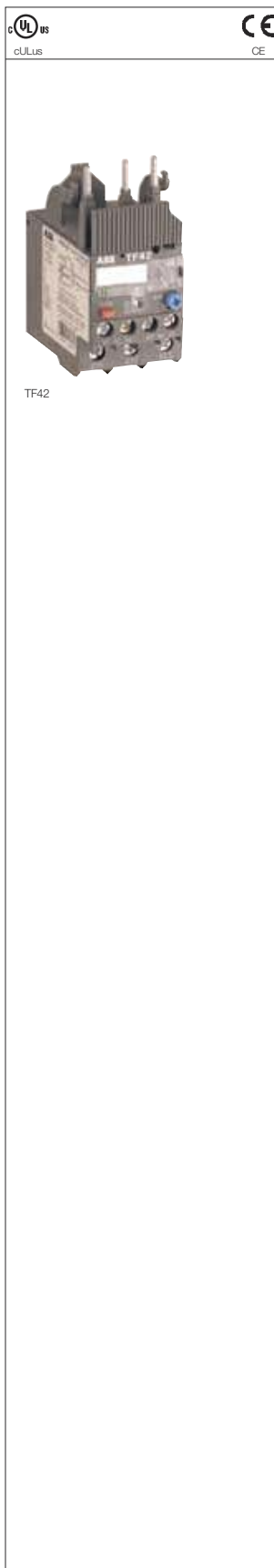


# TF42 Thermal Overload Relays

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|                                                                                     |                 |
|-------------------------------------------------------------------------------------|-----------------|
|  | 0.10 ... 38.0 A |
|                                                                                     | Class 10        |



## Application

- Overload protection
- Trip class 10
- Phase loss sensitivity
- Manual/automatic reset selectable

## Description

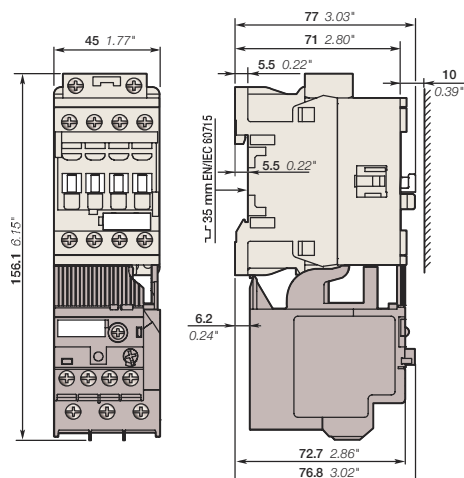
- 45 mm width
- Suitable for contactor AF09 ... AF38
- Sealable operating elements

## Ordering Details

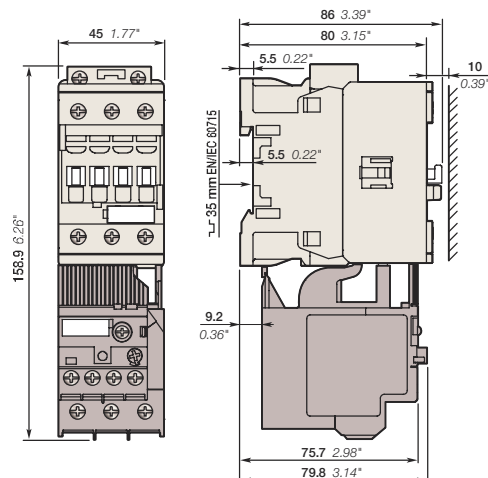
| Setting ranges     | Type      | Order code         | Max. fuse | Suitable for contactors | Pack <sup>(ng)</sup> pieces | Weight     |
|--------------------|-----------|--------------------|-----------|-------------------------|-----------------------------|------------|
| A ... A            |           |                    | A         |                         |                             | kg (1 pos) |
| 0.10 ... 0.13      | TF42-0.13 | 1SAZ 721 201 R1005 | 0.5 T     | AF09 ... AF38           | 1                           | 0.130      |
| 0.13 ... 0.17      | TF42-0.17 | 1SAZ 721 201 R1008 | 1 T       | AF09 ... AF38           | 1                           | 0.130      |
| 0.17 ... 0.23      | TF42-0.23 | 1SAZ 721 201 R1009 | 1 T       | AF09 ... AF38           | 1                           | 0.130      |
| 0.23 ... 0.31      | TF42-0.31 | 1SAZ 721 201 R1013 | 1 T       | AF09 ... AF38           | 1                           | 0.130      |
| 0.31 ... 0.41      | TF42-0.41 | 1SAZ 721 201 R1014 | 2 gG      | AF09 ... AF38           | 1                           | 0.130      |
| 0.41 ... 0.55      | TF42-0.55 | 1SAZ 721 201 R1017 | 2 gG      | AF09 ... AF38           | 1                           | 0.130      |
| 0.55 ... 0.74      | TF42-0.74 | 1SAZ 721 201 R1021 | 4 gG      | AF09 ... AF38           | 1                           | 0.130      |
| 0.74 ... 1.00      | TF42-1.0  | 1SAZ 721 201 R1023 | 6 gG      | AF09 ... AF38           | 1                           | 0.130      |
| 1.00 ... 1.30      | TF42-1.3  | 1SAZ 721 201 R1025 | 6 gG      | AF09 ... AF38           | 1                           | 0.130      |
| 1.30 ... 1.70      | TF42-1.7  | 1SAZ 721 201 R1028 | 10 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 1.70 ... 2.30      | TF42-2.3  | 1SAZ 721 201 R1031 | 10 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 2.30 ... 3.10      | TF42-3.1  | 1SAZ 721 201 R1033 | 10 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 3.10 ... 4.20      | TF42-4.2  | 1SAZ 721 201 R1035 | 20 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 4.20 ... 5.70      | TF42-5.7  | 1SAZ 721 201 R1038 | 20 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 5.70 ... 7.60      | TF42-7.6  | 1SAZ 721 201 R1040 | 35 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 7.60 ... 10.0      | TF42-10   | 1SAZ 721 201 R1043 | 35 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 10.0 ... 13.0      | TF42-13   | 1SAZ 721 201 R1045 | 40 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 13.0 ... 16.0      | TF42-16   | 1SAZ 721 201 R1047 | 40 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 16.0 ... 20.0      | TF42-20   | 1SAZ 721 201 R1049 | 63 gG     | AF09 ... AF38           | 1                           | 0.130      |
| 20.0 ... 24.0      | TF42-24   | 1SAZ 721 201 R1051 | 63 gG     | AF09 ... AF38           | 1                           | 0.145      |
| 24.0 ... 29.0      | TF42-29   | 1SAZ 721 201 R1052 | 63 gG     | AF09 ... AF38           | 1                           | 0.145      |
| 29.0 ... 35.0      | TF42-35   | 1SAZ 721 201 R1053 | 80 gG     | AF09 ... AF38           | 1                           | 0.145      |
| 35.0 ... 38.0/40.0 | TF42-38   | 1SAZ 721 201 R1055 | 80 gG     | AF09 ... AF38           | 1                           | 0.145      |

## Main Dimensions (mm, inches)

AF09, AF12, AF16 3-pole contactors  
+ TF42 thermal overload relay



AF26, AF30, AF38 3-pole contactors  
+ TF42 thermal overload relay



# TF42 Thermal Overload Relays

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0.10 ... 38.0 A

Class 10

## Main Technical Data

| Overload Relay Type                        |                                                                                     |                                                                                     |                                                                                     |          | TF42                                                                      |                                  |                           |  |  |
|--------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------|----------------------------------|---------------------------|--|--|
|                                            |                                                                                     |                                                                                     |                                                                                     |          | up to 20.0 A                                                              |                                  | up to 38.0/40.0 A         |  |  |
| Standards                                  | Conformity to standards                                                             |                                                                                     |                                                                                     |          | IEC/EN60947-1, IEC/EN60947-4-1, IEC/EN60947-5-1, UL 508, CSA C22.2 No. 14 |                                  |                           |  |  |
|                                            | Phase loss sensitivity (acc. to IEC/EN 60947-4-1)                                   |                                                                                     |                                                                                     |          | Yes                                                                       |                                  |                           |  |  |
| General data                               | Mounting position                                                                   |                                                                                     |                                                                                     |          | Position 1                                                                |                                  |                           |  |  |
|                                            | Degree of protection (acc. to IEC 60947-1)                                          |                                                                                     |                                                                                     |          | IP 20                                                                     |                                  |                           |  |  |
| IEC                                        |                                                                                     |                                                                                     |                                                                                     |          |                                                                           |                                  |                           |  |  |
| Main circuit                               | Rated operational voltage $U_n$                                                     |                                                                                     |                                                                                     |          | 690 V AC                                                                  |                                  |                           |  |  |
|                                            | Rated operational current AC-3 $I_n$                                                |                                                                                     |                                                                                     |          | up to 20.0 A                                                              |                                  | up to 38.0/40.0 A (50 °C) |  |  |
|                                            | Rated frequency                                                                     |                                                                                     |                                                                                     |          | 50 / 60 Hz                                                                |                                  |                           |  |  |
|                                            | Trip class                                                                          |                                                                                     |                                                                                     |          | 10                                                                        |                                  |                           |  |  |
| Isolation data<br>(acc. to IEC/EN 60947-1) | Rated impulse withstand voltage $U_{imp}$                                           |                                                                                     |                                                                                     |          | 6 kV                                                                      |                                  |                           |  |  |
|                                            | Rated insulation voltage $U_i$                                                      |                                                                                     |                                                                                     |          | 690 V                                                                     |                                  |                           |  |  |
| Environmental data                         | Ambient air temperature range                                                       |                                                                                     |                                                                                     |          |                                                                           |                                  |                           |  |  |
|                                            | Operation                                                                           |                                                                                     | Open - compensated                                                                  |          | -25 ... +60 °C                                                            |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     | Open                                                                                |          | -25 ... +60 °C                                                            |                                  |                           |  |  |
|                                            | Storage                                                                             |                                                                                     |                                                                                     |          | -50 ... +80 °C                                                            |                                  |                           |  |  |
|                                            | Altitude                                                                            |                                                                                     |                                                                                     |          | ≤ 2000 m                                                                  |                                  |                           |  |  |
|                                            | Vibration (acc. to IEC/EN 60068-2-6)                                                |                                                                                     |                                                                                     |          | 5 g / 3-150 Hz                                                            |                                  |                           |  |  |
|                                            | Shock (acc. to IEC/EN 60068-2-27)                                                   |                                                                                     |                                                                                     |          | 25 g / 11 ms                                                              |                                  |                           |  |  |
|                                            | Rated operational voltage $U_n$ (acc. to IEC/EN 60947-5-1)                          |                                                                                     |                                                                                     |          | 600 V                                                                     |                                  |                           |  |  |
| Auxiliary circuit                          | Rated operational current $I_a$ (acc. to IEC/EN 60947-5-1 utilization category)     |                                                                                     |                                                                                     |          |                                                                           |                                  |                           |  |  |
|                                            | AC-15                                                                               | 110-120 V                                                                           |                                                                                     | N.C.     | 3 A                                                                       |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     | N.O.     | 0.75 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     | 220-230-240 V                                                                       |                                                                                     | N.C.     | 3 A                                                                       |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     | N.O.     | 0.75 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     | 400 V                                                                               |                                                                                     | N.C.     | 0.75 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     | N.O.     | 0.75 A                                                                    |                                  |                           |  |  |
|                                            | 480-500 V                                                                           |                                                                                     | N.C.                                                                                | 0.75 A   |                                                                           |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     | N.O.                                                                                | 0.75 A   |                                                                           |                                  |                           |  |  |
|                                            | 600 V                                                                               |                                                                                     | N.C.                                                                                | 0.6 A    |                                                                           |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     | N.O.                                                                                | -        |                                                                           |                                  |                           |  |  |
|                                            | DC-13                                                                               | 24 V                                                                                |                                                                                     | N.C.     | 1.25 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     | N.O.     | 1.25 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     | 110-120-125 V                                                                       |                                                                                     | N.C.     | 0.55 A                                                                    |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     | N.O.     | 0.55 A                                                                    |                                  |                           |  |  |
|                                            | 250 V                                                                               |                                                                                     | N.C.                                                                                | 0.27 A   |                                                                           |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     | N.O.                                                                                | 0.27 A   |                                                                           |                                  |                           |  |  |
|                                            | 500 V                                                                               |                                                                                     | N.C.                                                                                | 0.15 A   |                                                                           |                                  |                           |  |  |
|                                            |                                                                                     |                                                                                     | N.O.                                                                                | 0.15 A   |                                                                           |                                  |                           |  |  |
|                                            | Minimum switching capacity                                                          |                                                                                     |                                                                                     |          | 17 V / 3 mA                                                               |                                  |                           |  |  |
|                                            | Short-circuit protection device                                                     |                                                                                     |                                                                                     |          | N.C.                                                                      | 6                                |                           |  |  |
|                                            |                                                                                     |                                                                                     |                                                                                     |          | N.O.                                                                      | 4                                |                           |  |  |
| Connecting capacity                        | Main circuit                                                                        |  | Rigid                                                                               | 1 or 2 x | 0.75 ... 4 mm²                                                            | 1.5 ... 2.5 mm² - 2.5 ... 10 mm² |                           |  |  |
|                                            |                                                                                     |  | Flexible with ferrule                                                               | 1 or 2 x | 0.75 ... 4 mm²                                                            | 1.5 ... 6 mm²                    |                           |  |  |
|                                            |                                                                                     |  | Flexible without ferrule                                                            | 1 or 2 x | 0.75 ... 4 mm²                                                            | 2.5 ... 4 mm² - 4 ... 6 mm²      |                           |  |  |
|                                            |                                                                                     | Stripping length                                                                    |                                                                                     |          |                                                                           | 12 mm                            |                           |  |  |
|                                            |                                                                                     | Tightening torque                                                                   |                                                                                     |          |                                                                           | 1.5 ... 2.5 Nm                   | 2.5 ... 2.7 Nm            |  |  |
|                                            |                                                                                     | Auxiliary circuit                                                                   |  | Rigid    | 1 or 2 x                                                                  | 0.75 ... 4 mm²                   |                           |  |  |
|                                            |  |                                                                                     | Flexible with ferrule                                                               | 1 or 2 x | 0.75 ... 2.5 mm²                                                          |                                  |                           |  |  |
|                                            |  |                                                                                     | Flexible without ferrule                                                            | 1 or 2 x | 0.75 ... 1 mm² - 1 ... 2.5 mm²                                            |                                  |                           |  |  |
|                                            | Stripping length                                                                    |                                                                                     |                                                                                     |          | 9 mm                                                                      |                                  |                           |  |  |
|                                            | Tightening torque                                                                   |                                                                                     |                                                                                     |          | 1.0 ... 1.5 Nm                                                            |                                  |                           |  |  |
| UL/CSA                                     |                                                                                     |                                                                                     |                                                                                     |          |                                                                           |                                  |                           |  |  |
| Main circuit                               | Max. operational voltage                                                            |                                                                                     |                                                                                     |          | 600 V AC                                                                  |                                  |                           |  |  |
|                                            | Trip rating                                                                         |                                                                                     |                                                                                     |          | 125 % of FLA                                                              |                                  |                           |  |  |
| Connecting capacity                        | Main circuit                                                                        |  | Stranded                                                                            | 1 or 2 x | AWG 18 ... 10                                                             | AWG 14 ... 6                     |                           |  |  |
|                                            |                                                                                     |  | Flexible without ferrule                                                            | 1 or 2 x | AWG 18 ... 10                                                             | AWG 14 ... 6                     |                           |  |  |
|                                            |                                                                                     | Stripping length                                                                    |                                                                                     |          |                                                                           | 12 mm                            |                           |  |  |
|                                            |                                                                                     | Tightening torque                                                                   |                                                                                     |          |                                                                           | 13 ... 22 lb.in                  | 22 lb.in                  |  |  |
|                                            | Auxiliary circuit                                                                   |  | Stranded                                                                            | 1 or 2 x | AWG 18 ... 12                                                             |                                  |                           |  |  |
|                                            |                                                                                     |  | Flexible without ferrule                                                            | 1 or 2 x | AWG 18 ... 12                                                             |                                  |                           |  |  |
|                                            |                                                                                     | Stripping length                                                                    |                                                                                     |          |                                                                           | 9 mm                             |                           |  |  |
|                                            |                                                                                     | Tightening torque                                                                   |                                                                                     |          |                                                                           | 9 ... 13 lb.in                   |                           |  |  |