

● HUNCH AUTOMATION — CELL 900G

STOP FUEL THEFT

CELL 900G · DIESEL GENSET FUEL MONITORING SYSTEM

Real-time fuel consumption, refueling and pilferage detection — with cloud dashboard, GSM/Wi-Fi connectivity, genset control and 2-hour backup battery. Know exactly where every litre goes.

 **GET PROTECTED NOW**

 **FULL SPECIFICATIONS**

— THE PROBLEM

Diesel is Disappearing. Do You Know Where?

Without fuel monitoring, operators are flying blind — unable to distinguish genuine consumption from theft, ghost refueling, or unauthorized generator use. The losses are staggering.



Fuel Pilferage by Staff

30%

Night-time or unguarded site access allows staff to manually siphon fuel from tanks. Without level monitoring, these thefts go completely undetected — sometimes for months.



Ghost Refueling & Fake Invoices

15%

Vendors bill for fuel deliveries that are never fully dispensed. Without a refueling event log with timestamps and quantities, there is no way to verify what was actually delivered.



Unauthorized Genset Use

20%

Generators run unnecessarily when grid power is available, or operated at excessive loads — causing both unnecessary fuel burn and accelerated engine wear without any accountability trail.



Engine Failures — No Early Warning

Risk

Water temperature spikes and oil pressure drops precede catastrophic engine failures. Without real-time monitoring and automatic safeties, a PKR 5M+ engine is destroyed before anyone is alerted.

01 **Continuous Level Monitoring — Every Minute**

SPI/I2C fuel level sensor tracks tank volume continuously. Any unexpected drop outside of normal consumption rates immediately triggers an alert — catching pilferage at the moment it happens.

02 **Refueling Events — Verified & Timestamped**

Every refueling event is logged with volume, timestamp and rate of fill. Cross-reference with vendor invoices instantly — ghost deliveries are exposed immediately.

03 **Genset Control — Remote Start/Stop**

Grid On/Off and Genset Start/Stop digital inputs track exactly when the generator runs versus when grid power is available. Remote control via cloud stops unauthorized use instantly.

04 **Engine Safeties — Auto-Protect**

Water temperature and oil pressure analog inputs provide real-time engine health data. Configurable alarm thresholds and automatic shutdown safeties protect your engine before failure.

05 **2-Hour Backup Battery — Even When Grid is Down**

Built-in Li-ion backup battery keeps CELL 900G operational for 2 hours during power outages — the most common time for fuel theft to occur. No monitoring gap, ever.

— PILFERAGE INTELLIGENCE

See Every Drop. Catch Every Theft.

The CELL 900G's intelligent event detection identifies consumption, refueling, and pilferage events automatically — with cloud alerts sent to your phone the moment an anomaly is detected.

◆ FUEL LEVEL TIMELINE - 24H



● ⚠ Pilferage Detected - 35L sudden drop

02:34 AM

● ✓ Refueling - 450L dispensed, verified

09:15 AM

● Normal consumption - 284L over 12h run

Ongoing

🔍 Intelligent Anomaly Detection

The system distinguishes between normal consumption rates and sudden unexplained level drops. A pilferage event — any unaccounted loss outside normal consumption patterns — triggers an immediate cloud alert with timestamp, quantity and location.

🔒 Fuel Lid Monitoring

A dedicated digital input monitors the fuel tank lid status. Any unauthorized opening triggers an immediate alert event — even before fuel is taken. First line of defence against opportunistic theft.

📊 Refueling Verification

Every refueling event is captured: start time, end time, volume dispensed and fill rate. Cross-reference with vendor delivery notes to instantly identify short deliveries, partial fills and fraudulent invoices.

📱 Instant Mobile Alerts

MQTT/HTTPS event triggering sends push notifications to your phone the moment any alert condition is met — theft, low fuel, engine temperature, oil pressure or power failure. React in minutes, not hours.

🔋 Tamper-Proof Backup Power

Built-in 2-hour Li-ion backup battery keeps the system fully operational when grid power is cut — which is often when pilferage attempts occur. The monitoring chain is never broken.

— TECHNICAL SPECIFICATIONS

Built for Field Deployment

IP65 waterproof housing, -40°C to +85°C storage temperature, GSM 2G/3G connectivity and 5W power consumption — engineered for remote genset sites in the harshest conditions.

🔧 HARDWARE PLATFORM

| | |
|-----------------|--------------------|
| CPU | 2-Core · 240 MHz |
| Flash / RAM | 4 MB / 520 KB |
| Housing | UPVC Panel |
| Protection | IP 65 Waterproof |
| Size | 200 × 150 × 100 mm |
| Operating Temp. | -10 ~ 65 °C |
| Storage Temp. | -40 ~ 85 °C |
| Humidity | 10 ~ 90% RH |

⚡ POWER & CONNECTIVITY

| | |
|--------------|------------------|
| Power Supply | 9 ~ 35 V DC · 5W |
|--------------|------------------|

| | |
|-------------------|--------------------|
| Backup Battery | 2-Hour Li-ion |
| Field Wiring | Waterproof Harness |
| PCB Connections | Removable Jacks |
| Data Transmission | MQTT / HTTPS |
| Event Triggering | Yes – Instant |
| Log Interval | User Defined |
| Data Records | 50,000 · SD Card |

COMMUNICATIONS

| | |
|----------------|------------------|
| GSM/GPRS | 2G / 3G |
| Wi-Fi | Web Server Mode |
| Industrial Bus | Modbus RS485 |
| Sensor Bus | SPI / I2C |
| Auto Switch | Wi-Fi ↔ GSM 3G |
| Cloud DB | MongoDB · MySQL |
| Passwords | 4-Level Security |
| OTA Firmware | Over-The-Air |

INPUTS – ANALOG

| | |
|----------------------|-----------------|
| Channels | 4 Analog Inputs |
| Engine Water Temp. | ✓ Monitored |
| Oil Pressure | ✓ Monitored |
| Battery Voltage | ✓ Monitored |
| Backup Batt. Voltage | ✓ Monitored |
| System Setup | Android App |

INPUTS – DIGITAL

| | |
|---------------|------------------|
| Channels | 4 Digital Inputs |
| Fuel Lid | ⚠ Theft Alert |
| Water Level | ✓ Monitored |
| Grid Status | On / Off |
| Genset Status | Run / Stop |
| Clock | Real Time Clock |

☁ CLOUD & MANAGEMENT

| | |
|------------------|-------------------|
| User Management | Cloud Admin Panel |
| Device Expansion | Unlimited |
| Multi-Customer | Yes |
| Multi-Area | Yes |
| Server Health | Remote Monitor |
| Alarms / Events | Real-Time Alerts |
| Reporting | Daily / Custom |

— CLOUD INTELLIGENCE

Your Entire Fuel Fleet. One Screen.

Multi-site, multi-customer cloud dashboard — manage unlimited CELL 900G devices from a single admin panel. Real-time visibility, complete history, instant alerts.



FUEL LEVEL

68%

CONSUMED L

284

▲ PILFERAGE L

12

REFUELING L

450

GRID

ON

GENSET

RUN

| | |
|---------------------------|-----------------|
| Total Fuel in Tank L | 1,500 |
| Available Fuel L | 1,020 |
| Fuel Consumption Rate L/h | 23.6 |
| Engine Water Temp. °C | 82 |
| Oil Pressure PSi | 42 |
| Battery Voltage V | 12.8 |
| Backup Battery V | 12.1 |
| Run Hours Total | 136h 47m |
| Last Pilferage Alert | 02:34 AM · 12L |
| Last Refuel Verified | 09:15 AM · 450L |



Unlimited Devices — One Dashboard

Add unlimited CELL 900G devices across unlimited sites and customers. Hospital network, commercial plaza chain, or telecom tower operator — one admin panel sees everything.

UNLIMITED SCALE



Android App — Monitor on the Move

Full system configuration and monitoring via Android app. Configure parameters, view live readings, download data logs and update firmware from anywhere in the world.

ANDROID APP



Auto GSM/Wi-Fi Switching

When Wi-Fi is available, CELL 900G uses it for fast, low-cost data transfer. When out of range, it automatically falls back to GSM 2G/3G — guaranteed connectivity in any location.

AUTO-FAILOVER



MongoDB & MySQL Cloud Database

Enterprise-grade cloud database stores every reading, event and alarm. Complete audit trail for fuel accountability, billing disputes and insurance claims. 50,000 records on-device as backup.

MONGODB · MYSQL



OTA Firmware — Custom Deployments

Firmware can be updated Over-The-Air via the Android app. HUNCH Automation can deploy customer-specific customizations remotely — no site visit, no downtime.

OTA UPDATES

— WHO NEEDS CELL 900G

Any Site With a Generator.

Wherever diesel generators run — fuel is at risk. The CELL 900G is designed for rapid deployment at any site, from a single unit to a nationwide network of hundreds.



HOSPITALS

Critical power backup monitoring



HOTELS

Hospitality fuel accountability



GSM TOWERS

Remote site fuel management



SME & FACTORIES

Production backup power

COMMERCIAL PLAZAS

Multi-tenant fuel monitoring

LABORATORIES

Sensitive facility power assurance



RENTAL POWER

Generator fleet management



HOUSING SOCIETIES

Community power monitoring



REMOTE STATIONS

Off-grid power monitoring

— COMPLETE CONNECTIVITY

4 Communication Paths. Zero Gaps.

The CELL 900G is the only fuel monitoring system in its class with four independent communication channels — ensuring data reaches the cloud no matter what.



GSM/GPRS 2G/3G

Built-in GSM modem provides cellular connectivity at any remote site — no local Wi-Fi required. Works on any 2G or 3G network worldwide. Primary connectivity for remote tower and off-grid sites.

REMOTE · NO WI-FI NEEDED



Wi-Fi — Auto Switching

When local Wi-Fi is available, CELL 900G automatically switches from GSM to Wi-Fi for faster, cheaper data transfer. Seamless auto-failover back to GSM when Wi-Fi is unavailable.

AUTO GSM/WI-FI FAILOVER



Modbus RS485

Industrial Modbus RS485 with Master/Slave auto-switching enables integration with any plant PLC, SCADA, or building management system — for centralized facility management.

PLC / SCADA INTEGRATION



SPI/I2C — Fuel Level Sensor

Dedicated SPI/I2C bus connects directly to the fuel level sensor with high-speed, noise-immune digital communication — eliminating the analog signal errors that plague 4-20mA level sensors.

DIGITAL · HIGH ACCURACY



MQTT / HTTPS Cloud

Data streams to cloud via MQTT for lightweight, real-time telemetry — or HTTPS for secure configuration and bulk data transfers. Event-triggered alerts ensure instant notification of anomalies.

MQTT + HTTPS



Android App Setup

Complete field configuration from the Android app in minutes. Connect the pre-wired harness, configure via app, and have live cloud data flowing — installation typically under 30 minutes.

30-MIN INSTALLATION

— RETURN ON INVESTMENT

Pays for Itself in Days.

A single pilferage event of 200 litres of diesel costs PKR 100,000+. The CELL 900G pays for itself the first time it prevents a theft — or catches a fraudulent fuel delivery.

30%

TYPICAL FUEL LOSS WITHOUT MONITORING

<30

MINUTES INSTALLATION TIME

24/7

REAL-TIME CLOUD MONITORING

∞

DEVICES – UNLIMITED SCALE

PROTECT YOUR FUEL TODAY

Stop the Loss. *Right Now.*

Every day without monitoring is a day your fuel is vulnerable. Contact HUNCH Automation for a free site assessment and rapid deployment quote.

 **GET PROTECTED NOW**

 **CALL AN ENGINEER**

PHONE

+92-345-8438162

EMAIL

info@hunch.com.pk

WEBSITE

www.hunch.com.pk

ADDRESS

4/17 M Block, Gulberg III, Lahore

