ERCFS Series
Hall Effect Encoder
SSI Output

P3 AMERICA
PRECISION SENSORS & JOYSTICKS

SSI digital - interface, 22 mm housing
Direct Serial Synchronous Interface for direct input to PLC etc.
Flange mounting
Shock and vibration proof

All dimensions are in mm
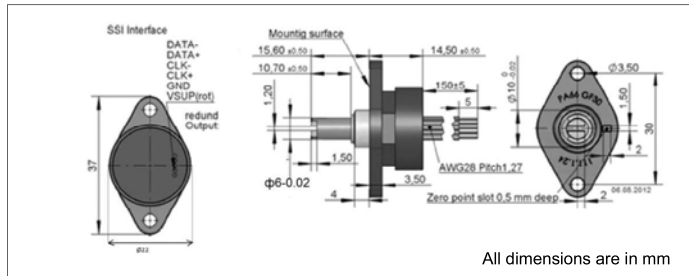
1- Supply (Red); 2- Ground (Grey); 3- Clock+ (Grey); 4- Clock- (Grey); 5- Data+(Grey); 6- Data- (Grey)

FUNCTION PRINCIPLE

The angular position and the signal generation is detected by a CMOS Hall sensor over which a parallel diametrically polarized magnet induces a magnetic field. An integrated electronic provides the output of a 2 byte WORD in Grey-code for SSI interface.

ELECTRICAL CHARACTERISTICS

Electrical angle		0 - 360°
Electrical speed (Max.)		1600 rpm
Resolution		12 bit (4096 steps)
Signal	Supply voltage	Output signal
S05SSI	5V±10%	5V SSI
S24SSI	9-30V DC	24V SSI
Frequency response		10 KHz
Supply current		< 30 mA
Update rate		0.1 ms

MECHANICAL CHARACTERISTICS

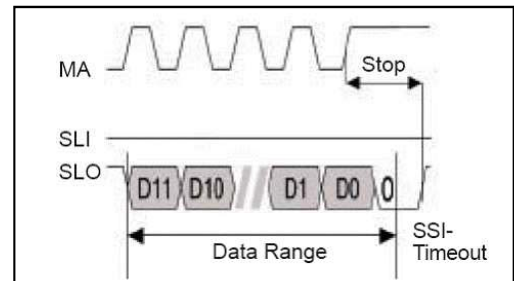|	
Mechanical angle	360° (continuous)
Mechanical speed (Max.)	3000 rpm
Shaft diameter X length (FMS)	6 mm X 16 mm
Rotational life	~20 million rotations
Operating temperature	- 40 ... +85 °C
Operating torque	0.3 to 0.5 Ncm (default)
Vibration (IEC 68-2-6, Test Fc)	±1.5 mm/20g /2000Hz/16cycles
Mechanical shock(IEC 68-2-7, Test Ea)	50g /11ms /halfsine (3X6 shocks)
Weight	18 gm
Interconnection	6 core flat cable 0.15 mtr long

MATERIAL

Bearing	Polymer bearing
Housing	Nylon 66 Glass Fibre reinforced
Shaft	Stainless steel

SERIAL SYNCHRONOUS INTERFACE

With the SSI interface the absolute angular position is provided serially and synchronous to a receiving electronic which has an SSI input (PLC indicator etc). The main advantage of the SSI interface is that long cable distances can be overcome by very few data lines. The actual angle of position is provided in 2 byte WORD Grey code with 12 bit over 360°. The receiving electronic provides pulse sequences and thus determines the transmission rate. With the firstfollowing signal of the pulse sequence, the angular position is detected and kept. The following rising ramps control the bit- wise transmission of the data word. After a small pause a new angular value can be transmitted.

Default Version :
22 mm housing, flange mount, 360° Electrical & Mechanical angle CW, 6 core flat cable 0.15 mtr long