SERIE PR90

PROGRAMMABLE INCREMENTAL SOLID 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

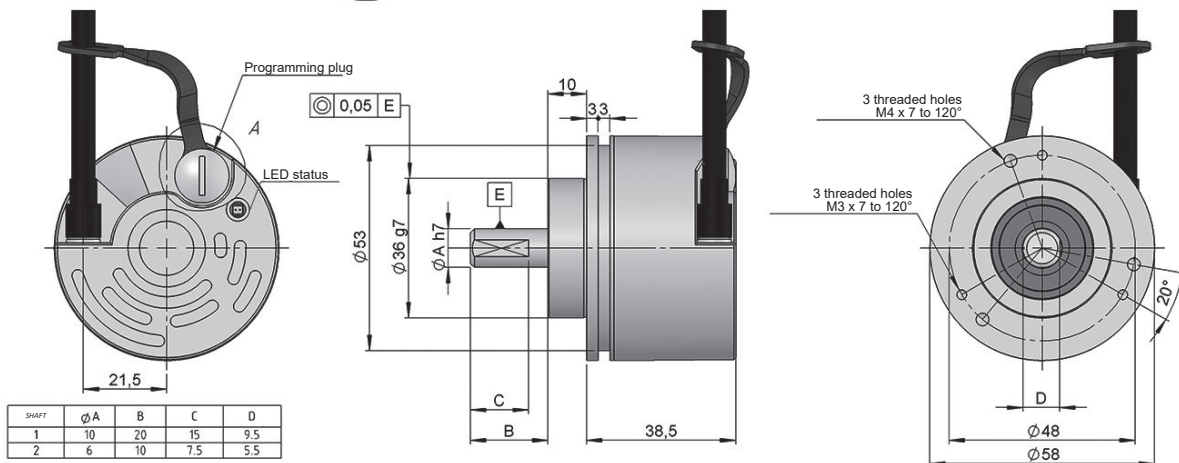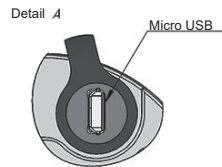| Optical Encoder	Incremental Encoder	Programmable Encoder	High shaft load capacity	Vibration and shock resistant	IP 65	Express Delivery

- **External diameter 58 mm**
- **Shaft Ø 6 or 10 mm**
- **Protection class IP65 according to DIN EN 60529**
- **Connection by cable (other cable length available) or industrial connector M12 or M23**

Detail A

Micro USB

Programming plug

A

LED status

$\boxed{\circ}$ 0,05 E

10

3,3

Ø53

Ø36 g7

Ø A h7

E

C

B

38,5

3 threaded holes M4 x 7 to 120°

3 threaded holes M3 x 7 to 120°

20°

D

Ø48

Ø58

21,5

SHAFT	Ø A	B	C	D
1	10	20	15	9.5
2	6	10	7.5	5.5

Drawing shaft type 1, connection type 1, without flange

REFERENCE

Reference example: PR90-11C1C-C

Serie	Shaft	Flange	Output signals	Connection	Power Supply / Electronic output	Pulses number	Special customer
PR90 -	☐	☐	C	☐	C -	C	. ☐☐☐☐
	1. Ø 10x20 mm 2. Ø 6x10 mm	1. None 3. 90.1102 5. 90.1005 (*)	C. AÃ+BB̃+0Õ	1. Helicoidal cable 2. Radial 90.9508 M12 8p CCW 3. Radial 90.9512 M23 12p CCW	C. 5...30 VDC / HTL - TTL	C. 1...65536	
			CONFIGURABLE ● CW / CCW ● Z 90° and 180° ● Z position of 0...360°		**CONFIGURABLE** ● Electronic output HTL / TTL	**CONFIGURABLE**	

Order your reference Step file 3D

info@encoderhohner.com

service available in 24 h

(*) Flange mounting included in delivery of the encoder.

Female connector is not included in the reference. All options available in the sections "CONNECTION DIMENSIONS", upon request.

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MECHANICAL SPECIFICATIONS

Materials	Cover: Aluminium Housing: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1×10^{10} rev.
Maximum number of revolutions permitted mechanically	6000 rpm
Protection against dust and splashes according to DIN EN 60529	IP65
Rotor inertia moment	30 gcm²
Starting torque at 20°C (68°F)	≤ 0,01 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/s² (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s² (6ms)
Maximum pulses per turn	65.536
Connection	2 meters cable or industrial connector M12 or M23 (other cable lengths available on order) **Female connector not included**

OUTPUT SIGNALS
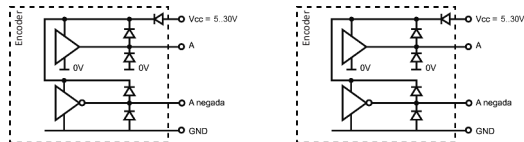
OUTPUT CIRCUIT	TTL	HTL
Reference code	*C*	*C*
Power supply	5...30 VDC	5...30 VDC
Consumption*	Tipical: 45 mA Max: 150 mA	Tipical: 45 mA Max: 150 mA
Max. load capability / channel	±20 mA	±20 mA
Length of cable allowed	1200 m	1200 m
"Low" signal level	VOL < 0.5 VDC	VOL < 2.5 VDC
"High" signal level	VOH > 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 of 400mA (1ms) at start-up of the encoder.

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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
Ã	Brown	1	6
B̃	Blue	3	1
0 (reference)	Grey	6	3
0̃	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

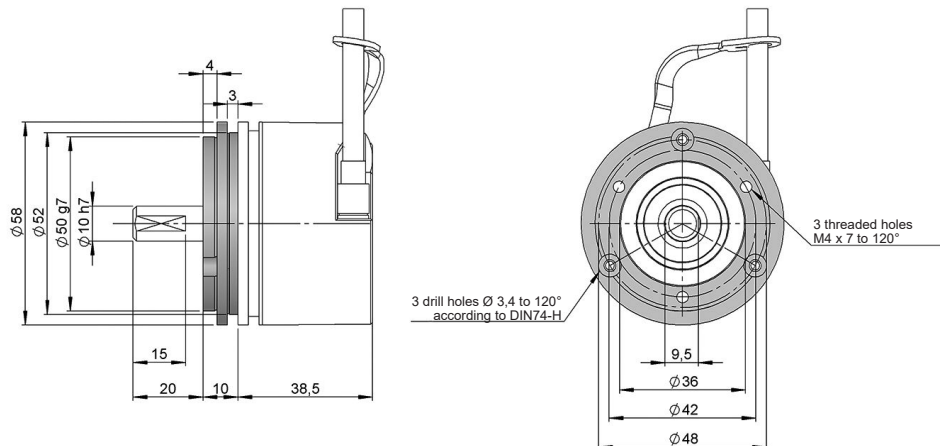### Configuration options:

Factory configuration:

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

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

FLANGE DIMENSIONS

Flange mounting included

Flange 2
90.1102

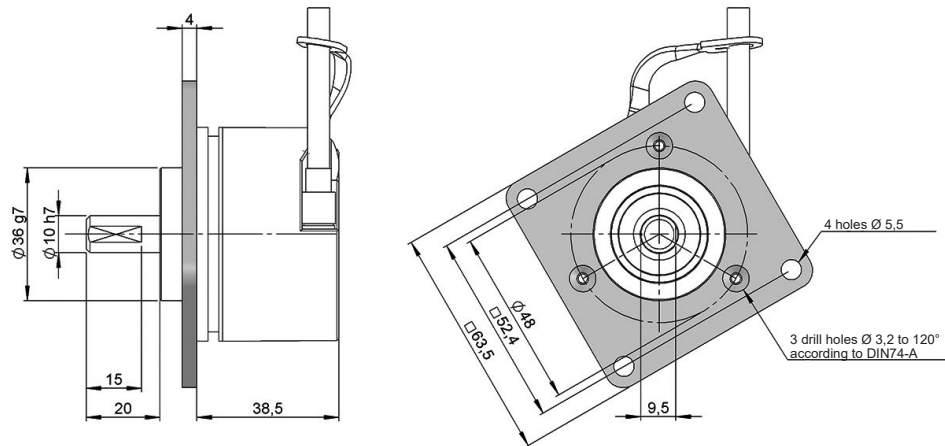3 drill holes Ø 3,4 to 120° according to DIN74-H

3 threaded holes M4 x 7 to 120°

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Flange 3
90.1005

Ø 36 g7
Ø 10 h7
15
20
38,5
4

4 holes Ø 5,5
Ø 48
□ 52,4
□ 63,5
3 drill holes Ø 3,2 to 120°
according to DIN74-A
9,5

CONNECTION DIMENSIONS

Female connector not included

Connection 2
Radial 90.9508

90.9508

Detail A
Micro USB
Programming plug
A
0,05 A
10
38,5
3
3
Ø 53
Ø 36 g7
Ø 10 h7
A
15
20
54
3,3

Ø 58
Ø 48
9,5
3 threaded holes M4 x 7 to 120°
3 threaded holes M3 x 7 to 120°
15°
35°

Ø 20
56,5
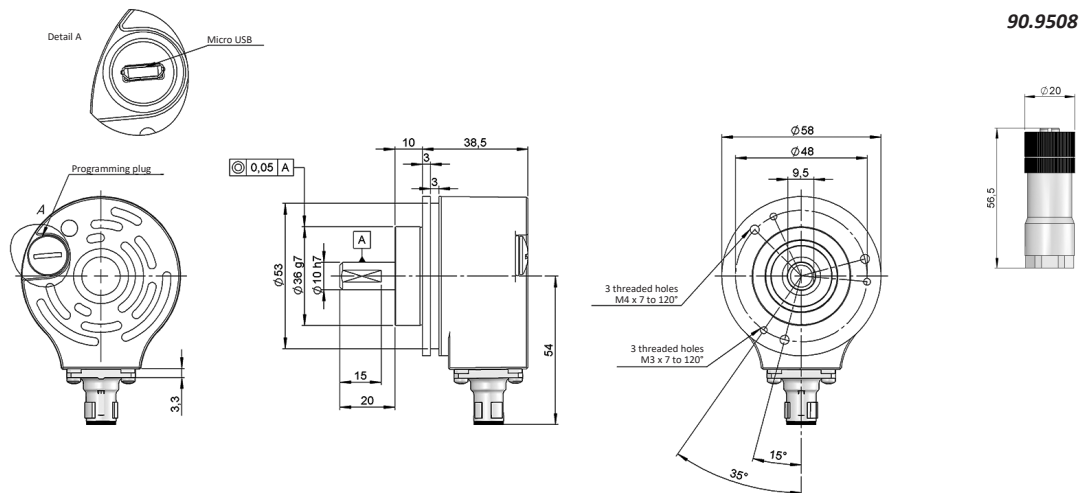
90.9508
M12 8p
male panel
counter clockwise

Connection 3
Radial 90.9512

90.9512

Detail A
Micro USB
Programming plug
A
0,05 A
10
38,5
3
3
Ø 53
Ø 36 g7
Ø 10 h7
A
15
20
56
2,5

Ø 58
Ø 48
9,5
3 threaded holes M4 x 7 to 120°
3 threaded holes M3 x 7 to 120°
15°
35°

Ø 26
55
PG11
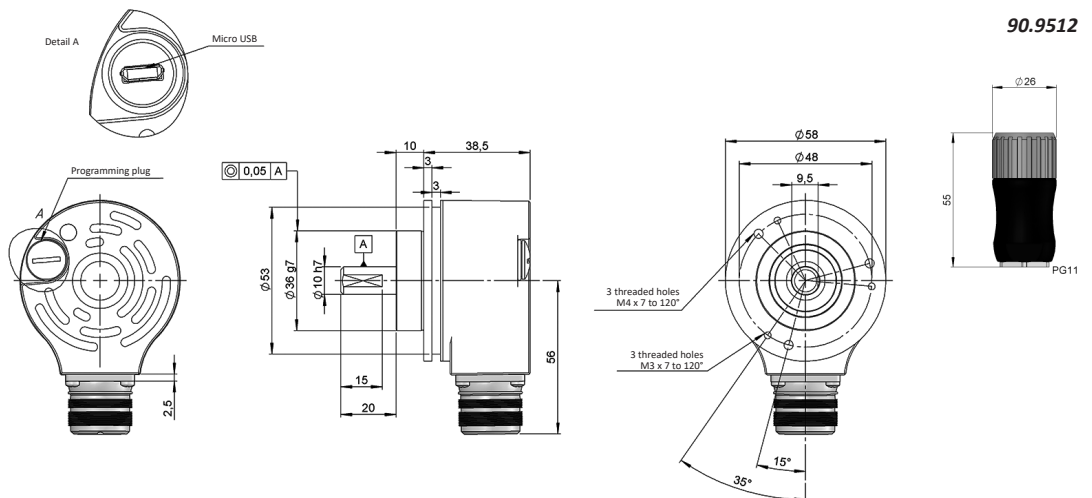
90.9512
M23 12p
male panel
counter clockwise