

COMMUNICATIONS MODULE WITH MANY FACES

Key Features



INTERFACE

RS-232, RS-485, and SDI-12 interfaces for low-cost wired or wireless networking



COMPATIBLE

Supports many sensor types



OPTIMIZED

Reliable vibrating wire measurements, and voltage input with 4-20 mA optimization



CONTROL

Digital outputs for control applications, and switched 12 VDC connection for device control



SELF-CHECK

Internal battery and temperature measurements



EFFICIENT

Sleep mode with very low quiescent power consumption

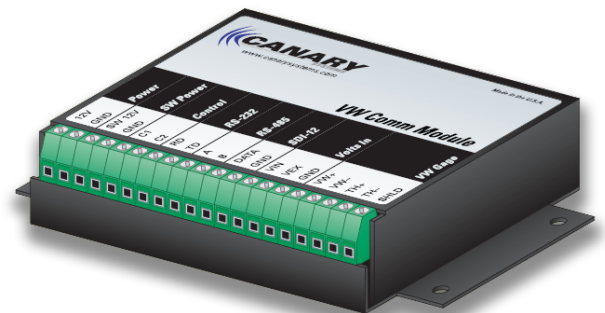
The **VW Comm Module** is a flexible, low-cost interface for vibrating wire gages, voltage output sensors, and thermistors. Three industry standard communication interfaces are included: RS-232, RS-485, and SDI-12.

The RS-232 interface provides compatibility with a wide range of standard wireless adaptors and modems, facilitating the deployment of cost-effective networks of wireless sensors.

The RS-485 interface allows an inexpensive, reliable wired network to be built using simple twisted pair cabling. Up to 61 nodes may be connected with a maximum cabling length of 1200 m (4000'), which can be extended with repeaters and isolators.

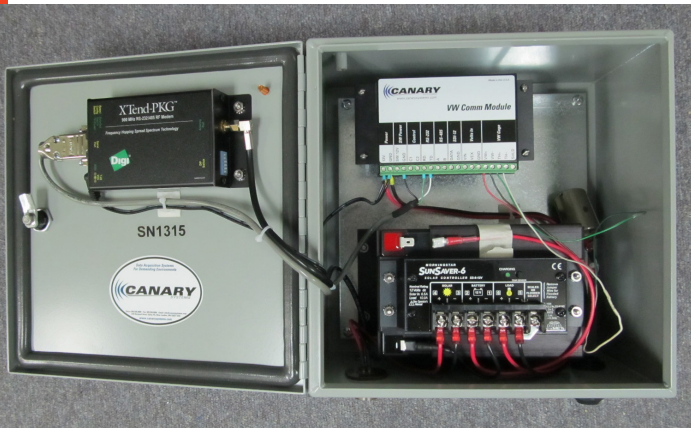
The SDI-12 networking interface provides vibrating wire gage measurement capability to any MCU or communications transceiver equipped with an SDI-12 port.

The vibrating wire interface consists of a precision differential amplifier with band-pass filtering, which improves **noise rejection and measurement reliability**. The excitation and measurement parameters are programmable to support all commonly used vibrating wire instruments. Reading output can be programmed for digits ($\text{Hz}^2 \times 10^{-3}$), frequency (Hz) or period (μS). The VW Comm also includes support for reading YSI44005-type **thermistors** to provide sensor temperature measurements. Other thermistors or temperature devices can be supported as well.



In addition to the vibrating wire and thermistor input





A Canary Systems® WRMT wireless remote with battery, solar power charge controller, and 900 MHz Digi radio

capability, a single-ended voltage up to 2.5 VDC can be measured. A high accuracy 2.5 VDC reference is also provided for powering other sensors such as RTD's and linear potentiometers. 10-bit measurement resolution can be improved with configurable averaging. The **voltage input range** can be offset from 0.5 to 2.5 VDC to optimize the resolution for 4-20 mA sensors. The VW Comm can also read the power supply voltage and internal temperature.

The VW Comm is equipped with two **control ports**, which can be used to control other devices such as multiplexers to expand the channel measurement capability. Power to other devices can be controlled through the use of its built-in, switched 12 V control output, supplying up to 500 mA. All inputs and outputs are protected against over-voltage, or other electrical transients, with a combination of gas tubes and transzorbors.

A programmable power-down timer puts the VW Comm in sleep mode when no communication activity is detected. With a sleep mode power consumption of well under 500 μ A, the unit is ideal for use in **battery powered applications**.

Contact Canary Systems for additional application assistance and information on supported sensors and peripherals, including wireless adaptor compatibility.

Specifications - VW Comm Module

Vibrating Wire Interface

- **Controller**
- Microchip PIC18F4580
- **Program Memory**
- 32 K Flash
- **Interface**
- RS-232 / RS-485 / SDI-12
- **Communications Speed**
- 1200-115 Kbps
- **VW Measurement Range**
- 100-6000 Hz
- **VW Sweep Range**
- 100-6000 Hz
- **VW Resolution**
- 0.1 μ s/cycles

Temperature Interface

- **Temperature Input**
- YSI44005
- **Temperature Input Range**
- -40 to +100° C
- **Temperature Accuracy**
- \pm 0.5° C

General

- **Voltage Input Ranges**
- 0-2.5, 0.5-2.5 VDC
- **Voltage Input Resolution**
- 10 bit (1 part in 1024)
- **Operating Power**
- 6-16 VDC, max 50 mA
- **Quiescent Power**
- < 500 μ A
- **Reverse Polarity Protection**
- Installed
- **Activated current**
- ~23 mA
- **Control line input impedance**
- 100 k Ω
- **Control Output levels**
- TTL or CMOS (5V logic)
- **Power input transient protection**
- 17.1 VDC, 600W Transzorbors
- **Control signal input transient protection**
- 5.8 VDC, 600W Transzorbors, with 90V Gas Plasma Arrestors

Physical

- **Dimensions (L×W×H)**
- 140×75×25 mm
- **Mounting Dimensions**
- 127×51 mm
- **Operating Temperature**
- -40 to +65° C

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