

# Thermal overload relays

## TF96



ABB's TF96 thermal overload relays are economic electromechanical protection devices for the main circuit. They are used mainly to protect motors against overload and phase failures. Starter combinations are setup together with contactors.

TF96 thermal overload relays are available up to 96 A in a compact size of 70 mm width. It offers reliable and fast protection for motors in the event of overload or phase failure. The device has trip class 10. Further features are the temperature compensation from -25 up to 60 °C, trip contact (NC), signal contact (NO), automatic- or manual reset selectable, trip-free mechanism, STOP function and a trip indication. The thermal overload relays are connected directly to the AF block contactors. Single mounting kits are available as accessory.

### Product conformity & compliance

#### REACH (Regulation EC 1907/2006)

TF96 and related accessories were classified as articles and, during normal and reasonably foreseeable conditions of use, do not intentionally release any substance or preparation. ABB continuously undertakes communications throughout its supply chain in order to collect information about suppliers' compliance with REACH regulation.

#### SVHC (Regulation EC 1907/2006 REACH)

ABB continuously assesses its products for content of Substances of Very High Concern (SVHC), as included in the "Candidate List" by the European Chemicals Agency (ECHA). ABB publishes the data about the products that are having a part with SVHC in the SCIP database.

#### RoHS II

TF96 and related accessories are within the scope of directive 2011/65/EU (RoHS II) and amendment 2015/863, starting from July 22 2019.

#### WEEE

The Waste Electrical and Electronic Equipment Directive (WEEE Directive) is the European Community directive 2012/19/EU on waste electrical and electronic equipment (WEEE) which, together with the RoHS directive, became European law in February 2003.

### Product safety

Compliance with essential health and safety requirements has been assured by compliance with the applicable product and safety standards. The validation according to the product and safety standards is carried out by third party tests laboratory (STIEE / TL030) in respect of the EN ISO/IEC 17025 European standard, according to IEC/EN CB scheme. CB certificate has been issued.

### Standards:

- IEC/EN 60947-1
- IEC/EN 60947-4-1
- IEC/EN 60947-5-1
- IEC/EN 60079-1\*
- IEC/EN 60079-7\*
- IEC/EN 60079-14\*
- IEC/EN 60079-31\*
- UL 60947-1
- UL 60947-4-1
- UL 60947-5-1

### Directives:

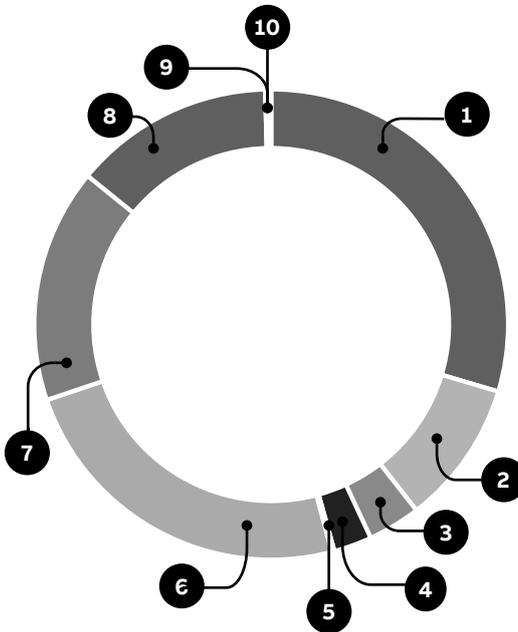
- EC "Low Voltage Directive" (LVD) 2014/35/EU
- EC "ATEX Directive" 2014/34/EU\*

\*V1000 only

## Material declaration

This section outlines the material composition of TF96-96 as representative products for the TF96 range. The constituent materials are distributed as follows.

**TF96-96 The total weight of the product is 530 gr.**

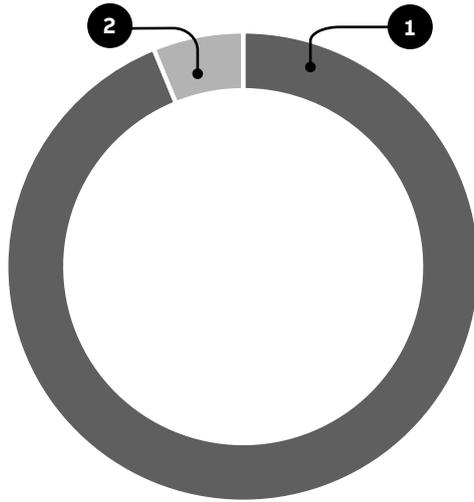


Material	% wt
1 PBT	29.6 %
2 PA	9.9 %
3 PPA	3.6 %
4 Other thermoplastic	2.6 %
5 Other thermoset	0.2 %
6 Copper	23.9 %
7 Steel	16.1 %
8 Stainless steel	13.7 %
9 Silver alloys	0.1 %
10 Other material	0.3 %
TOTAL	100 %

## Packaging

The tables below provide information for each packaging material used. The card box used for the product material are made of recycled fibers and are 100 % recyclables.

**TF96 packaging material composition: total weight 89 gr.**



Material	% wt
1 Cardbox	93.8 %
2 Paper	6.2 %
TOTAL	100 %

## Product use



### Energy

Power losses for TF96 are indicated in the following table.

Type	Power loss (W/device)
TF96-51	12.85
TF96-60	14.21
TF96-68	13.76
TF96-78	11.54
TF96-87	11.72
TF96-96	10.98

## End-of-life

At the end of operating life, constituent components of TF96 thermal overload relays have been optimized in order to reduce waste amount and increase recovery of the material. Metals and polymers contained into TF96 thermal overload relays are characterized by high recycling rates. Most plastic parts are marked for easy sorting.

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