

INDUSTRIAL MONITORING



PRODUCT DATASHEET

Fort Digital Industrial Dry Contact Alert System

1-32 Channels with Internal Backup Battery



1-32 MONITORING CHANNELS	4G LTE + Wi-Fi DUAL CONNECTIVITY	18650 INTERNAL BACKUP BATTERY
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LIVE status monitoring, instant push notifications and event history for industrial equipment, building services and critical assets.

APPLICATION NOTE This product is a remote monitoring and alerting aid. It is not a certified life-safety, fire-alarm, emergency-shutdown or protective control system.

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1. Product Overview

The Fort Digital Industrial Dry Contact Alert System converts up to 32 field signals into live mobile status, push notifications and searchable event records. The compact gateway combines Wi-Fi and cellular connectivity with an internal rechargeable battery so monitoring can continue during common power or router interruptions, subject to battery charge and mobile coverage.

Core Capabilities

- Live monitoring of every configured channel from the Fort Digital Sensors mobile app.
- Approximately 3-second status refresh under normal network conditions; not limited to a one-time SMS alert.
- Instant push notifications when a channel changes state, including while the app is closed or the phone is in standby.
- Incident history and event logs for operational review and troubleshooting.
- Wi-Fi plus 4G LTE connectivity with automatic failover when Wi-Fi becomes unavailable.
- Internal rechargeable 18650 battery in the Main Module for temporary backup operation.
- Individual channel naming and central monitoring of 1-16 or 1-32 inputs.
- Optional custom firmware, alert logic, escalation workflow and communication sequence.

System Configurations

Configuration	16-channel system	32-channel system
Main Module	1 unit	1 unit
16-Channel Input Module	1 unit	2 units
Total monitored inputs	Up to 16	Up to 32
Mobile app view	Channels 1-16	Channels 1-32
RS485 addressing	One slave ID	Unique slave ID per module

How the System Works

1. **Monitor:** Field contacts or compatible DC signals connect to D1-D16 on each input module.
2. **Communicate:** The input module reports channel states to the Main Module through Modbus RTU over RS485.
3. **Transmit:** The Main Module sends status data through Wi-Fi or 4G LTE to the Fort Digital service.
4. **Alert:** Authorised phones display live status, push notifications and event history.

NETWORK DEPENDENCY Alert delivery, live refresh and cloud access require an active Internet connection, valid app service and, when cellular is used, an active SIM with data service and suitable coverage.

2. Main Module Specifications

The Main Module is the system gateway, communications controller and battery-backed power source for the monitoring platform.

Parameter	Specification
Dimensions	125 mm x 90 mm x 40 mm
Weight	206 g
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
SIM format	Nano-SIM; SIM card and mobile data plan are not included
Processor	Dual-core CPU, up to 240 MHz
Flash memory	4 MB
PSRAM	8 MB
Wireless connectivity	Wi-Fi plus 4G LTE; 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
Operating temperature	-10 deg C to +70 deg C
Operating humidity	5% to 85% RH, non-condensing
Module interface	RS485 connection to one or two 16-channel input modules
Mobile application	Fort Digital Sensors app for iOS and Android

Power and Connectivity Notes

- Battery operating time varies with battery condition, temperature, signal strength, network activity, configuration and connected load.
- The internal battery must be maintained at a suitable charge level and periodically tested as part of the site's maintenance programme.
- Band support does not guarantee service on every operator. Confirm SIM activation, APN requirements, LTE coverage and local carrier compatibility before deployment.
- The open-air enclosure promotes natural airflow and helps reduce retained heat around internal electronics; install in a clean, dry and protected location.

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.

3. 16-Channel Digital Input Module

Each input module provides 16 optocoupler-isolated digital input channels. A second module expands the system to 32 channels while retaining one mobile-app view.

Parameter	Specification
Dimensions	95 mm x 90 mm x 45 mm
Weight	145 g
Supply voltage	12 VDC from the Main Module or an approved 12 VDC adaptor
Load current	500 mA
Enclosure	DIN-rail / PLC-style industrial plastic enclosure
Protocol	Modbus RTU over RS485
Modbus role	Slave device
Supported slave ID	1 to 255; use a unique ID for each module on the same RS485 bus
Digital inputs	16 optocoupler-isolated channels
Hardware response time	Less than 20 ms
Nominal ON level	9-24 VDC
Nominal OFF level	0-9 VDC
Input compatibility	NPN and PNP digital inputs, dry contacts, wet contacts, PLC outputs, industrial relays, NO/NC switches, pulse counters and compatible digital sensors
Input isolation	Optocoupler isolation for improved electrical separation and noise immunity
Mounting	DIN-rail mounting or screw mounting
Operating temperature	-10 deg C to +70 deg C
Operating humidity	5% to 85% RH, non-condensing

Terminal Functions

Terminal	Function	Connection guidance
VCC	12 VDC supply / excitation	Connect only as shown in the approved wiring diagram
GND	Power return / common	Maintain correct common and polarity
A / B	RS485 data pair	Connect A-to-A and B-to-B; do not reverse
RS485 GND	Communication reference	Connect to the matching reference terminal
S/S	Input common	Link to common GND only as specified for the installation
D1-D16	Individual monitored inputs	One assigned signal per channel
ELECTRICAL VERIFICATION The system integrator must verify the source contact type, voltage, polarity, isolation, protective devices and wiring before connection. Never exceed the stated input range.		

4. Application, Software and Supply

Mobile App Functions

- Live status for all configured channels
- Individual channel names
- Instant push notifications
- Incident history and event logs
- Multi-device monitoring within one app
- Remote viewing from authorised phones



**FORT DIGITAL
SENSORS APP**

Typical Applications

- UPS systems, generators, ATS panels, switchboards and power-distribution equipment
- Water, fire, sewage, booster and process pumps; float switches and tank-level contacts
- Refrigerators, freezers, cold rooms, chillers, HVAC systems and compressors
- PLCs, SCADA/HMI panels, industrial relays, production machines and conveyor systems
- Alarm panels, access-control systems, CCTV equipment, server racks and telecom systems
- Solar systems, battery banks, water-treatment equipment and other compatible digital outputs

Standard 16-Channel Package

Qty	Item	Notes
1	Main Module	Internal rechargeable NCR 18650 battery
1	16-Channel Digital Input Module	Second module required for 32 channels
1	Cable joiner	For common / ground distribution
1	USB-C charging cable and 5 V adaptor	For Main Module
1	12 V adaptor	For Digital Input Module, where specified
-	Mobile app access	Service terms according to quotation or subscription

Not included: Nano-SIM card, mobile data plan, field wiring, external sensors, relays, protective devices, installation materials and equipment-specific interface accessories unless stated in the quotation.

Deployment Requirements

- Suitable indoor or protected enclosure location within the specified temperature and humidity range.
- Stable 5 VDC charging supply and the required 12 VDC source for the input module.
- Wi-Fi and/or activated cellular data service with adequate coverage.
- Equipment interface drawings and confirmation of signal type, voltage and normal state.
- Commissioning test for every channel, notification recipient and power/network failover condition.

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

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