SYNCRO®
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VELOMEX

Measuring system for speed & length

VELOMEX is a non-contact speed, length and position measuring device for curved surfaces based on the Doppler effect. Designed for cables, wires and pipes, this device can provide monitoring, feedback and control for production lines, especially in the cable insulating, stranding and jacketing lines; it can also work as a precise absolute digital encoder.

OPERATING PRINCIPLE

Two coherent and collimated beams are focused on the same point on the surface of the object to be measured, creating interference fringes in the backscattered light; when the object moves, due to the Doppler effect the two beams will undergo different frequency shifts which will induce changes in the interference pattern, whose analysis allows to directly trace back the object's travelling speed.
The position and length measurements are then acquired via integration of the indexed speed measurements over time.

MAIN FEATURES

ABSOLUTE PERFORMANCE

The non-contact measurement principle does not require any calibration, so the signal is the absolute measure of the speed independent of the cable, wire or pipe nature, material or geometry.

FAST READINGS

VELOMEX can produce over 24.000 readings per second, ensuring an almost-continuous measurement of the speed and, thus, a very precise measurement of position and length even below 0.05%.

POWERFUL ANALYSIS SOFTWARE

VELOMEX can perform time integration at very high speed, therefore being able to apply very precise control of hauling, batch length cutting, encoder calibration, insulation, stranding and jacketing operations.

LONG-LIFE RELIABILITY

VELOMEX is designed with solid-state devices and no moving parts, so that the absence of wear and drift allows for long-life performance without maintenance needed.

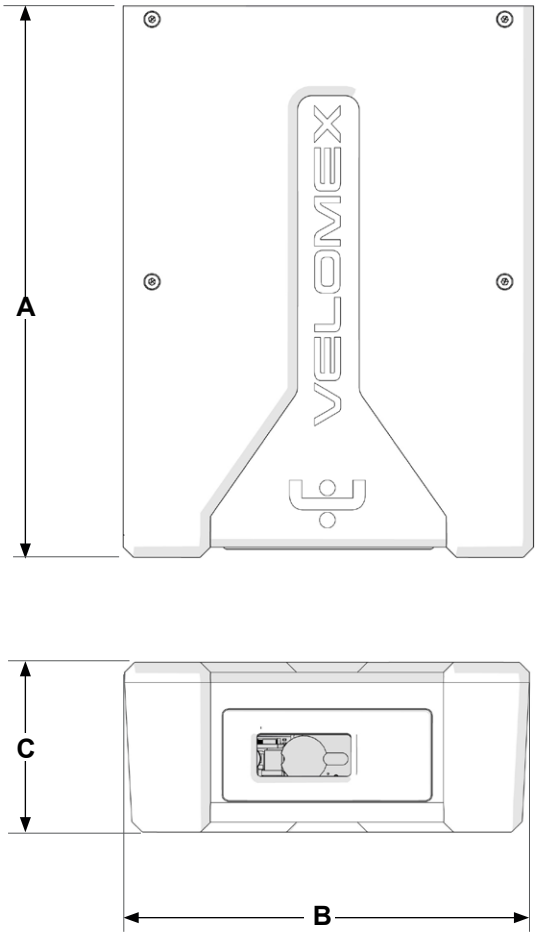
FUNCTIONAL DESIGN

Its compact design allows easy installation in the production line and doesn't require much space, so that it can be installed even in the tightest spots along the line.

INDUSTRY 4.0 & IoT

VELOMEX is equipped with an integrated interface so that it can work as a stand-alone device, but due to its TCP/IP protocol it can also easily communicate with any PLC or supervisor through a simple software package, making it ready for remoting and Industry 4.0.

TECHNICAL DATA



	A	B	C
Dimension	270 mm	200 mm	85 mm
Stand Off Distance	300 mm		
Deph of Field	60 mm		
Minimum Speed	0,25 m/min		
Maximum Speed	5000 m/min		
Accuracy	Factory Calibrated to better than 0,05%. Repeatabily of 0,02%		
Measurement	Maximum Acceleration Rate of 500 m/s2. Measurement rate Up to 24,400/sec		
Mode	Normal (Continuous Length), Batch Length		
Object Detection	Automatic Detection and Object Present		
Power requirement	15-30 vdc, 15 W		
Protection rating	IP67		
Temperature range	5°C - 40°C (41°F - 104°F)		