

## PRODUCT-DETAILS

# TF65-53

## TF65-53 Thermal Overload Relay



### General Information

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | TF65-53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product ID            | 1SAZ811201R1005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| EAN                   | 4013614482953                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Catalog Description   | TF65-53 Thermal Overload Relay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Long Description      | <p>The TF65-53 thermal overload relay is an economic electromechanical protection device for the main circuit. 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, trip contact (NC), signal contact (NO), automatic- or manual reset selectable, trip-free mechanism, STOP function and a trip indication. The overload relays are connected directly to the block contactors. Single mounting kits are available as accessory.</p> |

### Ordering

|                        |          |
|------------------------|----------|
| Minimum Order Quantity | 1 piece  |
| Customs Tariff Number  | 85364900 |

### Dimensions

|                            |          |
|----------------------------|----------|
| Product Net Width          | 54.9 mm  |
| Product Net Height         | 101.4 mm |
| Product Net Depth / Length | 106.9 mm |
| Product Net Weight         | 0.372 kg |

## Popular Downloads

|                                            |                          |
|--------------------------------------------|--------------------------|
| Data Sheet, Technical Information          | 2CDC106069D0201          |
| Data Sheet, Technical Information (Part 2) | 1SAZ800502F0006          |
| Data Sheet, Technical Information (Part 3) | 1SAZ800503<br>1SAZ800506 |
| Instructions and Manuals                   | 2CDC106051M6803          |
| Instructions and Manuals (Part 2)          | 2CDC106085M6801          |
| Dimension Diagram                          | 1SAZ800401F0001          |

## Technical

|                                                    |                                                                                                                                                                                                            |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Setting Range                                      | 44 ... 53 A                                                                                                                                                                                                |
| Rated Operational Voltage                          | Auxiliary Circuit 600 V AC/DC<br>Main Circuit 690 V AC<br>Main Circuit 440 V DC                                                                                                                            |
| Rated Operational Current ( $I_e$ )                | 53 A                                                                                                                                                                                                       |
| Rated Operational Current AC-3 ( $I_e$ )           | 53 A                                                                                                                                                                                                       |
| Rated Frequency (f)                                | Auxiliary Circuit 50 Hz<br>Auxiliary Circuit 60 Hz<br>Auxiliary Circuit DC<br>Main Circuit 50 Hz<br>Main Circuit 60 Hz                                                                                     |
| Rated Impulse Withstand Voltage ( $U_{imp}$ )      | Auxiliary Circuit 6 kV<br>Main Circuit 8 kV                                                                                                                                                                |
| Rated Insulation Voltage ( $U_i$ )                 | 690 V                                                                                                                                                                                                      |
| Number of Poles                                    | 3                                                                                                                                                                                                          |
| 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<br>Auxiliary Circuit NO 4 A                                                                                                                                                       |
| Rated Operational Current AC-15 ( $I_e$ )          | (120 V) NC 3 A<br>(120 V) NO 0.5 A<br>(240 V) NC 3 A<br>(240 V) NO 0.5 A<br>(400 V) NC 0.75 A<br>(400 V) NO 0.5 A<br>(500 V) NC 0.75 A<br>(500 V) NO 0.5 A                                                 |
| Rated Operational Current DC-13 ( $I_e$ )          | (125 V) NC 0.55 A<br>(125 V) NO 0.55 A<br>(24 V) NC 1.25 A<br>(24 V) NO 1.25 A<br>(250 V) NC 0.27 A<br>(250 V) NO 0.27 A<br>(500 V) NC 0.15 A<br>(500 V) NO 0.15 A<br>(60 V) NC 0.55 A<br>(60 V) NO 0.55 A |
| Degree of Protection                               | Housing IP20<br>Main Circuit Terminals IP10                                                                                                                                                                |
| Pollution Degree                                   | 3                                                                                                                                                                                                          |
| Connecting Capacity Auxiliary Circuit              | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>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><br>Flexible 1/2x 0.75 ... 1 mm <sup>2</sup><br>Flexible 1/2x 1 ... 2.5 mm <sup>2</sup><br>Rigid 1/2x 0.75 ... 4 mm <sup>2</sup>                                                                                                                                                                                                                        |
| Connecting Capacity<br>Main Circuit | Flexible with Ferrule 1/2x 2.5 ... 10 mm <sup>2</sup><br>Flexible with Ferrule 1x 2.5 ... 35 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 2.5 ... 35 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 2.5 ... 10 mm <sup>2</sup><br>Flexible 1/2x 2.5 ... 16 mm <sup>2</sup><br>Flexible 1x 2.5 ... 35 mm <sup>2</sup><br>Rigid 1/2x 2.5 ... 16 mm <sup>2</sup><br>Rigid 1x 2.5 ... 35 mm <sup>2</sup> |
| Tightening Torque                   | Auxiliary Circuit 1 ... 1.2 N·m<br>Main Circuit 4.0 ... 4.5 N·m                                                                                                                                                                                                                                                                                                                                                        |
| Wire Stripping Length               | Auxiliary Circuit 9 mm<br>Main Circuit 17 mm                                                                                                                                                                                                                                                                                                                                                                           |
| Recommended Screw<br>Driver         | Auxiliary Circuit Pozidriv 2<br>Main Circuit Pozidriv 2                                                                                                                                                                                                                                                                                                                                                                |
| Mounting Position                   | Position 1 to 6                                                                                                                                                                                                                                                                                                                                                                                                        |
| Power Loss                          | at Rated Operating Conditions per Pole 2.5 ... 3.6 W                                                                                                                                                                                                                                                                                                                                                                   |
| Suitable For                        | AF40<br>AF52<br>AF65                                                                                                                                                                                                                                                                                                                                                                                                   |
| Standards                           | IEC/EN 60947-1<br>IEC/EN 60947-4-1<br>IEC/EN 60947-5-1<br>UL 60947-1<br>UL 60947-4-1                                                                                                                                                                                                                                                                                                                                   |

## Technical UL/CSA

|                                                 |                                                                                              |
|-------------------------------------------------|----------------------------------------------------------------------------------------------|
| Maximum Operating<br>Voltage UL/CSA             | Main Circuit 600 V AC                                                                        |
| Ampere Rating UL/CSA                            | 53 A                                                                                         |
| Contact Rating UL/CSA                           | (NC:) B600<br>(NC:) Q600<br>(NO:) Q600<br>(NO:) D300                                         |
| Connecting Capacity<br>Main Circuit UL/CSA      | Flexible 1x 12-2 AWG<br>Flexible 2x 12-6 AWG<br>Stranded 1x 12-2 AWG<br>Stranded 2x 12-6 AWG |
| Connecting Capacity<br>Auxiliary Circuit UL/CSA | Flexible 1/2x 18-12 AWG<br>Stranded 1/2x 18-12 AWG                                           |
| Tightening Torque<br>UL/CSA                     | Auxiliary Circuit 9 ... 11 in·lb<br>Main Circuit 35 ... 40 in·lb                             |

## Environmental

|                                                   |                                                                                            |
|---------------------------------------------------|--------------------------------------------------------------------------------------------|
| Ambient Air<br>Temperature                        | Operation -40 ... +70 °C<br>Operation Compensated -40 ... +70 °C<br>Storage -50 ... +80 °C |
| Ambient Air<br>Temperature<br>Compensation        | Yes                                                                                        |
| Maximum Operating<br>Altitude Permissible         | 2000 m                                                                                     |
| Resistance to Shock acc.<br>to IEC 60068-2-27     | 11 ms Pulse 25g                                                                            |
| Resistance to Vibrations<br>acc. to IEC 60068-2-6 | 5g / 3 ... 150 Hz                                                                          |
| RoHS Status                                       | Following EU Directive 2011/65/EU                                                          |

## Certificates and Declarations (Document Number)

|                                   |                  |
|-----------------------------------|------------------|
| ABS Certificate                   | 1SAA941003-0101  |
| ATEX Certificate                  | 1SAA941005-3901  |
| BV Certificate                    | 1SAA941001-0203  |
| CB Certificate                    | 1SAA941015-2001  |
| CCC Certificate                   | 1SAA941012-3801  |
| cUL Certificate                   | cUL_E48139       |
| Declaration of Conformity - CE    | 1SAD938510-0187  |
| DNV GL Certificate                | 1SAA941004-0301  |
| EAC Certificate                   | 1SAA941002-2701  |
| GOST Certificate                  | 1SAA941001-2701  |
| Instructions and Manuals          | 2CDC106051M6803  |
| Instructions and Manuals (Part 2) | 2CDC106085M6801  |
| LR Certificate                    | 1SAA941003-0501  |
| RINA Certificate                  | RINA_ELE098115XG |
| RMRS Certificate                  | 1SAA941002-0701  |
| RoHS Information                  | 1SAD938507-0187  |
| UL Certificate                    | UL_E48139        |

## Container Information

|                                |               |
|--------------------------------|---------------|
| Package Level 1 Units          | 1 piece       |
| Package Level 1 Width          | 123 mm        |
| Package Level 1 Height         | 121 mm        |
| Package Level 1 Depth / Length | 82 mm         |
| Package Level 1 Gross Weight   | 0.456 kg      |
| Package Level 1 EAN            | 4013614482953 |
| Package Level 2 Units          | 12 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   | 5.858 kg      |
| Package Level 2 EAN            | 4013614485350 |

## Classifications

|                            |                                   |
|----------------------------|-----------------------------------|
| Object Classification Code | F                                 |
| ETIM 4                     | EC000106 - Thermal overload relay |
| ETIM 5                     | EC000106 - Thermal overload relay |
| ETIM 6                     | EC000106 - Thermal overload relay |
| ETIM 7                     | EC000106 - Thermal overload relay |
| eClass                     | 7.0 27371501                      |
| UNSPSC                     | 39121521                          |
| E-Number (Sweden)          | 3210267                           |

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## Categories

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

