RoHS Compliant

GC-502, Battery-operated, Super-Long Standby, NB-IOT Gas Meter Controller



Overview

Built-in NB-IOT, Micro-SIM, eSIM, or chip-SIM, primary battery, high-efficiency antenna, and with AES 256 encryption protection, GC-502 is an ideal companion of gas meters.

It sends warning data to cloud immediately once a meter alert was detected so that the gas operator knows what happened to this meter before receiving the user's call. Periodically receiving commands from cloud allows operator's control of any specified gas meter. Daily report of hourly gas usage not only reads the meter value but also helps the gas operator to predict and the user to know the usage behavior.

Features

- Built-in NB-IOT module and high-efficiency antenna
  - Micro-SIM or eSIM/chip-SIM support
  - Reliable, smooth 2-way communication
  - AES 256 encryption support
  - OTA support
- Support Japan-made digital gas meters+
  - Via meter's black and orange wires
  - Support all known digital gas meter functions
  - Notify server right away on detected alerts
  - Accept commands from server periodically
  - Daily report of meter's hourly reading
- In addition, meter temperature and signal quality information are also sent to the server.
- Replaceable primary battery (non-rechargeable)
  - Ultra-low power consumption
  - Low power alert at battery low
  - 10-year standby at good signal condition
  - Battery replaceable in case of bad signal.
- Flexible
  - Multiple MNOs support
  - Easy to use: in VPN case, plug and play.
  - No fixed bundling with meters, GC-502 works with any connected digital meters.

+ Meters of other brands could also be supported.

Technical Specifications

Cellular Module

NB-IOT	Gemalto/Cinterion ENS22-E module
Frequency Bands	Bands 3/5/8/20/28, i.e., 1800/850/900/800/700MHz In Taiwan (NCC), bands 8/28 only, i.e., 900/700/MHz
Speed (Max.)	Down Link 27kbps, Up Link 63kbps
FOTA	Incremental Over The Air firmware update

General

Dimension (mm)	142 x 80 x 43
Weight (g)	293.5
Interfaces 	1. Power switch button x 1, 2. Orange LED x 1, 3. 2-pin screw connector x 1, 4. Micro-SIM card holder x 1

NaviSys Technology Corp.
Tel : +886-3-5632598
Sales contact: sales@navisys.com.tw
Address: 2F, No.56, Park Ave. II, Hsinchu Science Park, 300, Taiwan (R.O.C.)
http://www.navisys.com.tw/
Fax: +886-3-5632597
Technical support: service@navisys.com.tw

Power	By 3.6VDC Primary battery Input range: 3VDC~4.2VDC
Communication	* NB-IOT to servers * Meter's orange and black wires
Power consumption	Power saving mode: 8~10 uA Normal working: 7~55 mA[1] average
Watertight	IPX6
Working Environment	Temperature: -20 °C ~ 70 °C Humidity: 85%RH, non-condensing
Storage	Temperature[2]: ≦ 30 °C

[1] Depending on signal quality

[2] Higher temperature with more self-discharge. 1 year of storage at 20 °C, battery self-discharge rate <1%.

Major Functions

Power ON/OFF	Push switch button to 1: to turn ON, 0: to turn OFF
SIM Change	Push SIM edge to eject/fix SIM card
Orange LED	Blink to show power on, then OFF.
Meter Connection	Connect to, fix at the screw connector
Meter Readings	Report at the specified interval
Meter alerts	Report immediately as an alert detected ● Earthquake ● Gas leakage etc.
Meter Settings	Meter control functions ● Turn ON/OFF utility supply ● Meter configuration update
OTA	Over The Air firmware upgrade
Security	AES 256 encryption to server

Quick Guide

Normally, the device has been properly setup on arrival.

- Remove the device's bottom cover
- Connect meter's black wire to the left of the screw connector and orange wire to the right one.
  - Above for Japan meters. Different meters would have different ways of connections.
- Turn on power switch, LED blinks and then is dark to indicate power has been turned on.
- Warning would be reported to server as it was detected, hourly meter reading data were reported to server periodically, waiting for commands from server.

Accessories

- 3.6V primary battery

*This document is subject to change without notice.

NaviSys Technology Corp. http://www.navisys.com.tw/
Tel : +886-3-5632598 Fax: +886-3-5632597
Sales contact: sales@navisys.com.tw Technical support: service@navisys.com.tw
Address: 2F, No.56, Park Ave. II, Hsinchu Science Park, 300, Taiwan (R.O.C.)