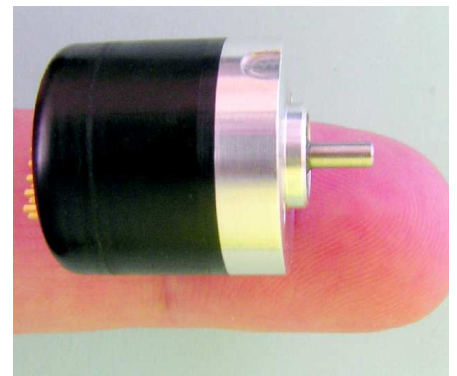


Product Information

Features

- Very compact, low weight, only 16 mm diameter (0.62")
- Analog or quadrature count outputs
- High resolution: digital from 2000 up to 100,000 counts per rev
sinewave from 500 up to 1250 periods per rev
- Additional motor commutation tracks UVW, 4, 6, 8 poles
- Short circuit proof differential line driver outputs
- High data rate up to 16 MHz
- up to 60,000 rpm
- Self monitoring encoder with warning/error signal



Description

The Ulthemius[®] encoder is a state of the art micro encoder. By using a very high level of integration, this encoder family uses chrome-on-plastic (COP[™]) code disks for low mass, a sophisticated optical pickup system, an internal signal conditioning and interpolating circuit (Pat.) with automatic realtime correction of phase, amplitude and offset errors. Thus a very precise output signal is achieved.

The encoder monitors himself and gives an error signal output before getting into critical system status.

Applications

This encoder was designed to meet the most demanding requirements in :

Pick & Place Automation
Miniature Motors & Drives
Scanners and medical devices
Direct integration into X-Y tables or Z stages

Specifications, electrical

(all data at 25 °C unless otherwise noted)

Supply voltage	5 V, ± 10%
Supply current	50 mA (without output load)
Max. count rate	16 MHz
Outputs, digital	A,\bar{A} / B,\bar{B} / Z,\bar{Z}
Digital outputs are short circuit proof and RS422A compatible; serial-matched for twisted pair	U,\bar{U} / V,\bar{V} / W,\bar{W}
Vout,low / Vout,high	0.6 V / 4.4 V @ 10 mA
Outputs, analog	Sine, Cosine, Index, 1 V_{pp}
Max. frequency	500 kHz
Max. load at output	20 mA digital/10 mA analog
Operating/storage temp.	-35 °C to + 85 °C

Resolutions

Digital: All digital CPR are stated after quadrature :

2000, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 15000, 16000, 20000, 24000, 25000, 30000, 32000, 40000, 50000, 60000, 64000, 80000, 100000, 2048, 4096, 8192, 16384, 32768, 65536

Analog, sine wave: 500, 512, 750, 1000, 1024, 1250

Other CPR available on request, pls call factory

Specifications, mechanical

Weight, excl. cable	12 gr.
Shaft loads	axial 2 N, radial 2 N
Shaft dimensions	∅ 2,0 mm x 6,0 mm
Max. rev./min.	60.000 rpm*
IP-rating	IP40, optional IP50
Max. shock	100 g - 11 ms
Bump	10 g - 16 ms (1000 x 3axis)
Vibration	10 g - 10 - 2000 Hz
Moment of inertia	0,06 g cm²
Start torque	< 0,001 Nm @ 25°C

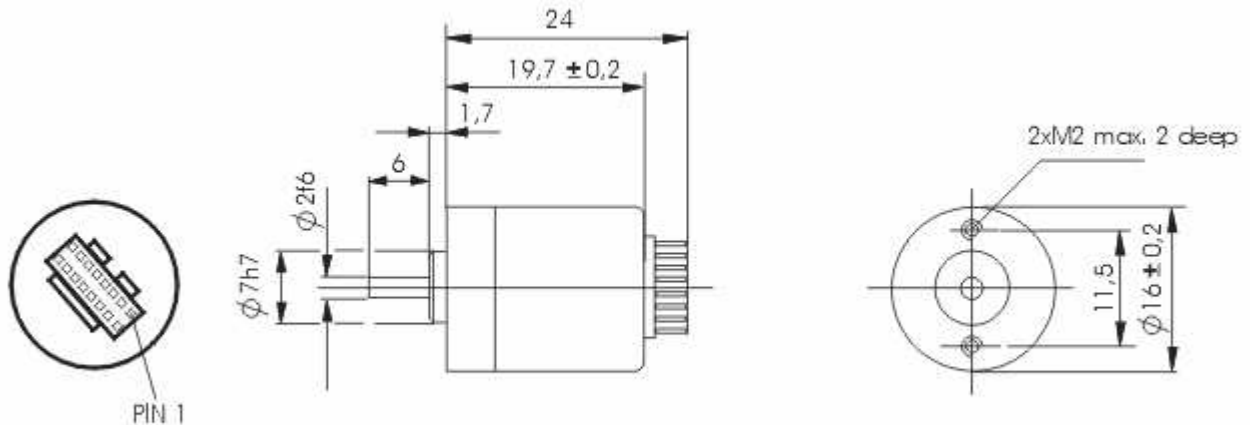
Housing material	Aluminium
Output connection	16 pin or cable

*at highest CPR limited by output frequency

The Ulthemius[™] encoder family opens up the high resolution with smallest size.

We bring Motion to the Market.....

Mechanical dimensions

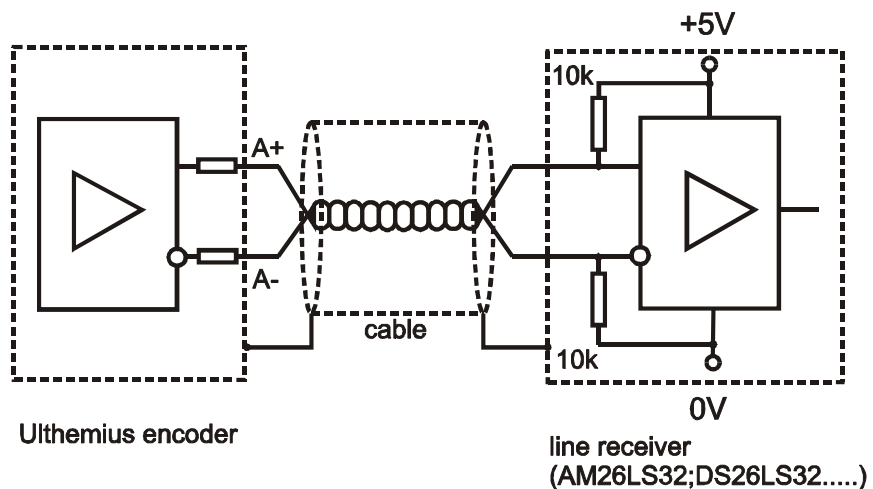


Electrical connection

recommended receiver circuit

Output :

- 1 A+
- 2 A-
- 3 GND
- 4 +5V
- 5 B+
- 6 B-
- 7 Z+
- 8 Z-
- 9 ERR-
- 10 Shield
- 11 U+
- 12 U-
- 13 V+
- 14 V-
- 15 W+
- 16 W-



Connector: Samtec FFSD-08-S-XX.XX-01-N, or equivalent, for ribbon cable
 For cable length >1m shielded twisted pair type recommended