



I-87089W

1-ch Vibrating Wire Input Module

Features

- Support 8 ~ 32 Vibrating Wire inputs
- Support 450 ~ 6000 Hz Vibrating Wire sensor
- Support channel to channel isolation
- Dual Watchdog
- 4 kV ESD Protection
- 3000 VDC Intra-module Isolation, Field-to-Logic



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.

System Specifications

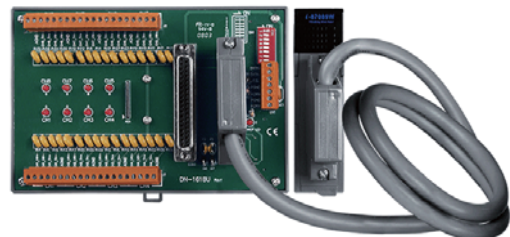
COM Ports	
Port	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
CPU Module	
Dual Watchdog	Module (1.6 Seconds), Communication (Programmable)
LED Indicators/Display	
System LED Indicators	1 as Power/Communication Indicator
I/O LED Indicators	16 as High/Low Alarm Signals
Isolation	
Intra-module 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	
Consumption	3.6 W
Mechanical	
Dimensions	I-87089W 30 mm × 114 mm × 85 mm (W × L × H) DN-1618UB 165 mm × 112 mm × 52 mm
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95 % RH, Non-condensing

I/O Specifications

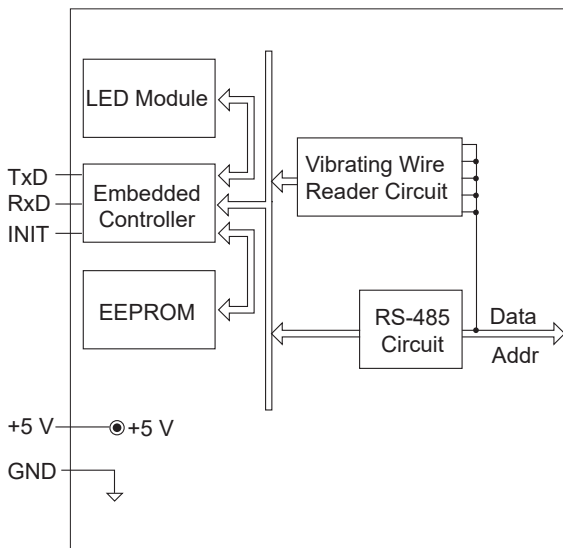
Vibrating Wire Input		
Channels	8	
Type	Vibrating Wire Sensor (2 VW wire + 2 Temperature wire +1 shield wire)	
Excitation Mode	Enhanced square wave	
Measuring Range	Temperature	-20 ~ +50 °C
	Wire	450 ~ 6000 Hz
Resolution	Temperature	±0.1 °C % of FSR
	Wire	±0.1 Hz % of FSR
Channel-to-Channel Isolation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

Applications

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



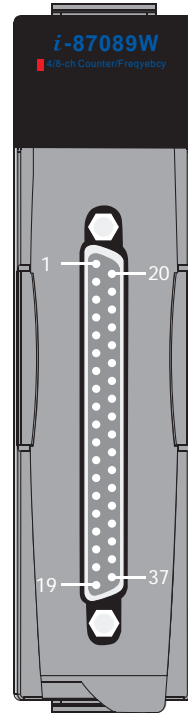
Internal I/O Structure



Wire Connections

Vibrating Wire Input		
VW+		CHx_VW+
VW-		CHx_VW-
TH+		CHx_TH+
TH-		CHx_TH-
Shield		AGND

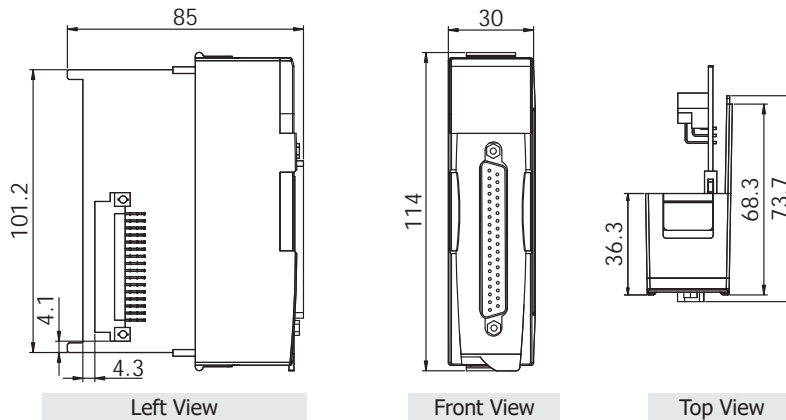
Pin Assignments



Pin Assignment	Terminal	No.	Pin Assignment
NC	1		
NC	2	20	GND
NC	3	21	GND
NC	4	22	NC
TH-	5	23	NC
TH+	6	24	NC
GND	7	25	NC
GND	8	26	NC
VW+	9	27	NC
VW-	10	28	NC
FIN+	11	29	NC
NC	12	30	NC
NC	13	31	NC
GND	14	32	NC
NC	15	33	VCC
NC	15	34	VCC
GND	16	35	VCC
NC	17	36	VCC
NC	18	37	Data+
Data-	19		

37-pin Male D-Sub Connector

Dimensions (Units: mm)



Accessories

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

I-87089W-G CR	1-channel Vibrating Wire Input Module (RoHS)
I-87089W/S-G CR	8-channel Vibrating Wire Input Module, includes DN-1618UB Daughter Board and CA-3710 Cable (1.0 m) (RoHS)