

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.

A170

PHOTOELECTRIC ANGLE ENCODER



Precision photoelectric angle encoder A170 is used for precise angular displacement measurement of rotary tables, dividers, comparators, antennas and other high precision equipment. It provides information about the value and direction of motion. The encoder is used in automatic control, on-line gauging, process monitoring systems, etc. The stainless steel case of the encoder is mounted using screws. The angle encoder is connected to the motor shaft or spindle via coupling, available optionally. Three versions of output signals are available:

- A170-A - sinusoidal signals, with amplitude approx. 11 μ App;
- A170-AV - sinusoidal signals, with amplitude approx. 1 Vpp;
- A170-F - square-wave signals (TTL) with integrated subdividing electronics for interpolation x1, x2, x5, x10, x20, x25, x50 and x100.

The modification with distance-coded reference marks is available



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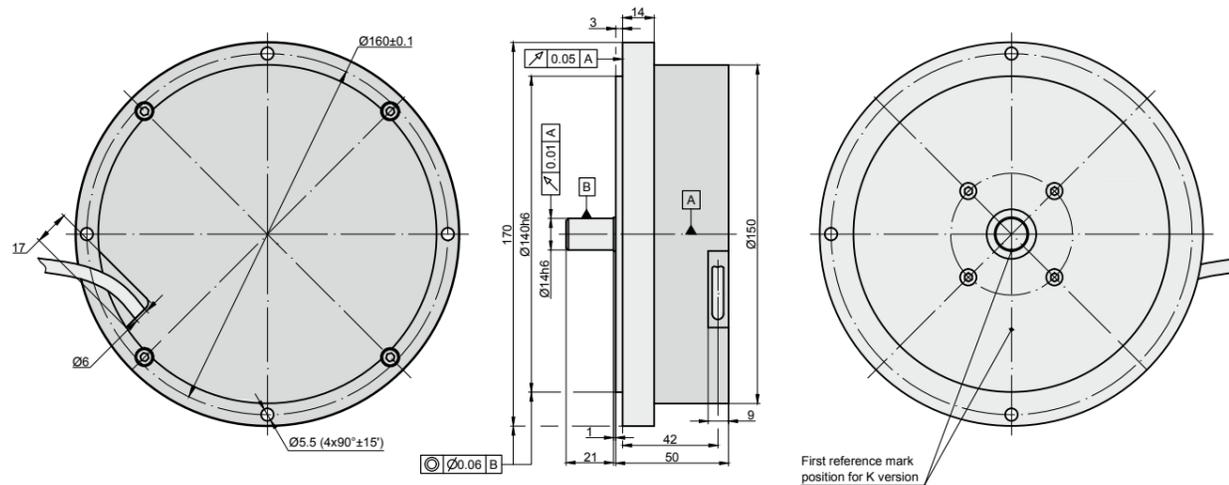
A170

RECOMMENDED APPLICATIONS



MECHANICAL DATA

Line number	18000, 36000	Permissible shaft load:	
Number of output pulses per revolution for A170H-F	18000; 36000; 72000; 90000; 180000; 360000; 720000; 450000; 900000; 1800000; 3600000	- axial	≤ 30 N
Reference signal:		- radial	≤ 30 N
- standard (S)	one per shaft	Starting torque at 20 °C	≤ 0.012Nm
- distance-coded (K) for z = 18000	36 per shaft revolution	Rotor moment of inertia	< 3.7×10 ⁻⁴ kgm ²
- distance-coded (K) for z = 36000	72 per shaft revolution	Protection (IEC 529)	IP64
Permissible mech. speed	≤ 1000 rpm	Maximum weight without cable	3.5 kg
Max. operating speed (depends on number of output pulses)	300 to 500 rpm	Operating temperature	0...+70 °C
Accuracy	±2.0; ±2.5; ±5.0 arc. sec	Storage temperature	-30...+85 °C
		Maximum humidity (non condensing)	98 %
		Permissible vibration	≤ 100 m/s ²
		Permissible shock (6 ms)	≤ 300 m/s ²



ELECTRICAL DATA

VERSION	A170-A $\sim 11 \mu\text{App}$	A170-A V $\sim 1 \text{Vpp}$	A170-F \square TTL
Supply voltage (U _p)	+5 V ± 5% 100 mA max.	+5 V ± 5% 120 mA max.	+5 V ± 5%; 150 mA max.
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 ₂ = 7...16 μA	Differential sine +A/-A and +B/-B Amplitude at 120 Ω load: - A = 0.6...1.2 V - B = 0.6...1.2 V	Differential square-wave U1/U1 and U2/U2. Signal levels at 20 mA load current: - low (logic "0") ≤ 0.5 V - high (logic "1") ≥ 2.4 V
Reference signal	One quasi-triangular I ₀ peak per revolution. Signal magnitude at 1 kΩ load: - I ₀ = 2...8 μA (usable component)	One quasi-triangular +R and its complementary -R per revolution. Signals magnitude at 120 Ω load - R = 2...8 V (usable component)	One differential square-wave U0/U0 per revolution. Signal levels at 20 mA load current: - low (logic "0") < 0.5 V - high (logic "1") > 2.4 V
Maximum operating frequency	(-3 dB cutoff) ≥ 160 kHz	(-3 dB cutoff) ≥ 180 kHz	(160-2500 kHz (depends on interpolation factor)
Direction of signals	I ₂ lags I ₁ for clockwise rotation (viewed from encoder mounting side)	+B lags +A for clockwise rotation (viewed from encoder mounting side)	U2 lags U1 with clockwise rotation (viewed from encoder mounting side)
Maximum rise and fall 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
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 mm².

ACCESSORIES

CONNECTOR 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		
COUPLINGS	SC98-1				SC98-2		
EXTERNAL INTERPOLATOR	NK						

ORDER FORM

OUTPUT SIGNAL VERSION:	PULSE NUMBER PER REVOLUTION:	OPTIONAL LINE NUMBER DISC (Z):	REFERENCE SIGNAL:	ACCURACY GRADE:	CABLE LENGTH:	CONNECTOR TYPE:	COUPLING:
A AV F	18000 ... 3600000	18000 360000	S - one per revolution, K - distance-coded	20 - ±2.0 arc.sec. 25 - ±2.5 arc.sec. 50 - ±5.0 arc.sec.	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	0 - without coupling 1 - SC98-1 2 - SC98-2
ORDER EXAMPLES:		1) A170-F-360000/36000-K-25-AR01/C12-1 2) A170-F-360000-K-25-AR01/C12-1					