

## CANopen ABSOLUTE SINGLE TURN ENCODERS, CHU9 RANGE

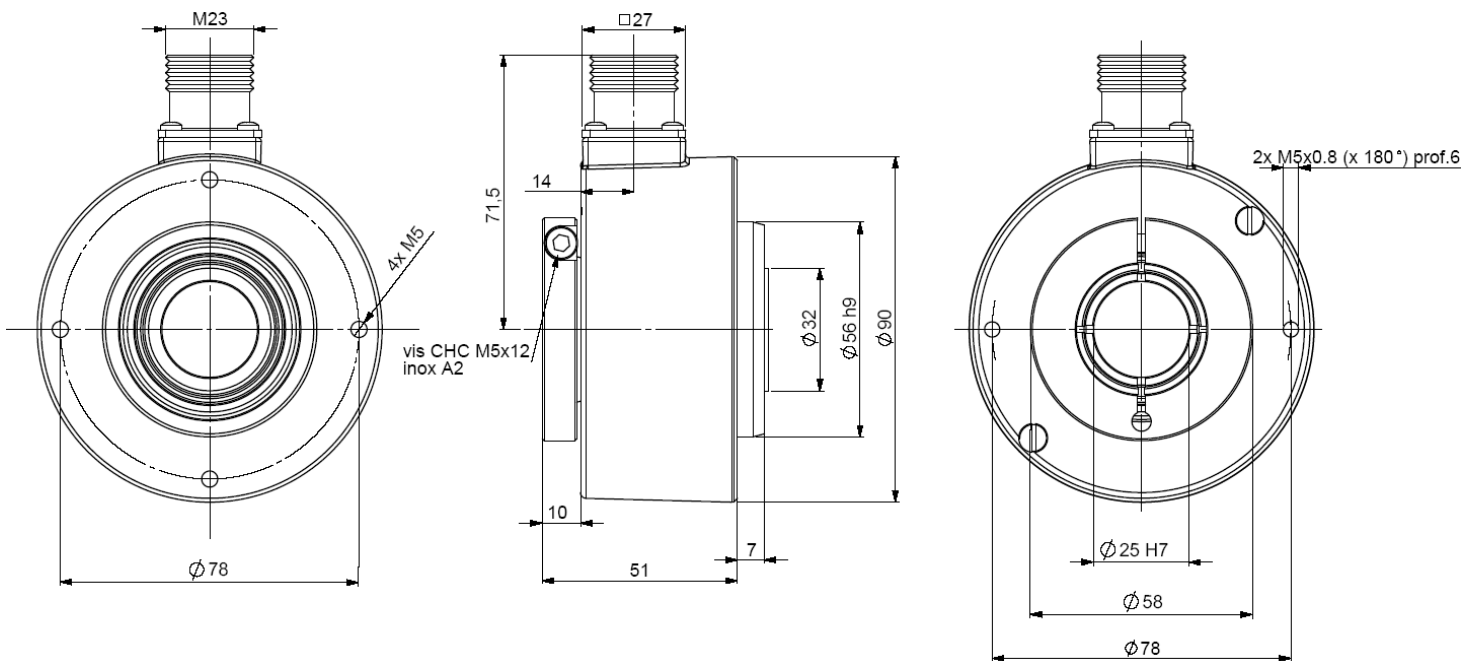
CHU9, the new generation of CANopen absolute single turn encoders :

- Through hollow shaft version Ø30mm, reduction hubs available,
- 90mm encoder, extra-flat,
- Robustness and excellent resistance to shocks / vibrations,
- High protection level IP65,
- High performances in temperature -20°C to 80°,
- Universal power supply from 5 to 30 Vdc,
- High resolutions up to 8192 points per turn (2<sup>13</sup>).

**CANopen**  
DS 301 V4.02  
DS 406 V3.1



CHU9\_25 connection BCR (radial M23), with reduction hub 9418/I25 (25mm) mounted on the shaft



### MECHANICAL CHARACTERISTICS

Material	Cover : zinc alloy	Vibrations (EN60068.2.6)	$\leq 200 \text{ m.s}^{-2}$ (10 ... 1 000Hz)
Stainless steel option	Body : aluminium	EMC	EN 61000-6-4, EN 61000-6-2
Shaft	Inox	Isolation	500V (1min)
Bearings	6807 serie	Encoder weight (approx.)	0,700 kg zinc alloy cover, alu body
Maximal loads	Axial : 50 N		1,00 kg zinc alloy cover, stainless steel body
	Radial : 80 N		1,20 kg stainless steel cover and body
Shaft inertia	$\leq 55 \cdot 10^{-6} \text{ kg.m}^2$	Operating temperature	- 20 ... + 80°C (encoder T°)
Torque	$\leq 25 \cdot 10^{-3} \text{ N.m}$	Storage temperature	- 40... + 80°C
Permissible max. speed	6 000 min <sup>-1</sup>	Protection(EN 60529)	IP 65
Continuous max. speed	3 600 min <sup>-1</sup>	Torque (ring screw)	nominal: 3N.m, break: 4N.m
Shaft seal	Viton	Theoretical mechanical lifetime 10 <sup>9</sup> turns (F <sub>axial</sub> / F <sub>radial</sub> )	
Shocks (EN60068.2.27)	$\leq 500 \text{ m.s}^{-2}$ (during 6 ms)	25 N / 40 N : 140	50 N / 80 N : 17

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# CANopen

### ELECTRICAL CHARACTERISTICS

Power supply	5 – 30Vdc
Introduction	< 1 s
Consumption (without load)	< 50mA (at 24Vdc)
Accuracy	± ½ LSB (13 bits)

### Programmable parameters

**Resolution:** defines the resolution per revolution (0 to 8 192),

**Transmission speed :** programmable from 10kbaud (1000m) to 1 Mbaud (40 m) ; value per default: 20 Kbaud,

**Address:** define the software address of the encoder on the bus (1 to 127, value by default: id = 1),

**Direction :** define the direction of count of the encoder,

**RAX :** defines the value of its preset position (non turning shaft),

**CAM:** Low and High Limits.

### Communication modes

3 modes are available to interrogate the encoder :

**POLLING mode:** (Response to a RTR message): The position value is only given upon request (SDO mode),

**CYCLIC mode:** the encoder transmits its position in an asynchronous manner. The frequency of the transmission is defined by the programmable cyclical timer register from 0 to 65 535 ms,

**SYNCHRO mode:** the encoder transmits its position on a synchronous demand by the master.

### CANOPEN CONNECTION

1	2	3	4	5	6	7	8, 9, 11	10	12
Reserved	CAN LOW	CAN GND	Reserved	Reserved	Reserved	CAN HIGH	Reserved	0V	+ 5/30Vdc

Pinout 3 (CAN GND) and 10 (0V) are connected together (intern the encoder).

Nota : Refer to the bus standards for the maximal derivation length.

**ORDERING CODE** (Special versions upon request, for ex. special flanges/electronics/connections...)

	Shaft Ø	Power supply	Output stage	Code	Resolution	Connection	Connection orientation
CHU9	30 : 30mm Reduction hubs available	P : 5 to 30Vdc	BB : CANopen	B: Binary	13 : 8192 ppoints per revolution (2 <sup>13</sup> )	BC: M23 12 pinouts clockwise	R : radial
CHU9 _	30 //	P	BB	B //	13 //	BC	R

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