

# SERIES PR90H

## PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS



Programmable incremental optical encoder from 1 to 65.536 pulses per rotation



Programmable via USB, without an additional programming box



Programmable without powering up the encoder



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



0° to 360° reference signal position



Optical Encoder



Incremental Encoder



Programmable Encoder



High shaft load capacity



Vibration and shock resistant

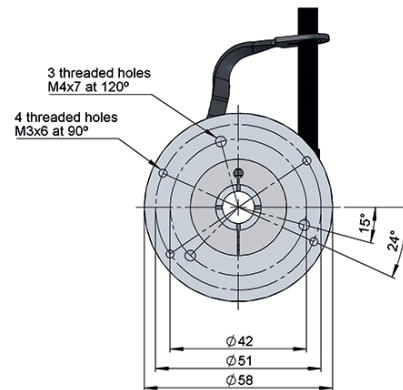
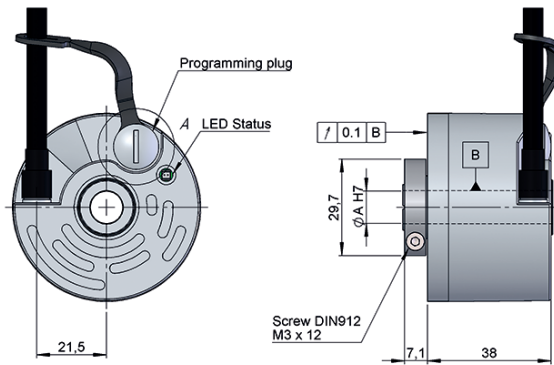
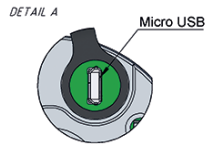


IP 65



Fast delivery

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



SHAFT	$\varnothing A$
1	10 mm
2	12 mm
3	14 mm

Drawing hollow shaft type 1, with 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
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	2. Frontal clamp	1. $\varnothing$ 10mm 2. $\varnothing$ 12mm 3. $\varnothing$ 14mm	C. A $\ddot{A}$ +B $\ddot{B}$ +0 $\ddot{O}$  CONFIGURABLE • CW / CCW • Z 90° y 180° • Z position of 0...360°	1. Helicoidal cable 2. Radial 90.9508 M12 8p CCW 3. Radial 90.9512 M23 12p CCW	C. 5...30 VDC / HTL - TTL  CONFIGURABLE • Electronic output HTL / TTL	C. 1...65536  CONFIGURABLE	

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.

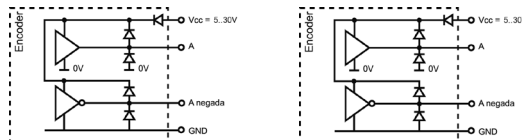
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### MECHANICAL SPECIFICATIONS

Materials	Cover: Aluminium Housing: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 <sup>10</sup> rev.
Housing fixation	Flexible anti-rotation system (different models available)
Permitted misalignment with elastic flange	±0,05 mm radial, ±0,1 mm axial
Shaft fixation	Frontal clamp
Hollow shaft diameter	10, 12 or 14 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 <sup>2</sup>
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 <sup>2</sup> (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s <sup>2</sup> (6ms)
Maximum pulses per turn	65536
Connection	2 meters cable or industrial connector M12 or M23 (other cable lengths available on order) <b>Female connector not included</b>

### 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 counterclockwise

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### CONNECTION



	95.0008011 Cable 4x2x0,14	90.9508 M12 8p CCW	90.9512 M23 12p CCW
GND	Black	7	10
VCC	Red	8	12
A	Yellow	2	5
B	Green	4	8
$\tilde{A}$ inverted	Brown	1	6
$\tilde{B}$ inverted	Blue	3	1
0 (reference)	Grey	6	3
$\tilde{0}$ inverted	Orange	5	4

Shield connected to the housing

### CONNECTION PC\*



90.9452  
Cable uUSB/USB

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

Available in the section "ACCESSORIES".

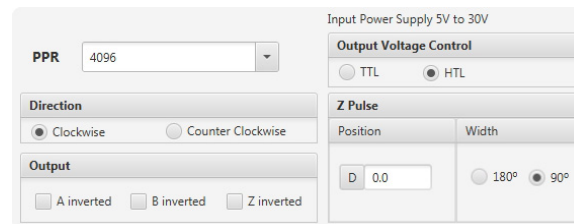
### PROGRAMMING DETAILS

#### 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:



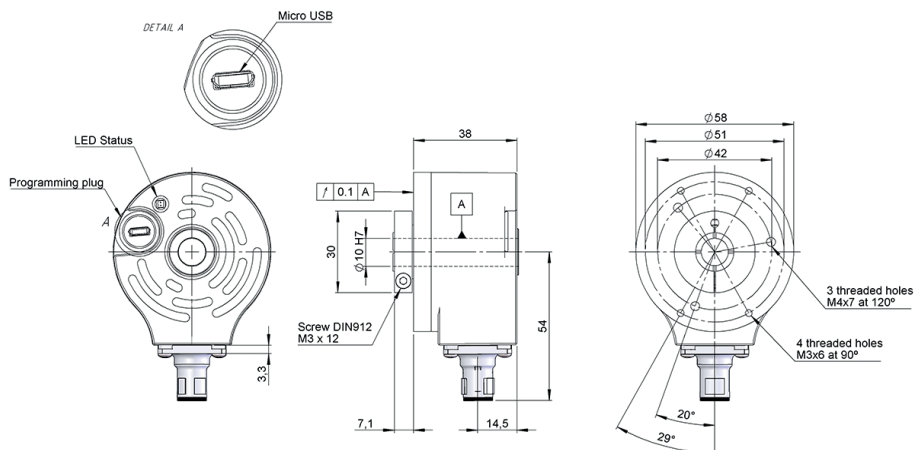
#### Factory configuration:

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

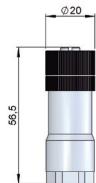
### CONNECTION DIMENSIONS

Female connector not included

**Connection 2**  
Radial 90.9508



90.9508

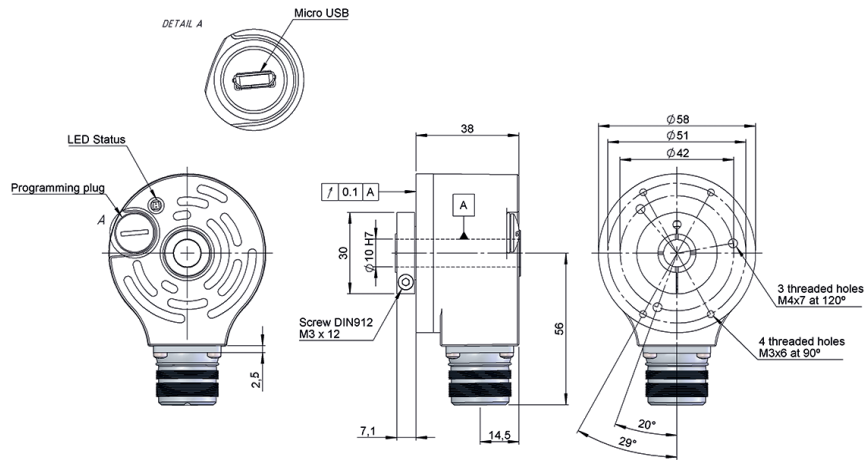


90.9508  
M12 8p  
male connector  
counter clockwise

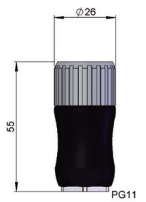
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**Connection 3**  
Radial 90.9512



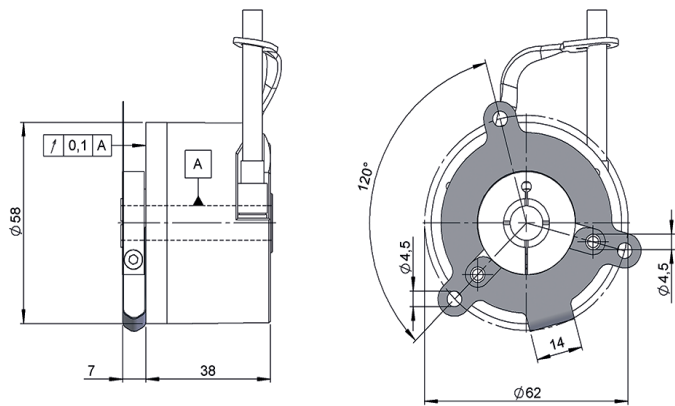
**90.9512**



**90.9512**  
M23 12p  
male connector  
counter clockwise

### ANTI-ROTATION SYSTEMS DIMENSIONS

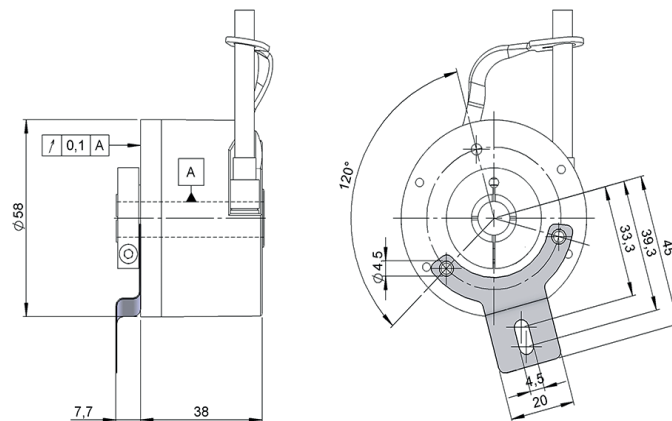
**Flexible flange**  
90.1014



**90.1014**



**Flexible flange**  
90.1018



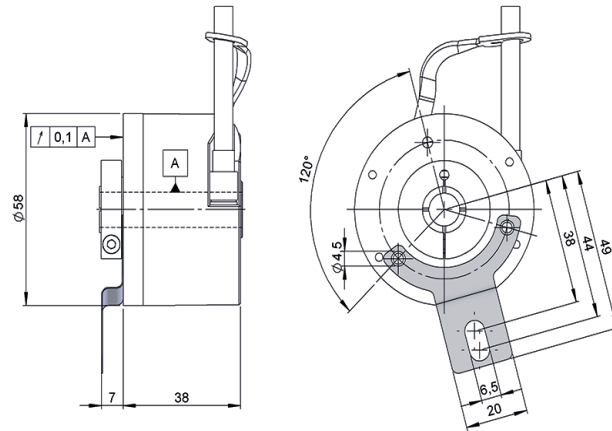
**90.1018**



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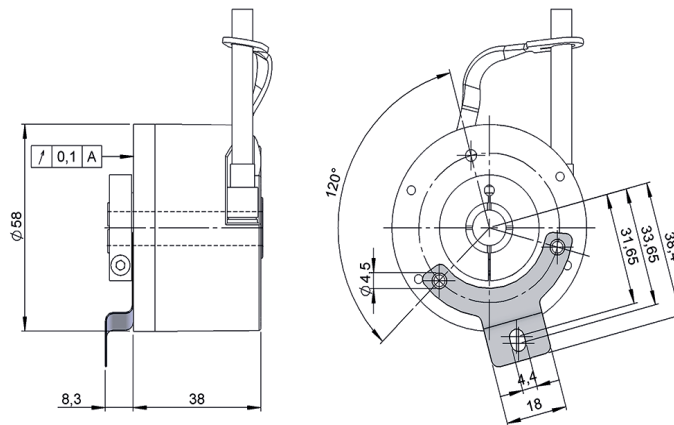
Flexible flange  
90.1020



90.1020



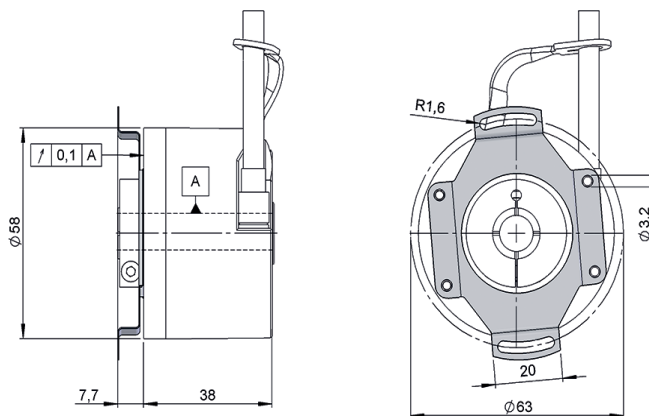
Flexible flange  
90.1024



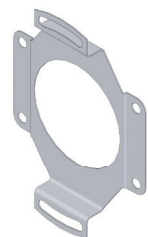
90.1024



Flexible flange  
90.1027



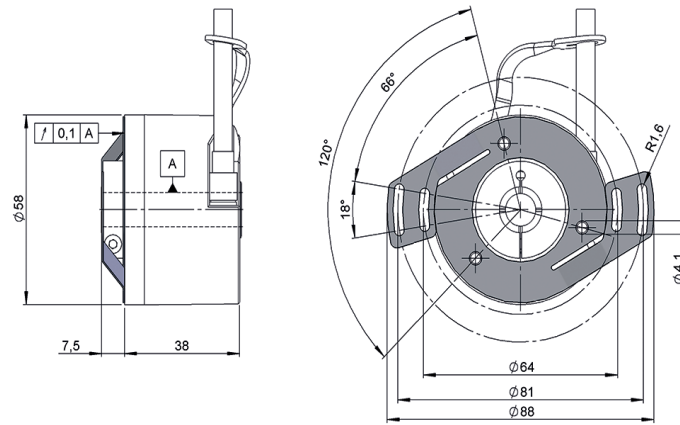
90.1027



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Flexible flange  
90.1075



90.1075

