

Absolute encoders - SSI

Cone shaft

Optical singleturn encoders

EFL580 - SSI



EFL580 with cone shaft

Features

- Encoder singleturn / SSI
- Optical sensing method
- Resolution: singleturn 13 bit
- Additional incremental signals 2048 sine periods
- Cone shaft
- Operating temperature max. +105 °C

Optional

- Alternative connection technology

Technical data - electrical ratings

Voltage supply	5 VDC \pm 10 % (please consider the voltage drop on the supply cable)
Reverse polarity protection	Yes
Consumption w/o load	\leq 50 mA
Initializing time typ.	20 ms after power on
Interfaces	SSI, SinCos
Function	Singleturn
Steps per revolution	8192 / 13 bit
Sensing method	Optical
Code	Gray
Code sequence	CW/CCW coded by connection
Inputs	SSI clock Zero setting input
Output stages	SSI data: Linedriver RS422
Incremental output	2048 sinewaves A, B, sine 1 Vpp
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	UL approval / E63076

Technical data - mechanical design

Size (flange)	\varnothing 58 mm
Shaft type	\varnothing 9.25 mm cone shaft (1:10)
Protection DIN EN 60529	IP 64
Operating speed	\leq 6000 rpm (electric)
Rotor moment of inertia	20 gcm ²
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-25...+105 °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration \pm 4 mm - 10-61 Hz 30 g - 61-2000 Hz DIN EN 60068-2-27 Shock 200 g, 3 ms
Weight approx.	620 g (5 m cable)
Connection	Cable 5 m with D-SUB, 15-pin

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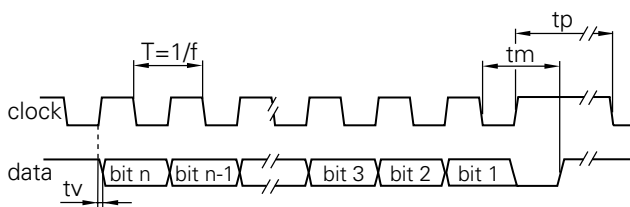
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Part number

EFL580-C R K . D K 5G . 13 009

R	K	.	D	K	5G	.	13	009	
									Resolution
									13 13 bit singleturn
									Voltage supply / interface
									5G 5 VDC, SSI, gray
									Connection
									K Cable 5 m, tangential, SUB-D, HD, 15-pin, 3 row
									Protection
									D IP 64
									Mounting
									K ø9.25 mm cone shaft, center screw
									Flange
									R With stator coupling ø72 mm

Data transfer



Clock frequency f	62.5...1500 kHz
Duty cycle of T	40...60 %
Delay time tv	150 ns
Monoflop time tm	26 µs + T/2
Clock interval tp	30 µs

Subject to modification in technic and design. Errors and omissions excepted.

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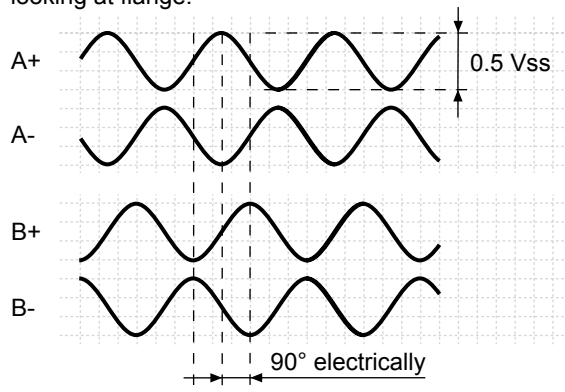
Terminal significance

UB	Encoder voltage supply.
GND	Encoder ground connection relating to UB.
Data+	Positive, serial data output of differential linedriver.
Data-	Negative, serial data output of differential linedriver.
Clock+	Positive, serial SSI clock input of differential line reciever
Clock-	Negative, serial SSI clock input of differential line reciever.
Zero setting	Input for setting a zero point anywhere within the encoder resolution. The zero setting operation is triggered by a High impulse. Connect to GND after setting operation for maximum interference immunity. Impulse duration >100 ms.
SinCos outputs	SinCos tracks and inverted. A leading B when rotating the shaft clockwise and looking at flange.

Output signals

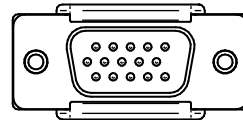
SinCos

A leading B when rotating the shaft clockwise and looking at flange.



Terminal assignment

Pin	Assignment
1	A+
2	A-
3	B+
4	B-
5	Data+
6	Data-
7	-
8	Zero setting
9	-
10	-
11	Clock+
12	Clock-
13	UB
14	GND
15	-



Trigger level

SSI	Circuit
SSI-Clock	RS422 Terminating resistor 220 Ω
SSI-Data	RS422
Control input	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 kΩ to GND
Outputs	Sine / Cosine
Output level	0.5 V _{pp} ±10 % (Output signals before difference formation)
Load	<10 mA

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Dimensions

