

## Encoders

optical Encoder, digital outputs,  
2 channels, 120 lines per revolution

For combination with  
Stepper Motors

### Series PE22-120

PE22-120		
Lines per revolution	<i>N</i>	120
Frequency range, up to <sup>1)</sup>	<i>f</i>	30
Signal output, square wave		2
Supply voltage	<i>U<sub>DD</sub></i>	4,5 ... 5,5
Current consumption, typical <sup>2)</sup>	<i>I<sub>DD</sub></i>	20
Pulse width	<i>P</i>	180 ± 45
Phase shift, channel A to B	<i>Φ</i>	90 ± 45
Logic state width	<i>S</i>	90 ± 45
Cycle	<i>C</i>	360 ± 30
Signal rise/fall time, max. (C <sub>LOAD</sub> = pF)	<i>tr/tf</i>	0,5 / 0,1
Inertia of code disc	<i>J</i>	0,24
Operating temperature range		-20 ... +85

<sup>1)</sup> Velocity (min<sup>-1</sup>) = *f*(Hz) x 60/*N*

<sup>2)</sup> *U<sub>DD</sub>* = 5 V: with unloaded outputs

### For combination with Motor

Dimensional drawing A	<L1 [mm]
AM2224	38,0
AM2224R3	40,9

### Characteristics

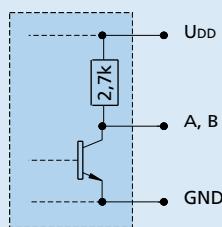
These incremental shaft encoders in combination with two phases stepper motors are designed for indication and control of both, shaft velocity and direction of rotation as well as for position verification.

The encoder is placed at the rear output shaft of the stepper motor and extends its overall length by 11 mm.

The supply voltage for the encoder and the stepper motors as well as the two channel output signals are interfaced through a ribbon cable with connector.

Details for the stepper motors and suitable reduction gearheads are on the corresponding data sheets.

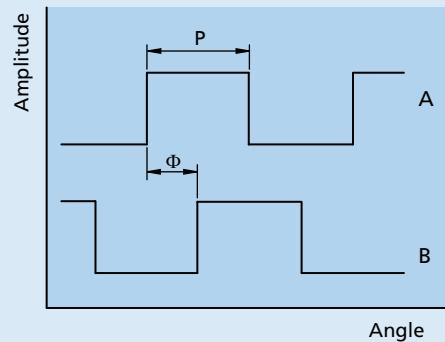
To view our large range of accessory parts, please refer to the "Accessories" chapter.

**Circuit diagram / Output signals**
**Output circuit**


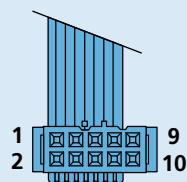
**Recommendation:**  
Please use a latch to capture the outputs.

**Output signals**

with clockwise rotation as seen from the shaft end


**Connector information / Variants**

No.	Function
1	Motor Phase A +
2	Motor Phase A -
3	Motor Phase B +
4	Motor Phase B -
5	U <sub>DD</sub> ENC
6	GND
7	Channel A
8	Channel B
9	N.C.
10	N.C.

**Connection Encoder and Motor**


**Connector**  
Serie 71600-010LF  
PVC-ribbon cable

**Full product description**

■ Example:  
AM2224SB025016 PE22-120  
AM2224R3012586 PE22-120

**Dimensional drawing A**
