

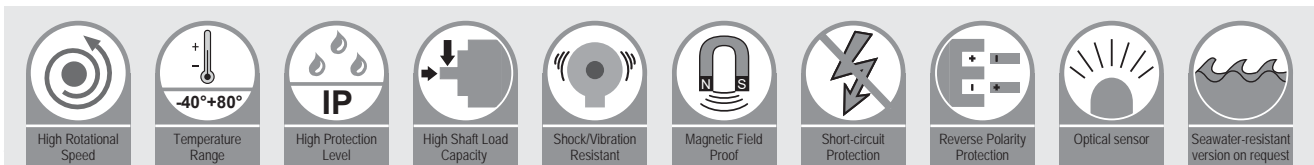
# Incremental Encoders

Hollow shaft

11-A0HN



- Heavy duty
- Max bore size 45 mm
- Balanced stainless-steel clamping ring
- Optional isolated insertion available to protect against shaft currents
- Pulse frequency up to 2 MHz



## Highlight :

- 100 mm outer diameter, max bore size 45 mm
- Wide temperature range, -40°C ~ +80°C optional
- High shock and vibration resistance
- Protection acc. to EN 60 529, up to IP 65
- Connection via cable, M12 or M23 connector
- High resolution up to 20480 ppr
- With Push-pull, RS422 or SinCos output

| Mechanical characteristics                |  |
|---|--|
| Max. Speed                                | 6000 rpm   |
| Starting torque                           | 1.5 Ncm (at 20 °C )                                  |
| Moment of inertia                         | ≤ 22 gcm <sup>2</sup>                                |
| Shaft load capacity                       | Radial 200 N; Axial 100 N**                          |
| Weight                                    | Approx. 0.720 kg                                     |
| Protection acc. to EN 60 529              | IP 65  |
| Working temperature range                 | -20°C ... 80°C; -40°C ... 80°C optional*             |
| Materials                                 | Shaft: Stainless Steel;<br>Flange/Housing: Aluminium |
| Shock resistance acc. to EN 60068-2-29    | 1000 m/s <sup>2</sup> (6 ms)                         |
| Vibration resistance acc. to EN 60068-2-6 | 50 m/s <sup>2</sup> (10-2000 Hz)                     |

\* Please contact us if need low temperature encoder.  
\*\* : Can be customized: Radial 400 N, Axial 200 N.

| SinCos Interface Electrical characteristics |   |
|---|---|
| Output circuit                              | Sin/Cos (1Vpp)  |
| Power supply                                | 5 VDC   |
| Power consumption with inverted signal      | Max. 100 mA   |
| Frequency                                   | ≤100 kHz  |
| Permissible load / channel                  | Min. 120 Ohm  |
| Short circuit protection                    | yes   |
| Reverse polarity protection                 | no  |
| UL approval                                 | yes   |
| CE compliant acc. to                        | EN 61326-1:2006; EN 61000-6-2:2006 ;<br>EN 61000-6-3:2007 |

| Electrical characteristics  |  |                  |                  |
|-----------------------------|--|------------------|------------------|
| Output circuit              | RS422  | Push-pull        | Push-pull(7272)  |
| Power supply                | 5 VDC or 10 ... 30 VDC                                 | 10 ... 30 VDC    | 5 ... 30 VDC     |
| Power consumption (no load) | Max. 70 mA***  | Max. 70 mA***    | Max. 70 mA***    |
| Permissible load / channel  | Max.40 mA  | Max.40 mA        | Max.40 mA        |
| Pulse frequency             | Max. 200 kHz****                                       | Max. 200 kHz**** | Max. 200 kHz**** |
| Signal level                | High<br>Min. 2.5 V                                     | Min. U - 2.5V    | Min. U - %10U    |
|                             | Low<br>Max. 0.5 V                                      | Max. 2.5 V       | Max. 2.5 V       |
| Rising edge time tr         | Max. 200 ns  | Max.1 μs         | Max.1 μs         |
| Falling edge time tf        | Max. 200 ns  | Max. 1 μs        | Max.1 μs         |
| Short circuit protection    | yes  | yes              | no               |
| Reverse polarity protection | no;10 ... 30 VDC yes                                   | yes              | yes              |
| UL approval                 | yes  | yes              | yes              |
| CE compliant acc. to        | EN 61326-1:2006; EN 61000-6-2:2006 ; EN 61000-6-3:2007 |                  |                  |

\*\*\* : 100 mA when resolution ≥ 10000ppr      \*\*\*\* : 2MHz when resolution ≥ 10000ppr

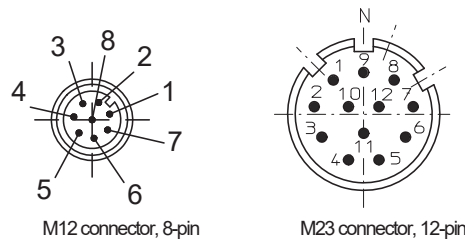
# Incremental Encoders

## Hollow shaft 11-A0HN

### Terminal assignmen

| Signal                | Ub | GND | A  | $\bar{A}$ | B  | $\bar{B}$ | Z  | $\bar{Z}$ | Shield |
|-----------------------|----|-----|----|-----------|----|-----------|----|-----------|--------|
| Cable (Colour)        | BN | WH  | GN | RD        | YW | BK        | GY | VT        | Shield |
| M12 connector, 8-pin  | 2  | 1   | 3  | 6         | 4  | 7         | 5  | 8         |        |
| M23 connector, 12-pin | 12 | 10  | 5  | 6         | 8  | 1         | 3  | 4         |        |

Top view of mating side, male contact base



Incremental encoder

| Order Code<br>Hollow Shaft                        | 11-A0HN-X X X X-X X X X   |   |   |  |  |
|---|---|---|---|--|--|
|   | Type <span style="margin-left: 100px;">a</span> <span style="margin-left: 10px;">b</span> <span style="margin-left: 10px;">c</span> <span style="margin-left: 10px;">d</span> <span style="margin-left: 10px;">e</span> |   |   |  |  |
| <b>a</b> Flange                                   | <b>b</b> Hollow shaft*  | <b>c</b> Output circuit / Power supply  | <b>e</b> Pulse rate   |  |  |
| 1 = without mounting accessory by flange ring     | B = $\varnothing$ 25 mm   | 1 = RS422 (with inverted signal) / 5 VDC  | 512, 1000, 1024, 2048, 2500, 3600, 4096, 4500, 5000, .... 8192, 10240, 16384, 20480 |  |  |
| 3 = with fastening arm, by flange ring            | C = $\varnothing$ 25.4 mm   | 2 = RS422 (with inverted signal) / 10 ... 30 V DC   | 1 Vpp Sin/Cos: 1024 2048  |  |  |
| 4 = with fastening arm, fasten the shaft by screw | E = $\varnothing$ 30 mm   | 3 = Push-pull (without inverted signal) / 10 ... 30VDC  | Other pulse rates on request  |  |  |
| 5 = Tether arm, by flange ring                    | F = $\varnothing$ 35 mm   | 4 = Push-pull (7272 with inverted signal) / 5 ... 30VDC (Only for equal or less than 2500ppr) |   |  |  |
|   | G = $\varnothing$ 38 mm   | 5 = Push-pull (with inverted signal) / 10 ... 30VDC   |   |  |  |
|   | J = $\varnothing$ 42 mm   | 6 = SinCos, 1Vpp (with inverted signal) / 5VDC  |   |  |  |
|   | L = $\varnothing$ 45 mm   | <b>d</b> Type of connection   |   |  |  |
|   |   | 2 = Radial cable, 2m  |   |  |  |
|   |   | 5 = M23 connector, 12-pin, radial (without mating connector)                                  |   |  |  |
|   |   | 7 = M12 connector, 8-pin, radial (without mating connector)                                   |   |  |  |

\* When flange type is 1,3,5 and bore size  $\leq$  42mm, the shaft is with isolated insertion.

### Accessories

Connection technology:

Connector, self-assembly

M12 female connector with coupling nut  
M23 female connector with coupling nut

E1-1208-0101  
E1-3212-0100

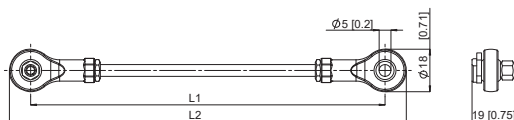
Mounting accessory for hollow shaft version:

Stator coupling



Further accessories and exact order code please refer to the accessories section.

Tether arm

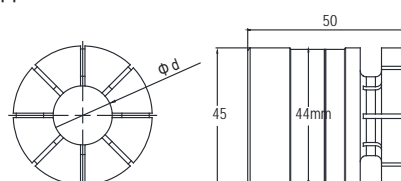


L1= 70 mm, L2= 88 mm (Other lengths on request) T2-0000-5000-0070

Isolated insertion \*\*

Isolation inserts prevent currents from passing through the encoder bearings. These currents can occur when using inverter controlled three-phase or AC motor and considerably shorten the service life of the encoder bearings.

Applicable to 11-A0HN



$\varnothing$  d  
25 mm T2-0000-4102-4525  
30 mm T2-0000-4102-4530  
Other bore size see accessories section

\*\* : Only for flange type 1,3,5.

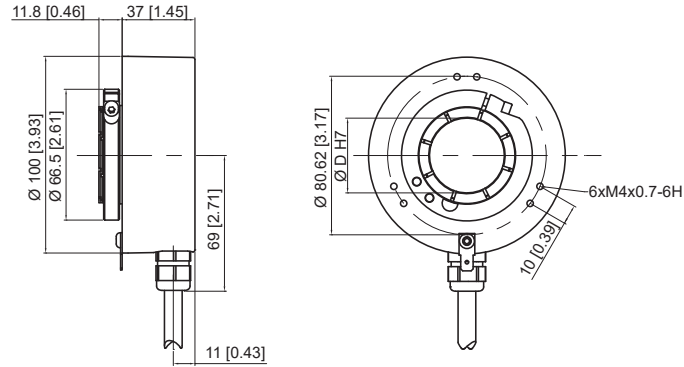
# Incremental Encoders

Hollow shaft

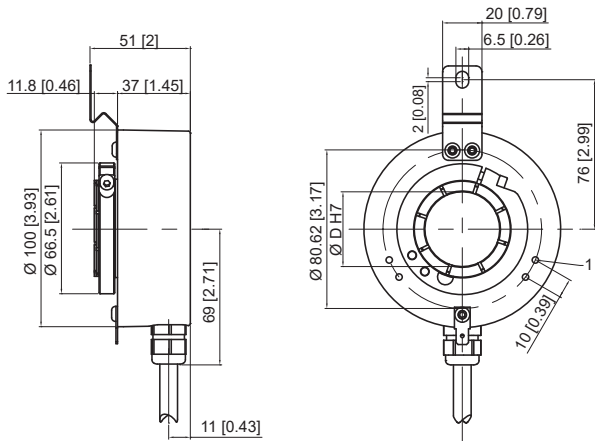
11-A0HN

## Dimensions

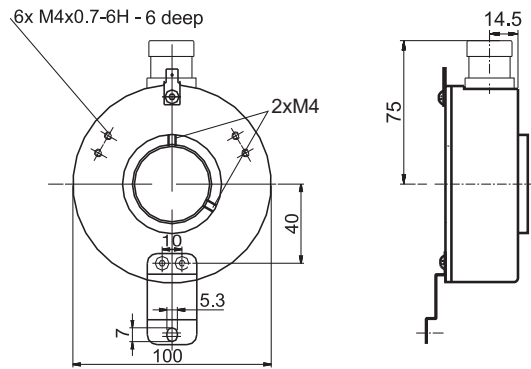
Flange type 1, type of connection 2



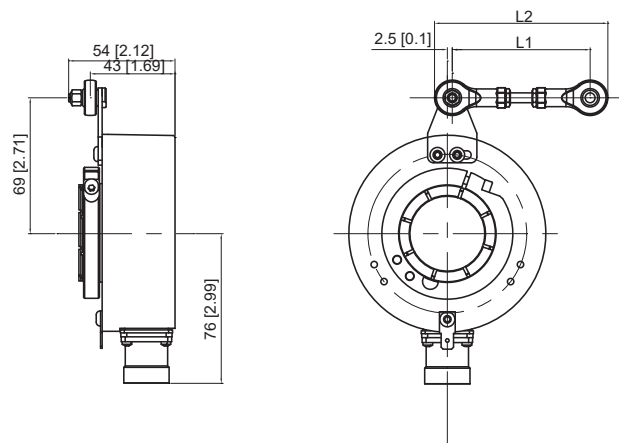
Flange type 3, type of connection 2



Flange type 4, type of connection 5



Flange type 5, type of connection 5



Other mounting types and accessories on your request,  
please send us an email: [sales@heinlanz.com](mailto:sales@heinlanz.com)