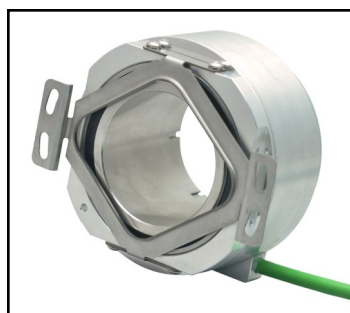


TECHNICAL DATASHEET
Hollow shaft feedback for DD motor
RS90

**TECHNICAL DATA
mechanical**

- Large bore hollow shaft encoder, high dynamic response
- Bore size up to 50mm
- Compact housing , OD=89mm
- Direct read 4096 periods sin/cos with UVW commutation channel
- Max speed 3,000RPM
- Rear clamping ring for quick mounting.
- Application: DD motor for Lithium battery, printing machine, rotary ta-



OD	Housing 89 mm, with tether 104mm
Bore size	30/38/50 mm
Mounting	Fixed by tether , rear mounting
IP rating (EN 60529)	IP64
Axial endplay of mounting shaft	±0.5 mm
Radial runout of mating shaft	±0.1 mm
Max speed	3,000 RPM
Inertia	3.0 kg.cm ²
Vibration (DIN EN 60068-2-6)	200 m/s ² (10 ... 500 Hz)
Shock (DIN EN 60068-2-27)	1,000 m/s ² (6 ms)
Operating temperature	-20 °C ... +100 °C
Storage temperature	-40 °C ... +100 °C
Humidity	95% non-condensing
Weight	approx. 1.0 kg
Connection	Cable, Radial

**TECHNICAL DATA
electrical**

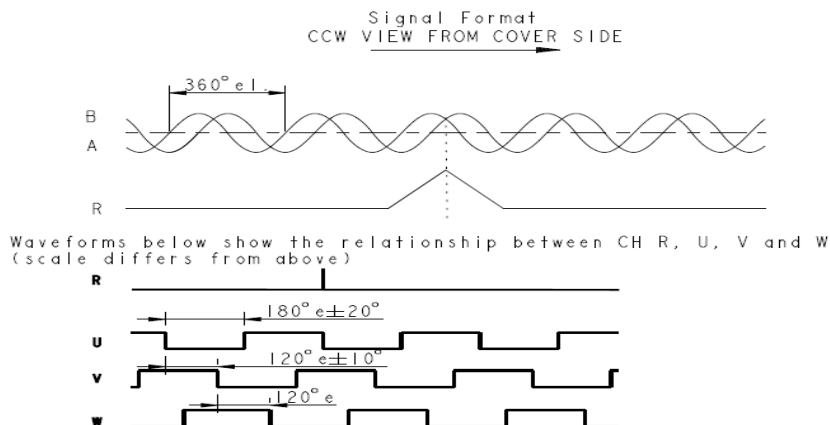
Supply voltage	DC 5V ± 5%
Current consumption	150 mA
Signal periods	4096PPR Direct (Square wave by interpolation and the selectable PPR see the ordering information)
Incremental signals	1Vpp Sin/Cos, DC 2.5v offset
Max output frequency	Sin/cos: 300KHz Square wave 7.8MHz (related to cable length, consult the manufacturer)
Typical Accuracy	±45"
Typical Repeatability	±3"

TECHNICAL DATASHEET

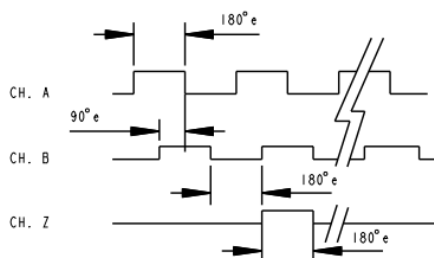
Hollow shaft feedback for DD motor

RS90

Output signals



Signal format, CCW view from cover side
Square wave signal (differential output, reverse signal not shown)



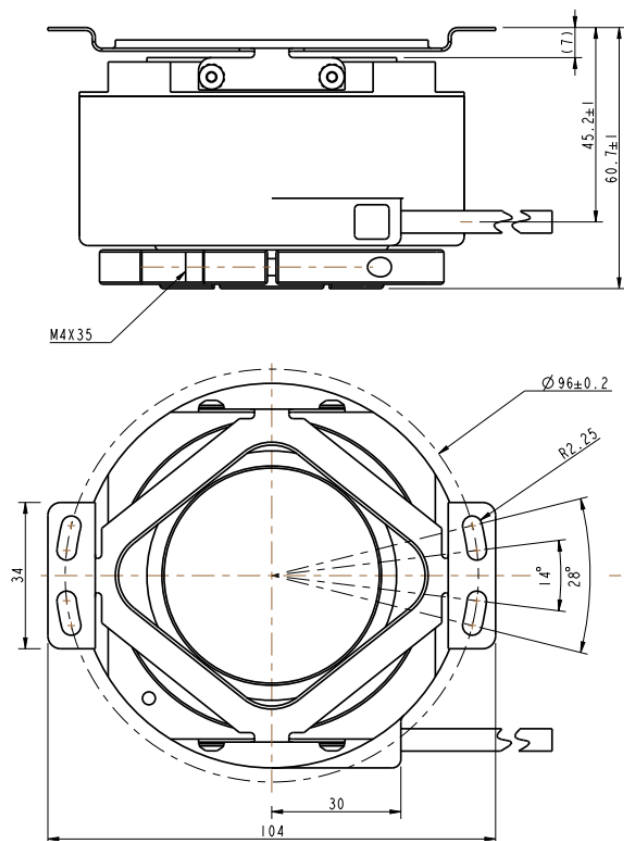
CONNECTION

Color	Definition
RED	Vcc
BLK	GND
BLU	A+
BLU/RED	A-
GRN	B+
GRN/WHT	B-
PNK	R+
PNK/GRY	R-
BRN ¹	U
GRY ¹	V
WHT ¹	W
SCREEN ²	SCREEN

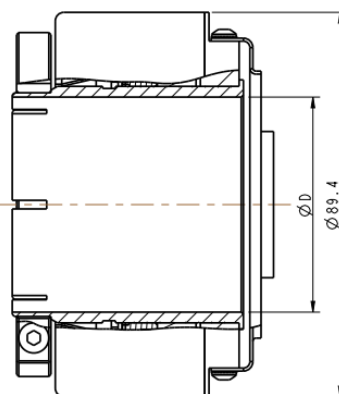
¹ UVW output is valid only if the number of poles in the selected table is not 0.

² The cable shield is connected to the encoder housing.

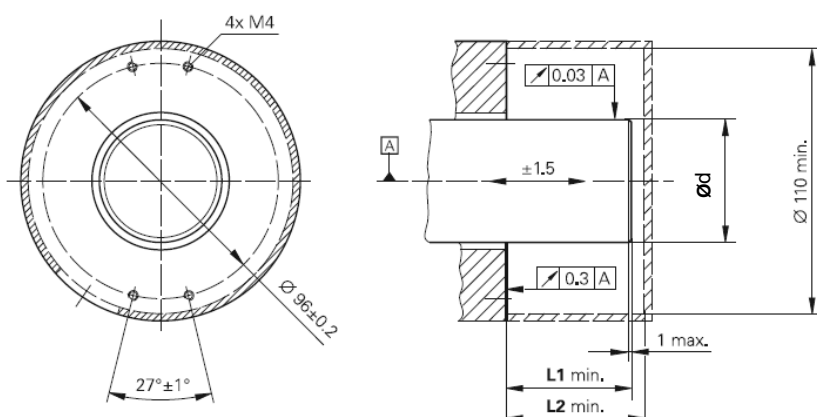
DIMENSIONED DRAWINGS



Hollow shaft ØD	Hollow shaft ØD tolerance	Mating shaft Ød tolerance	Min matching shaft length L1	Min. Mounting depth L2
Ø30	(+0.05/0)	g6(-0.007/-0.020)	60.0 mm	62.5mm
Ø38	(+0.05/0)	g6(-0.009/-0.025)	60.0 mm	62.5mm
Ø50	(+0.034/+0.009)	h6(0/-0.016)	60.0 mm	62.5mm



Matching dimensions required



Dimensions in mm



TECHNICAL DATASHEET

Hollow shaft feedback for DD motor

RS90

ORDERING INFORMATION (Sin/Cos)

Type	Resolution	/ Poles	Supply voltage	Protection	Flange	Bore Size	Output	Connection
		/						
RS90	4096 4096PPR	0 0 A 10 D 16 E 20 F 24 G 30 *other on request	A DC 5V	4 IP64	H Front spring tether, rear clamping ring	30 30mm 38 38mm 50 50mm *other on request	S sin/cos	A0 0.5m Cable, radial B0 1.0m Cable, radial F0 5.0m Cable, radial

ORDERING INFORMATION (Square wave output)

Type	PPR	/ Poles	Supply voltage	Protection	Flange	Bore Size	Output	Connection
		/						
RS90	4096 4,096 PPR 8192 8,192 PPR 16384 16,384 PPR 20480 20,480 PPR 32768 32,768 PPR 40960 40,960 PPR 65536 65,536 PPR 81920 81,920 PPR 102400 102,400 PPR 204800 204,800 PPR	0 0	A DC 5V	4 IP64	H Front spring tether, rear clamping ring	30 30mm 38 38mm 50 50mm *other on request	R RS422 line driver	A0 0.5m Cable, radial B0 1.0m Cable, radial F0 5.0m Cable, radial

