

Incremental encoders

Large hollow shaft optical	5821 (hollow shaft)	Push-pull / RS422
---------------------------------------	----------------------------	--------------------------



Optimized proportions, optimized costs:

With an overall diameter of just 58 millimeters the series 5821 boasts a hollow shaft of up to 28 millimeters diameter.



Adaptable

- Through hollow shaft from 16 mm up to 28 mm.
- With cable connection or M12 connector.
- High resolution up to 5000 pulses per revolution.

Order code		8.5821		. 1XXXX . XXXX	
Hollow shaft		Type		a b c d e	
a Flange 1 = with spring element, ø 58 mm [2.28"]		c Output circuit / power supply 1 = RS422 (with inverted signal) / 5 V DC 4 = RS422 (with inverted signal) / 8 ... 30 V DC 3 = Push-pull (with inverted signal) / 8 ... 30 V DC		e Pulse rate 50, 60, 100, 125, 250, 400, 500, 512, 960, 1000, 1024, 2000, 2048, 5000 (e.g. 100 pulses => 0100)	
b Through hollow shaft K = ø 16 mm [0.63"] C = ø 20 mm [0.79"] 8 = ø 22 mm [0.87"] 6 = ø 24 mm [0.94"] 5 = ø 25 mm [0.98"] 3 = ø 28 mm [1.10"]		d Type of connection 1 = radial cable, 1 m [3.28'] PVC E = radial M12 connector, 8-pin		Optional on request - other pulse rates - other hollow shaft diameters	

Connection technology		Order no.
Cordset, pre-assembled	M12 female connector with coupling nut, 8-pin 2 m [6.56'] PVC cable	05.00.6041.8211.002M
Connector, self-assembly (straight)	M12 female connector with coupling nut, 8-pin	05.CMB 8181-0

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

Incremental encoders

Large hollow shaft optical	5821 (hollow shaft)	Push-pull / RS422
-----------------------------------	----------------------------	--------------------------

Technical data

Mechanical characteristics		Electrical characteristics	
Maximum speed	2500 min ⁻¹	Output circuit	RS422 Push-pull (7272 compatible)
Mass moment of inertia	approx. 3.5 x 10 ⁻⁶ kgm ²	Power supply	5 V DC (±5 %) or 8 ... 30 V DC
Starting torque – at 20°C [68°F]	< 0.1 Nm	Power consumption with inverted signal (no load)	typ. 40 mA max. 90 mA
Weight	approx. 0.4 kg [14.11 oz]	Permissible load / channel	max. +/- 20 mA
Protection acc. to EN 60529	IP64	Pulse frequency	max. 300 kHz
Working temperature range		Signal level	HIGH min. 2.5 V LOW max. 0.5 V
at max. speed 2000 min ⁻¹	-20°C ... +70°C [-4°F ... +158°F]	Rising edge time t_r	max. 200 ns
at max. speed 2500 min ⁻¹	-20°C ... +60°C [-4°F ... +140°F]	Falling edge time t_f	max. 200 ns
Material	hollow shaft steel	Short circuit proof outputs ¹⁾	yes
Shock resistance acc. to EN 60068-2-27	1000 m/s ² , 6 ms	Reverse polarity protection of the power supply	yes
Vibration resistance acc. to EN 60068-2-6	100 m/s ² , 35 ... 2000 Hz	CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

Terminal assignment

Output circuit	Type of connection	Cable (isolate unused wires individually before initial start-up)									
1, 3, 4	1	Signal:	0 V	+V	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	$\perp$
		Core color:	WH	BN	GN	YE	GY	PK	BU	RD	shield
Output circuit	Type of connection	M12 connector, 8-pin									
1, 3, 4	E	Signal:	0 V	+V	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	$\perp$
		Pin:	1	2	3	4	5	6	7	8	PH ²⁾

- +V: Encoder power supply +V DC
0 V: Encoder power supply ground GND (0 V)
A, $\bar{A}$: Incremental output channel A
B, $\bar{B}$: Incremental output channel B
0, $\bar{0}$: Reference signal
PH $\perp$: Plug connector housing (shield)

Top view of mating side, male contact base



M12 connector, 8-pin

1) If power supply correctly applied.
2) PH = shield is attached to connector housing.

Incremental encoders

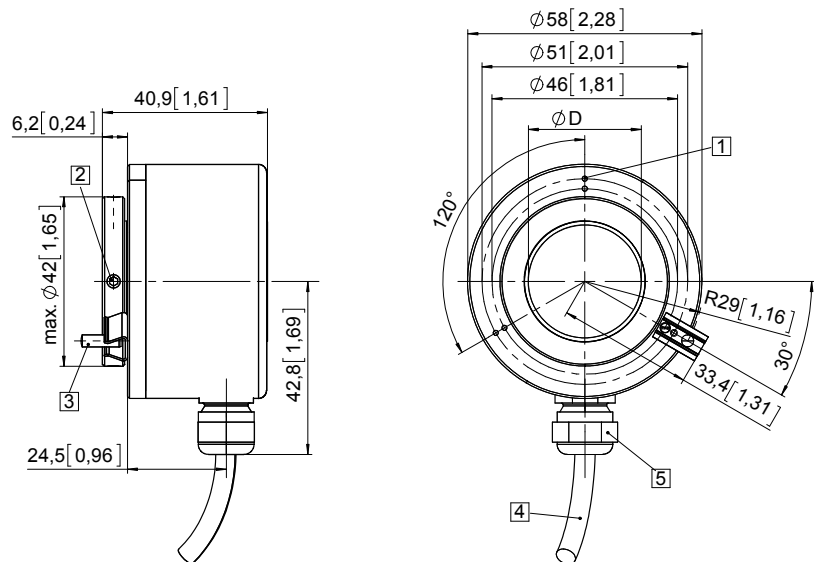
Large hollow shaft optical	5821 (hollow shaft)	Push-pull / RS422
---------------------------------------	----------------------------	--------------------------

Dimensions

Dimensions in mm [inch]

Flange with spring element, $\varnothing 58$ [2.28] Cable version, connection type 1

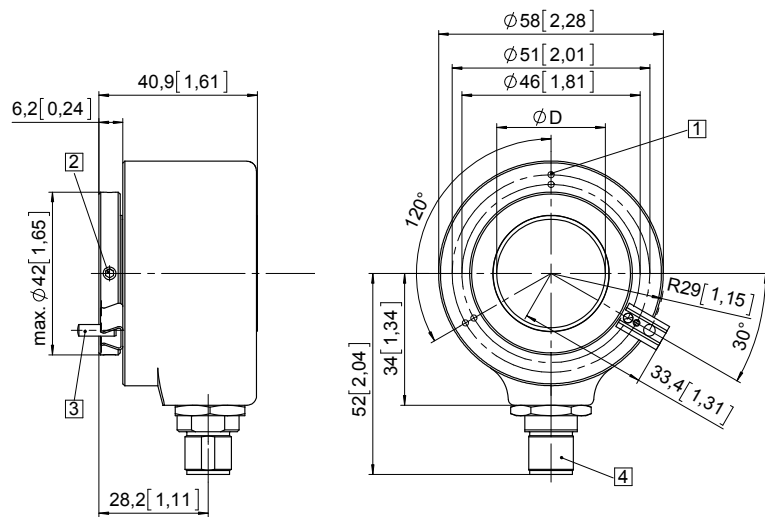
- 1 M1.6 / 5 [0.2] deep
- 2 4 x socket set screw M4x6 DIN 913
- 3 Cylindrical pin 3m6x12 DIN 6325 included
- 4 Cable length 1 m [3.28']
- 5 Cable gland PG7



D	Fit
16 [0.63]	F7
20 [0.79]	F7
24 [0.94]	F7
25 [0.98]	F7
28 [1.10]	F7

Flange with spring element, $\varnothing 58$ [2.28] M12 connector version, connection type E

- 1 M1.6 / 5 [0.2] deep
- 2 4 x socket set screw M4x6 DIN 913
- 3 Cylindrical pin 3m6x12 DIN 6325 included
- 4 Connector M12



D	Fit
16 [0.63]	F7
20 [0.79]	F7
24 [0.94]	F7
25 [0.98]	F7
28 [1.10]	F7