DIGITAL VIBRATING WIRE INTERFACE

GEOKON®

MODEL 8960 SERIES



GeoNet 8960 Series Digital VW Interfaces.

APPLICATIONS

Model 8960 Series Digital Vibrating Wire Interfaces expand the capacity of GeoNet Multi-Channel and Addressable Loggers and enable vibrating wire sensors to be read by Modbus® RTU clients, such as:

- Field PCs
- Desktop PCs
- PLCs



Model 8960-01C-CAB, shown with Model 4500 VW Piezometer connected.



Model 8020-38 Addressable Bus Converter.

OPERATING PRINCIPLE

Model 8960 Digital Vibrating Wire Interfaces incorporate signal conditioning and digital addressing to enable Modbus RTU clients to read vibrating wire sensors. The interface is commanded to read the sensor by writing to the trigger register. The sensor values can then be read from their respective registers. Each VW channel occupies one Modbus address.

The interface will automatically detect any resonant frequency between 400 and 6,500 Hz.

The VW interface is also compatible with Model 4900 VW Load Cells. Multiple load cells and VW sensors can be connected to a single interface, provided that the total number of VW gauges does not exceed the channel capacity of the interface.

Model 8960 Digital Vibrating Wire interfaces can be connected to GeoNet Multi-Channel and Addressable Loggers, thereby expanding the capacity of the logger. Multiple interfaces can be used to bus the data to a single data logger. The bus limit is 32 units or 64 Channels. See specifications below for maximum number of sensors for each model.

ACCESSORIES

The Model 8020-38 Addressable Bus Converter allows addressable sensor strings to be connected to personal computers, readouts, dataloggers, and programmable logic controllers. The converter acts as a bridge using the TTL or USB protocols between readers and the GEOKON RS-485-enabled sensor strings. (Refer to the Model 8020-38 data sheet for more information).

SPECIFICATIONS

Power Supply	12 VDC
Current	1.2 mA (idle)
Maximum Current	35 mA (180Ω VW Coil), 57 mA (50Ω VW Coil)
Interface	RS-485, Half-duplex (two-wire differential)
Protocol	Modbus RTU
Baud Rate	115,200 bits/second
Frequency Range	400 Hz to 6,500 Hz
Frequency Trueness	0.082 Hz
Frequency Precision	0.146 Hz (99% Confidence Interval)
Frequency Resolution	> 0.002 Hz
Frequency Measurement Duration	< 370 ms
Thermistor Range	–20 °C to +80 °C
Thermistor Accuracy	±1% (25 °C thermistor point match)
Temperature Resolution	10-bit, non-linear, 0.6 °C (worst case at –40 °C)
Cable	4-conductor, foil shield, Polyurethane jacket, nominal OD = 7.9 mm
Operating Temperature	–40° C to +80° C
L × W × H (Enclosure)	Die-cast aluminum 120 × 122 × 91 mm (single-channel) 160 × 260 × 91 mm (four-channel) 180 × 280 × 101 mm (eight-channel)
L × Ø (Housing)	100 × 25 mm (single-channel interface, Model 8960-01C-CAB)
Maximum # of Sensors	8960-01C = 1 unit (1 channel) 8960-04C = 1 unit (4 channels) 8960-08C = 1 unit (8 channels)
Bus Limit	32 units or 64 channels

ORDERING INFORMATION

8960-01C-CBL: Single-Channel Digital VW Interface in enclosure.
8960-04C-CBL: Four-Channel Digital VW Interface in enclosure.
8960-08C-CBL: Eight-Channel Digital VW Interface in enclosure.
8960-EXTENSION: Extension cable, for the above, 3 m length.
8960-EXTENSION-V: Extension cable, for the above, customer specified length.
8960-01C-CAB-SL: Digital VW Interface for single sensor (non bused), 3 m cable length, bare leads.
8960-01C-CAB-VL: Digital VW Interface for single sensor (non bused), customer specified cable length, bare leads.
8960-01C-12P-SL: Digital VW Interface for single sensor (non bused), 3 m cable length, sensmetrics 12-pin connector.
8960-01C-12P-VL: Digital VW Interface for single sensor (non bused), customer specified cable length, sensmetrics 12-pin connector.
02-313P9LTD: Violet Polyurethane Cable, 8 mm [0.31"] Ø, 2 twisted pairs, for the above.
8020-38: Addressable Bus Converter.

GEOKON | TRUSTED MEASUREMENTS

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