

Code <b>ST03</b>	Project <b>A04-B</b>	Release <b>A</b>	Title <b>TECHNICAL DATASHEET</b>
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## ELECTRONIC HANDWHEEL VN413FT

### GENERAL FEATURES

- Incremental bidirectional encoder which allows to manually vary axis shifting typically on NC manufacturing machines.
- Up to 500 pulses/revolution.
- Cable output (in radial position) or terminal board.
- Round flange of reduced size.
- Knob available in silver or dark grey colours.



### MECHANICAL AND ELECTRICAL FEATURES

Code VN413FT	
Pulses	50 - 100 - 500 ppr
Protection class	IP40
Operating temperature	0 ÷ 70°C
Storing temperature	-20 ÷ 80°C
Humidity	20 ÷ 90% (not condensed)
Power supply	5 V ± 5% or 12 ÷ 24 V ± 5%
Current consumption	45 mA
Max. frequency	50 kHz
Output signals	LINE DRIVER
Standard length of the cable	1 m
Electrical connections	see rel. table
MTBF (hours)	350.000
Weight	≈ 450 g

### ORDERING CODE

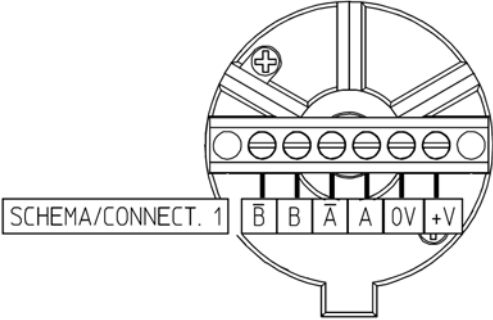
MODEL	TYPE	PPR	POWER SUPPLY	CABLE OUTPUT / TERMINAL BOARD	OUTPUT SIGNALS	COLOUR	FLANGE
<b>VN413FT</b>	<b>B0R</b>	<b>00100</b>	<b>05V</b>	<b>M01</b>	<b>L5</b>	<b>W</b>	<b>7</b>

**B0R** = bidirectional   
 **00050** = 50 ppr   
 **05V** = 5V   
 **Mxx** = cable length in meters   
 **L5** = LINE DRIVER   
 **W** = silver  
**00100** = 100 ppr   
**1224** = 12÷24V   
**M0.5** = 0.5m   
**M01** = 1m   
**B** = dark grey  
**00500** = 500 ppr   
**M40** = 40m<sub>MAX</sub>   
**MR** = terminal board   
**7** = standard  
**8** = bigger size

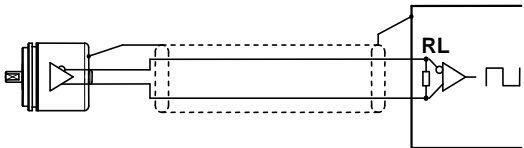
Example  **HANDWHEEL VN413FT B0R 00100 05V M01 L5 W7**

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**CABLE AND ELECTRICAL CONNECTIONS**


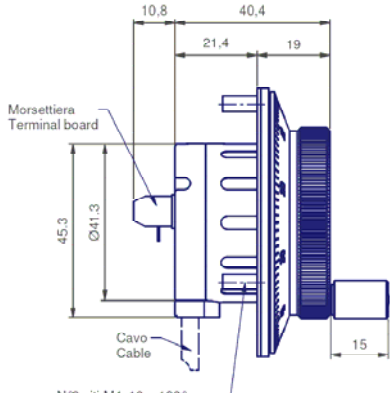
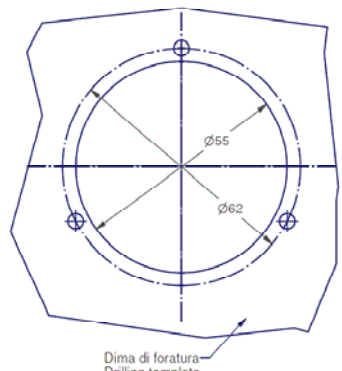
TERMINAL BOARD	CABLE																							
	<b>Cable 9 cores <math>\varnothing = 4.1</math> mm, PVC external sheath</b> <b>Wires section:</b> - for power supply: 0.08 mm <sup>2</sup> - for signals: 0.08 mm <sup>2</sup> <b>NOTES:</b> <b>Do not exceed the minimum cable bending radius of 30 mm.</b>																							
	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="2">LINE DRIVER</th> </tr> <tr> <th>SIGNAL</th> <th>WIRE COLOUR</th> </tr> </thead> <tbody> <tr><td>A</td><td>Green</td></tr> <tr><td>B</td><td>White</td></tr> <tr><td>NC</td><td>Brown</td></tr> <tr><td>A negative</td><td>Orange</td></tr> <tr><td>B negative</td><td>Light Blue</td></tr> <tr><td>NC</td><td>Yellow</td></tr> <tr><td>V+</td><td>Red</td></tr> <tr><td>GND</td><td>Blue</td></tr> <tr><td>Housing *</td><td>Violet</td></tr> <tr><td></td><td>Shield</td></tr> </tbody> </table> <p>* Connect these conductors to GND</p>	LINE DRIVER		SIGNAL	WIRE COLOUR	A	Green	B	White	NC	Brown	A negative	Orange	B negative	Light Blue	NC	Yellow	V+	Red	GND	Blue	Housing *	Violet	
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**SHIELDED CABLE**


	<b>LINE DRIVER CONNECTION</b>	
	<b>POWER SUPPLY</b>	<b>RL</b>
5 V	120 $\Omega$	
12 V	330 $\Omega$	
24 V	1000 $\Omega$	

In case of cable extension, the electrical connection between the body of connectors must be ensured.

**DIMENSIONS AND RECOMMENDED FIXING**

	 <p>N°3 viti M4x10 a 120° No.3 screws M4x10 at 120°</p>	 <p>Dima di foratura Drilling template</p>
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**WHAT TO AVOID**

<ul style="list-style-type: none"> <li>▪ All mechanical reworks (cutting, drilling, face milling 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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