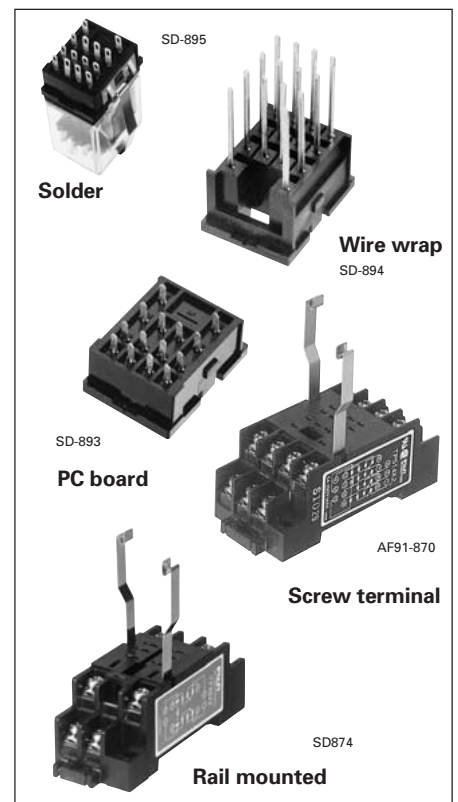
Plug-in type terminal



PC board type terminal

● **Sockets**

There is almost infinite choice of sockets. They can be adapted to all types of wiring including solder type, standard screw terminals, wire wrap and printed circuit. Sockets for rail mounting use are also available.



Industrial Control Relays

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HH52, 53, 54

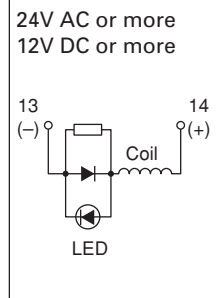
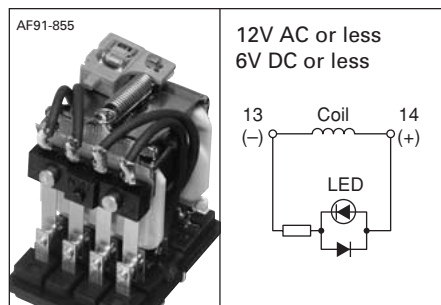
■ Versions

Operating status indicator

All relays can be supplied on request with a visual indicating signal—a light emitting diode (LED).

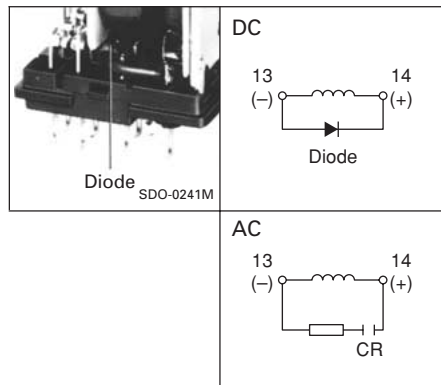
LED's are fitted to relays with nominal operating voltages up to 240 volts.

The LED emits highly visible red light for AC and green light for DC when power is applied to the relay coil, an extremely useful signal when trouble shooting either equipment or a system.



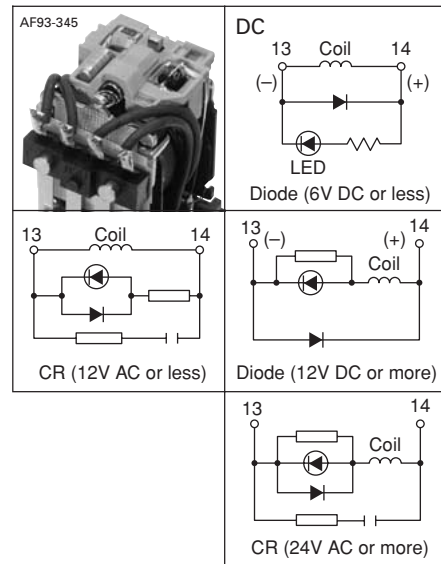
Surge suppression

We can also supply relays with a diode (or CR) for surge suppression. The highly efficient diode (or CR) is connected in parallel with the coil in order to suppress the surge generated within the coil. Consequently this coil can be used in electric circuits which include highly sensitive relays or transistors, etc. without interfering with their operation, so increasing the dependability of the equipment.



With operation indicator and surge suppression device

This type has a built-in operation indicator and surge suppressor.



With extra pick-up operating coil

This type is recommended for use in poor power supply environments.

Pick-up voltage: 65% of rated voltage (at 20°C)

Drop-out voltage: 10% of rated voltage (at 20°C)

Mechanical durability: 10 million operations

Other specifications are the same as those of the basic model.

High capacity type

This type is suitable for switching a load like solenoid. The current rating of the contacts is 7A for HH52PU and 5A for HH54PU. Other specifications are the same as those of the basic model.

With Au-plated Ag contact

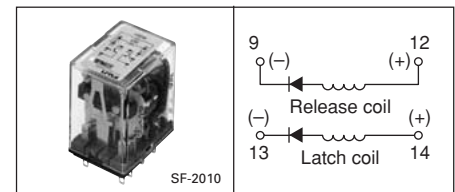
Type HH □-J has gold-plated contacts. (Note: Models with bifurcated contacts and 4PDT high-capacity models are provided with gold-plated contacts as standard, even if their type number has no J.)

Dual coil magnetically held

One coil firmly holds the contacts in one position, the second coil releases them.

This relay has a good memory stability because it will maintain the ON condition during loss of power. It operates on a momentary pulse to either coil. The relay saves space as well as power, since a single unit occupies half the space of a mechanically interlocking latching relay of the same rating.

Voltages: 6V–110V AC, 6V–48V DC



■ **Ordering code system**

● **Relay**

R M 2C P W R F-AH

① ② ③④ ⑤ ⑥ ⑦ ⑧ ⑨⑩

① **Product category**

| Code | Description |
|------|---------------|
| R | Control relay |

② **Series category**

| Code | Description |
|------|--|
| M | Miniature control relay (HH52 to HH54) |
| P | Miniature power relay (HH62 to HH64) |
| C | General purpose relay (HH22 to HH24) |

③④ **Contact arrangement**

| Code | Contact arrangement |
|------|------------------------------|
| 2 C | 2PDT |
| 3 C | 3PDT |
| 4 C | 4PDT |
| 3 M | 1NO+1NC+SPDT |
| 4 M | 2NO+1NC+SPDT |
| 4 2 | 2PDT with extra pick-up coil |

⑤ **Mounting**

| Code | Mounting |
|------|-------------------|
| P | Plug-in mounting |
| B | PC board mounting |
| S | Flange mounting |

⑥ **Contact form**

| Code | Form |
|-------|--------------------------|
| Blank | Single |
| W | Bifurcated |
| U | High capacity (HH52, 54) |
| J | Single (Au-plated) |

⑦ **Version**

| Code | Description |
|-------|-------------------|
| Blank | Standard |
| R | Magnetically held |

⑧ **Accessory**

| Code | Description |
|-------|---|
| Blank | Not provided |
| F | With surge suppression diode (DC) |
| G | With LED indicator and surge suppression diode (DC) |
| L | With LED indicator |
| C | With surge suppression (CR) |
| A | With LED indicator and surge suppression CR (AC) |

⑨⑩ **Operating coil**

| Code | Coil voltage |
|------|---------------------|
| A A | 6V AC 50/60Hz |
| A B | 12V AC 50/60Hz |
| A E | 24V AC 50/60Hz |
| A F | 48V AC 50/60Hz |
| A 1 | 100–110V AC 50/60Hz |
| A H | 110–120V AC 50/60Hz |
| A 2 | 200–220V AC 50/60Hz |
| A M | 220–240V AC 50/60Hz |
| D A | 6V DC |
| D B | 12V DC |
| D E | 24V DC |
| D F | 48V DC |
| D 1 | 100–110V DC |

● **Socket**

R X 58 X2-CR ZT

① ② ③④ ⑤⑥ ⑦⑧ ⑨⑩

① **Product category**

| Code | Description |
|------|---------------|
| R | Control relay |

② **Series category**

| Code | Description |
|------|-------------|
| X | Socket |

③④ **Application**

| Code | Type |
|------|-------------------|
| 5 8 | TP58 (For HH52P) |
| 5 1 | TP511 (For HH53P) |
| 5 4 | TP514 (For HH54P) |
| 6 8 | TP68 (For HH62P) |
| 6 1 | TP611 (For HH63P) |
| 6 4 | TP614 (For HH64P) |
| 8 G | 8GB (For HH22P) |
| 3 8 | TP38 (For HH22P) |
| 1 G | 11GB (For HH23P) |
| 3 1 | TP311 (For HH23P) |

⑤⑥ **Mounting and wiring**

| Code | Description |
|-------|---|
| Blank | Soldering |
| B 1 | PC board |
| R 2 | Wire wrap |
| | Surface mounting screw terminal (M3.5) |
| S 0 | For HH22, 23, 24 Rail mounting screw terminal (M3.5) |
| X 0 | For HH22, 23, 24 |
| X 2 | For HH52, 53, 54, HH62, 63, 64 Rail mounting screw terminal (M3) |
| X 1 | For HH52, 53, 54 |

⑦⑧ **Socket with surge suppression device**

| Code | Description |
|------|-----------------------------------|
| C R | Provided with CR circuit |
| C 1 | Provided with 100V Z-trap (diode) |
| C 2 | Provided with 200V Z-trap (diode) |

⑨⑩ **Approvals**

| Code | Standards |
|------|-----------|
| Z U | UL |
| Z S | UL/CSA |
| Z T | TÜV |
| Z L | Lloyd |

Industrial Control Relays

Miniature control relays

HH52, 53, 54

■ Versions Relay

| Classification | | Contact form and arrangement | | Mounting Plug-in Type | Ordering code | PC board Type | Ordering code | Flange Type | Ordering code |
|--------------------------------------|--------------------------------------|------------------------------|-------------------|-----------------------|-------------------|------------------|------------------|------------------|---------------|
| Standard | Without LED | Single | 2PDT | HH52P | RM2CP-■ | HH52B | RM2CB-■ | HH52S | RM2CS-■ |
| | | | 3PDT | HH53P | RM3CP-■ | HH53B | RM3CB-■ | HH53S | RM3CS-■ |
| | | Bifurcated | 4PDT | HH54P | RM4CP-■ | HH54B | RM4CB-■ | HH54S | RM4CS-■ |
| | | | 2PDT | HH52PW | RM2CPW-■ | HH52BW | RM2CBW-■ | HH52SW | RM2CSW-■ |
| | With LED | Single | 2PDT | HH52P-L | RM2CPL-■ | HH52B-L | RM2CBL-■ | | |
| | | | 3PDT | HH53P-L | RM3CPL-■ | HH53B-L | RM3CBL-■ | | |
| | | Bifurcated | 4PDT | HH54P-L | RM4CPL-■ | HH54B-L | RM4CBL-■ | | |
| | | | 2PDT | HH52PW-L | RM2CPWL-■ | HH52BW-L | RM2CBWL-■ | | |
| | With surge suppression diode | Single | 2PDT | HH52P-F | RM2CPF-■ | HH52B-F | RM2CBF-■ | HH52S-F | RM2CSF-■ |
| | | | 3PDT | HH53P-F | RM3CPF-■ | HH53B-F | RM3CBF-■ | HH53S-F | RM3CSF-■ |
| | | Bifurcated | 4PDT | HH54P-F | RM4CPF-■ | HH54B-F | RM4CBF-■ | HH54S-F | RM4CSF-■ |
| | | | 2PDT | HH52PW-F | RM2CPWF-■ | HH52BW-F | RM2CBWF-■ | HH52SW-F | RM2CSWF-■ |
| With surge suppression diode and LED | Single | 2PDT | HH52P-FL | RM2CPG-■ | HH52B-FL | RM2CBG-■ | | | |
| | | 3PDT | HH53P-FL | RM3CPG-■ | HH53B-FL | RM3CBG-■ | | | |
| | Bifurcated | 4PDT | HH54P-FL | RM4CPG-■ | HH54B-FL | RM4CBG-■ | | | |
| | | 2PDT | HH52PW-FL | RM2CPWG-■ | HH52BW-FL | RM2CBWG-■ | | | |
| With surge suppression CR | Single | 2PDT | HH52P-CR | RM2CPC-■ | HH52B-CR | RM2CBC-■ | HH52S-CR | RM2CSC-■ | |
| | | 3PDT | HH53P-CR | RM3CPC-■ | HH53B-CR | RM3CBC-■ | HH53S-CR | RM3CSC-■ | |
| | Bifurcated | 4PDT | HH54P-CR | RM4CPC-■ | HH54B-CR | RM4CBC-■ | HH54S-CR | RM4CSC-■ | |
| | | 2PDT | HH52PW-CR | RM2CPWC-■ | HH52BW-CR | RM2CBWC-■ | HH52SW-CR | RM2CSWC-■ | |
| With surge suppression CR and LED | Single | 2PDT | HH52P-CRL | RM2CPA-■ | HH52B-CRL | RM2CBA-■ | | | |
| | | 3PDT | HH53P-CRL | RM3CPA-■ | HH53B-CRL | RM3CBA-■ | | | |
| | Bifurcated | 4PDT | HH54P-CRL | RM4CPA-■ | HH54B-CRL | RM4CBA-■ | | | |
| | | 2PDT | HH52PW-CRL | RM2CPWA-■ | HH52BW-CRL | RM2CBWA-■ | | | |
| Magnetically held | Single | 2PDT | HH52P-R | RM2CPR-■ | HH52B-R | RM2CBR-■ | HH52S-R | RM2CSR-■ | |
| | Bifurcated | 2PDT | HH52PW-R | RM2CPWR-■ | HH52BW-R | RM2CBWR-■ | HH52SW-R | RM2CSWR-■ | |
| High capacity | Without LED | Single | 2PDT | HH52PU | RM2CPU-■ | HH52BU | RM2CBU-■ | HH52SU | RM2CSU-■ |
| | | | 4PDT | HH54PU | RM4CPU-■ | HH54BU | RM4CBU-■ | HH54SU | RM4CSU-■ |
| | With LED | Single | 2PDT | HH52PU-L | RM2CPUL-■ | HH52BU-L | RM2CBUL-■ | | |
| | | | 4PDT | HH54PU-L | RM4CPUL-■ | HH54BU-L | RM4CBUL-■ | | |
| | With surge suppression diode | Single | 2PDT | HH52PU-F | RM2CPUF-■ | HH52BU-F | RM2CBUF-■ | HH52SU-F | RM2CSUF-■ |
| | | | 4PDT | HH54PU-F | RM4CPUF-■ | HH54BU-F | RM4CBUF-■ | HH54SU-F | RM4CSUF-■ |
| | With surge suppression diode and LED | Single | 2PDT | HH52PU-FL | RM2CPUG-■ | HH52BU-FL | RM2CBUG-■ | | |
| | | | 4PDT | HH54PU-FL | RM4CPUG-■ | HH54BU-FL | RM4CBUG-■ | | |
| | With surge suppression CR | Single | 2PDT | HH52PU-CR | RM2CPUC-■ | HH52BU-CR | RM2CBUC-■ | HH52SU-CR | RM2CSUC-■ |
| | | | 4PDT | HH54PU-CR | RM4CPUC-■ | HH54BU-CR | RM4CBUC-■ | HH54SU-CR | RM4CSUC-■ |
| With surge suppression CR and LED | Single | 2PDT | HH52PU-CRL | RM2CPUA-■ | HH52BU-CRL | RM2CBUA-■ | | | |
| | | 4PDT | HH54PU-CRL | RM4CPUA-■ | HH54BU-CRL | RM4CBUA-■ | | | |

- Notes: 1. UL, CSA, and TÜV approved.
2. Bifurcated contacts are all gold-plated silver contacts.
3. Enter the coil voltage code in the ■ mark.
4. For types with single contact other than high-capacity types, types with gold-plated silver contact are available on request. To order these types, add J to the ordering code. Refer to the ordering code system.
Example: RM2CPJ-■ (with gold-plated silver contact)
RM2CP-■ (with silver contact: standard)

| Classification | | Contact form and arrangement | Mounting Plug-in Type | Ordering code | PC board Type | Ordering code | Flange Type | Ordering code |
|-------------------------|-----------------------------------|------------------------------|-----------------------|---------------|---------------------|---------------|--------------------|---------------|
| With extra pick-up coil | Without LED | Single 2PDT | HH54-2P | RM42P-■ | HH54-2B | RM42B-■ | HH54-2S | RM42S-■ |
| | | Bifurcated 2PDT | HH54-2PW | RM42PW-■ | HH54-2BW | RM42BW-■ | HH54-2SW | RM42SW-■ |
| | | Single 2PDT | HH54-2P-L | RM42PL-■ | HH54-2B-L | RM42BL-■ | | |
| | With LED | Bifurcated 2PDT | HH54-2PW-L | RM42PWL-■ | HH54-2BW-L | RM42BWL-■ | | |
| | | Single 2PDT | HH54-2P-F | RM42PF-■ | HH54-2B-F | RM42BF-■ | HH54-2S-F | RM42SF-■ |
| | | Bifurcated 2PDT | HH54-2PW-F | RM42PWF-■ | HH54-2BW-F | RM42BWF-■ | HH54-2SW-F | RM42SWF-■ |
| | With surge suppression diode | Single 2PDT | HH54-2P-FL | RM42PG-■ | HH54-2B-FL | RM42BG-■ | | |
| | | Bifurcated 2PDT | HH54-2PW-FL | RM42PWG-■ | HH54-2BW-FL | RM42BWG-■ | | |
| | With surge suppression CR | Single 2PDT | HH54-2P-CR | RM42PC-■ | HH54-2B-CR | RM42BC-■ | HH54-2S-CR | RM42SC-■ |
| | | Bifurcated 2PDT | HH54-2PW-CR | RM42PWC-■ | HH54-2BW-CR | RM42BWC-■ | HH54-2SW-CR | RM42SWC-■ |
| | With surge suppression CR and LED | Single 2PDT | HH54-2P-CRL | RM42PA-■ | HH54-2B-CRL | RM42BA-■ | | |
| | | Bifurcated 2PDT | HH54-2PW-CRL | RM42PWA-■ | HH54-2BW-CRL | RM42BWA-■ | | |

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 - Enter the coil voltage code in the ■ mark.
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- Example: RM2CPJ-■ (with gold-plated silver contact)
 RM2CP-■ (with silver contact: standard)

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HH52, 53, 54

■ Sockets

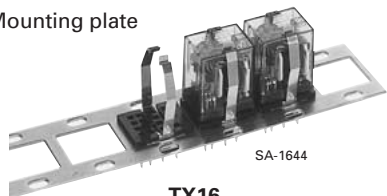
| Description | Standard * | | | With surge suppression device | | | | Mass (g) | Used with | | |
|-----------------------------------|------------|---------------|----------|-------------------------------|---------------|------------------|---------------|---------------|-----------|------------------|---------------|
| | Type | Ordering code | Mass (g) | CR circuit Type | Ordering code | 100V Z-trap Type | Ordering code | | | 200V Z-trap Type | Ordering code |
| Soldering | TP58 | RX58 | 9 | - | - | - | - | - | - | HH52P | |
| | TP511 | RX51 | 10 | - | - | - | - | - | - | HH53P | |
| | TP514 | RX54 | 10 | - | - | - | - | - | - | HH54P | |
| PC board | TP58B | RX58B1 | 9 | - | - | - | - | - | - | HH52P | |
| | TP511B | RX51B1 | 9.5 | - | - | - | - | - | - | HH53P | |
| | TP514B | RX54B1 | 9.5 | - | - | - | - | - | - | HH54P | |
| Wire wrap | TP58R2 | RX58R2 | 10.5 | - | - | - | - | - | - | HH52P | |
| | TP511R2 | RX51R2 | 11.5 | - | - | - | - | - | - | HH53P | |
| | TP514R2 | RX54R2 | 12.5 | - | - | - | - | - | - | HH54P | |
| Rail mounting screw terminal M3.5 | TP58X2 | RX58X2 | 49 | TP58X2-CR | RX58X2-CR | TP58X2-Z/100 | RX58X2-C1 | TP58X2-Z/200 | RX58X2-C2 | 49 | HH52P |
| | TP511X2 | RX51X2 | 50 | TP511X2-CR | RX51X2-CR | TP511X2-Z/100 | RX51X2-C1 | TP511X2-Z/200 | RX51X2-C2 | 50 | HH53P |
| | TP514X2 | RX54X2 | 62 | TP514X2-CR | RX54X2-CR | TP514X2-Z/100 | RX54X2-C1 | TP514X2-Z/200 | RX54X2-C2 | 62 | HH54P |
| Rail mounting screw terminal M3.0 | TP58X1 | RX58X1 | 32 | TP58X1-CR | RX58X1-CR | - | - | - | - | 32 | HH52P |
| | - | - | - | - | - | - | - | - | - | - | - |
| | TP514X1 | RX54X1 | 49 | TP514X1-CR | RX54X1-CR | - | - | - | - | 49 | HH54P |

Note: *UL, CSA and TÜV approved

■ Mounting plates and rails

| Type | Ordering code | Socket capacity* (Max.) |
|--------|---------------|-------------------------|
| TX01 | RZ01 | 1 pc. |
| TX16 | RZ16 | 16 pcs. |
| TX19 | RZ19 | 19 pcs. |
| TX18C | RZ18C | 18 pcs. |
| TX36C1 | RZ36C1 | 36 pcs. |

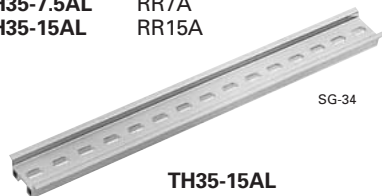
Mounting plate



TX16

Mounting rail 900mm

| | |
|------------|-------|
| TH35-7.5 | RR7F |
| TH35-7.5AL | RR7A |
| TH35-15AL | RR15A |



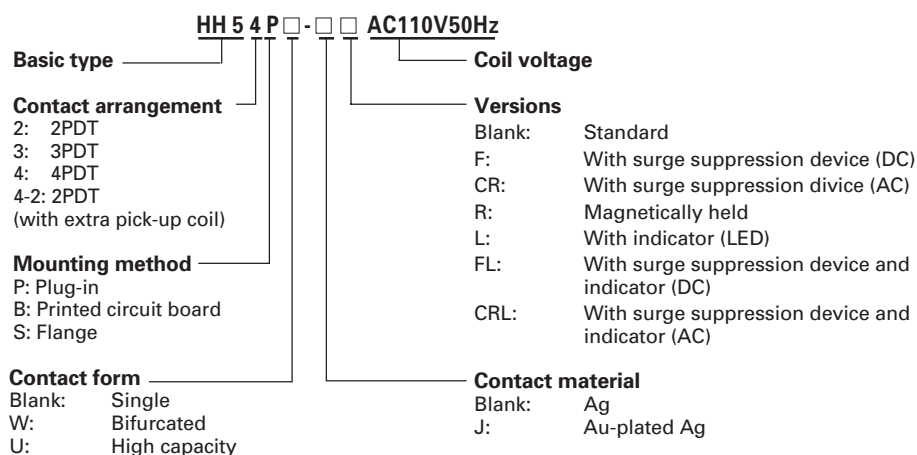
TH35-15AL

Minimum ordering quantity: 10 pcs. (1 pack)

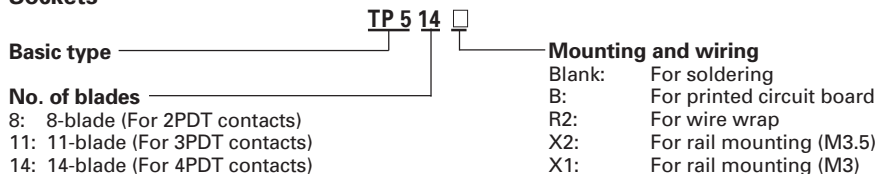
Notes: Plates will accept both soldering terminal and wire wrap terminal sockets.

* No. of relays to be mounted directly.

■ Type number nomenclature Relays



Sockets



■ Ordering information

Specify the following:

- Ordering code or type number
- Coil voltage
- Socket type number

■ **Specifications**

| | | | | | | | |
|---------------------------------|--|------------------------------------|-------------|--------------|--------------|--------------|--------------|
| Basic type | | HH52 HH53 | HH54 | HH52U | HH54U | HH52W | HH54W |
| Contact form | Single | | | | | Bifurcated | |
| Rated thermal current (A) | | 5 | 3 | 7 | 5 | 5 | 3 |
| Rated insulation voltage | 250V | | | | | | |
| Pick-up voltage (at 20° C) | AC | 80% of rated voltage | | | | | |
| | DC | 75% of rated voltage | | | | | |
| Drop-out voltage (at 20° C) | AC | 30% of rated voltage | | | | | |
| | DC | 10% of rated voltage | | | | | |
| Max. power supply voltage | 110% of rated voltage | | | | | | |
| Operating temperature | -55 to +70°C, no icing (-25 to +60°C for with operating indicator) | | | | | | |
| Dielectric strength | 2000V AC rms, 1 minute between coil and contact 2000V AC rms, 1 minute between poles 1000V AC rms, 1 minute between open contacts 2000V AC rms, 1 minute between socket terminals | | | | | | |
| Insulation resistance | 100MΩ (500V DC megger) | | | | | | |
| Operating time | 20ms or less | | | | | | |
| Vibration | Mechanical and malfunction durability: 10 to 55Hz, 1mm double amplitude | | | | | | |
| Shock | Malfunction durability: 200m/s ² Mechanical durability: 1000m/s ² | | | | | | |
| Durability | Mechanical | AC ratings: 50 million operations | | | | | |
| | | DC ratings: 100 million operations | | | | | |
| Contact resistance (before use) | 50mΩ max. | | | | | | |
| Mass | Approx. 33g | | | | | | |

Notes: HH52PW, 54PW, HH54PU: Au-plated Ag contact as standard
 HH52P, 53P, 54P: Ag contact as standard

■ **Coil characteristics**

- AC coil

| Order voltage code | Rated voltage (V) | Rated current (mA) | | Coil resistance (Ω) | Coil color | Power consumption (VA) | |
|--------------------|-------------------|--------------------|---------|---------------------|------------|------------------------|---------|
| | | 50Hz | 60Hz | | | 50Hz | 60Hz |
| AC6 | 6 | 200 | 167 | 10 | Clear | 1.2 | 1.0 |
| AC12 | 12 | 100 | 83 | 46 | Clear | | |
| AC24 | 24 | 50 | 42 | 187 | Clear | | |
| AC48 | 48 | 25 | 21 | 746 | Clear | | |
| AC100 | 100/110 | 12/12.7 | 10/10.9 | 3680 | Green | 1.2/1.4 | 1.0/1.2 |
| AC110 | 110/120 | 10.9/11.7 | 9.1/10 | 4320 | Clear | | |
| AC200 | 200/220 | 6/6.4 | 5/5.5 | 13400 | Yellow | | |
| AC220 | 220/240 | 5.5/5.8 | 4.5/5 | 17200 | Clear | | |

Note: Other voltages up to 240V AC are also available, contact FUJI.

- DC coil

| Order voltage code | Voltage (V) | Rated current (mA) | Coil resistance (Ω) | Coil color | Power consumption (W) |
|--------------------|-------------|--------------------|---------------------|------------|-----------------------|
| DC6 | 6 | 150 | 40 | Clear | 0.9 |
| DC12 | 12 | 75 | 160 | Black | |
| DC24 | 24 | 37 | 650 | Grape | |
| DC48 | 48 | 18.5 | 2600 | Red | |
| DC100 | 100/110 | 9.1/10 | 11000 | Blue | |

Note: Other voltages up to 130V DC are also available on request, contact FUJI.

Industrial Control Relays

Miniature control relays

HH52, 53, 54

■ Operating current and electrical durability

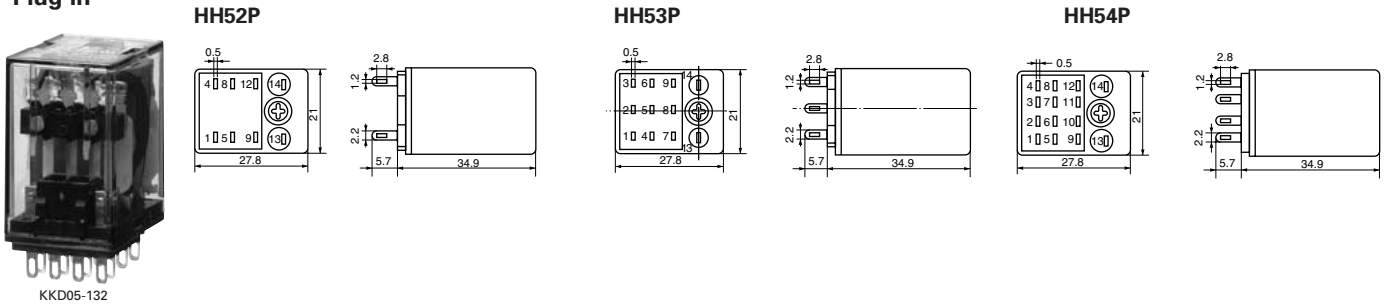
| Voltage | Make Current (A) | Power factor or time constant | Break Current (A) | Power factor or time constant | Electrical life ($\times 10^3$ operations) | | | | |
|-------------------|------------------|-------------------------------|-------------------|-------------------------------|---|------------|------------|-------|-------|
| | | | | | HH52U | HH52, HH53 | HH54 HH54U | HH52W | HH54W |
| 200V AC Ind. load | 10 | $\text{Cos}\phi = 0.7$ | 1 | $\text{Cos}\phi = 0.3$ to 0.4 | 1000 | 400 | 80 | 150 | – |
| | 5 | | 0.5 | | 2000 | 1000 | 200 | 400 | – |
| | 3 | | 0.3 | | 3500 | 1700 | 330 | 660 | 80 |
| 100V AC Ind. load | 10 | $\text{Cos}\phi = 0.7$ | 1 | $\text{Cos}\phi = 0.3$ to 0.4 | 1500 | 700 | 130 | 260 | – |
| | 5 | | 0.5 | | 3300 | 1500 | 280 | 560 | 70 |
| | 3 | | 0.3 | | 6000 | 2800 | 500 | 1000 | 120 |
| 200V AC Res. load | 3 | $\text{Cos}\phi = 1$ | 3 | $\text{Cos}\phi = 1$ | 1200 | 600 | 150 | 300 | – |
| | 1 | | 1 | | 4000 | 2000 | 500 | 1000 | 130 |
| 100V AC Res. load | 3 | $\text{Cos}\phi = 1$ | 3 | $\text{Cos}\phi = 1$ | 1700 | 1000 | 250 | 500 | 60 |
| | 1 | | 1 | | 6000 | 3400 | 900 | 1800 | 120 |
| 24V DC Ind. load | 1 | T=15msec. | 1 | T=15msec. | 1000 | 500 | 150 | 300 | – |
| | 0.2 | | 0.2 | | 8400 | 4000 | 1200 | 2400 | 400 |
| 24V DC Res. load | 3 | T=0msec. | 3 | T=0msec. | 1000 | 400 | 100 | 200 | – |
| | 1 | | 1 | | 4500 | 1600 | 400 | 800 | 100 |

■ Ratings (UL and CSA)

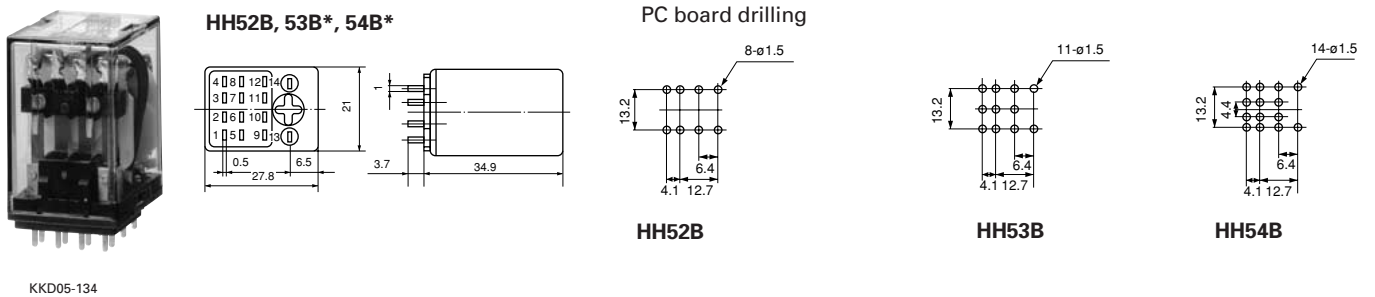
| Basic type | Voltage | Single-phase* motor (HP) | Resistive load (A) | Inductive load (A) | Remarks (polarity) |
|--|---------|--------------------------|--------------------|--------------------|--|
| HH52P, 52B 52S HH53P, 53B 53S | 120V AC | 1/6 | 5 | 1.5 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | 1/4 | 5 | – | |
| | 30V DC | – | 5 | 2(15ms) | |
| | 120V DC | – | 0.3 | 0.2(15ms) | |
| HH54P, 54B, 54S | 120V AC | 1/10 | 3 | 1 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | 1/4 | 3 | – | |
| | 30V DC | – | 3 | 2(15ms) | |
| | 120V DC | – | 0.3 | 0.2(15ms) | |
| HH52PU, 52BU, 52SU | 120V AC | 1/4 | 7 | 1.5 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | 3/4 | 7 | – | |
| | 30V DC | – | 7 | 2(15ms) | |
| | 120V DC | – | 0.3 | 0.2(15ms) | |
| HH54PU, 54BU, 54SU | 120V AC | 1/8 | 5 | 1 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | 1/4 | 5 | – | |
| | 30V DC | – | 5 | 2(15ms) | |
| | 120V DC | – | 0.3 | 0.2(15ms) | |
| HH52PW, 52BW, 52SW | 120V AC | 1/6 | 5 | 1.5 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | 1/4 | 5 | – | |
| | 30V DC | – | 5 | 2(15ms) | |
| | 120V DC | – | 0.3 | 0.2(15ms) | |
| HH54PW, 54BW, 54SW | 120V AC | – | 3 | 1 | Same polarity between adjacent contacts for inductive load Opposite polarity for others |
| | 240V AC | – | 3 | – | |
| | 30V DC | – | 3 | 2(15ms) | |
| | 120V DC | – | 0.2 | 0.2(15ms) | |

Note: *UL and CSA approvals only.

■ **Dimensions, mm/Relays**
Plug-in

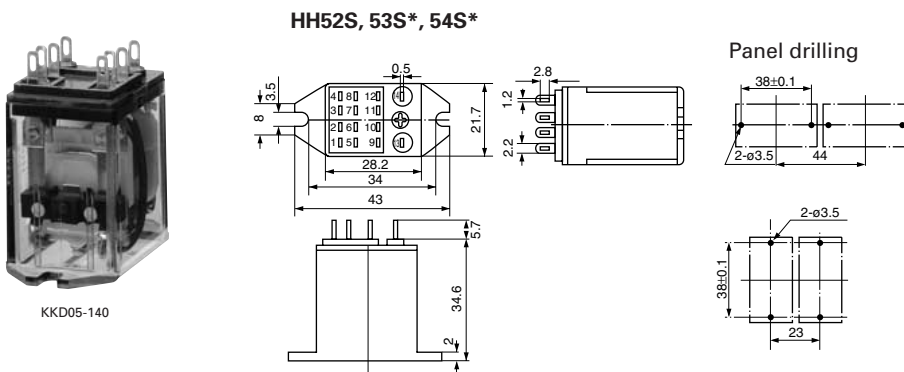


P.C. board



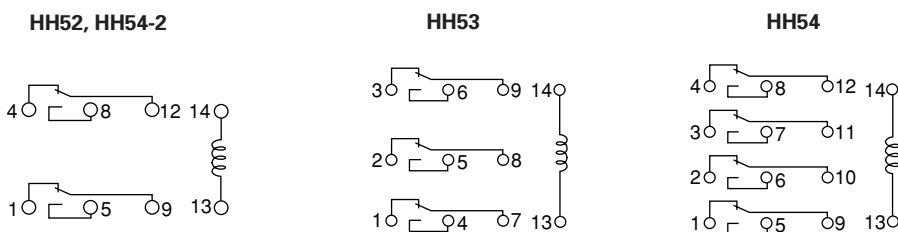
* Number of terminals are different from HH52B.

Flange



* Number of terminals are different from HH52S.

■ **Wiring diagrams**



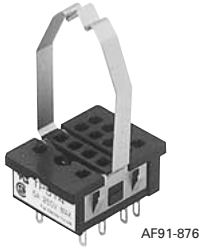
Industrial Control Relays

Miniature control relays

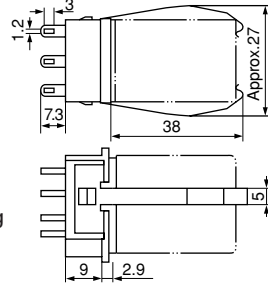
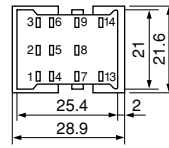
HH52, 53, 54

■ Dimensions, mm/Sockets

Soldering

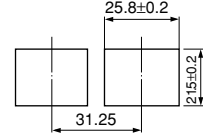


TP511

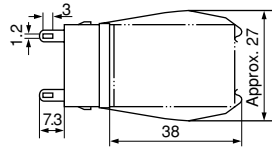
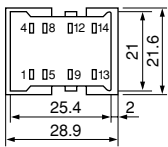


Mass: Approx. 10g

Panel cutting

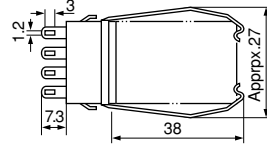
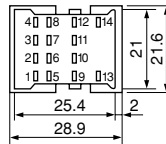


TP58

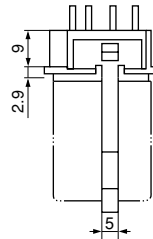
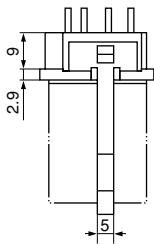


Mass: Approx. 10g

TP514



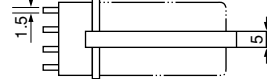
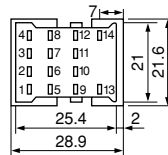
Mass: Approx. 10g



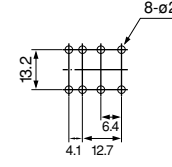
P.C. board



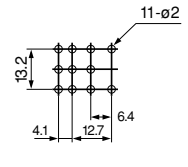
TP58B, TP511B, TP514B



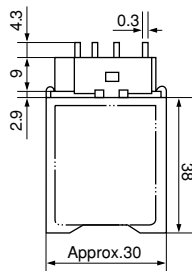
PC board drilling



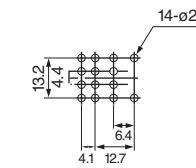
TP58B



TP511B



Mass: 58B Approx. 9g
511B, 514B Approx. 9.5g

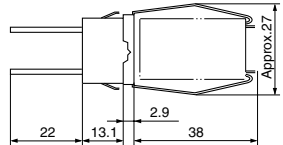
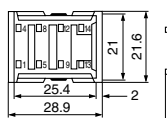


TP514B

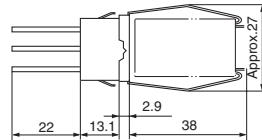
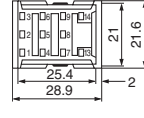
Wire-wrap



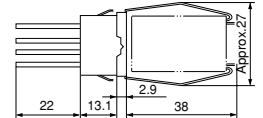
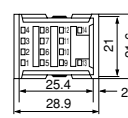
TP58R2



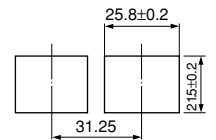
TP511R2



TP514R2



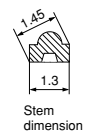
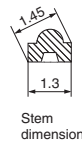
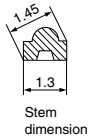
Panel cutting



Mass: Approx. 10.5g

Mass: Approx. 11.5g

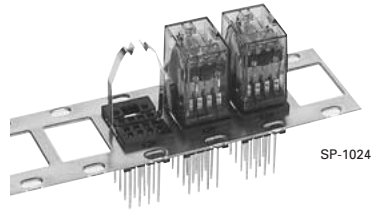
Mass: Approx. 12.5g



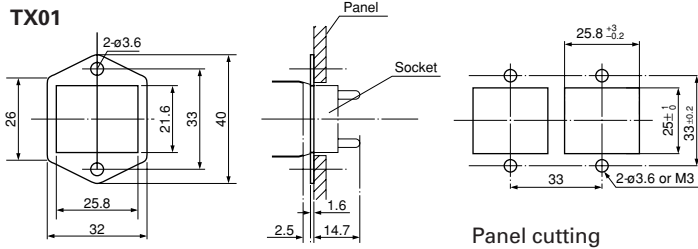
Mounting plates

FUJI can supply very convenient mounting plates which can accept either 1, 16, 18, 19, or 36 panel mounting miniature relays.

These mounting plates use plug-in relays with sockets, which are held in position by "snap-in" clips.

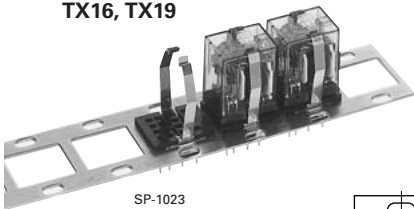


TX01

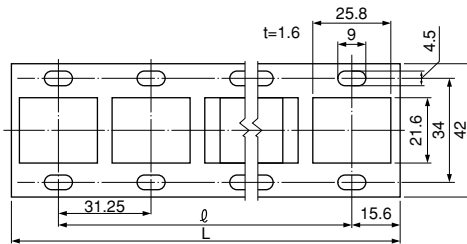


Mass: Approx. 5.8g

TX16, TX19



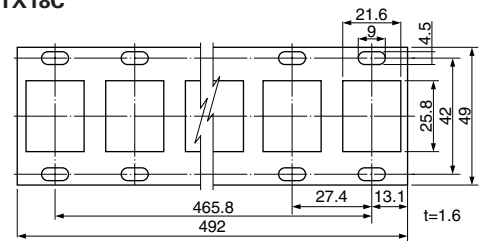
Mass: TX16 Approx. 130g
 TX19 Approx. 160g



Panel cutting

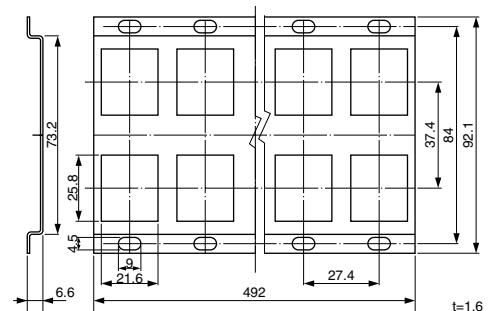
| Description | Type | |
|-------------|-------|-------|
| | TX16 | TX19 |
| Hole | 16 | 19 |
| L distance | 500 | 594 |
| ℓ distance | 468.7 | 562.5 |

TX18C



Mass: Approx. 155g

TX36C1



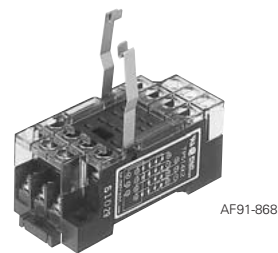
Mass: Approx. 325g

● **Finger protection covers**

- Quick-mounting type cover
 The cover can be quickly mounted on or removed from the TP series socket used with HH series control relay, even if sockets are mounted side-by-side.
- Mountable any time
 The cover can be mounted on or removed from the socket at any time before or after wiring the terminals.

■ **Types**

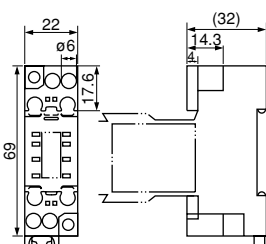
| Type | Used with |
|--------|---|
| RZ52X1 | TP58X1 Socket for HH52P miniature control relay |
| RZ54X1 | TP514X1 Socket for HH54P miniature control relay |
| FX14X2 | TP58X2 socket for HH52P miniature control relay TP514X2 socket for HH54P miniature control relay |



FX14X2

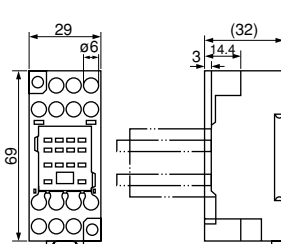
■ **Dimensions, mm**

RZ52X1



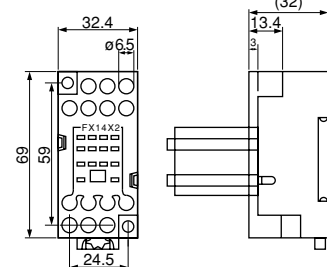
Mass: Approx. 2g

RZ54X1



Mass: Approx. 2.5g

FX14X2



Mass: Approx. 2.7g

Industrial Control Relays

Miniature control relays

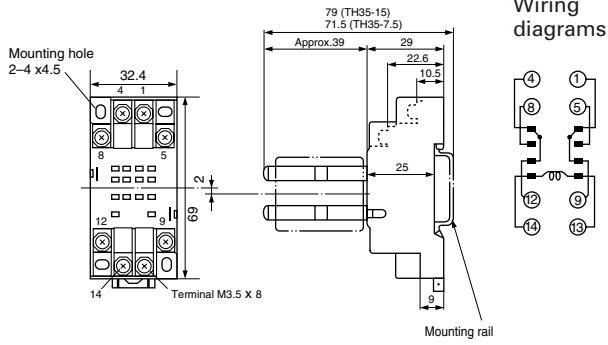
HH52, 53, 54

■ Dimensions, mm

● Sockets for rail mounting

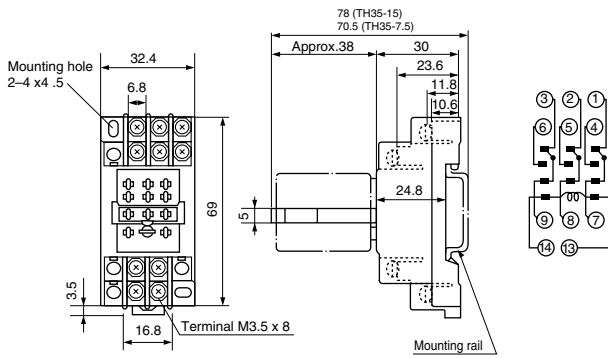
● Screw terminal M3.5

TP58X2 (for HH52P)



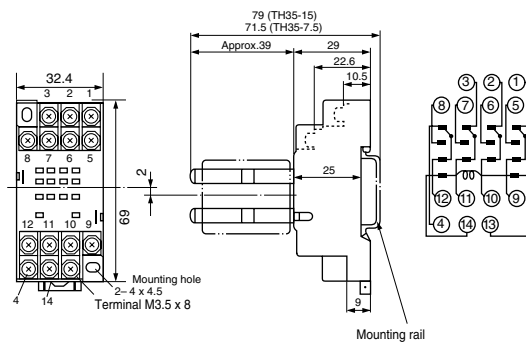
Mass: 49g

TP511X2 (for HH53P)



Mass: 50g

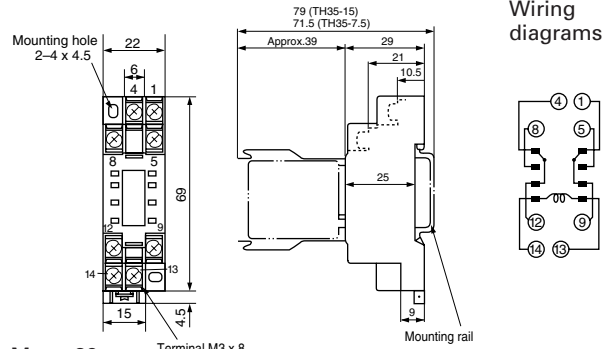
TP514X2 (for HH54P)



Mass: 62g

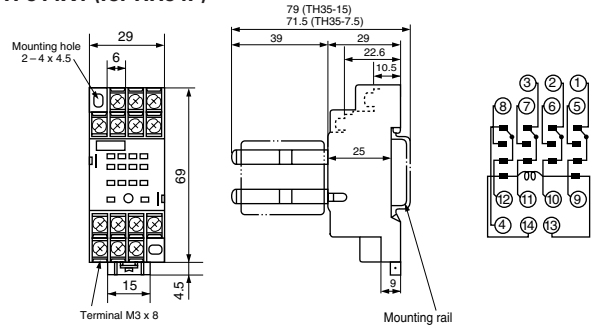
● Screw terminal M3

TP58X1 (for HH52P)



Mass: 32g

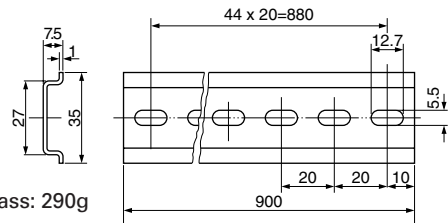
TP514X1 (for HH54P)



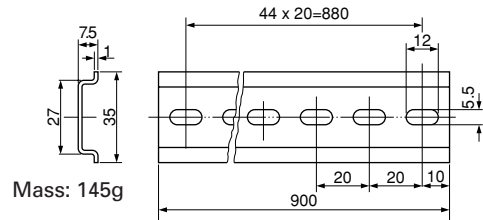
Mass: 49g

● Mounting rails

TH35-7.5



TH35-7.5AL



TH35-15AL

