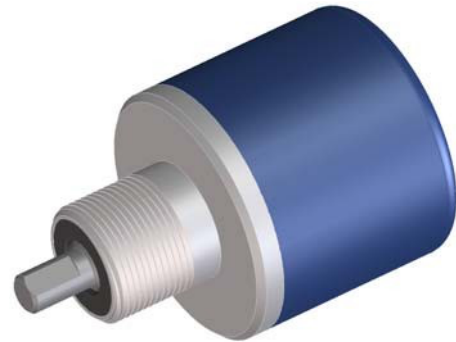


Code <b>ST10</b>	Project <b>A02</b>	Release <b>B</b>	Title <b>TECHNICAL DATASHEET</b>
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## OPTICAL ENCODER EN38FN

### GENERAL FEATURES

- Incremental optical rotary encoder with small overall dimensions.
- Flange and body made of aluminium.
- Sealed cable output either radial or axial position.



### MECHANICAL AND ELECTRICAL FEATURES

<p><b>MECHANICAL</b></p> <ul style="list-style-type: none"> <li>• Flange and body made of aluminium.</li> <li>• Ring for high protection.</li> <li>• Shaft made of stainless steel.</li> <li>• Ball bearings.</li> <li>• Fixing by threaded nut M18x1.</li> </ul> <p><b>ELECTRICAL</b></p> <ul style="list-style-type: none"> <li>• Protection against shortcuts.</li> <li>• High stability of output signals.</li> </ul>	<b>Cod. EN38FN</b>	<b>PP</b>	<b>L5</b>
	<b>Pulses per revolution</b>	from 5 to 3600 ppr	
	<b>Max. rotating speed</b>	momentary	8000rpm
		permanent	6000rpm
	<b>Max. load on shaft</b>	30 N (radial) – 30 N (axial)	
	<b>Shaft (diameter A x length L) mm</b>	ø6 h7 – ø8 h7	
	<b>Protection class</b>	IP65 (standard) * IP67 (optional)	
	<b>Operating temperature</b>	0 ÷ 70° C	
	<b>Storage temperature</b>	-20 ÷ 80° C	
	<b>Humidity</b>	20 ÷ 90 % (not condensed)	
	<b>Power supply</b>	5 ÷ 28V ± 10%	
	<b>Current consumption at 5V</b>	40 mA	
	<b>Max. output current</b>	40 mA	70 mA
	<b>Max. frequency</b>	120 kHz	
	<b>Output</b>	Push-Pull	Line Driver
	<b>Standard length of cable</b>	1m	
<b>Electrical connections</b>	see rel. table		
<b>Electrical protections</b>	inversion of power supply polarity short-circuits on output port		
<b>Weight</b>	80 g		

\* It is important to note that shaft rotates more freely in the version with protection class IP65.

### ORDERING CODE

MODEL	CABLE OUTPUT	PPR	POWER SUPPLY	SHAFT Ø	CABLE	OUTPUT	OPTIONS
<b>EN38FN</b>	<b>HR</b>	<b>xxxxx</b>	<b>05V</b>	<b>D06</b>	<b>M01</b>	<b>L5 C</b>	<b>V2</b>
	HR = radial HA = axial		05V = 5V 0528 = 5÷28V	D06 = ø6mm D08 = ø8mm	M0.5 = 0.5m M01 = 1m M40 = 40mMAX	L5 C = LINE DRIVER PP C = PUSH-PULL	No code = standard configuration V2 = protection class IP67

Example 🖱️ **OPTICAL ENCODER EN38FN HR 00300 05V D06M01 L5 C V2**

Code <b>ST10</b>	Project <b>A02</b>	Revision <b>B</b>	Title <b>TECHNICAL DATASHEET</b>
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CABLE AND ELECTRICAL CONNECTIONS		PP		L5	
		SIGNAL	WIRE COLOUR	SIGNAL	WIRE COLOUR
<b>Cable 8 cores <math>\varnothing = 4.5\text{mm}</math>, PVC external sheath</b> <b>Wires section:</b> - for power supply: 0.14mm <sup>2</sup> - for signals: 0.14mm <sup>2</sup>		A	Green	A	Green
		B	White	B	White
<b>Cable 5 cores <math>\varnothing = 4.1\text{mm}</math>, PVC external sheath</b> <b>Wires section:</b> - for power supply: 0.35mm <sup>2</sup> - for signals: 0.14mm <sup>2</sup>		Z	Brown	Z	Brown
				A	Orange
NOTES: Respect a minimum bending radius of 50mm for cables.				B	Light Blue
				Z	Yellow
		V+	Red	V+	Red
N.C. = Wire not connected		GND	Blue	GND	Blue
		$\perp$	Shield	$\perp$	Shield

### SHIELDED CABLE

LINE-DRIVER CONNECTION	
POWER SUPPLY	RL
5V	120 $\Omega$
12V	330 $\Omega$
24V	1000 $\Omega$

In case of cable extension, ensure the electrical connection between the body of connectors.

### DIMENSIONS AND RECOMMENDED FIXING

- Use an elastic coupling for shaft junction.

### WHAT TO AVOID

- Any type of mechanical working (cut, drill, mill, etc.)
- Any modification either on the body or on the shaft of the encoder
- Any kind of bad usage
- External hits or stresses