

## MAIN EXPORT COUNTRIES:



The company under the name "Precizika Metrology" began work after the change of name of the Lithuanian - American Joint Venture "Brown & Sharpe - Precizika". The company has a proud history of old traditions in the leadership of design and production of metrological equipment. Its workforce has been involved for over fifty years in the supply of measuring technology and systems to automate factories as well as in the development of optical scale manufacturing technology.

In 2000, the production process was certified to fully meeting the requirements of EN ISO 9002:1994, in 2003 – EN ISO 9001:2000.

The company's goal is to consistently supply high quality products and services to meet customer demands on a timely basis. The company's main products are linear and angular glass scale gratings, and the linear and rotary displacement measuring systems.

JSC "Precizika Metrology" represents worldwide known companies and suppliers of measuring equipment, CNC centers, executes installation and services of them, trains the users, and executes upgrading of used CMM and manual cutting machine-tools.

# A58H1

PHOTOELECTRIC ROTARY ENCODER



The encoder A58H1 is used to measure angular position of the key machine components, industrial robots, comparators, rotary tables, servo drives and to establish an informational link with DCC, NC or Digital Readout Units. The encoder has external flexible coupling. The encoder is used in automatic control, on-line gauging, process monitoring systems, etc. Three versions of output signals are available:

- A58H1-A - sinusoidal signals, with amplitude approx. 11  $\mu$ App;
- A58H1-AV - sinusoidal signals, with amplitude approx. 1 Vpp;
- A58H1-F - square-wave signals (TTL) with integrated subdividing electronics for interpolation x1, x2, x3, x4, x5, x8, x10.



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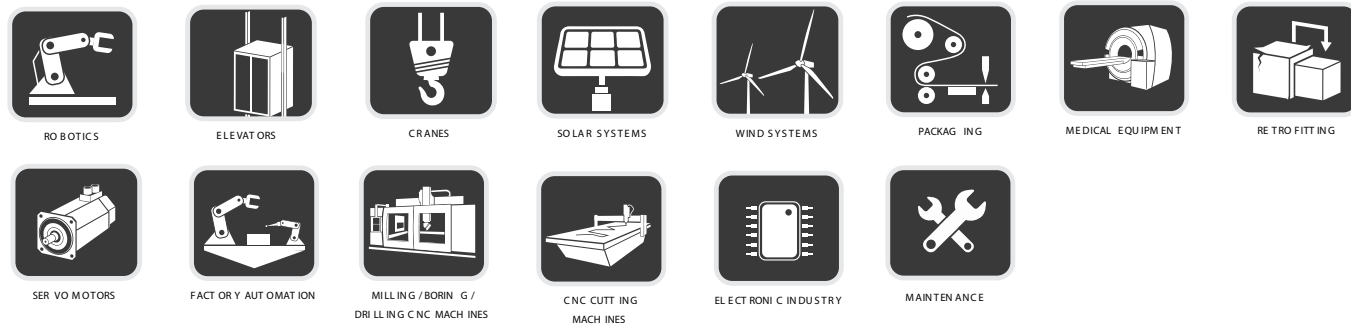
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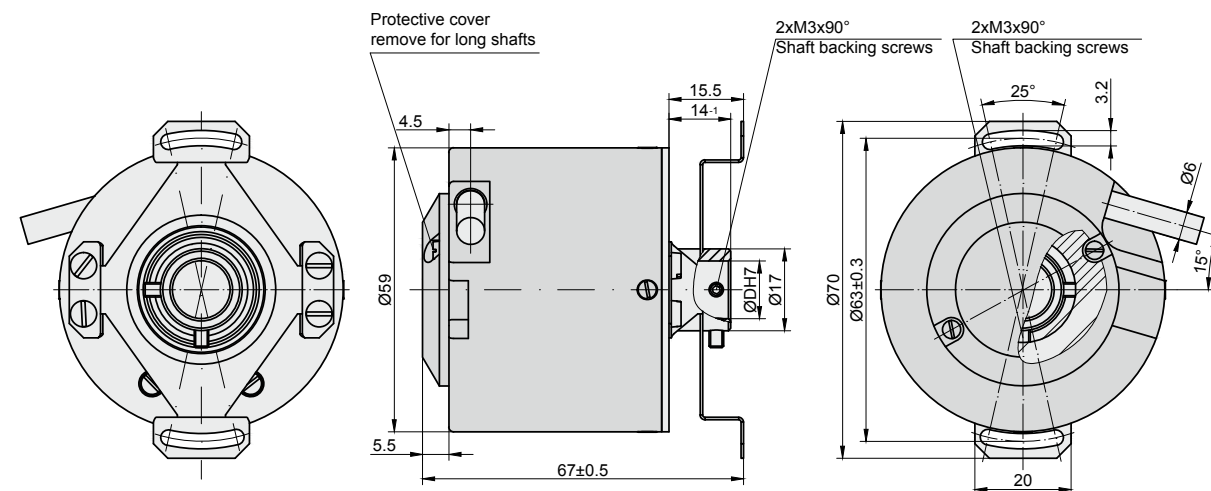
# A58H1

## RECOMMENDED APPLICATIONS



## 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	Rotor moment of inertia	$< 1.5 \times 10^{-4} \text{ kgm}^2$
Pulse number per shaft revolution for A58H1-F	Z x k, where k=1,2,3,4,5,8,10	Protection (housing) (IEC 529)	IP 64
Maximum shaft speed	10000 rpm	Protection (shaft side) (IEC 529)	IP 64
Permissible motion of shaft: - axial - radial (at shaft end)	$\pm 0.03 \text{ mm}$ $0.05 \text{ mm}$	Maximum weight without cable	0.3 kg
Accuracy ( $T_1$ -period of lines on disc in arc. sec)	$\pm 0.1 T_1 \text{ arc. sec}$	Operating temperature	$-10 \dots +70 \text{ }^\circ\text{C}$
Starting torque at $20 \text{ }^\circ\text{C}$	$\leq 0.025 \text{ Nm}$	Storage temperature	$-30 \dots +80 \text{ }^\circ\text{C}$
		Maximum humidity (non-condensing)	98 %
		Permissible vibration (55 to 2000 Hz)	$\leq 100 \text{ m/s}^2$
		Permissible shock (11 ms)	$\leq 300 \text{ m/s}^2$



D, mm	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14* (on option)
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\*For one side fixation from encoder flange side

## ELECTRICAL DATA

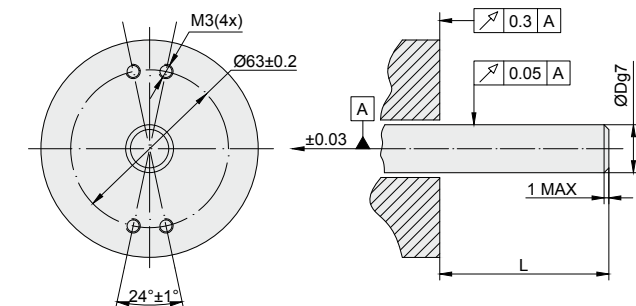
VERSION	A58H1-A $\sim 11 \mu\text{A}_{pp}$	A58H1-AV $\sim 1 \text{ V}_{pp}$	A58H1-F $\square$ TTL; $\square$ HTL
Supply voltage ( $U_p$ )	$+5 \text{ V} \pm 5\%$	$+5 \text{ V} \pm 5\%$	$+5 \text{ V} \pm 5\%$ ; $+(10 \text{ to } 30) \text{ V}$
Max. supply current (without load)	80 mA	120 mA	120 mA
Light source	LED	LED	LED
Incremental signals	Two sinusoidal $I_1$ and $I_2$ Amplitude at 1 k $\Omega$ load: - $I_1 = 7-16 \mu\text{A}$ - $I_2 = 7-16 \mu\text{A}$	Differential sine +A/-A and +B/-B Amplitude at 120 $\Omega$ load: - A = 0.6-1.2 V - B = 0.6-1.2 V	Differential square-wave $U1/\overline{U1}$ and $U2/\overline{U2}$ . Signal levels at 20 mA load current: - low (logic "0") $\leq 0.5 \text{ V}$ at $U_p = +5 \text{ V}$ - low (logic "0") $\leq 1.5 \text{ V}$ at $U_p = 10 \text{ to } 30 \text{ V}$ - high (logic "1") $\geq 2.4 \text{ V}$ at $U_p = +5 \text{ V}$ - high (logic "1") $\geq (U_p - 2) \text{ V}$ at $U_p = 10 \text{ to } 30 \text{ V}$
Reference signal	One quasi-triangular $I_0$ peak per revolution. Signal magnitude at 1 k $\Omega$ load: - $I_0 = 2-8 \mu\text{A}$ (usable component)	One quasi-triangular +R and its complementary -R per revolution. Signals magnitude at 120 $\Omega$ load - R = 0.2-0.8 V (usable component)	One differential square-wave $U0/\overline{U0}$ per revolution. Signal levels at 20 mA load current: - low (logic "0") $< 0.5 \text{ V}$ at $U_p = +5 \text{ V}$ - low (logic "0") $< 1.5 \text{ V}$ at $U_p = 10 \text{ to } 30 \text{ V}$ - high (logic "1") $> 2.4 \text{ V}$ at $U_p = +5 \text{ V}$ - high (logic "1") $> (U_p - 2) \text{ V}$ at $U_p = 10 \text{ to } 30 \text{ V}$
Maximum operating frequency	$(-3 \text{ dB}) \geq 160 \text{ kHz}$	$(-3 \text{ dB}) \geq 180 \text{ kHz}$	$(160 \times k) \text{ kHz}$ , k-interpolation factor
Direction of signals	$I_1$ lags $I_2$ for clockwise rotation (viewed from shaft side)	+B lags +A for clockwise rotation (viewed from shaft side)	$U2$ lags $U1$ with clockwise rotation (viewed from shaft side)
Maximum rise and fall time	-	-	$< 0.5 \mu\text{s}$
Standard cable length	1 m, without connector	1 m, without connector	1 m, without connector
Maximum cable length	5 m	25 m	25 m
Output signals			

Note:

- Maximum working rotation speed (with proper encoder counting) is limited by maximum operating frequency and maximum mechanical rotation speed.
- If cable extension is used, power supply conductor cross-section should not be smaller than  $0.5 \text{ mm}^2$ .

## MOUNTING REQUIREMENTS

L, mm	11 min for one side fixation 56 min for both side fixation 56 max for version with protective cover 11 min for version without protective cover
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## ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C9 12-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector
DIGITAL READOUT DEVICES	CS3000			CS5500			
EXTERNAL INTERPOLATOR	NK						

## ORDER FORM

OUTPUT SIGNAL VERSION :	PULSE NUMBER PER REVOLUTION :	SHAFT HOLE DIAMETER :	SUPPLY VOLTAGE :	CABLE LENGTH:	CONNECTOR TYPE:
A AV F	100 108000	6, 8, 10, 12, 14* mm *with additional hub for shaft mounting, for one side fixation from flange side	05V - +5V 30V - $+(10 \text{ to } 30)\text{V}^*$ *only for A58H-F with HTL output	AR01 - 1m AR02 - 2m AR03 - 3m ...	W - without connector B12 - round, 12 pins C9 - round, 9 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins RS10 - round, 10 pins ONC - round, 10 pins

ORDER EXAMPLES:

- A58H1-AV-1024-6-05V-AR01/W
- A58H1-F-4000-8-30V-AR06/C12
- A58H1-F-4000/500-8-30V-AR06/C12