

Sine encoders

Hollow shaft $\varnothing 10$ to $\varnothing 14$ mm

Resolution 1024, 2048 pulses

ITD22H00 SIL



ITD22H00 SIL with hollow shaft

Features

- Encoders for functional safety
- Up to SIL 3 / Category 4, PLe
- Resolution 1024 or 2048 ppr
- Incremental encoder with sine/cosine interface
- High LowHarmonics® signal quality
- Detachable cable – tangential outlet
- Suitable as motor feedback system for safe drives

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 %
Reverse polarity protection	Yes
Consumption w/o load	≤ 100 mA
Resolution (steps/turn)	1024...2048
Sensing method	Optical
Output frequency	≤ 180 kHz (-3 dB)
Output signals	A, B, 0
Output circuit	Sine/cosine 1 Vpp
Approval	SIL 2 (DIN EN IEC 61508-1:2010 / DIN EN 61800-5-2:2007 Category 3, PLd EN ISO 13849-1:2006) With a redundant use: SIL 3 (DIN EN IEC 61508-1:2010 / DIN EN 61800-5-2:2007 Category 4, PLe EN ISO 13849-1:2006)
Safety operating figures	Encoder operating life (ITD22H00 SIL at +40 °C): MTTF: ≤ 100 years PFH: $1,2E-09$ 1/h SFF: 96.9 % DC: 93.4 (medium)

Technical data - mechanical design

Dimensions (flange)	$\varnothing 58$ mm
Shaft	$\varnothing 10$ mm hollow shaft $\varnothing 12$ mm hollow shaft $\varnothing 14$ mm hollow shaft
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Protection DIN EN 60529	IP 65
Operating speed	≤ 6000 rpm
Starting torque	≤ 0.015 Nm
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-30...+100 °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 20 g, 55-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Connection	Board connector, 8-pin
Weight approx.	150 g

Sine encoders

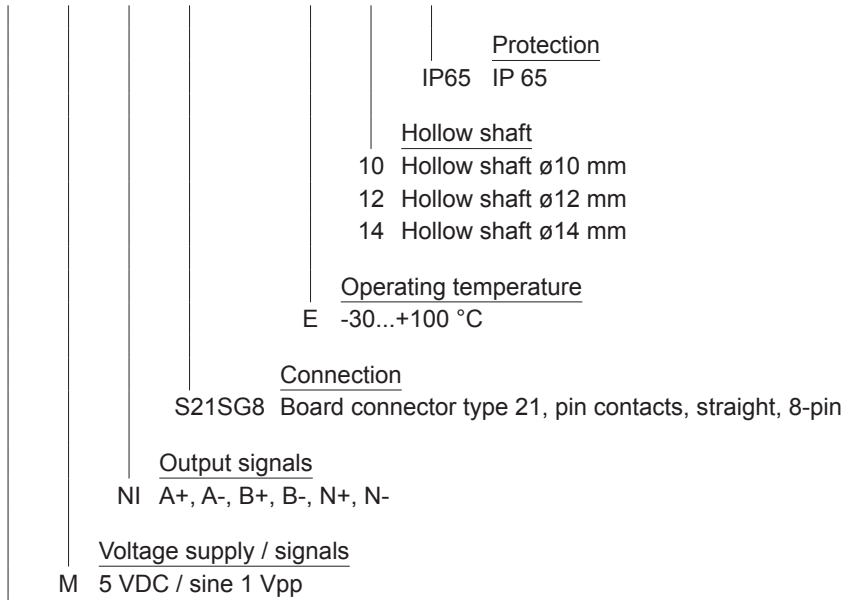
Hollow shaft $\varnothing 10$ to $\varnothing 14$ mm
Resolution 1024, 2048 pulses

ITD22H00 SIL

Part number

ITD22H00 SIL

	M	NI	S21SG8	E		IP65
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See part number (pulses)

Part number (pulses)

1024 | 2048

Accessories

Connectors and cables

11072169	Connection cable with wire end sleeves (UL/CSA) L = 1 m
11079089	Connection cable with rear mount socket M23, 12-poles L = 1 m
11079111	Connection cable with D-SUB connector, 9-poles L = 1 m
11079113	Connection cable with coupling M12, 8-poles L = 1 m
11079112	Connection cable with crimp contacts (UL/CSA) L = 0.2 m

Mounting accessories

11073114	Mounting kit 019
11073119	Mounting kit 021

Further connection cable lengths see accessories.

Sine encoders

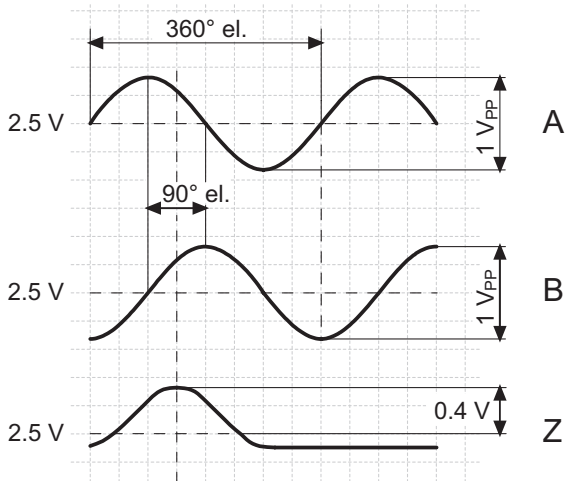
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Output signals

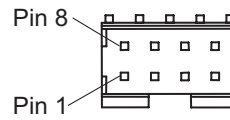
Clockwise rotation when looking at the mounting side.



differential signals

Terminal assignment

Connector	Assignment
Pin 3	Track A +
Pin 4	Track A -
Pin 5	Track B +
Pin 6	Track B -
Pin 7	Track N +
Pin 8	Track N -
Pin 1	UB
Pin 2	GND



Trigger level

Outputs	Sine
Output amplitude A + B	1 V _{PP} at Z ₀ = 120 Ω
Output amplitude N	approx. 0,4 V (useable part) at Z ₀ = 120 Ω

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Dimensions

