

Sentinel Smart Wireless Sensor system

Creates the IoT platform of sensor data exchange and integration.

- Up to 64 wireless sensors per base station
- Temperature, humidity, analog sensors, digital alarm, RS485
- Windows 10 / iOS / Android monitoring app
- Long-life battery
- 1200 metres wireless communication distance
- System integration: TCP modbus support for BMS integration. API dll for third party software programming, REST API for user web portal development.



Wireless Sensor

- Temperature Humidity
- Analog sensor 4-20mA, 0-5V
- Digital alarm, Modbus RS485
- Battery Life: 2 - 3 years
- Transmission interval (5 seconds - 4 hours)

Free App

- Easy to use Client apps
- Client for Windows 10, iOS and Android
- Data receiving central software
- Set up software
- Support TCP Modbus

Professional

- Sensor high/low alarm levels
- Battery low alert
- Alert user over LAN or internet
- Email alarm
- Data storage in local computer

Making factory, storage and farming smarter by the power of IoT



Agriculture & Farming

Recording and analysis of temperature, humidity situation in greenhouse or farm where cabling is difficult or impossible. Long distance 1200 metre communication



Tank & Cold storage

Diesel Level and temperature monitoring are critical in gas tanks and cold food storage. Alert user wirelessly when oil level or temperature is high/low



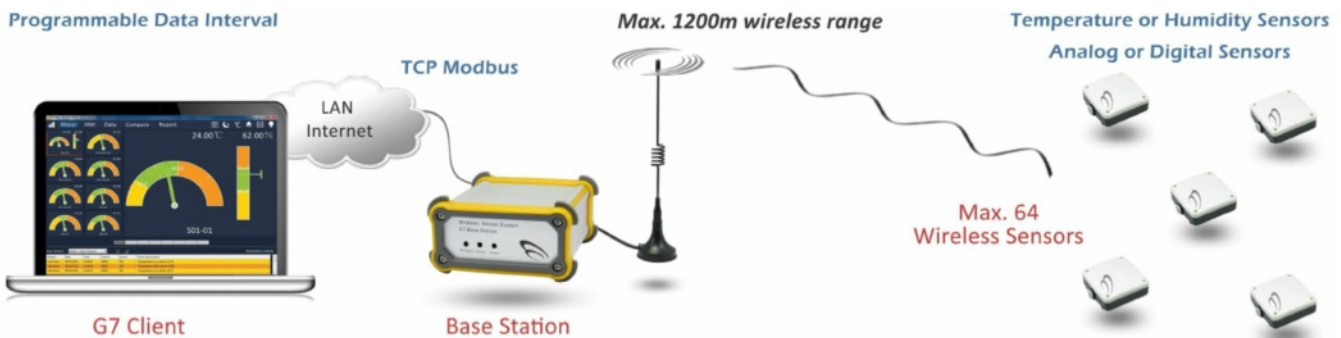
Pharmacy Automation

Keep recording of temperature and humidity for audit and analysis. Hassle free installation without cabling. Instant alarm function to warn of temperature to high/low

Sentinel sensors

Sentinel Smart Wireless Sensor system

Creates the IoT platform of sensor data exchange and integration.



Sentinel Wireless sensor sends real time data wirelessly through radio wave to the base station. The Base station collects the measurements of all the wireless sensors, and uploads to a computer. Both station and sensor are easily configured by set up software via USB port.

Wireless Sensor	
Temperature sensor G7-T2	
Temperature:	-55° - 125°C (+/- 0.5°C)
Combo sensor G2-H2/H3	
Temperature	-40° - 125°C (+/- 0.3°C)
Humidity	0 - 100%RH (+/-2%)
Analog Sensor G/-AD	4-20 mA / 0-5VDC input
Digital Alarm G/-A2	On/off dry contact
Modbus G7-MB	RS485
Upload interval	5 seconds - 4 hours
Wireless distance	1200 metres (unblocked)
Sensor Identification	Programmable 5 digits
RF Wireless	433MHz (license free)
RF Power	< 20dBm
Operation rating	80mA (data transmission)
Standby rating	~3.0uA (sleep mode)
Operating voltage	2.5 -3.6V DC
Battery	3400mAh
Battery life	Up to 3 year (1 hr upload)
Extended battery	14000mAh
Battery life	Up to 10 year (1 hr upload)
Dimensions	80 x 80 x 28 mm
Operating temperature	-20° - 75°C

Base Station	
Upload Interval	5 seconds - 4 hours
Protocol:	TCP/IP Network
	TCP Modbus Support
Network Port	10/100M Ethernet
	Fixed & Dynamic IP
Upload Central server	Fixed IP & DDNS
Industrial support	Modbus TCP Protocol
RF Wireless	433MHz, 4.8Kbit/s
RF Address/Band:	255/15
Operating Voltage	5VDC
Rating:	< 1A
Operating temperature	15° - 75°C
Dimensions	110 x 95 x 45 mm



G7-BS Base Station

Sentinel Smart Wireless Sensor system

Free Software

Client Lite for Windows (desktop & Touch screen) iPad, iPhone and Android Phone

Received data from base station over LAN or internet.

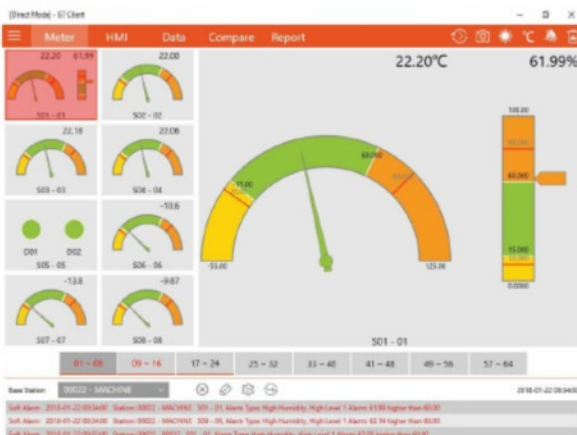
Displays both live, historical, and statistical data in graphics

Data records are saved into local storage for comparison or report generation

Data can be exported in csv or SQLite for third parts software data analysis

Dashboard display mode gives an overview of up to 64 sensors reading on a single screen

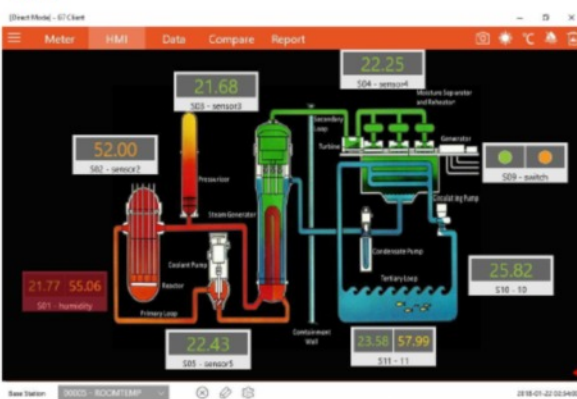
Meter



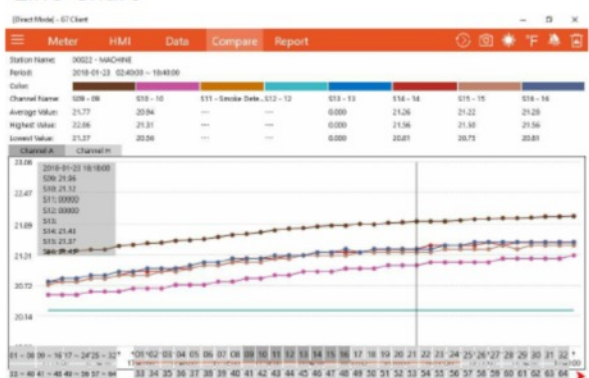
Dashboard



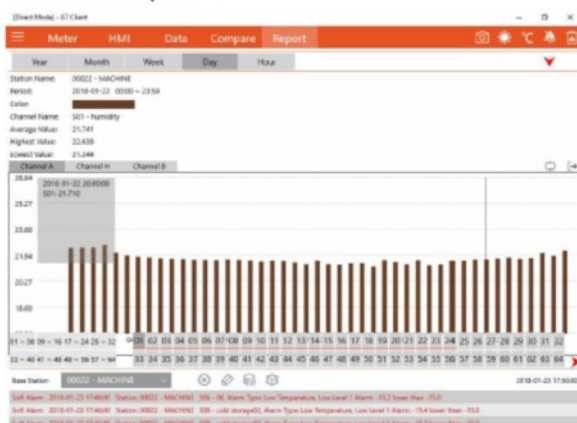
HMI



Line Chart



Statistic Report



Alarm

On screen Alert

User is alerted when high/low temperature, humidity, analog level, digital alarm, or low battery voltage is triggered.

Alarm Email

Client for Windows 10 sends alarm to up to 3 email addresses.

Sentinel Smart Wireless Sensor system

Wireless Sensor Temperature & Humidity

Battery capacity: 3.6V, 3400mAh
 Battery life: up to 3 years (upload of 30 mins)
 Dimensions: 80 x 80 x 28 mm

- Internal Battery
- RF Antenna internal or external adjustable
- Waterproof

G7-T2

- Temperature probe with 2 mtr cable



G7-TX

- Temperature 100mm probe



G7-H3

- Temperature & Humidity Combo sensor, waterproof probe



G7-H2

- Temperature & Humidity Combo sensor, 20cm cable

G7-S2 / H4 / H5 / H6

- Temperature & humidity Combo sensor. Waterproof probe, 2 mtr cable for outdoor application



Wireless Sensor (Extended Power) -Ex Temperature & Humidity

Battery capacity: 3.6V, 14000mAh
 Battery life: up to 10 years (upload of 30 mins)
 Dimensions: 115 x 90 x 55 mm

- Internal Battery
- RF Antenna internal or external adjustable
- Waterproof
- Wall mountable

G7-H3Ex

- Temperature & Humidity Combo sensor, waterproof probe



G7-H2Ex

- Temperature & Humidity Combo sensor, 20cm cable



G7-S2EX / H4 / H5 / H6

- Temperature & humidity Combo sensor. Waterproof probe, 2 mtr cable for outdoor application



G7-TXEx

- Temperature 100mm probe



G7-T2Ex

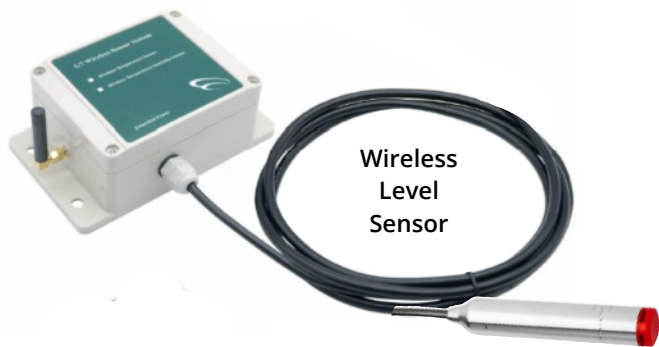
- Temperature probe with 2 mtr cable



Sentinel Smart Wireless Sensor system

Wireless Sensor Analog Sensor

Analog Sensor: 4-20mA or 0-5VDC signal output
 Battery capacity: 3.6V, 3400mAh
 Battery life: up to 5 years (upload of 30 mins)
 Internal power: 12 or 24VDC for sensor with max
 Output: 40mA rating



Wireless
Level
Sensor



Wireless PM2.0
Sensor



Wireless
Soil humidity
Sensor



Wireless Soil Temperature & Humidity
Sensor

Wireless Sensor (Built-in probe)



Wireless CO2 Sensor

- Range: 0 - 2000 or 5000 ppm
- Resolution: +/-10ppm
- Accuracy: +/-5%
- Power: 3.6V Battery
- Sensor Probe: Integrated

Wireless CO2 Sensor

- Range: 0 - 1000 or 2000 ppm
- Resolution: +/-10ppm
- Accuracy: +/-5%
- Power: 3.6V Battery
- Sensor Probe: Integrated

G7-AD Wireless Analog Sensor

Supports analog sensors with 4-20mA or 0-5VDC input

Low Power Design

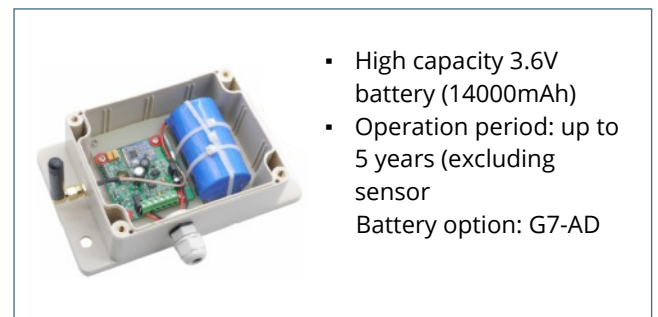
Micro-controller supports sleep mode for years long operation in battery

Internal Power output

It provides on board voltage output 12VDC for external analog sensors in different applications e.g. soil humidity sensor for agriculture

Warm-up time

Stabilize external analog sensor reading before capturing data



- High capacity 3.6V battery (14000mAh)
- Operation period: up to 5 years (excluding sensor)
- Battery option: G7-AD

Sentinel Smart Wireless Sensor system

Wireless Fuel Tank Level Monitoring

Real time tank level tracking
High & low level Alarm
No cabling, Simple installation
Free software - Real time level or volume monitoring



G7-AD Wireless Analog Transmitter & Level Sensor



G7-Client

Base Station

Max. 64 tanks each Base station

Application:

Gas refuelling system - measuring the level or volume
Oil Tanks - Real time monitoring of level or volume
Mobile Oil or Gas Tanks - No cable connection is needed from mobile tanks to volume tracking system
Multiple tanks monitoring system - one single software is capable of volume tracking up to 500 tanks

Wireless Greenhouse Environmental Monitoring

Sensors high and low temperature
No cabling, simple installation
Free alarm software - monitoring 128 sensors

- G7-AD Wireless analog sensor (CO2, Level, Pressure, PM2)
- Wireless temperature Temperature & humidity sensor
- Wireless digital alarm (Door contact, water leak)



Application:

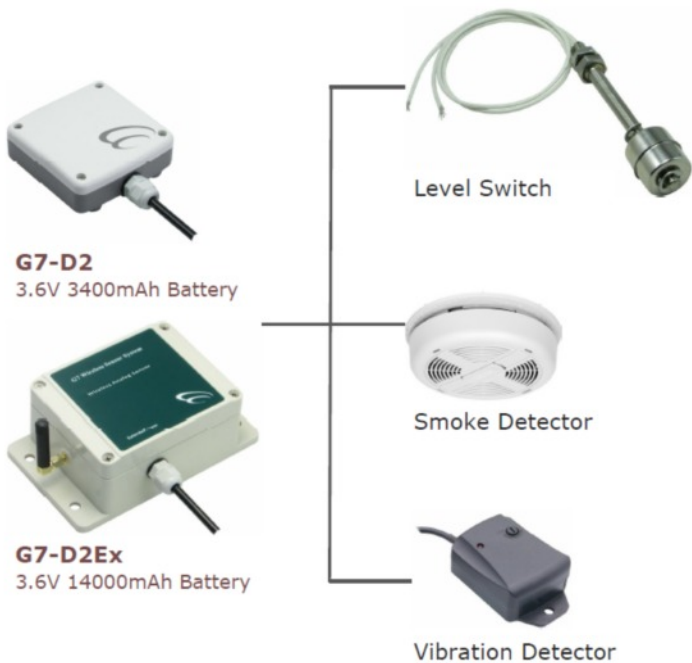
Greenhouse. No cabling cost, real time tracking of temperature, humidity, CO2 and other sensors
Farming. No cabling, eas installation up to 1200 metres wireless distance
Factory. Support industrial sensors eg. PT100 analog sensor for extreme range
Weight: Wireless load cell or weight scale measurement for truck, poultry and storage tanks

Sentinel Smart Wireless Sensor system

Wireless Sensor

Digital Alarm input

Digital alarm input 2 x channels
 Battery capacity: Dry contact
 Battery life: Closed alarm triggered



G7-D2 Wireless Digital Alarm

Supports 2 channels of digital alarm inputs

It is widely used in remote alarm of oil tank level switch or cold food fridge door open

Low Power Design

Micro-controller supports sleep mode for years long operation in battery

Instant Alarm

It provides instant alarm even in sleep mode

- Programmable repeated alarm interval
- Programmable number of repeated alarms
- Low battery alarm

Digital input status

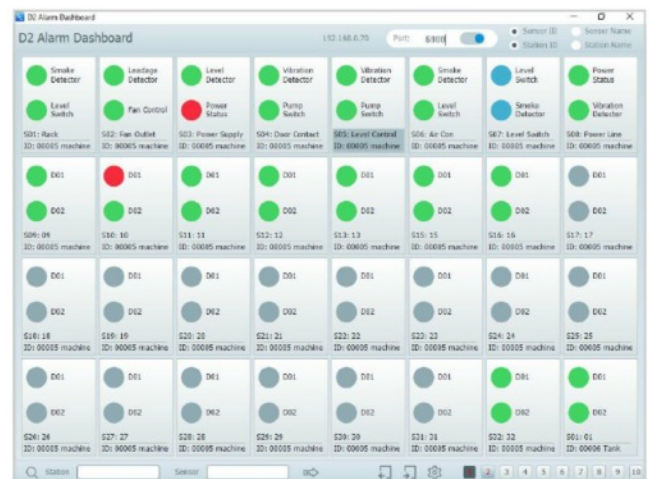
Keep track of input status in interval
 Alert user when alarm triggers or resumes normal LAN/Internet connection
 Base station sends alarm over LAN/Internet instantly. Both fixed IP and DDNS are supported.
 Support TCP Modbus for BMS integration

LAN/Internet connection

Base station sends alarm over LAN/Internet instantly
 Both fixed IP and DDNS are supported
 Support TCP Modbus for BMS Integration.

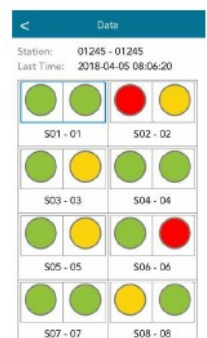
Free digital Alarm Monitoring Software

- Real time alert on alarm and resume normal
- Monitoring max. 320 Alarm sensors
- Max. 100 base stations
- Each sensor supports max. 2 alarm inputs
- Sensor battery low level alert
- Audio Display Alerts, Email and SMS alarm
- Email alarm sent to max. 5 users mailbox
- SMS alarm sent to max. 5 users mobile phone
- Digital alarm On/Off, resume status in different alert colours
- Alert on wireless sensor communication loss
- Base station and sensor name are user programmable
- Auto fill search base station or sensor ID and name



D2 Alarm Dashboard

- Windows 10
- iPad, iPhone
- Android Phone



Sentinel Smart Wireless Sensor system

Wireless Oil Tank Level Alarm Monitoring

Instant high & low alarm level
No cabling, Simple installation
Low equipment cost
Free software - Real time level or volume monitoring



G7-D2 Wireless Alarm Transmitter & high Low level switch



G7-D2 Dashboard

Base Station

Max. 56 tanks each Base station

Application:

Gas refuelling system - Eliminating overflow or under low level fuel issues

Oil Tanks - Real time alert on below or above normal levels

Mobile Oil or Gas Tanks - No cable connection is needed from mobile tanks to volume monitoring system

Multiple tanks monitoring system - one single software is capable of volume tracking up to 500 tanks

Wireless Water Leakage Alarm System

Sensors high and low temperature
No cabling, simple installation
Free alarm software - real time water leak alarm

G7-LK Wireless water leakage sensor



Application:

Hotels: No cabling cost, real time tracking monitoring of water leaks

Hospital: No cable installation, minimal loss of medical equipment or material in water leak.

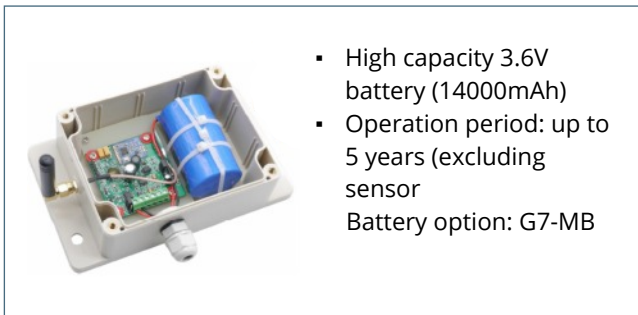
Factory: Wireless sensor can be installed anywhere eg. Production line, package or storage facility

Warehouse: Complete environmental monitoring together with wireless temperature and humidity sensors

Sentinel Smart Wireless Sensor system

Wireless Sensor Modbus Protocol

RS485 Port Modbus Protocol
 Operation Period: up to 5 years (upload 30 minutes)
 Internal power 12 for Modbus Meter
 Output: with max 50mA. rating



- High capacity 3.6V battery (14000mAh)
 - Operation period: up to 5 years (excluding sensor)
- Battery option: G7-MB

G7-DMB Wireless Modbus sensor

Modbus meter via RS485 port

Low Power Design

Micro-controller supports sleep mode for years long operation in battery

Internal Power output

It provides on board voltage output 12VDC for external meter in different applications: e.g. flow meter

Warm-up time

Stabilize external analog sensor reading before capturing data

Modbus Data Registers (Address Programmable)

- 1 x Floating point Modbus data register
- 1 x Integer Modbus data register

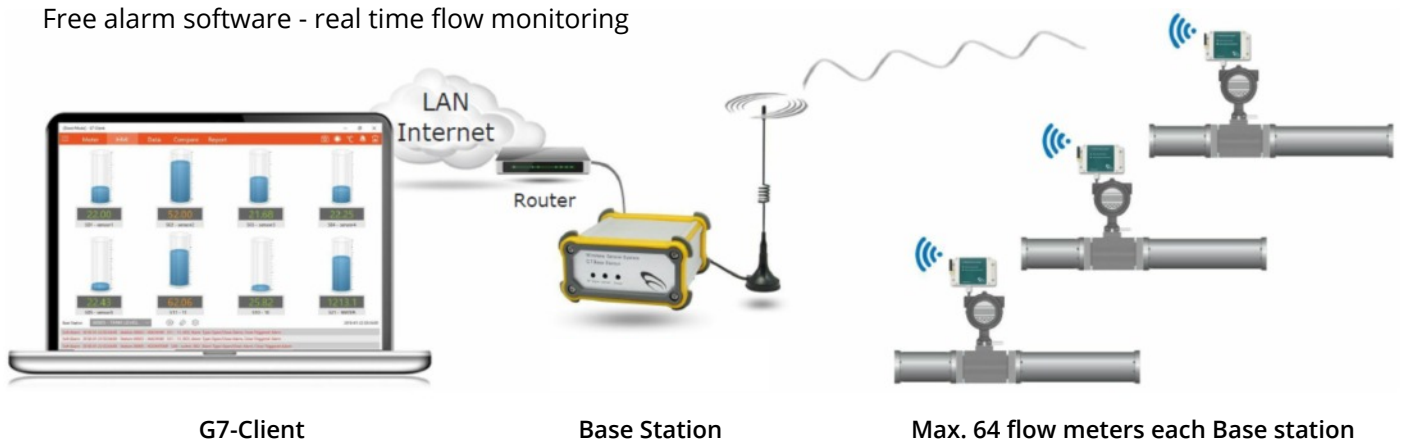


Wireless Liquid Flow Monitoring

Features:

- Instant flow rate and total flow
- No cabling, simple installation
- Low cost equipment
- Free alarm software - real time flow monitoring

G7-MM Wireless Modbus sensor and modbus flow meter



Sentinel Smart Wireless Sensor system

How does G7 Client work

Windows 10, iOS, Android

Direct mode - Free

- Each base station receives data from a maximum of 64 wireless sensors
- Each base station uploads sensors to one single client user
- G7 Client Lite (Direct mode) - Each single client user accesses maximum 2 base stations
- G7 Client Licensed (Direct mode) - Each single client user accesses maximum of 20 base stations.
- Local storage of incoming data from base stations
- Graphic display of both live and historical data

Alarm

- Alarm email delivered from G7 client PC
- Single set of sensor alarm setting

How to upload data over mobile network

- By connecting to 3G/4G Router
- Insert SIM Card
- Upload data via 3G/4G mobile network



Integration

- Support third party system integration.

1) TCP Modbus -

- Via industrial standard Modbus data registers
- TCP Modbus tool is bundled Free
- Data can be accessed by other SCADA directly

2) API Driver

- API dll for third party development

3) REST API

- Web service API for third party web portal

4) Centre Software

- Data received and saved into text file



Easy Installation

1. Connect base station to internet
2. Setup network properties
3. Download G7 Client app
4. Temperature Humidity Graphics view

