

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

$$^1) \text{ Velocity (min}^{-1}) = f(\text{Hz}) \times 60/N$$

2) $U_{DD} = 3 \text{ V}$: with unloaded outputs

For combination with Motor

[illegible]

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.

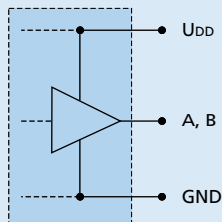
The supply voltage for the encoder and the Micromotor as well as the output signals are interfaced with a flexible printed circuit (FPC).

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

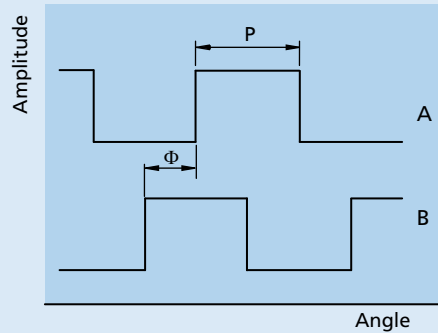
To view our large range of accessory parts, please refer to the "Accessories" chapter.

Circuit diagram / Output signals

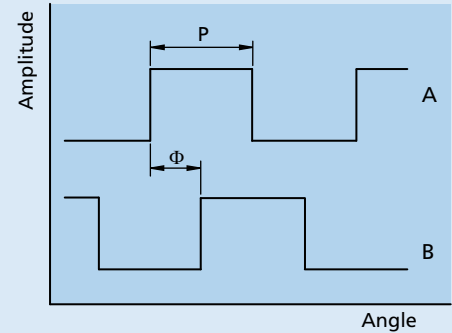
Output circuit



Output signals with clockwise rotation as seen from the shaft end



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



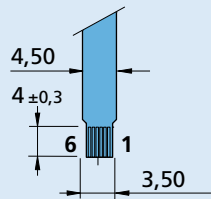
0816 ... SR

Connector information / Variants

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

* Note: Brushless motors have separate motor leads.

Connection Encoder



Recommended connector

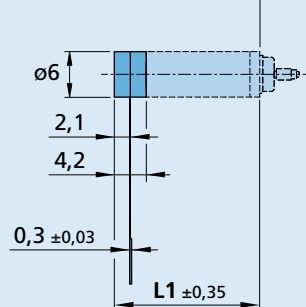
Molex 52745
grid 0,5 mm
FPC / FFC, 6-conductors

Full product description

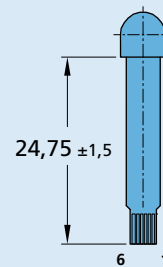
Examples:
0615N003S-K1655 PA2-50
0620K012B-K1719 PA2-50

Dimensional drawing A

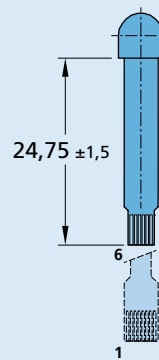
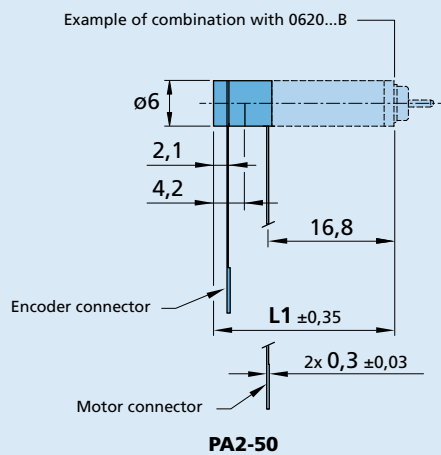
Example of combination with 0615...S



PA2-50



Dimensional drawing B



Dimensional drawing C

