

TECHNICAL DATASHEET

Absolute Encoder AC 110 - BiSS / SSI



- Hollow shaft absolute encoder
- ST - Resolution up to 19 Bit
- Compact design: 50 mm
- Robust bearings for long life
- Hollow shaft up to 50 mm
- Interfaces: SSI, BiSS-B or BiSS-C
- Optional: Sine-Cosine 4096 increments
- Integrated diagnostic system



GENERAL INFORMATION

HENGSTLER OPTOASIC Technology

The central Element of the ACURO AC110 is the latest Hengstler OptoASIC technology, which offers the following key benefits.

- Outstanding reliability by reduced number of components and integrated diagnostics systems
- Aging compensation by integrated LED light regulation
- Integrated monitoring of pollution, disk damage, LED lifetime and temperature

The ACURO AC110 is ideally suited for applications like:

- Gearless drive
- Gearless elevators
- Industrial Machinery

TECHNICAL DATA mechanical

Housing diameter	110 mm
Shaft diameter	50 mm (Hub shaft)
Mounting of shaft	Keyway, Rear clamping ring
Protection class shaft input (EN 60529)	IP50 or IP64
Protection class housing (EN 60529)	IP40 or IP64
Axial endplay of mounting shaft (hubshaft)	± 0.5 mm
Radial runout of mating shaft (hubshaft)	± 0.05 mm
Max. speed	IP40: max. 3600 rpm IP50: max. 2000 rpm IP64: max. 1500 rpm
Starting torque typ.	25 Ncm
Vibration resistance (DIN EN 60068-2-6)	100 m/s ² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Operating temperature	-20 °C ... +70 °C
Storage temperature	-50 °C ... +80 °C
Material shaft	Stainless Steel / Aluminum, ceramic coated
Material housing	Aluminum

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TECHNICAL DATA mechanical (continued)

Weight	approx. 1000 g
Connection	Cable, radial Cable 1.5 m with M23 connector (Conin), 12 pole, axial or radial

TECHNICAL DATA electrical

Supply voltage	-5%/ 10% DC 5 V DC 10-30 V
Current w/o load typ.	120 mA
Resolution singleturn	11 - 19 Bit (22 Bit on request)
Output code	Binary, Gray
Drives	Clock and Data / RS422
Incremental signals	Sinus-Cosinus 1 Vpp
Number of pulses	4096
3dB limiting frequency	500 kHz
Alarm output	Alarm bit (SSI Option), warning and alarm bit (BiSS)

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

ELECTRICAL CONNECTIONS Cable / Cable with M23 connector (Conin), 12 pole

Colour cable	Cable connector	Signal
brown ⁴	1	0 V (supply voltage)
pink	2	Data
yellow	3	Clock
	4	N.C.
blue	5	$\overline{\text{Direction}}$ ¹
	6	N.C.
	7	N.C.
white ⁴	8	DC 5 V ³ / DC 10 - 30 V
	9	N.C.
grey	10	$\overline{\text{Data}}$
green	11	$\overline{\text{Clock}}$
black	12	0 V-signal output ²
Screen		Shielded with housing

¹ $\overline{\text{Direction}}$: UB or unconnected = ascending code values with rotation cw

0 V = descending code values with rotation cw

When activating Direction only the rotation direction for the absolute position value is changed. For the optional version with SinCos - signals the direction is activated by changing A- and B- signal.

² Connected with 0 V in the encoder. Use this output to lay Direction on logical "0" if required.

³ Notice: when supply voltage = DC 5V $\Rightarrow$ max. cable length 10 m

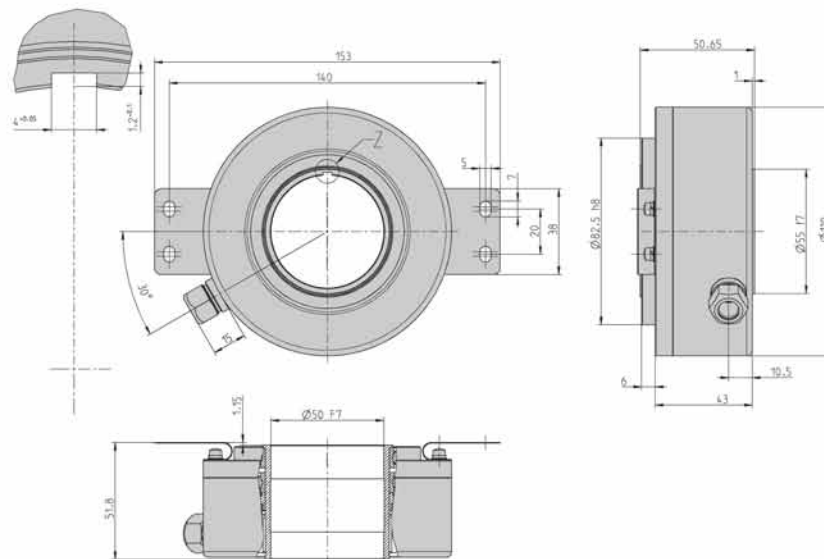
⁴ Use only thin wires 0.14 mm ²

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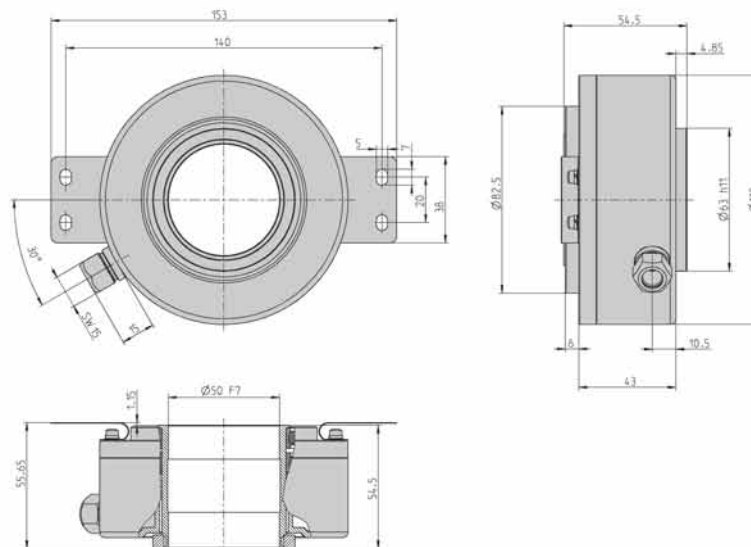
DIMENSIONED DRAWINGS

Kevwav



Dimensions in mm

Clampina rina



Dimensions in mm

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ORDERING INFORMATION

Type	Resolution ^{1,2,3}	Supply voltage	Spring tether	Protection	Shaft	Interface	Connection
☐	☐	☐	☐	☐	☐	☐	☐
AC110	0010 10 Bit ST 0012 12 Bit ST 0013 13 Bit ST 0014 14 Bit ST 0017 17 Bit ST 0019 19 Bit ST (BiSS)	A DC 5 V E DC 10 - 30 V	0 Without tether B With tether	0 IP40 1 IP40 4 IP64	K50 Keyway (4x1,2) / 50 mm H50 Clamping ring / 50 mm	BI BiSS-B SB SSI Binary SG SSI Gray BE BiSS-C	B Cable, radial B-D 1.5 m cable with M23 connector (Conin), 12 pole

¹ When SSI and resolution > 14 Bit: max. clock frequency 178 kHz

² higher resolutions on request

³ Max. cable length for DC 5V: 10 m

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. For variants with connector on cable end please add cable length code in between. Further cable lengths on request.

Code	Cable length
without code	1.5 m
-D0	3 m
-F0	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

Example:

Cable 3 m length: ... B - D0

Cable mit 3 m length and M23 connector, cw: ... B - D0 - I

TECHNICAL DATASHEET**Absolute Encoder AC 110 - BiSS / SSI
Accessories****CONNECTING CABLES**

Cable not made up with connectors	Ordering code
TPE cable, 12-core + screen	3 280 220 + length