HIDA 58H

PRECISION ROTARY ENCODER

The encoder **HIDA58H** is used to measure angular position of the key components of machines, industrial robots, comparators, rotary tables, servodrives, deviding equipment and to establish an informational link with DCC, NC or Digital Readout units. The encoder has integrated stator coupling so it can be fixed directly on the object shaft. Adapter (delivered on option) can be used for mounting convenience.

The encoder is used in automatic control, adjusting and monitoring systems .

The case of the encoder is fixed to an object by means of four screws M3 or through adapter. The hollow shaft of the encoder is connected with an object shaft by means of two mounting screws M3. There is the possibility of shaft fixation from both flange sides (version on option). If encoder is mounted through hollow shaft on the long object shaft (l=56мм), it is necessary to remove the protective cover. When the cover is removed it is possible to fix encoder to object shaft from the cover side.

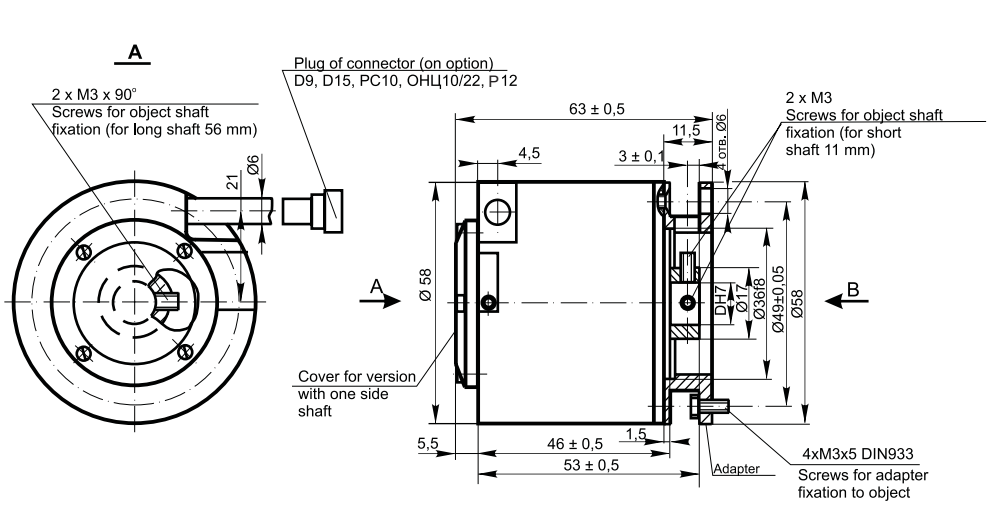
The encoder has three versions of output signals:

- sinusoidal signals, with amplitude approx. 11 μA_{pp};
- sinusoidal signals, with amplitude approx. 1 V_{pp};
- square-wave signals (TTL) with integrated subdividing electronics for interpolation x1, x2, x5, x10.

■ Mechanical Data

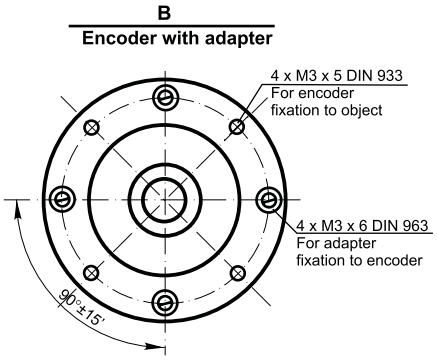
•Line number on disc (Z):	100 250 500 600 800 1000 1024 1125 1250 1500 2000 2500 3000 3600 4000 5000 9000 10800
•Number of output pulses per revolution for Square-wave version: **Z x k**, where k = 1,2,3,4,5,8,10	
•Maximal mech. speed	10000 rpm
•Permissible motion of shaft:	
- axial	±0,03 mm
- radial	0,05 mm
•Accuracy (T_1-period of lines on disc)	$\pm 0.1T_1$ arc. sec
- on option for z < 5000	$\pm 0.05T_1$ arc. sec
- on option for z ≥ 5000	±12,0 arc. sec

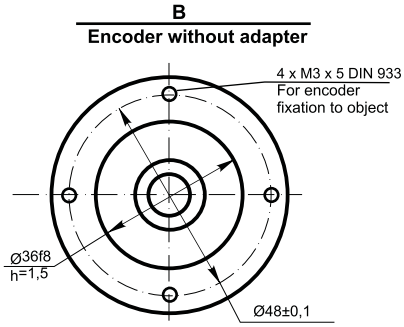
•Starting torque at 20°C	≤ 0,02 N
•Moment of inertia of rotor	< $1,5x10^{-4}$ kgm^2
•Protection (housing) (IEC 529)	IP64
•Protection (shaft side) (IEC 529)	IP54
•Maximum weight without cable	0,35 kg
•Operating temperature	0...+70°C
•Storage temperature	-30...+80°C
•Maximum humidity (without condensation of moisture)	≤ 98 %
•Permissible vibration (55 to 2000 Hz)	≤ 100 m/s^2
•Permissible shock (5 ms)	≤ 300 m/s^2



D, mm = Ø 6, Ø 8,Ø 10, Ø 12, Ø 14* (on option)

*For one side fixation from encoder flange side

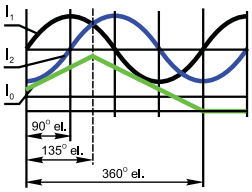


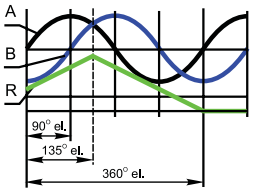


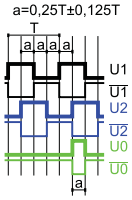
■ Electrical Data

Version	Sine 11 µApp	Sine 1 Vpp	⊓⊔ TTL; ⊓⊔ HTL
♦Power supply ($U_П$), B	+5 B ±5%	+5 B ±5%	+5 B ±5%; +(10...30) B±5%
♦Maximum consumed current (without load)	80 mA	120 mA	120 mA
♦Light source	LED	LED	LED
♦Incremental signals	Two sinusoidal I_1 and I_2. Amplitude at 1 kΩ load: - I_1 = 7-16 µA - I_1 = 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 U1, U2 and their inverted $\overline{U1}$, $\overline{U2}$. Signal levels at 20 mA load current: - low ("0" logic) ≤ 0.5 V at U_p=+5 V - low ("0" logic) ≤ 1.5 V at U_p=10 to 30 V - high ("1" logic) ≥ 2.4 V at U_p=+5 V - high ("1" logic) ≥ (U_p-2) V at U_p=10 to 30 V
♦Reference signal	One quasi-triangle I_0 peak per revolution. Signal magnitude at 1 kΩ load: - I_0 = 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 U0 and its inverted $\overline{U0}$ per revolution. Signal levels at 20 mA load current: - low ("0" logic) ≤ 0.5 V at U_p=+5 V - low ("0" logic) ≤ 1.5 V at U_p=10 to 30 V - high ("1" logic) ≥ 2.4 V at U_p=+5 V - high ("1" logic) ≥ (U_p-2) V at U_p=10 to 30 V
♦Maximum operating frequency	(-3dB cutoff) ≥ 160 kHz	(-3dB cutoff) ≥ 160 kHz	160 kHz
♦Direction of signals	I_2 lags I_1 with clockwise rotation (viewed from shaft side)	B lags A with clockwise rotation (viewed from shaft side)	U2 lags U1 with clockwise rotation (viewed from shaft side)
♦Maximum rising and falling time			< 0.5 µs
♦Standard cable length	1 m, without connector	1 m, without connector	1 m, without connector
♦Maximum 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^2.

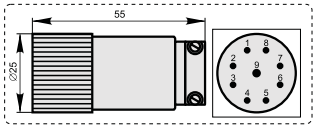




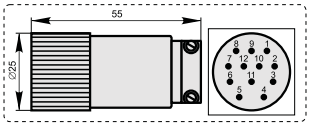


■ Accessories

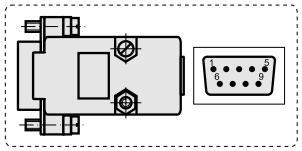
P9 - 9 -pin round connector for **Sine 11 µApp**



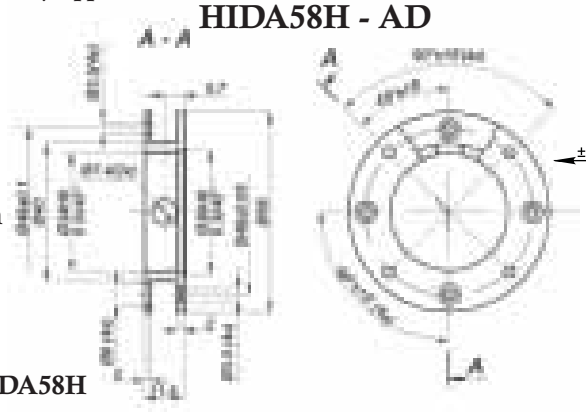
P12 - 12-pin round connector for **Sine 1 Vpp and Square-wave version**



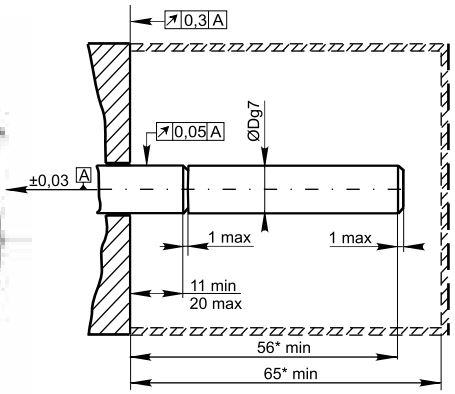
D9 -9-pin flat connector for all versions of **HIDA58H**



Adapter
HIDA58H - AD



■ Requirements to object



* Length of objec shaft
56 min - for version with protective cover;
>56 - for version without protective cover

■ Order form

HIDA 58H – □□□□ – □□ – □□ – □□□/□

Pulse number per revolution **100...108000**

Diameter of shaft hole: **6, 8, 10, 12,14** mm

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

Cable length :
01 - 1м
02 - 2м
03 - 3м
... - ...

Type of connector:
N - without connector
D9 - flat, 9 pins
P9 - round, 9 puns
P12 - round, 12 pins

Adapter :
HIDA58H-AD