

Incremental Encoders

Miniature Magnetic	2430 / 2440 (Shaft / Hollow shaft)	RS422
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Thanks to their non-contact magnetic scanning technology the miniature-format encoders 2430 and 2440 guarantee exceptional ruggedness – and this with a resolution of up to 256 pulses per revolution.

As a result of their compact outer diameter of only 24 mm, they are ideal for use where installation space is restricted.



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High rotational speed	Temperature range	Shock / vibration resistant	Short-circuit proof	Reverse polarity protection	Magnetic sensor technology

Magnetically robust

- The non-contact magnetic technology prevents wear and guarantees a long service life
- Multiple clamping affords high strain relief to the cable outlet, ensuring longer life
- Wide temperature range from -20°C up to +85°C
- Flexible connection possibilities: can be supplied with radial or axial cable outlet

Compact power

- Resolution up to 256 ppr
- Shaft and hollow shaft version

Order code	8.2430	. X X 6 X . XXXX	If for each parameter of an encoder the <u>underlined preferred option</u> is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.				
Shaft version	Type	<table border="0" style="font-size: x-small;"> <tr> <td style="border: 1px solid black; padding: 2px;">a</td> <td style="border: 1px solid black; padding: 2px;">b</td> <td style="border: 1px solid black; padding: 2px;">c</td> <td style="border: 1px solid black; padding: 2px;">d</td> <td style="border: 1px solid black; padding: 2px;">e</td> </tr> </table>			a	b	c
a	b	c	d	e			
a Flange <u>1 = ø 24 mm [0.94"]</u> 3 = ø 28 mm [1.10"] 2 = ø 30 mm [1.18"]		c Output circuit / Power supply <u>6 = RS422 (with inverted signal) / 5 V DC</u>		e Pulse rate 1 ... 128 (factory programmable) <u>256</u> (e.g. 128 pulses => 0128) Other pulse rates on request			
b Shaft (ø x L) 1 = ø 4 x 10 mm [0.16 x 0.39"] 3 = ø 5 x 10 mm [0.20 x 0.39"], with flat <u>2 = ø 6 x 10 mm [0.24 x 0.39"]</u>		d Type of connection 1 = axial cable, 2 m [6.56'] PVC <u>2 = radial cable, 2 m [6.56'] PVC</u>					

Order code	8.2440	. 1 X 6 X . XXXX	If for each parameter of an encoder the <u>underlined preferred option</u> is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.				
Hollow shaft	Type	<table border="0" style="font-size: x-small;"> <tr> <td style="border: 1px solid black; padding: 2px;">a</td> <td style="border: 1px solid black; padding: 2px;">b</td> <td style="border: 1px solid black; padding: 2px;">c</td> <td style="border: 1px solid black; padding: 2px;">d</td> <td style="border: 1px solid black; padding: 2px;">e</td> </tr> </table>			a	b	c
a	b	c	d	e			
a Flange <u>1 = ø 24 mm [0.94"]</u>		c Output circuit / Power supply <u>6 = RS422 (with inverted signal) / 5 V DC</u>		e Pulse rate 1 ... 128 (factory programmable) <u>256</u> (e.g. 128 pulses => 0128) Other pulse rates on request			
b Blind hollow shaft insertion depth max. 14 mm [0.55"] 1 = ø 4 mm [0.16"] <u>2 = ø 6 mm [0.24"]</u>		d Type of connection 1 = axial cable, 2 m [6.56'] PVC <u>2 = radial cable, 2 m [6.56'] PVC</u>					

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Mounting accessory for shaft encoders		Order-No.
Coupling	Bellows coupling \varnothing 15 mm [0.59"] for shaft 4 mm [0.16"]	8.0000.1201.0404

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

Technical data

Mechanical characteristics		
Speed		max. 12.000 min ⁻¹
Moment of inertia		approx. 0.1 x 10 ⁻⁶ kgm ²
Starting torque - at 20°C [68°F]		< 0.01 Nm
Shaft load capacity	radial	10 N
	axial	20 N
Weight		approx. 0.06 kg [2.11 oz]
Protection acc. to EN 60529	housing side	IP65 (IP67 on request)
	flange side	IP50 (IP67 on request)
Working temperature range		-20°C ... +85°C [-4°F ... +185°F]
Materials	shaft / hollow shaft	stainless steel
	clamping flange	MS58
Shock resistance acc. to EN 60068-2-27		1000 m/s ² , 6 ms
Vibration resistance acc. to EN 60068-2-6		100 m/s ² , 55 ... 2000 Hz

Electrical characteristics		
Output circuit		RS422 (TTL-compatible)
Power supply		5 V DC \pm 5%
Power consumption with inverted signal (no load)		typ. 40 mA / max. 90 mA
Permissible load/channel		max. \pm 20 mA
Pulse frequency		max. 300 kHz
Signal level	HIGH	min. 2.5 V
	LOW	max. 0.5 V
Rising edge time t_r		max. 200 ns
Falling edge time t_f		max. 200 ns
Min. flange distance		0.5 μ s ¹⁾
Short circuit proof outputs²⁾		yes ³⁾
Reverse polarity protection of the power supply		no
CE compliant acc. to		EMC guideline 2004/108/EC
RoHS compliant acc. to		guideline 2002/95/EC

Terminal assignment

Output circuit	Type of connection	Cable (isolate unused wires individually before initial start-up)									
6 with inv. signal	1, 2	Signal:	0 V	+V	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	
		Cable colour:	WH	BN	GN	YE	GY	PK	BU	RD	

- +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

1) For max. speed use a counter with input frequency of min. 500 kHz
 2) If supply voltage correctly applied
 3) Only one channel allowed to be shorted-out:
 If +V = 5 V DC short circuit to channel, 0 V, or +V is permitted.

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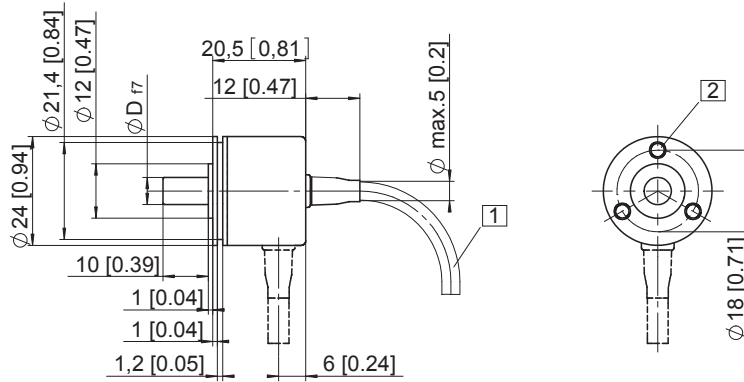
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Dimensions shaft version

Dimensions in mm [inch]

Flange type 1, \varnothing 24 [0.94]

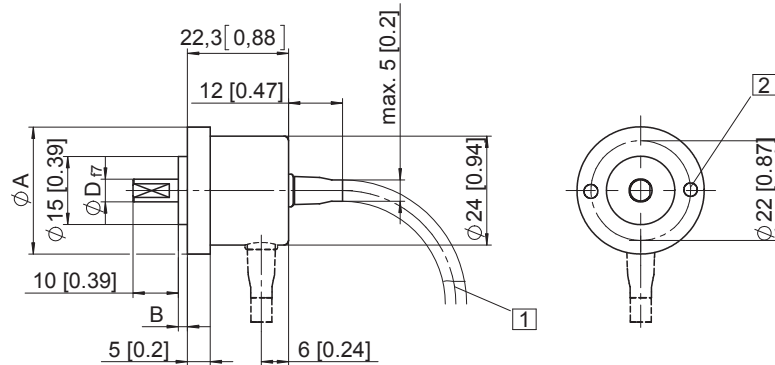
- 1 min R50 [1.97]
- 2 3 x M3, 4 [0.16] deep



Flange type 2, \varnothing 30 [1.18]

Flange type 3, \varnothing 28 [1.10]

- 1 min R50 [1.97]
- 2 2 x M3, 4 [0.16] deep



Flange type	A	B
2	\varnothing 30 [1.18]	3 [0.12]
3	\varnothing 28 [1.10]	2 [0.08]

Dimensions hollow shaft version

Dimensions in mm [inch]

Flange type 1, \varnothing 24 [0.94]

- 1 4 x M3 DIN 915 - SW1.5

