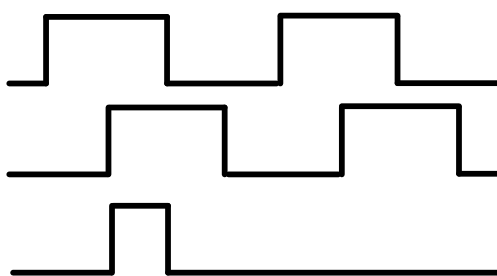
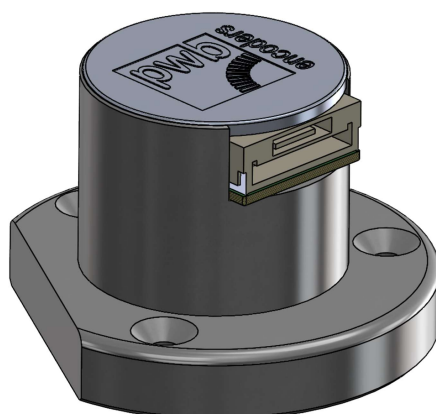


## Mini Encoder Optical Kit System



**PWB encoders GmbH**  
**Am Goldberg 2**  
**D-99817 Eisenach**  
**Germany**  
**Phone: +49 3691 72580-0**  
**Fax: +49 3691 72580-29**

**info@pwb-encoders.com**  
**www.pwb-encoders.com**

## Description

The MEHR 25 Y01 is a optical kit encoder. It is available for a 6mm motor shaft. The encoder provides two differential square wave output signals (in quadrature 90 degrees phase shifted) for counting and direction information and one index channel (one pulse per revolution).

The resolution of the encoder is determined by the number of pulses per revolution (PPR). The power supply can be selected as 5V or 8-30V version. Accordingly, the outputs are available as TTL or HTL.

## Warning:

The encoder is not "hot plug capable" and must not be plugged under voltage. This could destroy the encoder.

## Features

- Small size: 22.0 mm diameter x 23.0 mm length
- Quick and easy assembly
- Three channel output
- Power supply: 5 VDC or 8-30 VDC
- Output type: TTL or HTL compatible
- max. 20 mA output drive capability
- Resolution 1024 PPR
- Shaft diameter: 6.0 mm
- Operating temperature: -20°C to +85°C
- Compliant EU-directive 2011/65/EU (RoHS)

### IMPORTANT NOTICE

The guarantee will be voided by misuse, accident, modification, unsuitable physical or operating environment, operation in other than the specified operating environment, or failure caused by a product for which **PWB encoders GmbH** is not responsible.

**PWB encoders GmbH** reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services also datasheets at any time.

## Recommended operating conditions

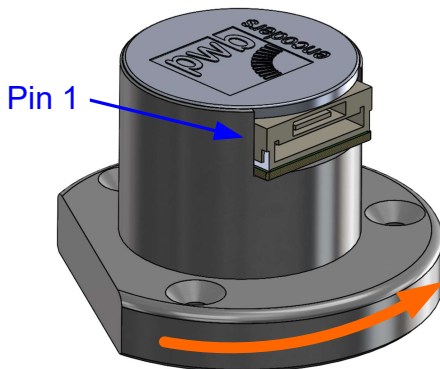
## Electrical Notes

| Parameter                 | Symbol   | Min.        | Typ.  | Max.       | Unit        | Notes                  |
|---------------------------|----------|-------------|-------|------------|-------------|------------------------|
| Supply voltage            | $U_B$    | 4.75        | 5.0   | 5.25       | $V_{DC}$    | 5V Version             |
|                           | $U_B$    | 8.0         | 12.0  | 30.0       | $V_{DC}$    | 8-30V Version          |
| Supply current            | $I_{CC}$ | 38          | 45    | 58         | mA          | 20-25 k $\Omega$ Load  |
| Load capacitance          | $C_L$    |             |       | 100        | pF          |                        |
| Count frequency           | $f$      |             |       | 800        | kHz         |                        |
| Operating temperature     | $T_A$    | -20         | 25    | 85         | $^{\circ}C$ |                        |
| Humidity exposure         |          |             |       | 90         | % RH        | not condensing         |
| <b>A , B , I Channel</b>  |          |             |       |            |             |                        |
| High level output voltage | $V_{OH}$ | 2.5         |       | $U_B$      | $V_{DC}$    | 5V Version             |
|                           | $V_{OH}$ | $U_B - 3 V$ |       | $U_B$      | $V_{DC}$    | 8-30V Version          |
| High level output current | $I_{OH}$ |             |       | 20         | mA          |                        |
| Low level output voltage  | $V_{OL}$ |             |       | 0.5        | $V_{DC}$    | 5V Version             |
|                           | $V_{OL}$ |             |       | 1.2        | $V_{DC}$    | 8-30V Version          |
| Low level output current  | $I_{OL}$ |             |       | 20         | mA          |                        |
| Propagation time          |          |             |       | 110        | ns          |                        |
| Rise time                 | $t_r$    |             |       | 350        | ns          |                        |
| Fall time                 | $t_f$    |             |       | 350        | ns          |                        |
| Pulse width               | $P$      | 40          | 50:50 | 60         | %           |                        |
| Phase shift               |          | 80          | 90    | 100        | $^{\circ}e$ | depended on resolution |
| Absolute angular accuracy |          |             |       | $\pm 0,05$ | DEG         |                        |

## Mechanical Notes

| Parameter  | Value  | Tolerance  | Unit    |
|--|--------|------------|---------|
| Max. allowable axial shaft play of motor         | 0.1    | -          | mm      |
| Max. allowable radial shaft play of motor        | 0.02   | -          | mm      |
| Mounting countersunk screw                       | M2.5   | -          | -       |
| Pitch circle diameter                            | 29.0   | $\pm 0.05$ | mm      |
| max. speed (mechanical)                          | 10,000 | -          | rpm     |
| Total weight                                     | 60     | -          | g       |
| Moment of inertia of the hub with the code wheel | 322    |            | $gmm^2$ |
| Protection grade according to DIN 40500          | IP40   | -          | -       |

## Electrical interface



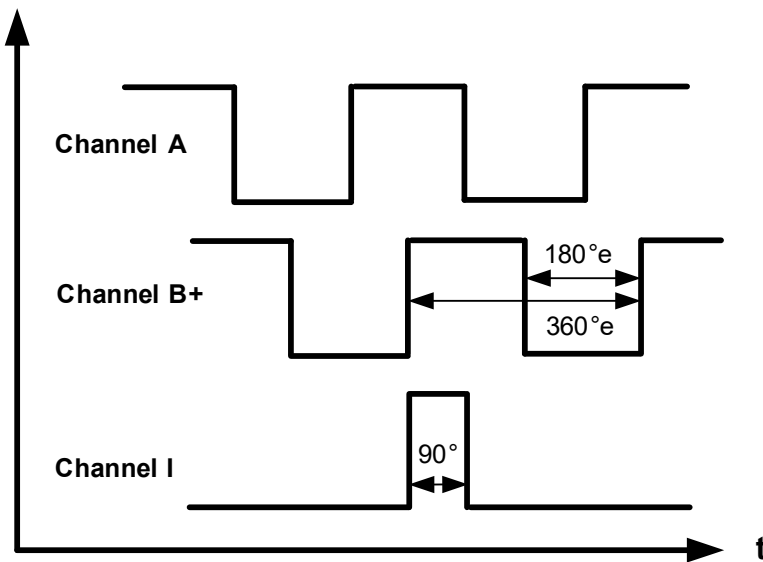
Rotation direction clockwise

## Pin-out description

| Pin | Output pin | Description  | Color  |
|-----|------------|--------------|--------|
| 1   | B          | Channel B    | violet |
| 2   | A          | Channel A    | yellow |
| 3   | I          | Index I      | green  |
| 4   | NC         | (A-)         | /      |
| 5   | GND        | Ground       | black  |
| 6   | UB         | Power supply | red    |

## Signals

Amplitude



Rotation direction clockwise

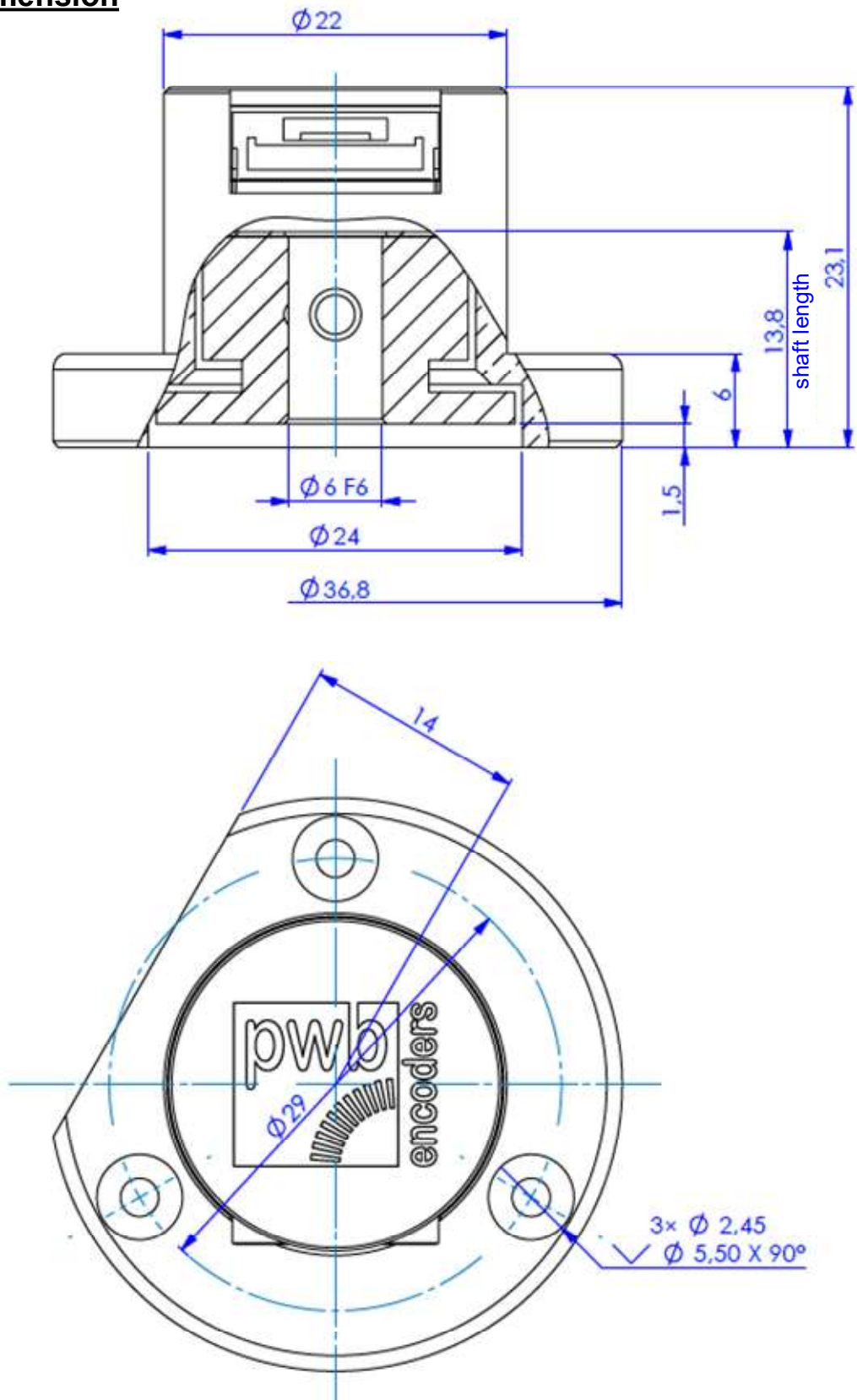
Index = A & B related

### **PWB encoders GmbH RESTRICTED**

**THIS DOCUMENT AND ANY ASSOCIATED DATA CONTAIN RESTRICTED INFORMATION THAT IS PROPERTY OF PWB encoders GmbH AND MAY NOT BE DISCLOSED OR DUPLICATED FOR OTHERS EXCEPT AS AUTHORIZED BY PWB encoders GmbH**

**INFORMATION CONTAINED IN THIS PUBLICATION MAY BE SUPERSEDED BY UPDATES. IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR APPLICATION MEETS WITH YOUR SPECIFICATIONS.**

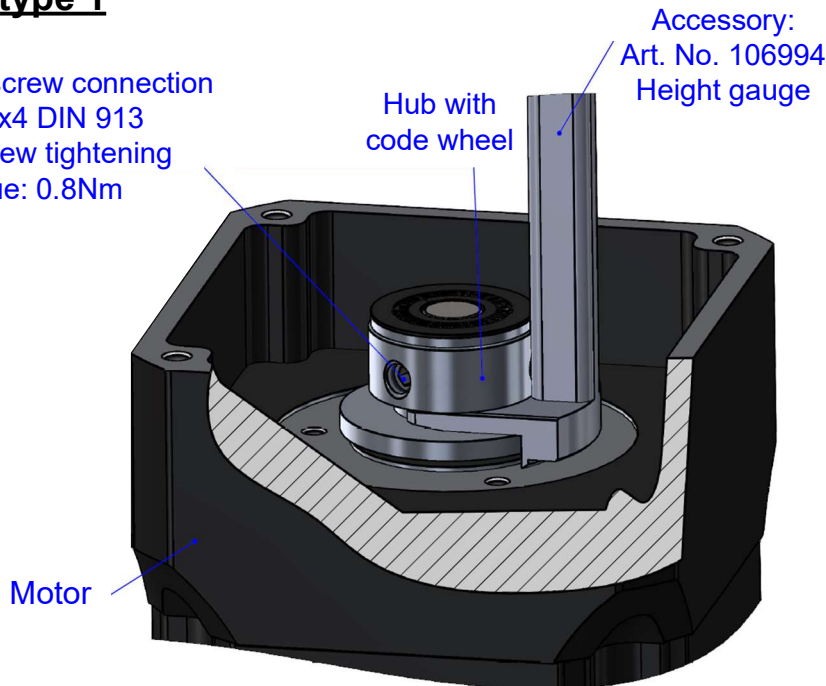
## Mechanic dimension



## Assembly

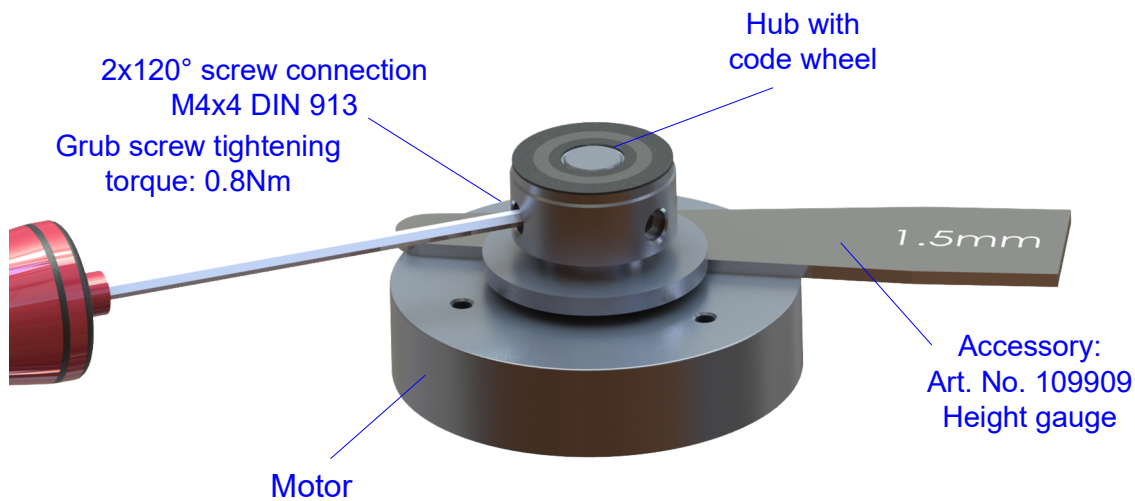
### Motor type 1

2x120° screw connection  
M4x4 DIN 913  
Grub screw tightening  
torque: 0.8Nm

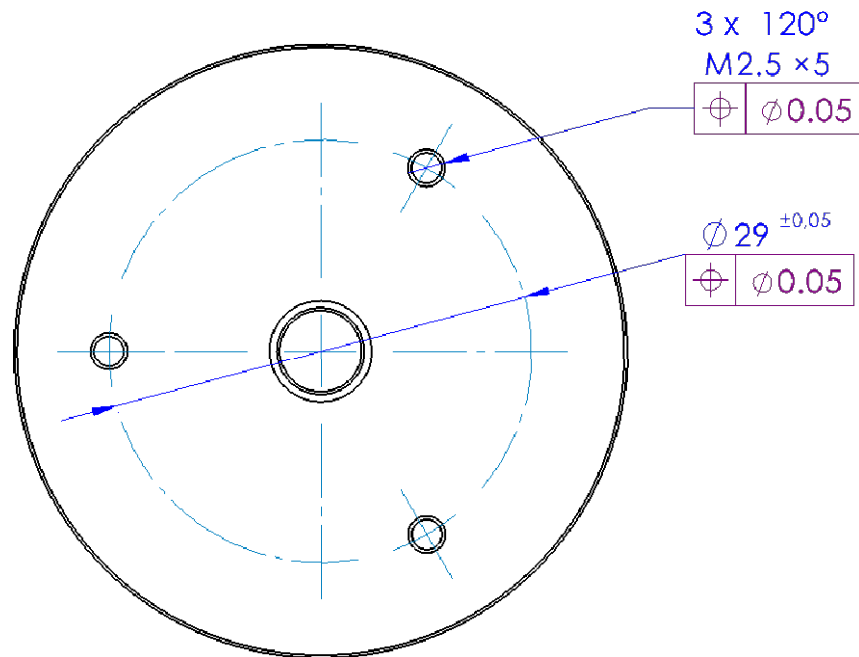


### Motor type 2

2x120° screw connection  
M4x4 DIN 913  
Grub screw tightening  
torque: 0.8Nm



## Motor flange bore pattern



## Ordering information

Ordering code:

**MEHR 25 Y01 - XXXX - X.XXX - XX - XX**

|  |   |   |  |  |
|--|---|---|--|--|
| <b>Mechanic<br/>Performance</b><br>Y01 | <b>Encoder<br/>Resolution (PPR) *</b><br>1024 | <b>Motor Shaft<br/>Diameter (mm)</b><br>6.000 | <b>Supply<br/>Voltage (V)</b><br>05 : 5<br>24 : 24 | <b>Output option<br/>cable length (m)</b><br>00 : no cable<br>30 : 300mm cable |
|--|---|---|--|--|

Note:

\* other encoder resolutions on request

**ESD Warning: Normal handling precautions should be taken to avoid static discharge damage to the sensor.**



## Accessories:

Height gauge  
Art. No. 106994



Height gauge  
Art. No. 109909



Connection cable 300mm  
Art. No. 107628

