Encoders

optical Encoder, digital outputs,
2 channels, 50 lines per revolution

For combination with
DC-Micromotors
Brushless DC-Motors

Series PA2-50

		PA2-50	
Lines per revolution	*N*	50	
Frequency range, up to[1]	*f*	35	kHz
Signal output, square wave		2	Channels
Supply voltage	U_{DD}	2,7 ... 3,3	V
Current consumption, typical[2]	I_{DD}	8,5	mA
Output current, max.	I_{OUT}	8	mA
Pulse width	*P*	180 ± 50	°e
Phase shift, channel A to B	*Φ*	90 ± 45	°e
Logic state width	*S*	90 ± 50	°e
Cycle	*C*	360 ± 36	°e
Signal rise/fall time, max. (C_{LOAD} = 25 pF)	*tr*/*tf*	0,3 / 0,1	µs
Inertia of code disc	*J*	0,02	gcm²
Operating temperature range		-30 ... +85	°C

[1] Velocity (min⁻¹) = *f* (Hz) x 60/*N*
[2] U_{DD} = 3 V: with unloaded outputs

For combination with Motor	
Dimensional drawing A	**<L1 [mm]**
0615 ... S - K1655	19,2
Dimensional drawing B	**<L1 [mm]**
0620 ... B - K1719	23,0
Dimensional drawing C	**<L1 [mm]**
0816 ... SR - K2565	24,0

Characteristics

These incremental shaft encoders in combination with the DC-Micromotors and Brushless DC-Servomotors are designed for both indication and control of both shaft velocity and direction of rotation as well as for positioning.

An all-in-one emitter and detector chip transmits and receives LED light reflected off a low inertia reflective disc providing two channels with 90° phase shift.

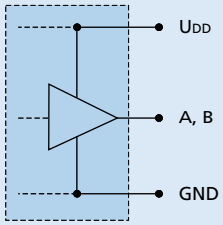
The supply voltage for the encoder and the Micromotor as well as the output signals are interfaced with a flexible printed circuit (FPC).

Details for the DC-Micromotors and Brushless DC-Servomotors and suitable reduction gearheads are on separate catalog pages.

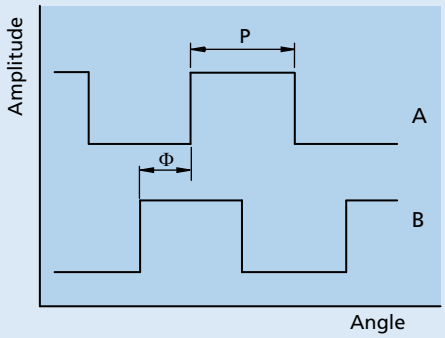
To view our large range of accessory parts, please refer to the “Accessories” chapter.

Circuit diagram / Output signals

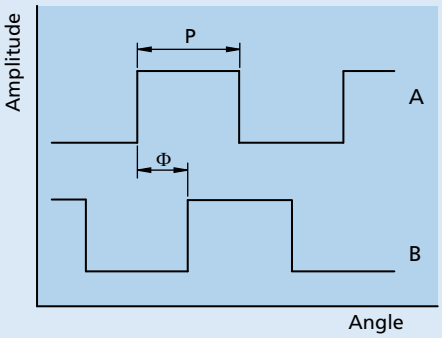
Output circuit



Output signals
with clockwise rotation as seen from the shaft end



0615 ... S / 0620 ... B
Channel B leads channel A



0816 ... SR

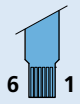
Connector information / Variants

Example product designation: **0615N003S-K1655 PA2-50**

Option	Type	Description

Connection Encoder

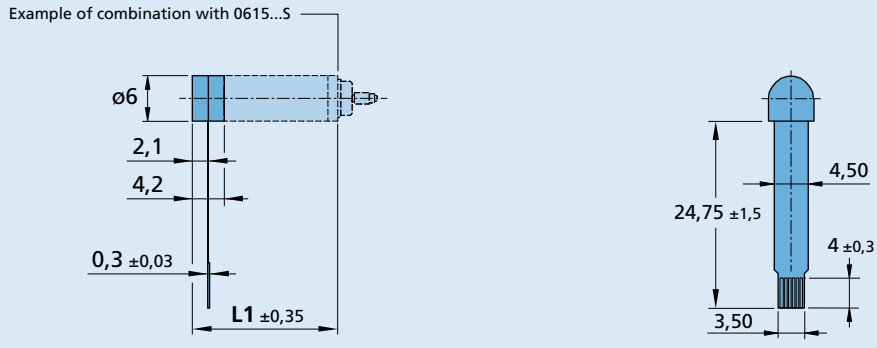
No.	Function
1	Motor + *
2	UDD
3	Channel A
4	Channel B
5	GND
6	Motor – *



Recommended connector
Molex 52745, grid 0,5 mm, FPC / FFC, 6-conductors

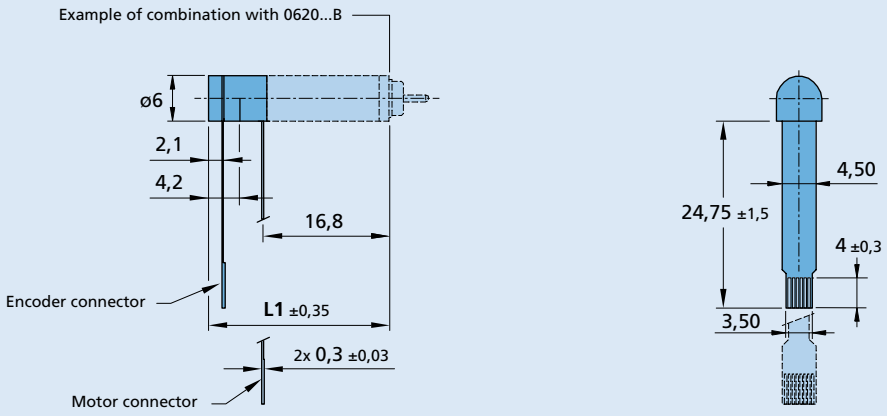
*** Note:**
Brushless motors have separate motor leads.

Dimensional drawing A



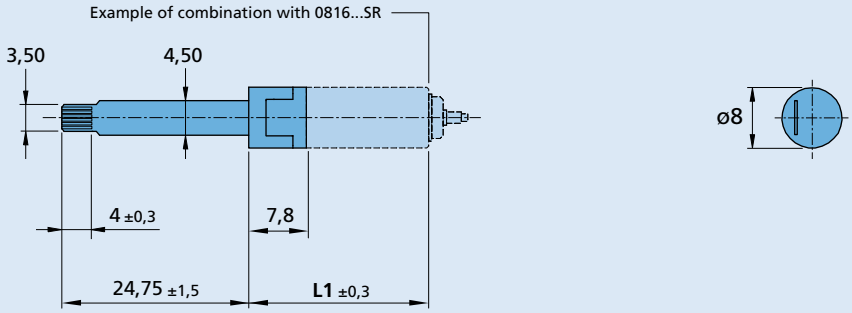
PA2-50

Dimensional drawing B



PA2-50

Dimensional drawing C



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