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## 3SR8-F, from 30 to 630 A

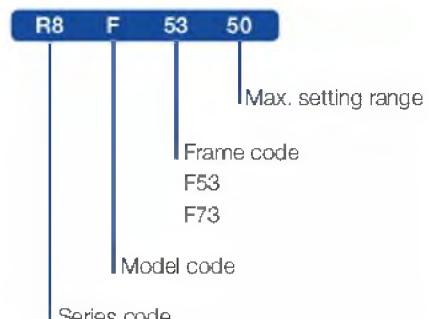
Independent power supply with build-in power source, directly draws power from the incoming end to avoid the risk of protection function failure caused by external power failure.

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure

## Applications And Functions For Thermal Relay 3SR8-F

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of fuse or circuit breaker
- Used for the protection of motors

### Instruction of type code



## Technical specifications for thermal relay 3SR8-F

| Type   | 3SR8-F53                 | 3SR8-F73 |
|--|--------------------------|----------|
| <b>Standard</b>                                  | IEC 60947-4-1            |          |
| <b>Tripping class</b>                            | 10 A, 20 A               |          |
| <b>Rated operational voltage Ue (V)</b>          | 1000                     |          |
| <b>Rated working current Ie (A)</b>              | 220                      | 630      |
| <b>Setting range (A)</b>                         | 30-220                   | 200-630  |
| <b>Reset</b>                                     | Manual on front of relay |          |
| <b>Rated insulation voltage Ui (V)</b>           | 1000                     |          |
| <b>Rated impulse withstand voltage Uimp (kV)</b> | 6                        |          |
| <b>Tightening torque (N·m)</b>                   | 0.8                      |          |
| <b>Degree of protection</b>                      | IP20                     |          |

|  |                               |
|--|-------------------------------|
| <b>Ambient air temperature (°C)</b>        | -5 to +40, max. 95 % humidity |
| <b>Storage temperature (°C)</b>            | -40 ~ +75                     |
| <b>Maximum operating altitude (meters)</b> | 2000                          |
| <b>Flame resistance</b>                    | V1                            |

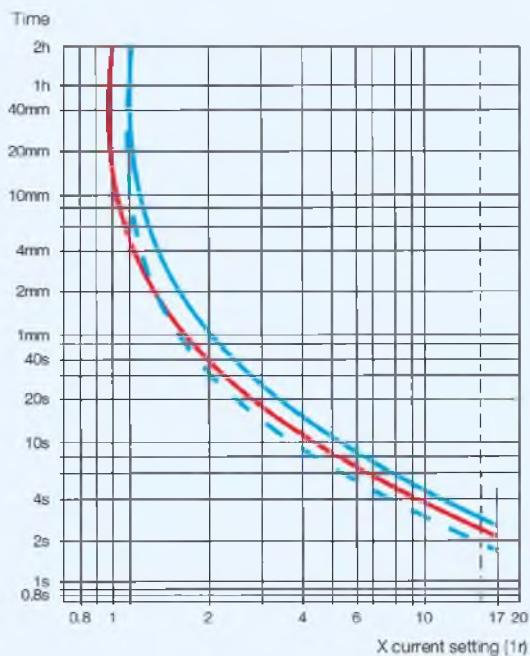
## Selection and ordering data

3SR8-F thermal relay matched with contactor 3SC8-F

| Current setting range<br>(A) | Fuses to be used with selected relay maximum rating |             | Matched contactor | Type code  | Order code |
|------------------------------|---|-------------|-------------------|------------|------------|
|                              | aM Type (A)   | gG Type (A) |                   |            |            |
|                              |   |             |                   |            |            |
| 30-50                        | 50  | 80          | 3SC8-F115...F185  | R8 F53/50  | 15710      |
| 48-80                        | 80  | 125         | 3SC8-F115...F185  | R8 F53/80  | 15711      |
| 60-100                       | 100   | 200         | 3SC8-F115...F185  | R8 F53/100 | 15712      |
| 90-150                       | 160   | 250         | 3SC8-F115...F185  | R8 F53/150 | 15713      |
| 132-220                      | 250   | 315         | 3SC8-F225...F265  | R8 F53/220 | 15714      |
| 200-330                      | 400   | 500         | 3SC8-F225...F500  | R8 F73/330 | 15715      |
| 300-500                      | 500   | 800         | 3SC8-F225...F500  | R8 F73/500 | 15716      |
| 380-630                      | 630   | 800         | 3SC8-F400...F630  | R8 F73/630 | 15717      |



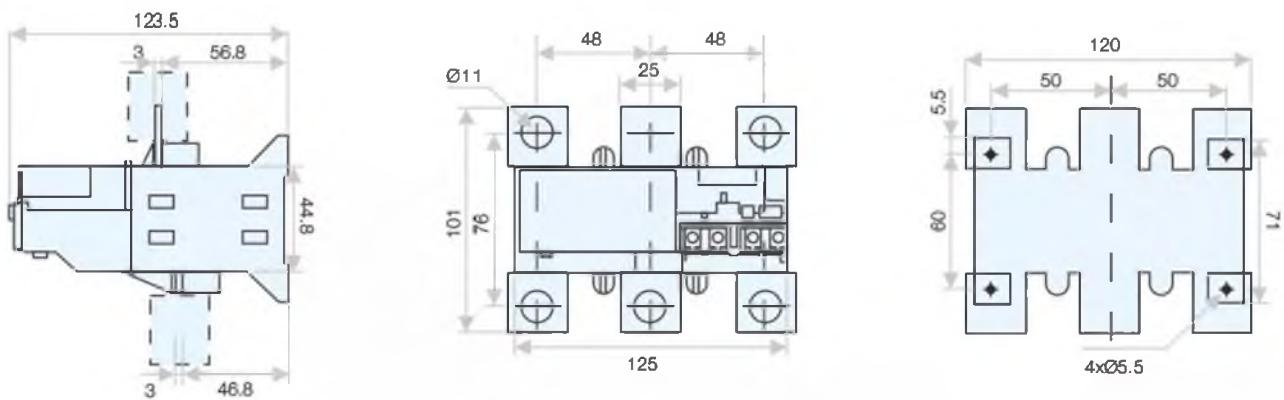
## Tripping curve for thermal relay 3SR8-F



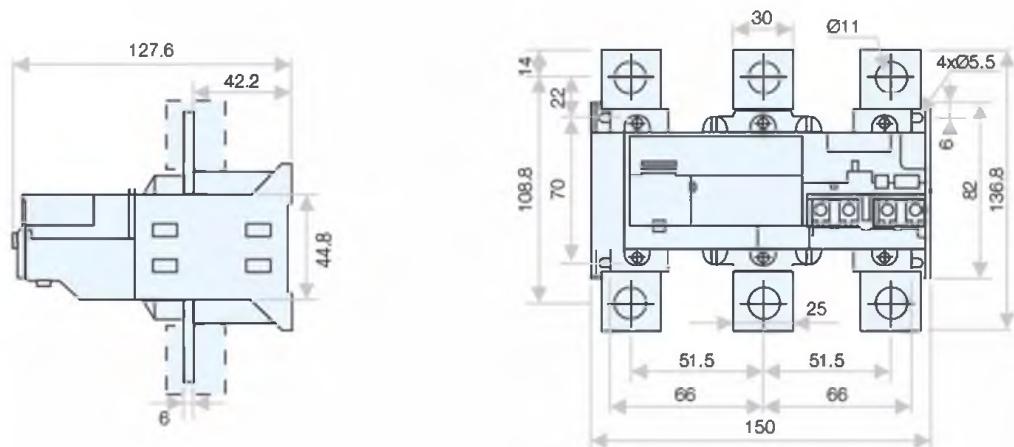
## Outline and installation dimensions (Series 3SR8-F)

unit in mm

3SR8-F53



3SR8-F73



## 3SR8, from 0.1 to 93 A

Independent power supply with build-in power source, directly draws power from the incoming end to avoid the risk of protection function failure caused by supply failure.

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure

## Applications And Functions For Thermal Relay 3SR8

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker
- Used for the protection of motors

### Instruction of type code

R8 25 0.16

Max. setting current range (A):

|                 |           |
|-----------------|-----------|
| 0.16: 0.1-0.16  | 10: 7-10  |
| 0.25: 0.16-0.25 | 13: 9-13  |
| 0.4: 0.25-0.4   | 18: 12-18 |
| 0.63: 0.4-0.63  | 25: 17-25 |
| 1: 0.63-1       | 32: 23-32 |
| 1.6: 1-1.6      | 36: 28-36 |
| 2: 1.25-2       | 40: 30-40 |
| 2.5: 1.6-2.5    | 50: 37-50 |
| 4: 2.5-4        | 65: 48-65 |
| 6: 4-6          | 70: 55-70 |
| 8: 5.5-8        | 80: 63-80 |
|                 | 93: 80-93 |

Rated frame current (A): 25, 36, 93

Series code

## Technical specifications for assembled thermal relay of type 3SR8

| Type                         | 3SR8-D13      | 3SR8-D23 | 3SR8-D33 |
|------------------------------|---------------|----------|----------|
| Standard                     | IEC 60947-4-1 |          |          |
| Tripping class               | 10 A          |          |          |
| Rated working current Ie (A) | 25            | 36       | 93       |
| Setting range (A)            | 0.1-25        | 23-36    | 23-93    |

|  |                               |
|--|-------------------------------|
| <b>Rated insulation voltage <math>U_i</math> (V)</b>             | 690                           |
| <b>Rated impulse withstand voltage <math>U_{imp}</math> (kV)</b> | 6                             |
| <b>Signalling Trip indicator</b>                                 | Trip indicator                |
| <b>Tightening torque (N·m)</b>                                   | 0.8                           |
| <b>Degree of protection</b>                                      | IP20                          |
| <b>Ambient air temperature (°C)</b>                              | -5 to +40, max. 95 % humidity |
| <b>Storage temperature (°C)</b>                                  | -40 ~ +75                     |
| <b>Maximum operating altitude (meters)</b>                       | 2000                          |
| <b>Flame resistance</b>  | V1                            |
| <b>Mounting</b>  | Directly under the contactor  |

## Selection and ordering data

### Series 3SR8

|   | Rated frame current (A) | Current setting range (A) | Matched fuse type |        | Matched AC contactor | Type code  | Order code |
|---|-------------------------|---------------------------|-------------------|--------|----------------------|------------|------------|
|   |                         |                           | aM (A)            | gG (A) |                      |            |            |
|   | 25                      | 0.1~0.16                  | 0.25              | 2      | 3SC8-09              | R8 25/0.16 | 22875      |
|   |                         | 0.16~0.25                 | 0.25              | 2      | 3SC8-09              | R8 25/0.25 | 22876      |
|   |                         | 0.25~0.4                  | 1                 | 2      | 3SC8-09              | R8 25/0.40 | 22877      |
|   |                         | 0.4~0.63                  | 1                 | 2      | 3SC8-09              | R8 25/0.63 | 22878      |
|   |                         | 0.63~1                    | 2                 | 4      | 3SC8-09              | R8 25/1    | 22879      |
|   |                         | 1~1.6                     | 2                 | 4      | 3SC8-09              | R8 25/1.6  | 22880      |
|   |                         | 1.25~2                    | 4                 | 6      | 3SC8-09              | R8 25/2    | 22881      |
|   |                         | 1.6~2.5                   | 4                 | 6      | 3SC8-09              | R8 25/2.5  | 22882      |
|   |                         | 2.5~4                     | 6                 | 10     | 3SC8-09              | R8 25/4    | 22883      |
|   |                         | 4~6                       | 8                 | 16     | 3SC8-09              | R8 25/6    | 22884      |
|   |                         | 5.5~8                     | 12                | 20     | 3SC8-09              | R8 25/8    | 22885      |
|   |                         | 7~10                      | 12                | 20     | 3SC8-12              | R8 25/10   | 22886      |
|   |                         | 9~13                      | 16                | 25     | 3SC8-12              | R8 25/13   | 22887      |
|   |                         | 12~18                     | 20                | 35     | 3SC8-18              | R8 25/18   | 22888      |
|   |                         | 17~25                     | 25                | 50     | 3SC8-25              | R8 25/25   | 22889      |
|  | 36                      | 23~32                     | 40                | 63     | 3SC8-32              | R8 36/32   | 22890      |
|   |                         | 28~36                     | 40                | 80     | 3SC8-32              | R8 36/36   | 22891      |
|   |                         | 23~32                     | 40                | 63     | 3SC8-40              | R8 93/32   | 22892      |
|   |                         | 30~40                     | 40                | 100    | 3SC8-40              | R8 93/40   | 22893      |
|   |                         | 37~50                     | 63                | 100    | 3SC8-50              | R8 93/50   | 22894      |
|   |                         | 48~65                     | 63                | 100    | 3SC8-65              | R8 93/65   | 22895      |
|   |                         | 55~70                     | 80                | 125    | 3SC8-80              | R8 93/70   | 22896      |
|   |                         | 63~80                     | 80                | 125    | 3SC8-80              | R8 93/80   | 22897      |
|  | 93                      | 80~93                     | 100               | 160    | 3SC8-95              | R8 93/93   | 22898      |

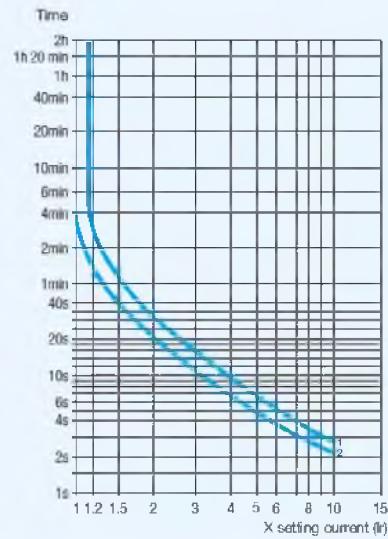
### Mounting block

| Matched relay   | Type code | Order code       |
|---|-----------|------------------|
|  | R8 25     | C8 A7D1064 15971 |
|  | R8 36     | C8 A7D2064 15972 |
|  | R8 93     | C8 A7D3064 15973 |

## Action characteristics for thermal relay 3SR8

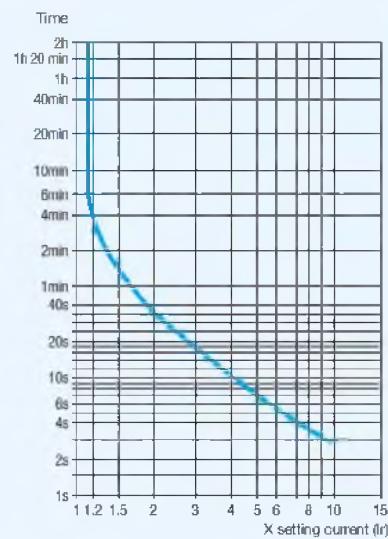
Average operating time related to multiples of the current setting (Class 10 A)

Balanced 3-phase operation, from cold state

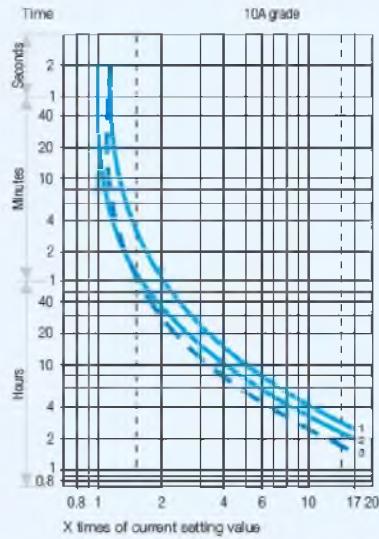


1. Setting: at lower end of scale
2. Setting: at upper end of scale

Balanced operation with 2 phases only, from cold state

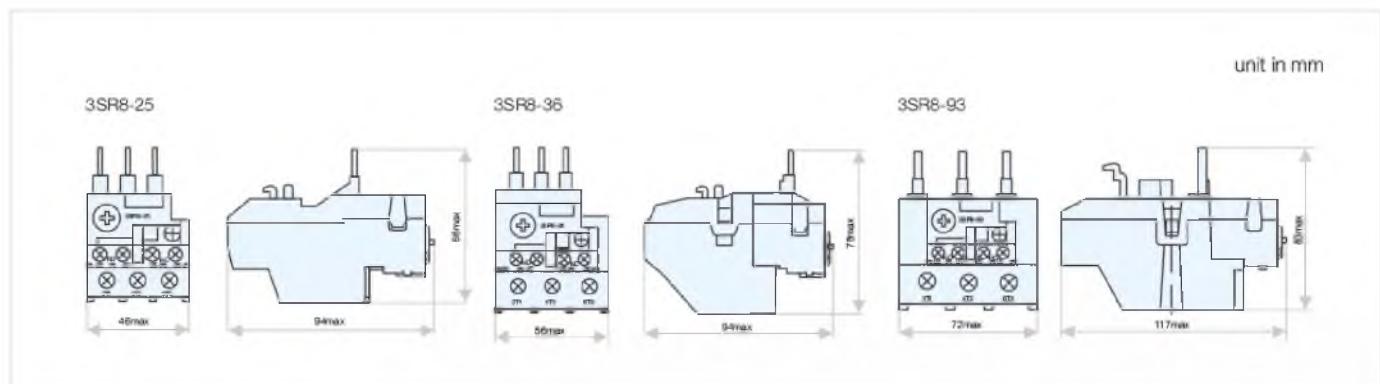


### Tripping curve for thermal relay 3SR8

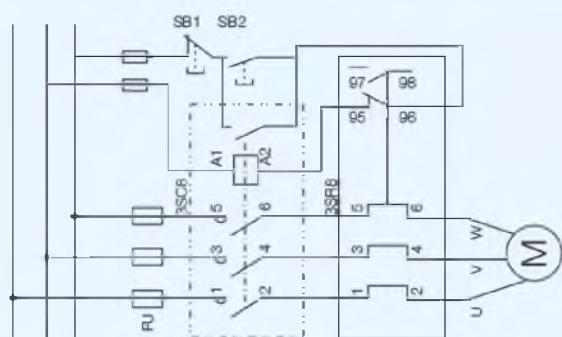


1. Equilibrium running, 3 phase, start from cold state
2. Equilibrium running, 2 phase, start from cold state
3. Equilibrium running, 3 phase, after long period of setting current (hot state)

## Outline and installation dimensions



## Operating principle diagram of overload relay



FU - fuse  
3SC8 - AC contactor  
3SR8 - thermal relay  
SB1 - stop button  
SB2 - start button

## 3SR8-K, from 0.11 to 14 A

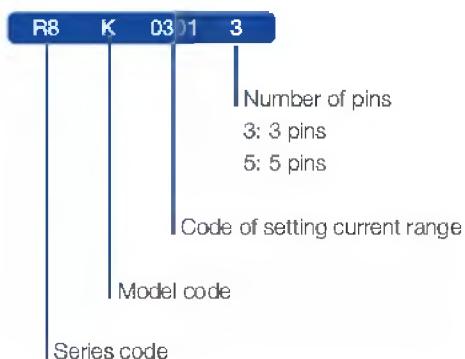
Independent power supply with build-in power source, directly draws power from the incoming end to avoid the risk of protection function failure caused by supply failure.

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure

## Applications And Functions For Thermal Relay

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker
- Used for the protection of motors

## Instruction of type code



## Technical specifications for assembled thermal relay of type 3SC8-K

- Type: 3SR8-K
- Standard: IEC 60947-4-1
- Tripping class: 10 A
- Number of connecting pin: 4
- Rated operational voltage Ue (V): up to 690
- Rated insulation voltage Ui (V): 690
- Rated impulse withstand voltage Uimp (kV): 6
- Rated current range In (A):
  - 0.11-0.16, 0.16-0.23, 0.23-0.36, 0.36-0.54,
  - 0.54-0.8, 0.8-1.2, 1.8-2.6, 2.6-3.7,
  - 3.7-5.5, 5.-8, 8-11.5, 10-14
- Signalling: Trip indicator
- Tightening torque (N·m): 0.8
- Degree of protection: IP20

- Ambient air temperature (°C): -5 to +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Maximum operating altitude (meters): 2000
- Flame resistance: V1
- Mounting: directly under the contactor

## Selection and ordering data

### 3SR8-K thermal relay matched with contactor 3SC8-K

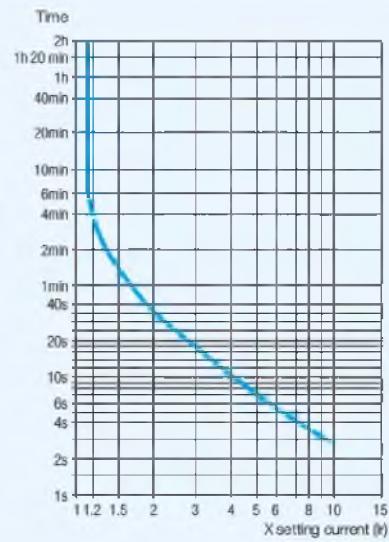
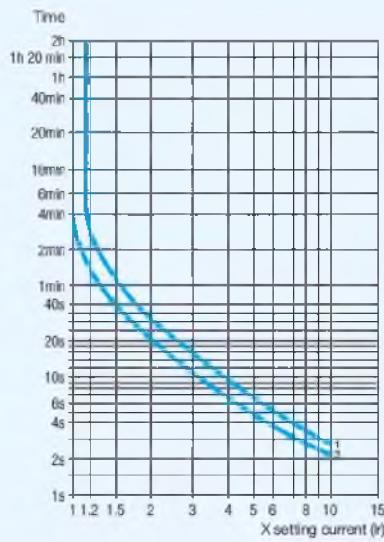
|               | Current setting range (A) | Fuses to be used with selected relay |             | Type code  | Order code |
|---------------|---------------------------|--------------------------------------|-------------|------------|------------|
|               |                           | aM Type (A)                          | gG Type (A) |            |            |
| 3SR8-K 5 Pins | 0.11-0.16                 | 0.25                                 | 0.5         | R8 K0301/5 | 15594      |
|               | 0.16-0.23                 | 0.25                                 | 0.5         | R8 K0302/5 | 15595      |
|               | 0.23-0.36                 | 0.5                                  | 1           | R8 K0303/5 | 15596      |
|               | 0.36-0.54                 | 1                                    | 1.6         | R8 K0304/5 | 15597      |
|               | 0.54-0.8                  | 1                                    | 2           | R8 K0305/5 | 15598      |
|               | 0.8-1.2                   | 2                                    | 6           | R8 K0306/5 | 15599      |
|               | 1.8-2.6                   | 4                                    | 8           | R8 K0308/5 | 15600      |
|               | 2.6-3.7                   | 4                                    | 10          | R8 K0310/5 | 15601      |
|               | 3.7-5.5                   | 6                                    | 16          | R8 K0312/5 | 15602      |
|               | 5-8                       | 8                                    | 20          | R8 K0314/5 | 15603      |
|               | 8-11.5                    | 10                                   | 25          | R8 K0316/5 | 15604      |
|               | 10-14                     | 16                                   | 32          | R8 K0321/5 | 15605      |

## Tripping curve of thermal relay 3SR8-K

Average operating time related to multiples of the current setting (Class 10 A)

Balanced 3-phase operation, from cold state

Balanced operation with 2 phases only, from cold state



1. Setting: at lower end of scale
2. Setting: at upper end of scale

## Outline and installation dimensions (3SC8-K, 3SR8-K)

## PTR61F, from 30 to 630 A

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors

### Applications And Functions For Thermal Relay

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.

### Technical specifications

| Type                                      | PTR61F-53   | PTR61F-73                             |
|---|---|---------------------------------------|
| Standard                                  | IEC 60947-4-1   |                                       |
| Tripping class                            | 10 A, 20 A  |                                       |
| Rated operational voltage Ue (V)          | 1000  |                                       |
| Rated working current Ie (A)              | 220   | 630                                   |
| Setting range (A)                         | 30 ... 50, 48 ... 80, 60 ... 100, 90 ... 150, 132 ... 220 | 200 ... 330, 300 ... 500, 380 ... 630 |
| Reset                                     | Manual on front of relay                                  |                                       |
| Rated insulation voltage Ui (V)           | 1000  |                                       |
| Rated impulse withstand voltage Uimp (kV) | 6   |                                       |
| Tightening torque (N·m)                   | 0.8   |                                       |
| Degree of protection                      | IP20  |                                       |
| Ambient air temperature (°C)              | -5 to +40, max. 95 % humidity                             |                                       |
| Storage temperature (°C)                  | -40 ~ +75   |                                       |
| Maximum operating altitude (meters)       | 2000  |                                       |
| Flame resistance                          | V1  |                                       |

Next: PTR61, from 0.1 to 93 A

## PTR61, from 0.1 to 93 A

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors

## Applications And Functions For Thermal Relay

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.

## Technical specifications

| Type                                      | PTR61-25   | PTR61-36      | PTR61-93  |
|---|--|---------------|---|
| Standard                                  | IEC 60947-4-1  |               |   |
| Tripping class                            | 10 A   |               |   |
| Rated working current Ie (A)              | 25   | 36            | 93  |
| Setting range (A)                         | 0.1-0.16, 0.16-0.25, 0.25-0.4, 0.4-0.63, 0.63-1, 1-1.6, 1.25-2, 1.6-2.5, 2.5-4, 4-6, 5.5-8, 7-10, 9-13, 12-18, 17-25 | 23-32, 28-36, | 23-32, 30-40, 37-50, 48-65, 55-70, 63-80, 80-93 |
| Rated insulation voltage Ui (V)           | 690  |               |   |
| Rated impulse withstand voltage Uimp (kV) | 6  |               |   |
| Signalling Trip indicator                 | Trip indicator   |               |   |
| Tightening torque (N·m)                   | 0.8  |               |   |
| Degree of protection                      | IP20   |               |   |
| Ambient air temperature (°C)              | -5 to +40, max. 95 % humidity  |               |   |
| Storage temperature (°C)                  | -40 ~ +75  |               |   |
| Maximum operating altitude (meters)       | 2000   |               |   |
| Flame resistance                          | V1   |               |   |
| Mounting                                  | Directly under the contactor   |               |   |

## PTR61K, from 0.11 to 14 A

Independent power supply with build-in power source,directly draws power from the incoming end to avoid the risk of protection function failure caused by supply failure.

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure

## Applications And Functions For Thermal Relay

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker
- Used for the protection of motors

## Technical specifications for assembled thermal relay of type PC61K

- Type: PTR61K
- Standard: IEC 60947-4-1
- Tripping class: 10 A
- Number of connecting pin: 4
- Rated operational voltage  $U_e$  (V): up to 690
- Rated insulation voltage  $U_i$  (V): 690
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Rated current range  $I_n$  (A):
  - 0.11-0.16, 0.16-0.23,
  - 0.23-0.36, 0.36-0.54,
  - 0.54-0.8, 0.8-1.2,
  - 1.8-2.6, 2.6-3.7,
  - 3.7-5.5, 5.-8,
  - 8-11.5, 10-14
- Signalling: Trip indicator
- Tightening torque ( $N \cdot m$ ): 0.8
- Degree of protection: IP20
- Ambient air temperature ( $^{\circ}C$ ): -5 to +40, max. 95 % humidity
- Storage temperature ( $^{\circ}C$ ): -40 ~ +75
- Maximum operating altitude (meters): 2000
- Flame resistance: V1
- Mounting: directly under the contactor

## Selection and ordering data

Thermal overload relays PTR61K, 0.11 to 14 A

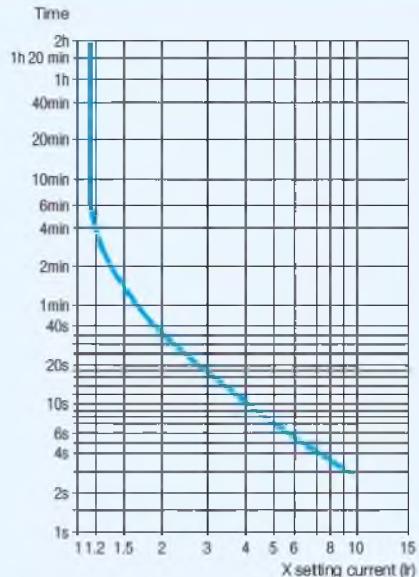
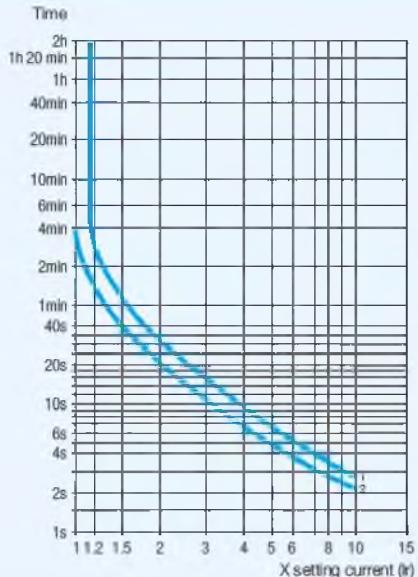
| For contactors  | Current setting range<br>(A) | Fuses to be used with selected relay |           |               | Type code |
|---|------------------------------|--------------------------------------|-----------|---------------|-----------|
|   |                              | aM<br>(A)                            | gG<br>(A) |               |           |
|  | 0.11 ... 0.16                | 0.25                                 | 0.5       | PTR61K-5-0.16 |           |
|   | 0.16 ... 0.23                | 0.25                                 | 0.5       | PTR61K-5-0.23 |           |
|   | 0.23 ... 0.36                | 0.5                                  | 1         | PTR61K-5-0.36 |           |
|   | 0.36 ... 0.54                | 1                                    | 1.6       | PTR61K-5-0.54 |           |
|   | 0.54 ... 0.8                 | 1                                    | 2         | PTR61K-5-0.8  |           |
|   | 0.8 ... 1.2                  | 2                                    | 6         | PTR61K-5-1.2  |           |
|   | 1.2 ... 1.8                  | 2                                    | 8         | PTR61K-5-1.8  |           |
|   | 1.8 ... 2.6                  | 4                                    | 8         | PTR61K-5-2.6  |           |
|   | 2.6 ... 3.7                  | 4                                    | 10        | PTR61K-5-3.7  |           |
|   | 3.7 ... 5.5                  | 6                                    | 16        | PTR61K-5-5.5  |           |
|   | 5.5 ... 8                    | 8                                    | 20        | PTR61K-5-8    |           |
|   | 8 ... 11.5                   | 10                                   | 25        | PTR61K-5-11.5 |           |
|   | 10 ... 14                    | 16                                   | 32        | PTR61K-5-14   |           |
|   | 12 ... 16                    | 20                                   | 40        | PTR61K-5-16   |           |

## Tripping curve of thermal relay PTR61K

Average operating time related to multiples of the current setting (Class 10 A)

Balanced 3-phase operation, from cold state

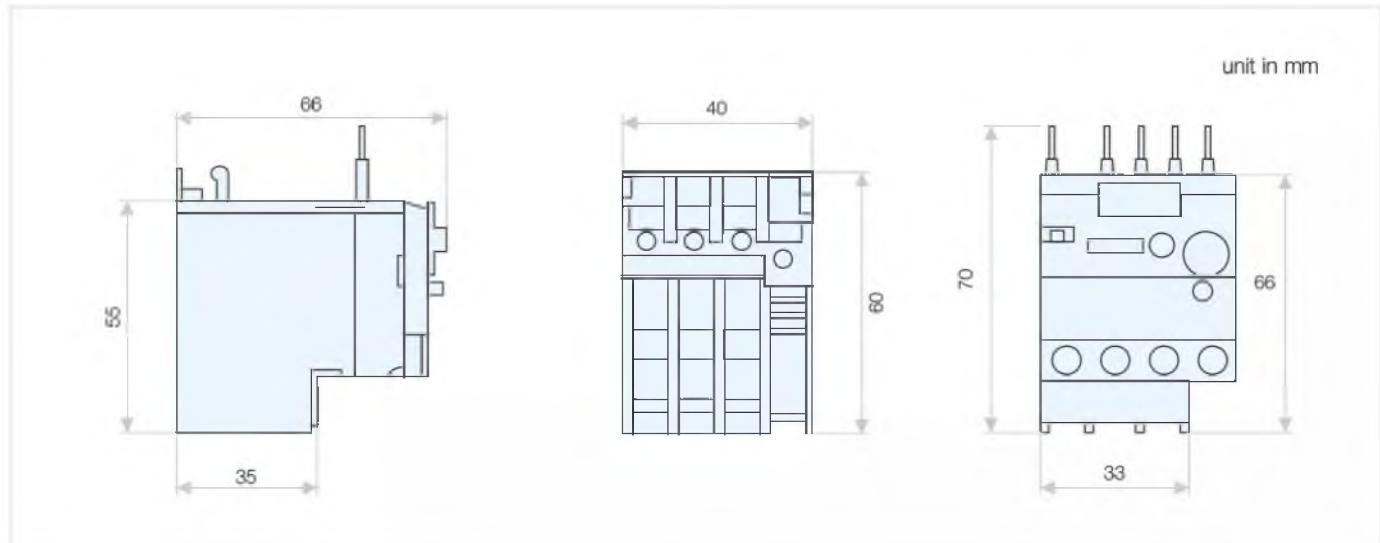
Balanced operation with 2 phases only, from cold state



1 Setting: at lower end of scale

2 Setting: at upper end of scale

## Outline and installation dimensions



## VTR51F, from 30 to 630 A

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.

### Technical Specifications

| Type                                      | VTR51F-53   | VTR51F-73                             |
|---|---|---------------------------------------|
| Standard                                  | IEC 60947-4-1   |                                       |
| Tripping class                            | 10 A, 20 A  |                                       |
| Rated operational voltage Ue (V)          | 1000  |                                       |
| Rated working current Ie (A)              | 220   | 630                                   |
| Setting range (A)                         | 30 ... 50, 48 ... 80, 60 ... 100, 90 ... 150, 132 ... 220 | 200 ... 330, 300 ... 500, 380 ... 630 |
| Reset                                     | Manual on front of relay                                  |                                       |
| Rated insulation voltage Ui (V)           | 1000  |                                       |
| Rated impulse withstand voltage Uimp (kV) | 6   |                                       |
| Tightening torque (N·m)                   | 0.8   |                                       |
| Degree of protection                      | IP20  |                                       |
| Ambient air temperature (°C)              | -5 to +40, max. 95 % humidity                             |                                       |
| Storage temperature (°C)                  | -40 ~ +75   |                                       |
| Maximum operating altitude (meters)       | 2000  |                                       |
| Flame resistance                          | V1  |                                       |

## VTR51K, from 0.11 to 14 A

- Overload protection and phase-failure protection.
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.

### Technical Specifications For Assembled Thermal Relay Of Type VC51K

- Type: VTR51K
- Standard: IEC 60947-4-1
- Tripping class: 10 A
- Number of connecting pin: 4
- Rated operational voltage  $U_e$  (V): up to 690
- Rated insulation voltage  $U_i$  (V): 690
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Rated current range  $I_n$  (A):
  - 0.11-0.16, 0.16-0.23,
  - 0.23-0.36, 0.36-0.54,
  - 0.54-0.8, 0.8-1.2,
  - 1.8-2.6, 2.6-3.7,
  - 3.7-5.5, 5-8,
  - 8-11.5, 10-14
- Signalling: Trip indicator
- Tightening torque (N·m): 0.8
- Degree of protection: IP20
- Ambient air temperature (°C): -5 to +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Maximum operating altitude (meters): 2000
- Flame resistance: V1
- Mounting: directly under the contactor

## VTR51, from 0.1 to 93 A

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.

### Technical Specifications

| Type                                      | VTR51-25  | VTR51-36      | VTR51-93   |
|---|---|---------------|--|
| Standard                                  | IEC 60947-4-1   |               |  |
| Tripping class                            | 10 A  |               |  |
| Rated working current Ie (A)              | 25  | 36            | 93   |
| Setting range (A)                         | 0.1-0.16, 0.16-0.25, 0.25-0.4,<br>0.4-0.63, 0.63-1, 1-1.6, 1.25-2,<br>1.6-2.5, 2.5-4, 4-6, 5.5-8, 7-10,<br>9-13, 12-18, 17-25 | 23-32, 28-36, | 23-32, 30-40, 37-50, 48-65,<br>55-70, 63-80, 80-93 |
| Rated insulation voltage Ui (V)           | 690   |               |  |
| Rated impulse withstand voltage Uimp (kV) | 6   |               |  |
| Signalling Trip indicator                 | Trip indicator  |               |  |
| Tightening torque (N·m)                   | 0.8   |               |  |
| Degree of protection                      | IP20  |               |  |
| Ambient air temperature (°C)              | -5 to +40, max. 95 % humidity   |               |  |
| Storage temperature (°C)                  | -40 ~ +75   |               |  |
| Maximum operating altitude (meters)       | 2000  |               |  |
| Flame resistance                          | V1  |               |  |
| Mounting                                  | Directly under the contactor  |               |  |

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