

# Absolute encoders - bus interfaces

Solid shaft  $\varnothing 10$  mm with clamping flange

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

## ATD 2B B14 Y22



ATD 2B B14 Y22 with clamping flange

### Features

- Encoder single- or multiturn / EtherCAT
- Optical sensing method
- Resolution: max. singleturn 17 bit, multiturn 16 bit
- Solid shaft  $\varnothing 10$  mm with clamping flange
- Short cycle times up to 62.5  $\mu$ 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	$\leq 150$ 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	$\leq 131072$ / 17 bit
Number of turns	$\leq 65536$ / 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)	$\varnothing 58$ mm
Shaft type	$\varnothing 10$ mm solid shaft (clamping flange)
Protection DIN EN 60529	IP 65
Operating speed	$\leq 8000$ rpm (mechanical) $\leq 8000$ rpm (electric)
Starting torque	$\leq 0.02$ Nm (+20 °C)
Admitted shaft load	$\leq 20$ N axial $\leq 40$ N radial
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.	380 g
Connection	Connector M12, female D-coded, 4-pin Connector M12, A-coded, 4-pin

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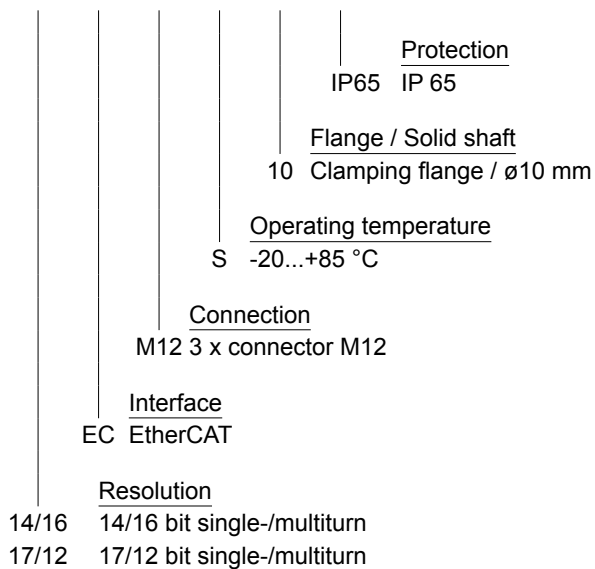
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## Part number

ATD 2B B14 Y22 

	EC	M12	S	10	IP65
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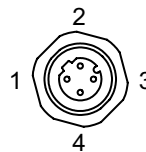
## ATD 2B B14 Y22

### 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 $\mu$ 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

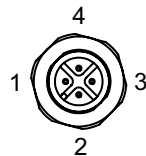
### Terminal assignment

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)

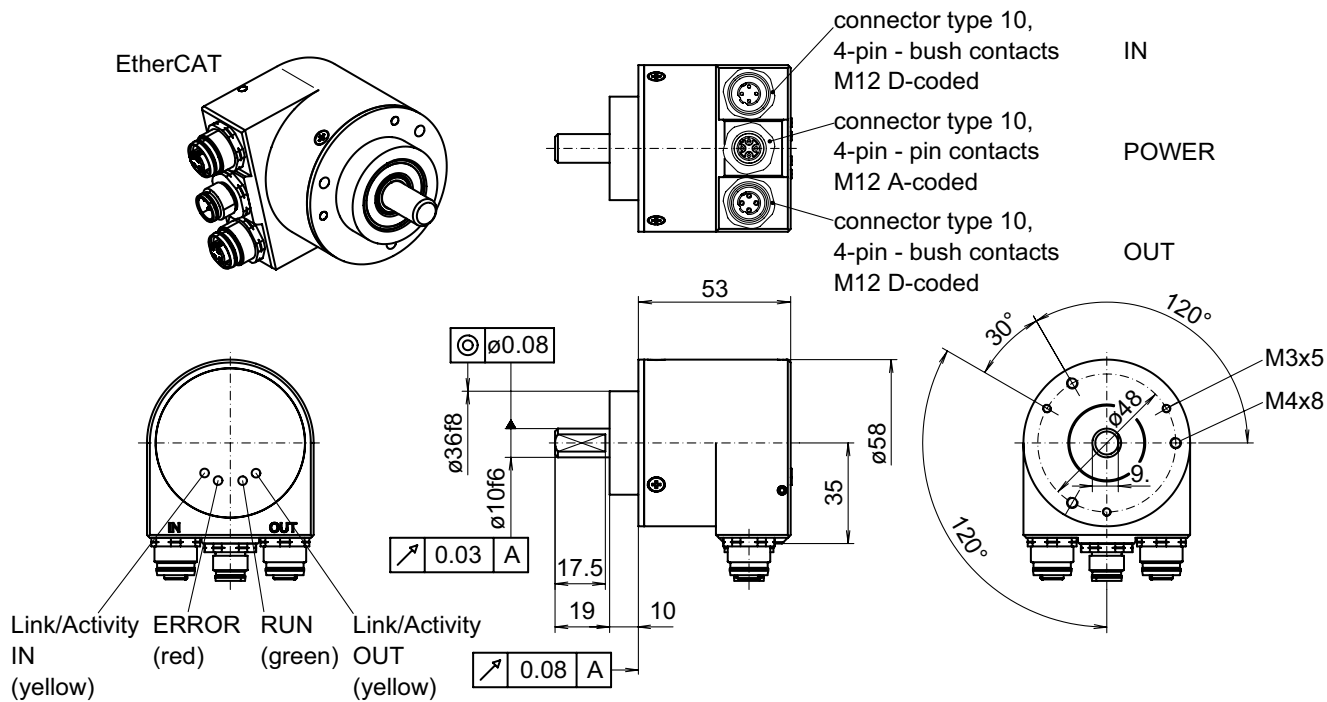
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## Dimensions



028- 7 Y22