HENGSTLER

TECHNICAL DATASHEET

EEx Absolute Encoders AX 70 / 71 - SSI

Version AX 70 - Aluminium

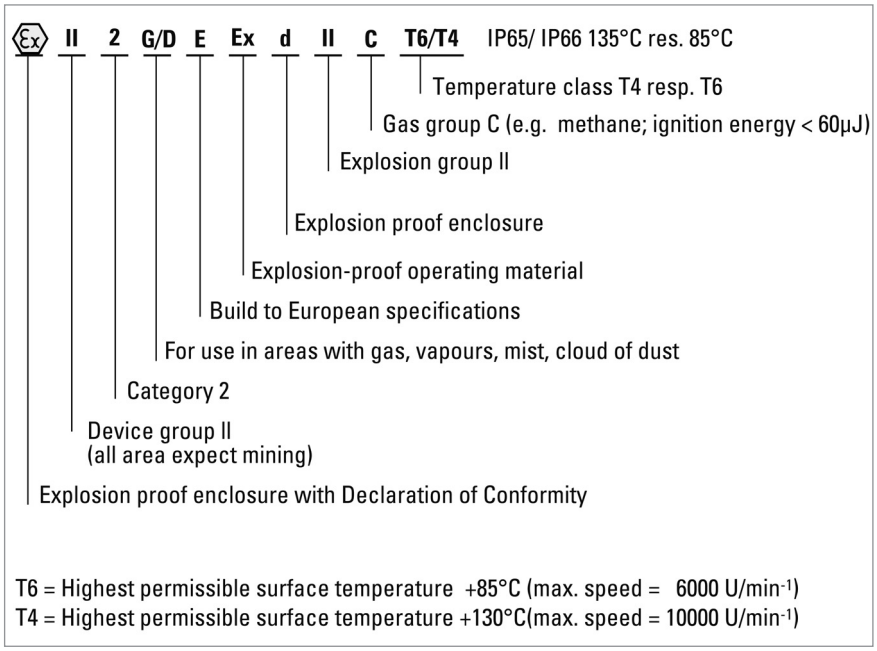

Version AX 71 - Stainless Steel

- ATEX certification for gas and dust explosion proof
- Same electrical performance as ACURO industry
- Protection class up to IP67
- Diameter only 70 mm
- Robust design
- Also available with stainless steel housing (AX 71 - SSI)
- Resolution up to 29 Bit (17 Bit ST, 12 Bit MT)
- Applications: enamelling production line, petro chemistry, bottling machines, mixers, silo works, mills

HENGSTLER ACURO industry · ATEX · SSI · CE · c UL us LISTED · RoHS 2002/95/EG

EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure "d" under AX 70 and AX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the AX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version AX 71 is available.



T6 = Highest permissible surface temperature +85°C (max. speed = 6000 U/min^{-1})
T4 = Highest permissible surface temperature +130°C(max. speed = 10000 U/min^{-1})

TECHNICAL DATA
mechanical

Housing diameter	70 mm

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TECHNICAL DATA
mechanical (continued)

Shaft diameter	10 mm (Solid shaft)
Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	40 N / 100 N
Max. speed	T4: max. 10 000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (6 ms)
Ambient temperature	T4: -40 °C ... +60 °C T6: -40 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
Material shaft	Stainless Steel
Material housing	AX 70: Aluminum AX 71: Stainless Steel
Weight	AX 70: approx. 1.4 kg AX 71: approx. 4.8 kg
Connection	Cable, axial

[1] No dust explosion-proof (D) for IP64

TECHNICAL DATA
electrical

Supply voltage	DC 10-30 V
Max. current w/o load	220 mA (ST), 250 mA (MT)
Resolution singleturn	10 - 17 Bit
Resolution multiturn	12 Bit
Output code	Binary, Gray
Drives	Clock and Data / RS422
Control inputs	$\overline{\text{Direction}}$
Alarm output	Alarm bit (SSI Option)

RECOMMENDED DATA TRANSFER RATE
bei SSI

The max. data transfer rate depends on the cable length. For Clock / $\overline{\text{Clock}}$ and Data / $\overline{\text{Data}}$ please use twisted pairs. Use shielded cable.

Cable length	Frequency
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

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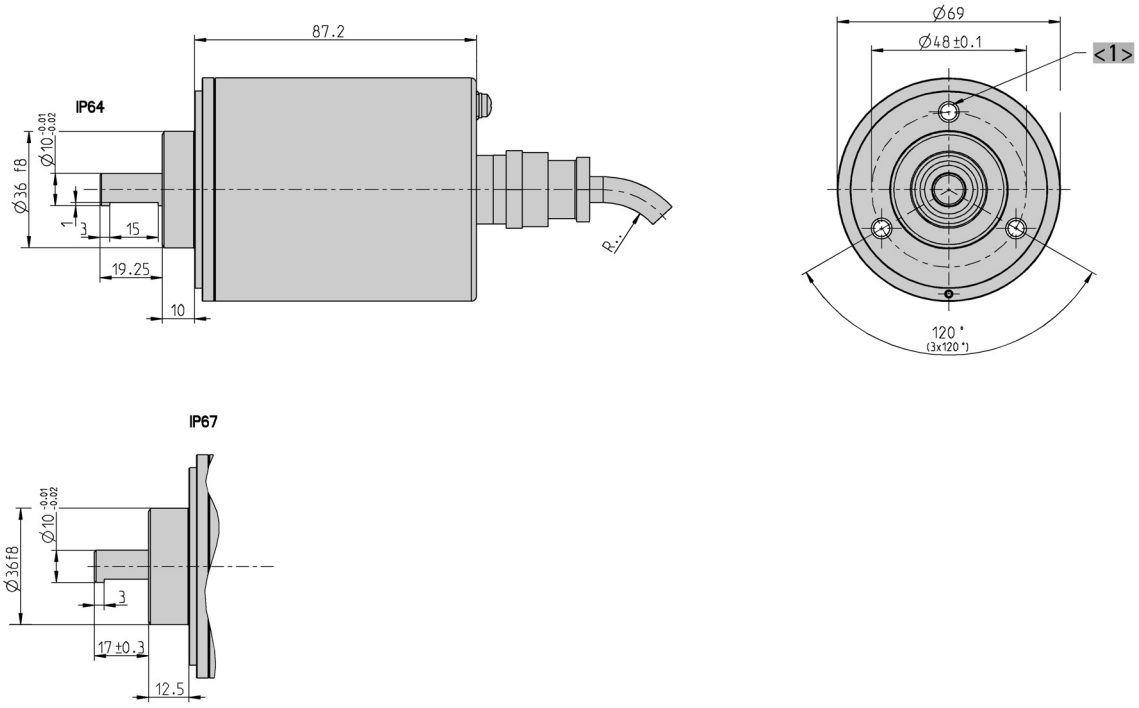
ELECTRICAL CONNECTIONS
Cable

Colour	No.	SSI
white 0.5 mm	12	DC 10 ... 30 V
brown 0.5 mm	11	0 V supply voltage
green	10	$\overline{\text{Clock}}$
yellow	9	Clock
grey	8	$\overline{\text{Data}}$
pink	7	Data
blue	3	$\overline{\text{Direction}}$
black	4	0 V signal output

DIMENSIONED DRAWINGS

SSI



<1> mounting thread M6x12
Cable bending radius R for flexible installation ≥ 150 mm
Cable bending radius R for fixed installation ≥ 40 mm
Dimensions in mm

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ORDERING INFORMATION

Type	Resolution [1,2,3]	Supply voltage	Flange, Protection, Shaft [4,5]	Interface	Connection
AX70 **AX71**	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **0017** 17 Bit ST **0360** 360 increments ST **0720** 720 increments ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST higher resolution on request	**E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**SB** SSI binary **SG** SSI Gray	**A** Cable, axial

[1] Resolution 360 increments ST with Offset 76 (value range 76...435)
[2] Resolution 720 increments ST with Offset 152 (value range 152...871)
[3] When resolution > 14 Bit: max. clock frequency 178´kHz
[4] Dust explosion-proof certification (D) only for IP67
[5] IP67 only with temperature class T4

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

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Accessories

FLEXIBLE COUPLINGS

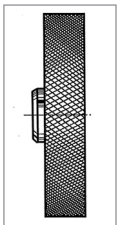
Bellows coupling

Helical coupling

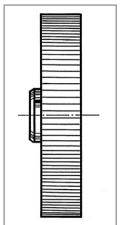
Isolated disk coupling

		Ordering code
Bellows coupling	10 mm / 10 mm	3 520 037
Bellows coupling	8 mm / 10 mm	3 520 077
Helical coupling 25/32	6 mm / 10 mm	3 520 066
Helical coupling 25/32	10 mm / 12 mm	3 520 065
Helical coupling 25/32	10 mm / 10 mm	3 520 074
Isolated disk coupling	6 mm / 10 mm	3 520 082
Isolated disk coupling	10 mm / 10 mm	3 520 088

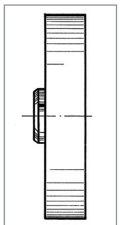
MEASURING WHEELS



Tread 2 + 3



Tread 4



Tread 6

Tread 2 B
with glued-on rubber profile B = low-wear rubber surface with good grip (white)
Applications such as paper and cardboard, measuring cables, nongreasy metals, fleece, undressed or surface-treated wood, soft and hard plastics

Tread 3
vulcanized rubber surface with parallel knurl
Applications such as rubber, leather, fabrics, flooring and glass

Tread 4
Aluminum with parallel knurl
Applications such as rubber, soft plastics, wood with rough surface, and to a limited extent for fabrics

Tread 6
plastic surface
Applications such as wire, greasy metals and steel sections

Material	Bore diameter (mm) fitting to encoder shaft	Circumference	Tread	Width of bearing surface	Ordering code
Aluminum	10 mm	0.2 m	2 B	12 mm	0 601 049
Aluminum	10 mm	0.5 m	2 B	25 mm	0 601 151
Aluminum	10 mm	0.5 m	3	25 mm	0 601 156
Aluminum	12 mm	0.5 m	3	25 mm	0 601 159
Aluminum	10 mm	0.5 m	6	25 mm	0 601 163
Aluminum	10 mm	0.5 yd	4	25 mm	0 601 157