

# Rotary Measuring Technology

## Incremental shaft encoder

### Miniature Type 2400



- High performance at a competitive price
- IP 64
- Wide temperature range (-20 ... +85 °C)
- Chromated housing is resistant to cooling lubricants and other environmental influences
- Sturdy cable outlet with multiple clamping
- Temperature compensation
- Broad input voltage range (5 ... 24 V or 8 ... 30 V)
- Highly flexible cable withstands constant flexing from 0 °C ... 70 °C)
- Low power consumption despite high scanning rate
- Reverse connection protected and Short-circuit proof
- **Kübler encoder type 24xx meet German Railways standard EN 50121\*\***

#### Mechanical characteristics:

Speed:	max. 12 000min <sup>-1</sup>
Rotor moment of inertia:	appr. 0,1 x 10 <sup>-6</sup> kgm <sup>2</sup>
Starting torque:	<0,001 Nm
Radial load capacity of shaft:	10 N
Axial load capacity of shaft:	20 N
Weight:	appr. 0,06 kg
Protection acc. to EN 60529:	IP 64
Working temperature:	-20° C ... +85 °C
Operating temperature:	-20° C ... +90 °C
Shaft	stainless steel
Shock resistance acc. to DIN-IEC 68-2-27	1000 m/s <sup>2</sup> , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s <sup>2</sup> , 55 ... 2000 Hz

#### Electrical characteristics:

Output circuit:	Push-pull	Push-pull
Supply voltage:	5 ... 24 V DC	8 ... 30 V DC
Power consumption (no load):	max. 50 mA	max. 50 mA
Permissible load/channel:	max. 50 mA	max. 50 mA
Pulse frequency:	max. 160 kHz	max. 160 kHz
Signal level high:	min. U <sub>B</sub> -2,5 V	min. U <sub>B</sub> -3 V
Signal level low:	max. 0,5 V	max. 2,5 V
Rise time t <sub>r</sub> :	max. 1 µs	max. 1 µs
Fall time t <sub>f</sub> :	max. 1 µs	max. 1 µs
Short circuit proof outputs:	yes	yes
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

#### Applications:

- Pick and place machines
- Handling machines for electronic components
- Quality testing machines
- Medical machines
- Mail opening and mail stuffing machines
- Check weighers
- Labeling machines
- Mole machines (camera control)

#### Pulse rates available at short notice:

10, 25, 36, **50**, 60, **100**, 125, 180, **200**, 250, **360**, **500**, 512, **1000**, **1024**, 1080

#### \*\* Kübler encoder type 24xx meets German Railways standard

An independent test laboratory (TTI-P-G115/96-01) approved by the German Accreditation Council (DAR) certified the compliance with the railway standard, according to EN 50121.

We will gladly send you a copy of the test report on request. When ordering an encoder to the railway standard, please be sure to state this explicitly on the order.



### Miniature Type 2400

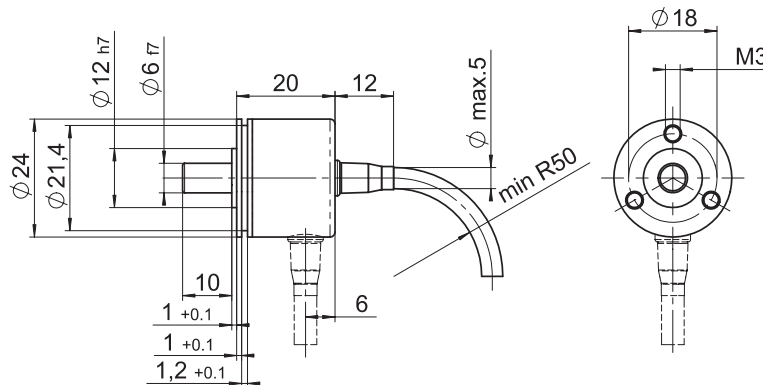
#### Terminal assignment

Signal:	0V	+U <sub>B</sub>	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	
Colour:	WH	BN	GN	YE	GY	PK	BU	RD	
without inverted signal:	WH	BN	GN		YE		GY		

Isolate unused outputs before initial start-up

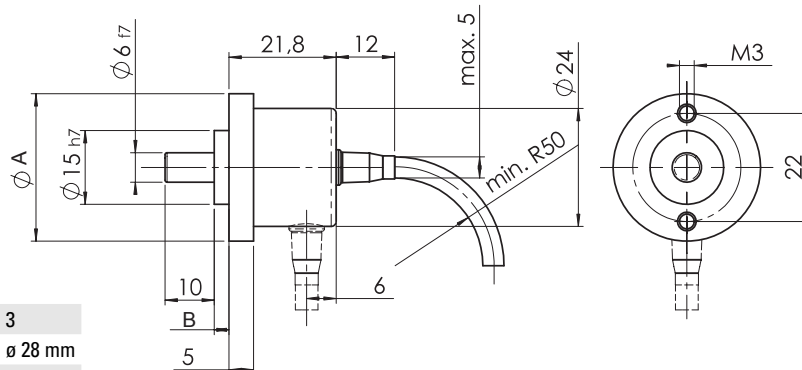
#### Dimensions:

Flange type 1 (Ø24 mm)



Flange type 2 (Ø 30 mm)

Flange type 3 (Ø 28 mm)



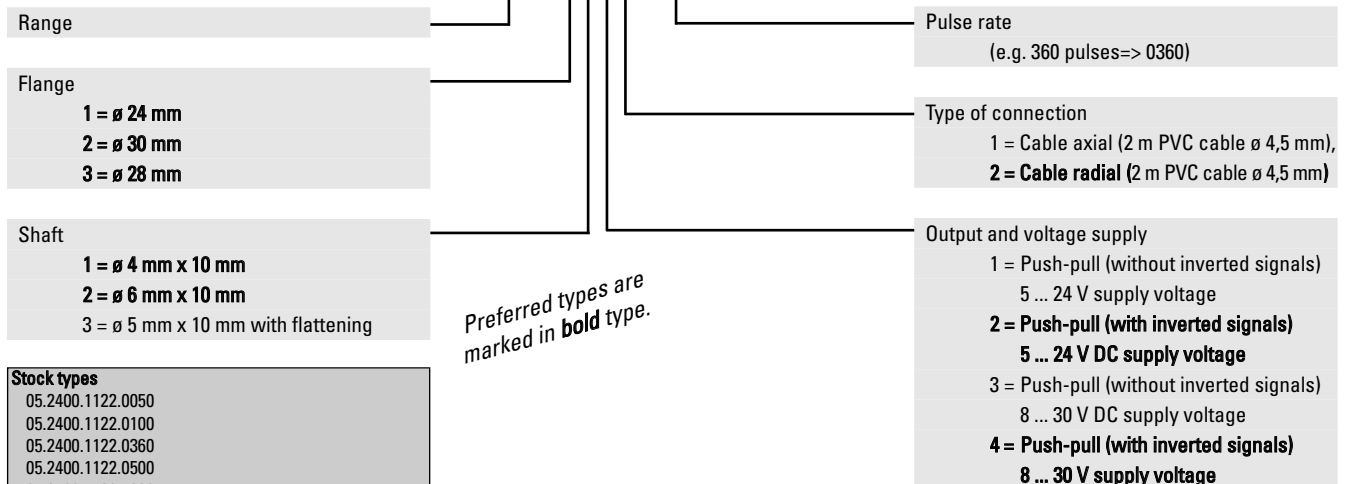
Flange type	2	3
A	Ø 30 mm	Ø 28 mm
B	3 mm	2 mm

#### Mounting advice:

Do not connect encoder and drive rigidly to one another at shafts and flanges! We recommend the use of suitable couplings (see chapter Accessories).

#### Order code:

05.2400.XXXX.XXXX



#### Stock types

05.2400.1122.0050  
05.2400.1122.0100  
05.2400.1122.0360  
05.2400.1122.0500  
05.2400.1122.1000  
05.2400.1122.1024  
05.2400.3321.1000  
05.2400.3341.1000  
05.2400.3331.0500  
05.2400.3331.1000