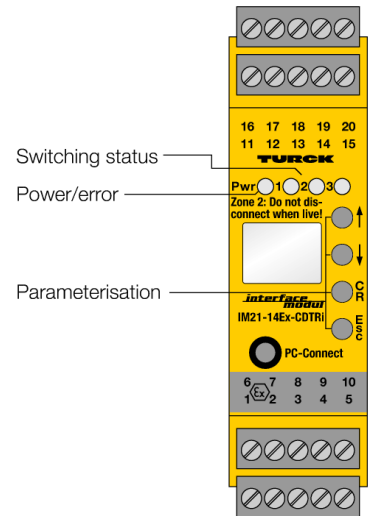
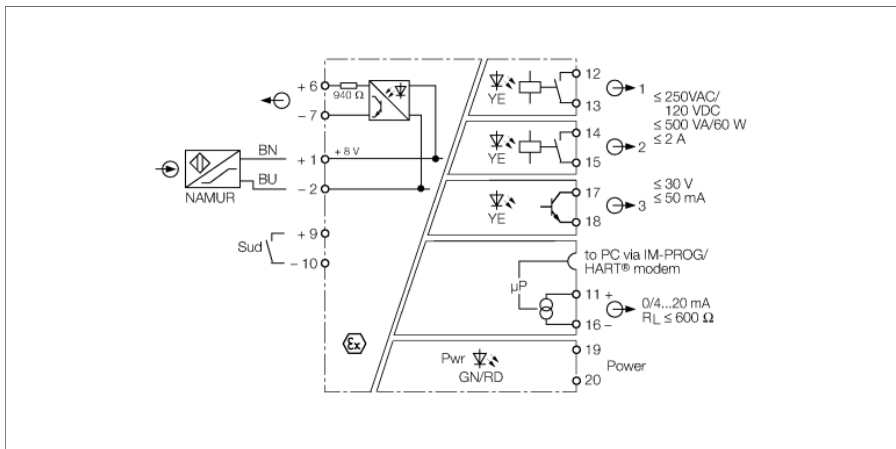


**Rotation speed monitor
1-channel
IM21-14EX-CDTRI**



The rotation speed monitor IM21-14EX-CDTRI monitors frequencies, rotation speeds and pulse trains of rotating motor, gear or turbine parts according to over or undershoot of adjusted limit values. The current value is indicated on a display on the front of the device.

Intrinsically safe sensors acc. to EN 60947-5-6 (NAMUR) can be connected. Depending on the settings, the line is monitored for wire-break and/or short-circuit. In the event of an input circuit error the relays drop out, the transistor is blocked and the Pwr LED changes to red.

The device can be parametrized and configured via PC (FDT / DTM). For this, connect the device to the PC via the 3.5 mm jack on the front (the matching transmission cable IM-PROG III can be ordered separately from TURCK). In addition, a basic scope of parameters can be set via buttons and display on the front as well as via the HART® capable power interface

At each of the two relay outputs a predefined switching limit value can be monitored. The two relays also monitor overshoot/undershoot of window limits. The transistor output can also be used as a pulse divider. The measured value is permanently written to a ring buffer with space for 8000 values. The writing process is stopped with a predefined trigger event, like for example "excess of limit value". After that, the stored signal sequence can be read out.

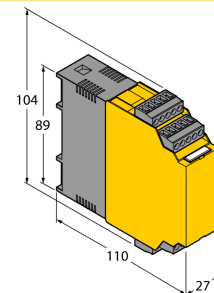
A switching hysteresis is defined by setting a switch-on and off point. A switch-off delay can also be set to avoid shut down due to sudden frequency hops.

- ATEX, IECEx, cFM_{us}, TR CU, NEPSI, TIIS, Kosha
- Installation in zone 2
- Monitors over and underrange of limit values and window limits
- Operating range 0.06 ... 600000 min⁻¹
- Control of sensors acc. to EN 60947-5-6 (NAMUR)
- 2 x relay outputs and 1 x transistor output
- Current output 0/4...20 mA reversible
- Pulse output Ex nL II C/II B
- Parametrized via PC (FDT / DTM), front-panel switch or HART®
- Complete galvanic isolation
- Input reverse-polarity protected

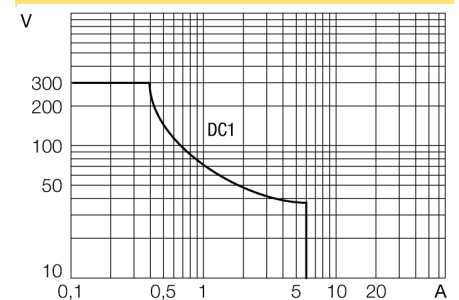
**Rotation speed monitor
1-channel
IM21-14EX-CDTRI**

| | |
|---|--|
| Type designation | IM21-14EX-CDTRI |
| Ident-No. | 7505651 |
| Nominal voltage | Universal voltage supply unit |
| Operating voltage | 20...250 VAC |
| Frequency | 40...70 Hz |
| Operating voltage range | 20...125 VDC |
| Power consumption | ≤ 3 W |
| Monitoring range/Setting range | ≤ 0.06...600000 min ⁻¹ |
| Max. input frequency | 600000 min ⁻¹ |
| Pulse time | ≥ 0.02 ms |
| Pulse pause | ≥ 0.02 ms |
| NAMUR input | |
| NAMUR | EN 60947-5-6 |
| No-load voltage | 8.2 VDC |
| Short-circuit current | 8.2 mA |
| Input resistance | 1 kΩ |
| Cable resistance | ≤ 50 Ω |
| Switch-on threshold | 1.75 mA |
| Switch-off threshold | 1.55 mA |
| Wire breakage threshold | ≤ 0.06 mA |
| Short-circuit threshold | ≥ 6.4 mA |
| Output current | 0/4...20 mA |
| Load resistance, current output | ≤ 0.6 kΩ |
| Fault current | 0 / 22 mA adjustable |
| Output circuits (digital) | 2 x relays (NO) |
| Output switching voltage relay | ≤ 30 VDC / ≤ 250 VAC |
| Switching current per output | ≤ 2 A |
| Switching capacity per output | ≤ 500 VA/60 W |
| Switching frequency | ≤ 10 Hz |
| Contact quality | AgNi, 3μ Au |
| Semiconductor output circuit(s) | |
| Output circuits (digital) | 1 x transistor (potential-free, short-circuit proof) |
| Switching voltage | ≤ 30 VDC |
| Switching current per output | ≤ 0.05 A |
| Switching frequency | ≤ 10000 Hz |
| Voltage drop | ≤ 2.5 V |
| Feed-forward pulse output | |
| Voltage | ≤ 30 V |
| Current | ≤ 10 mA |
| Measuring accuracy (including linearity, hysteresis and repeatability) | ≤ 0.05 % of full scale |
| Reference temperature | 23 °C |
| Temperature drift analog output | 0.0025 %/K |
| Galvanic isolation | |
| Test voltage | 2.5 kV |
| Important note | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply. |
| Ex approval acc. to conformity certificate | IBExU 07 ATEX 1132 |
| Application area | II (1) G, II (1) D |
| Ignition protection category | [Ex ia Ga] IIC , [Ex ia Da] IIIC |
| Ex approval acc. to conformity certificate | IBExU 07 ATEX B010 X |
| Application area | II 3 G |
| Ignition protection type | Ex nA nC [ic Gc] IIC/IIB T4 Gc |
| Characteristic | linear |
| Indication | |
| Operational readiness | green |
| Pulse input | yellow |
| Error indication | red |

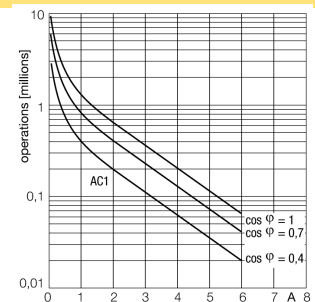
Dimensions



Output relay – Load curve



Output relay – Electrical lifetime

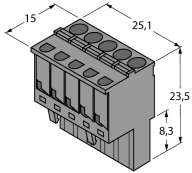
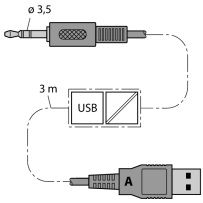


Rotation speed monitor**1-channel****IM21-14EX-CDTRI**

| | |
|----------------------------------|---|
| Protection class | IP20 |
| Flammability class acc. to UL 94 | V-0 |
| Ambient temperature | -25...+70 °C |
| | -25 ... +60 °C für FM |
| Storage temperature | -40...+80 °C |
| Relative humidity | ≤ 95 % |
| Dimensions | 104 x 27 x 110 mm |
| Weight | 249 g |
| Mounting instructions | DIN rail (NS35) or panel |
| Housing material | Polycarbonate/ABS |
| Electrical connection | 4 × 5-pin removable terminal blocks, reverse polarity protected, screw terminal |
| Terminal cross-section | 1 x 2.5 mm ² / 2 x 1.5 mm ² |
| Tightening torque | 0.5 Nm |

**Rotation speed monitor
1-channel
IM21-14EX-CDTRI**

Accessories

| Type code | Ident-No. | Description | |
|-----------------|-----------|--|---|
| IM-CC-5X2BU/2BK | 7504031 | Cage clamp terminals for IM modules (Ex-devices with 27 mm overall width); includes: 2 pcs. 5-pin blue terminals and 2 pcs. 5-pin black terminals. |  |
| IM-PROG III | 7525111 | The programming adapter IM-PROG III is used for parametrization of TURCK IM devices via FDT/DTM. In addition, the in-PROG III provides galvanic isolation. |  |