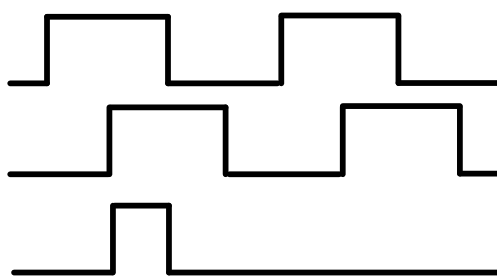
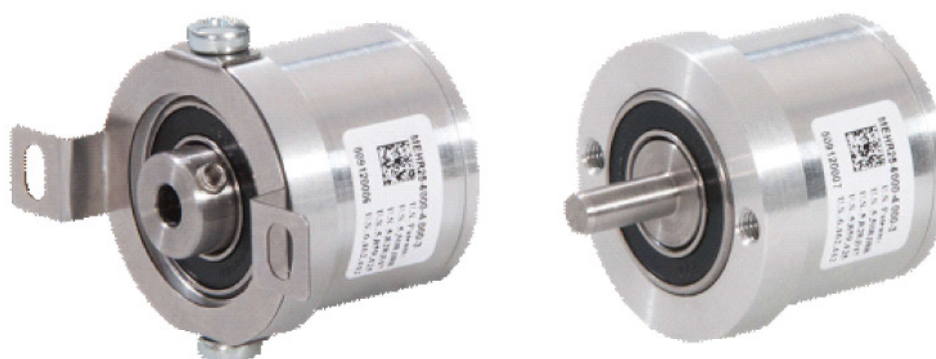




Mini Encoder High Resolution



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

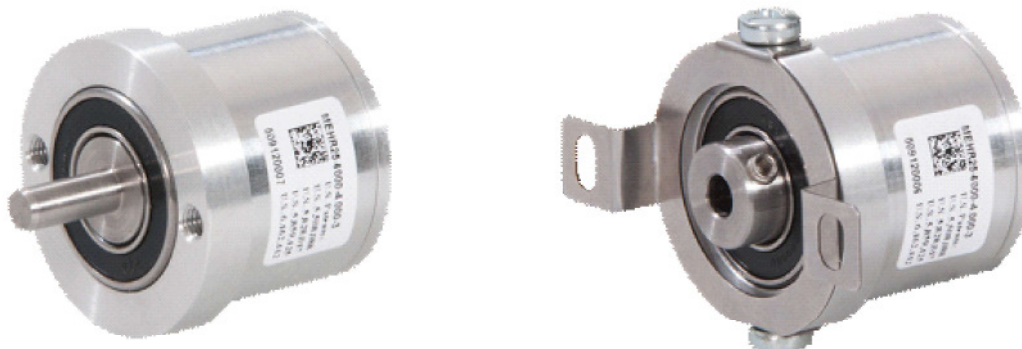
Description

The MEHR25 is a high resolution optical encoder. He is available as a shaft or hollow shaft encoder for different sizes of motor shafts.

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 counts per revolution (CPR). Power supply and signals are provided by a 8 pin Molex connector.

Performance



Features

- Small size: 25.0 mm diameter x 26.3 mm length
- Quick and easy assembly
- Three channel differential line driver output channel A+, A-, B+, B-, I+, I-
- Power supply: 5 VDC
- Output type: TTL compatible
- max. 50 mA output drive capability
- Resolution up to 12,000 CPR
- Maximum shaft diameter: 6.0 mm
- Operating temperature: -20°C to +85°C
- Frequency: 500 kHz
- Compliant EU-directive 2011/65/EU (RoHS)

Recommended operating conditions

Electrical Notes

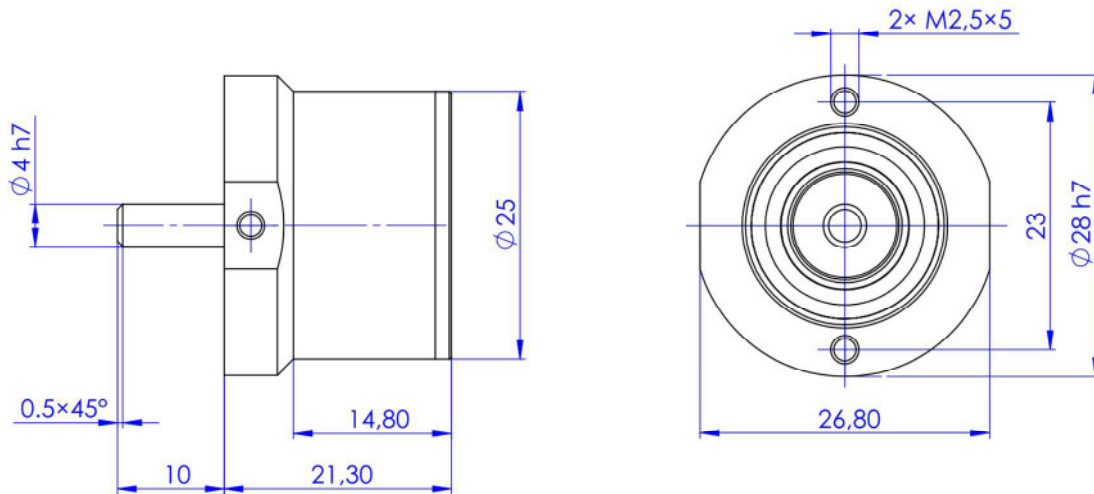
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply voltage	V_{CC}	4,75	5.0	5,25	V_{DC}	
Supply current	I_{CC}	8	30	50	mA	No Load
Load capacitance	C_L			100	pF	
Count frequency	f			850	kHz	
Operating temperature	T_A	-20	25	85	°C	
Humidity exposure				90	% RH	not condensing
A, A, B, B, I, I Channel						
High level output voltage	V_{OH}	2.5		V_{CC}	V_{DC}	
High level output current	I_{OH}			50	mA	
Low level output voltage	V_{OL}			0.8	V_{DC}	
Low level output current	I_{OL}			50	mA	
Propagation time				110	ns	
Rise time	t_r			350	ns	
Fall time	t_f			350	ns	

Mechanical Notes

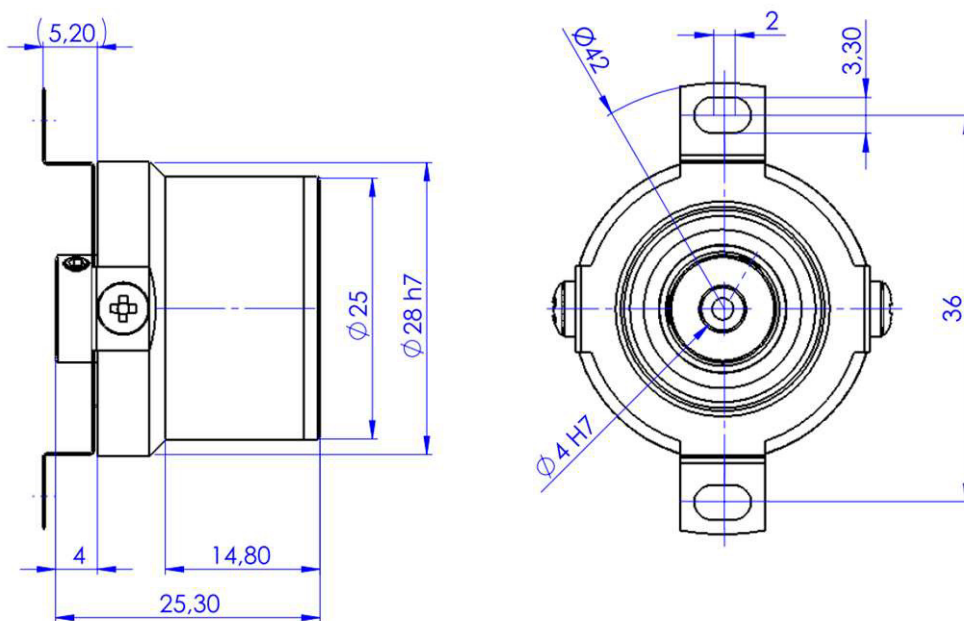
Parameter	Value	Tolerance	Unit
Max. allowable axial shaft play of motor	0.1	-	mm
Max. allowable radial shaft play of motor	0.02	-	mm
Mounting screw size (DIN 84)	M3	-	-
Pitch circle diameter	36.0	±0.1	mm
Mating connector (Molex)	contact 8x 50079-8000 housing 1x 51021-0800	-	-
Total weight	40	-	g
Moment of inertia of the hub with the code wheel	13.0	±1.0	gcm ²
Protection grade according to DIN 40500	IP54	-	-
max. speed (mechanical)	12,000	-	rpm

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

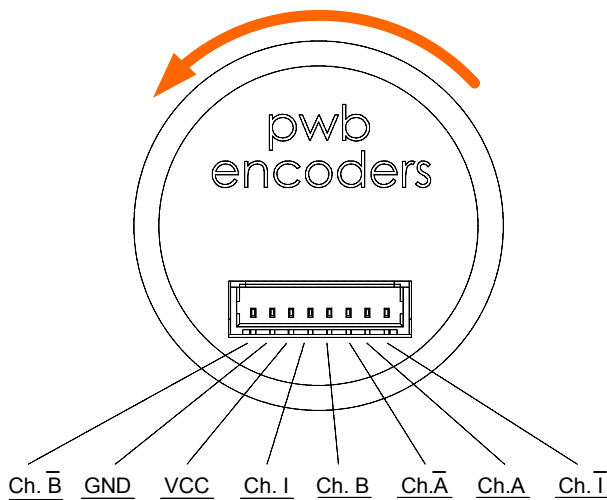
Mechanic performance: S (shaft with connector)



Mechanic performance: H (hollow shaft with connector)



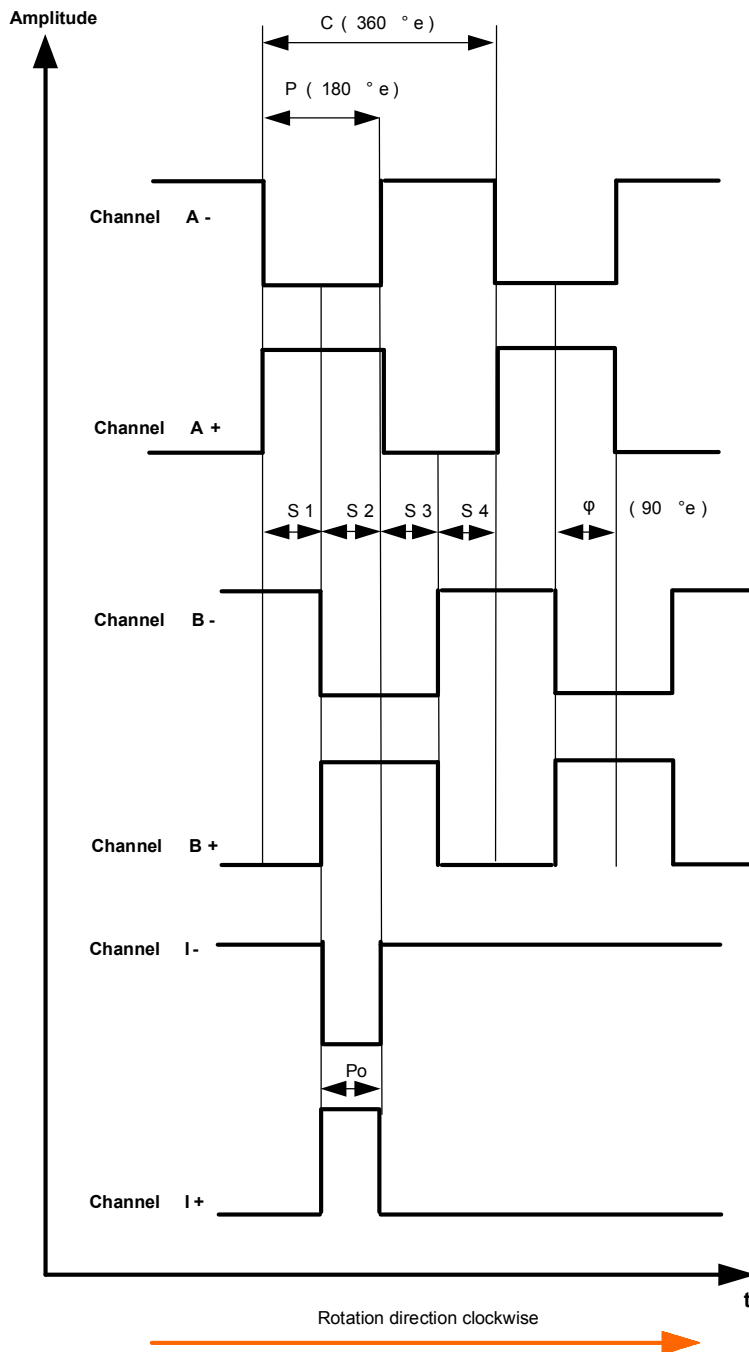
Electrical interface



Pin-out description

Pin	Output pin	Description	Wire colors (UL 1061)
1	B -	Channel B-	red
2	GND	Ground	green
3	Vcc	Power supply	blue
4	I +	Index I+	purple
5	B +	Channel B+	brown
6	A -	Channel A-	yellow
7	A +	Channel A+	orange
8	I -	Index I -	black

Electrical interface



Definitions

Counts per Revolution (CPR):

The number of bar and window pairs or increments per revolution of the code wheel.

One Cycle (C):

360 electrical degrees (°e), one period of the signal, caused by one pair of bar and window.

Pulse Width (P):

The number of electrical degrees that an output is high during one cycle. This value is nominally 180 °e.

State Width (S):

The number of electrical degrees between a transition in the output of channel A and the neighbouring transition in the output of channel B. There are 4 states per cycle, each nominally 90 °e.

Phase (φ):

The number of electrical degrees between the centre of the high state of channel A and the center of the high state of channel B. This value is nominally 90 °e.

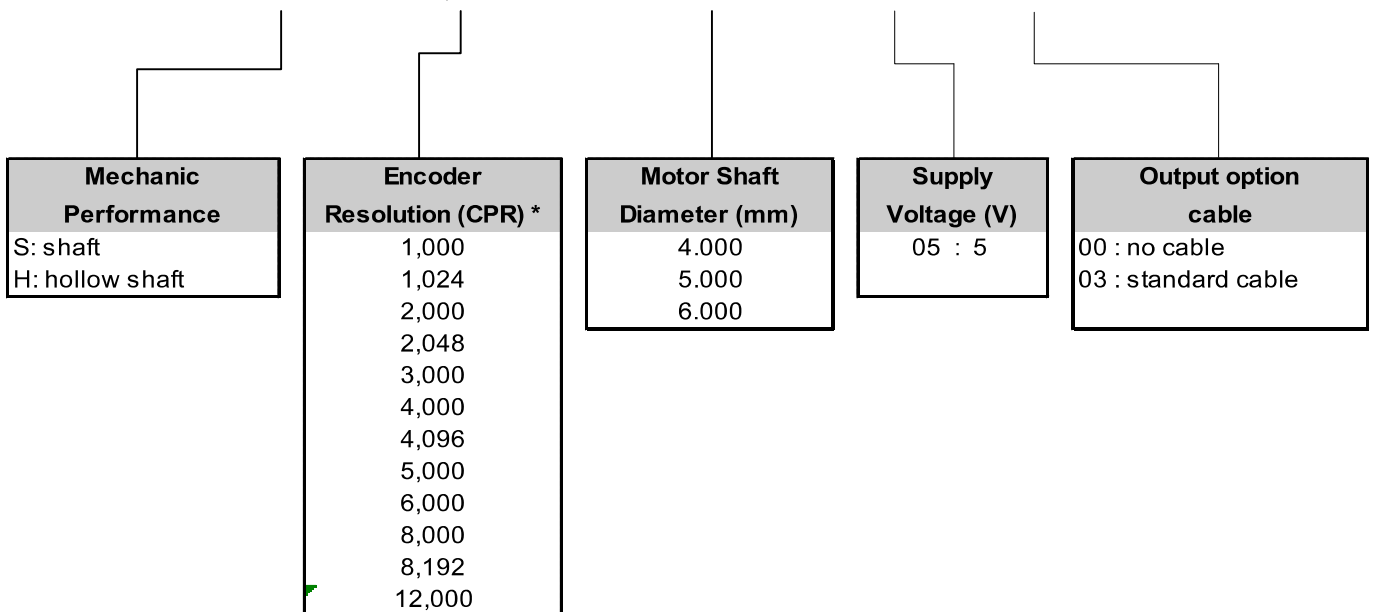
Position Error (ΔQ):

The angular difference between the actual angular shaft position and the position indicated by the encoder cycle count.

Ordering information

Ordering code:

MEHR 25 X - XX,XXX - X.XXX - XX - XX



Note:

* other encoder resolutions on request

Available accessories see page 8 (no parts of standard delivery):

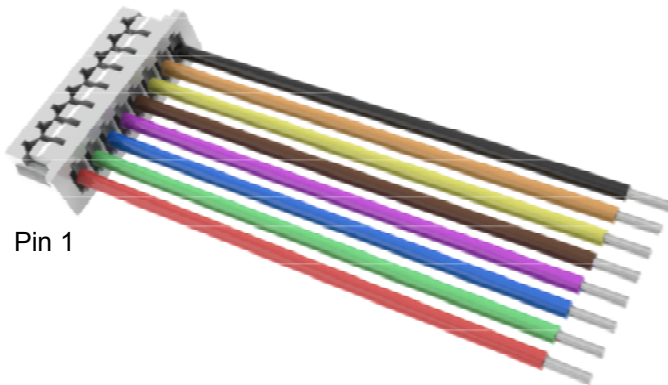
- cable 300 mm length

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.

Available accessories



Pin 1

Standard cable length 300 mm
8 wires (UL 1061 / AWG 26)

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.