



I-87089W

1-channel Vibrating Wire Input Module

Features

- Support 8 ~ 32 Vibrating Wire inputs
- Support 450 ~ 6000 Hz Vibrating Wire Sensor
- Support Channel-to-Channel Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



Introduction

The vibrating wire sensor has a wire which is initially plucked by a series of electrical magnetic forces from a coil. The conductive wire after plucking is vibrating in a magnetic field. The wire will disturb the field, and then the coil can pick up the induced voltage change. The signal is amplified and detected by a VW readout device, or called VW reader. After plucking, there is no other force acting on this wire. When the transient response dies out, the reader can read a stable resonant frequency. The resonant frequency is function of the tension of this wire.

Applications

The I-87089W/S can be extended to 32 channels by connecting 3 extra DN-1618UB.

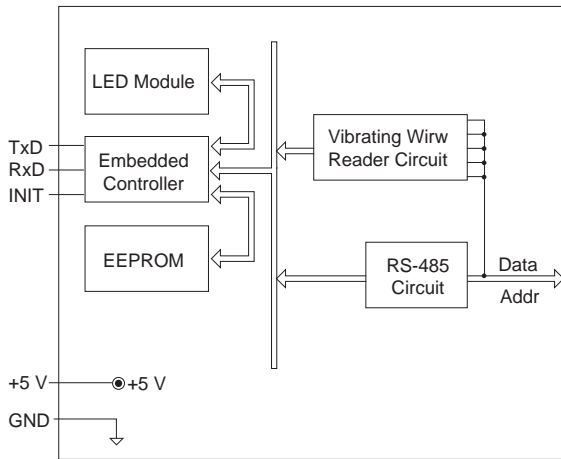
System Specifications

Communication		
Interface	RS-485	
Format	N, 8, 1	
Baud Rate	1200 to 115200 bps	
Connector	D-Sub 37	
RS-485 (Data+, Data-)	D-sub 37-pin connector with 3000 VDC isolation	
Protocol	115200, 8, N, 1	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
LED Indicators/Display		
System LED Indicators	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	16 as High/Low Alarm Signals	
Isolation		
Intra-module Isolation, Field-to-Logic	3000 Vdc	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal	
	±8 kV Air for Random Point	
Power		
Power Consumption	3.6 W	
Mechanical		
Dimensions (L × W × H)	I-87089W	114 mm × 30 mm × 85 mm
	DN-1618UB	112 mm × 165 mm × 52 mm
Environment		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

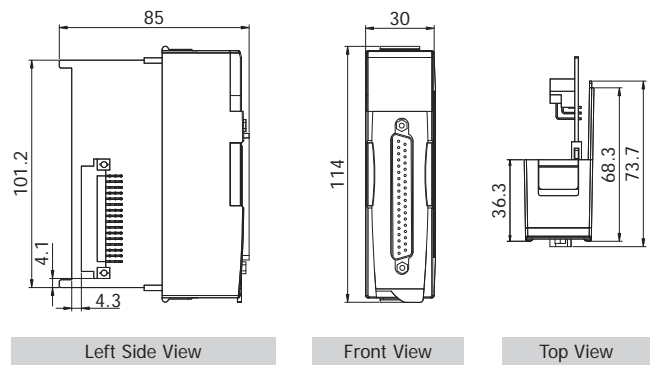
I/O Specifications

Vibrating Wire Input		
Channels	8	
Input Type	Vibrating Wire Sensor (2 VW wire + 2 Temperature wire + 1 shield wire)	
Measuring Range	Wire	450 ~ 6000 Hz
	Temperature	-20°C ~ +50°C
Excitation mode	Enhanced square wave	
Resolution	Wire	±0.1 Hz % of FSR
	Temperature	±0.1°C % of FSR
Channel-to-Channel Isolation	Yes, 1 kV	

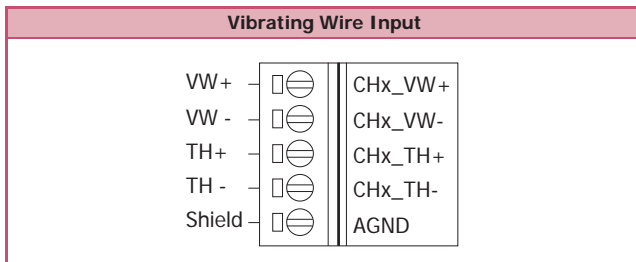
Internal I/O Structure



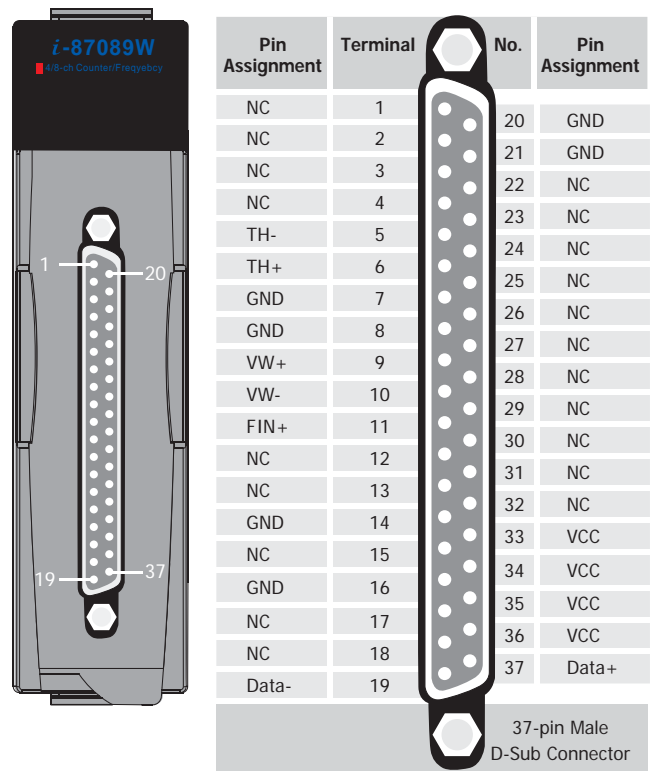
Dimensions (Units: mm)



Wire Connections




Pin Assignments



Ordering Information

I-87089W-G CR	1-channel Vibrating Wire Input Module (Gray Cover) (RoHS)
I-87089W/S-G CR	8-channel Vibrating Wire Input Module (Gray Cover) (RoHS)
DN-1618UB CR	8-channel Vibrating Wire Extended Board (RoHS)

Accessories

 SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
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