

A170H

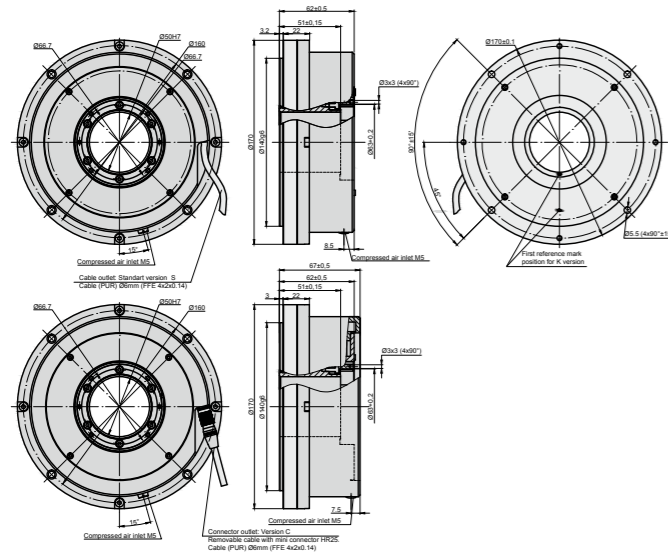
PHOTOELECTRIC ANGLE ENCODER

Photoelectric angle encoder A170H is the high end encoder of the product range. It has a hollow shaft and an integrated stator coupling and is capable of producing up to 3.600.000 output pulses per revolution with the accuracy that can reach up to ±2.5 arc. sec.

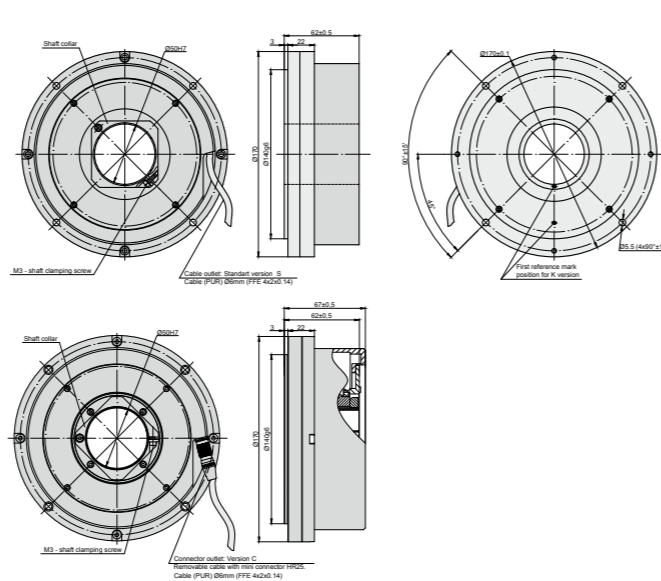
- Analog output signals
- High Resolutions
- Hollow Shaft
- Distance Coded reference mark
- High precision



MOUNTING TYPE H (SCREW)



MOUNTING TYPE P (CLAMP)



MECHANICAL DATA

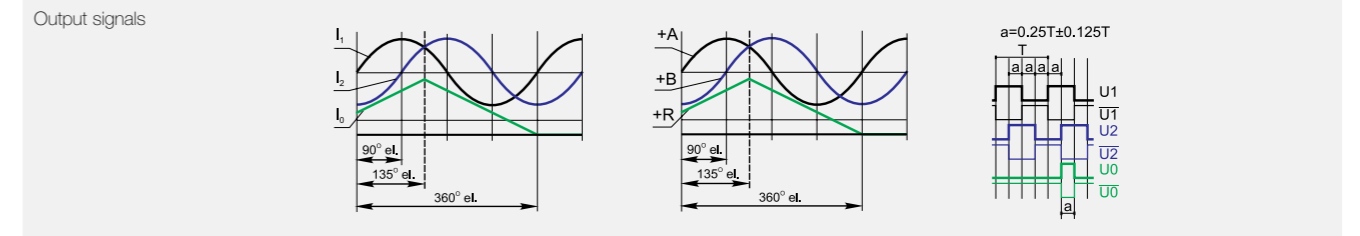
Line number on disc (Z)	18000, 36000	Starting torque at 20°C	≤ 0.5Nm
Number of output pulses per revolution for A170-F	Z x k, where k = 1, 2, 3, 4, 5, 8, 10, 20, 25, 50, 100	Rotor moment of inertia	< 0.9×10 ⁻³ kgm
Reference signal:	one per shaft revolution 36 per shaft revolution 72 per shaft revolution	Protection (IEC 529)	IP64
Permissible mech. speed	≤ 1000 rpm	Maximum weight without cable	4.1 kg
Max. operating speed (depends on number of output pulses)	300 to 500 rpm	Operating temperature	0...+70 °C
Permissible shaft load:		Storage temperature	-30...+85°C
- axial	0,02 mm	Maximum humidity (non condensing)	98 %
- radial	0,02 mm	Permissible vibration	≤ 100 m/s ²
Accuracy	±2.5 arc. sec	Permissible shock (6 ms)	≤ 300 m/s ²

ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C9 9-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						

ELECTRICAL DATA

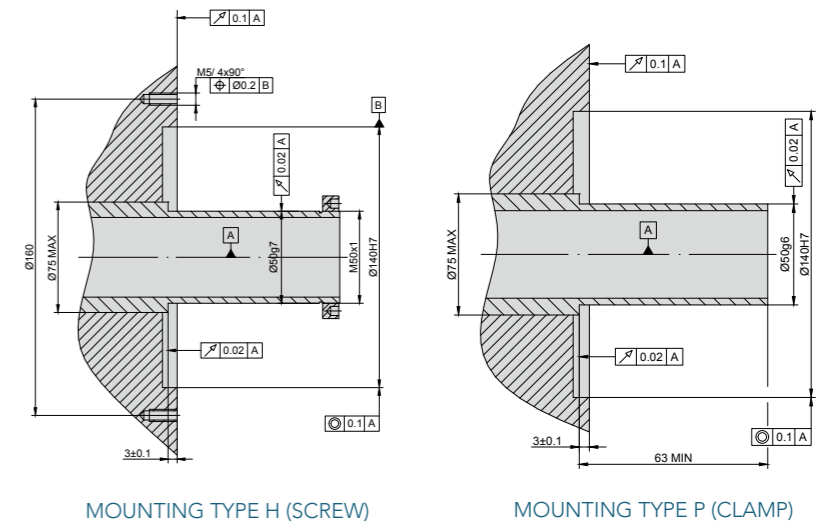
VERSION	A170H-A ~ 11 μApp	A170H-AV ~ 1 Vpp	A170H-F □□ TTL
Supply voltage (U _p)	+5 V ± 5%	+5 V ± 5%	+5 V ± 5%;
Max. supply current (without load)	100 mA	120 mA	150 mA
Light source	LED	LED	LED
Incremental signals	Two sinusoidal I ₁ and I ₂ Amplitude at 1 kΩ load: - I1 = 7...16 μA - I2 = 7...16 μA	Differential 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/U1̄ and U2/U2̄. 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 = 0.2...0.8 V (usable component)	One differential square-wave U0/U0̄ 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



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.

MOUNTING REQUIREMENTS



ORDER FORM

A170H - X - XXXXX/XXXXX - XX - X - X - XXX

OUTPUT SIGNAL VERSION:	PULSE NUMBER PER REVOLUTION:	OPTIONAL LINE NUMBER ON DISC (Z):	REFERENCE SIGNAL:	MOUNTING TYPE:	CABLE OR CONNECTOR OUTLET:	CABLE LENGTH:	CONNECTOR TYPE:
A AV F	18000 ... 3600000	18000 36000 *only for A170-F	S - one per revolution K - distance-coded	P - clamp H - screw	S - version S (cable outlet) C-version C (connector outlet)	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:
1) A170H-F-360000/36000-K-P-S-AR01/C12
2) A170H-F-360000-K-H-C-AR01/C12