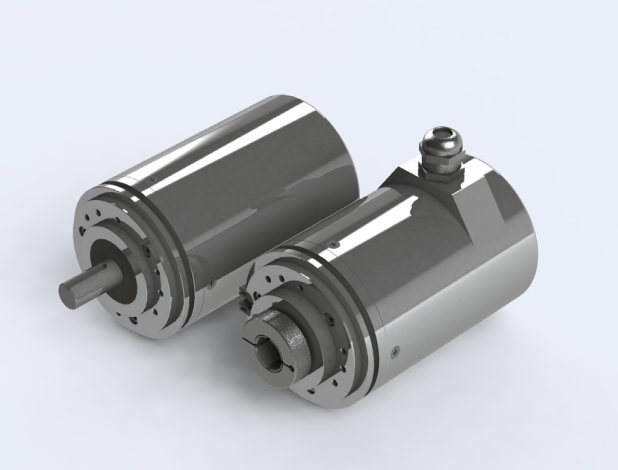
hohner
Elektrotechnik Werne



Series AWA 70 Ex & HWA 70 Ex

- Absolute Ex-rotary-encoder with 10, 12 or 14 mm solid- or blind hollow shaft and SSI interface
- Housingdiameter 70 mm for design type "Pressurised encapsulation" and high degree of protection
- With Ex d IIC T6 (PTB 09 ATEX 1106 X)
- Maximum resolution 13 Bit
- Short-circuit-proof outputs
- Overvoltage and reverse polarity protection on the operating voltage input (at Ub= 10-30V DC)
- Accessories from page 78

Mechanical specifications

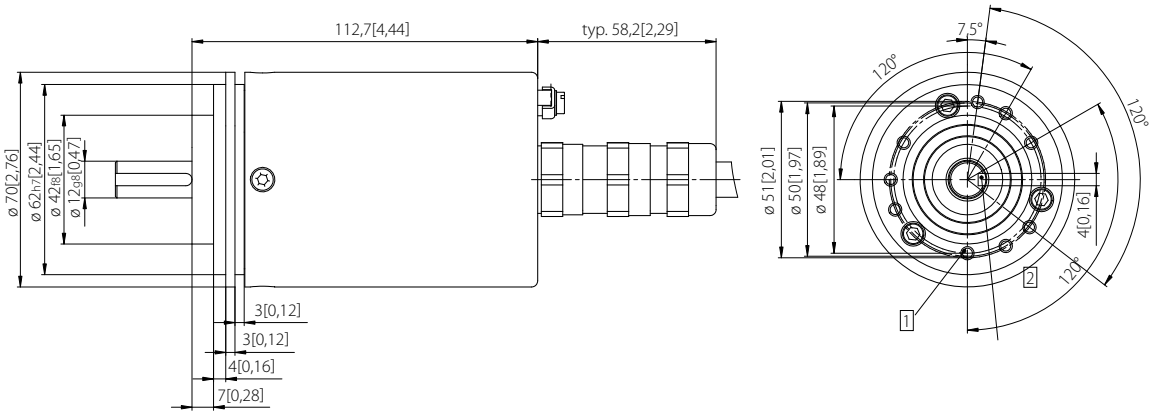
Speed:	max. 6.000 U/min.	Working temperature range:	-40° C . . . + 60° C
Moment of inertia of the rotor:	ca. 4 x 10^{-6} kgm^2	Shaft:	Stainless steel
perm. shaft load radial:	80 N (at shaft end)	Shock resistance according to	
perm. shaft load axial:	20 N	EN 600068-2-27:	2.500+ m/s^2, 6 ms
Starting torque (25° C):	< 0,05 Nm	Vibration resistance according to	
Weight:	ca. 1,5 kg	EN 600068-2-6:	100 m/s^2, 55 . . . 2.000 Hz
Protection class according to EN 60 529:	IP 67		

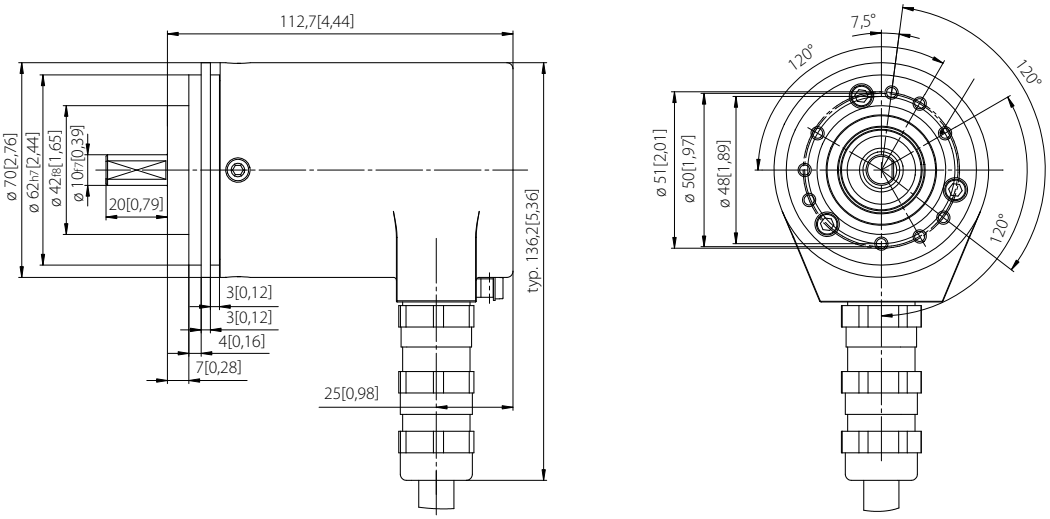
Electrical specifications

Interface type	Synchronous - Serial (SSI)	Synchronous - Serial (SSI)
Supply voltage (U_B)	5 V DC (+/- 5%)	10 - 30 V DC
Output driver	RS 485	RS 485
Current consumption type	89 mA	89 mA
Current consumption max.	138 mA	138 mA
Perm. load/channel	max. +/- 20 mA	max. +/- 20 mA
Cycle rate min./max.	max. 15.000/s	max. 15.000/s
Taktrate, min. / max.	100 kHz / 500 kHz	100 kHz / 500 kHz
Short-circuit-proof outputs[1)]	yes	yes[2)]
Reverse polarity protection on UB	no	yes

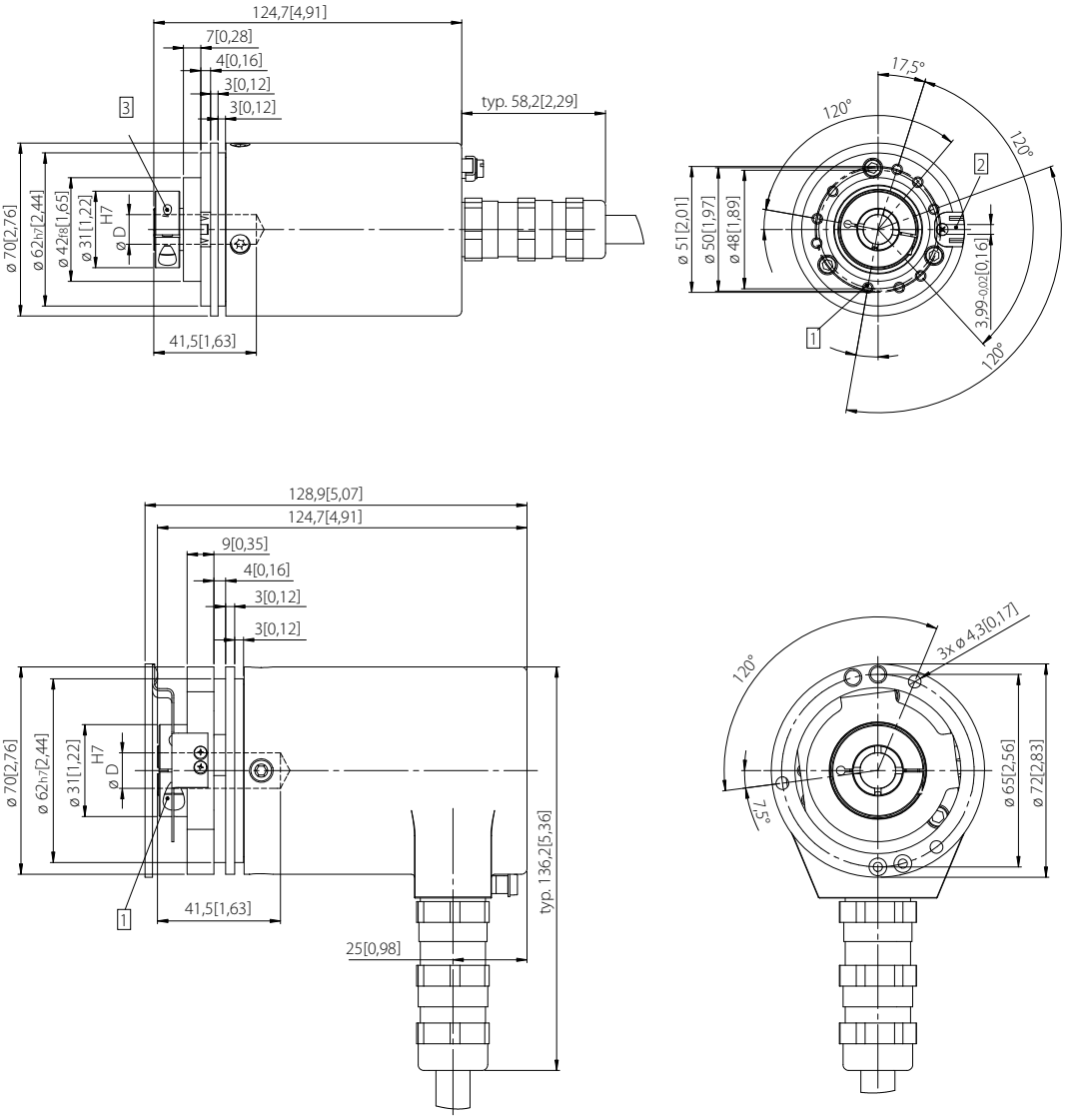
[1)] With correctly applied supply voltage UB
[2)] Only one channel at the same time: with U_B = 5 V short circuit to channel and 0 V and + UB is permissible
with U_B = 10 - 30 V short circuit to channel and 0 V is permissible

Mechanical dimensions





Mechanical dimensions



Installation instructions

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

Please observe

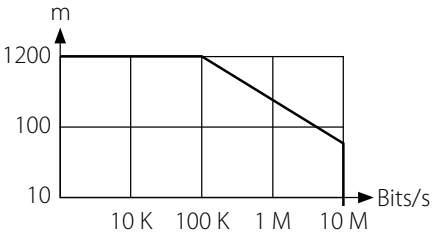
All current standards for installing electrical systems in potentially explosive atmospheres must be observed during installation!
Manipulations of the encoder (opening, mechanical processing) will lead to the loss of ex approval and guarantees!
The installer assumes the consequential liability!

Counting direction

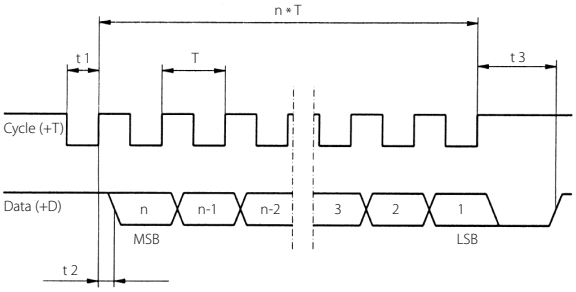
Ascending code values during clockwise rotation of shaft. (facing the shaft)

Max. permissible transfer rate for SSI

depending on the cable length



SSI interface



Functional description of the SSI interface
The cycle and data lines are at high level when in idle state. The first decreasing clock pulse edge signals the start of data transfer. The clock pulse edges increasing thereafter, transfer the data bit by bit, starting with MSB. The transfer of a complete data word requires n+1 increasing clock pulse edges (n=resolution in bit). The data line remains on low after the last positive clock pulse edge, until the encoder is ready again for a new data word. The cycle line must remain at least as long on high, and can subsequently start once again a new read-out sequence of the encoder with a decreasing edge.

Please observe! The data update is carried out synchronously with the read-out cycle. The data are thus as current as the time lag between two read-outs; a periodic read-out of the encoder is, therefore, recommended. After a longer read-out interval and simultaneous shaft rotation of the encoder, the data content of the first read-out can be "outdated" and should be ignored.

Pin configuration

Signal	0V	+V	C+	C-	D+	D-	SET	DIR	Stat	⏚	⏚
Cable labelling	1	2	3	4	5	6	7	8	9	YE/GN	Shield

Order reference

70 Ex– [ ][ ] 1 [ ] 0 1 [ ][ ] 0 – [ ][ ][ ][ ][ ][ ]

Design	Shaft	Counting direction	Connection position	Connection type (see page 78)	Output circuit	Output code	Option	Resolution
AWA = solid shaft	10 = 10x20 mm with flat 12 = 12x25 mm with keyway	1 = right	R = radial A = axial	01 = Cable (length 2 m) (other length on request)	6 = SSI with UB 10 V - 30 V 7 = SSI with UB 5 V	G = Gray B = Binary	0 = none	1.024 2.048 4.096 8.192 16.384 131.072
HWA = Blind hollow shaft	12 = 12 mm 14 = 14 mm							