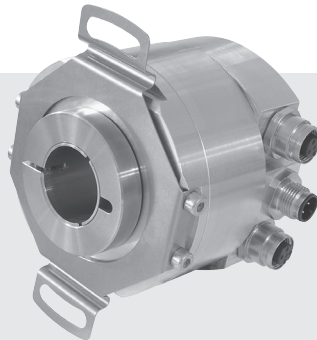
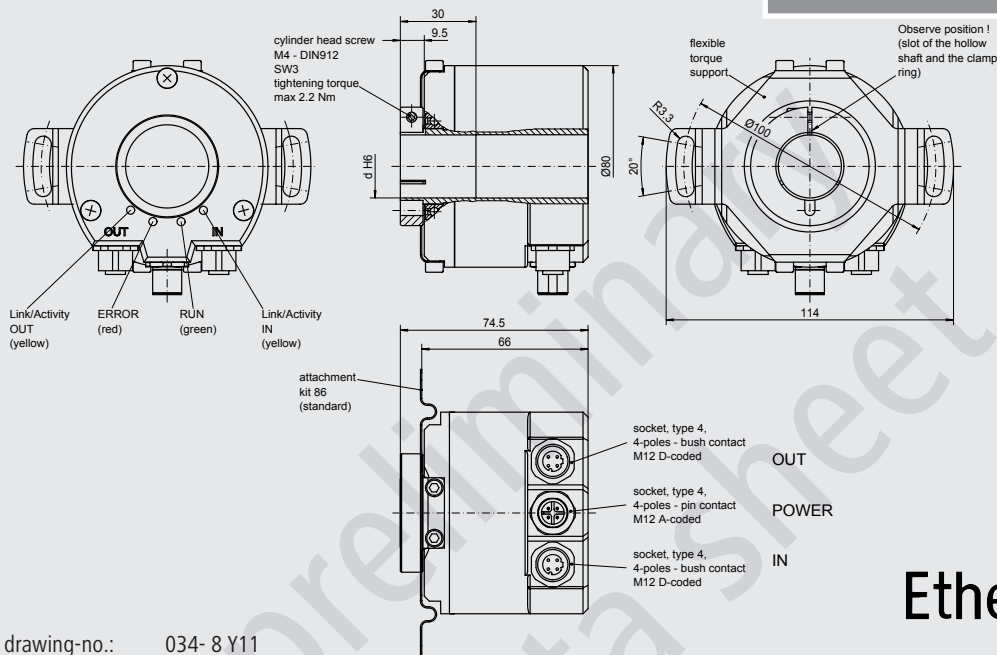


Absolute encoder with hollow shaft EtherCAT



Features

- Hollow shaft absolute encoder in single- resp. multturn- version
- Resolution:
max. 15 Bit ST, 16 Bit MT,
optional max. 19 Bit ST, 12 Bit MT
- EtherCAT
- Short cycle times
- Programmable over bus system
- Self diagnostics
- Electronical zero point setting
- Connector version



drawing-no.: 034- 8 Y11

EtherCAT

Mechanical data

Design	A 4		A 4
Attachment kit	86	standard (ref. data sheet »Attachment kit's«)	86
Housing	aluminium, unpainted		
Protection	IP 54	according to DIN EN 60 529	IP54
Construction principle	LED with glass slotdisc electronical count with buffer (multiturn)		
max. revolution (mechanical)	$n_{max} \leq 5000 \text{ min}^{-1}$		
Permissible motor-shaft play	axial $\leq 0.25 \text{ mm}$ radial $\leq 0.1 \text{ mm}$		
Starting torque	at 20 °C $\leq 2 \text{ Ncm}$		
Vibration	55... 2000 Hz $\leq 100 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 6	
Shock	11 ms $\leq 300 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 27	
Hollow shaft diameter	d 25 mm	(standard), 20 mm, 22 mm, 27 mm possible	25
Weight	approx. 590 g		

Electrical data

Steps per revolution		programmable from 256 to max. 32 768 (8 to 15 Bit) steps per revolution	ZZ
Number of turns	only by multiturn	programmable from 256 to max. 65 536 (8 to 16 Bit) shaft turns	YY
Electronic version	serial	Output-stage: EtherCAT	EC
Supply voltage	U _s	10 - 30 VDC (polarity protected)	
Current consumption (no-load)	I _{max}	≤ 150 mA (at 24 VDC)	
Diagnostic LEDs	red green 2x yellow	encoder error EtherCAT-status-machine Link-status display for port A + B	
Type of connection		3 x M12-connector	M12
Operating temperature range		-20 °C to +85 °C	S
Permissible relativ humidity		≤ 90 % (condensation not permitted)	

EtherCAT-features

Bus-protocol		EtherCAT, CoE (CANopen over EtherCAT)
Operation mode		Full-Duplex Fast Ethernet physics (100 BASE-TX)
Communication	Modi Cyclic times	Freerun, Sync-Mode, Distributed Clock min. 62.5 µs to max. 32 ms in Distributed Clock
Communication profile		compatible to CANopen according to DS 301
Device profile		according to DS 406
Preset-value		The preset value changes the encoder output position value to a predefined position.
Parameter	Direction of rotating Scaling function	The direction of rotation were increasing or decreasing position values are output may be changed via SDO (Service Data Object). Absolute encoder units per revolution and total measuring range may be changed via SDO (Service Data Object).
Diagnostic messages		position error, battery, hardware error, over & under temperature

Options

Protection	IP 65 (n _{max} ≤ 3000 min ⁻¹)	according to DIN EN 60 529	IP65
Steps per revolution		programmable from 65 536 to max. 524 288 (16 to 19 Bit) steps per revolution	ZZ
Number of turns	only by multiturn	programmable from 256 to max. 4096 (8 to 12 Bit) shaft turns	YY

Connection table

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

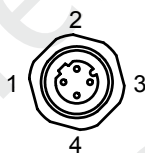
PIN-no. signals

PIN 1 TxD+

PIN 2 RxD+

PIN 3 TxD-

PIN 4 RxD-



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

PIN-no. signals

PIN 1 VDC

PIN 2 NC

PIN 3 GND

PIN 4 NC



Ordering example:

ATD 4B	A 4	Y11	19/12	EC		M12	S	25	IP65	86
Absolute encoder ATD 4B	Design A 4	Mechanical variant Y11 = look at the drawing	Steps/rev. / no. of turns 524 288 (19 Bit) steps/rev. 4096 (12 Bit) rev.	Electronic version EtherCAT		Type of connection 3 x connector M12	Operating temperature range -20 °C to +85 °C	Hollow shaft diameter 25 mm	Protection IP65	Attachment kit variant 86

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