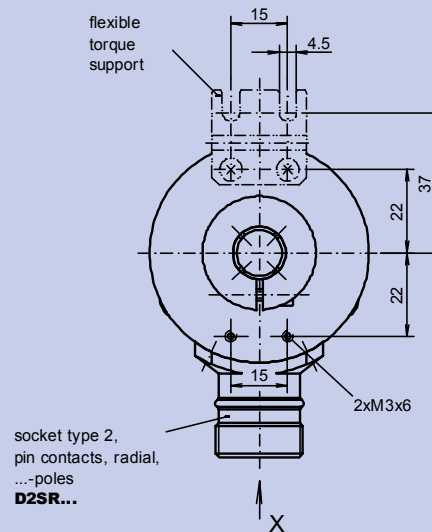
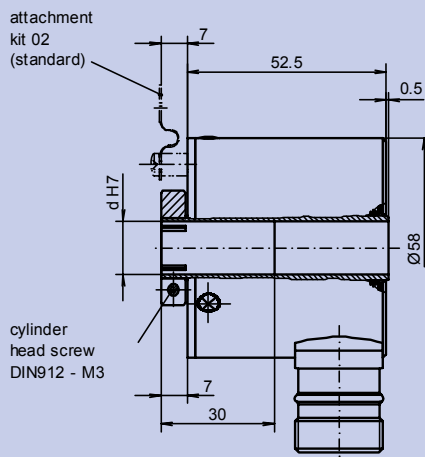


Features

- Hollow shaft absolute encoder in single- resp. multiturn- version
- **Resolution:**
max. 24 Bit (multiturn)
max. 17 Bit (singleturn)
- Mounting at torque support
- Specification of interface BiSS (bidirectional sensor-interface)
- Self-diagnosis
- Electronical preset setting
- Connector version
- optional incremental signals



drawing-no.: 028- 5 Y 7

BiSS

Mechanical data

Design	A 4	A 4
Housing	aluminium, black	
Protection	IP 65	according to DIN EN 60 529
Construction principle	LED with glass slotdisc Electronical count with buffer (multiturn)	
max. revolution (mechanical)	$n_{max} \leq 8000 \text{ min}^{-1}$	
Permissible motor-shaft play	axial $\leq 0.25 \text{ mm}$ radial $\leq 0.1 \text{ mm}$	(at shaft end)
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 12 mm	(standard), 10 mm, 14 mm possible
Weight	approx. 325 g	1 2

Electrical data

Steps per revolution	Single-/Multiturn	programmable* up to max. 131.072 (17 Bit) steps per revolution	XX
Number of turns	Multiturn	programmable* up to max. 16.777.216 (24 Bit) shaft turns	YY
Electronic version	serial	BiSS (Bidirectional sensor-interface)	BS
Output code (programmable)*		Gray-Code (factory setting) Binary-Code	GR BI
Supply voltage	U_B	10-30 VDC (polarity protected)	
Current consumption (no-load)	I_{max}	≤ 70 mA (at 24 VDC)	
Inputs		control signal: V/\bar{R} , Preset BiSS: optocoupler input for electrical isolation	
Outputs		level high $\geq U_B - 3.5$ V (at $I = -20$ mA) load high ≤ -20 mA BiSS: RS-485 (2-wires)	level low ≤ 0.5 V (at $I = 20$ mA) load low ≤ 20 mA
Clock frequency	f_T	39.1 kHz to 10 MHz	
Type of connection		socket type 2, pin contacts, radial, 12-poles socket type 2, pin contacts, radial, 17-poles (BiSS + Incremental signals)	D2SR12 D2SR17
Operating temperature range		-20 °C to +85 °C	S
Permissible relativ humidity		≤ 90 % (condensation not permitted)	

Options

Incremental output signals	A, B	2 sine-wave signal trains phase shifted by 90° electr., 2048 (4096 optional) periods/rev., output amplitude: 1 V_{PP} at $Z_0 = 120 \Omega$ (TTL- / HTL- level optional)
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Connection table

BiSS

PIN-no.	signals	PIN-no.	signals
PIN 1	clock -	PIN 7	preset
PIN 2	clock +	PIN 8	V/\bar{R}
PIN 3	data +	PIN 9	NC
PIN 4	data -	PIN 10	error
PIN 5	NC	PIN 11	$+U_B$
PIN 6	NC	PIN 12	0 V

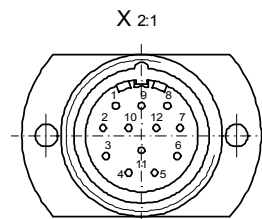
BiSS + Incremental signals

PIN-no.	signals	PIN-no.	signals
PIN 1	clock -	PIN 10	error
PIN 2	clock +	PIN 11	$+U_B$
PIN 3	data +	PIN 12	0 V
PIN 4	data -	PIN 13	NC
PIN 5	NC	PIN 14	A +
PIN 6	NC	PIN 15	A -
PIN 7	preset	PIN 16	B +
PIN 8	V/\bar{R}	PIN 17	B -
PIN 9	NC		

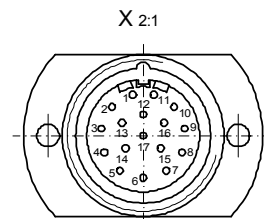
Specification of the connections

PIN	Explanation
7 preset	Preset input for setting a preset value at any desired point within the entire revolution. The presetting process is triggered by apply of $+U_B$.
8 V/\bar{R}	Up/down counting direction input: $+U_B$ or NC = increasing code values with a clockwise shaft rotating direction when looking at the mounting side. 0 V = decreasing code values with a clockwise shaft rotating direction when looking at the flange side.
10 error	Diagnostic-output (open collector). The output is high-active, that means if no fault submitted, is the output to 0 V interconnected.

BiSS sockets 12-poles



BiSS + Incremental signals socket 17-poles



Ordering example

ATD 2B	A 4	Y 7	13/12	BS	GR	D2SR12	S	12	IP65	02
Absolute encoder ATD 2B	Design A 4	Mechanical variant Y 7 = look at the drawing	Steps / rev. / No. of turns 8192 (13 Bit) steps/rev. 4096 (12 Bit) rev.	Electronic version programmable / BiSS	Output code Gray-Code	Type of connection socket type 2, pin contacts, radial, 12-poles	Operating temperature -20 °C to +85 °C	Hollow shaft diameter 12 mm	Protection IP65	Attachment kit variant 02

* factory-made or above BiSS Master programmable