PHOTOELECTRIC ROTARY ENCODER

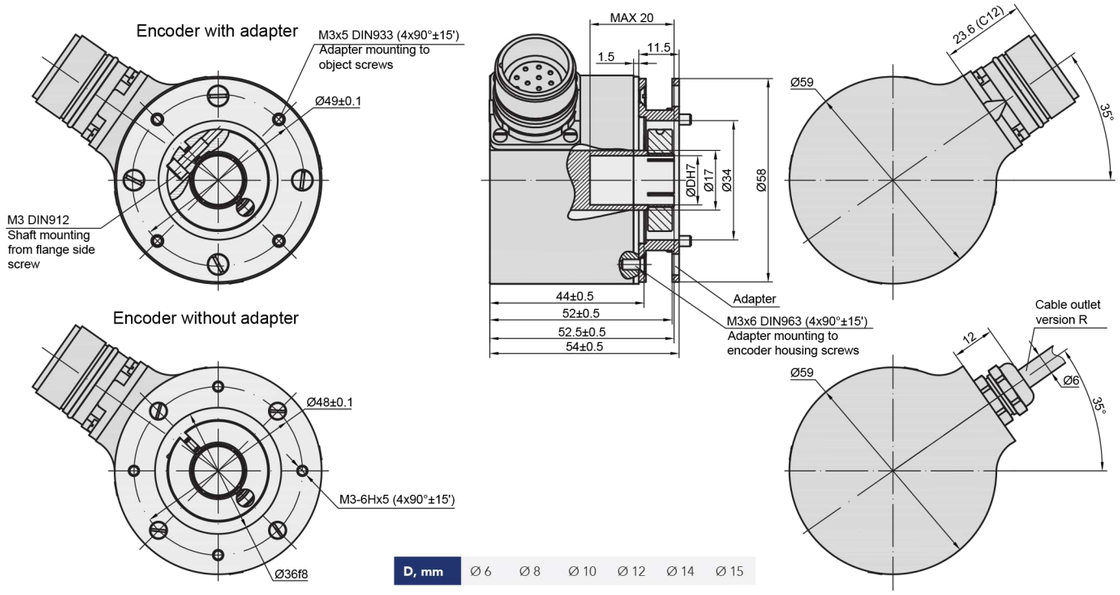
A58HME

High Resolutions

Analog output signals

Hollow Shaft

Photoelectric encoder A58HME can produce up to 108.000 output pulses per revolution and is a very similar encoder to the A58HE series. The main difference between the two is that A58HME has a 6-15 mm diameter blind hollow shaft.



MECHANICAL DATA

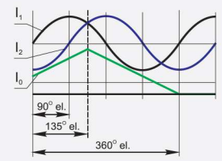
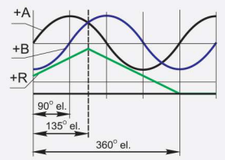
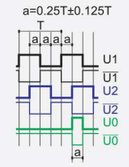
Line number on disc (z)	100; 250; 500; 600 800; 1000; 1024; 1125; 1250; 1500; 2000; 2048; 2500; 3000; 3600; 4000; 5000; 9000; 10800
Number of output pulses per revolution for A58HME-F	Z x k, where k=1,2,3,4,5,8,10 (k - interpolation factor)
Maximum shaft speed	10000 rpm
Permissible motion of shaft: - axial - radial (at shaft end)	±0.03 mm 0.05 mm
Accuracy (T_1-period of lines on disc in arc. sec) - on option for z < 5000 - on option for z > 5000	±0.1T_1 arc. sec ±0.05T_1 arc. sec ±12.0 arc. sec

Starting torque at 20°C	≤ 0.025 Nm
Rotor moment of inertia	< 1.5x10^{-4} kgm^2
Protection (housing) (IEC 529)	IP64
Protection (shaft side) (IEC 529)	IP64
Maximum weight without cable	0.35 kg
Operating temperature	0...+70 °C
Storage temperature	-30...+80 °C
Maximum humidity (non-condensing)	98 %
Permissible vibration (55 to 2000 Hz)	≤ 100 m/s^2
Permissible shock (11 ms)	≤ 300 m/s^2

ACCESSORIES

CONNECTORS FOR CABLE	C12 12-pin flange socket	C9 9-pin flange socket
DIGITAL READOUT DEVICES	CS3000	CS5500
EXTERNAL INTERPOLATOR	NK	

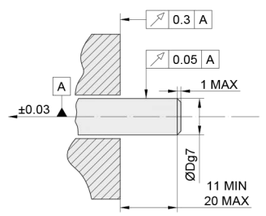
ELECTRICAL DATA

Version	A58HME-A ∿ 11 µApp	A58HME-AV ∿ 1 Vpp	A58HME-F ⊓ TTL; ⊓ HTL
Supply voltage (U_p)	+5 V ± 5%	+5 V ± 5%	+5 V ± 5%; +(10 to 30) 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 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/$\overline{U1}$ and U2/$\overline{U2}$. Signal levels at 20 mA load current: - low (logic "0") ≤ 0.5 V at U_p=+5 V - low (logic "0") ≤ 1.5 V at U_p=10 to 30 V - high (logic "1") ≥ 2.4 V at U_p=+5 V - high (logic "1") ≥ (U_p-2) V at U_p=10 to 30 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 120Ω 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 V at U_p=+5 V - low (logic "0") < 1.5 V at U_p=10 to 30 V - high (logic "1") > 2.4 V at U_p=+5 V - high (logic "1") > (U_p-2) V at U_p=10 to 30 V
Maximum operating frequency	(-3 dB) ≥ 160 kHz	(-3 dB) ≥ 180 kHz	(160 x k) kHz, k-interpolation factor
Direction of signals	I_2 lags I_1 for clockwise rotation	+B lags +A for clockwise rotation	U2 lags U1 with clockwise rotation
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			

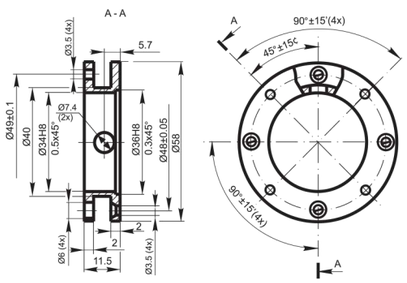
Note:

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

MOUNTING REQUIREMENTS



ADAPTER



ORDER FORM

A58HME - X1 - X2/X3 - X4 - X5 - X6 - X7 - X8

Output signal version (X1):	Pulse number per Revolution (X2):	Optional line number on disc (z) (X3):	Shaft hole Diameter (X4):	Supply Voltage (X5):	Cable length (X6):	Connector type (X7):	Adapter (X8):
A **AV** **F**	**100** ... **108000*** only F signal version for <18000 pulses	**100** ... **10800**	**6, 8, 10, 12,14,15** - mm	**05V** - +5V **30V** - +(10 to 30) V* *only for A58HME-F with HTL output	**R01** - 1m **R02** - 2m **R03** - 3m ... **CR** - flange socket radial	**W** - without connector **C9** -round, 9 pins **C12** - round, 12 pins **D9** - flat, 9 pins	**W** - without adapter **S** - with adapter

ORDER EXAMPLES: 1) A58HME-AV-1024-6-05V-W;
2) A58HME-F-4000-8-30V-S;
3) A58HME-F-4000/500-8-30V-S