

A58H PHOTOELECTRIC ROTARY ENCODER

(A58H-A, A58H-AV, A58H-F)



The encoder **A58H** 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 ($l=56\text{mm}$), 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 by its output signals:

A58H-A - sinusoidal signals, with amplitude approx. $11 \mu\text{A}_{\text{pp}}$;

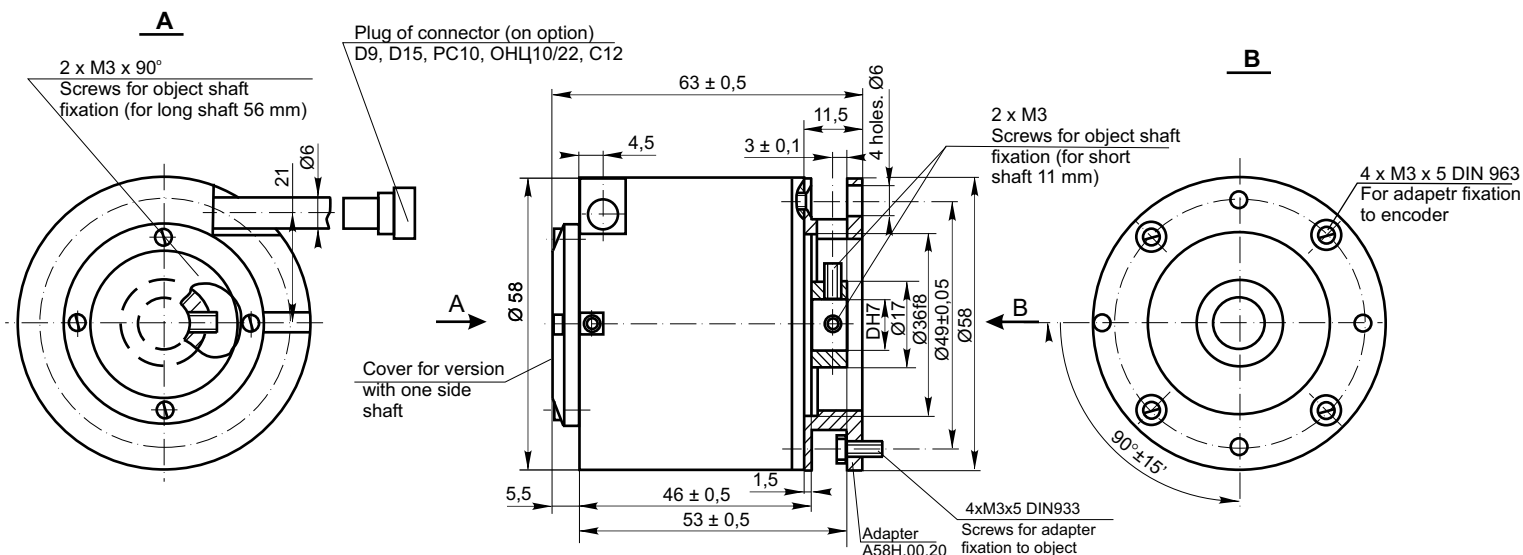
A58H-AV - sinusoidal signals, with amplitude approx. 1V_{pp} ;

A58H-F - square-wave signals (TTL) with integrated subdividing electronics for interpolation $\times 1, \times 2, \times 5, \times 10$.

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Mechanical Data

□ Line number on disc:	100 250 500 600 800 1000 1024	- on option for $z \geq 5000$	$\pm 12,0 \text{ arc. sec}$
(z)	1125 1250 1500 2000 2500 3000	□ Starting torque at 20°C	$\leq 0,02 \text{ N}$
	3600 4000 5000 9000 10800	□ Moment of inertia of rotor	$< 1,5 \times 10^{-4} \text{ kgm}^2$
□ Number of output pulses per revolution for A58H-F :	$z \times k$, where k - coefficient of interpolation; $k = 1, 2, 5, 10$	□ Protection (shaft side) (IEC 529)	IP54
□ Maximal mech. speed	10000 rpm	□ Maximum weight without cable	0,35 kg
□ Permissible motion of shaft:		□ Operating temperature	$0 \dots +70^\circ\text{C}$
- axial	$\pm 0,03 \text{ mm}$	□ Storage temperature	$-30 \dots +80^\circ\text{C}$
- radial	0,05 mm	□ Maximum humidity (without condensation of moisture)	$\leq 98 \%$
□ Accuracy (T_1 -period of lines on disc)	$\pm 0,1 T_1 \text{ arc. sec}$	□ Permissible vibration (55 to 2000 Hz)	$\leq 100 \text{ m/s}^2$
- on option for $z \leq 5000$	$\pm 0,05 T_1 \text{ arc. sec}$		



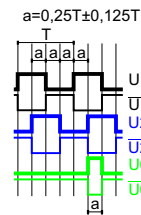
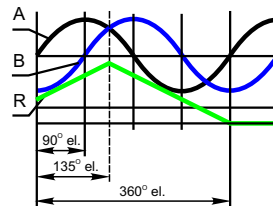
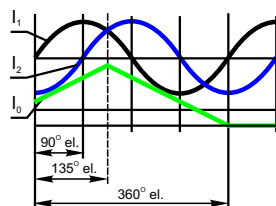
D, mm = Ø 6, Ø 8, Ø 10, Ø 12, Ø 14* (on option)

*For one side fixation from encoder flange side

Electrical Data

Version

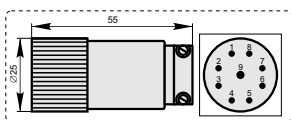
	A58H-A $\sim 11 \mu\text{App}$	A58H-AV $\sim 1 \text{Vpp}$	A58H-F \square TTL; \square HTL
◆ Power supply (U_n), B	+5 B $\pm 5\%$	+5 B $\pm 5\%$	+5 B $\pm 5\%$; +(10...30) B $\pm 5\%$
◆ Maximum consumed current (without load)	80 mA	120 mA	120 mA
◆ Light source	LED	LED	LED
◆ Incremental signals	Two sinusoidal I_1 and I_2 . Amplitude at 1 k Ω load: при нагрузке 1 кОм: - $I_1 = 7-16 \mu\text{A}$ - $I_2 = 7-16 \mu\text{A}$	Two sinusoidal A and B. A и B, величиной 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) $\leq 0.5 \text{ V}$ at $U_p=+5 \text{ V}$ - low ("0" logic) $\leq 1.5 \text{ V}$ at $U_p=10$ to 30 V - high ("1" logic) $\geq 2.4 \text{ V}$ at $U_p=+5 \text{ V}$ - high ("1" logic) $\geq (U_p-2) \text{ V}$ at $U_p=10$ to 30 V
◆ Reference signal	One quasi-triangle I_0 peak per revolution. Signal magnitude at 1 k Ω load: - $I_0 = 2-8 \mu\text{A}$ (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 $U0$ and its inverted $\overline{U0}$ per revolution. Signal levels at 20 mA load current: - low ("0" logic) $\leq 0.5 \text{ V}$ at $U_p=+5 \text{ V}$ - low ("0" logic) $\leq 1.5 \text{ V}$ at $U_p=10$ to 30 V - high ("1" logic) $\geq 2.4 \text{ V}$ at $U_p=+5 \text{ V}$ - high ("1" logic) $\geq (U_p-2) \text{ V}$ at $U_p=10$ to 30 V
◆ Maximum operating frequency	(-3dB cutoff) $\geq 160 \text{ kHz}$	(-3dB cutoff) $\geq 160 \text{ kHz}$	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
◆ Cable diameter	6 mm	6 mm	6 mm
◆ Maximum cable length	5 m	15 m	30 m for TTL



Accessories

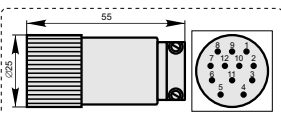
C9

9-pin round connector for A58H-A



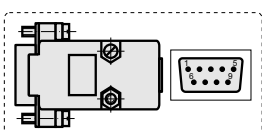
C12

12-pin round connector for A58H-F and A58H-AV

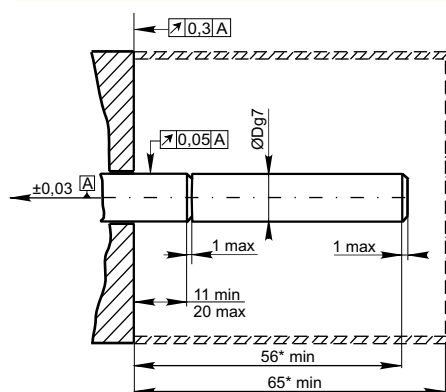


D9

9-pin flat connector for all version of A58H



Requirements to object



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

Order form

A58H - XX - XXXX - XX - XXX - XX / X

Version by output signals:
A, AV or F

Pulse number per revolution
100...108000

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

Power supply:
05V- +5V
30V - +(10...30)V

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

Type of connector:
W - without connector
D9 - flat, 9 pins
C9 - round, 9 pins
C12 - round, 12 pins