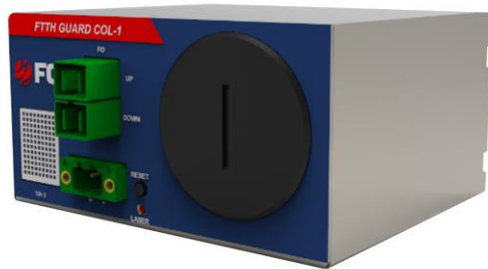


Sensor Aggregator

Universal device for monitoring of access to objects and environmental parameters despite lack of power supply in the field



Sensor Aggregator



Smart Guard Application

Main characteristics:

- 6 independent ports for any binary sensor (on-off switch, reed switch, water level sensor, disruptions sensor, light sensor etc.)
- 1 separated voltage input for power supply monitoring
- Battery power supply – minimum of 3 years without battery replacement (depending on configuration)
- Optional - external 12V DC connector
- Built-in temperature and humidity sensor
- Data and alarms transmission via single mode fiber
- In-field configuration and diagnosis via Bluetooth interface and smartphone application
- Periodic notifications on status of sensors
- Laser power control
- Battery voltage monitoring
- Alarm in case power supply outage when working on AC/DC
- LED indicators
- Metal enclosure IP30

Optional features:

- Ethernet based data transmission
- PoE
- Internal WDM filters for active fiber applications
- Up to 20 devices in a chain on a single fiber
- Possibility of redundant upstream data transmission architecture
- Hardened version with dedicated enclosure IP68
- Additional external temperature and humidity sensor

Sensor Aggregator

Device includes:

- Sensor Aggregator device
- D-size battery
- AC/DC converter 12V
- UTP or fiber patchcord
- Assembly accessories
- Smart Guard application for smartphone

Optional:

- Door opener sensor (switch / reed switch)
- Manhole cover opener sensor (hardened)
- Disruptions sensor
- Leaning sensor
- Flood sensor
- Light sensor
- Rack brackets

Certificates and standards:

- Environmental: IP 30 according to EN 60529/IEC 529
- Laser class: PN-EN 60825-1
- CE
- RoHS

Technical specification:

Smart Guard Sensor Aggregator	
Laser class	3M
Laser power	-5 to +4 dBm (configurable)
Laser wavelength*	1310 nm/1550 nm/CWDM
Pass-through attenuation	< 0,8dB
Connector type	SC/APC
Battery parameters	size D / voltage 3.6V
AC/DC parameters	12V / 300mA
working conditions temperature	0 to +60 (70**) degrees C
Number of sensors inputs	6
Number of voltage sensor inputs	1
Network communication protocol*	Ethernet 10/100 BASE
Dimensions (w × h × d) [mm]	104 x 89 x 54

- *depending on device type
- **Hardened version

Data Receiver

Data Receiver for aggregation and conversion of data between fiber network and IP LAN/WAN network which works with the Smart Guard Centralized System

Main characteristics:

- 32 duplex fiber ports
- Up to 20 Aggregators per each port
- 1 binary output, 2 binary inputs
- 48 V DC power supply
- Power supply redundancy
- Built-in temperature and humidity sensor
- Configuration via RS-232 or LAN
- Works together with the Smart Guard Centralized System
- Optical power monitoring
- Raising alarms when Aggregator becomes unavailable
- Optionally internal WDM filter for active fiber application
- LED indicators
- Rack mount 19" 1 RU



Data Receiver

Certificates and standards:

- Environmental: IP 30 according to EN 60529/IEC 529
- CE
- RoHS

Smart Guard Data Receiver	
Receiver sensitivity	-35 dBm
Received wavelengths	1250-1620 nm
Pass-through attenuation of WDM filter	< 0,5dB
Connector type	SC/APC (LC/APC*)
Power supply voltage	48V
Working conditions temperature	0 to +60 degrees C
Network communication protocol	Ethernet 10/100 BASE
Dimensions (w × h × d) [mm]	440x45x300

*LC/APC connectors in the WDM version

Centralized data collection and analysis System

System for collecting, analysis, archivisation and presentation of monitoring data received from Sensor Aggregators and providing notifications on events

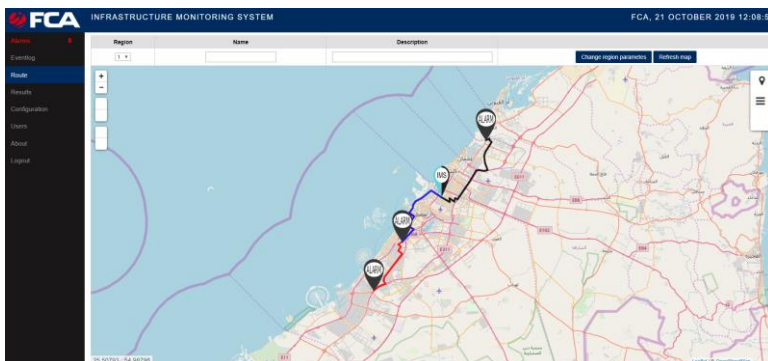


Alarm ID	State	Object	Date min	Date max	Create event	Resolved event	State	Comment
543	2019-10-10 12:56:03	Dubai Enclosure 01 IC 1			unavailable		Change	Change
544	2019-10-10 12:56:00	Dubai Cabinet 01 IC 3			unavailable		Change	Change
543	2019-10-10 11:10:20	Dubai Enclosure 01 IC 1	2019-10-10 11:10:20	2019-10-10 11:10:20	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
542	2019-10-10 11:10:20	Dubai Enclosure 01 IC 1	2019-10-10 11:10:20	2019-10-10 11:10:20	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
541	2019-10-10 11:05:38	Dubai Enclosure 01 IC 1	2019-10-10 11:05:38	2019-10-10 11:05:45	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
540	2019-10-10 10:33:09	Dubai Enclosure 01 IC 1	2019-10-10 10:33:09	2019-10-10 10:33:20	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
539	2019-10-10 10:33:09	Dubai Enclosure 01 IC 1	2019-10-10 10:33:09	2019-10-10 10:33:09	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
538	2019-10-10 10:32:27	Dubai Enclosure 01 IC 1	2019-10-10 10:32:27	2019-10-10 10:32:27	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
537	2019-10-10 10:30:02	Dubai Enclosure 01 IC 1	2019-10-10 10:30:02	2019-10-10 10:30:02	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
536	2019-10-10 10:06:37	Dubai Enclosure 01 IC 1	2019-10-10 10:06:37	2019-10-10 10:06:38	activation of sensor no 3 (Cable tray opens)	deactivation of sensor no 3 (Cable tray opens)	Change	Change
535	2019-10-10 09:48:55	Dubai Enclosure 01 IC 1					Change	Change

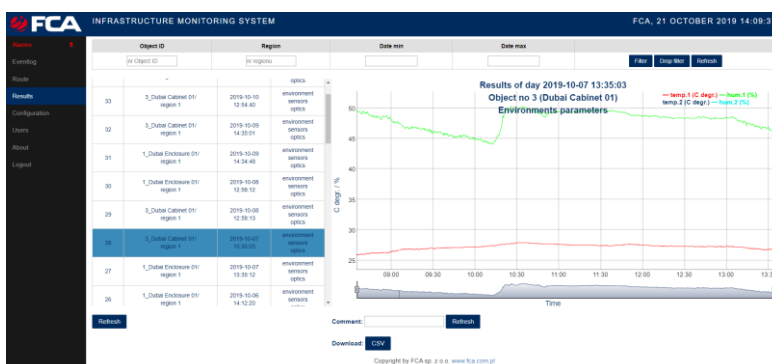
Alarm list

Main characteristics:

- Communication via HTTPS / API / SNMP
- Presentation of monitoring information (events) as an alarm list
- Acceptance and comments on alarms
- Notifications via SNMP, e-mail and syslog
- Reading of alarm list using SNMP versions 1, 2c and 3
- Locations of Aggregators on map
- Temperature and humidity register
- Sensors' state register
- Monitoring of battery voltage and/or external power supply of Sensor Aggregator
- Configurable alarm thresholds for temperature, humidity, optical power and battery voltage
- Possibility of continuity and optical link loss analysis
- User event log
- User administration panel with possibility of setting the privileges
- Possibility of database backup



Localization of Aggregators on the map



Environmental parameters register