- **Sturdy and compact design**
- **Up to 1024 ppr**
- **4.75 V ... 30 V with short-circuit proof push-pull output**
- **RS 422 functionality at 5 V operation**
- **Loadable metal disk**

## TVI50N-09BK0**T

## Product description

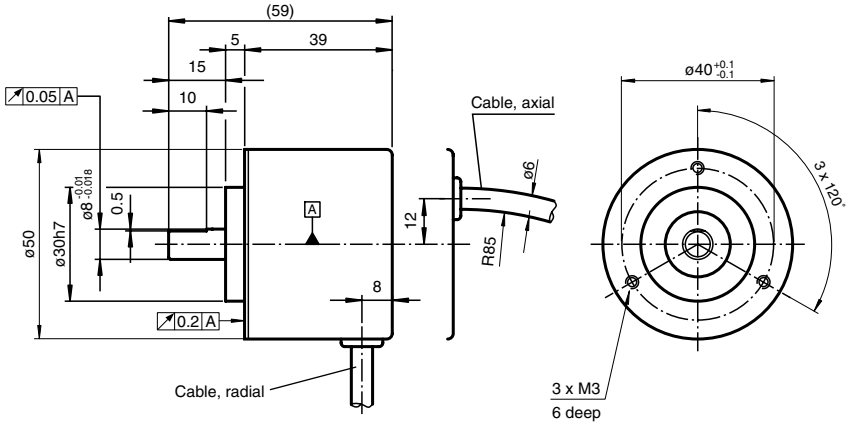
The TVI50 is the starting point for the new economical target line of Pepperl+Fuchs. With a small outside diameter of 50 mm, the unit is ideal for use in industrial areas where little space is available. The technology of the rotary encoder is adapted to the new requirements of the rotary encoder market. Innovative fast technology with Opto-ASIC forms the central basis of the device. The rotary encoder is available with a pulse count of up to 1024 pulses per revolution.
The rotary encoder is equipped with a metal disk that can accept a high load. It provides the ideal combination of non-sensitivity to temperature and high resolution.

## Technical data

| | | |
|---|---|---|
| **General specifications** | | |
| Pulse count (ppr) | | max. 1024 |
| **Electrical specifications** | | |
| Operating voltage | | 4.75 ... 30 V DC<br>5 V DC for RS 422 |
| No-load supply current | $I_0$ | max. 55 mA |
| **Output** | | |
| Output type | | push-pull, incremental (RS 422, incremental) |
| Voltage drop | $U_d$ | ≤ 2.5 V (< 2.5 V) |
| Operating current | | max. per channel 30 mA , short-circuit proof (max. per channel 20 mA, conditionally short-circuit proof) |
| Output frequency | | max. 100 kHz (max. 100 kHz) |
| Rise time | | 980 ns (225 ns) |
| De-energized delay | $t_{off}$ | 980 ns (225 ns) |
| **Connection** | | |
| Cable | | Ø6 mm, 8 x 0.128 $mm^2$, 0.5 m |
| **Standard conformity** | | |
| Protection degree | | DIN EN 60529, IP40, IP54 |
| Climatic testing | | DIN EN 60068-2-3, no moisture condensation |
| Emitted interference | | DIN EN 61000-6-4 |
| Interference rejection | | DIN EN 61000-6-2 |
| Shock resistance | | DIN EN 60068-2-27, 100 g, 6 ms |
| Vibration resistance | | DIN EN 60068-2-6, 10 g, 10 ... 2000 Hz |
| **Ambient conditions** | | |
| Operating temperature | | |
| Nickel disk | | -10 ... 70 °C (263 ... 343 K) |
| Storage temperature | | |
| Nickel disk | | -40 ... 80 °C (233 ... 353 K) |
| **Mechanical specifications** | | |
| Material | | |
| Housing | | aluminium, blank |
| Flange | | aluminium 3.1645 |
| Shaft | | stainless steel 1.4305 |
| Mass | | approx. 220 g |
| Rotational speed | | max. 6000 $min^{-1}$ |
| Moment of inertia | | ≤ 5 $gcm^2$ |
| Starting torque | | ≤ 0.5 Ncm |
| Shaft load | | |
| Axial | | 20 N |
| Radial | | 40 N |

Date of edition 2006-03-22

## Dimensions

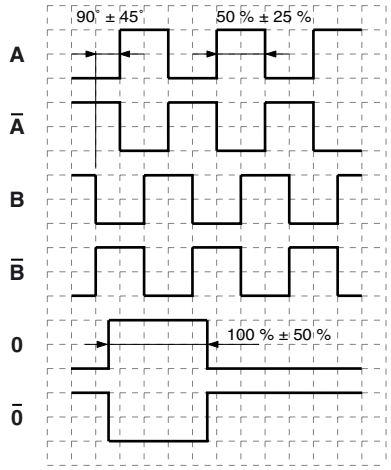



Clamping flange

## Electrical connection

| Signal | Cable Ø6 mm, 8-core |
|---|---|
| GND | Blue |
| $+U_b$ | Brown |
| A | Black |
| B | White |
| $\overline{A}$ | Violet |
| $\overline{B}$ | Grey |
| 0 | Orange |
| $\overline{0}$ | Yellow |
| Screen | - |

## Signal outputs




↻ cw - with view onto the shaft

## Accessories

| Accessories | Name/defining feature | Order code |
|---|---|---|
| Couplings | D1: Ø8 mm, D2: Ø8 mm | 9401 |
| | D1: Ø8 mm, D2: Ø8 mm | 9402 |
| | D1: Ø8 mm, D2: Ø8 mm | KW |

Date of edition 2006-03-22

For additional information on the accessories, please see the "Accessories" section.

## Order code

| T | V | I | 5 | 0 | N | – | 0 | 9 | B | K | | | 6 | T | N | – | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Pulse count** 50, 100, 200, 360, 400, 500, 1000, 1024

**Option**
**N** Normal

**Output switching**
**T** 4.75 V ... 30 V, push-pull

**Signal output**
**6** A + B + 0 and $\overline{A}$ + $\overline{B}$ + $\overline{0}$

**Exit position**
**A** Axial
**R** Radial

**Connection type**
**K0** Cable Ø6 mm, 8 x 0.128 mm², 0.5 m
**K2** Cable Ø6 mm, 8 x 0.128 mm², 2 m

**Flange version**
**B** Clamping flange

**Shaft dimension**
**09** Shaft Ø8 mm x 15 mm

**Housing material**
**N** Aluminium, IP40
**T** Aluminium, IP54

**Shaft version**
**V** Solid shaft

Date of edition 2006-03-22

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