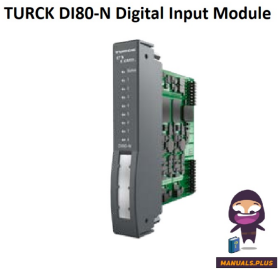


TURCK DI80-N Digital Input Module User Guide

Contents

TURCK DI80-N Digital Input Module

Product Information

Specifications

- **Model:** DI80-N
- **Number of Channels:** 8
- **Input Compatibility:** 3-wire PNP/NPN sensors (IEC 61131, Type 3)
- **Galvanic Isolation:** Yes
- **Intended Use:** Digital Input Module

FAQ

- **Q:** Can the DI80-N be used with sensors other than 3-wire PNP/NPN sensors?
  - **A:** No, the DI80-N is specifically designed for use with eight 3-wire PNP/NPN sensors (IEC 61131, Type 3). Any other use is not recommended.
- **Q:** What should I do if a channel shows a fault indication?
  - **A:** If a channel displays a fault indication such as wire breakage or short circuit, refer to the manual for troubleshooting steps or contact technical support.

Other documents

Besides this document, the following material can be found on the Internet at **www.turck.com**:

- Data sheet
- Notes on use in zone 2
- excom manual — I/O system for non-intrinsically safe circuits
- Declarations of conformity (current version)
- Approvals

For your safety

Intended use

The device is a piece of equipment from explosion protection category “increased safety” (IEC/EN 60079-7) and may only be used as part of the excom I/O system with the approved module carriers MT… (TÜV 21 ATEX 8643 X or IECEx TUR 21.0012X) in zone 2.

DANGER

These instructions do not provide any information on use in zone 2.
Danger to life due to misuse!

- **Operation in zone 2:** Observe the information on use in zone 2 without fail.

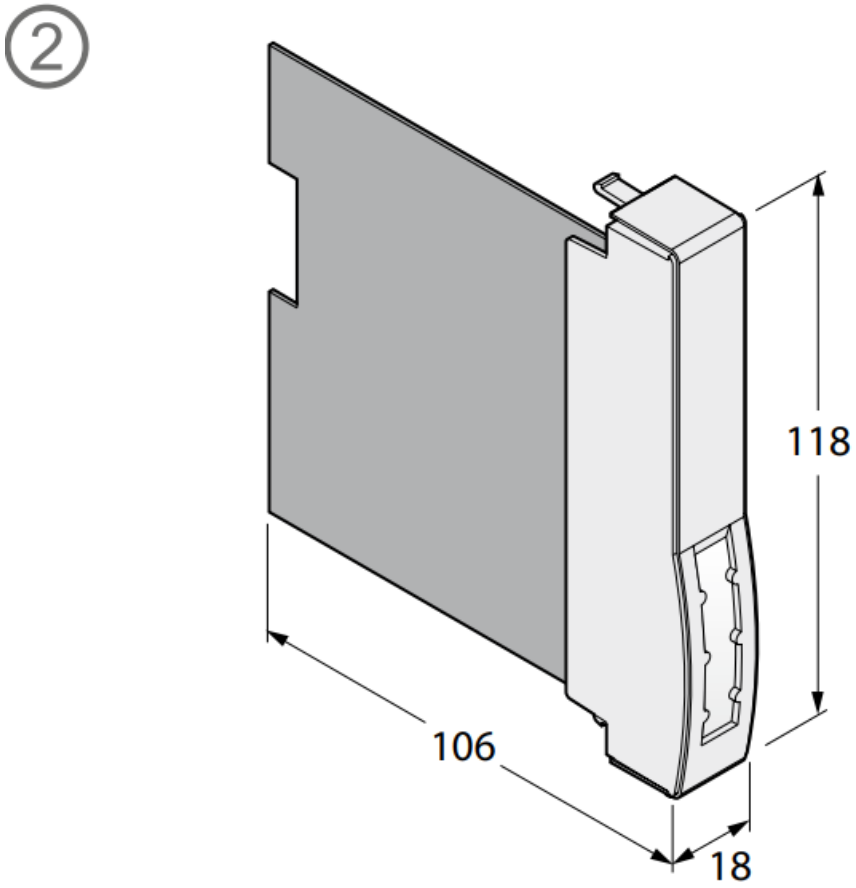
The 8-channel digital input module DI80-N serves for connection of eight 3-wire PNP/NPN sensors (IEC 61131, Type 3). The inputs are galvanically isolated from each other.
Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage.

General safety instructions

- The device may only be mounted, installed, operated, configured and maintained by professionally trained personnel.
- The device meets the EMC requirements for industrial areas. When used in residential areas, take measures to prevent radio interference.
- Only combine devices that are suitable for joint use based on their technical data.
- Check the device for damage before mounting.

Product description

Device overview



See fig. 1: Device view, fig. 2: Dimensions.

Functions and operating modes

The sensors are powered by a reverse-polarity protected auxiliary energy supply (24 V), The auxiliary energy is fed separately externally via the connection terminals to channels 1…4 (group 1) and 5…8 (group 2).
Flutter monitoring detects and reports procedurally unusual signal patterns, for example too frequent fluctuation of the input signal between “0” and “1.” The occurrence of such signal patterns is an indication of faulty sensors or process-related instabilities.

Installing And Connecting

Installing

Multiple devices can be mounted directly next to each other.

- Protect the mounting location from radiated heat, sudden temperature fluctuations, dust, dirt, humidity and other ambient influences.
- Insert the device into the designated position on the module rack so that it noticeably snaps into place.

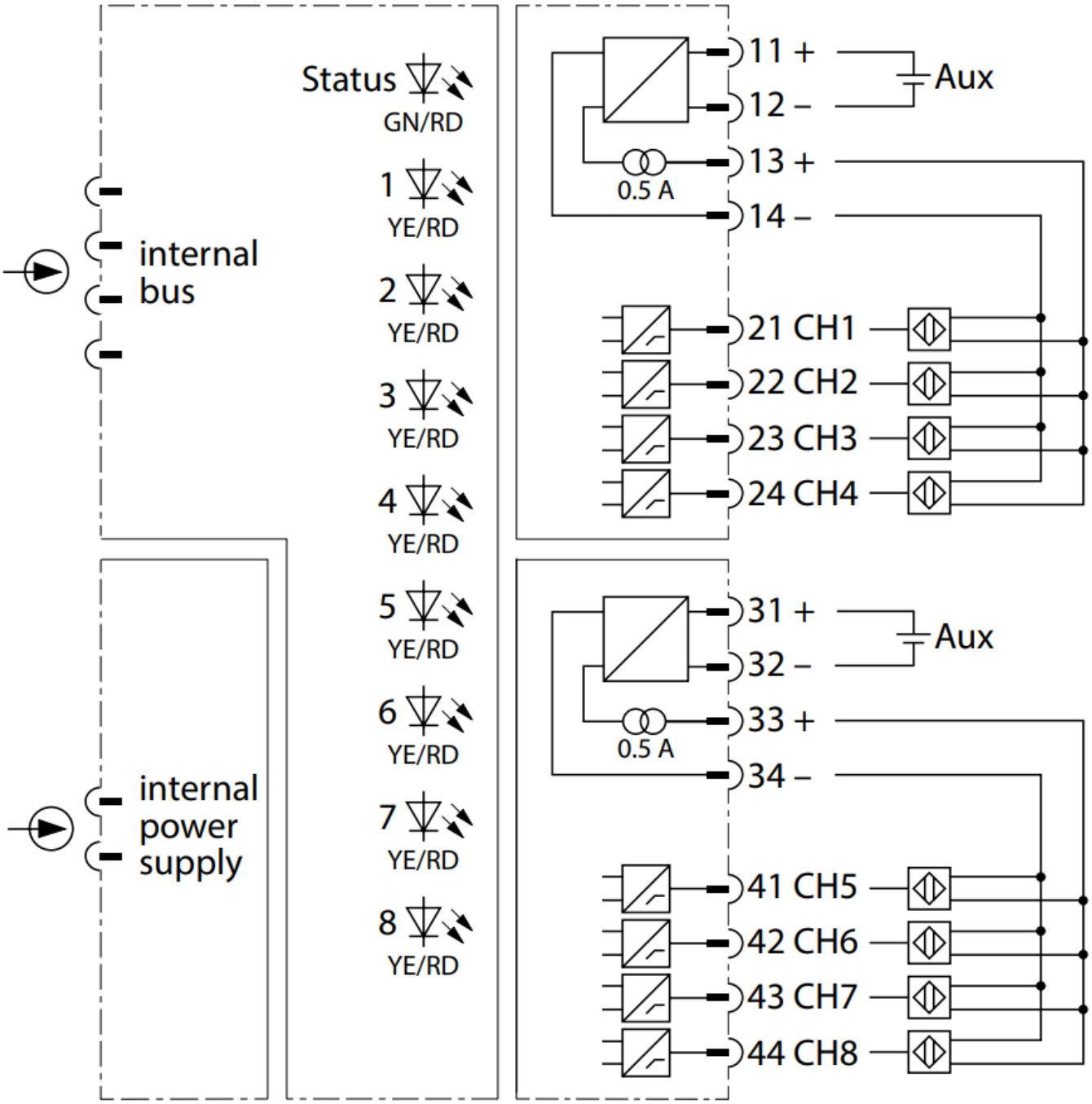
Connecting

- When plugged into the module rack, the device is connected to the module rack's internal power supply and data communication.
- Screw connection terminal blocks or terminal blocks with spring technology can be used to connect the field devices.
- Connect the field devices as shown in "Wiring diagram."

Commissioning

- Switching on the power supply on the module rack immediately switches on the fitted device.
- As part of the commissioning process, the input behavior must be parameterized once via the fieldbus master, and the module slot must be configured.

Wiring diagram



Operating

The device can be fitted in or removed from the module rack during operation if a potentially explosive atmosphere is not present.

LEDs

LED	Indication	Meaning
Status	Off	Power off
	Red flashing	Module not configured for current slot
	Green	Power supply and communication fault free
	Green flashing (slow: 0.5 Hz)	Module not yet configured by the gateway, awaiting configuration data
	Green flashing (1.0 Hz asym.)	Module in FailSafe mode
Channel 1…8	Off	Channel not active (not switched)
	Yellow	Channel active (switched)
	Red	Channel error (wire break, short circuit): Channel diagnostics available

Setting

The behavior of the inputs is parameterized via an associated configuration tool, FDT frame or web server, depending on the higher-level fieldbus system. The following parameters can be set for each channel:

- Short-circuit monitoring
- Wire-break monitoring
- Substitute value strategy
- Direction of current flow (PNP or NPN)
- Polarity
- Flutter time window
- Number of signal changes
- Activate or deactivate channel 1…8 individually

Repair

- The device must not be repaired by the user.
- The device must be decommissioned if it is faulty.
- Observe our return acceptance conditions when returning the device to Turck.

Disposal

- The device must be disposed of properly and does not belong in the domestic waste.

Technical Data

Type designation	DI80-N
ID	6884273
Supply voltage	Via module rack, main power supply
Power consumption	≤ 2.2 W
Galvanic isolation	Two galvanically isolated groups
Number of channels	8-channel
Input circuits	3-wire PNP/NPN
Auxiliary power	2 × (19.2…30 VDC)
Switching frequency	≤ 50 Hz
Wire-break	< 0.2 mA
0-signal	≤ 5.0 V
1-signal	≥ 11.0 V
Output Circuits	
Output current	≤ 500 mA
Short-circuit protection	Yes, cyclic
Connection mode	Module, plugged on rack
Protection class	IP20
Relative humidity	≤ 93 % at 40 °C acc. to EN 60068-2-78
Vibration test	Acc. to IEC 60068-2-6
EMC	Acc. EN 61326-1 Acc. to Namur NE21

Ambient temperature T_{amb}: -20…+70 °C

Contact

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Additional information see

- turck.com

Documents / Resources

	TURCK DI80-N Digital Input Module [pdf] User Guide DI80-N Digital Input Module, DI80-N, Digital Input Module, Input Module

References

- Turck.com
- Turck.com
- User Manual