



G-4510/G4510D

Power Saving PAC with Solar charger and optional communication module (RoHS)

Features

- Embedded MiniOS7, anti-virus
- Option Communication Modem
- Solar charger for Lead acid battery
- 10/100 Base-TX compatible Ethernet controller
- COM port: COM1 (5-wire RS232), COM2 (RS-485)
- I/O: 3 DI, 3 DO, 8 AI, 1 relay DO
- Support SD card
- Built-in RTC, NVRAM, EEPROM
- 128*64 dots LCM display (option)
- GPS : 32 channels with All-In-View tracking (option)



Introduction

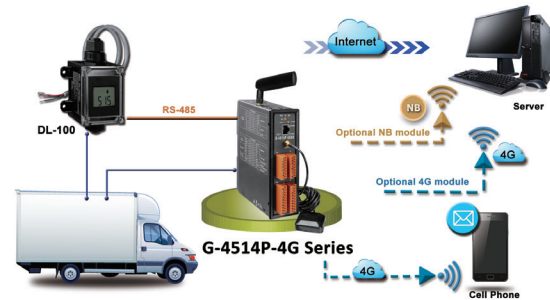
The G-4510 series are M2M (Machine to Machine) Power Saving PAC with a solar charger. It can be used in hydrologic monitoring or mudslide monitoring system. G-4510 can be used to wirelessly transmit data and other functions with its optional 4G/NB communication module. With optional GPS model, the G-4510 can also be a GPS tracking system for vehicle management or maritime system. The features of G-4510 series: Solar charger, Ethernet interface, optional GPS module, optional 4G/NB communication module, 3 digital inputs, 3 digital outputs, 8 analog inputs, 1 relay output.

Applications

1. Hydrologic / Wind Monitoring Application



2. Car Monitor / Tracking System



System Specifications

| Model | G-4510 | G-4510D |
|--------------------------|--|------------------|
| CPU Module | | |
| CPU | 1-Axis(IEPE) | 3-Axis |
| SRAM/Flash | ±80g | ±18g |
| NVRAM | 0.5Hz~15kHz | 10Hz~1KHz |
| EEPROM | 100mV/g | 400mV/g per axis |
| Comm. Interface | | |
| COM ports | COM1:5-wire RS-232; COM2: RS-485 | |
| Ethernet | 10/100 Base-TX Ethernet controller | |
| GPS Interface | | |
| Support Channels | 32 | |
| Protocol Support | NMEA 0183 | |
| Lead Acid Battery | | |
| Battery | 12V Lead-Acid Battery | |
| Charging Voltage | Voltage of Power Input must be over +16V | |
| Low Voltage Protect | Low Voltage disconnect = 11.1V / Low Voltage reconnect = 12.6V | |
| LED Indicators | | |
| System | Red | |
| GSM | Yellow | |
| GPS | Green | |
| Charging / Fault | Green / Red | |

| Model | G-4510 | G-4510D |
|----------------------------|--|------------------------------------|
| LCD Interface | | |
| Effective display area | - | 80.61 mm x 14.37 mm (W x H) |
| Module Dimension | - | 93 mm x 70 mm x 1.6 mm (W x H x T) |
| Power (Solar Input) | | |
| Protection | Power reverse polarity protection | |
| Frame Ground Protection | ESD, Surge, EFT, Hi-Pot | |
| Power Requirement | +10 VDC ~ +30 VDC , (Max. Voltage of Solar Panel must less +30V) | |
| GPS | Green | |
| Mechanical | | |
| Casing | Metal | |
| Dimensions (W x L x H) | 47 mm x 142 mm x 168 mm | |
| Installation Environment | DIN-Rail and Wall mount | |
| Environment | | |
| Operating Temperature | -20 ~ +70 °C | -15 ~ +55 °C |
| Storage Temperature | -40 ~ +80 °C | -20 ~ +70 °C |
| Humidity | 5 ~ 95% RH, Non-condensing | |

I/O Specifications

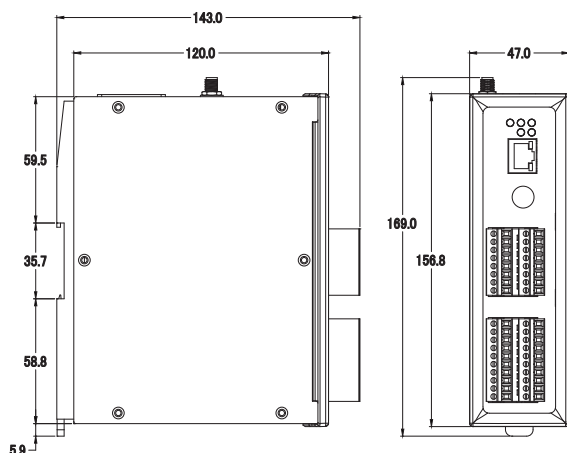
| Model | G-4510 | G-4510D |
|-----------------------|---------------------------------|---------|
| Digital Input | | |
| Input Channel | 3 | |
| Input Type | Source(Dry Type), Common Ground | |
| Off Voltage Level | +1 V max. | |
| On Voltage Level | +3.5 ~ +30 V | |
| Isolated Voltage | Non-isolated | |
| Digital Output | | |
| Output Channel | 3 | |
| Output Type | Open Collector (Sink/NPN) | |
| Load Voltage | +30 VDC max. | |
| Load Current | 100 mA max. | |
| Isolated Voltage | Non-isolated | |
| Analog Input | | |
| Input Channel | 8 | |
| Resolution | 12 - bit | |
| Input Range/Type | 0 ~ 20 mA | |
| Sample Rate | 1 KHz max. (Read one channel) | |
| Accuracy | +/- 2 LSB (+/- 0.0097 mA) | |
| Isolated Voltage | 2500Vrms 3000Dc to DC | |
| Relay | | |
| Output Channel / Type | 1 / Form C | |
| Input Range | 2A@30 Vdc ; 0.25 A @250 Vac | |
| Mechanical endurance | typ. 108 operations | |

Order Accessories Specifications

| Module (Optional) | EC21-AU | EC25-E | BG96 |
|-----------------------|---|--|---|
| Category | LTE category 1 | LTE category 4 | LTE Cat-M1/NB1/EGPRS |
| Digital Input | | | |
| LTE-FDD | B1/B2/B3/B4/B5/B7/B8/B28 | B1/B3/B5/B7/B8/B20 | B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 |
| LET-TDD | B40 | B38/B40/B41 | B39 (For Cat M1 Only) |
| WCDMA | B1/B2/B5/B8 | B1/B5/B8 | -- |
| GSM/EGPRS | 850/900/1800/1900MHz | 900/1800Mhz | 850/900/1800/1900MHz |
| Digital Output | | | |
| Region | Latin America, Australia, New Zeland, Taiwan | EMEA, Korea, Thailand, India | Global |
| Certification | Carrier: Telstra Regulatory: FCC /Anatel/NCC/JATE/TELEC/RCM Others:WHQL | Carrier: Vodafone/Deutsche Telekom/ SKT/Telefónica/ T-Mobile/KT/ LGU+ Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA Others: WHQL | Carrier: Vodafone (Global) Deutsche Telekom Telefónica(Europe)/ Verizon/AT&T/T-Mobile/ Sprint/ U.S. Celluar (North America) Telus/Rogers /Bell (Canada) SKT/LGU+ (South Korea) NTT DOCOMO/SoftBank/ KDD (Japan) Telstra (Australia) Regulatory: GCF (Global),CE (Europe) FCC/PTCRB (North America) IC (Canada) IFETEL (Mexico) CCC (China) KC (South Korea) NCC (Taiwan) JATE/TELEC (Japan) RCM (Australia) NBTC (Thailand) IMDA (Singapore) Others: RoHS Compliant |
| Environment | | | |
| Temperature Range | -40°C ~ +80°C | -40°C ~ +85°C | -40°C ~ +80°C |
| Dimensions | 51.0mm × 30.0mm × 4.9mm | | |

Dimensions (Units: mm)

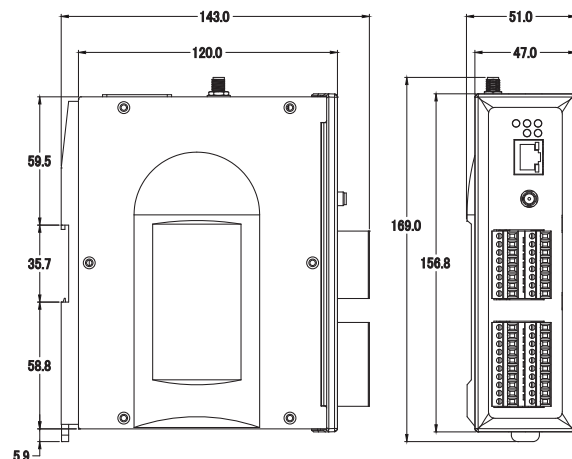
G-4510



Left View

Front View

G-4510D



Left View

Front View

Wire Connections

Digital Input Wire Connection

| Input Type | ON State DI value as 0 | OFF State DI value as 1 |
|--------------------|---------------------------|----------------------------|
| Relay Contact | | |
| TTL/ CMOS Logic | | |
| Open Collector | | |

Digital Output Wire Connection

| Input Type | ON State DO value as 1 | OFF State DO value as 0 |
|-----------------|---------------------------|----------------------------|
| Drive Relay | | |
| Resistance Load | | |

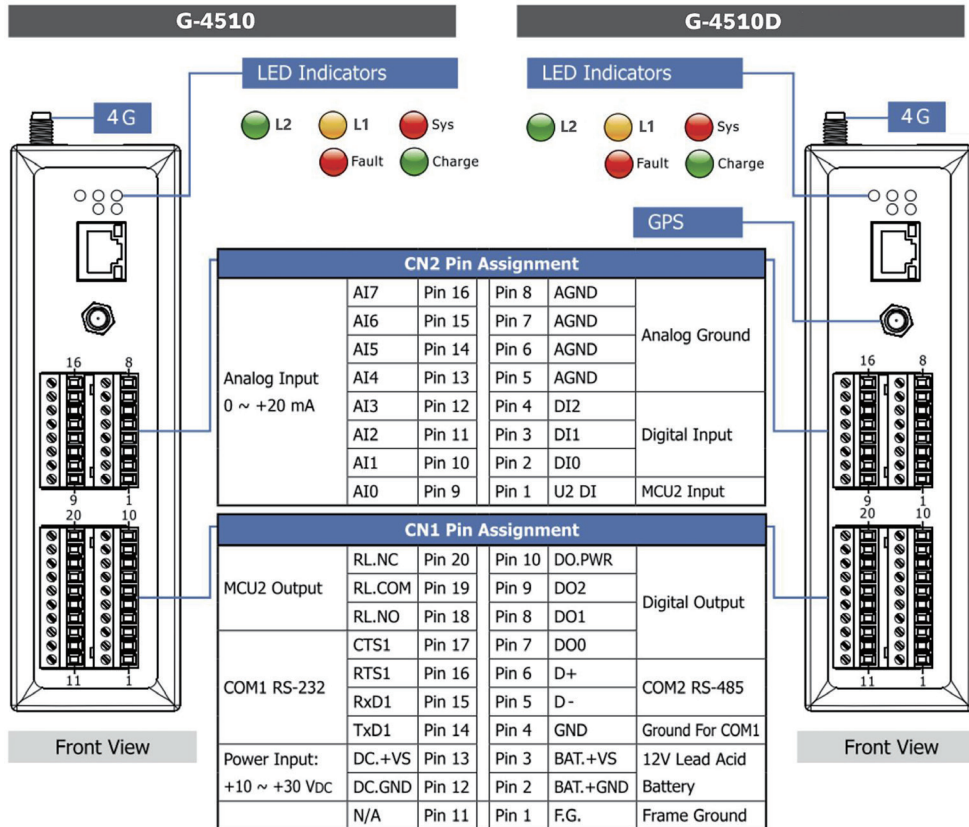
Current Input Wire Connection

| | |
|------------|--|
| Input Type | |
|------------|--|

Relay Wire Connection

| | Relay Output ON | Relay Output OFF |
|-------|-----------------|------------------|
| Relay | | |








Pin Assignments



Ordering Information

| | |
|-------------------|---|
| G-4510 CR | Power Saving PAC with Solar charger, optional GPS Function and communication module(RoHS) |
| G-4510D CR | Power Saving PAC with Solar charger, LCD display, optional GPS Function and communication module (RoHS) |

Accessories

| | | |
|---|-----------------------|---|
|  | ANT-421-05 CR | 5 dBi, 4G LTE omni-directional antenna (SMA Male Plug) (RoHS) |
|  | ANT-Base-01 CR | Antenna magnetic base with 1.5 meter cable (SMA Male Plug) (RoHS) |
|  | ANT-115-03 CR | GPS magnetic mount antenna with 5 meters cable (SMA Male Plug) (RoHS) |
|  | ANT-421-04 CR | 2 dBi, 4G LTE omni-directional antenna (SMA Male Plug) (RoHS) |
|  | EC21-AU CR | 3G/4G Communication LTE category 1 module |
|  | EC25-E CR | 3G/4G Communication LTE category 4 module |
|  | BG96 CR | NB1/M1/EGPRS Communication LPWA module |