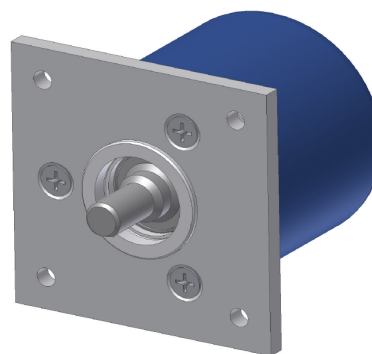


Code <b>ST14</b>	Project <b>A02</b>	Revision <b>B</b>	Title <b>TECHNICAL DATASHEET</b>
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## OPTICAL ENCODER EN38BB

### 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

MECHANICAL	Cod. EN38BB		PP	L5	
	<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>• Centring diameter 20mm.</li> <li>• High rotational precision.</li> <li>• High protection against environmental conditions.</li> </ul>	Pulses per revolution		from 5 to 3600 ppr	
Max. rotating speed		momentary	8000rpm		
		permanent	6000rpm		
Max. load on shaft		30 N (radial) – 30 N (axial)			
Shaft (diameter A x length L) mm		ø6 h7 – ø8 h7			
Protection class		IP65 (standard) * IP67 (optional)			
Operating temperature		0 ÷ 70° C			
Storage temperature		-20 ÷ 80° C			
Humidity		20 ÷ 90 % (not condensed)			
Power supply		5 ÷ 28V ± 10%			
Current consumption at 5V		40 mA			
Max. output current		40 mA	70 mA		
Max. frequency		120 kHz			
Output		Push-Pull	Line Driver		
Standard length of cable		1m			
Electrical connections		see rel. table			
Electrical protections		inversion of power supply polarity short-circuits on output port			
Weight		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>EN38BB</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 = 40m<sub>MAX</sub>

L5 C = LINE DRIVER  
PP C = PUSH-PULL

No code = standard configuration

V2 = protection class IP67

Example  **OPTICAL ENCODER EN38BB HR 00300 05V D06M01 L5 C V2**

Code <b>ST14</b>	Project <b>A02</b>	Revision <b>B</b>	Title <b>TECHNICAL DATASHEET</b>
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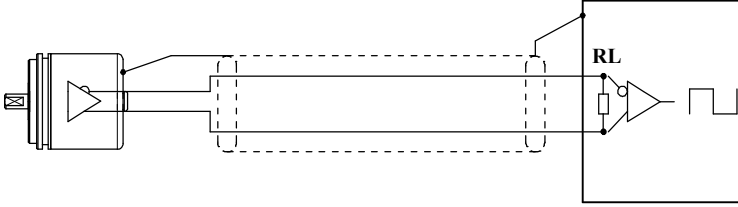
### CABLE AND ELECTRICAL CONNECTIONS

<b>Cable 8 cores <math>\text{AE} = 4.5\text{mm}</math>, PVC external sheath</b> <b>Wires section:</b> - for power supply: $0.14\text{mm}^2$ - for signals: $0.14\text{mm}^2$ <b>Cable 5 cores <math>\text{AE} = 4.1\text{mm}</math>, PVC external sheath</b> <b>Wires section:</b> - for power supply: $0.35\text{mm}^2$ - for signals: $0.14\text{mm}^2$	<b>PP</b>		<b>L5</b>	
	<b>SIGNAL</b>	<b>WIRE COLOUR</b>	<b>SIGNAL</b>	<b>WIRE COLOUR</b>
	A	Green	A	Green
	B	White	B	White
	Z	Brown	Z	Brown
			$\bar{A}$	Orange
			$\bar{B}$	Light Blue
			$\bar{Z}$	Yellow
	V+	Red	V+	Red
	GND	Blue	GND	Blue
	$\perp$	Shield	$\perp$	Shield

NOTES:  
Respect a minimum bending radius of 50mm for cables.

N.C. = Wire not connected

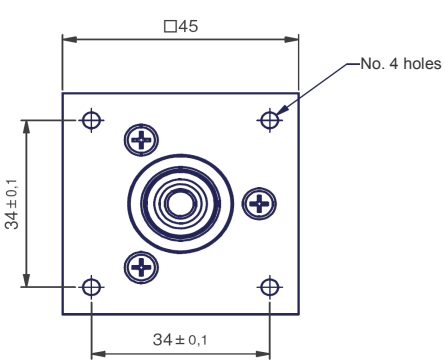
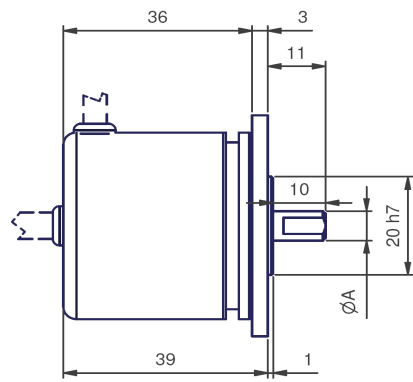
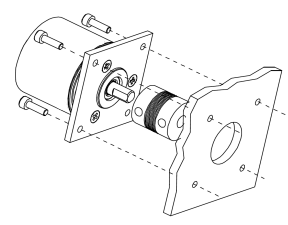
### SHIELDED CABLE



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

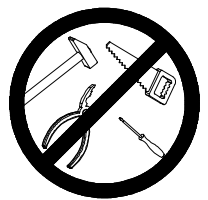
In case of cable extension, ensure the electrical connection between the body of connectors.

### DIMENSIONS AND RECOMMENDED FIXING

- Use an elastic coupling for shaft junction.

### WHAT TO AVOID

<ul style="list-style-type: none"> <li>Any type of mechanical working (cut, drill, mill, etc.)</li> <li>Any modification either on the body or on the shaft of the encoder</li> <li>Any kind of bad usage</li> <li>External hits or stresses</li> </ul>	
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