

INDUSTRIAL ENVIRONMENTAL MONITORING



PRODUCT DATASHEET

Fort Digital Power Trip Alert + CO2, Temperature and Humidity Sensors

LIVE Monitoring | Backup Battery | LTE 4G + Wi-Fi



CO2 + T + RH ENVIRONMENTAL MONITORING	4G LTE + Wi-Fi AUTO FAILOVER	18650 INTERNAL BACKUP BATTERY
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Live power status and environmental readings with configurable alerts, history logs and remote access for critical rooms, workplaces and facilities.

SAFETY NOTICE This product is an environmental monitoring and notification system. It is not a certified fire, smoke, gas or life-safety alarm and must not replace code-compliant detection, ventilation, emergency-stop or evacuation systems.

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1. Product Overview

The Fort Digital Power Trip Alert + CO₂, Temperature and Humidity Sensor System combines a Sensirion SCD30 environmental sensor with power-loss detection, a cellular/Wi-Fi gateway, mobile app and internal rechargeable battery. It provides remote live status, records environmental trends and sends notifications when configured events or thresholds are reached.

Core Capabilities

- Live external-power status with power-off and power-resume event records.
- Continuous CO₂ concentration, temperature and relative-humidity readings.
- Configurable alerts for power interruption and selected environmental thresholds.
- Historical graphs with highest, lowest and average readings plus CSV export.
- Wi-Fi plus 4G LTE connectivity with automatic failover when Wi-Fi is unavailable.
- Internal rechargeable 18650 battery for temporary operation during a power interruption.
- Open-air enclosure supports ambient sampling and reduces retained heat around electronics.
- Optional custom firmware, alert logic, escalation workflow and reporting requirements.

Monitored Outputs

Output	Displayed information	Unit / status
External power	Current state and power-off / power-resume events	ON / OFF
Carbon dioxide	Live CO ₂ concentration, trends and threshold records	ppm
Temperature	Live ambient temperature and history	deg C
Humidity	Live relative humidity and history	%RH

How It Works

1. **Measure:** The SCD30 measures CO₂, temperature and relative humidity.
2. **Watch power:** The Main Module monitors the availability of external USB power.
3. **Transmit:** Readings and status are sent through Wi-Fi or 4G LTE.
4. **Alert:** Authorised phones receive selected event and threshold notifications.

NETWORK DEPENDENCY Live viewing and alerts require an active Internet connection, valid app service and, when cellular is used, an activated Nano-SIM with data service and suitable coverage.

FORT DIGITAL
100% Locally Manufactured & Assembled

Power Trip Alert + CO₂, Temperature and Humidity Sensors

with **LIVE** Status Monitoring + Backup Battery + LTE 4G + WIFI

MONITOR • ALERT • PROTECT • ANYTIME • ANYWHERE

Compact Reliable 24/7 Monitoring

Smarter Environments Safer Tomorrows

Accurate CO₂, Temperature & Humidity Sensor

Power Status: ONLINE

CO₂: 467 ppm

Temperature: 30.7 °C

Humidity: 59.9%

History Logs:

- Power Off: 14 Sep 17:40:22
- Power Off: 14 Sep 17:40:22
- Power Resume: 14 Sep 17:51:16
- Power Off: 14 Sep 17:51:16

IDEAL FOR:

- SERVER ROOMS
- OFFICES
- SCHOOLS
- WAREHOUSES
- FACTORIES
- HOUSES

KEY BENEFITS:

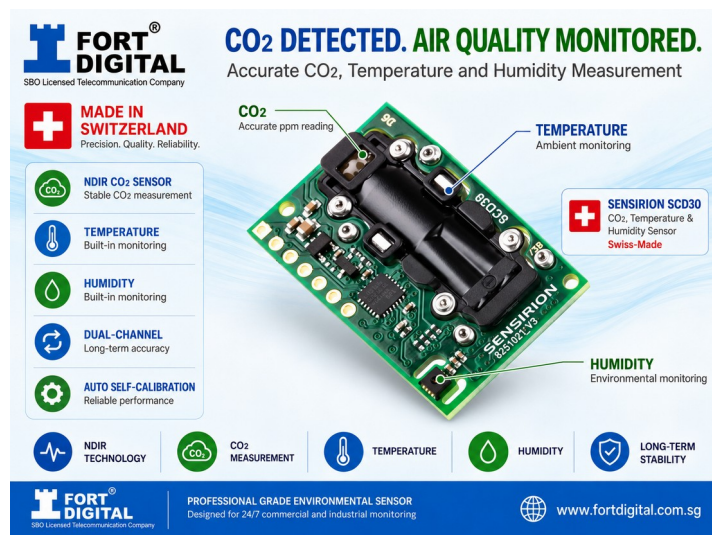
- Easy to Install
- Reliable & Secure
- Swiss-Made Sensor
- 24/7 Monitoring

Cleaner Air Safer Spaces Peace of Mind

FORT DIGITAL YOUR TRUSTED IoT PARTNER Hardware Development IoT & Safety - Weather - Temperature **SWISS TECHNOLOGY** FOR A CLEANER, SAFER WORLD www.fortdigital.com.sg +65 8151 5000

2. Sensirion SCD30 Sensor

The SCD30 combines dual-channel non-dispersive infrared (NDIR) CO₂ measurement with integrated temperature and humidity sensing. It is factory calibrated and linearised, and supports automatic or forced recalibration for long-term applications.



Sensirion SCD30 environmental sensor

Sensor parameter	Specification
CO ₂ measurement principle	Dual-channel NDIR infrared measurement
CO ₂ digital range	0 to 40,000 ppm through I2C or UART
Calibrated accuracy range	400 to 10,000 ppm
CO ₂ accuracy	+/- (30 ppm + 3% of measured value)
CO ₂ repeatability	+/- 10 ppm
CO ₂ response time	20 s, tau63%
Humidity range / accuracy	0 to 100 %RH / +/- 3 %RH at 25 deg C
Humidity response / drift	8 s, tau63% / <0.25 %RH per year
Temperature range	-40 to +70 deg C sensor output; CO ₂ operating range is 0 to 50 deg C
Temperature repeatability	+/- 0.1 deg C
Supply / current	3.3 to 5.5 VDC; 19 mA average at 2 s update; 75 mA maximum
Interfaces	I2C, UART (Modbus point-to-point, TTL logic) and PWM
Dimensions / weight	35 x 23 x 7 mm / 3.4 g
Published sensor lifetime	15 years under specified operating conditions
CALIBRATION ENVIRONMENT Automatic self-calibration requires the sensor to be exposed regularly to air near 400 ppm CO ₂ . For spaces that remain continuously occupied or consistently elevated, review the calibration method for the application.	

Sensor source: Sensirion SCD30 Sensor Module Datasheet, Version 1.0 - D1, May 2020.
https://sensirion.com/media/documents/4EAF6AF8/61652C3C/Sensirion_CO2_Sensors_SCD30_Datasheet.pdf

3. System Specifications

The integrated Main Module provides processing, power-status detection, wireless communications, battery backup and mobile-app connectivity for the SCD30 sensor.

Parameter	Specification
Overall enclosure size	125 mm x 90 mm x 40 mm
Input power	5 VDC through USB-C port
Supplied power cable	USB-A to USB-C, approximately 2-3 m
Enclosure	DIN-rail / PLC-style industrial plastic enclosure; open-air ventilation design
Internal battery	Rechargeable NCR 18650 Li-ion battery
Power monitoring	External USB power ON/OFF status with event recording and alerts
SIM format	Nano-SIM; SIM card and mobile data plan are not included
Processor	Dual-core CPU, up to 240 MHz
Flash memory / PSRAM	4 MB / 8 MB
Connectivity	Wi-Fi plus 4G LTE with automatic failover from Wi-Fi to LTE
Mobile network	4G LTE Cat-1 with 2G GSM/GPRS/EDGE support
LTE FDD bands	B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B18 / B19 / B20 / B25 / B26 / B28 / B66
LTE TDD bands	B34 / B38 / B39 / B40 / B41
Overall operating range	0 to 50 deg C; 5% to 85% RH, non-condensing
Mobile application	Fort Digital Sensors app for iOS and Android

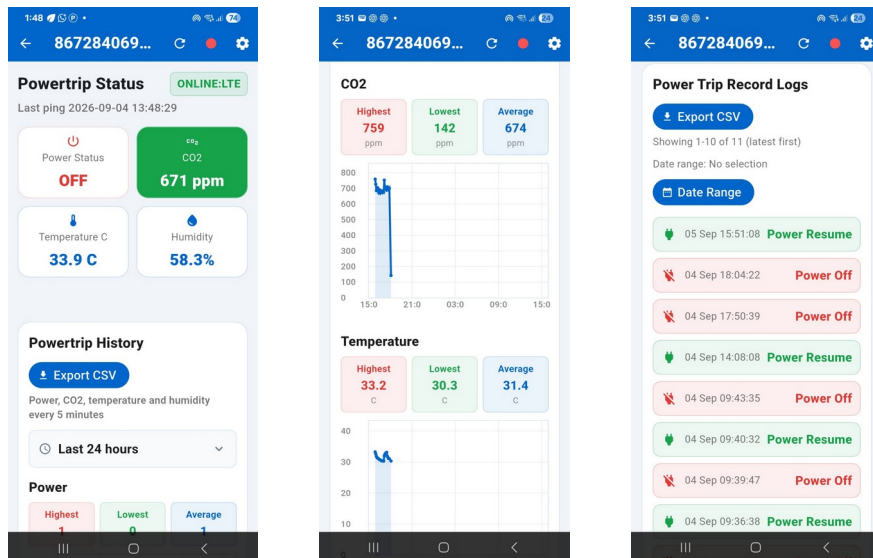
Power, Battery and Installation Notes

- Install indoors or in a protected, clean and dry location; avoid condensation, direct rain, corrosive vapour and explosive atmospheres.
- Keep enclosure openings unobstructed so the sensor samples representative room air.
- Avoid direct sunlight, heaters, air-conditioner outlets, open windows and strong local airflow unless that source is intentionally monitored.
- Battery runtime varies with battery condition, temperature, signal strength, network activity and configuration; test backup operation periodically.
- Band support does not guarantee service on every operator; confirm SIM activation, APN settings, coverage and local carrier compatibility.

BATTERY SAFETY Use only the specified battery type and supplied or approved charging equipment. Do not short-circuit, crush, puncture, expose to fire or replace the battery while external power is connected.

4. Mobile App, Applications and Supply

Live Monitoring and Records



Live status | Environmental history | Power-trip records

- Live external-power status, CO2, temperature and humidity readings
- Configurable event and threshold push notifications
- Historical graphs with highest, lowest and average values
- Power-off and power-resume records with date and time
- Selectable periods and CSV export for reporting and analysis
- Remote viewing from authorised iOS and Android devices

Typical Applications

Environment	Monitoring purpose
Server and equipment rooms	Power interruption, heat, humidity and ventilation awareness
Offices and meeting rooms	Occupancy-related CO2 and indoor-comfort trends
Schools and training rooms	CO2, temperature and humidity visibility
Warehouses and factories	Remote environmental status and abnormal-condition alerts
Homes and remote sites	Power and room-condition monitoring through mobile connectivity

Standard Package

Qty	Item	Notes
1	Fort Digital Main Module with SCD30 sensor	Includes internal rechargeable NCR 18650 battery
1	USB-C charging cable	Approximately 2-3 m
1	5 V Safety Mark adaptor	For Main Module charging and operation
-	Fort Digital Sensors mobile app	Service terms according to quotation or subscription

Not included: Nano-SIM card, mobile data plan, Wi-Fi service, mounting hardware and installation materials unless stated in the quotation.

5. Deployment, Alerts and Maintenance

Commission the system at its final installation point so airflow, connectivity, power status, thresholds, notifications and backup operation can be verified under representative site conditions.

Quick Deployment

Step	Action	Commissioning guidance
1	Connect	Insert an activated Nano-SIM if cellular service is required, then connect approved 5 V USB power.
2	Register	Install the app, scan the device QR code and enter the supplied PIN.
3	Configure	Set Wi-Fi, alerts, environmental thresholds and authorised recipients.
4	Commission	Confirm readings, power-trip alerts, Wi-Fi/LTE failover and battery operation.

Alert and Fire-Indicator Guidance

Power interruption, high CO₂, high temperature and humidity limits may be enabled or disabled according to the site workflow. Thresholds should be selected for the room, occupancy pattern, ventilation design and operational risk.

FIRE INDICATOR ONLY A sudden simultaneous rise in CO₂ and temperature can be consistent with combustion, but it is not proof of fire. Other sources may cause similar readings, and some fires may not produce an early CO₂ rise at the sensor location. Maintain certified smoke, heat and fire-alarm systems.

Commissioning Checklist

- Air openings are clear and the unit samples representative room air.
- Live power, CO₂, temperature and humidity values update in the app.
- Configured thresholds and power events generate the expected notifications.
- Wi-Fi interruption causes successful 4G LTE failover where cellular service is configured.
- External power interruption is recorded and battery-backed monitoring continues.
- All authorised recipients can access live status, history and event records.

Routine Maintenance

- Keep ventilation openings clear and wipe the enclosure with a dry, soft cloth.
- Periodically test notifications, Wi-Fi/LTE failover and backup-battery operation.
- Review logs for repeated offline events, abnormal drift or persistent threshold alarms.
- Review SCD30 calibration settings whenever the installation environment changes.

IMPORTANT Specifications may change without notice. Final configuration, accessories, subscription, warranty and support scope are governed by the accepted quotation and Fort Digital terms and conditions.



SCAN TO DOWNLOAD THE FORT DIGITAL SENSORS APP

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