

HIDA 58D

PRECISION ROTARY ENCODER



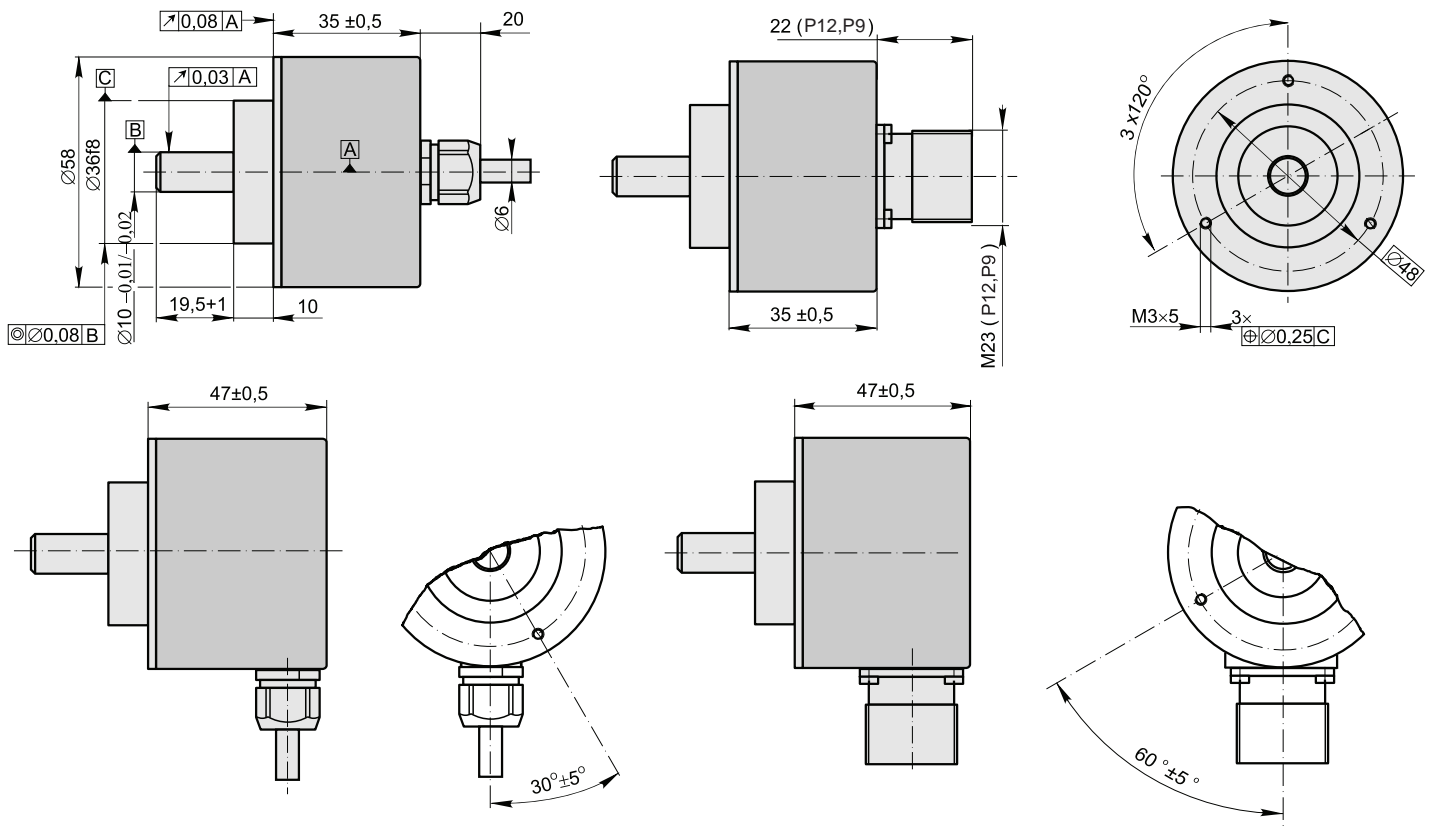
The precision rotary encoder **HIDA58D** is used to establish an informational link between the key components of machines, industrial robots, comparators and DCC, NC or Digital Readout units. It gives information about the value and direction of the motion components. The encoder is used in automatic control, on-line gauging, in process monitoring systems, etc.

The encoder has three versions of output signals:

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

■ Mechanical Data

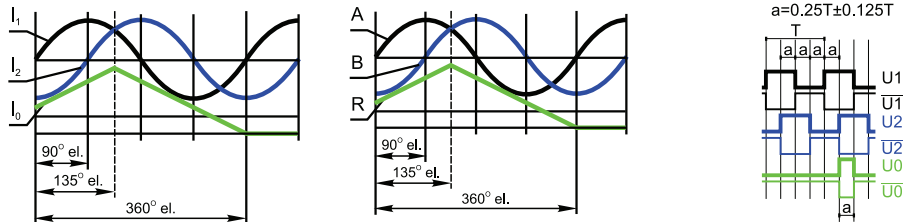
◆ Line number on disc (Z): 100, 250, 500, 600, 800, 1000, 1024, 1125, 1250, 1500, 2000, 2500, 3000, 3600, 4000, 5000, 9000, 10800	◆ Starting torque at 20°C	≤ 0.2 Ncm
◆ Pulse number per shaft revolution for Square-wave version: Z x k, where k=1, 2, 3, 4, 5, 8, 10	◆ Moment of inertia of rotor	< 15 gcm ²
◆ Maximum shaft speed	◆ Protection (IEC 529)	IP64
◆ Maximum shaft load:	◆ Maximum weight without cable	0.25 kg
- axial	◆ Operating temperature	-10...+70 °C
- radial (at shaft end)	◆ Storage temperature	-30...+80 °C
◆ Accuracy (T ₁ -period of lines on disc)	◆ Maximum humidity	98 %
	(without condensation of moisture)	
	◆ Permissible vibration (55 to 2000 Hz)	≤ 100 m/s ²
	◆ Permissible shock (11 ms)	≤ 1000 m/s ²



Electrical Data

Version	Sine 11 μ App	Sine 1 Vpp	TTL; HTL
◆ Power supply (U_p)	+5 V \pm 5% /<80 mA	+5 V \pm 5% /<120 mA	+5 V \pm 5%; +(10 to 30) V /<120 mA
◆ Light source	LED	LED	LED
◆ Incremental signals	Two sinusoidal I_1 and I_2 . Amplitude at 1 k Ω load: - $I_1 = 7-16 \mu$ A - $I_2 = 7-16 \mu$ A	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_1 , U_2 and their inverted $\overline{U_1}$, $\overline{U_2}$. 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) $\geq (U_p-2)$ V at $U_p=10$ to 30 V
◆ Reference signal	One quasi-triangle I_0 peak per revolution. Signal magnitude at 1 k Ω load: - $I_0 = 2-8 \mu$ A (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_0 and its inverted $\overline{U_0}$ 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) $\geq (U_p-2)$ 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)	U_2 lags U_1 with clockwise rotation (viewed from shaft side)
◆ Maximum rising and falling time			< 0.5 μ s
◆ 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 mm².

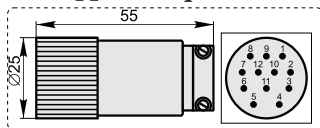


Accessories

Connectors

P12

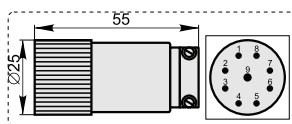
12-pin round connector for Sine 1 Vpp and Square-wave version



Cable armour Ø10

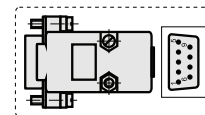
P9

9-pin round connector for Sine 11 μ App



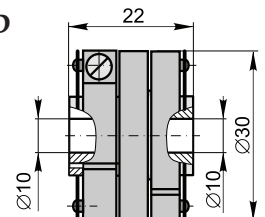
D9

9-pin flat connector for all versions of HIDA58D



Coupling

HIDA58D - SC30



Order form

HIDA 58D - - - /

Line number:

100...

5000...

Output:

05L - 5VDC Line driver TTL

24H-10...30VDC Line driver HTL

5AC-5VDC, Analog current sine 11 μ App

5AV-5VDC, Analog voltage sine 1Vpp

Cable length:

401 - 1m (4-axial outlet)

402 - 2m

503 - 3m (5-radial outlet)

... - ...

or

H5 - connector axially mounted on the encoder

H4 - connector radially mounted on the encoder

Type of connector:

N - without conn.

D9 - flat, 9 pins

P9 - round, 9 pins

P12 - round, 12 pins

Coupling:

HIDA58D-SC30