

## brief features

The CELL900G GENSET Health Monitoring System, an advanced solution designed for seamless monitoring and maintenance of generator sets (GENSETs). Utilizing cutting-edge cellular technology, the CELL900G provides real-time insights into the operational health and performance of GENSETs across various industrial and commercial applications.

Unlike conventional monitoring systems, the CELL900G offers unparalleled connectivity and data accessibility. It employs robust sensors and intelligent algorithms to continuously monitor critical parameters such as engine temperature, oil pressure, fuel consumption, and power output. Through its integrated cellular communication capabilities, the system transmits comprehensive data to a centralized platform for instant analysis and proactive maintenance planning.

With its scalable architecture and compatibility with diverse generator configurations, the CELL900G sets a new standard in GENSET health monitoring, empowering businesses to maximize uptime and productivity with confidence. Ideal for industries ranging from telecommunications and healthcare to hospitality and beyond, the CELL900G is the definitive choice for proactive GENSET management in the digital age.

The intelligent CELL900G use advanced dual core MCU. Web enabled intuitive and easy-to-use menu for monitoring, configuration and diagnostics. Configuration can be done from any browser through by using smart phones, tablets or laptop or OTA. Modbus RS485 option can be used to connect with any PLC or SCADA.

## applications customers

### APPLICATIONS

In industrial, commercial and remote areas telemetry system for generators sets with energy and fuel monitoring as well as with all filed sensors. Complete management system for the generator set health monitoring and fuel usage according to power generated.

#### **Preferred areas of use are:**

- Sub-monitoring of power
- Textiles and process industry
- Diesel generator sets
- Gas generator sets
- RBS
- Rental power
- Diesel fuel management
- Remote area power stations

### CUSTOMERS

Industrial and commercial sectors, such as:

- Chemical processing
- Textiles
- Power plants
- Steel rerolling mills
- Pharmaceuticals
- Bulk customers (housing societies)
- Hotels

# technical specifications

## Features

The CELL900G telemetry system with ability to internal data logging functionality makes it one of the most advanced process units. Its latest CPU with forward-thinking algorithms and web server function modules makes it more user friendly.

### Informative

CELL900G display all process parameters and configuration parameters on the web server using any web browser or using Android App.

### Configurable

User can easily configure any parameter using smart phone according to site demand.

### Environmentally Tough

Water proof IP65 housing

Wiring harness IP65 with water proof glands

### Easy to use

Operation can be done within minutes. Connect the field instrument with pre made wiring harness. Keep it online and configure it by using local App and get the data on online remote server.

### Customized Options

Due to OTA facility, CELL900G firmware can be up-gradation according to any specific customization.

- Energy monitoring
- Generator set remote monitoring
- RBS monitoring
- Fuel management
- Customized tags for remote monitoring

## Specifications

**Power Supply:** 9~35 V DC, 5 W

**Password:** 4 Level of passwords restriction

- SSID
- Configuration
- OTA
- Data Download

**EEPROM:** Data retention 40,000 records

**CPU:**

- Dual core up to 240 MHZ
- Flash RAM: 4 MB
- SRAM: 520 KB SRAM

**Analog Inputs:** 4 Nos. (4~20 mA/0~10 V DC | 12 Bit)

- Water temperature
- Oil pressure
- Battery voltage
- Spare

**Digital Inputs:** 4 Nos. (Non-Isolated)

- Fuel Lid
- Water Level
- WAPDA
- Spare

**Backup Power:** 5~7 Hours with Li-ion battery

**Transmission:** User programable

- Interval: 1~60 Minutes
- Method: Using Mosquito broker via MQTT
- Protocol: MQTT

**Configuration:**

- Local: SPIFFS Web browser/Android App
- Remote: Cloud server using MQTT protocol

**Database:** Mongo DB API development

**Communications:**

4 types of communications available

- Modbus RS485 (Master)
- Wi-Fi for Web Server
- SPI/I2C for Energy Meter
- GSM/GPRS 2G/3G

**Embedded Energy Meter:**

- Integral 3-Phase, 4-Wire system
- Class: 1.5
- CT: 5A
- PT: 100~240 V AC
- Parameters: KW, Total KW, Amp., Volts

**Environmental:**

- Operating: -10~65 °C
- Storage: -40~85 °C
- Relative humidity: 10~90%

**Connections:**

- PCB: Removable screw terminal blocks
- Terminal block: Wire size: 0.5~0.7 mm
- Field connections: Wiring harness 3 meters

**Panel:**

- Housing: UPVC IP 65 water proof
- Mounting: Wall mounting with 2-brackets
- Size: 150mm X 150mm X 100mm

**Warranty:** 1 year after delivery

# monitoring parameters

## Electric Parameters

- Kilo Watt
- Kilo Watt Hour
- 3-Phase Voltage
- 3-Phase Ampere
- Power Factor
- Frequency
- Generator Status (ON/OFF)
- Generator Load Status (ON Load/ OFF Load)
- WAPDA Status (ON/OFF)

## Engine Parameters

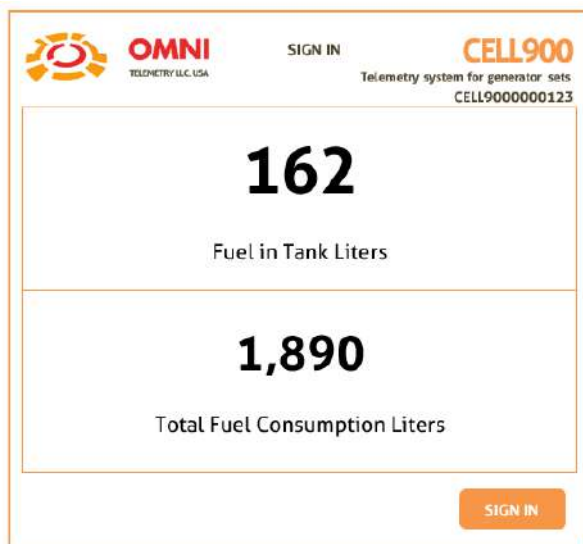
- Oil Pressure (PSI)
- Water Temperature (°C)
- Battery Voltage (V DC)
- Engine Status (ON/OFF)
- Run Hour
- Total Run Hour

## Fuel Parameters

- Available Fuel (LTR)
- Tank Volume (LTR)
- Fuel Level (%)
- LID Status (OPEN/CLOSE)
- Total Fuel Consumption
- Fuel Consumption
- Total Fuel Fill
- Fuel Fill
- Total Pilferage
- Pilferage

# setup configuration

A user-friendly interactive web enabled browser interface for flow meter parameters configuration. Every screen is self-explanatory.



1<sup>ST</sup> Page  
For display Available Fuel & Fuel Consumption  
IP: 192.168.9.54  
SSID: CELL9000000xxxx  
Password: hunchxxxxxxxxxx



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TELEMETRY LLC, USA

LOGIN

CELL900  
Telemetry system for generator sets  
CELL9000000123

User Name


Enter User Name

Password

Enter Password

LOGIN

Login Page  
User Name: hunchPassword:  
77xx



OMNI  
TELEMETRY LLC, USA

PROCESSING

CELL900  
Telemetry system for generator sets  
CELL9000000123


PARAMETERS	PROCESS VALUE
Oil Pressure Psi	45
Water Temp. °C	75
Water Level	Okay
Battery Volts V DC	27
Lid Status	Close
WAPDA	ON
Fuel in Tank Liters	162
Fuel Level %	81
Total Fuel Consumption Liters	1,890
Total Fuel Refueling Liters	1,791
Total Fuel Pilferage Liters	5
Power KW	36
Total Power KWH	2,790
3-Phase Volts VAC	396
3-Phase Current A	72
Frequency HZ	50.1
Power Factor pF	0.81

REPORT

SETTINGS

BACK

Parameter display page



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SETTINGS

CELL900

Telemetry system for generator sets

CELL9000000123

PARAMETERS	SET VALUE	NEW VALUE
Device Configure Time Minutes	3	
GSM Network APN	Zong	Select Option↓
Year RTC	2023	
Month RTC	10	
Day RTC	21	
Hour RTC	11	
Minutes RTC	25	
Gen Set OFF V AC ET	90	
Gen Set RUN V AC ET	180	
Gen Set OFF LOAD KW ET	2	
Gen Set ON LOAD KW ET	7	
SSID	Fiber Link	
Password	78900789	
Logging Interval Minutes	2	
Device ID	CELL9000000123	
Energy Meter CT Ratio	40	
Total Preset Energy Meter	2	
Total Preset Fuel Consumption	5	
Total Preset Fuel Refueling	3	
Fuel Refueling Liters/Hours	20	
Total Preset Fuel Pilferage	2	
Fuel Pilferage Liters/Hours	40	

UPDATE

OTA

BACK

Settings Page  
Configuration  
Calibration



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OVER THE AIR

CELL900

Telemetry system for generator sets

CELL9000000123

File Name

Enter File Name

UPLOAD

CLOSE

OTA  
Over The Air firmware upload

# communication Modbus tags

## CONFIGURATION

CELL900G has built-in Wi-Fi module with complete SPIF web enabled stack. Therefore, there is no need of any special data communication hardware or software, an end user can easily configure it by using any browser through HTTP. In configuration mode CELL900G will act as a Master.

## MODBUS RS485

CELL900G has built-in Modbus RS485 module, therefore, end user can get the data to PLC, DCS, SCADA, OPC server or any data communication module/software.

## DATA LOGGING

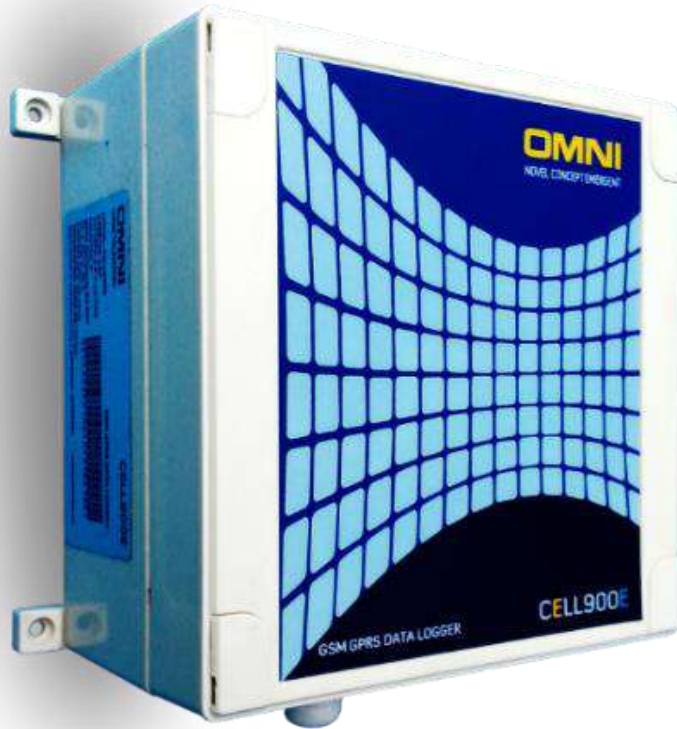
Furthermore, CELL900G has comprehensive feature of data transferring of its tags to local or cloud server by using its built-in Wi-Fi module in Salve mode through HTTP/MQTT. By using feature end user can log the data to its local or remote server for online monitoring and reporting purpose.

Standard Modbus tags detail is as under for communication.

DEFINE NAME	TYPE	ADDRESS	
Kilo Watt	Swapped long	0X02	Function code: 03 or 04  Register type: Holding register
Kilo Watt Hour	Swapped long	0X04	
3-Phase Voltage	Swapped long	0X06	
3-Phase Ampere	Swapped long	0X08	
Power Factor	Swapped long	0X0A	
Frequency	Swapped long	0X0C	
Generator Status	Swapped long	0X0E	
Generator Load Status	Swapped long	0X10	
WAPDA Status	Swapped long	0X12	
Oil Pressure	Swapped long	0X14	
Water Temperature	Swapped long	0X16	
Battery Voltage	Swapped long	0X18	
Engine Status	Swapped long	0X1A	
Available Fuel	Swapped long	0X1C	
Tank Volume	Swapped long	0X1E	
Fuel Level	Swapped long	0X20	
Lid Status	Swapped long	0X22	
Fuel Consume	Swapped long	0X24	
Total Fuel Consume	Swapped long	0X26	
Fuel Fill	Swapped long	0X28	
Total Fuel Fill	Swapped long	0X2A	
Pilferage	Swapped long	0X2C	
Total Pilferage	Swapped long	0X2E	

# mounting instructions

For proper GENSET Monitoring, GENSET Health & Monitoring System should be installed properly.



forward thinking

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