

Absolute encoders - bus interfaces

Through hollow shaft $\varnothing 20$ to $\varnothing 27$ mm

Optical multiturn encoders max. 17 bit ST / 16 bit MT, EtherCAT

ATD 4B A 4 Y11



ATD 4B A 4 Y11 with through hollow shaft

Features

- Encoder single- or multiturn / EtherCAT
- Optical sensing method
- Resolution: max. singleturn 17 bit, multiturn 16 bit
- Through hollow shaft $\varnothing 20 \dots 27$ mm
- Short cycle times up to 62.5 μ s
- Parametrizable by bus interface
- Self-diagnostic
- Electronic zero point adjustment

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤ 150 mA (24 VDC)
Interface	EtherCAT
Function	Multiturn
Profile conformity	CANopen® over EtherCAT
Operating mode	Full-Duplex Fast Ethernet physics (100 BASE-TX)
Steps per turn	≤ 131072 / 17 bit
Number of turns	≤ 65536 / 16 bit
Sensing method	Optical
Code sequence	CW: ascending values with clockwise sense of rotation; looking at mounting surface
Programmable parameters	Steps per revolution Total resolution Rotational direction CW/CCW Number of revolutions Operating modes
Diagnostic functions	Position or parameter error Temperature control Multiturn sensing Self-diagnosis
Status indicator	4x LED integrated in housing

Technical data - mechanical design

Size (flange)	$\varnothing 80$ mm
Shaft type	$\varnothing 20$ mm (through hollow shaft) $\varnothing 22$ mm (through hollow shaft) $\varnothing 25$ mm (through hollow shaft) $\varnothing 27$ mm (through hollow shaft)
Protection DIN EN 60529	IP 65
Operating speed	≤ 5000 rpm (mechanical) IP 54 ≤ 3000 rpm (mechanical) IP 65 ≤ 7000 rpm (electric)
Starting torque	≤ 0.02 Nm (+20 °C)
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-20...+85 °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 30 g, 11 ms
Weight approx.	590 g
Connection	Connector M12, female D-coded, 4-pin Connector M12, A-coded, 4-pin
Motor shaft tolerance	0.25 mm axial 0.1 mm radial

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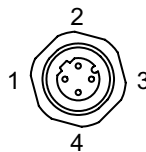
ATD 4B A 4 Y11

Terminal significance

Bus-protocol	EtherCAT, CoE (CANopen over EtherCAT)
Operation mode	Full-Duplex Fast Ethernet physics (100 BASE-TX)
Communication	Modi: - Asynchron - Frame synchron - Distributed Clock synchron Cycle times: - min 62,5 μ s to max. 32 ms in Distributed Clock
Communication profile	compatible to CANopen according to DS 301
Device profile	according to DS 406
Diagnostic messages	position error, operating temperature overrun, battery, hardware error

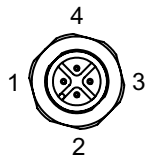
Terminal assignment

Connector	Assignment	Significance
Pin 1	TxD+	Transmission data+
Pin 2	RxD+	Receiving data+
Pin 3	TxD-	Transmission data-
Pin 4	RxD-	Receiving data-



Socket, 4-poles, bush contacts, M12 D-coded (IN / OUT)

Connector	Assignment	Significance
Pin 1	VDC	Supply voltage
Pin 2	-	Not assigned
Pin 3	GND	Ground
Pin 4	-	Not assigned



Socket, 4-poles, pin contacts, M12 A-coded (POWER)

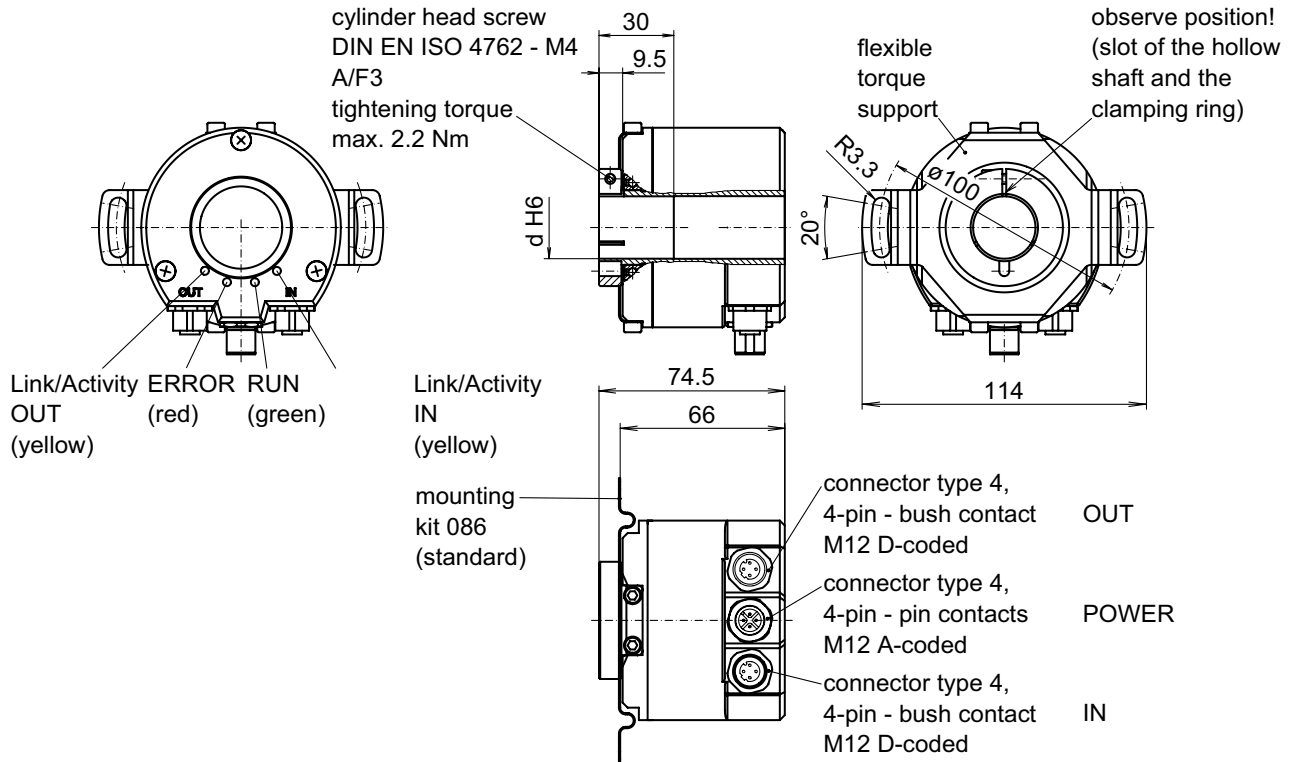
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Dimensions



034- 8 Y11