

# HIDA 58K2 HIDA 58K3

## PRECISION ROTARY ENCODER

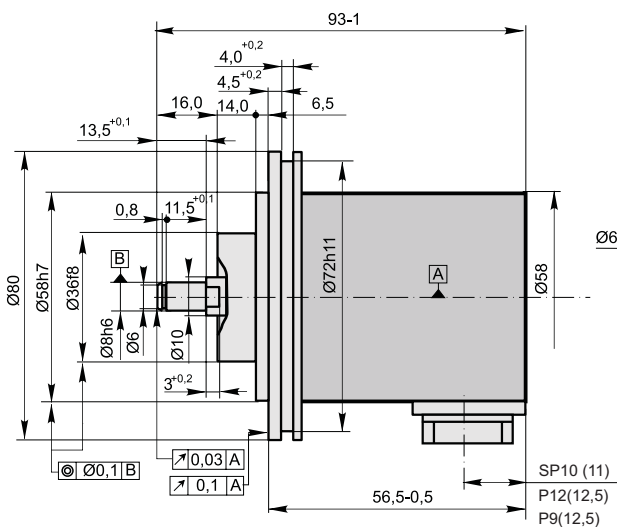


The precision rotary encoder **HIDA58K2**, **HIDA58K3** is used to establish an informational link between the key components of machines, comparators and NC or Digital Readout units. It gives the information about the value and direction of the motion of components. The encoder is used in automatic control, monitoring systems. The special precise gear with module  $m=0758$ ,  $z=21$ ,  $\alpha=25^\circ$ , which is in gearing with precise rack bar could be mounted on the shaft of encoder. It is recommended to do fixation of gear on the shaft by adhesive Loctite 420 or epoxy adhesive. The rack bar is mounted on the object surface, thus the measurement of linear displacement is available. Moreover the shaft of encoder could be connected with the shaft of object via compensative coupling, thus the information about rotary motion of object is available.

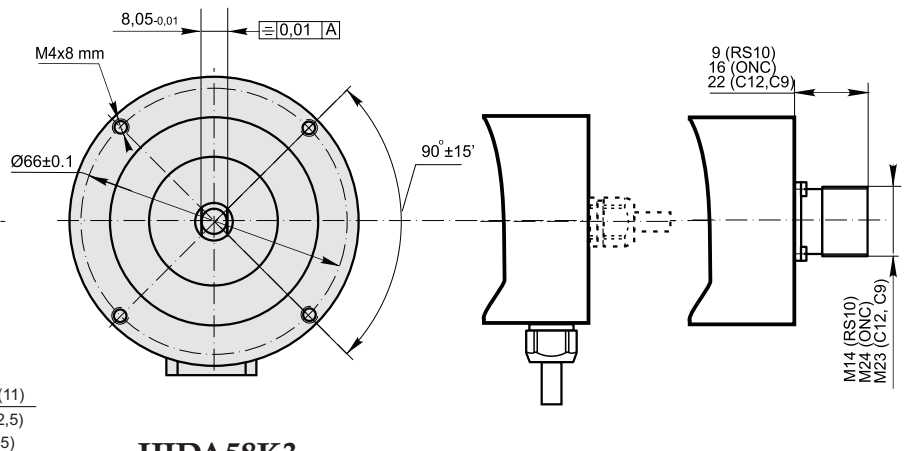
High rigidity to radial and axial load to the shaft of encoder

The encoder has three versions of output signals:

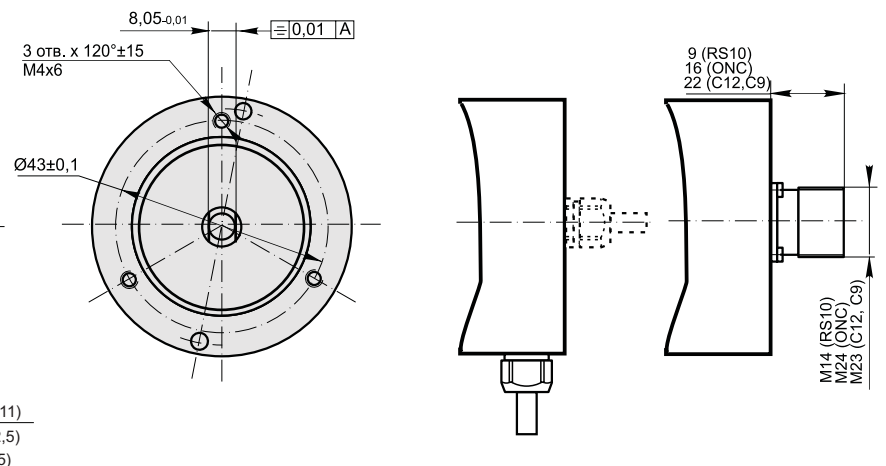
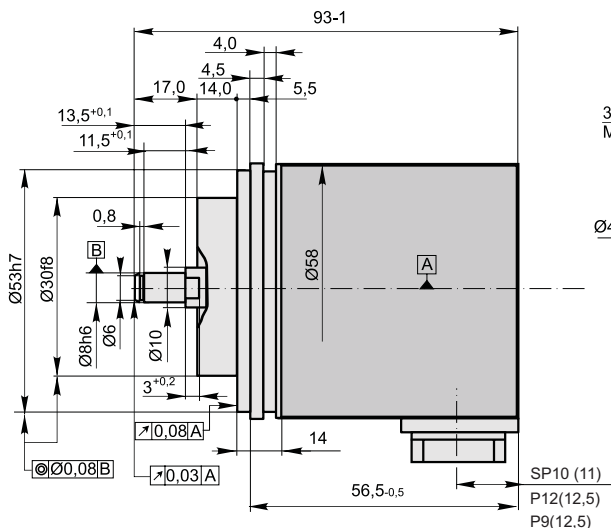
- sinusoidal signals, with amplitude approx.  $11 \mu A_{pp}$ ;
- sinusoidal signals, with amplitude approx.  $1 V_{pp}$ ;
- square-wave signals TTL or HTL.



**HIDA58K2**



**HIDA58K3**



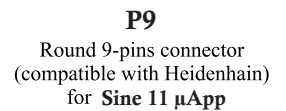
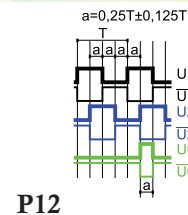
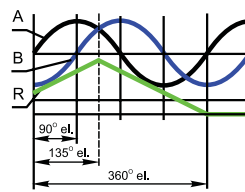
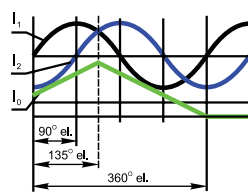
## Mechanical data

• Line number on disc (Z):	100 250 500 600 800 1000 1024 1125 1250 1500 2000 2048 2500 3000 3600 4000 5000 9000 10800	• Starting torque at 20°C	≤ 0.2 Ncm
• Pulse number per shaft revolution for Square-wave version:	Z x k, where k=1, 2, 3, 4, 5, 8, 10	• Moment of inertia of rotor	≤ 17 gcm <sup>2</sup>
• Maximum shaft speed	10000 rpm	• Protection (IEC 529)	IP64
• Maximum shaft load:		• Maximum weight	0.25 kg
- axial	≤ 40 N	• Operating temperature	-10...+70°C
- radial (at shaft end)	≤ 60 N	• Storage temperature	-30...+80°C
• Accuracy (T <sub>1</sub> -period of lines on disc)	±0.1T <sub>1</sub> arc. sec	• Maximum humidity (without condensation of moisture)	98 %
		• Permissible vibration (55 to 2000 Hz)	≤ 100 m/s <sup>2</sup>
		• Permissible shock (11 ms)	≤ 1000 m/s <sup>2</sup>

## Electrical data

Version	Sine 11 μApp	Sine 1 Vpp	□ TTL; □ HTL
• Power supply (U <sub>p</sub> )	+5 V ±5%	+5 V ±5%	+5 V ±5%; +(10...30) V ±5%
• Maximum consumed current (without load)	80 mA	120 mA	120 mA
• Light source	LED	LED	LED
• Incremental signals	Two sinusoidal I <sub>1</sub> and I <sub>2</sub> . Amplitude at 1 kΩ load: - I <sub>1</sub> = 7-16 μA - I <sub>2</sub> = 7-16 μA	Two sinusoidal A and B. Amplitude at 120 Ω load: - A = 0.6-1.2 V - B = 0.6-1.2 V	Square-wave U <sub>1</sub> , U <sub>2</sub> and their inverted $\bar{U}_1$ , $\bar{U}_2$ . Signal levels at 20 mA load current: - low ("0" logic) ≤ 0.5 V at U <sub>p</sub> =+5 V - low ("0" logic) ≤ 1.5 V at U <sub>p</sub> =10 to 30 V - high ("1" logic) ≥ 2.4 V at U <sub>p</sub> =+5 V - high ("1" logic) ≥ (U <sub>p</sub> -2) V at U <sub>p</sub> =10 to 30 V
• Reference signal	One quasi-triangle I <sub>0</sub> peak per revolution. Signal magnitude at 1 kΩ load: - I <sub>0</sub> = 2-8 μA (usable component)	One quasi-triangle R per revolution. Signal magnitude at 120 Ω load: - R = 0.2-0.8 V (usable component)	One square-wave U <sub>0</sub> and its inverted $\bar{U}_0$ per revolution. Signal levels at 20 mA load current: - low ("0" logic) ≤ 0.5 V at U <sub>p</sub> =+5 V - low ("0" logic) ≤ 1.5 V at U <sub>p</sub> =10 to 30 V - high ("1" logic) ≥ 2.4 V at U <sub>p</sub> =+5 V - high ("1" logic) ≥ (U <sub>p</sub> -2) V at U <sub>p</sub> =10 to 30 V
• Maximum operating frequency	(-3dB cutoff) ≥ 160 kHz	(-3dB cutoff) ≥ 160 kHz	160 kHz
• Direction of signals	I <sub>2</sub> lags I <sub>1</sub> with clockwise rotation (viewed from shaft side)	B lags A with clockwise rotation (viewed from shaft side)	U <sub>2</sub> lags U <sub>1</sub> with clockwise rotation (viewed from shaft side)
• Maximum rising/falling time			< 0.5 μs
• Maximum extension cable length	5 m	25 m	25 m

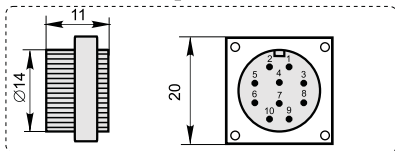
Note: If cable extension is used the power supply conductor section should be not smaller than 0.5 mm<sup>2</sup>.



## Accessories standard

### SP10

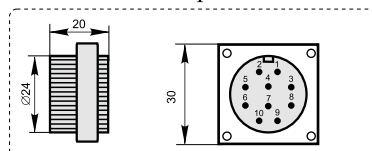
Round 10-pins connector



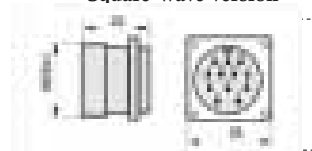
## Accessoires on option

### BP10

Round 10-pins connector

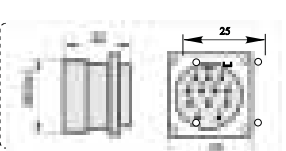


**P12**  
Round 12-pins connector (compatible with Heidenhain) for Sine 1 Vpp and Square-wave version



### P9

Round 9-pins connector (compatible with Heidenhain) for Sine 11 μApp



## Order form

HIDA 58K2/A58K3 - □□□□□ - □□ - □□ / □□□□

Pulse number per revolution:  
100...  
10800...

Output:  
05L - 5VDC Line driver TTL  
24H - 10...30VDC Line driver HTL  
5AC - 5VDC, Analog current sine 11 μApp  
5AV - 5VDC, Analog voltage sine 1Vpp

Output of connector:  
H4 - connector on housing axial  
H5 - connector on housing radial

Type of connector:  
BP10 - round, 10 pins  
SP10 - round, 10 pins  
P12 - round, 12 pins  
P9 - round, 9 pins