

Thermal Overload Relays

TR series

■ Features

● Manual trip

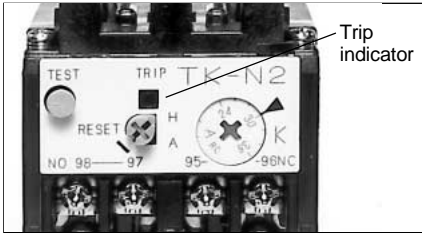
These relays can be manually tripped for sequence inspection by pressing manual trip bar (TR-0N/3, TR-5-1N/3). A sequence inspection will be performed when the test button is pulled out. When the test button is pressed in, only the NC contact will turn OFF. The original status will be restored when the test button is then released. (TR-N2/3 to N8/3)

● Trip-free mechanism

Even if the reset button is carelessly pressed, this relay trips without trouble (Trip-free mechanism).

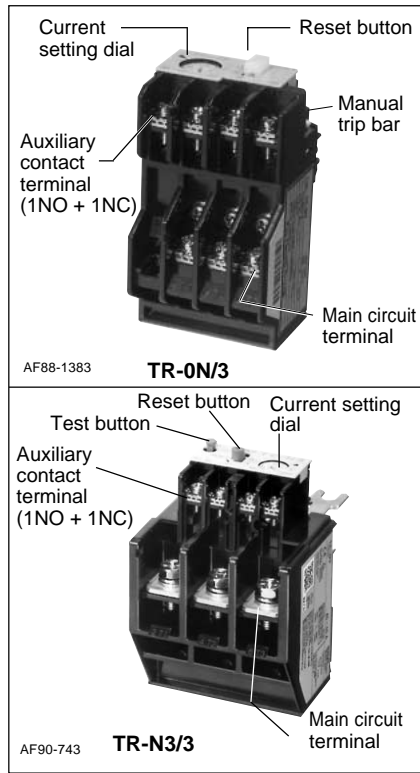
● Easy visual checking of operating status

Trip indicator and manual trip bar permit visual check of tripping status.



● Dial ampere setting

The setting dial uses a RC (Rated Current) marking which is set to the motor full load current.



■ Versatile optional accessories

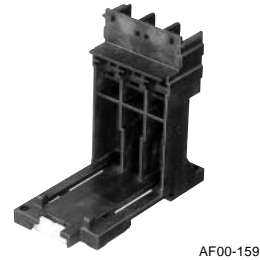
Trip indicator



Reset release



Base unit for separate mounting



■ Optional accessories

| Description | | Type | Ordering code | Used with thermal overload relay |
|--|---------------------|------------------|---------------|--|
| Reset release | Lead length 300 mm | SZ-R1 | TZ1R1 | TR-0N/3, TR-5-1N/3, TK-0N, TK-5-1N |
| | 500 mm | SZ-R2 | TZ1R2 | |
| | 700 mm | SZ-R3 | TZ1R3 | TR-N10 to N14, TK-N10 to N14 |
| You can reset these relays remotely on the front panels of switchboards. | Lead length 300 mm | SZ-R4 | TZ2R4 | TR-N2/3 to N8/3, TK-N2 to N8 |
| | 500 mm | SZ-R5 | TZ2R5 | |
| | 700 mm | SZ-R6 | TZ2R6 | |
| Trip indicator | 100–110V AC 50/60Hz | SZ-L100 | TZ1L100 | TR-0N/3, TR-5-1N/3, TK-0N, TK-5-1N |
| | 200–220V AC 50/60Hz | SZ-L200 | TZ1L200 | TR-N10 to N14, TK-N10 to N14 |
| Easier checking of trip status | 100–110V AC 50/60Hz | SZ-L100N2 | TZ2L100N2 | TR-N2/3 to N8/3, TK-N2 to N8 |
| | 200–220V AC 50/60Hz | SZ-L200N2 | TZ2L200N2 | |
| Dial cover For protection against the current setting being changed in error | | SZ-DA | SZ1DA | TR-0N/3, TR-5-1N/3, TK-0N, TK-5-1N TR-N2/3 to N14/3, TK-N2 to N14 |
| Base unit for separate mounting The unit can be screw-mounted and rail-mounted. | | SZ-HB | TZ1HB | TR-0N/3, TK-0N |
| | | SZ-HC | TZ1HC | TR-5-1N/3, TK-5-1N |
| | | SZ-HD | TZ2HD | TR-N2/3, TK-N2 |
| | | SZ-HE | TZ2HE | TR-N3/3, TK-N3 |
| Terminal cover | | SZ-T10 | SZ1T10 | Base unit for separate mounting SZ-HB |
| | | SZ-T11 | SZ1T11 | Base unit for separate mounting SZ-HC |
| | | SZ-T14 | SZ2T14 | For separate mounting TR-N2H/3, TK-N2H |
| | | SZ-T15 | SZ2T15 | For separate mounting TR-N3H/3, TK-N3H |
| | | SZ-RN6T | SZ2RN6T | For separate mounting TR-N6H/3, TK-N6H |
| | | SZ-T12 | TZ1T12 | TR-0N/3, TK-0N |
| | | SZ-T13 | TZ1T13 | TR-5-1N/3, TK-5-1N |
| | | SZ-T16 | SZ2T16 | TR-N2/3, TK-N2 |
| | | SZ-T17 | SZ2T17 | TR-N3/3, TK-N2 |

■ Selection guide/Standard type

| On-contactor mounting | 3-element 2-element | TR-0N/3 (TR13DW) TR-0N (TR13NW) | TR-5-1N/3 (TR20DW) TR-5-1N (TR20NW) | TR-N2/3 (TR35BDW) TR-N2 (TR35BNW) | TR-N3/3 (TR65BDW) TR-N3 (TR65BNW) | | | | |
|--------------------------|------------------------|--|--|--|--|-------------|---------|---------|-----------|
| Separate mounting | 3-element 2-element | TR-0NH/3 (TR13DH) TR-0NH (TR13NH) | TR-5-1NH/3 (TR20DH) TR-5-1NH (TR20NH) | TR-N2H/3 (TR35BDH) TR-N2H (TR35BNH) | TR-N3H/3 (TR65BDH) TR-N3H (TR65BNH) | | | | |
| Contactor to be combined | | SC-03 | SC-0 SC-05 | SC-4-0 | SC-4-1 SC-5-1 | SC-N1 | SC-N2 | SC-N2S | SC-N3 |
| Ampere setting range (A) | Code | A | 0.1 – 0.15 | 0.1 – 0.15 | 0.1 – 0.15 | 0.1 – 0.15 | | | |
| | | B | 0.13 – 0.2 | 0.13 – 0.2 | 0.13 – 0.2 | 0.13 – 0.2 | | | |
| | | C | 0.15 – 0.24 | 0.15 – 0.24 | 0.15 – 0.24 | 0.15 – 0.24 | | | |
| | | D | 0.2 – 0.3 | 0.2 – 0.3 | 0.2 – 0.3 | 0.2 – 0.3 | | | |
| | | E | 0.24 – 0.36 | 0.24 – 0.36 | 0.24 – 0.36 | 0.24 – 0.36 | | | |
| | | F | 0.3 – 0.45 | 0.3 – 0.45 | 0.3 – 0.45 | 0.3 – 0.45 | | | |
| | | G | 0.36 – 0.54 | 0.36 – 0.54 | 0.36 – 0.54 | 0.36 – 0.54 | | | |
| | | H | 0.48 – 0.72 | 0.48 – 0.72 | 0.48 – 0.72 | 0.48 – 0.72 | | | |
| | | J | 0.64 – 0.96 | 0.64 – 0.96 | 0.64 – 0.96 | 0.64 – 0.96 | | | |
| | | K | 0.8 – 1.2 | 0.8 – 1.2 | 0.8 – 1.2 | 0.8 – 1.2 | | | |
| | | L | 0.95 – 1.45 | 0.95 – 1.45 | 0.95 – 1.45 | 0.95 – 1.45 | | | |
| | | M | 1.4 – 2.2 | 1.4 – 2.2 | 1.4 – 2.2 | 1.4 – 2.2 | | | |
| | | N | 1.7 – 2.6 | 1.7 – 2.6 | 1.7 – 2.6 | 1.7 – 2.6 | | | |
| | | P | 2.2 – 3.4 | 2.2 – 3.4 | 2.2 – 3.4 | 2.2 – 3.4 | | | |
| | | R | 2.8 – 4.2 | 2.8 – 4.2 | 2.8 – 4.2 | 2.8 – 4.2 | | | |
| | | S | 4 – 6 | 4 – 6 | 4 – 6 | 4 – 6 | 4 – 6 | 4 – 6 | |
| | | T | 5 – 8 | 5 – 8 | 5 – 8 | 5 – 8 | 5 – 8 | 5 – 8 | |
| | | U | 6 – 9 | 6 – 9 | 6 – 9 | 6 – 9 | 6 – 9 | 6 – 9 | |
| | | V | 7 – 11 | 7 – 11 | 7 – 11 | 7 – 11 | 7 – 11 | 7 – 11 | 7 – 11 |
| | | W | | 9 – 13 | 9 – 13 | 9 – 13 | 9 – 13 | 9 – 13 | 9 – 13 |
| | | X | | | 12 – 18 | 12 – 18 | 12 – 18 | 12 – 18 | 12 – 18 |
| | | Q | | | | 16 – 22 | | | |
| | | B | | | | | 18 – 26 | 18 – 26 | 18 – 26 |
| | | E | | | | | 24 – 36 | 24 – 36 | 24 – 36 |
| | | F | | | | | | 28 – 40 | 28 – 40 |
| | | I | | | | | | 32 – 42 | |
| | | G | | | | | | | 34 – 50 |
| | | J | | | | | | | 45 – 65 |
| | | O | | | | | | | 48 – 68 |
| | | L | | | | | | | 53 – 80* |
| | | M | | | | | | | 65 – 95* |
| | | I | | | | | | | 85 – 105* |

| On-contactor mounting | 3-element 2-element | TR-N5/3 (TR80BDW) TR-N5 (TR80BNW) | TR-N6/3 (TR1CBDW) TR-N6 (TR1CBNW) | TR-N7/3 (TR1FBDW) TR-N7 (TR1FBNW) | TR-N8/3 (TR1JBDW) TR-N8 (TR1JBNW) | TR-N10/3 (TR2CBDW) TR-N10 (TR2CBNW) | TR-N12/3 (TR4ABDW) TR-N12 (TR4ABNW) | TR-N14/3 (TR8ABDW) TR-N14 (TR8ABNW) | | |
|--------------------------|------------------------|--|--|--|--|--|--|--|-----------|-----------|
| Separate mounting | 3-element 2-element | – | TR-N6H/3 (TR1CBDH) TR-N6H (TR1CBNH) | – | – | TR-N10H/3 (TR2CBDH) TR-N10H (TR2CBNH) | TR-N12H/3 (TR4ABDH) TR-N12H (TR4ABNH) | TR-N14H/3 (TR8ABDH) TR-N14H (TR8ABNH) | | |
| Contactor to be combined | | SC-N4 | SC-N5A | SC-N6 | SC-N7 | SC-N8 | SC-N10 | SC-N11 | SC-N12 | SC-N14 |
| Ampere setting range (A) | Code | B | 18 – 26 | 18 – 26 | | | | | | |
| | | E | 24 – 36 | 24 – 36 | | | | | | |
| | | F | 28 – 40 | 28 – 40 | | | | | | |
| | | G | 34 – 50 | 34 – 50 | | | | | | |
| | | J | 45 – 65 | 45 – 65 | 45 – 65 | 45 – 65 | | | | |
| | | L | 53 – 80 | 53 – 80 | 53 – 80 | 53 – 80 | | | | |
| | | M | | 65 – 95 | 65 – 95 | 65 – 95 | | | | |
| | | I | | 85 – 105 | | | | | | |
| | | N | | | 85 – 125 | 85 – 125 | 85 – 125 | | | |
| | | P | | | 110 – 160* | 110 – 160 | 110 – 160 | 110 – 160 | 110 – 160 | |
| | | R | | | | | 125 – 185 | 125 – 185 | 125 – 185 | |
| | | S | | | | | 160 – 240 | 160 – 240 | 160 – 240 | |
| | | T | | | | | | 200 – 300 | 200 – 300 | |
| | | U | | | | | | | 240 – 360 | 240 – 360 |
| | | V | | | | | | | 300 – 450 | 300 – 450 |
| | | W | | | | | | | | 400 – 600 |

- Notes: • TR-N10/3 to N14/3 types are provided with CTs.
 • Max. setting ranges of these starters are as shown in the table on the right.
 • When ordering the thermal overload relays for starter use, select the applicable setting range.
 (): Basic ordering code (When ordering phase-loss protective type, enter the version code E instead of D)
 *: Separate mounting only

| Motor starter | Maximum applicable heater range (A) | |
|---------------|-------------------------------------|----------|
| | 200–240V | 380–440V |
| SW-03/3H | 7–11 | 6–9 |
| SW-4-0/3H | 12–18 | 12–18 |
| SW-N1/3H | 24–36 | 24–36 |
| SW-N2S/3H | 34–50 | 34–50 |
| SW-N4/3H | 53–80 | 53–80 |
| SW-N6/3H | 85–125 | 85–125 |