

WF-2019/S

Wi-Fi I/O Module with 10-ch Universal AI (Asia Only)

Features

- 10 differential universal analog input channels
- Supports thermocouple devices with J, K, T, E, R, S, B, N, C types
- Compatible with IEEE 802.11b/g standards
- Support WEP, WPA and WPA2 wireless encryption
- Support Modbus/TCP and UDP protocols
- Support DHCP network configuration
- Wide operating temperature range
- Built-in watchdog

Introduction

The WF-2019 is a 10-channel universal analog input module with voltage and current input types. It provides extremely accurate thermocouple measurement and automatically cold-junction compensation for each channel. In addition, the WF-2019 has WLAN connection complies with the IEEE802.11b/g standards. With the popularity of 802.11 network infrastructure, the WF-2019 makes an easy way to incorporate wireless connectivity into monitoring and control systems. The WF-2019 also supports Modbus/TCP and UDP protocols and the network encryption configuration, which makes perfect integration to SCADA software and offer easy and safe access for users from anytime and anywhere.

System Specifications

Isolation		
Intra-module Isolation		3000 VDC
Wi-Fi		
Transmission Range		50 meters (LOS)
Standards		IEEE 802.11 b/g (non-RevB version) IEEE 802.11 b/g/n (RevB version)
Receive Sensitivity		-83 dBm @ 11 Mbps (non-RevB version) -93 dBm @ 11 Mbps (RevB version)
Output Power		8 dBm @ 11 Mbps (non-RevB version) 14 dBm @ 11 Mbps (RevB version)
Mode		Infrastructure & Ad-hoc (non-RevB version) Infrastructure & Limit-AP (RevB version)
Encryption		WEP, WPA and WPA2
Antenna		5 dBi (Omni-Directional)
Power		
Input Range		+10 VDC ~ +30 VDC
Consumption		2.2 W
Mechanical		
Dimensions	WF-2019	33 mm x 127 mm x 98 mm (W x L x H) (Without antenna)
	DB-1820	65 mm x 78 mm x 22 mm (W x L x D)
Installation		DIN-Rail Mounting
Environmental		
Operating Temperature		-25 ~ +75 °C
Storage Temperature		-30 ~ +80 °C
Humidity		10 ~ 90% RH, Non-condensing

I/O Specifications

Analog Input		
Channels		10
Type		Voltage, Current
Sensor Type		Thermocouple
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V, ±10 V
	Current	±20 mA (External resistor is required)
	Thermocouple	J, K, T, E, R, S, B, N, C
Resolution		16-bit
Accuracy		±0.1% of FSR
Sampling Rate		10 Hz (Total)
Input Impedance	Voltage Input	>400 kΩ
	Current Input	125 Ω
Common Mode Rejection		86 dB Min.
Normal Mode Rejection		100 dB
Overvoltage Protection		240 Vrms
Individual Channel Configuration		Yes
Zero Drift		±20 μV/°C
Span Drift		±25 ppm/°C
Open Thermocouple Detection		Yes (Software programmable)

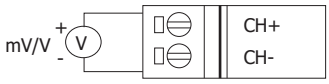
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Applications

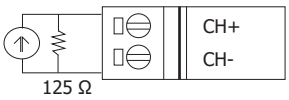


Wire Connections

Voltage Input Wiring

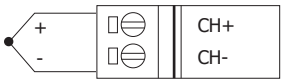


Current Input Wiring



Note: When connecting to a current source,
an optional external 125 Ω resistor is required.

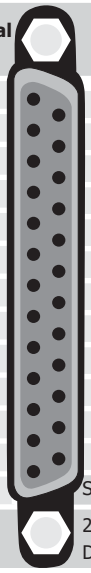
Thermocouple Input Wiring



Pin Assignments

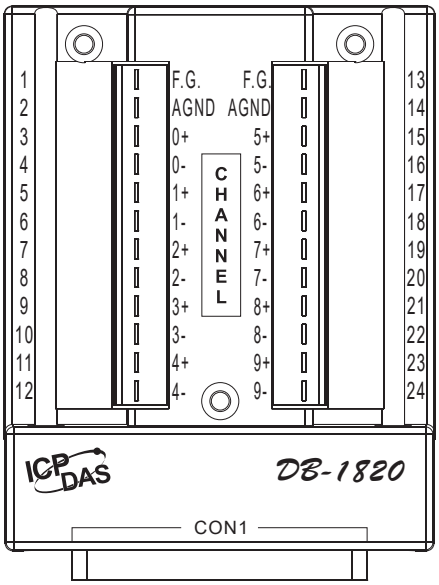
WF-2019

Pin Assignment	Terminal No.	No.	Pin Assignment
+5V	01	14	AGND
CJC	02	15	CH 0+
CH 0-	03	16	CH 1+
CH 1-	04	17	CH 2+
CH 2-	05	18	CH 3+
CH 3-	06	19	CH 4+
CH 4-	07	20	CH 5+
CH 5-	08	21	CH 6+
CH 6-	09	22	CH 7+
CH 7-	10	23	CH 8+
CH 8-	11	24	CH 9+
CH 9-	12	25	N.C.
N.C.	13	Shield	F.G.



25-pin Female
D-Sub Connector

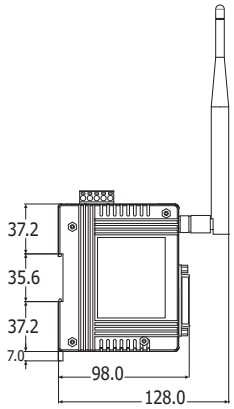
DB-1820



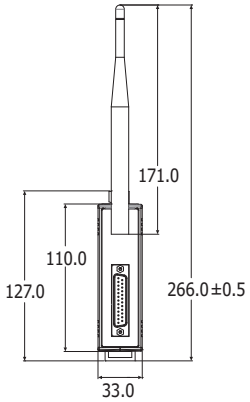
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Dimensions (Units: mm)

WF-2019

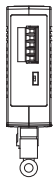


Left View



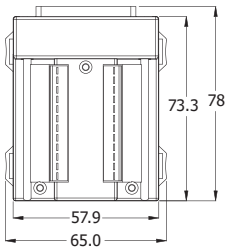
Front View


Rear View

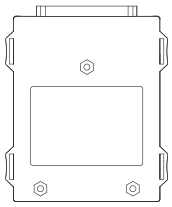

Top View

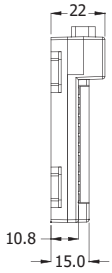

Bottom View

DB-1820

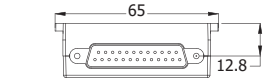


Front View

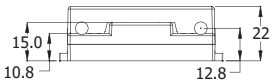

Rear View



Left View



Top View



Bottom View

Ordering Information

WF-2019/S CR	Wi-Fi I/O Module with 8-ch/16-ch AI (Asia Only) (RoHS) Includes ANT-124-05 Antenna, DB-1820 Daughter Board and CA-0910 Cable

Accessories

2AB125R	125 Ω, 0.1% DIP Resistor used for Current Type Input Modules
CD-2518D CR	DB25 Male to Female 1.8 m Cable (180°) and DIN-Rail Mount for the DB-1820 (RoHS)
CD-25015 CR	DB25 Male to Female 15 cm Cable (90°) and DIN-Rail Mount for the DB-1820 (RoHS)
3S001-1 CR	Antenna Extension Cable, RG58A/U, RP-SMA Male to RP-SMA Female, 1 M (RoHS)
3S003-1 CR	Antenna Extension Cable, RG58A/U, RP-SMA Male to RP-SMA Female, 3 M (RoHS)
3S005-1 CR	Antenna Extension Cable, RG58A/U, RP-SMA Male to RP-SMA Female, 5 M (RoHS)
3S008-1 CR	Antenna Extension Cable, RG58A/U, RP-SMA Male to RP-SMA Female, 8 M (RoHS)
ANT-8 CR	8 dBi, 2.4 GHz omni-directional antennna (RP SMA Male Plug) (RoHS)
ANT-15 CR	15 dBi, 2.4 GHz omni-directional antennna (RP SMA Male Plug) (RoHS)
ANT-15YG-1 CR	15 dBi, 2.4 GHz directional yagi antenna (RP SMA Male Plug) (RoHS) Includes 3S004 Cable (HDF 200 cable, N type male to RP-SMA male, 1 M)
ANT-18 CR	18 dBi, 2.4 GHz directional panel antennna (RP SMA Male Plug) (RoHS)
ANT-21 CR	21 dBi, 2.4 GHz directional grid antennna (RP SMA Male Plug) (RoHS)
ANT-124-03 CR	3 dBi, 2.4 GHz omni-directional antenna (RP SMA Male Plug) (RoHS)

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