

Characteristics

- Mini Encoder with hollow shaft
- Encoder: Ø24 mm
- Strong construction with 2 precision ball bearings, for industrial environments
- Supply Range: 5V ± 10% or 3,3V ± 10%
- With a direct Connection to PLCs, there is a low current consumption.
- IP-Rating: IP64 / IP50 (with flat ribbon)
- Magnetic resistance with SMD-Technology



Mechanical Data

Dimension: Encoder Hollow shaft	Ø24 mm Ø2 mm; Ø3 mm; Ø4 mm; Ø5 mm; Ø6 mm oder ¼"
Weight	~75 gr
Material: Housing Hollow shaft Fixing Clamp Bearings	Electroplated Steel and Brass Stainless Steel Brass lifetime lubricated ball-bearings
Shaft Speed	max. 10.000 rpm ((2) / (3))
Starting Torque	< 0,005 Nm at 25°C)
Mass Moment of Inertia	1,3 gcm ²
Shaft Loads	axial 20 N radial 20 N
Operating Temperature	-40°C to +100°C
Storage Temperature	-55°C to +100°C
Shock	10 G / 11 ms
Vibration	10 - 2.000 Hz / 10 G
Bump	10 G / 16 ms (1.000 x 3 axis)
Humidity	5% to 85% without condensation
IP Rating	IP-Rating: IP64 / IP50 (with flat ribbon)

Electrical Data

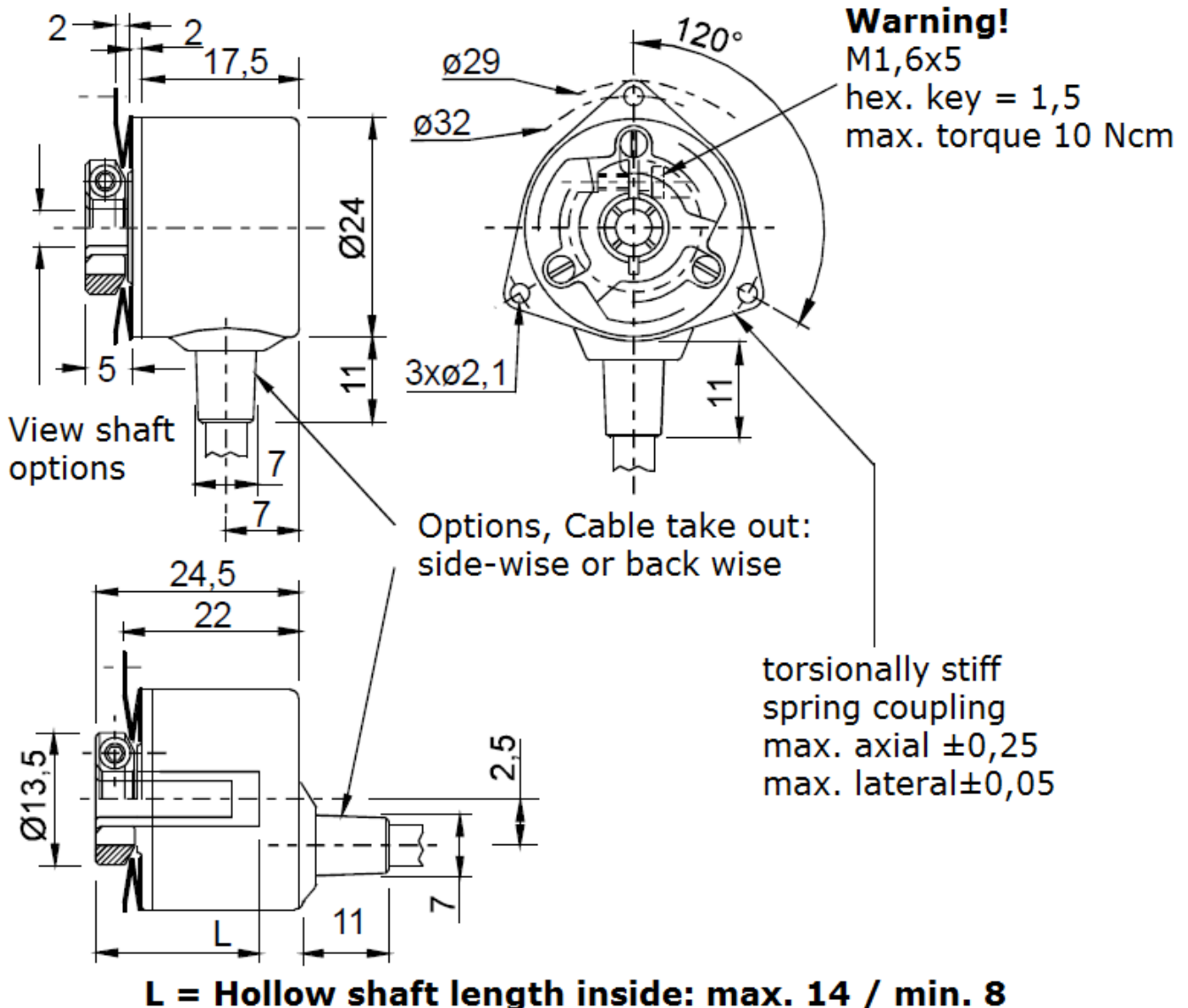
Code	SSI	
Resolution	Slow-mode 12 bit (5)	Fast-mode 12 bit (5)
System propagation delay	384 µs	
Supply Voltage	5VDC ± 10% oder 3,3VDC± 10%	
Accuracy	±0,5 at 25 °C	
Load per Output	max. 4 mA at 5V (short circuit protection)	
Current consumption	max. 25 mA	
Cable	5 leads (0,14 mm ²), shielded	

Datasheet

Notes

(1)	The absolute angular position is always set to the highest resolution; regardless of rotational speed or the number of positions to be read out.					
(2)	The absolute angular position is sampled at a fixed rate. This allows a maximum speed as shown in the electrical specifications without missing positions.					
(3)	By increasing the rotational speed, the number of issued absolute angular positions will decrease.					
(4)	Data D11:D0 is valid when the status bits have the following configurations:					
	OCF	COF	LIN	MagINC	MagDEC	Parity
	1	0	0	0	0	even checksum of bits 1 to 15
				0	1	
1				0		
(5)	Make sure you give us information about the 12 bit speed mode in your order: "slow mode" - slow speed applications; "fast mode" - for applications with higher speeds.					

Dimension mm



SSI Symbol Declaration

D11...D0	absolute angular position data
OCF Offset Compensation Finished	Logic high indicates the startup to be completed and data to be valid
COF Cordic Overflow	Logic high indicates invalid data on bits D11:D0. The absolute output maintains the last valid angular value.
LIN Linearty Alarm	logic high indicates critical output linearity on the input field. When bit is set, data bits may still be used but can contain invalid data.
MagINC Magnitude Increase	becomes high when magnetic field is increasing (pushing the magnet towards IC.)
MagDEC	becomes high when magnetic field is decreasing (pulling the magnet away from IC)
Even PAR	for transmission error detection of bits 1 to 15.

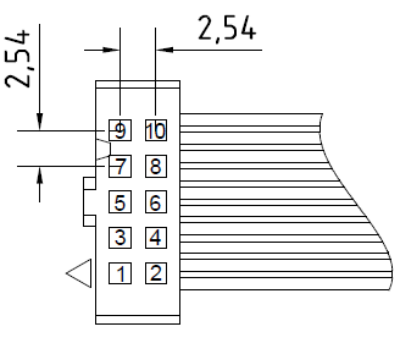
SSI-Interface Timetable

$t_{CLK\ FE}$	= min. 500 ns	First data shifted to output register
$t_{CLK/2}$	= min. 500 ns	Start of data output
$t_{DO\ active}$	= max. 100 ns	Data output activated, logic high
$t_{DO\ valid}$	= max. 375 ns	Data output valid
t_{CSn}	= min. 500ns	Pulse width of CSn
$t_{DO\ Tristate}$	= max. 100ns	Data output tristate

Standard Cable Connections

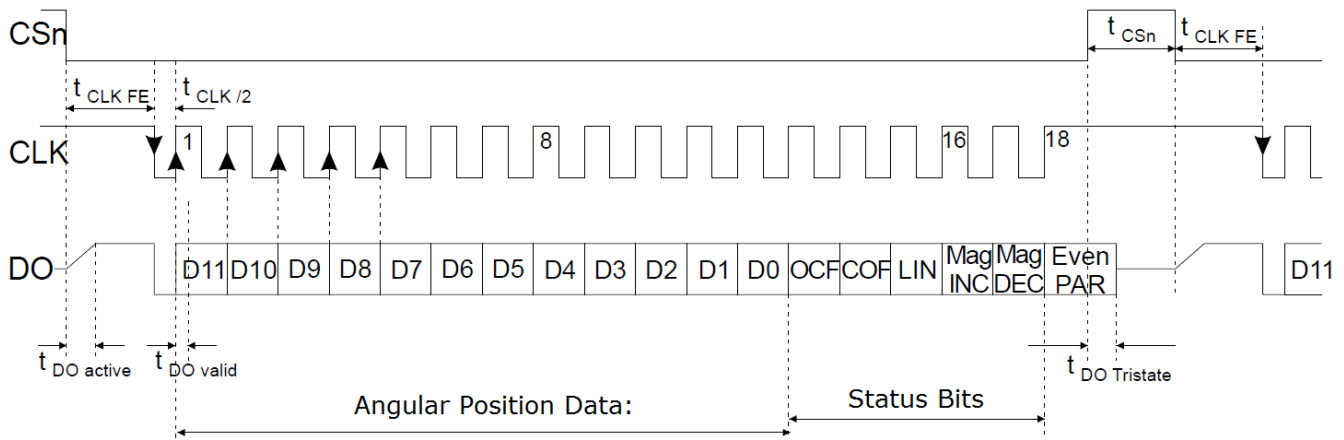
Color	Output
white	GND, 0Volt
brown	V+
green	CSn
yellow	CLK
grey	DO

IDC-Connector with Ribbon Cable

	Pin	Difference
	1 (rot)	Do not connected!
	2	CSn
	3	DO
	4	CLK
	5	V+
	6	GND, 0 Volt
	7	do not conneted!
	8	
	9	
10		

Datasheet

Serial SSI-Interface



Ordering example

Type SCH24AB - 12E - 02 - 64 - 01 - S - X

Resolution / elec. specification

- 12E = 12 Bit - 3,3 V
Fast-Mode
- 12F = 12 Bit - 3,3V
Slow-Mode
- 12G = 12 Bit - 5V
Fast-Mode
- 12H = 12 Bit - 5V
Slow-Mode

Hollow shaft Dimensions

- 02 = Ø2 mm
- 03 = Ø3 mm
- 04 = Ø4 mm
- 05 = Ø5 mm
- 06 = Ø6 mm
- ¼ = ¼"

IP-Rating

- 64 = IP64 ->Standard cable
- 50 = IP50 ->ribbon cable

Cable length

- 01 = 1m
- XX = specify length
- 0,5 = 0,5 m -> ribbon cable
- 1,0 = 1 m -> ribbon cable
- 2,0 = 2 m -> ribbon cable

Cable take out

- S = side
- B = back

Option ribbon cable

- IDC = IDC-Anschluss