



# SERIE HS10/HM10

## SINGLETURN AND MULTITURN ABSOLUTE BLIND HOLLOW SHAFT ENCODER



- Profibus DP
- Programmable up to 30 bits (65.536 points per turn, 16.384 turns)
- External diameter 58 mm
- Blind hollow shaft  $\varnothing$  10 or 12 mm
- Protection class IP65 according to DIN EN 60529
- Connection by cable or industrial connector 3 x M12



Optical  
Encoder



Absolute  
Encoder



High shaft  
load capacity



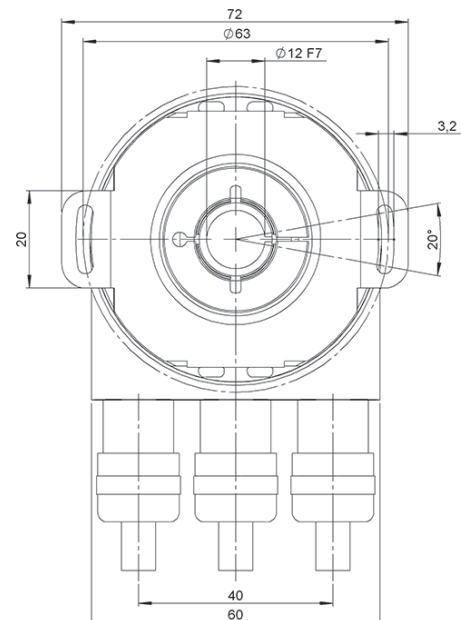
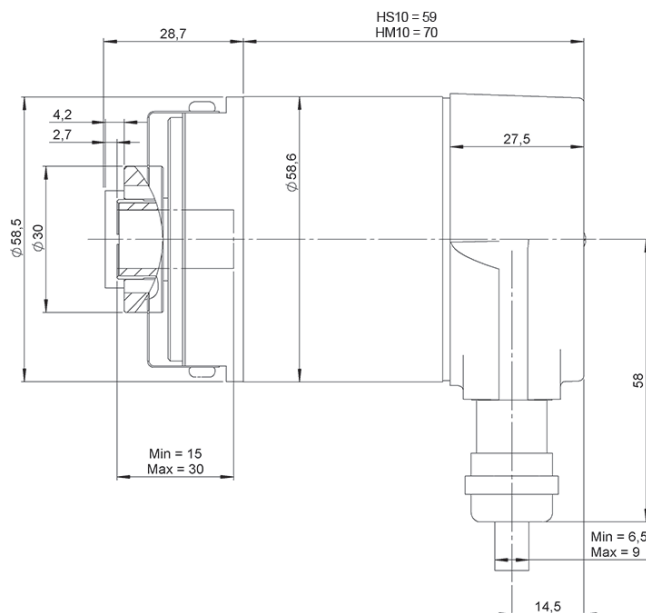
Vibration  
and shock  
resistant



IP 65



Temperature  
range



Drawing blind hollow shaft type 3, connection type 1

### REFERENCE

Reference example: HS10-4432-13 | HM10-4331-1312

| Serie                               | Flange                   | Blind-Hollow shaft                               | Interface                | Connection                                                 | Singleturn resolution                               | Multiturn resolution                              | Special customer                                    |
|-------------------------------------|--------------------------|--------------------------------------------------|--------------------------|------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|
| HS10/HM10 -                         | <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"/> |
| HS10. Singleturn<br>HM10. Multiturn | 4. Blind-Hollow shaft    | 3. $\varnothing$ 10 mm<br>4. $\varnothing$ 12 mm | 3. Profibus DP           | 1. 3 x Cable Gland<br>Terminal Box<br>2. 3 x M12 Connector | up to 16 bits<br>(Standard: 13 bits)                | up to 14 bits<br>(Standard: 12 bits)              |                                                     |

Order your reference  
Step file 3D

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

service available in 24 h



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### MECHANICAL SPECIFICATIONS

|                                                      |                                                                                              |
|------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Materials                                            | Housing: Aluminium<br>Flange: Aluminium<br>Shaft: Stainless Steel                            |
| Bearings                                             | Ballraces                                                                                    |
| Blind hollow shaft diameter                          | 10 or 12 mm                                                                                  |
| Maximum number of revolutions permitted mechanically | ≤ 12000 rpm                                                                                  |
| Protection according to DIN EN 60529                 | IP65                                                                                         |
| Rotor inertia moment                                 | ≤ 30 gcm <sup>2</sup>                                                                        |
| Starting torque at 20°C (68°F)                       | ≤ 0,03 Nm                                                                                    |
| Weight approx.                                       | 480 g                                                                                        |
| Operating temperature range                          | -40°C to +85°C                                                                               |
| Storage temperature range                            | -40°C to +85°C                                                                               |
| Humidity                                             | 98% RH, not condensed                                                                        |
| Vibration according to DIN EN 60068-2-6              | 100 m/s <sup>2</sup> (10Hz...1000Hz)                                                         |
| Shock according to DIN EN 60068-2-27                 | 1000 m/s <sup>2</sup> (6ms)                                                                  |
| Radial connection                                    | 3 x Cable Gland (Terminal Box)<br>3 x M12 Connector<br><b>Mating connectors not included</b> |

### INTERFACE



|                       |                                                                                                                                                                        |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Profile               | DPV0, DPV1 and DPV2 Class 2 (EN50170 + EN50254)                                                                                                                        |
| Diagnostics           | Memory                                                                                                                                                                 |
| Programming functions | Resolution, gearing factor (physical resolution), velocity scaling + filter, preset (zero point), counting direction, limit switches, node number, teach-in, diagnosis |
| Manual functions      | Address selector switch 0-99 and terminal resistor (with connection cap)                                                                                               |
| Features              | Round axis                                                                                                                                                             |
| Transmission rate     | ≤ 12 Mbaud                                                                                                                                                             |
| Interface cycle time  | ≥ 1 ms                                                                                                                                                                 |

### ELECTRICAL SPECIFICATIONS

|                               |                                                                  |
|-------------------------------|------------------------------------------------------------------|
| Output Driver                 | Profibus Data Interface, galvanically isolated via opto-couplers |
| Power supply                  | 10...30 VDC                                                      |
| Consumption                   | ≤ 115 mA (10 VDC)<br>≤ 50 mA (30 VDC)                            |
| Power Consumption             | ≤ 1.5 W                                                          |
| Start time                    | < 1 s                                                            |
| Singleturn resolution         | up to 16 bits                                                    |
| Multiturn resolution          | up to 14 bits                                                    |
| Accuracy (INL)                | ±0.0220° (14 – 16 bits)<br>±0.0439° (≤13 bits)                   |
| Code                          | Binary                                                           |
| Short circuit protection      | Yes                                                              |
| Protection polarity inversion | Yes                                                              |
| EMC: Emitted interference     | DIN EN 61000-6-4                                                 |
| EMC: Noise immunity           | DIN EN 61000-6-2                                                 |
| MTTF                          | 13,5 years                                                       |

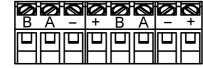
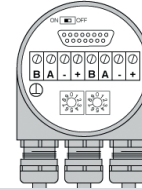
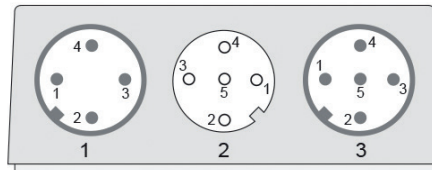
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## CONNECTION

Mating connectors not included



|                      | M12 4p<br>Male<br>a coded | M12 5p<br>Female<br>b coded | M12 5p<br>Male<br>b coded |
|----------------------|---------------------------|-----------------------------|---------------------------|
| VCC                  | 1                         | -                           | -                         |
| GND                  | 3                         | -                           | -                         |
| BUS Line A (Bus out) | -                         | 2                           | -                         |
| BUS Line B (Bus out) | -                         | 4                           | -                         |
| BUS Line A (Bus in)  | -                         | -                           | 2                         |
| BUS Line B (Bus in)  | -                         | -                           | 4                         |
| Not connected        | 2, 4                      | 1, 3, 5                     | 1, 3, 5                   |

| 3 x Cable Gland<br>Terminal Box* |
|----------------------------------|
| (+)                              |
| (-)                              |
| A (right)                        |
| B (right)                        |
| A (left)                         |
| B (left)                         |

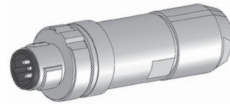
(\*) The power supply has to be connected once (no matter which clamps). If the terminating resistor is switched on, the outgoing bus lines are disconnected.

## ACCESSORIES

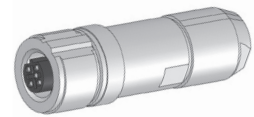
**90.9554**  
M12 4p  
Female



**90.9553**  
M12 5p  
Male



**90.9552**  
M12 5p  
Female



## CONNECTION DIMENSIONS

**Connection 2**  
3 x M12

