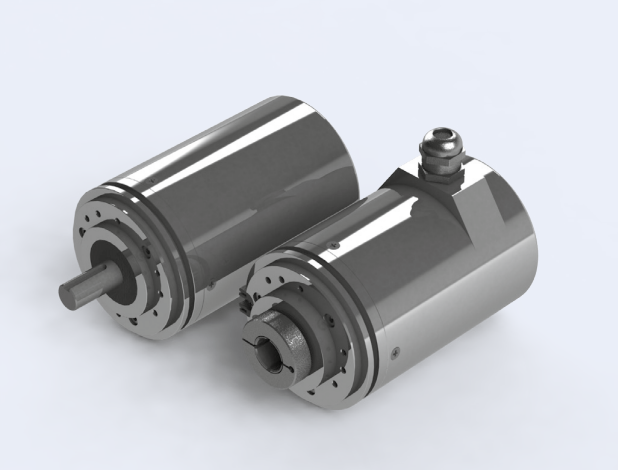
hohner
Elektrotechnik Werne



Series AWI 70 Ex & HWI 70 Ex

- Incremental Ex-rotary-encoder with 10, 12 or 14 mm solid- or blind hollow shaft
- Housingdiameter 70 mm for design type "Pressurised encapsulation" and high degree of protection
- With Ex d IIC T6 (PTB 09 ATEX 1106 X)
- Maximum 5.000 pulses / revolution
- Short-circuit-proof outputs
- Overvoltage and reverse polarity protection on the operating voltage input (at Ub= 10-30 V DC)
- Accessories from page 78

Mechanical specifications

Speed:	max. 6.000 U/min.*	Working temperature range:	-40° C . . . + 60° C
Moment of inertia of the rotor:	approx 4 x 10^{-6} kgm^2	Shaft:	Stainless steel
perm. shaft load radial:	80 N (at shaft end) [1]	Shock resistance according to DIN EN 600068-2-27:	2.500+ m/s^2, 6 ms
perm. shaft load axial:	40 N	Vibration resistance according to DIN EN 600068-2-6:	100 m/s^2, 55 Hz . . . 2.000 Hz
Starting torque (25° C):	< 0,05 Nm		
Weight:	approx 1,5 kg		
Protection class according to EN 60 529:	IP 67		

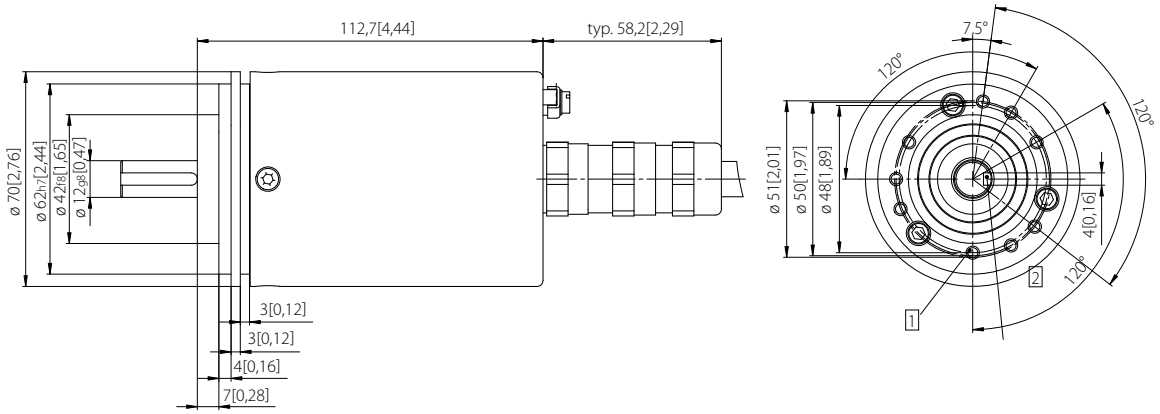
* in continuous operation max. 1500 U/min [1] for shaft design

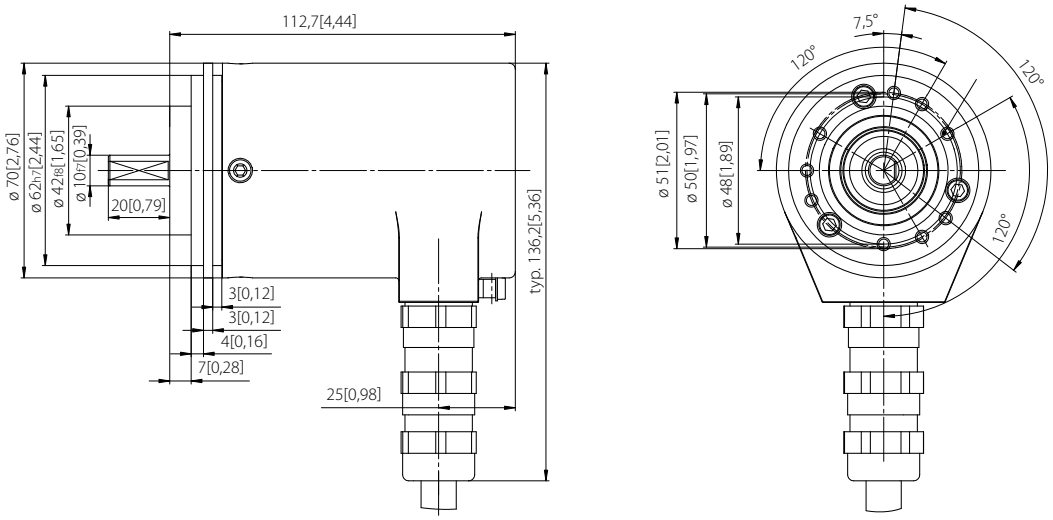
Electrical specifications

Output circuit	RS 422 (TTL compatible)	Push-pull circuit
Supply voltage	5 V DC (+/- 5%)	10 - 30 VDC
Current consumption without inversions (without load)	type 40 mA / max. 90 mA	type 50 mA / max. 100 mA
max. perm. load/channel	+/- 20mA	+/- 20 mA
max. pulse frequency	300 Hz	300 Hz
Signal level high	min. 2,5 V	min. +V -1,0 V
Signal level low	max. 0,5 V	max. 0,5 V
Rise time tr	max. 200 ns	max. 1 µs
Fall time tr	max. 200 ns	max. 1 µs
Short-circuit proof[1)]	yes[2)]	yes
Reverse polarity protection on UB	no	yes

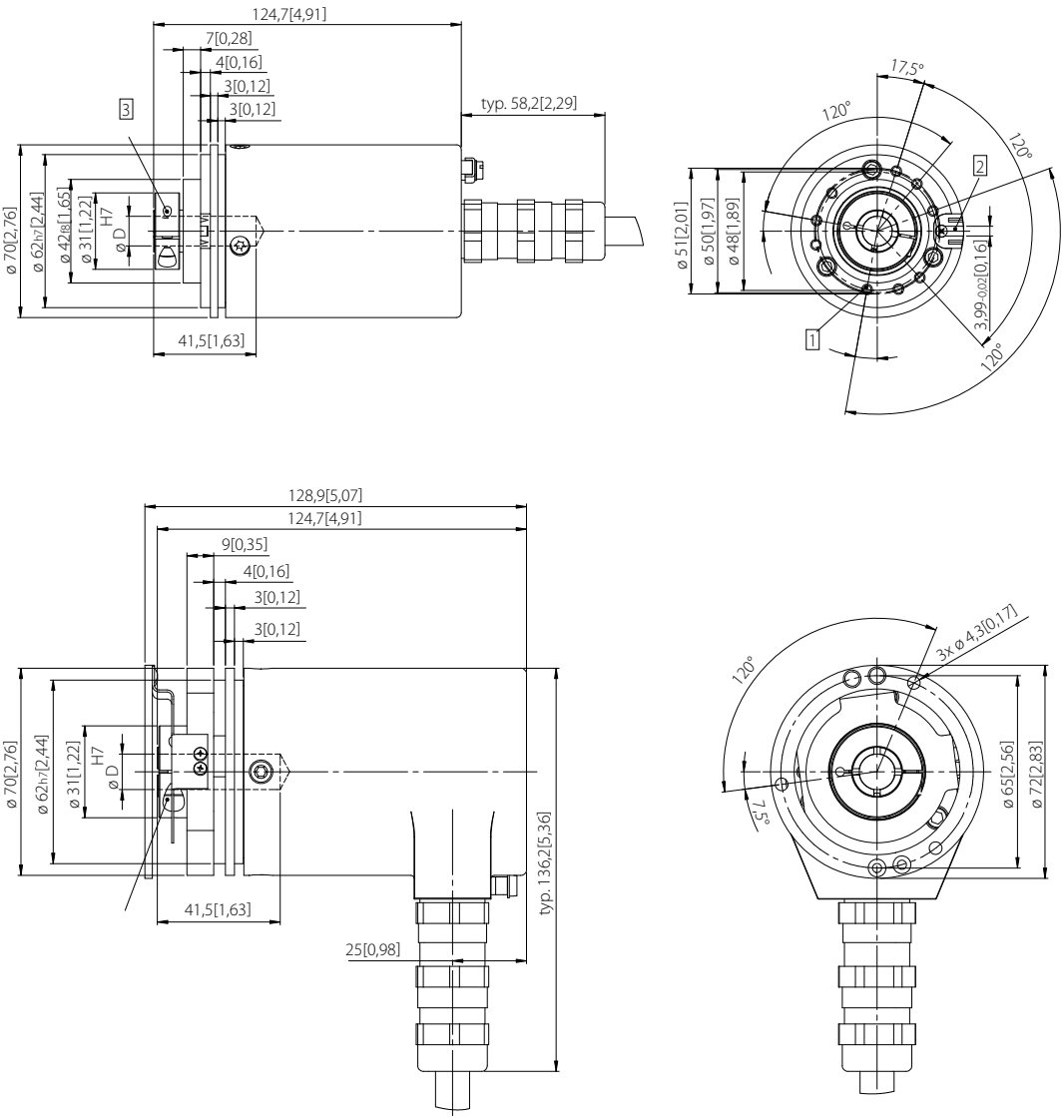
[1)] With correctly applied supply voltage U_B
[2)] Only one channel at the same time: with U_B = 5 V short circuit to channel and 0 V and + UB is permissible
with U_B = 10 - 30 V short circuit to channel and 0 V is permissible

Mechanical dimensions





Mechanical dimensions



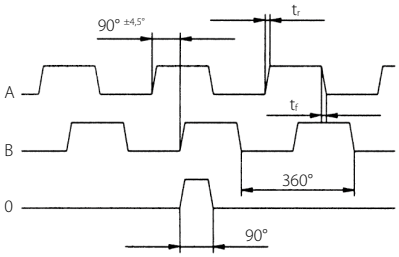
Installation instructions

Flange and shaft of encoder and drive may not be rigidly coupled at the same time!

Please observe

All current standards for installing electrical systems in potentially explosive atmospheres must be observed during installation! Manipulations of the encoder (opening, mechanical processing) will lead to the loss of ex approval and guarantees! The installer assumes the consequential liability!

Pulse image



Direction of rotation (relative to pulse image)
Shaft rotating clockwise, facing the shaft

Recommended encoders according to RS 422 - specification
e.g. DS 3486 or AM 26LS32

All channels can also be executed inversely.

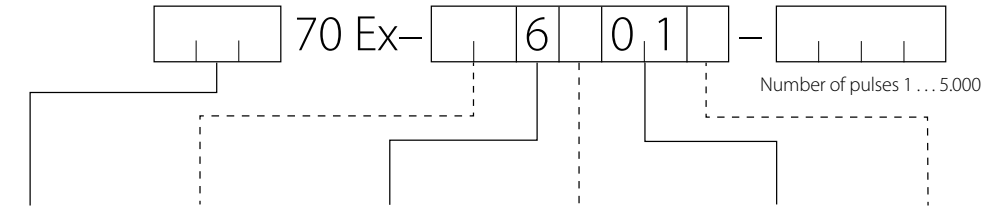
Numbers of pulses available at short notice:
1, 5, 10, 12, 250, 256, 360, 400, 500, 512, 600, 800, 1.000, 1.024, 1.200, 2.000, 2.048, 2.500, 3.000, 3.600, 4.096, 5.000
Other numbers of pulses upon request

Pin configuration

Cable 01	Sig.	0 V	0 V Sensor	+U_B	+U_B Sensor	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$
	Colour	white	gray/pink	brown	red/brown	green	yellow	gray	pink	blue	red
	Control line	1	9	2	10	3	4	5	6	7	8

SG = Shield located on housing of the cable gland. The sensor cables are connected internally with the power supply.
Unused outputs must be insulated prior to commissioning.

Order reference



Design	Shaft	Signal output	Connection position	Connection type (see page 78)	Output circuit
AWI = solid shaft	10 = 10 x 20 mm with flat 12 = 12 x 25 mm with keyway	6 = A, B, 0 / $\overline{A}$, $\overline{B}$, $\overline{0}$	R = radial A = axial	01 = Cable (length 2 m) (other length on request)	1 = Push-pull 6 = RS 422 7 = RS 422 with U_B = 10 - 30 V
HWI = Blind hollow shaft	12 = 12 mm 14 = 14 mm				