

Encoders

optical Encoder, digital outputs
2 channels, 100 lines per revolution

For combination with
DC-Micromotors
Brushless DC-Motors

Series PA2 – 100

		PA2 – 100	
Lines per revolution	N	100	
Frequency range ¹⁾	f	up to 35	
Signal output, square wave		2	
Supply voltage	U _{DD}	2,7 ... 3,3	
Current consumption, typical (U _{DD} = 3 V DC)	I _{DD}	8	
Pulse width	P ₀	180 ± 45	
Phase shift, channel A to B	Φ	90 ± 45	
Logic state width	S	90 ± 45	
Cycle	C	360 ± 30	
Signal rise/fall time, max. (C _{LOAD} = 50 pF)	tr/tf	0,1 / 0,1	
Inertia of code disc	J	0,02	
Operating temperature range		- 25 ... + 85	
			kHz
			channels
			V DC
			mA
			°e
			°e
			°e
			°e
			µs
			gcm ²
			°C

¹⁾ speed (rpm) = f(Hz) x 60/N

For combination with motor

Dimensional drawing A	L1 [mm]
1016...G - K1752	23,5
1024...S - K1752	31,5

Dimensional drawing B	L1 [mm]
1224...SR - K1752	31,05

Features

These incremental shaft encoders in combination with the DC-Micromotors 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.

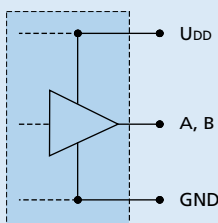
The supply voltage for the encoder and the Micromotor as well as the output signals are interfaced with a flexible printed circuit (FPC).

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

An optional interface board with suitable connector is also available on request.

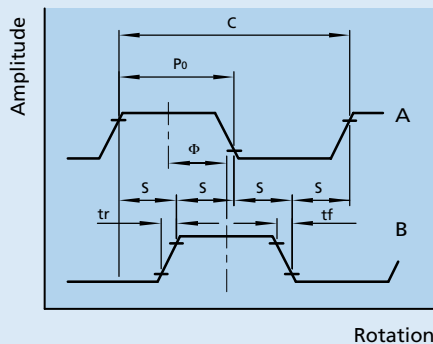
Circuit diagram / Output signals

Output circuit



Output signals

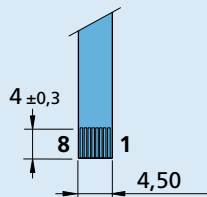
with clockwise rotation as seen from the shaft end



Connector information / Variants

No.	Function
1	Motor +
2	Motor +
3	U _{DD}
4	Channel A
5	Channel B
6	GND
7	Motor -
8	Motor -

Connection Encoder



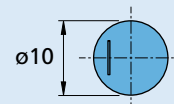
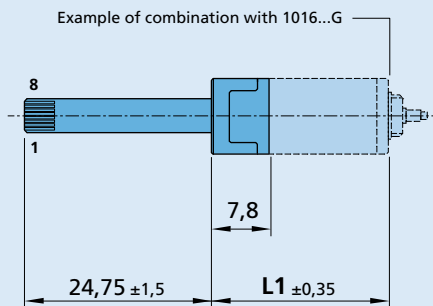
Recommended connector

Molex 52745
grid 0,5 mm
FPC / FFC, 8-conductors

Full product description

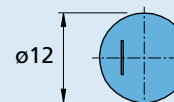
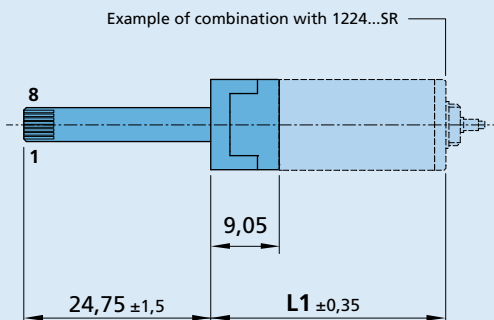
■ Examples:
1016N006G-K1752 PA2-100
1224N012SR-K1752 PA2-100

Dimensional drawing A



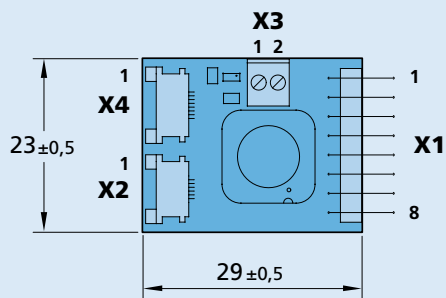
PA2 - 100

Dimensional drawing B



PA2 - 100

Interface board MCDC 3002 S

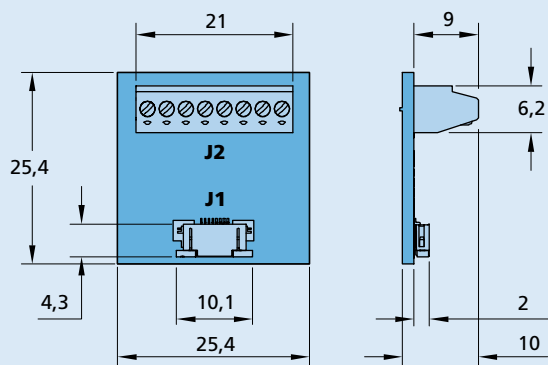


Interface Board PA2-50 / PA2-100
Part No.: 6501.00144

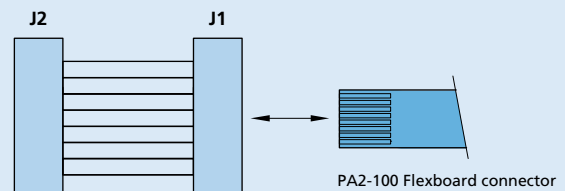
Connection

Pin	Connection X1	Pin	Connection X3
1	4. In	1	5. In
2	Channel A	2	4. In
3	Channel B		
4	$U_{DD} = 5V$	Pin	Connection X4
5	SGND	1	Motor +
6	Motor +	2	Motor +
7	Motor -	3	$U_{DD} = 3,3V$
8	5. In	4	Channel A
		5	Channel B
		6	SGND
		7	Motor -
		8	Motor -
Pin	Connection X2		
1	Motor +		
2	$U_{DD} = 3,3V$		
3	Channel A		
4	Channel B		
5	SGND		
6	Motor -		

Optional interface board



Interface board PA2-100
Part No.: D100308900



Connector
J1 - Molex 52745-0896
J2 - Phoenix 1725711