TURCK

INDUCTIVE SENSORS WITH INTEGRATED ROTATIONAL SPEED MONITOR

Excellent system availability, reduced down-times and fast error finding via simple diagnostics make it necessary for today's industry to follow an in-depth decentralisation concept. Consequently, many sensors include advanced signal processing options to reinforce this process.

TURCK caters for this development by offering all-metal *uprox*® sensors not only with AS-i interface but with an additional built-in rotational speed monitoring function.

Periodic dampening of the sensor by a metal target attached to theshaft or direct detection of the teeth of a wheel enables monitoring of an extensive speed range of 3...3000 min-^{1} for underspeed and overspeed conditions via a single device. The integrated start-up time delay, adjustable switch points via potentiometer and teach-in functions all ensure error-free operation.

A separate processing device, such as a counter and relay module, is not needed, thus saving space in mounting cabinets or eliminating the need for separate distribution boxes and protective housings.

The new rotational speed monitoring sensors come as cable versions in a threaded barrel housing (M30) for flush or non-flush mounting with a switching distance up to 20 mm. Established *uprox*® features, e.g. magnetic field resistance and correction factor 1 for all metals, have been retained.

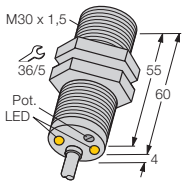
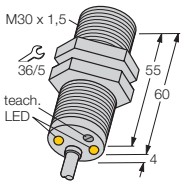
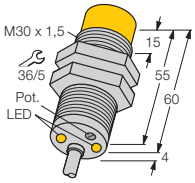
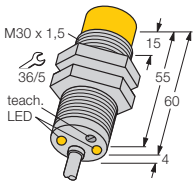
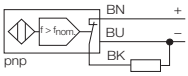
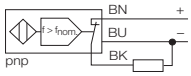
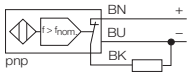
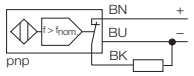
- **Compact housing M30 x 1**
- **Extended speed range 3 .. 3000 min^{-1}**
- **Incorporated start-up time delay (5 s) to avoid system shut-down during start-up phase**
- **Switching point adjustable via potentiometer or teach-in**
- ***Uprox*®-sensing features like**
  - **Factor 1 for all metals**
  - **Magnetic field immune**
  - **Extended sensing range**
- **High protection degree IP 67**
- **Excellent EMC resistance**

Rotational Speed monitor

uprox®

Types and data

- **Housing: chrome-plated brass**
- **Threaded barrel, M30 x 1,5**
- **Cable, 2 m**

Type / Ident-No.	**DBi10U-M30-AP4X2** 15 822 31	**DTBi10U-M30-AP4X2** 15 822 30	**DNi20U-M30-AP4X2** 15 822 33	**DTNi20U-M30-AP4X2** 15 822 32
Connection				
electrical version	**DC**	**DC**	**DC**	**DC**
Dimensions				
wiring diagram				
Rated operating distance S_n	10 mm	10 mm	20 mm	20 mm
Mounting	flush	flush	non-flush	non-flush
Speed range	3...3000 min^{-1}	3...3000 min^{-1}	3...3000 min^{-1}	3...3000 min^{-1}
Speed range adjustable via:	potentiometer	teach-in function	potentiometer	teach-in function
Supply voltage U_B	10...65 VDC	10...65 VDC	10...65 VDC	10...65 VDC
Ripple W_{PP}	≤ 10 %	≤ 10 %	≤ 10 %	≤ 10 %
No-load current I_0	< 20 mA	< 20 mA	< 20 mA	< 20 mA
Output	N.O., pnp	N.O, pnp	N.O, pnp	N.O, pnp
Rated operational current I_e	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
OFF-state current I_r	0,1 mA	0,1 mA	0,1 mA	0,1 mA
Voltage drop (U_d at I_e)	≤ 1,8 V	≤ 1,8 V	≤ 1,8 V	≤ 1,8 V
Reverse polarity protection	●	●	●	●
Wire-breakage protection	●	●	●	●
Short-circuit protection	●	●	●	●
Overload trip point	≥ 220 mA	≥ 220 mA	≥ 220 mA	≥ 220 mA
EMC per EN 60947-5-2, Annex ZA	●	●	●	●
Switching frequency f	100 Hz	100 Hz	100 Hz	100 Hz
Hysteresis H	3...15 %	3...15 %	3...15 %	3...15 %
Temperature drift	± 10 %	± 10 %	± 10 %	± 10 %
Repeat accuracy R	≤ 2 %	≤ 2 %	≤ 2 %	≤ 2 %
Housing material	chrome-plated brass	chrome-plated brass	chrome-plated brass	chrome-plated brass
Material active face	PBT-GF30	PBT-GF30	PBT-GF30	PBT-GF30
Protection degree (IEC 60529/EN 60529)	IP67	IP65	IP67	IP65
Temperature range	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Cable 2 m long [mm²]	LifYY, 3 x 0,34	LifYY, 3 x 0,34	LifYY, 3 x 0,34	LifYY, 3 x 0,34
Switching indication	LED (yellow)	LED (yellow)	LED (yellow)	LED (yellow)
Power on indication	LED (green)	LED (green)	LED (green)	LED (green)
Operation indication	LED (yellow)	LED (yellow)	LED (yellow)	LED (yellow)

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