PRELIMINARY

Absolute Shaft Encoders Type AC 110

ACURO industry BiSS / SSI

- Same electrical performance as ACURO industry AC 36 and AC 58 versions
- Robust bearings for long life
- Hollow shaft up to 50 mm
- Absolute singleturn
- Revolution 11-17 Bit
- SSI or BiSS - Interface
- Optional: Sine-Cosine 4096 increments
- DC 5 V or DC 10 - 30 V
- 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
  - Temperature

The ACURO AC110 is ideally suited for applications like:
- Gearless drive
- Gearless elevators
- Industrial Machinery

TECHNICAL DATA mechanical

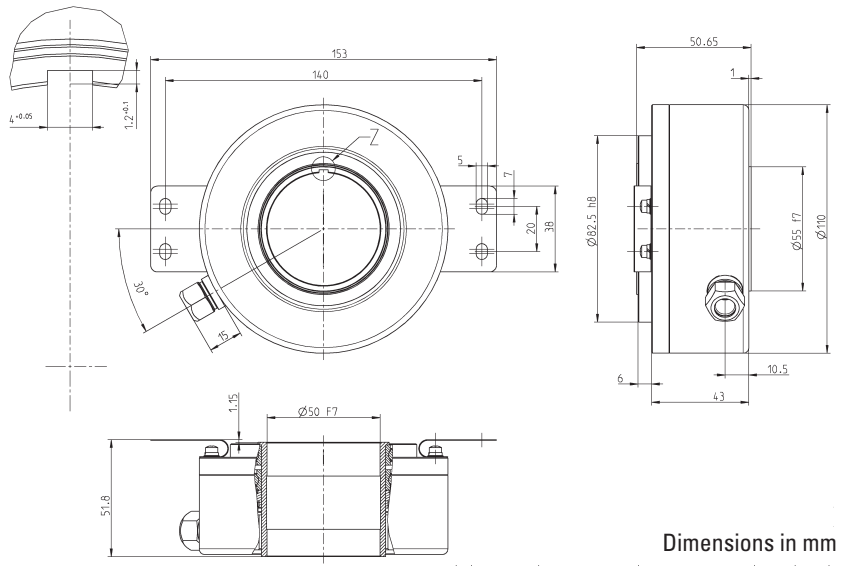
Housing diameter	110 mm
Shaft diameter	up to 50 mm
Protection class housing	IP50 or IP64
Protection class shaft	IP50 or IP64
Max. speed	IP50: 3 600 min^{-1} IP64: 1 500 min^{-1}
Spring tether (hollow shaft)	
Tolerance axial	± 0.5 mm
Tolerance radial	± 0.05 mm
Vibration resistance (IEC 68-2-6)	100 m/ s^2 (10 - 500 Hz)
Shock resistance (IEC 68-2-27)	1000 m/ s^2 (6 ms)
Operating temperature	-20...+70°C
Storage temperature	-50...+80°C
Material Shaft	Stainless steel
Material Housing	Aluminium
Weight approx.	1000g

TECHNICAL DATA
electrical

Supply voltage	DC 5 V (–5 %/ +10 %) or DC 10-30 V
Max. current w/o load ST/MT	120 mA
Lines / Drives	Clock and Data / RS422
Output code	Binary or Gray
Resolution singleturn	10 - 17 Bit
Incremental signals	Sine - Cosine 1 Vpp
No. of increments	4096
3 dB limiting frequency	500 kHz
Absolute accuracy	± 35“
Repeatability	± 7“
Alarm output	alarm bit (SSI), warning bit and alarm bit (BiSS)
Connection	Cable radial Cable with Conin-Coupling

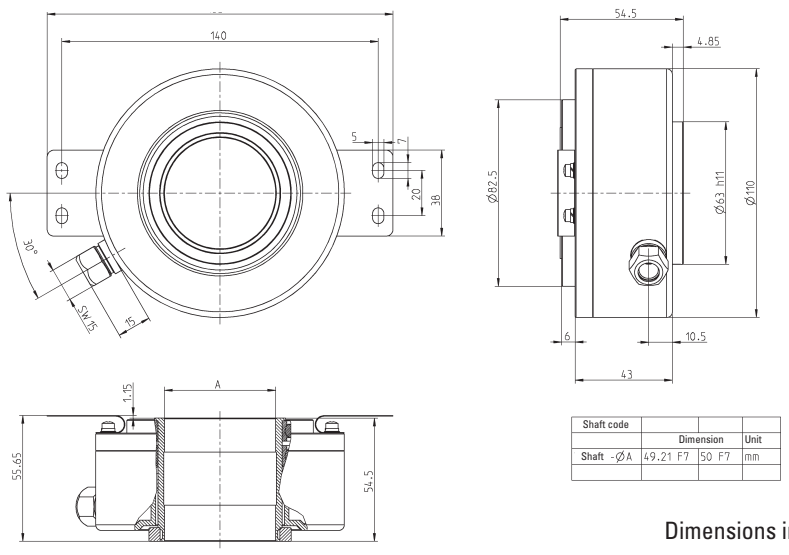
DIMENSIONAL DRAWINGS

KEYWAY



Dimensions in mm

CLAMPING RING



Shaft code			
	Dimension		Unit
Shaft -ØA	49.21 F7	50 F7	mm

Dimensions in mm

PIN ASSIGNMENT

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] Direction: + U_B or unconnected = ascending code values with rotation cw
0 V = descending code values with rotation cw

[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 → max. cable length 10 m

[4] Use only thin wires 014 mm²

RECOMMENDED DATA TRANSFER RATE WITH 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.

Lead length	Baud rate
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

ORDERING INFORMATION

Type	Resolution	Supply voltage	Spring tether	Protection class	Mounting /Shaft	Output	Connection
AC110	**0011** 11 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **0017** 17 Bit ST [1]	**A** DC 5 V [2] **E** DC 10 - 30 V	**B** with **O** without	**1** IP50 **4** IP64	**K50** Keyway (4x1.2)/ 50 mm **H50** Clamping ring/ 50 mm	**SB** SSI Binary **SG** SSI Gray **BI** BiSS	**B** Cable radial 1.5 m **B-D0** Cable radial 3 m **B-F0** Cable radial 5 m **B-K0** Cable radial 10 m **B-D** Cable 1.5 m with Conin-Coupling

[1] When resolution > 14 Bit → max. Clock frequency 178´kHz

[2] Notice: when supply voltage = DC 5V → max. cable length 10 m