*Issued November 2009* 12484

# DATA SHEET

MITSUBISHI ELECTRIC

# TH–N OVERLOAD RELAYS

Based on Mitsubishi MS-N Series Datasheet

# MOTOR PROTECTION RELAYS

## 1. Thermal Overload Relays

### TH-N Series Thermal Overload Relays Will Make a Convenience and Safer Systems.

TH-N12

TH-N20

TH-N12CX

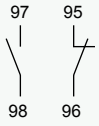
### A Selection of Relays for Optimum Motor Protection Characteristics

The thermal relay line-up includes two-element units as well as the phase failure protection type models (three-element relays), all with the same external dimensions.
This array of protection characteristics allows you to choose the units best suited to your motor protection needs.

### Maintenance and Inspection Are Easy

An operation indicator makes maintenance and inspection easy. Checks can be performed using manual operations.

### 1NO + 1NC Contacts




1 NO and 1 NC contacts can be used independently as signals contacts.

### Rated Current Can Be Set Easily

The value of the rated current is displayed on a dial.
Simply adjust the dial to the full-load current of the motor and motor protection is assured.

### Finger Protectors

Models with finger protectors that conform to DIN VDE 0106 Part 100 (TH-N□CX) are also available.

### Various Accessories

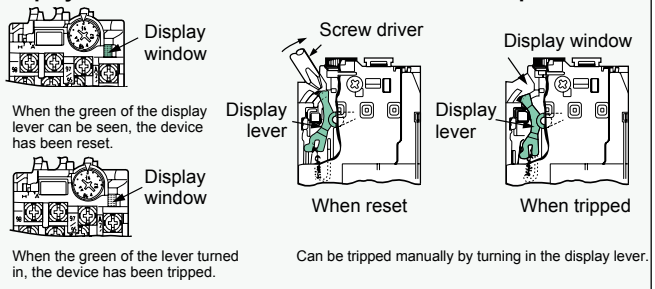
- Independent mount adaptor for TH-N12(CX).
  : UN-HZ12(CX)
- Reset release : UN-RR□□□
- Trip indicating LED : UN-TL□□

### Trip-Free Reset Bar

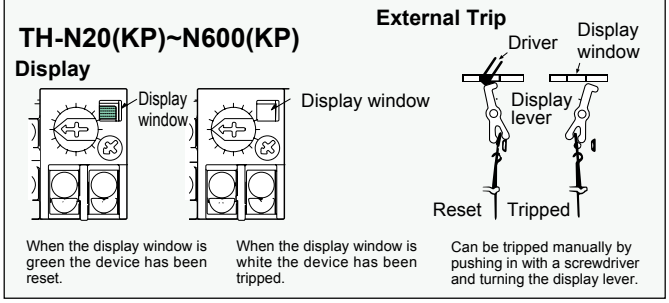
Choose between automatic and manual reset. Also features tripfree reset bar mechanism.

**• Display and External Trip Mechanism**

**TH-N12(KP)**

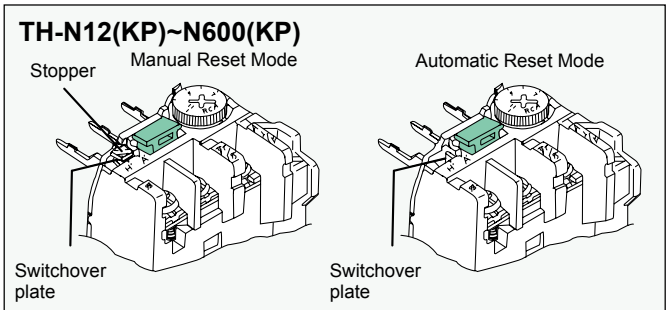



**TH-N20(KP)~N600(KP)**

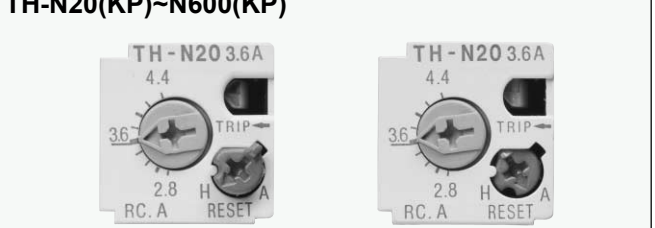



**• Switching Between Automatic and Manual Reset**

**TH-N12(KP)~N600(KP)**




**TH-N20(KP)~N600(KP)**



# 1.1. Selection Guide of Thermal Overload Relays

Table 1.1

| Max. Fuse Rating (660Vac) IEC 269-1 (A) | | | Overload Relay | | | Motor Capacity [kW, (hp)] (Three phase 50/60Hz, based on four poles) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Heater desig-nation | Setting range (A) | Model (TH-) | | | | |
| aM | gG | gM | | | | AC220-240V | AC380V | AC400-440V | AC500V |
| 0.5 | 0.5 | — | 0.12A | 0.1-0.16 | N12 | — | — | — | — |
| 0.5 | 1 | — | 0.17A | 0.14-0.22 | N12 | — | — | — | — |
| 1 | 2 | — | 0.24A | 0.2-0.32 | N12 | 0.03(1/24) | 0.06(1/12) | 0.06(1/12) | 0.09(1/8) |
| 1 | 2 | — | 0.35A | 0.28-0.42 | N12 | 0.05(1/16) | 0.09(1/8) | 0.09(1/8) | 0.12(1/6) |
| 1 | 2 | — | 0.5A | 0.4-0.6 | N12 | 0.06(1/12) | 0.12(1.6) | 0.12(1.6) | 0.18(1/4) |
| 2 | 4 | — | 0.7A | 0.55-0.85 | N12 | 0.09(1/8) | 0.18(1/4) | 0.18(1/4) | 0.25(1/3) |
| 2 | 4 | — | 0.9A | 0.7-1.1 | N12 | 0.12(1/6) | 0.25(1/3) | 0.25(1/3) | 0.37(1/2) |
| 2 | 4 | — | 1.3A | 1.0-1.6 | N12 | 0.18(1/4) | 0.37(1/2) | 0.37(1/2)<br>0.55(3/4) | 0.55(3/4) |
| 4 | 6 | — | 1.7A | 1.4-2.0 | N12 | 0.25(1/3) | 0.55(3/4) | 0.75(1) | 0.75(1) |
| 4 | 6 | — | 2.1A | 1.7-2.5 | N12 | 0.37(1/2) | 0.75(1) | — | 1.1(1-1/2) |
| 6 | 10 | — | 2.5A | 2.0-3.0 | N18 | 0.55(3/4) | 1.1(1-1/2) | 1.1(1-1/2) | 1.5(2) |
| 6 | 10 | — | 3.6A | 2.8-4.4 | N18 | 0.75(1) | 1.5(2) | 1.5(2) | 2.2(3) |
| 8 | 16 | — | 5A | 4.0-6.0 | N18 | 1.1(1-1/2) | 2.2(3) | 2.2(3) | 3(4) |
| 12 | 20 | — | 6.6A | 5.2-8.0 | N18 | 1.5(2) | 3(4) | 3,3.7(4.5) | 3.7(5) |
| 12 | 20 | — | 9A | 7.0-11 | N18 | 2.2(3) | 3.7(5)<br>4(5-1/2) | 3(4)<br>3.7(5) | 5.5(7-1/2) |
| 16 | 25 | 32M35 | 11A | 9.0-13 | N18 | 3(4) | 5.5(7-1/2) | 5.5(7-1/2) | 7.5(10) |
| 20 | 32 | 32M50 | 15A | 12-18 | N18 | 3.7(5) | 7.5(10) | 7.5(10)<br>9(12.5) | 9(12/5) |
| 25 | 40 | 32M63 | 19A[1] | 16-22 | N20 | 5.5(7-1/2) | 11(15) | 11(15) | 11(15) |
| 40 | 63 | 32M63 | 22A | 18-26 | N20 | 5.5(7-1/2) | 11(15) | 11(15) | 15(20) |
| 50 | 80 | 63M80 | 29A | 24-34 | N20 | 7.5(10) | 15(20) | 15(20) | 18.5(25) |
| 63 | 80 | 63M80 | 35A[2] | 30-40 | N20 | 9(12.5) | 18.5(25) | 18.5(25) | 22(30) |
| 63 | 100 | 100M100 | 42A | 34-50 | N20TA | 11(15) | 22(30) | 22(30) | 30(40) |
| 80 | 125 | 100M125 | 54A | 43-65 | N20TA | 15(20) | 30(40) | 30(40) | 37(50) |
| 100 | 160 | 100M160 | 67A | 54-80 | N20TA | 18.5(25) | 37(50) | 37(50) | 45(60) |
| 125 | 200 | 100M200 | 82A | 65-100 | N20TA | 22(30) | 45(50) | 45(60) | 55(75) |
| — | 200 | 100M200 | 95A[3] | 85-105 | N20TA | 30(40) | 55(75) | 55(75) | — |
| — | 250 | 200M250 | 105A | 85-125 | N60 | 30(40) | 55(75) | 55(75) | 75(100) |
| — | 250 | 200M250 | 125A | 100-150 | N60 | 37(50) | 75(100) | 75(100) | 90(125) |
| — | 315 | 200M315 | 150A | 120-180 | N60 | 45(60) | 90(125) | 90(125) | 110(150) |
| — | 400 | — | 180A | 140-220 | N60 | 55(75) | 110(150) | 110(150) | 132(175) |
| — | 500 | — | 210A[4] | 170-250 | N60 | 75(100) | 132(180) | 132(180) | — |
| — | 630 | — | 250A | 200-300 | N60 | 75(100) | 132(180)<br>160(220) | 132(180)<br>160(220) | 160(220) |
| — | 630 | — | 330A | 260-400 | N60 | 90(125)<br>110(150) | 200(270) | 200(270) | 220(300)<br>250(340) |
| — | 800 | — | 500A | 400-600 | N60 | 132(180)<br>160(220) | 220(300)<br>250(340)<br>300(400) | 220(300)<br>250(340)<br>300(400) | 400(530) |
| — | 1000 | — | 660A | 520-800 | N60 | 200(270)<br>220(300) | 400(530) | 400(530) | 500(670) |

*Notes: 1. For starter size N20, N21 only. 2. For starter size N35 only. 3. For starter size N95 only. 4. For starter size N220 only.*
*5. Selection by mounting*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contactor mounting | W/o F/P (2) | TH-N12(KP) | TH-N18(KP) | TH-N20(KP) (1) | TH-N20TA(KP) (1) | TH-N60(KP) (1) | TH-N60TA(KP) (1) | TH-N120(KP) (1) | TH-N120TA(KP) (1) | TH-N220RH(KP) | TH-N400RH(KP) | — |
| | With F/P (3) | TH-N12CXKP | TH-N18CXKP | TH-N20CXKP (1) | TH-N20TAKPCX (1) | TH-N60CXKP (1) | — | — | — | — | — | — |
| Independent mounting | W/o F/P (2) | TH-N12(KP) + UN-HZ12 (4) | — | TH-N20(KP) | — | TH-N60(KP) | — | TH-N120(KP) | TH-N120TAHZ(KP) | TH-N220HZ(KP) | TH-N400HZ(KP) | TH-N600(KP) + CT |
| | With F/P (3) | TH-N12CXKP + UN-HZ12CX (4) | — | TH-N20CXHZKP | — | TH-N60CXKP | — | — | — | — | — | — |

*Notes: 1. Use "Connecting parts" when couple with contactor (see Table 1.6(3)). 2. W/o F/P:Without Finger Protection.*
*3.With F/P:With Finger Protection. 4. UN-HZ12(CX) is shipped separately from TH-N12(CX)(KP).*
*5. CT should be supplied by customer.*

## 1.2. Selection Guide of the Current Transformers for TH-N600KP

Table 1.2

| | | | | | | |
|---|---|---|---|---|---|---|
| Current Transformer for TH-N600KP | Heater Designation(A) | | 250 | 330 | 500 | 660 |
| | Setting Range(A) | | 200~300 | 260~400 | 400~600 | 520~800 |
| | Current Transformer Ratio | | 400/5A | 500/5A | 750/5A | 1,000/5A |
| | Current Transformer Capacity | | At least 15VA | | | |
| | Recommended MITSUBISHI Current Transformer Model Number | Cable wiring | CW-15L 400/5A 15VA | CW-15L 500/5A 15VA | CW-15L 750/5A 15VA | — |
| | | Bus bar wiring | CW-15LM 400/5A 15VA | CW-15LM 500/5A 15VA | CW-15LM 750/5A 15VA | CW-40LM 1000/5A 40VA |

** Current transformer to be supplied by customer.*

## 1.3. Technical Data

Table 1.3

| Three heater type TH- / Two heater type TH- | | | N12(CX)KP N12(CX) | N18(CX)KP N18(CX) | N20(CX)KP N20(CX) | N20TA(CX)KP N20TA(CX) | N60(CX)KP N60(CX) | N60TAKP N60TA | N120KP N120 | N120TAKP N120TA | N220RHKP N220RH | N400RHKP N400RH | N600KP N600 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. setting current | | A | 13 | 18 | 22 | 40 | 65 | 105 | 100 | 150 | 220 | 400 | 800 |
| Range of setting current | | A | 0.1-13 | 2.8-18 | 0.2-22 | 18-44 | 12-65 | 54-105 | 34-100 | 85-150 | 65-250 | 85-400 | 200-800 |
| Rated insulation voltage | | V | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 1000 | 1000 | 690 |
| Permissible ambient temperature | | °C | –25 to + 55 | | | | | | | | | | |
| Single phase protection | | | Types TH-N/K □□□KP provide the protection. | | | | | | | | | | |
| Bimetal heating | | | Direct | | | | | | | | Via CTs | | Via CTs[1] |
| Max. heater dissipation per current path | Min. setting | W | 0.8 | 0.9 | 0.8 | 1.4 | 1.7 | 2.4 | 2.5 | 3.2 | 2.5 | 2.5 | 2.5 |
| | Max. setting | W | 1.8 | 2.2 | 2.2 | 3.5 | 4.9 | 5.2 | 7.1 | 8.6 | 6.0 | 6.0 | 6.0 |
| Auxiliary contact | | | 1NO + 1NC | | | | | | | | | | |
| Rated operating current of aux. contacts | | | | | | | | | | | | | |
| Category | NO | 120V A | 2 | | 2 | | | | | | | | |
| AC-15 | contact | 240V A | 1 | | 1 | | | | | | | | |
| | | 500V A | 0.5 | | 0.5 | | | | | | | | |
| | NC | 120V A | 2 | | 3 | | | | | | | | |
| | contact | 240V A | 1 | | 2 | | | | | | | | |
| | | 500V A | 0.5 | | 1 | | | | | | | | |
| Category | | 48V A | 0.4 | | 0.5 | | | | | | | | |
| DC-13 | | 110V A | 0.2 | | 0.2 | | | | | | | | |
| | | 220V A | 0.1 | | 0.1 | | | | | | | | |
| Main terminal screw size | Line side | mm | — | | M4 | M4 | M6 | M6 | M8 | M8 | — | — | M4 |
| | Load side | mm | M3.5 | M4 | M4 | M5 | M6 | M6 | M8 | M8 | M10 | M12 | M4 |
| Standard wire sizes recommended Heater designation-wire size | | (mm²) | 0.24A-2 ≀ 11A-2 | 3.6A-2 ≀ 11A-2 15A-3.5 | 0.24A-2 ≀ 11A-2 15A-3.5 19A-3.5 | 22A-5.5 29/35A-8 | 15A-3.5 22A-5.5 29/35A-8 42A-14 54A-22 | 67A-22 82/95A-38 | 42A-14 54/67A-22 82A-38 | 105A-60 125A-60 | — — | — — | — — |
| Max. conductor size Main | Line side | mm² | (2.5)[2] | — | 6 | — | 25 | — | 38 | 60 | — | — | 6 |
| | Load side | mm² | 2.5 | 6 | 6 | 16 | 25 | 38 | 38 | 60 | 150 | 240 | 6 |
| | Busbar width Line side | mm | — | | — | — | 15 | — | 20 | 20 | — | — | — |
| | Load side | mm | — | | — | — | 15 | 20 | 20 | 20 | 25 | 30 | — |
| Aux. contacts | | mm² | 2.5 | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

*Notes: 1. Used with current transformer (to be supplied by the customer). See Table 1.2.*
*2. When used with UN-HZ 12(CX)adaptor.*

## 1.4. Selection Guide of Quick Trip Thermal Overload Relay

Table 1.4

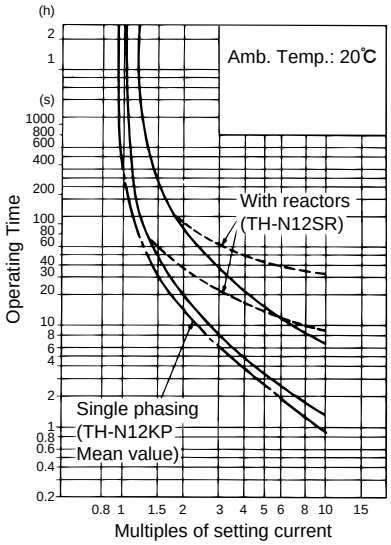
| Applicable contactor | **S-N10 S-N11 S-N12** | **S-N20 S-N21 S-N25 S-N35** | **S-N25 S-N35** | **S-N50 S-N65 S-N80 S-N95** | **S-N80 S-N95** |
|---|---|---|---|---|---|
| Three heater type with phase failure protection | **TH-N12KF** | **TH-N20KF** | **TH-N20TAKF** | **TH-N60KF** | **TH-N60TAKF** |
| Two heater type | — | **TH-N20FS** | **TH-N20TAFS** | **TH-N60FS** | **TH-N60TAFS** |
| Heater setting range (Ordering designation) | 1.7~2.5**(2.1A)** 2.8~4.4**(3.6A)** 4~6**(5A)** 5.2~8**(6.6A)** 7~11**(9A)** 9~13**(11A)** | 1.7~2.5 **(2.1A)** 2.8~4.4 **(3.6A)** 4~6 **(5A)** 5.2~8 **(6.6A)** 7~11 **(9A)** 9~13 **(11A)** 12~18 **(15A)** | 18~26 **(22A)** 24~34 **(29A)** 30~40 **(35A)**[1] | 34~50 **(42A)** 43~65 **(54A)** | 54~80 **(67A)** 65~93 **(82A)**[2] |

*Notes: *1. Only for S-N35. *2. Only for S-N95.*

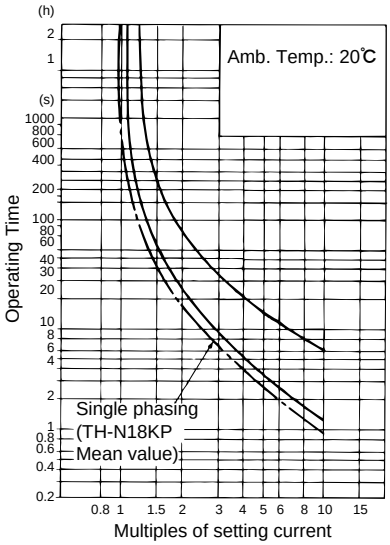
# 1.5. Operating Characteristics of Thermal Overload Relays

**(Connecting wire size: Refer to "standard wire size" of Table 1.3)**

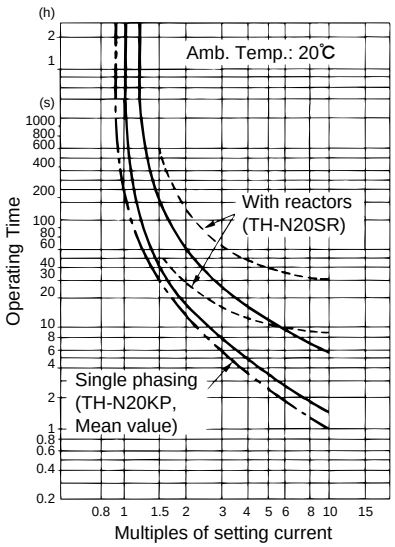
**TH-N12**
**TH-N12KP·TH-N12SR**



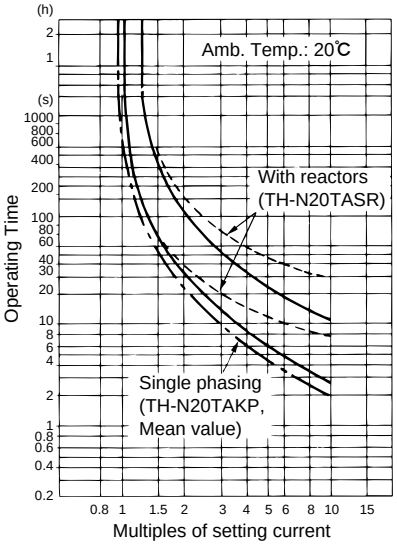

**TH-N18**
**TH-N18KP**



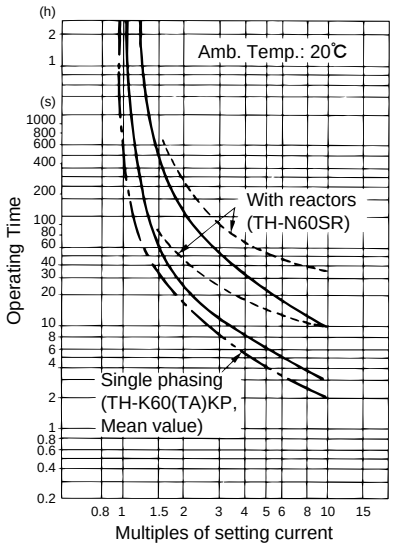

**TH-N20·TH-N20KP**
**TH-N20SR·TH-N20KPSR**



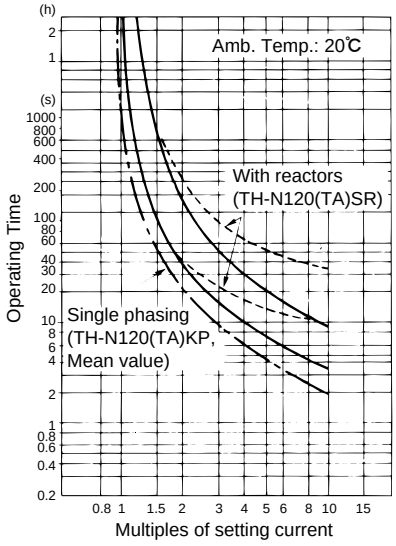

**TH-N20TA·TH-N20TAKP**
**TH-N20TASR·TH-N20TAKPSR**



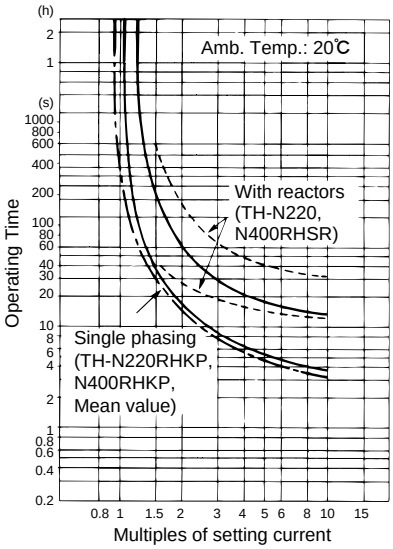

**TH-N60·TH-N60TA**
**TH-N60KP·TH-N60TAKP**
**TH-N60SR·TH-N60TASR**
**TH-N60KPSR·TH-N60TAKPSR**



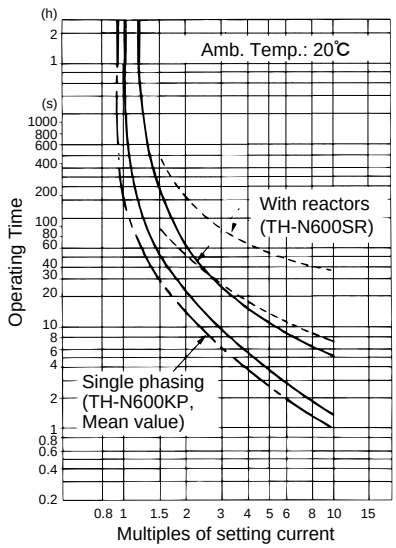

**TH-N120·TH-N120KP**
**TH-N120SR·TH-N120KPSR**
**TH-N120TA·TH-N120TAKP**
**TH-N120TASR·TH-N120TAKPSR**




**TH-N220RH**
**TH-N220RHKP**
**TH-N220RHSR**
**TH-N220RHKPSR**
**TH-N400RH**
**TH-N400RHKP**
**TH-N400RHSR**
**TH-N400RHKPSR**




**TH-N600**
**TH-N600KP**
**TH-N600SR**
**TH-N600KPSR**



## 1.6. Optional Parts and Accessories

Saturable Reactors for Slow Tripping

**Ordering designation**

| THR - G22 | PT | |
|---|---|---|
| Part number | 3 heater | 2 heater |
| see table 2·1·6(1) | PT | PD |

Table 1.6 (1)

| Heater Designation | Part number | | | | | | |
|---|---|---|---|---|---|---|---|
| | TH-N12[1] | TH-N20(KP) | TH-N20TA(KP) | TH-N60(KP) TH-N60TA(KP) | TH-N120(KP) TH-N120TA(KP) | TH-N220□□(KP) TH-N400□□(KP) | TH-N600(KP) |
| 0.24A | TSR-A0Y | TSR-C0Y | — | — | — | — | — |
| 0.35A | TSR-A0Y | TSR-C0Y | — | — | — | — | — |
| 0.5A | TSR-A01 | TSR-C0Y | — | — | — | — | — |
| 0.7A | TSR-A03 | TSR-C03 | — | — | — | — | — |
| 0.9A | TSR-A05 | TSR-C03 | — | — | — | — | — |
| 1.3A | TSR-A09 | TSR-C07 | — | — | — | — | — |
| 1.7A | TSR-A11 | TSR-C09 | — | — | — | — | — |
| 2.1A | TSR-A12 | TSR-C10 | — | — | — | — | — |
| 2.5A | TSR-A13 | TSR-C12 | — | — | — | — | — |
| 3.6A | TSR-A15 | TSR-C15 | — | — | — | — | — |
| 5A | TSR-A18 | TSR-C17 | — | — | — | — | — |
| 6.6A | TSR-A21 | TSR-C20 | — | — | — | — | — |
| 9A | TSR-A23 | TSR-C23 | — | — | — | — | — |
| 11A | TSR-A25 | TSR-C25 | — | — | — | — | — |
| 15A | — | TSR-C26 | — | THR-G22 | — | — | — |
| 19A | — | TSR-C29 | — | — | — | — | — |
| 22A | — | — | TSR-D28 | THR-G24 | — | — | — |
| 29A | — | — | TSR-D29 | THR-G26 | — | — | — |
| 35A | — | — | TSR-D28 | THR-G27 | — | — | — |
| 41A | — | — | — | THR-G27 | THR-H41 | — | — |
| 54A | — | — | — | THR-G29 | THR-H42 | — | — |
| 67A | — | — | — | THR-G29 | THR-H43 | — | — |
| 82A | — | — | — | THR-G30 | THR-H43 | THR-F10 | — |
| 95A | — | — | — | THR-G30 | — | — | — |
| 105A | — | — | — | — | THR-H44 | THR-F13 | — |
| 125A | — | — | — | — | THR-H45 | THR-F13 | — |
| 150A | — | — | — | — | — | THR-F15 | — |
| 180A | — | — | — | — | — | THR-F16 | — |
| 210A | — | — | — | — | — | THR-F17 | — |
| 250A | — | — | — | — | — | THR-F18 | THR-E13 |
| 330A | — | — | — | — | — | THR-F19 | THR-E13 |
| 500A | — | — | — | — | — | — | THR-E13 |
| 660A | — | — | — | — | — | — | THR-E13 |

*Note: 1. Saturable reactors can be adopted only for the two heater type TH-N12*

Table 1.6 (2)

| | | | | |
|---|---|---|---|---|
| Trip indicator | Thermal overload relay | Voltage(50/60Hz) | Part number | |
| | TH-N12(CX)(KP)<br>TH-N18(CX)(KP) | AC 24/DC24V<br>AC 100-127V<br>AC 200-240V | **UN-TL15DC24V**<br>**UN-TL15AC100V**<br>**UN-TL15AC200V** | |
| | TH-N20,N20TA(CX)(KP)<br>TH-N60(CX)(KP)~N600(KP) | AC 24/DC24V<br>AC 100-127V<br>AC 200-240V | **UN-TL20DC24V**<br>**UN-TL20AC100V**<br>**UN-TL20AC200V** | |
| Reset release | Thermal overload relay | | Part number | Length (mm) |
| | TH-N12(CX)(KP)<br>TH-N18(CX)(KP) | | **UN-RR205**<br>**UN-RR405**<br>**UN-RR555**<br>**UN-RR705** | 200<br>400<br>550<br>700 |
| | TH-N20,N20TA(CX)(KP)<br>TH-N60(KP)~-N600(KP)[1] | | **UN-RR200**<br>**UN-RR400**<br>**UN-RR550**<br>**UN-RR700** | 200<br>400<br>550<br>700 |
| Separate mounting adaptor | Thermal overload relay | | Part number | |
| | TH-N12(TP/KP)<br>TH-N12CX(TP/KP) | | **UN-HZ12**<br>**UN-HZ12CX** | |

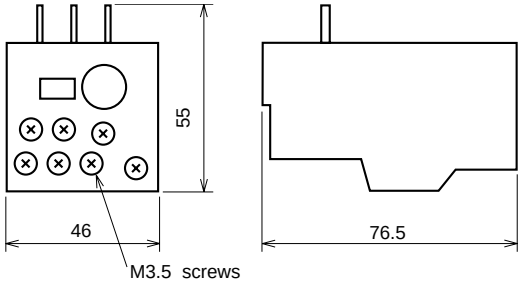
*Note: 1. Except for type TH-N60CX and TH-N60CXKP.*

## • Connecting Parts for Contactors to Thermal Overload Relays

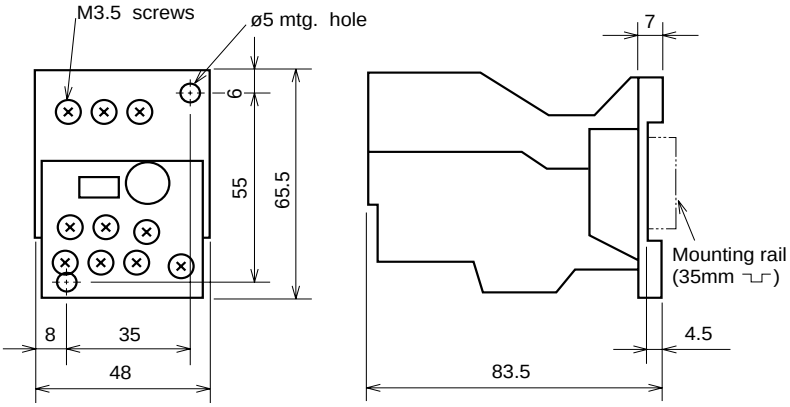
Table 1.6 (3)

| For connection between contactor (non-reversing type) and thermal overload relay | Overload relay | Contactor | Part number | Mass(kg) |
|---|---|---|---|---|
| | TH-N20(CX)(KP) | S-N20(CX), S(D)-N21(CX) | UN-TH20 | 0.02 |
| | TH-N20(CX)(KP),-N20TA(CX)(KP) | S-N25(CX), S(D)-N35(CX) | UN-TH25(CX) | 0.02 |
| | TH-N60(CX)(KP) | S-N50(CX), -N65(CX)<br>SD-N50, -N65 | BH559N350 | 0.02 |
| ** Connecting bars and mounting plate are included in the OLR of TH-N220RH(KP) and TH-N400RH(KP) for S-N180, -N220, -N300, -N400.* | TH-N60(KP), -N60TA(KP) | S-N80, -N95<br>SD-N80, -N95 | BH569N350<br>BH569N352 | 0.04<br>0.04 |
| | TH-N120(KP), N120TA(KP) | S(D)-N125<br>S(D)-N150 | BH579N355<br>BH589N355 | 0.36<br>0.36 |

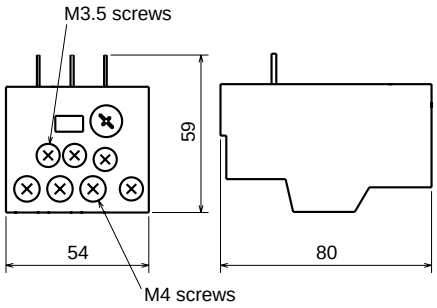
# 1.7. Outline Dimensions



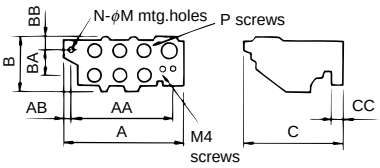

TH-N12(CX)(KP) (Mass: 0.11kg)

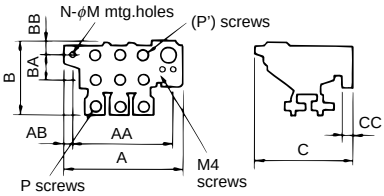


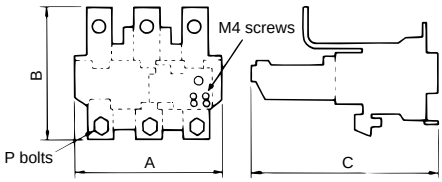

TH-N12(CX)(KP) with mounting adapter UN-HZ12(CX)

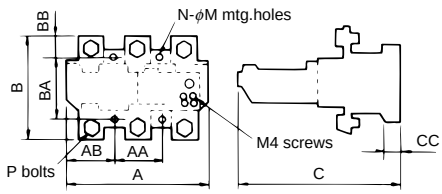



TH-N18(CX)(KP) (Mass: 0.14kg)




| Type | A | B | C | AA | AB | BA | BB | CC | N | M | P | Q | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-N20(CX)(KP) | 63 | 51 | 79 | 19 | 15 | 33 | 8.5 | 7 | 2 | 4.5 | M4 | M3.5 | 0.14 |
| TH-N60(KP) | 91.5 | 57 | 87 | 70 | 12 | 45 | 6 | 9 | 2 | 4.5 | M6 | M4 | 0.28 |
| TH-N60CX(KP) | 91.5 | 57 | 87 | 70 | 12 | 45 | 6 | 9 | 2 | 4.5 | M6 | M4 | 0.28 |
| TH-N120(KP) | 103 | 67 | 105 | 75 | 14 | 50 | 6 | 10 | 2 | 6 | M8 | M4 | 0.48 |
| TH-N600(KP) | 63 | 42 | 83.5 | 19 | 14 | 33 | 2 | 7 | 2 | 4.5 | M4 | M4 | 0.14 |

| Type | A | B | C | AA | AB | BA | BB | CC | N | M | P(Ṕ) | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-N20TA(CX)(KP) | 74 | 72 | 83.5 | — | — | — | — | — | — | — | M5 (M4) | 0.2 |
| TH-N60TA(KP) | 89 | 73.5 | 83.5 | — | — | — | — | — | — | — | M6 (M6) | 0.32 |
| TH-N120TA(KP) | 112 | 87 | 105 | — | — | — | — | — | — | — | M8 (M8) | 0.75 |
| TH-N120TAHZ(KP) | 112 | 103 | 105 | 75 | 25 | 50 | 25 | 10 | 2 | 6 | M8 (M8) | 1.0 |

| Type | A | B | C | AA | AB | BA | BB | CC | N | M | P | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-N220RH(KP) | 144 | 114 | 179.5 | — | — | — | — | — | — | — | M10 | 2.5 |
| TH-N400RH(KP) | 144 | 160 | 193.5 | — | — | — | — | — | — | — | M12 | 2.7 |

| Type | A | B | C | AA | AB | BA | BB | CC | N | M | P | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-N220HZ(KP) | 144 | 104 | 166.5 | 47 | 48.5 | 62 | 21 | 18 | 4 | 6 | M10 | 2.5 |
| TH-N400HZ(KP) | 144 | 173 | 166.5 | 47 | 48.5 | 62 | 55.5 | 18 | 4 | 6 | M12 | 2.7 |

*Note: Suffix "HZ" denotes separate mounting type.*