ICP DAS

FR-2017iT

FRnet I/O Module with 8/16-channel Isolated AI with High Voltage Protection and Isolated Communication Line

Features

- Built-in wire-saving FRnet control
- High-speed transmission reliability
- Simple synchronization mechanism
- No software overhead on protocol processing
- Supporting broadcasting (1:n data transmission)
- Duplicating output easily
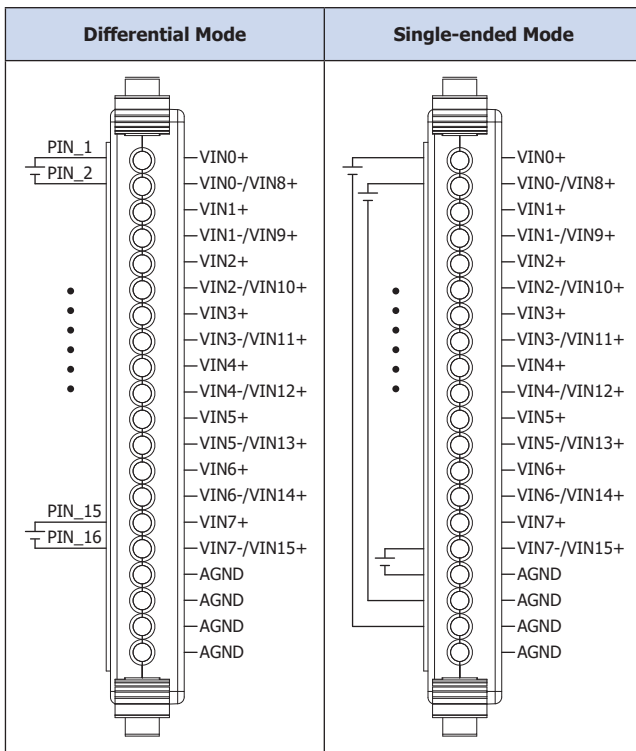- Fixed I/O scan-time and I/O synchronization

CE UKCA FC RoHS

Introduction

The FR-2017iT is a 12-bit, 8-channel differential or 16-channel single-ended analog inputs module that provides two ways to select input range (+/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA, 0~20mA and 4~20mA). One way provides switch selectable the same range at all channels and another each analog channel is allowed to configure an individual range by software selectable. It also has 240Vrms high over voltage protection for all analog inputs. The FR-2000 I/O module has an FRnet interface. The users can daisy chain several FR-2000 modules together. Via FRnet, the FR-2000 modules can extend the remote I/O control of PC, PAC and PLC easily. Further information about the networking of FR-2017iT/2024iT; refer to literatures related to I-8172W and FRB-200U.
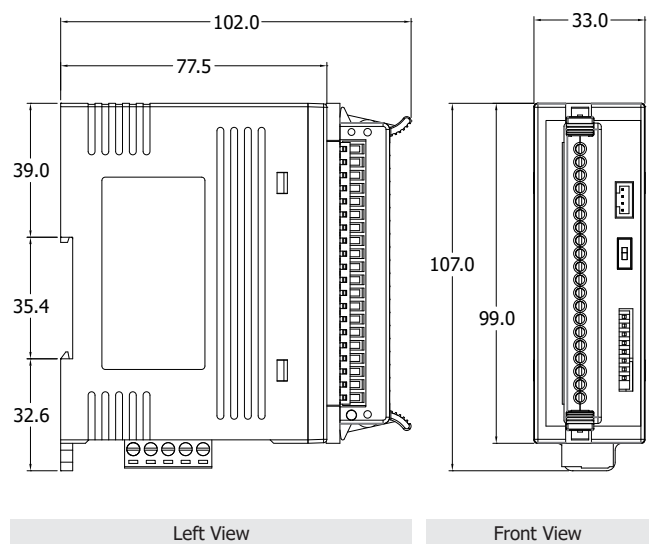
Specifications

Isolation	
Intra-module Isolation	3000 Vrms

EMS Protection	
EFT (IEC 61000-4-4)	±4 kV contact for power liner
ESD (IEC 61000-4-2)	±4 kV contact for power liner, communication line and each channel ±8 kV air for random point
Surge (IEC 61000-4-5)	± 3 kV for power liner

LED Indicators	
Status	Power, Communication Run, Communication Error, Terminal Resistor, Analog Input

Analog Input	
Channels	8 differential or 16 single-ended, switch selectable
Type	Voltage Current
Range	±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA (requires optional external 125 Ω resistor for current input)
Resolution	16-bit (1 channel)/12-bit (8/16 channels)
Accuracy	±0.1% (1 channel)/±0.5% (8/16 channels) or better
Sampling Rate	10 samples/second (1 channel)/50 samples/second (8/16 channels) total
Bandwidth	15.7 Hz (1 channel)/78.7Hz (8/16 channels)
Input Impedance	Voltage: 2 MΩ (Differential), 1 MΩ (Single-ended)
Common Mode Rejection	86 dB Min.
Normal Mode Rejection	100 dB
Overvoltage Protection	Differential: 240 Vrms, Single-ended: 150 Vrms
Individual Channel Configuration	Yes (by software, requires optional CA-0904 cable)
Zero Drift	±20 uV/°C
Span Drift	±25 ppm/°C

FRnet	
Wire Cable	Belden 9841 (2P twisted-pair cable), When different cables are used, the transmission distance may be changed
Transfer Speed	250 kbps and 1Mbps (Default) DIP Switch Selectable
Transfer Distance	Max. 400 m for speed 250 K Max. 100 m for speed 1M (Default)
Cyclic Time	2.88 ms for speed 250 K 0.72 ms for speed 1 M (Default)

Power	
Input Range	+10 VDC ~ +30 VDC (Non-isolated)
Consumption	2.4 W Max.
Mechanical	
Casing	Plastic
Dimensions (mm)	33 x 102 x 107 (W x L x H)
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-30 ~ +85 °C
Humidity	10 ~ 90% RH, Non-condensing

Pin Assignments and Wire Connections

Differential Mode	Single-ended Mode

PIN_1
PIN_2

VIN0+
VIN0-/VIN8+
VIN1+
VIN1-/VIN9+
VIN2+
VIN2-/VIN10+
VIN3+
VIN3-/VIN11+
VIN4+
VIN4-/VIN12+
VIN5+
VIN5-/VIN13+
VIN6+
VIN6-/VIN14+
VIN7+
VIN7-/VIN15+
AGND
AGND
AGND
AGND

PIN_15
PIN_16

VIN0+
VIN0-/VIN8+
VIN1+
VIN1-/VIN9+
VIN2+
VIN2-/VIN10+
VIN3+
VIN3-/VIN11+
VIN4+
VIN4-/VIN12+
VIN5+
VIN5-/VIN13+
VIN6+
VIN6-/VIN14+
VIN7+
VIN7-/VIN15+
AGND
AGND
AGND
AGND

Dimensions (Units: mm)

102.0
77.5
39.0
35.4
32.6
33.0
107.0
99.0

Left View

Front View

Ordering Information

FR-2017iT CR	FRnet I/O Module with 8/16-channel Isolated AI with High Voltage Protection and Isolated Communication Line (RoHS)