

AWA 70 Ex HWA 70 Ex

Compact version, diameter 70 mm in design
"Compression proof metal protection" with
EXII 2G EEX d II CT6 (PTB 03 ATEX 1163)
Electronic temperature and
ageing compensation.
Short circuit proof outlets
Over-voltage and reserve battery protection
on the operating voltage inlet (at $U_B = 10 - 30$ VDC)
Diameter of the shaft 12 mm
Resolution up to 13 Bit
SS and parallel section port

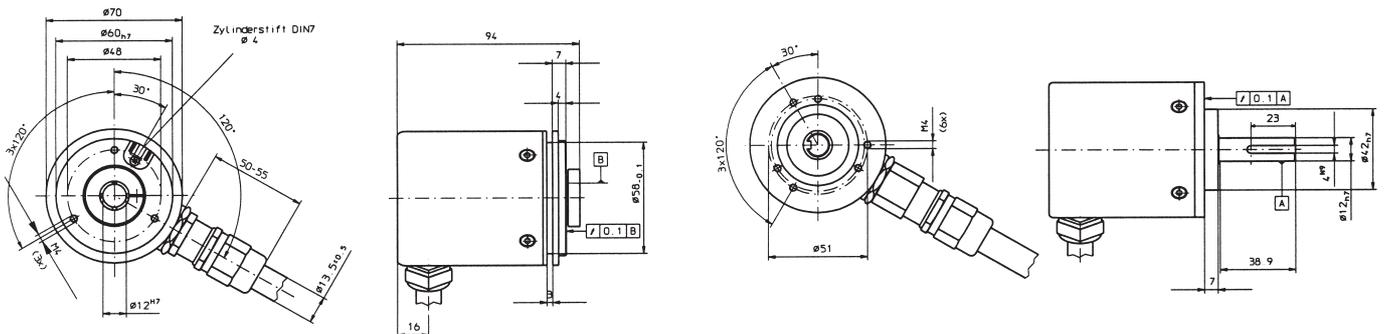


Mechanical Specifications:

Revolution speed: max. 6000 U/min.*
Inertia moment of the rotor: ca. 8×10^{-6} kgm²
Permissible shaft load(radial): 20 N (at shaft end)₁
Permissible shaft load(axial): 10 N
Motor starting torque(25° C): < 0,05 Nm
Weight: ca. 0,9 kg
Protective system acc. to EN 60529: IP 64

Working temp. range: -20° C bis + 70° C
Shaft: Stainless steel
Thermal shock resistance
acc. to DIN - IEC 68-2-27 1000 m/s², 6 ms
Vibration resistance
acc. to DIN - IEC 68-2-6 100 m/s², 10. . . .2000 Hz
* under continuous operation max. 1500 R/min.
1) with shaft version

Mechanical Dimensions:



Assembly notes:

Flange and shaft of encoder and actuation must not be simultaneously rigidly coupled together!
With the hollow shaft version, the torque converter bearing offers the easiest system of flange-mounting (see dimension pictures).

impulse count	permissible radial deviation of the actuation shaft provides an accuracy of +/- 0,5 Bit when using the torque converter bearing.
1024 or 10 Bit	+/- 0,08
4096 or 12 Bit	+/- 0,02
8192 or 13 Bit	+/- 0,01

Please note !

When installing, all valid norms for the assembly of electrical appliances in potentially areas must be complied with!
Manipulation of the encoder (opening, mechanical alterations) will lead to a loss of the Expermit and the guarantee cover!
The installer takes all responsibility for any attributable consequences!

Electrical Specifications:

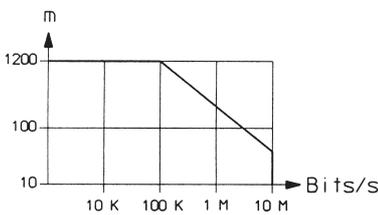
Interface	Synchron - Seriell (SSI)	Synchron - Seriell (SSI)	Parallel	Parallel
Supply voltage (U _B)	5 VDC (+/- 5%)	10 - 30 VDC	5 VDC (+/- 5%)	10 - 30 VDC
Output driver	RS 485	RS 485	Gegentakt	Gegentakt
Current consumption typ.	89 mA	89 mA	109 mA	109 mA
max.	138 mA	138 mA	169 mA	169 mA
Permissible load	max. +/- 20 mA	max. +/- 20 mA	max. +/-10 mA	max. +/- 10 mA
Data element exchange rate	max. 15.000/s	max. 15.000/s	40.000/s	40.000/s
Rate of cycles,min/max	100 kHz / 500 kHz	100 kHz / 500 kHz	—	—
Short circuit proof outputs 1)	Yes	Yes 1)	Yes 2)	Yes 2)
Reverse battery protection on UB	No	Yes	No	Yes

1) At a correctly installed distribution voltage U_B
 2) Only one channel at a time: at U_B = 5 V the short circuit is opposite the channel, 0 V and + U_B permissible
 at U_B = 10 - 30 V the short circuit is opposite and 0 V permissible

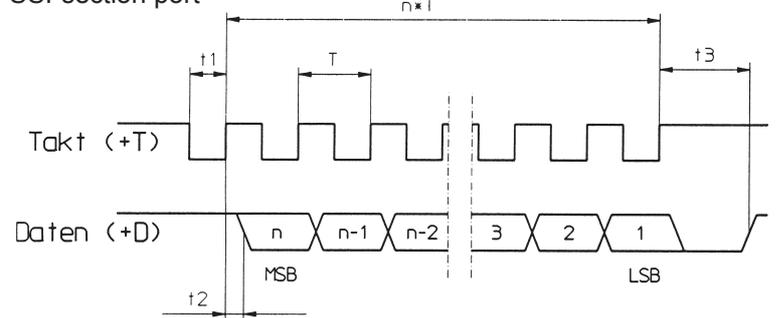
Count direction:

Ascending code values when turning the shaft in a clockwise direction (when facing the shaft).

Max. permissible rate of conduction with SSI:
 (dependent on length of cable)



SSI-section port



t1 M 1µs; t2 < 0,5µs (without cable); t3 = max. 40µs; 2µs m T m 10µs; n = resolution in Bit

Functional description of the SSI section port.

In an off-position, the cycle and data lines are High Level. The first descending cycle edge signals the beginning of the data transfer. The data is then transferred in Bits, commencing with MSB, with the thereafter increasing cycle edge. The transfer of a complete data element requires n + 1 increasing cycle edges (n = resolution in Bit). After the last positive cycle edge, the data line remains on Low until the encoder is once again ready for a new data element. The cycle line must also remain at High for at least the same amount of time and can then once again be given a new read-out sequence of the encoder with a descending cycle.

Please note!

The data update occurs in synchrony with the read-out cycle. The data is therefore equally as up-to-date as the time difference between two read-outs; a periodic read-out of the encoder is therefore recommended. If a long period of time has passed since the last read-out and a rotation of the shaft encoder is then undertaken, then the contents of the data will be "outdated" at the first read-out and should be ignored.

Order No:

70 Ex - 1 2 1 R 0 1 G 0

Version	Shaft	Count direction	Pos. of connec. / Typ of connec.	Output Circuit	Output code	Optional extras	Resolution
AWA = Axle shaft HWA = Hollow shaft	12 = 12 mm	1 = rechts	R = radial	01 = Cable (Length 2 m)	1 = Push Pull 3 = TTL 6 = SSI at U _B 10 V - 30 V 7 = SSI at U _B 5 V	G = Gray 0 = keine	1024 4096 8192

* Other cable length available upon request
 Accessories: Adapter flange F 70/14
 (only for version AWA)