



SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS



Programmable incremental optical encoder from 1 to 65536 pulses per rotation



Programmable via USB, without an additional programming box



Programmable without powering up the encoder



Multi-voltage 5...30 VDC Automatic power voltage recognition



0° to 360° reference signal position



Optical Encoder



Incremental Encoder



Programmable Encoder



High shaft load capacity



Vibration and shock resistant



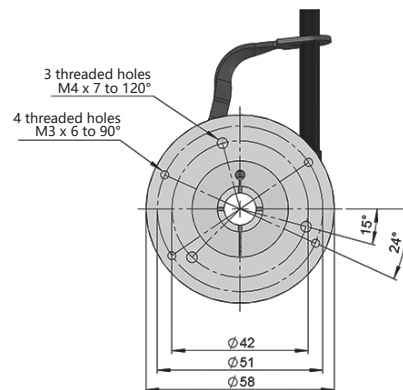
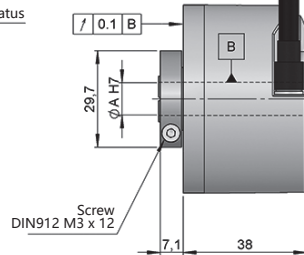
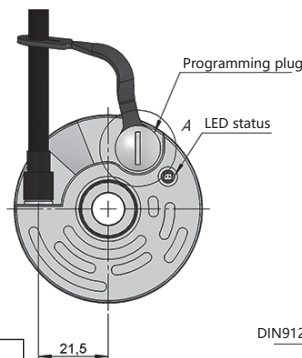
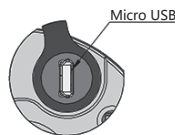
IP65



Express Delivery

- External diameter 58 mm
- Hollow shaft $\varnothing$ 8, 10, 12, 14 or 15 mm
- Protection class IP65 according to DIN EN 60529
- Connection by cable (other cable length available) or industrial connector M12 or M23

Detail A



HOLLOW SHAFT	$\varnothing A$
1	10 mm
2	12 mm
3	14 mm
4	15 mm
6	8 mm

Drawing hollow shaft type 1, mechanical option type 2, connection type 1

REFERENCE

Reference example: PR90H-21C1C-C

Serie	Mechanical option	Hollow shaft	Output signals	Connection	Power Supply / Electronic output	Pulses number	Special customer
PR90H -	☐	☐	☒	☐	☒	☒	☐ ☐ ☐ ☐
2. Frontal clamp 1. $\varnothing$ 10 mm 2. $\varnothing$ 12 mm 3. $\varnothing$ 14 mm 4. $\varnothing$ 15 mm 6. $\varnothing$ 8 mm C. ABZ, $\overline{ABZ}$ CONFIGURABLE • CW / CCW • Z 90° and 180° • Z position of 0...360° 1. Helicoidal cable 2. Radial M12 8p CCW 3. Radial M23 12p CCW C. 5...30 VDC / HTL - TTL CONFIGURABLE • Electronic output HTL / TTL C. 1...65536 CONFIGURABLE							

Order your reference Step file 3D

info@encoderhohner.com
service available in 24 h

Female connector and the required anti-rotation system are not included in the reference. All options available in the sections "CONNECTION DIMENSIONS" and "ANTI-ROTATION SYSTEMS DIMENSIONS", upon request.



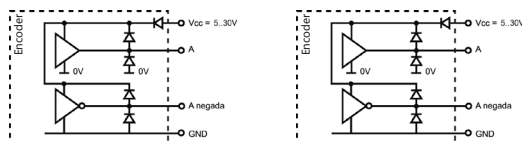
SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

MECHANICAL SPECIFICATIONS

Materials	Cover: Zamac Housing: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 ¹⁰ rev.
Housing fixing	Flexible anti-rotation system (different models available)
Permitted misalignment (Flexible flange)	±0.05 mm axial, ±0.1 mm radial
Shaft fixing	Front clamp
Hollow shaft diameter	8, 10, 12, 14 or 15 mm
Maximum number of revolutions permitted mechanically	6000 rpm
Protection against dust and splashes according to DIN EN 60529	IP65
Rotor inertia moment	60 gcm ²
Starting torque at 20°C (68°F)	≤ 0.02 Nm
Maximum load permitted on axial shaft	40 N
Maximum load permitted on radial shaft	80 N
Weight aprox.	0.5 Kg
Operating temperature range	-20°C to +80°C
Vibration according to DIN EN 60068-2-6	100 m/s ² (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s ² (6ms)
Maximum pulses per turn	65536
Connection	2 meters cable or industrial connector M12 or M23 (other cable lengths available on order) Female connector not included

OUTPUT SIGNALS



OUTPUT CIRCUIT	TTL	HTL
Reference code	C	C
Power supply	5...30 VDC	5...30 VDC
Consumption (*)	Typical: 45 mA Max: 150 mA	Typical: 45 mA Max: 150 mA
Max. load capability / channel	±20 mA	±20 mA
Length of cable allowed	1200 m	1200 m
“Low” signal level	VOL < 0.5 VDC	VOL < 2.5 VDC
“High” signal level	VOH > 2.5 VDC	VOH > VCC – 1.5 VDC
Frequency	900 kHz	900 kHz
Short circuit protection	Yes	Yes
Protection polarity inversion	Yes	Yes

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

(*) Peak current up to 800mA (1ms) at start-up of the encoder.

SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

CONNECTION



	Cable 4x2x0.14 95.0008011	Connector M12 8p CCW	Connector M23 12p CCW
GND	Black (BK)	7	10
+UB	Red (RD)	8	12
A	Yellow (YE)	2	5
B	Green (GN)	4	8
$\bar{A}$	Brown (BN)	1	6
$\bar{B}$	Blue (BU)	3	1
Z	Grey (GY)	6	3
$\bar{Z}$	Orange (OG)	5	4
Case	Shield	Case	Case

CONNECTION PC



Cable
uUSB/USB
90.9452

(*) The connection cable uUSB / USB is not included in the reference.

PROGRAMMING DETAILS

LED status:

● **green intermittent indicator:**
Communication between devices

● **red indicator:**
Error detection (overload, low power, optical failure, communications failure, humidity...) See type of error in the programming software

Configuration options:

Input Power Supply 5V to 30V

PPR: 4096

Direction: ☒ Clockwise ☐ Counter Clockwise

Output: ☐ A inverted ☐ B inverted ☐ Z inverted

Output Voltage Control: ☐ TTL ☒ HTL

Z Pulse: Position: 0.0, Width: ☐ 180° ☒ 90°

Factory configuration:

- Pulses: 4096 ppr
- Output: HTL
- Direction: Clockwise (CW)
- Position (Z pulse): 0°
- Width (Index, Z, 0): 90°

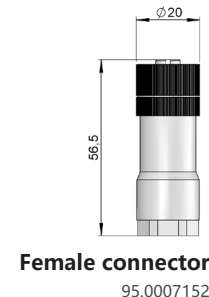
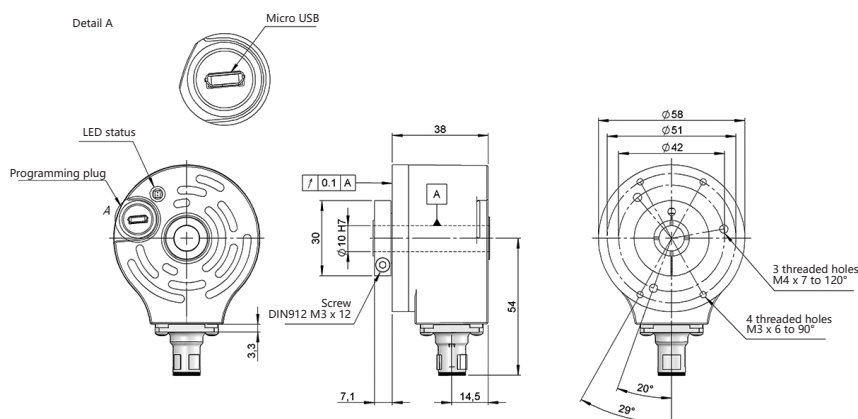
Download the software and programming manual from: www.encoderhohner.com/pr90/

CONNECTION DIMENSIONS

Female connector not included

Connection 2 Radial

M12 8p
male panel
counter clockwise



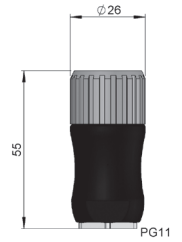
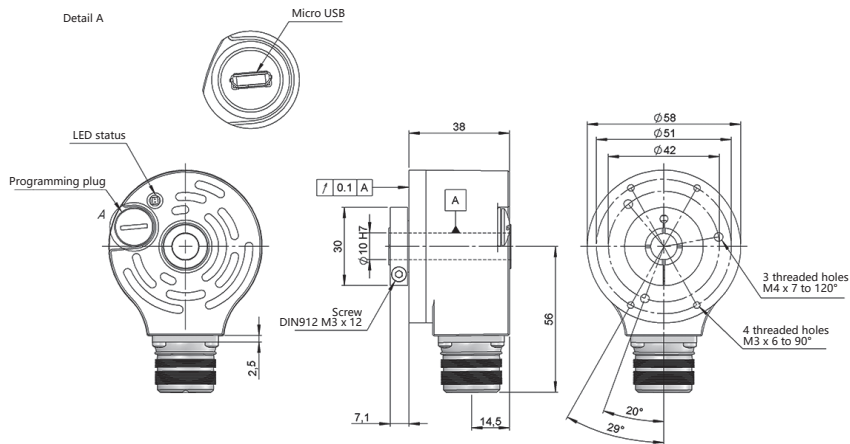
Pre-assembled cable
89.003.02.047.XX
Length in meters

SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

Connection 3 Radial

M23 12p
male panel
counter clockwise



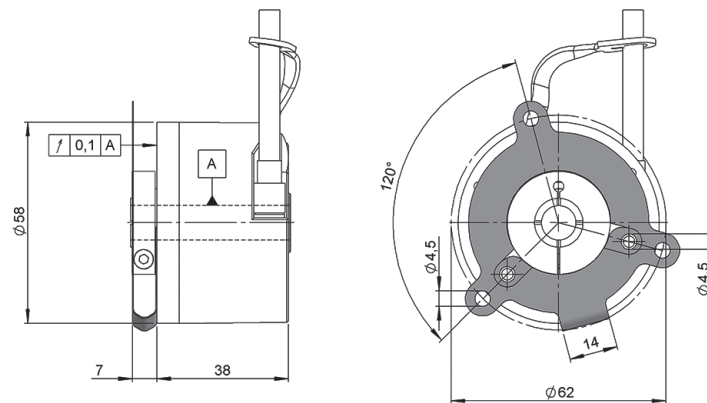
Female connector
95.0007137



Pre-assembled cable
89.010.02.015.XX
Length in meters

ANTI-ROTATION SYSTEMS DIMENSIONS

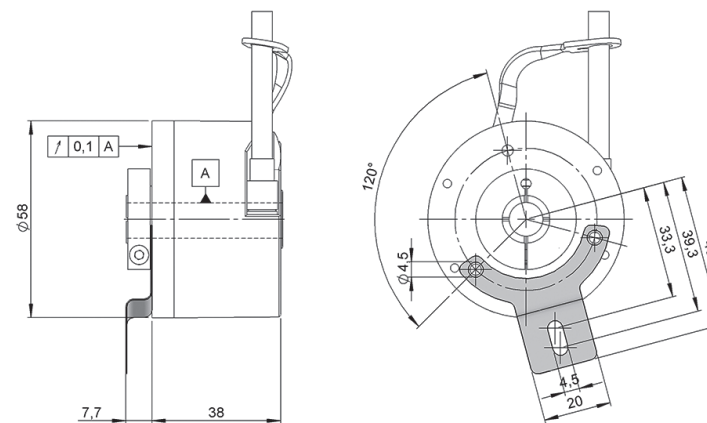
Flexible flange 90.1014



90.1014



Flexible flange 90.1018



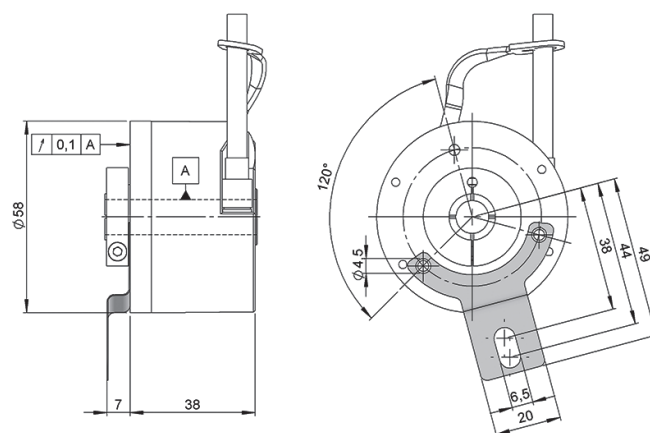
90.1018



SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

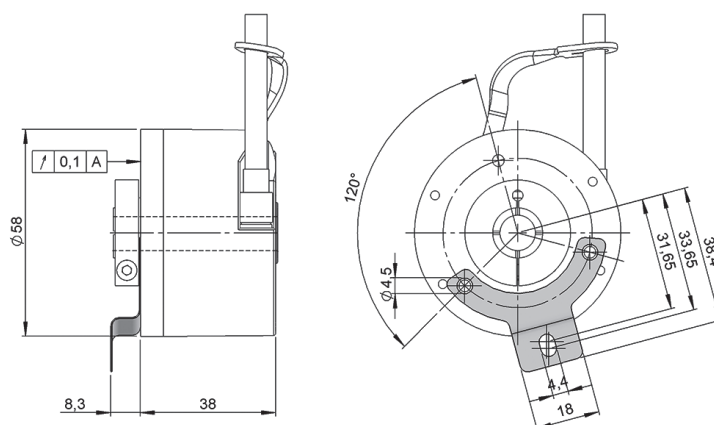
Flexible flange
90.1020



90.1020



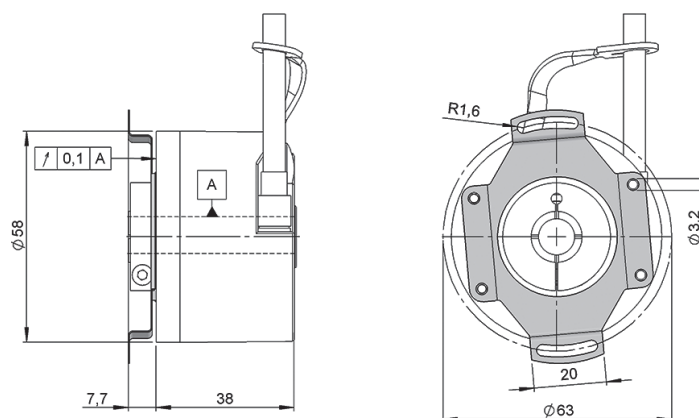
Flexible flange
90.1024



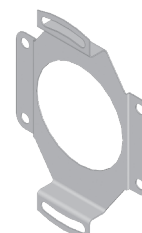
90.1024



Flexible flange
90.1027



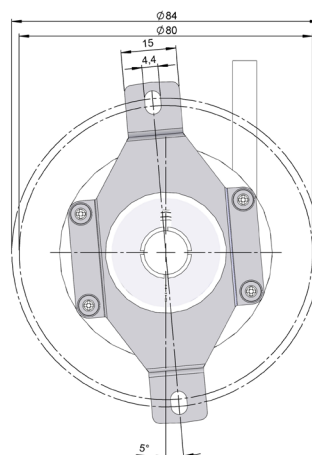
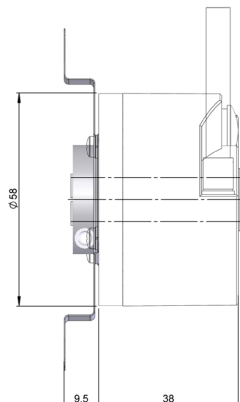
90.1027



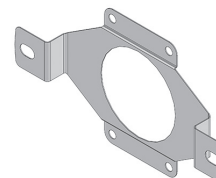
SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

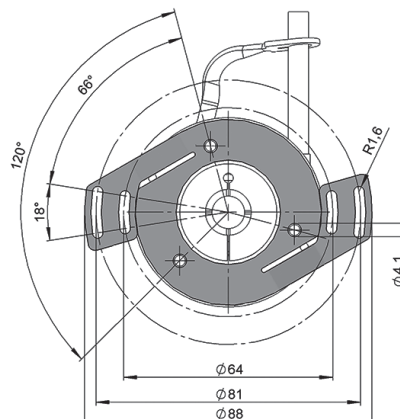
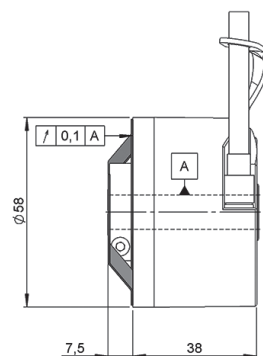
Flexible flange
90.1045



90.1045



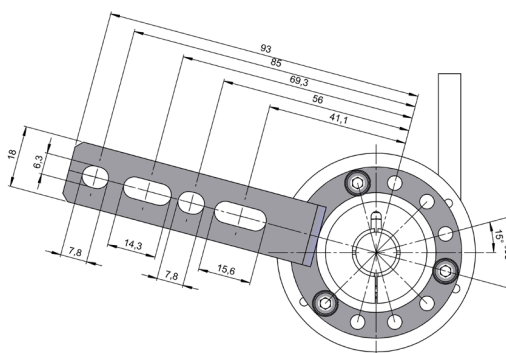
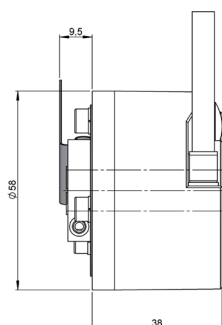
Flexible flange
90.1075



90.1075



Flexible flange
90.1095



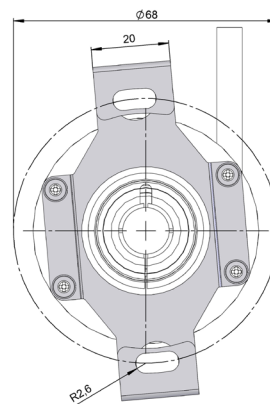
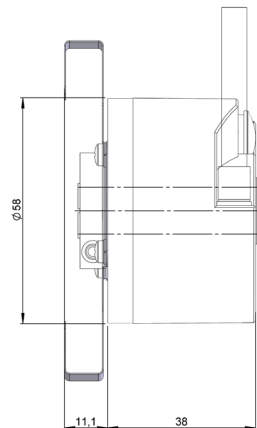
90.1095



SERIE PR90H

PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

Flexible flange
93.0102090



93.0102090

