

# SERIE 21

## INCREMENTAL SOLID SHAFT ENCODER COST OPTIMIZED FOR INDUSTRIAL APPLICATIONS

- Resolution up to 500 pulses per turn
- External diameter 40 mm
- Shaft  $\varnothing$  6 mm
- Protection class IP41 according to DIN EN 60529
- Connection by cable (other cable length available)



Optical Encoder



Incremental Encoder



Vibration and shock resistant

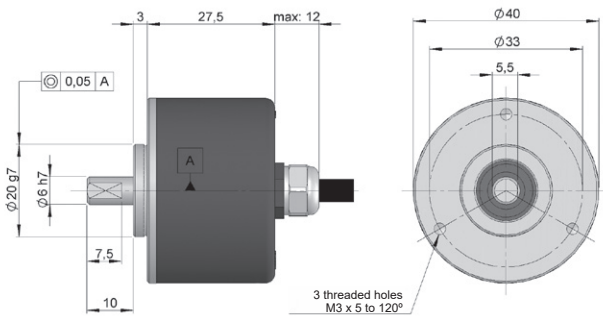


IP41

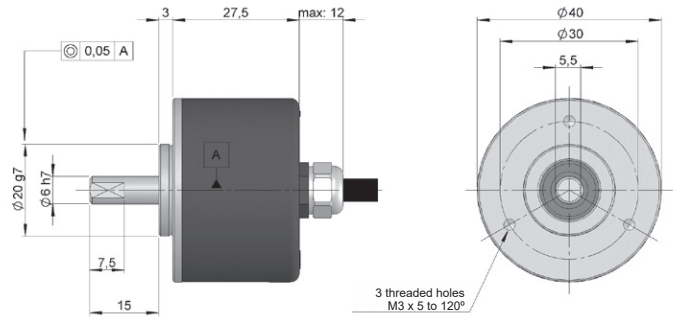


Express Delivery

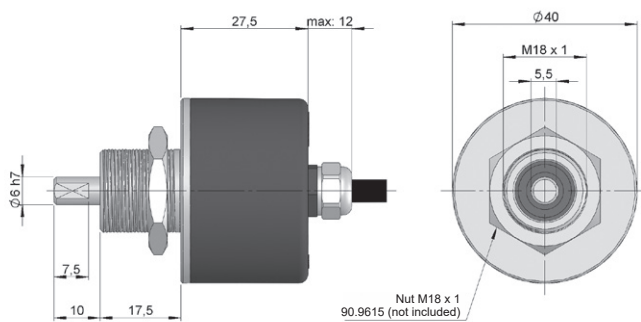
### Option A



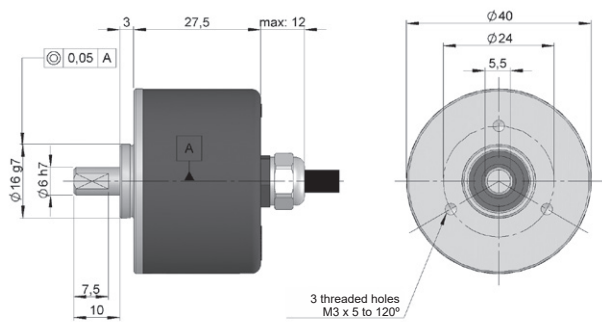
### Option B



### Option C



### Option D



## REFERENCE

Reference example: 21-111-500

| Serie | Mechanical option  | Output signals  | Power Supply / Electronic output  | Pulses number  | Special customer  |
|-------|--|---|---|--|---|
| 21 -  | <input type="checkbox"/>                                 | <input type="checkbox"/>  | <input type="checkbox"/> -  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|       | 1. Option A<br>2. Option B<br>3. Option C<br>4. Option D | 1. A<br>2. A+B<br>3. A+B+0<br>4. A+B+0<br>7. A $\tilde{A}$ +B $\tilde{B}$ +0 $\tilde{0}$<br>8. A $\tilde{A}$ +B $\tilde{B}$ | 0. 11...30 VDC / NPN Open collector 11..30 VDC<br>1. 11...30 VDC / Push-Pull 11..30 VDC<br>7. 5 VDC / RS422 5 VDC (compatible TTL)<br>9. 11..30 VDC / Line driver differential Push-Pull 11..30 VDC |  |   |

Order your reference  
Step file 3D

[info@encoderhohner.com](mailto:info@encoderhohner.com)

service available in 24 h



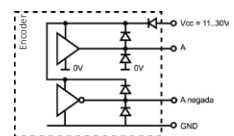
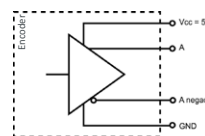
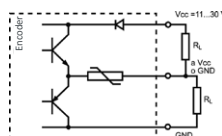
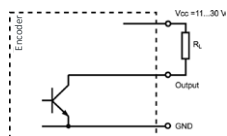
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## INCREMENTAL SOLID SHAFT ENCODER COST OPTIMIZED FOR INDUSTRIAL APPLICATIONS

### MECHANICAL SPECIFICATIONS

|  |  |
|--|--|
| Materials  | Cover: Plastic<br>Housing: Aluminium<br>Shaft: Stainless Steel   |
| Bearings   | Ballraces  |
| Bearings lifetime  | 1x10 <sup>10</sup> rev.  |
| Maximum number of revolutions permitted mechanically           | 5000 rpm   |
| Protection against dust and splashes according to DIN EN 60529 | IP41   |
| Rotor inertia moment   | 10 gcm <sup>2</sup>  |
| Starting torque at 20°C (68°F)                                 | ≤ 0,004 Nm   |
| Maximum load permitted on axial shaft                          | 5 N  |
| Maximum load permitted on radial shaft                         | 5 N  |
| Weight aprox.  | 0,2 Kg   |
| Operating temperature range                                    | -20°C to +60°C   |
| Vibration according to DIN EN 60068-2-6                        | 100 m/s <sup>2</sup> (10Hz...2000Hz)   |
| Shock according to DIN EN 60068-2-27                           | 1000 m/s <sup>2</sup> (6ms)  |
| Maximum pulses per turn  | 500  |
| Axial connection   | 1 meter cable (other cable lengths available or connector mounted at the end of the cable, upon request) |

### OUTPUT SIGNALS



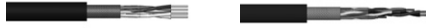
| OUTPUT CIRCUIT                 | NPN Open Collector     | Push-Pull                     | RS422 (TTL compatible)        | Push-Pull Differential        |
|--------------------------------|------------------------|-------------------------------|-------------------------------|-------------------------------|
| Reference code                 | 0                      | 1                             | 7                             | 9                             |
| Power supply                   | 11...30 VDC            | 11...30 VDC                   | 5 VDC ±10%                    | 11...30 VDC                   |
| Output voltage                 | 11...30 VDC            | 11...30 VDC                   | 5 VDC                         | 11...30 VDC                   |
| Consumption                    | 40 mA                  | Typical: 45 mA<br>Max: 150 mA | Typical: 70 mA<br>Max: 150 mA | Typical: 45 mA<br>Max: 150 mA |
| Max. load capability / channel | 40 mA                  | ±30 mA                        | ±20 mA                        | ±30 mA                        |
| Length of cable allowed        | 50 m (24 VDC)          | 50 m                          | 1200 m                        | 100 m                         |
| "Low" signal level             | VOL < 0,4 VDC (24 VDC) | VOL < 2.5 VDC                 | VOL < 0,5 VDC                 | VOL < 2.5 VDC                 |
| "High" signal level            | VOH > 22 VDC (24 VDC)  | VOH > Vcc - 3 VDC             | VOH > 2.5 VDC                 | VOH > VCC - 3 VDC             |
| Frequency                      | 100 kHz                | 200 kHz                       | 300 kHz                       | 200 kHz                       |
| Short circuit protection       | Not permanent          | Yes                           | Yes                           | Yes                           |
| Protection polarity inversion  | Yes                    | Yes                           | No                            | Yes                           |

Channel B leads (90° electric) channel A, view from the shaft, shaft rotating clockwise

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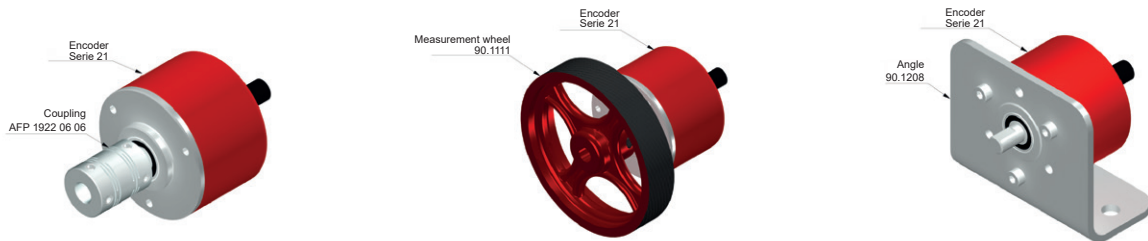
## CONNECTION



|               | 95.0008002<br>Cable<br>2x2x0,14+1x0,14 | 95.0008003<br>(* Cable<br>3x2x0,14+2x0,34 |
|---------------|--|---|
| GND           | Yellow                                 | Black                                     |
| VCC           | White                                  | Red                                       |
| A             | Brown                                  | Yellow                                    |
| B             | Green                                  | Green                                     |
| $\tilde{A}$   |  | Brown                                     |
| $\tilde{B}$   |  | Blue                                      |
| 0 (reference) | Grey                                   | Grey                                      |
| $\tilde{0}$   | Grey                                   | Orange                                    |

Cable 3x2x0,14+2x0,34 only for encoders with inverted signals.

## ACCESSORIES EXAMPLES



All the accessories available in the section "MOUNTING ACCESSORIES".