

NEW

Micro Encoders

Magnetic Encoders

- Features:**
 32, 64, 128, 256 Lines per revolution
 3 Channels
 Digital output
 Discrete wires and connector

HEM3-256-W

| | | | |
|---|-------------------|-------------|------------------|
| Signal output, square wave | | 3 | channels |
| Supply voltage ¹⁾ | V _{DD} | 3,0 ... 3,6 | V DC |
| Supply voltage ²⁾ | V _{DD} | 4,5 ... 5,5 | V DC |
| Current consumption, typical (V _{DD} = 3,3 or 5 V DC) | I _{DD} | 16 | mA |
| Output current, max. ³⁾ (V _{DD} = 3,3 / 5 V DC) | I _{OUT} | 2 / 4 | mA |
| Pulse width | P | 180 ± 45 | °e |
| Phase shift, channel A to B | Φ | 90 ± 45 | °e |
| Logic state width | S | 90 ± 45 | °e |
| Cycle | C | 360 | °e |
| Signal rise/fall time, max (C _{LOAD} = 50 pF) | tr/tf | 0,1 / 0,1 | µs |
| Rotational speed up to | n _{max.} | 30 000 | rpm |
| Inertia of code disc | J | 0,02 | gcm ² |
| Operating temperature range | | -30 ... +85 | °C |

¹⁾ V_{DD} = 3,3 V DC: Connect pins 3 and 4 to 3,3 V DC

²⁾ V_{DD} = 5 V DC: Connect pin 3 to 5 V DC, do not connect pin 4

³⁾ V_{DD} = 5 V DC: Low logic level < 0,5 V, high logic level > 4,5 V: CMOS and TTL compatible

Ordering information

| Encoder | number of channels | lines per revolution | for combination with: |
|------------|--------------------|----------------------|--|
| HEM3-032-W | 3 | 32 | } DC-Micromotors series } 0816 ... S } 1016 ... G, 1024 ... S } 1224 ... S, 1224 ... SR |
| HEM3-064-W | 3 | 64 | |
| HEM3-128-W | 3 | 128 | |
| HEM3-256-W | 3 | 256 | |

Note: Lines per revolution refers to pre-quadrature resolution and equals the cycles per revolution

A = axial cable exit, R = radial exit (see page 2)

Features

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

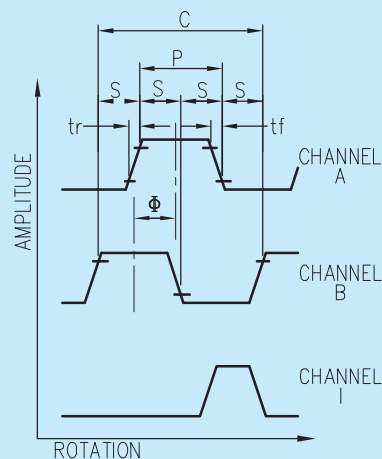
Solid state sensors and a low inertia magnetic disc provide two channels with 90° phase shift and one index channel.

The nominal supply voltage for the encoder is selectable and either 3,3 VDC or 5,0 VDC.

The supply voltage for the encoder and the DC-Micromotor as well as the output signals are interfaced with discrete wires and an 8-pin Molex crimp style connector.

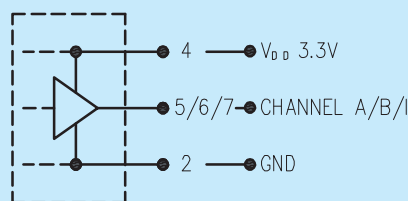
Details for the DC-Micromotors and suitable reduction gearheads are on separate catalog pages.

Output signals / Circuit diagram / Connector information

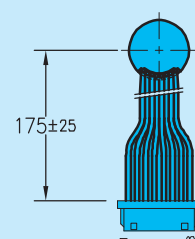


Output Signals

with clockwise rotation as seen from the shaft end



Output circuit



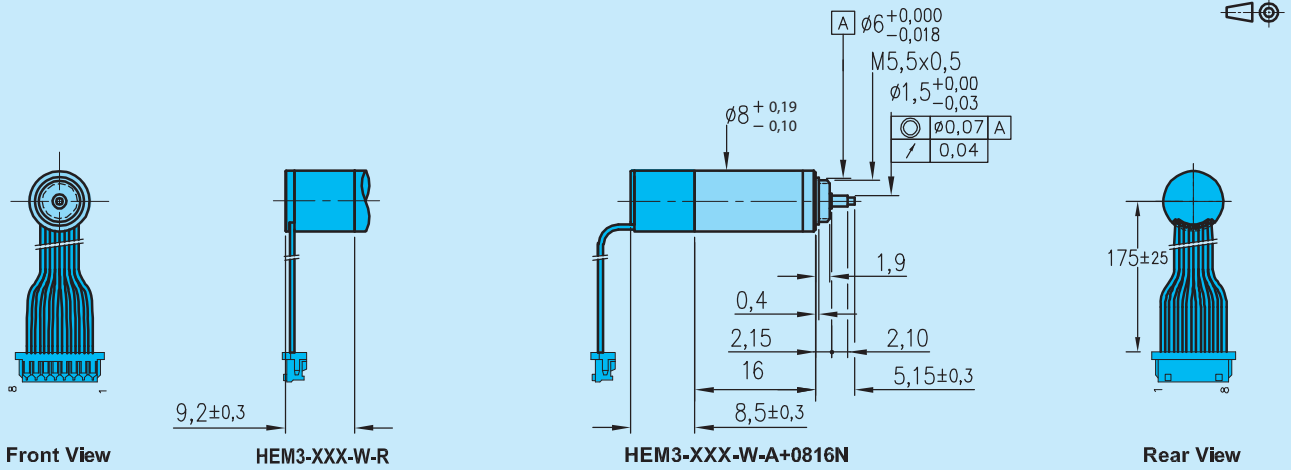
Rear View

| PIN | COLOR | FUNCTION |
|-----|--------|----------|
| 1 | BLACK | MOT - |
| 2 | GREEN | GND |
| 3 | BROWN | VDD_5V |
| 4 | WHITE | VDD_3.3V |
| 5 | YELLOW | A |
| 6 | VIOLET | B |
| 7 | GREY | INDEX |
| 8 | BLUE | MOT + |

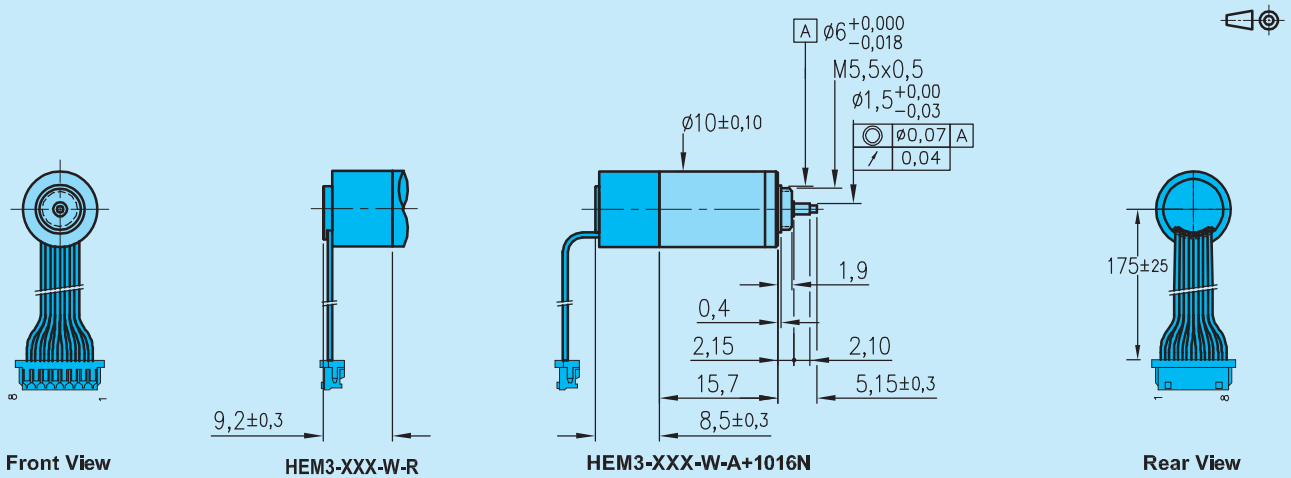
Connector:
 Molex 51021-0800
 Pitch 1.25mm

Wire:
 Tefzel 30 AWG
 MIL-W-227459/32

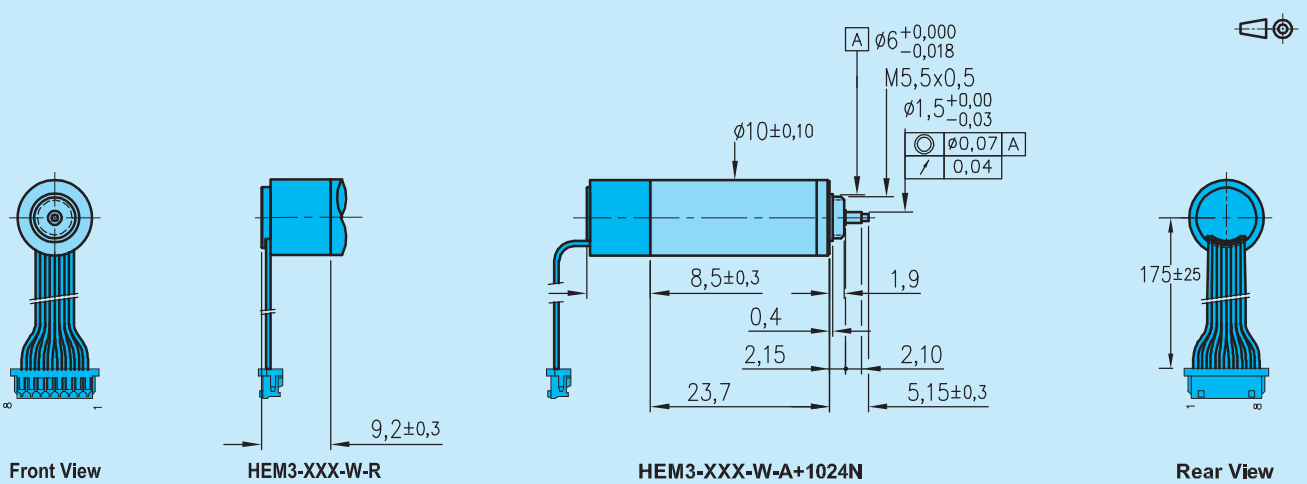
DC Micromotor 0816 N ... S - K1707 with Encoder HEM3-XXX-W



DC Micromotor 1016 N ... G - K1707 with Encoder HEM3-XXX-W



DC Micromotor 1024 N ... S - K1707 with Encoder HEM3-XXX-W



DC Micromotor 1224 N ... S - K1707 / 1224 N ... SR - K1707 with Encoder HEM3-XXX-W

