



SERIE PR178

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

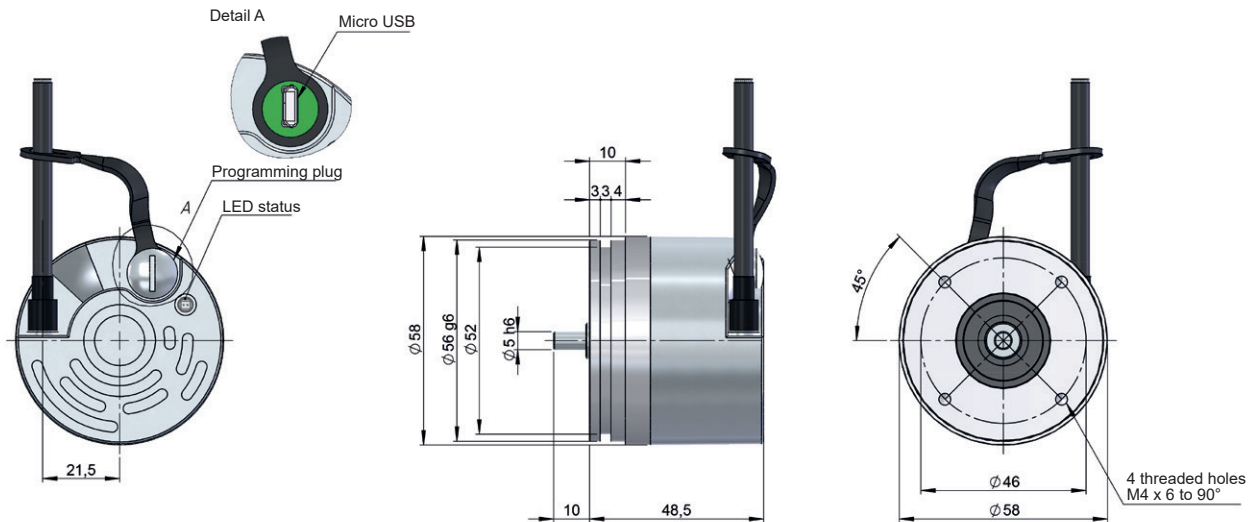


IP65



Express Delivery

- External diameter 58 mm
- Shaft \varnothing 5x10 mm
- Protection class IP65 according to DIN EN 60529
- Connection by cable (other cable length available) or industrial connector



Drawing connection type 1

REFERENCE

Reference example: PR178-A5/1-2500

Serie	Shaft	Flange	Output signals	Power Supply / Electronic output	Connection	Pulses number
PR178 -	\varnothing 5x10 mm	\varnothing 56 mm 4 holes M4x6	A \ddot{A} +B \ddot{B} +0 \ddot{O}	A5. 5 V, TTL A. 15 V, HTL	1. Radial cable 2. Radial connector M12 8p CCW 3. Radial connector M23 12p CCW	C. 1...65536
			<p>CONFIGURABLE</p> <ul style="list-style-type: none"> • CW / CCW • Z 90° and 390° • Z position of 	<p>CONFIGURABLE</p> <ul style="list-style-type: none"> • Electronic output HTL / TTL 		<p>CONFIGURABLE</p>



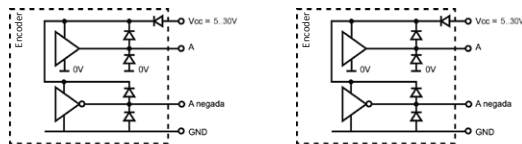
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MECHANICAL SPECIFICATIONS

Materials	Cover: Aluminium Housing: Aluminium Shaft: Stainless Steel
Bearings	Ballraces
Bearings lifetime	1x10 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 gcm ²
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/s ² (10Hz...2000Hz)
Shock according to DIN EN 60068-2-27	1000 m/s ² (6ms)
Maximum pulses per turn	65.536
Connection	2 meters cable (other cable lengths available on order)

OUTPUT SIGNALS



OUTPUT CIRCUIT	TTL	HTL
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 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
\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...)
See type of error in the programming software

Configuration options:

Input Power Supply 5V to 30V

PPR: 4096

Output Voltage Control: TTL HTL

Direction: Clockwise Counter Clockwise

Output: A inverted B inverted Z inverted

Z Pulse: Position: D 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/