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 PRODUCT-DETAILS

# TF42-20B

## TF42-20B Thermal Overload Relay 16 ... 20 A




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### General Information

Extended Product Type	TF42-20B
Product ID	1SAZ741201R1049
EAN	4013614517198
Catalog Description	TF42-20B Thermal Overload Relay 16 ... 20 A

Long Description	<p>The TF42-B thermal overload relays are economic electromechanical protection devices for the main circuit, complying with the latest railway rolling stock standards and allowing installation in passengers or driver cabins for trains frequently operating tunnels or undergrounds.</p> <p>They offer a reliable protection for motors in the event of overload or phase failure. The devices have trip class 10.</p> <p>The thermal overload relays are three pole relays with bimetal tripping elements. The motor current flows through the bimetal tripping elements and heats them directly and indirectly. In case of an overload (over current), the bimetal elements bent as a result of the heating. This leads to a release of the relay and a change of the contacts switching position (95-96 / 97-98).</p> <ul style="list-style-type: none"> <li>- Manual or automatic reset selectable</li> <li>- Phase loss sensitive acc. to IEC/EN 60947-4-1</li> <li>- TEST and STOP function - Trip indication on the front</li> <li>- Temperature compensation</li> <li>- Suitable for three- and single-phase applications</li> <li>- designed in accordance to the applicable parts of IEC 60077 standard</li> <li>- shocks and vibration withstand conforming to IEC 61373 (category 1, class B)</li> <li>- usable according to European fire and smoke safety standard EN 45545-2</li> </ul>
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## Ordering

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Minimum Order Quantity	1 piece
Customs Tariff Number	85364900

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## Popular Downloads

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Data Sheet, Technical Information	2CDC106023D0201
Instructions and Manuals	2CDC106022M6802
Instructions and Manuals (Part 2)	1SAC200017M0002
Time-Current Characteristic Curve	1SAZ700506F0019
CAD Dimensional Drawing	2CDC001079B0201

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## Dimensions

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Product Net Width	45 mm
Product Net Height	88.3 mm
Product Net Depth / Length	70.5 mm
Product Net Weight	0.135 kg

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## Technical

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Setting Range	16 ... 20 A
Rated Operational Voltage	Auxiliary Circuit 600 V AC/DC Main Circuit 690 V AC
Rated Operational Current ( $I_e$ )	20 A
Rated Frequency (f)	Auxiliary Circuit 50 Hz Auxiliary Circuit 60 Hz Auxiliary Circuit DC Main Circuit 50 Hz Main Circuit 60 Hz
Rated Impulse Withstand Voltage ( $U_{imp}$ )	Auxiliary Circuit 6 kV Main Circuit 6 kV
Rated Insulation Voltage ( $U_i$ )	690 V
Number of Poles	3P
Number of Auxiliary Contacts NC	1
Number of Auxiliary Contacts NO	1
Number of Protected Poles	3
Conventional Free-air Thermal Current ( $I_{th}$ )	Auxiliary Circuit NC 6 A Auxiliary Circuit NO 4 A Main Circuit 0 A
Rated Operational Current AC-15 ( $I_e$ )	(120 V) NC 3 A (120 V) NO 0.75 A (240 V) NC 3 A (240 V) NO 0.75 A (400 V) NC 0.75 A (400 V) NO 0.75 A (500 V) NC 0.75 A (500 V) NO 0.75 A
Rated Operational Current DC-13 ( $I_e$ )	(125 V) NC 0.55 A (125 V) NO 0.55 A

	(24 V) NC 1.25 A (24 V) NO 1.25 A (250 V) NC 0.27 A (250 V) NO 0.27 A (500 V) NC 0.15 A (500 V) NO 0.15 A (60 V) NC 0.55 A (60 V) NO 0.55 A
Degree of Protection	IP20
Pollution Degree	3
Connecting Capacity Auxiliary Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup> Flexible 1/2x 0.75 ... 1 mm <sup>2</sup> Flexible 1/2x 1 ... 2.5 mm <sup>2</sup> Rigid 1/2x 0.75 ... 4 mm <sup>2</sup>
Connecting Capacity Main Circuit	Flexible with Ferrule 1/2x 0.75 ... 4 mm <sup>2</sup> Flexible with Insulated Ferrule 1/2x 0.75 ... 4 mm <sup>2</sup> Flexible 1/2x 0.75 ... 4 mm <sup>2</sup> Rigid 1/2x 0.75 ... 4 mm <sup>2</sup>
Tightening Torque	Auxiliary Circuit 1 ... 1.2 N·m Main Circuit 2.5 ... 2.7 N·m
Wire Stripping Length	Auxiliary Circuit 9 mm Main Circuit 12 mm
Recommended Screw Driver	Main Circuit Pozidriv 2
Power Loss	at Rated Operating Conditions per Pole 1.8 ... 2.6 W
Suitable For	AF09ZB AF09B AF12ZB AF12B AF16ZB AF16B AF26ZB AF26B AF30ZB AF30B AF38ZB AF38B
Standards	IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1 UL 60947-1 UL 60947-4-1 IEC 60335-2-40 A2L

## Technical UL/CSA

Maximum Operating Voltage UL/CSA	Main Circuit 600 V AC
Contact Rating UL/CSA	(NC:) B600 (NC:) Q600 (NO:) Q600 (NO:) D300
Connecting Capacity Main Circuit UL/CSA	Flexible 1/2x 18-10 AWG Stranded 1/2x 18-10 AWG
Connecting Capacity Auxiliary Circuit UL/CSA	Flexible 1/2x 18-12 AWG Stranded 1/2x 18-12 AWG
Tightening Torque UL/CSA	Auxiliary Circuit 9 ... 11 in·lb Main Circuit 13 ... 22 in·lb

## Environmental

Ambient Air Temperature	Operation -25 ... +60 °C Operation Compensated -25 ... +60 °C Storage -50 ... +80 °C
Ambient Air Temperature Compensation	Yes
Maximum Operating Altitude Permissible	2000 m

Shock and Vibration Withstand acc. to IEC 61373	Category 1, Class B
Resistance to Shock acc. to IEC 60068-2-27	11 ms Pulse 25g
Resistance to Vibrations	5g 3 ... 150 Hz
RoHS Information	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
Toxic Substances Control Act - TSCA	2CMT2023-006525

## Material Compliance

Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
REACH Declaration	2CMT2021-006202
RoHS Declaration	2CMT2021-006277
WEEE B2C / B2B	Business To Business
WEEE Category	5. Small Equipment (No External Dimension More Than 50 cm)

## ABB EcoSolutions

End Of Life Disassembling Instructions	1SAC200429H0001
Environmental Information	1SAC200057H0009
Environmental Product Declaration - EPD	1SAC200373H0001

## Certificates and Declarations

A2L Certificate - IEC	1SAA941000-4601
CCC Certificate	2024010304658956
CQC Certificate	CQC2011010309464423
Declaration of Conformity - CCC	2020980304001788
Declaration of Conformity - CE	1SAD101100-3505
Declaration of Conformity - UKCA	1SAD201100-3505
UL Certificate	E48139-20090126

## Container Information

Package Level 1 Units	carton 1 piece
Package Level 1 Width	48 mm
Package Level 1 Height	92 mm
Package Level 1 Depth / Length	78 mm
Package Level 1 Gross Weight	0.15 kg
Package Level 1 EAN	4013614517198
Package Level 2 Units	carton 48 piece
Package Level 2 Width	280 mm
Package Level 2 Height	210 mm
Package Level 2 Depth / Length	395 mm
Package Level 2 Gross Weight	7.586 kg
Package Level 2 EAN	4013614517419

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### External Classifications and Standards

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Object Classification Code	F
ETIM 9	EC000106 - Thermal overload relay
ETIM 10	EC000106 - Thermal overload relay
eClass	V11.0 : 27371501
UNSPSC	39121520
IDEA Granular Category Code (IGCC)	5364 >> Overload relay

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### Accessories

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Identifier	Description	Type	Quantity	Unit Of Measure
1SAZ701902R0001	DB42 Single Mounting Kit	DB42	1	piece

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### Categories

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Low Voltage Products and Systems → Control Products → Contactors → Thermal Overload Relays

