



# SERIE 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...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

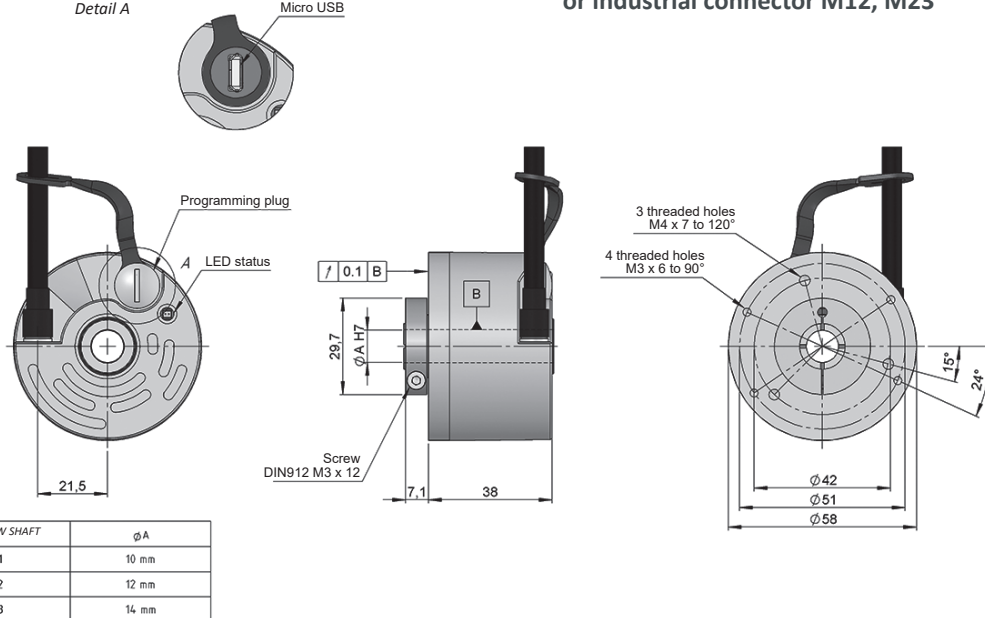


Express Delivery

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

Detail A

Micro USB



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 -	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	2. Frontal clamp	1. $\varnothing$ 10 mm 2. $\varnothing$ 12 mm 3. $\varnothing$ 14 mm	C. A $\ddot{A}$ +B $\ddot{B}$ +0 $\ddot{O}$  CONFIGURABLE • CW / CCW • Z 90° and 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	

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.



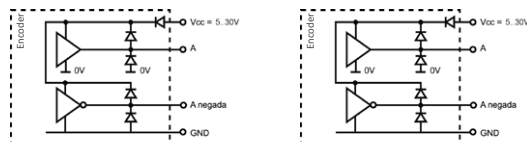
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### MECHANICAL SPECIFICATIONS

Materials	Cover: Aluminium Housing: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 <sup>10</sup> rev.
Housing fixing	Flexible anti-rotation system (different models available)
Permitted misalignment (Flexible flange)	±0,05 mm radial, ±0,1 mm axial
Shaft fixing	Front 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 clockwise

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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
$\tilde{A}$	Brown	1	6
$\tilde{B}$	Blue	3	1
0 (reference)	Grey	6	3
$\tilde{0}$	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".

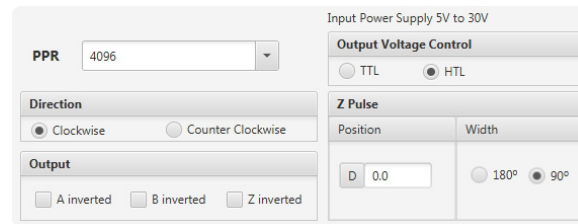
### PROGRAMMING DETAILS

#### LED Status:

● *green intermittent indicator:*  
Communication between devices

● *red indicator:*  
Error detection (overload, low power, optical failure, communications failure, humidity...)

#### Configuration options:



#### Factory configuration:

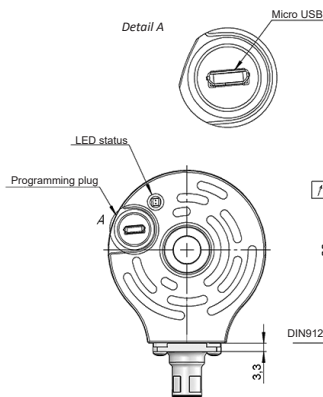
- Pulses: 4096 ppr
- Output: HTL
- Direction: Clockwise (CW)
- Position (Z pulse): 0°
- Width (Index, Z, O): 90°

Download the **software** and programming manual from: [www.encoderhohner.com/pr90/](http://www.encoderhohner.com/pr90/)

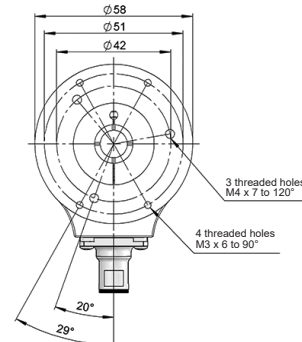
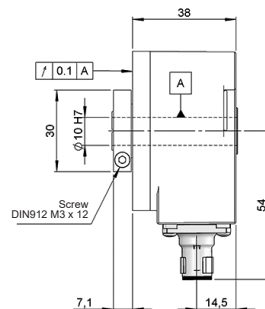
### CONNECTION DIMENSIONS

Female connector not included

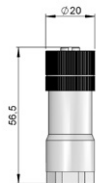
**Connection 2**  
Radial 90.9508



**90.9508**  
M12 8p  
male panel  
counter clockwise



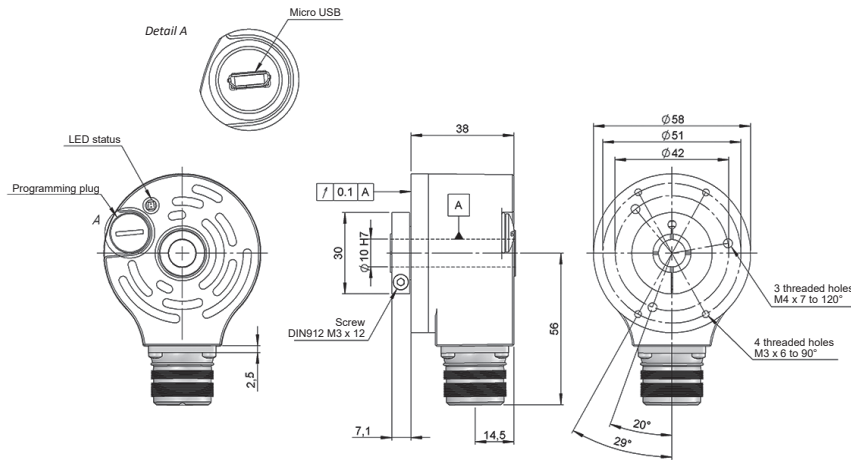
**90.9508**



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**Connection 3**  
Radial 90.9512



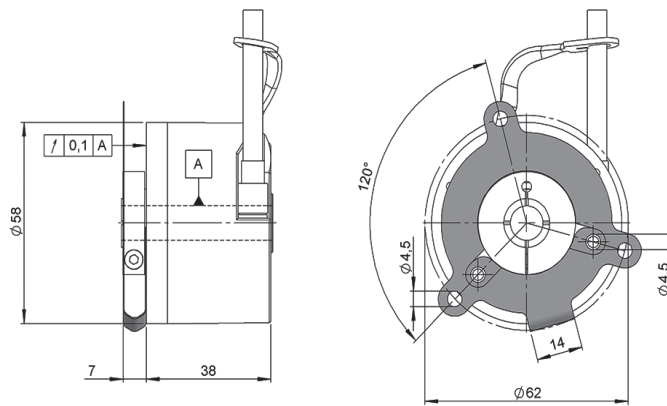
**90.9512**



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

### ANTI-ROTATION SYSTEMS DIMENSIONS

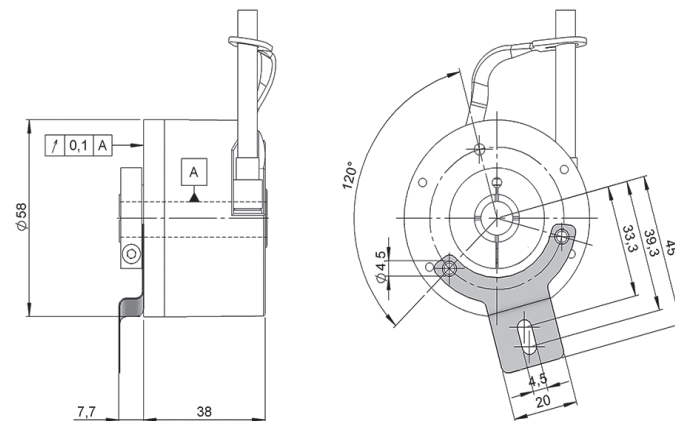
**Flexible flange**  
90.1014



**90.1014**



**Flexible flange**  
90.1018



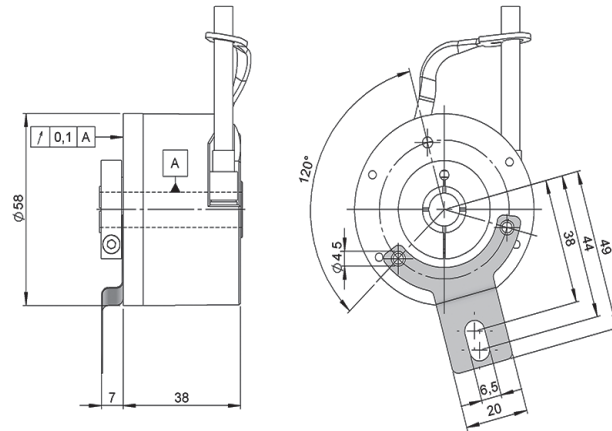
**90.1018**



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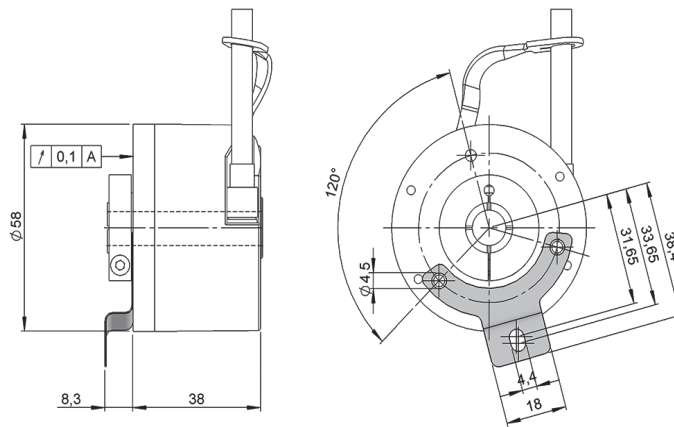
Flexible flange  
90.1020



90.1020



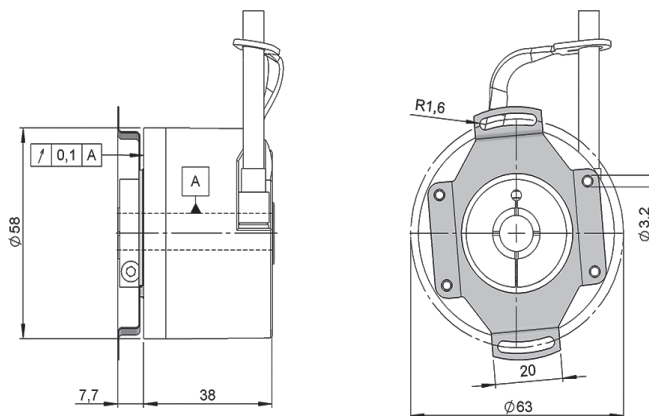
Flexible flange  
90.1024



90.1024



Flexible flange  
90.1027



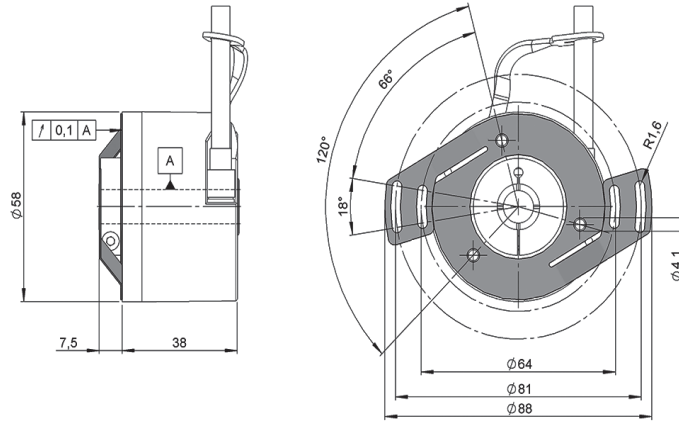
90.1027



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PROGRAMMABLE INCREMENTAL HOLLOW SHAFT ENCODER FOR INDUSTRIAL APPLICATIONS

Flexible flange  
90.1075



90.1075

