



Features

- RTD Input
- Lead Resistance Elimination for 3/4-wire connection
- Open Wire Detection
- 4 kV ESD Protection
- 3000 Vdc Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

I-87013W is used for measuring temperature by RTD. It supports 2/3/4 wire RTD and features open wire detection. Besides, I-87013W also has qualification for 4 KV ESD protection and 3000 Vdc intra-module isolation.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

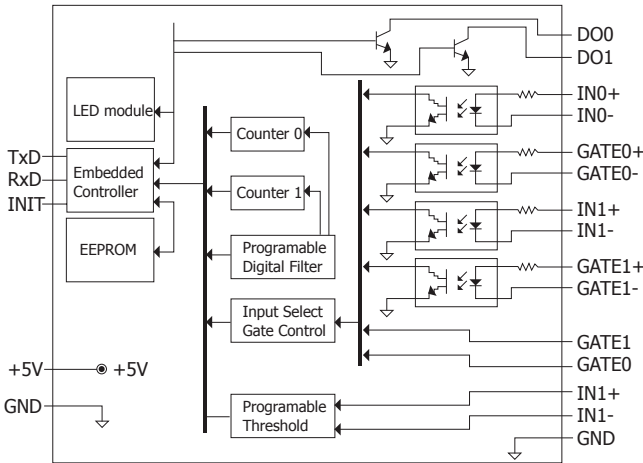
System Specifications

| Communication | |
|--|---|
| Interface | RS-485 |
| Format | N, 8, 1 |
| Baud Rate | 1200 ~ 115200 bps |
| Protocol | DCON |
| Dual Watchdog | Yes, Module (1.6 Seconds), Communication (Programmable) |
| LED Indicator/Display | |
| System LED Indicator | 1 LED as Power/Communication Indicator |
| I/O LED Indicator | 8 LEDs as Counter/ Frequency status Indicators |
| Isolation | |
| Intra-Module Isolation, Field-to-Logic | 3750 V _{rms} |
| EMS Protection | |
| ESD (IEC 61000-4-2) | 4 kV Contact for Each Terminal |
| | 8 kV Air for Random Point |
| Power | |
| Power Consumption | 0.5 W Max. |
| Mechanical | |
| Dimensions (W x L x H) | 30 mm x 102 mm x 115 mm |
| Environment | |
| Operating Temperature | -25 ~ +75°C |
| Storage Temperature | -40 ~ +85°C |
| Humidity | 10 ~ 95% RH, Non-condensing |

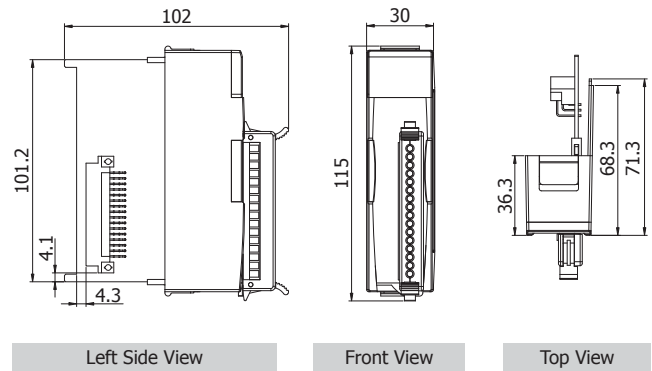
I/O Specifications

| Counter/Frequency Input | | |
|--|--|--|
| Channels | 2 | |
| Type | Counter or Frequency | |
| Isolated | On Voltage Level | +3.5 V _{dc} ~ +30 V _{dc} |
| | Off Voltage Level | +1 V _{dc} Max. |
| Non-isolated | On Voltage Level | 0 ~ +5 V _{dc} (Default >2.4 V _{dc}) |
| | Off Voltage Level | 0 ~ +5 V _{dc} (Default <0.8 V _{dc}) |
| | Threshold Voltage | Programmable |
| Counter | Up | |
| Max.Counts | 32-bits (4,294,967,295) | |
| Max. Counter/Frequency | 100 kHz | |
| Digital Filter | 2 ~ 65000 μs | |
| Frequency Accuracy | 1 Hz or 10 Hz (software selectable) | |
| Programmable Alarm Mode | Mode 0 | High Alarm Comparator on Counter 0 and Counter 1 |
| | Mode 1 | Two Steps High Alarm Comparator on Counter 1 |
| Virtual Battery Backup for Counter Value | - | |
| Digital Output | | |
| Channels | 2 | |
| Type | Sink, Open Collector | |
| Output Voltage | +5 V _{dc} ~ +30 V _{dc} | |
| Output Current | 30 mA | |
| Alarm Output | Yes | |

Internal I/O Structure



Dimensions (Units: mm)



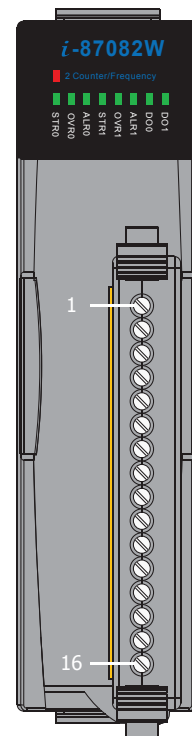
Wire Connections

| Counter Type | |
|--|--|
| Isolation | Non-Isolation |
| Counter Input + INx+ Counter Input - INx- Gate Control+ GATEx+ Gate Control- GATEx- | Counter Input + INx Gate Control GATEx Ground D.GND |

| Frequency Type | |
|---|--|
| Isolation | Non-Isolation |
| Frequency Input + INx+ Frequency Input - INx- Don't be used GATEx+ GATEx- | Frequency Input + INx Don't be used GATEx Frequency Input - D.GND |

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|----------------------------------|------------------------------------|
| | ON State | OFF State |
| Resistance Load | DOx (B)GND | DOx (B)GND |
| Inductance Load | DOx (B)GND | DOx (B)GND |

Pin Assignments



| Terminal No. | Pin Assignment |
|--------------|----------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | IN0 |
| 04 | GATE0 |
| 05 | GND |
| 06 | IN1 |
| 07 | GATE1 |
| 08 | GND |
| 09 | IN0+ |
| 10 | IN0- |
| 11 | GATE0+ |
| 12 | GATE0- |
| 13 | IN1+ |
| 14 | IN1- |
| 15 | GATE1+ |
| 16 | GATE1- |

Ordering Information

| | |
|----------------------|--|
| I-87082W-G CR | 2-channel Counter/Frequency Module (Gray Cover) (RoHS) |
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Accessories

| | |
|------------------|--|
| SG-770 CR | 7 channel differential or 14 channel single-ended surge protector (RoHS) |
|------------------|--|