G2TFKN02

Manufacturer data sheet: V1.073

Monitoring relay - motor temperature monitoring

Status: Available Data sheet created: 01.07.2025

Item Number: 2390101 - **Serie:** Gamma - **EAN:** 9008662002371



- Monitoring relays GAMMA series
- Multifunction
- Motor temperature monitoring (PTC)
- Galvanic isolation to sensor circuit
- Short circuit monitoring sensor circuit
- Zero-voltage safe
- Fault memory
- Test and reset button
- External reset button connectable
- Supply voltage selectable via power module TR2/SNT2
- 2 changeover contacts
- width 22,5mm
- Industrial design

Description

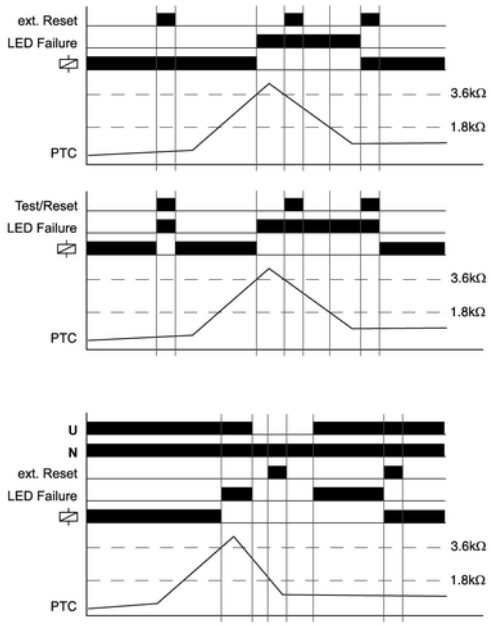
Temperature monitoring of the motor winding (max. 6 PTC) with fault latch, for temperature probes in accordance with DIN 44081, test function with integrated test/reset key.

General information

Short description	Motor temperature monitoring, short-circuit monitoring, zero-voltage safe, 2 changeover contacts
Item Number	2390101
EAN	9008662002371
Main category	Monitoring Relays
Series	Gamma
Type	G2TFKN02
Design	Industrial design
Supply	12-400V AC
Dimensions	22.5 x 90 x 108 mm

Functions and measurands

Amount of functions 3



No additional function (OFF)

If the supply voltage U is applied (green LED illuminated) and the cumulative resistance of the PTC-circuit is less than 3.6k (standard temperature of the motor), the output relays switch into on-position. Pressing the test/reset key under this conditions forces the output relays to switch into off-position. They remain in this state as long as the test/ reset key is pressed and thus the switching function can be checked in case of fault. The test function is not effective using an external reset key. When the cumulative resistance of the PTC-circuit exceeds 3.6k (at least one of the PTCs has reached the cut-off temperature), the output relays switch into off-position (red LED illuminated). The output relays again switch into on-position (red LED not illuminated), if the cumulative resistance drops below 1.8k by cooling down of the PTC and either a reset key (internal or external) was pressed or the supply voltage was disconnected and re-applied.

Zero voltage latch (N)

If the supply voltage is interrupted and the additional function “Zero voltage latch” (+N or +N+K) is activated, the actual status of the output relays is stored and they switch into off-position if necessary. If the supply voltage is re-applied the status is restored. If this function is activated a fault can only be cleared by pressing the internal or external reset key

Short circuit monitoring (K)

In case of a line break or a short circuit of the probe line (cumulative resistance less than 20) the output relays switch into off-position (red LED illuminated) if the additional function “Short circuit monitoring” (+K or +K+N) is activated. Under these conditions however the output relays do not change their state, neither by pressing a reset key nor by disconnecting and reapplying the supply voltage.

Indicators

Supply/time lapse 1	Green LED U ON: Supply voltage applied
Relay state	Yellow LED ON/OFF: output relay position
Error / monitoring function	Red LED ON/OFF: Display error for corresponding threshold

Mechanical design

Housing material	made of self-extinguishing plastic
Housing - protection degree	IP40
Mounting	top hat rail TH 35 7,5-15 according to IEC 60715:2017 / EN 60715:2017
Terminals/connections	Touch-proof clamping yoke terminals according to DGUV 3 (Screwdriver PZ1 required)
Terminals - protection degree	IP20
Mounting position	any
Stripping length	7 mm
Max. Tightening Torque	1 Nm
Terminal capacity	• 1 x 0.5 to 2.5mm² with/without ferrule • 1 x 4mm² without ferrule • 2 x 0.5 to 1.5mm² with/without ferrules • 2 x 2.5mm² flexible without ferrules

Supply circuit

Terminals/connections	A1-A2 (galvanically separated)
Supply voltage a.c.	12 ... 400 V (via Powermodul)
Supply voltage tolerance a.c.	According to power supply unit specification
Rated consumption a.c.	1,5 W / 2 VA
Rated frequency power module	According to power supply unit specification
Duty cycle	100%
Recovery time	500 ms
Drop-out voltage	>30% the supply voltage
Overvoltage category	III (IEC 60664-1)
Rated surge voltage	4 kV
Rated impulse withstand voltage	400 V a.c.

Output curcuit

Type	Relay
Contact 1	1 change over contact
Terminals 1	11-12-14
Contacts 2	1 change over contact
Terminals/connections 2	21-22-24
Rated voltage	250 V a.c.
conditional short-circuit current	1 kA
Fuse Protection	5 A quick
Mechanical life	15 x 10^6 Switching cycles
Electrical life	100 x 10^3 Switching cycles (1000 VA)
Utilization categorie	AC 15
Switching frequency	max. 60/min at 100 VA resistive load
Switching frequency 2	max. 6/min at 1000 VA resistive load (IEC 60947-5-1)
Rated surge voltage	4 kV
Overvoltage category	III (IEC 60664-1)

Interface

Control input

Function	external reset key
Loadable	no
Maximum line length	R-T2: max. 10m (twisted pair)
Reset	potential free normally open contact, terminals R-T2

Measuring circuit

Measurand	Temperature

Accuracy

Base accuracy	±10 % (from full scale)
Repetition accuracy	≤1 %
Voltage influence	≤2.3 %
Temperature influence	≤0.1 % / °C

Measuring circuit - temperature

Measuring input	Terminals T1-T2
Initial resistance	<1.5 kΩ
Response value (relay in off-position)	≥3.6 kΩ
Release value (relay in on-position)	≤1.8 kΩ
Disconnection (short circuit thermistor)	<20 Ω
Measuring voltage T1-T2	≤2.5 V d.c. at R ≤4.0 kΩ (according to DINVDE 0660 part 302)
Overvoltage category	III (according to IEC 60664-1)
Rated surge voltage	4 kV

Ambient conditions and general specifications

Ambient temperature IEC	-25 ... +55°C (IEC 60068-1)
Ambient temperature UL	-25 ... +40°C (UL 508)
Storage temperature	-25 ... +70 °C
Transport temperature	-25 ... +70 °C
Relative humidity	15% ... 85% (IEC 60721-3-3 class 3K3)
Vibration resistance	10 ... 55 Hz 0.35 mm (IEC 60068-2-6)
Shock resistance	15 g 11 ms (IEC 60068-2-27)
Pollution degree	3 (IEC 60664-1)
Installation altitude	Up to 2000 m above sea level

Logistics

Minimum Quantity	1
Tariff Number	85364900
EAN	9008662002371
Country of Origin	AT
Product Weight (g)	137

Available declarations / conformities

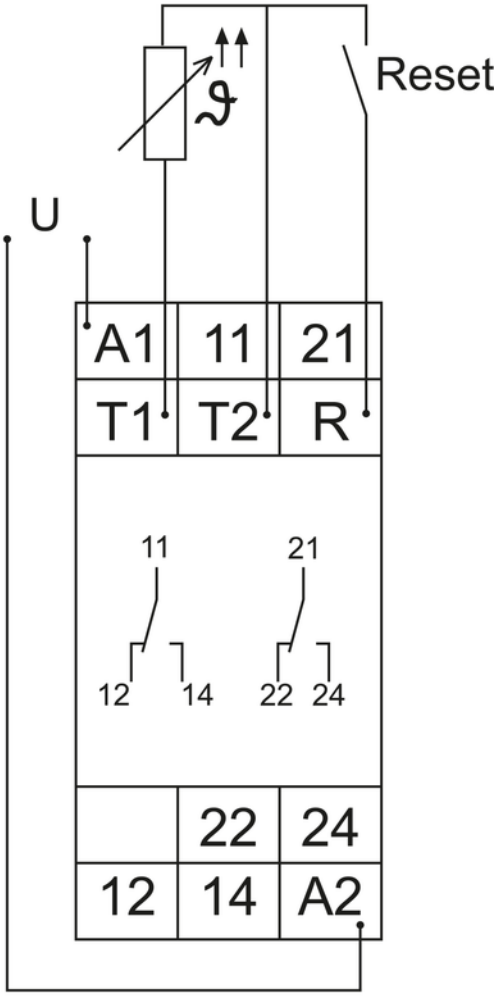
EAC	✓
CE	Open document
UL	Open document
c(UL)	Open document
REACH	Open document
WEEE	Open document
TSCA	Open document
RoHs	Open document
CMRT	Open document

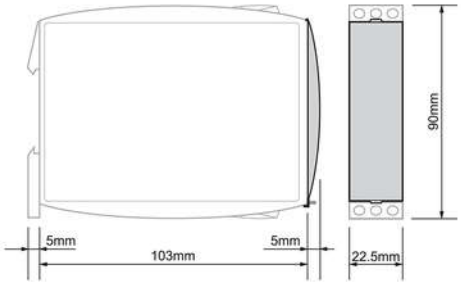
CAD Files

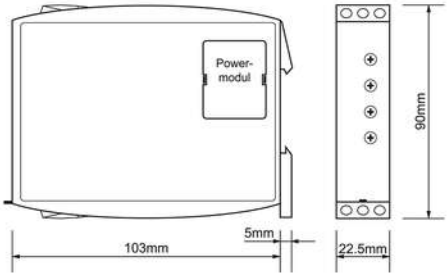
STEP_G2_TRAFO_en.STEP	Download file

Media & drawings













Tele Haase Steuergeräte Ges.m.b.H
Vorarlberger Allee 38
1230 Vienna
Austria

CALL US +43 / 1 / 614 74 - 0
ONLINE SUPPORT support@tele-haase.at

Changes and errors excepted