FM GUARD
FACILITY MANAGEMENT CONTROLLER
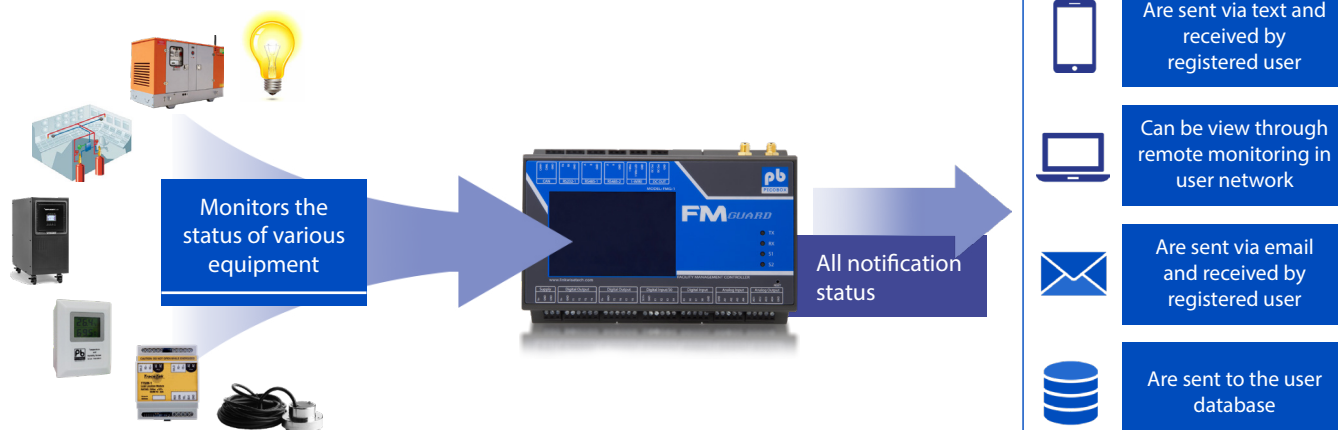

PICOBOX

INTRODUCTION

Managing and constantly checking of the facilities has become an essential way of making sure all the crucial equipment are working properly and no problem may arise anytime. Thus, spending time to time checking the facilities consume too many resources and can become inefficient once unnoticed problem arises. Unnoticed problem can cause downtime which can lead to business losses. However, with a reliable monitoring system, losses can be minimized and preventive actions can be taken.

FM Guard is a smart monitoring controller that provides 24/7 monitoring system which can sends an update through SMS/Text or emails, anytime and anywhere.

SAMPLE APPLICATION

Monitors the status of various equipment

All notification status

Are sent via text and received by registered user

Can be view through remote monitoring in user network

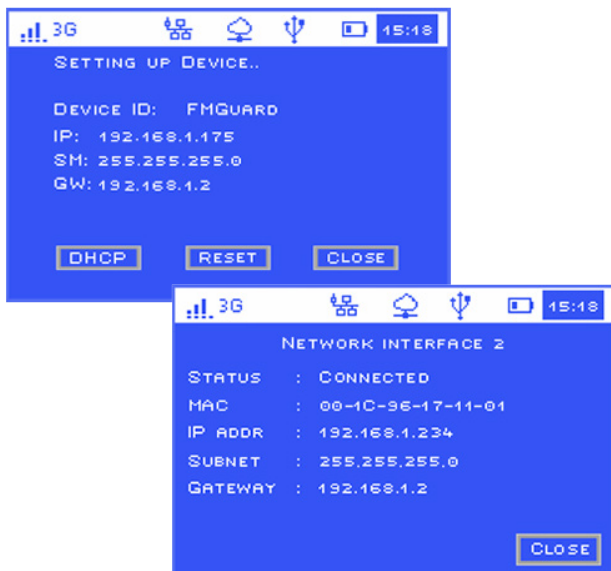Are sent via email and received by registered user

Are sent to the user database

FEATURES

- Has a 240 x 160 graphical display with a touchscreen that displays the current status of the I/Os.

- Alert notification via SMS and email

- Can act as sensor gateway for IoT

- Penta band worldwide UMTS/ HSPA engine

- With on board 2Ah Li-Ion battery and state of the art intelligent charging

- With auto update function for firmware and system updates

- Remote ON/OFF via logic expression and SMS command

- With up to 500 event logs, First IN First OUT

- Supports data logging on database and SD card

- With user-friendly interface accessible using any web browser

- I/Os are expandable using PICOBOX DAQ

- Embedded with firewall

Efficiently monitor your facilities through SMS/Text or email. Fast, Easy and Reliable

Picobox FMGuard is designed to provide alert status in the most convenient way-through SMS and email. In just 2-3 seconds you will be able to receive an alarm updates when something happened to your facilities and therefore preventive action can be taken care of immediately. The facilities manager can now easily monitor the status of each device and equipment in real-time and remotely.
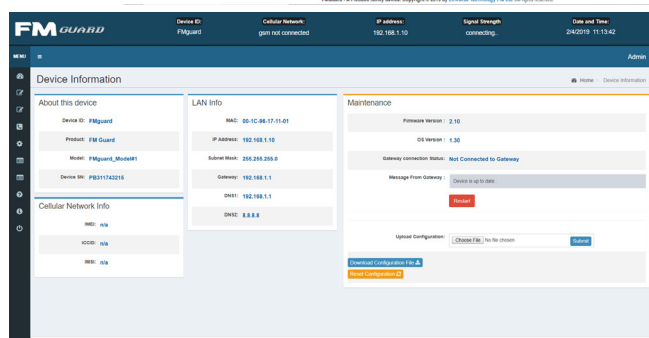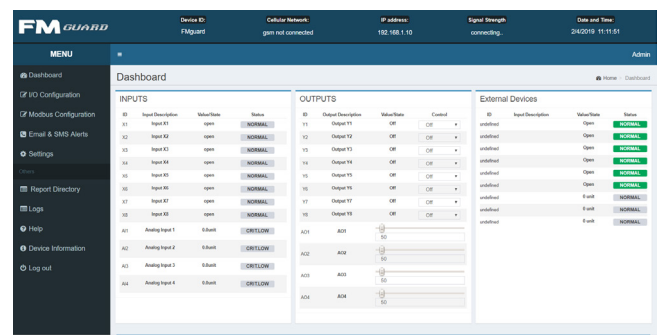
Graphical 240x160 pixels display

Simple LCD Display with touchscreen technology used to view the current status of the device without going through your PC.

Real-time monitoring

FMGuard has an outstanding graphical user interface that shows the current status and information of devices connected to it. The user interface is web-based, no need to install software, it is 100% open source. The user-friendly UI made the configuration easier to set up and maintain.

Easily expand monitoring capacity up to 64 points.

FMGuard is capable of expanding its monitoring capabilities up to 64 monitoring points through expansion modules like DAQ. Able to monitor status, alarms and IO availability using remote PC by visual representation (dashboard) and log reports. FMGuard can send 30 simultaneous SMS and Email alerts.

FMguard as a sensor gateway for IoT

UPS   Sensor   FDAS

Water Leak   PLC

JSON

IoT

Able to connect your existing devices into one monitoring system

Why Monitor your facilities?

Providing the best solutions has always been the secret in managing your facilities efficiently and effectively. Therefore, any problem may arise should be anticipated and taken care of as soon as possible.

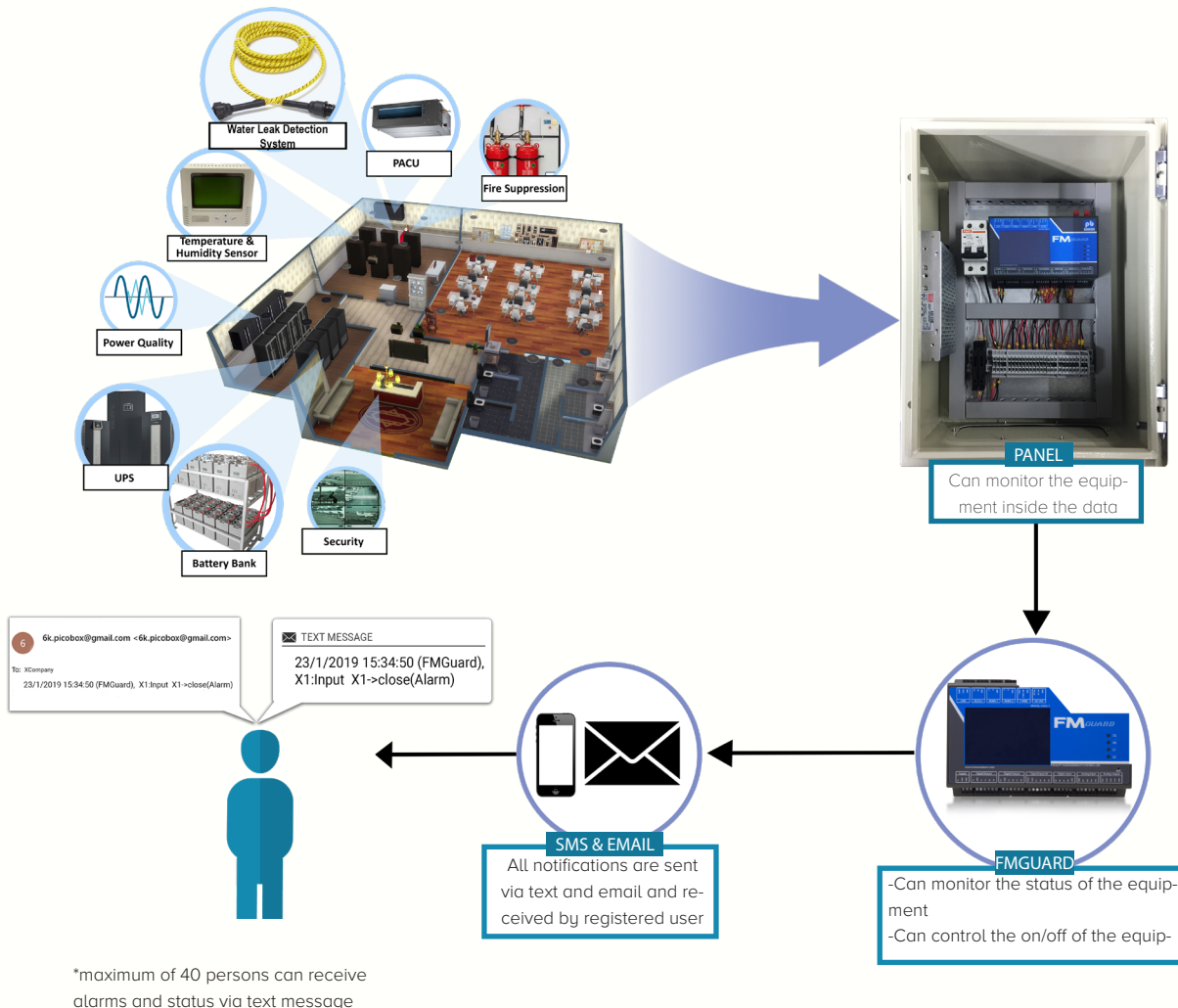**But will you be able to foresee any problem in the future? Or even check your facilities 24/7?**

FMGUARD is designed to solve your problem, originated from 4 different models in the past (Message Master; 2000; 4000; 5000). Linkwise Technology recently developed FMGuard as the most advanced monitoring controllers that combined these 4 models into one and innovate a new powerful features for you to fully experience not just the efficient and effective way of monitoring your facilities, but also the convenience of getting an updates 24/7 through SMS or email wherever you are. A proven monitoring system that is used in Data Center, Facilities and a wide variety of applications.

APPLICATIONS

- Data Center
- Manufacturing Process
- Telecommunication
- Fire and Security
- Energy Efficient & Power Management
- Environmental
- M&E Facility Management

DATA CENTER SETUP

FMGuard (Facility Management Guard) is a standalone facility monitoring system with an alarm notification using SMS and Email. A perfect companion product for all IT Data Centers, server rooms and any related facility. Providing a 24 x 7 continuous monitoring to all of your critical facilities and alerting you instantly on any alarm.
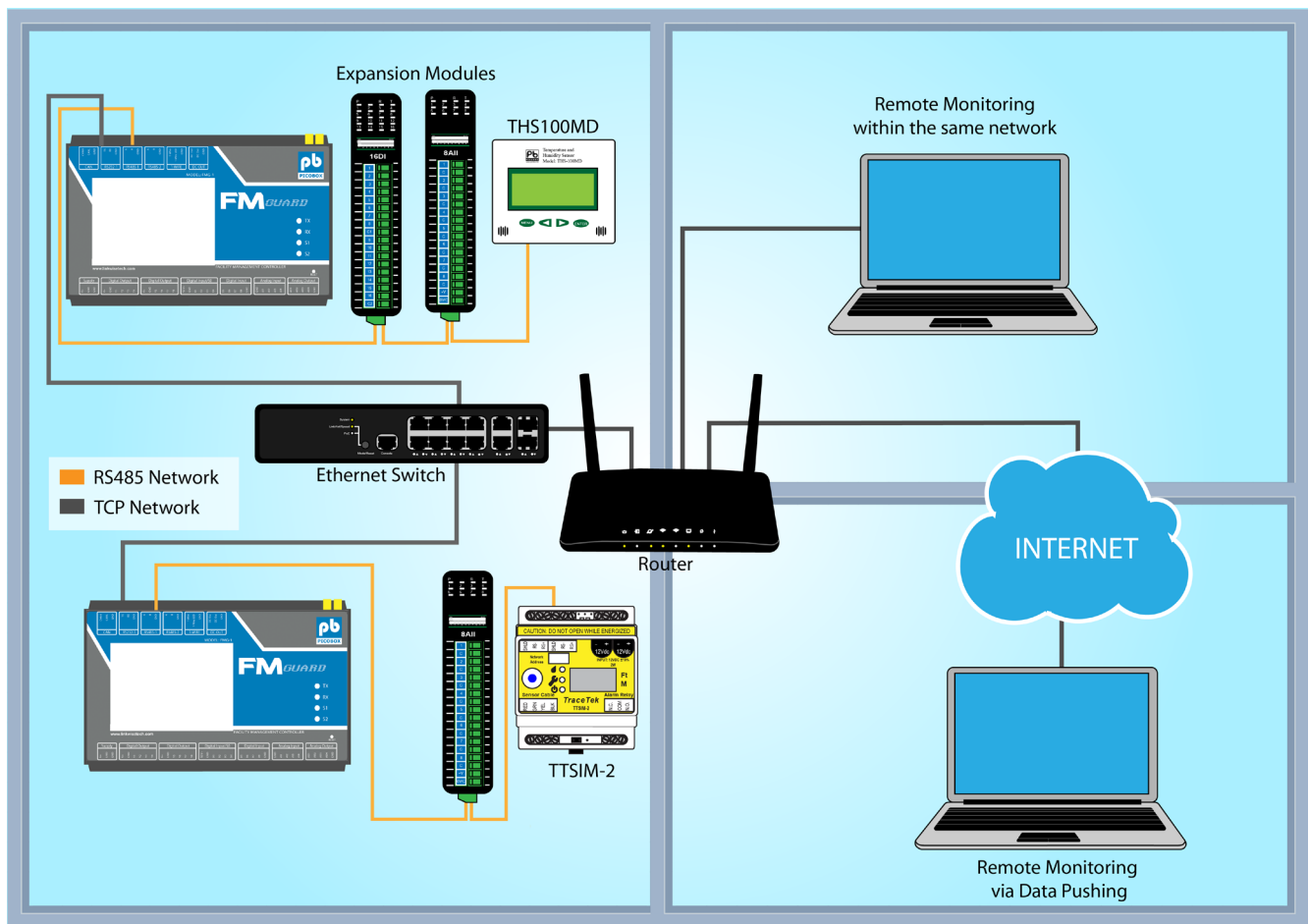

Water Leak Detection System

PACU

Fire Suppression

Temperature & Humidity Sensor

Power Quality

UPS

Security

Battery Bank

PANEL
Can monitor the equipment inside the data

FMGUARD
-Can monitor the status of the equipment
-Can control the on/off of the equip-

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To: XCompany
23/1/2019 15:34:50 (FMGuard), X1:Input X1->close(Alarm)

✉ TEXT MESSAGE
23/1/2019 15:34:50 (FMGuard), X1:Input X1->close(Alarm)

SMS & EMAIL
All notifications are sent via text and email and received by registered user

*maximum of 40 persons can receive alarms and status via text message

Modbus Communication for FMGuard
Facility Management Guard

Modbus DAQ is designed to collect data from low-level interface devices then send the data to FMGuard through MODBUS RTU. With multiple Modbus DAQ, FMGuard can monitor up to 64 monitoring points including the built in IO's of FMGuard. Modbus DAQ is also compatible with any devices with Modbus RTU protocol.

Any model of MODBUS DAQ can communicate with FMGuard using MODBUS RTU. FMGuard has automatic connectivity supervision that ensures all devices are communicating. Communication failure to any devices will be reported to the users via SMS.

Devices such as sensors and leak detection systems (ex. THS100MD and TTSIM-2) are capable of sending data to FMGuard via MODBUS RTU. FMGuard can read the real time values of these devices 24/7.

DIFFERENT WAYS OF MONITORING

Monitoring via SMS and Email Alerts

FMGuard can prompt the user via SMS and Email alerts when there is a change on the state of the equipment, system or device connected to it. It only takes 2-3 seconds to receive the alarm notification. FMGuard can even send messages to a specific person for the specific device.

FMGuard is an intelligent device that can answer pre configured SMS to the numbers registered on it. Users can ask the status of each device connected to it, the signal strength and more. Users with authoritative rights can also command FMGuard to turn ON and OFF devices connected to the digital output.

Monitoring via User Interface

FMGuard is packed with a user interface that can be easily accessed using any web browser. The users can view real-time status of all devices connected to FMGuard. They can also configure the FMGuard settings using this interface.

Monitoring using Data Pushing

FMGuard can send data to a server with a given time interval and during the occurrence of an alarm. Using this feature, the user can check FMGuard status anytime and anywhere around the world.

PHYSICAL	
Operating Voltage	24 to 36 VDC
Battery	On-board 2Ah (nominal) Li-Ion Battery
Processor	Cortex A5 32 bit ARM processor
Cellular Modem	GSM: 850/900/1800/1900 MHz UMTS: 800/850/900/1900/2100 MHz
Operating Temperature & Humidity	0-45 °C, 5-90% non condensing
Physical Size	W 160.2 x H 89 (top) x D 53.5 mm without terminal blocks and connectors.
Weight	Approximately 465 g. without accessories
Mounting	Industrial standard ABS housing with 9M DIN rail mounting, pluggable
Connectors	2-way pluggable terminal blocks
Security Feature	2 Level security, administrator and guest
Date and Time	Support NTP server time zone synchronization Real time clock w/ battery back up
LED Indicators	TX=Reserve for Modbus transmit RX=Reserve for Modbus receive **S1 and S2 = for signaling status and possible errors**
Communication Port	2x RJ45, Ethernet (10/100 Mbit) & RS232 Mini USB-B, Service port SMA female connector for UMTS USB host port (USB-A receptacle) RS485 Modbus Serial Port
Interface	HTML interface, via a web browser Dot Matrix LCD with 240x160 pixels, touch screen with virtual buttons
NETWORK	
Network Support	**Static and Dynamic IP**
Network Protocol	**a.TCP (Transmission Control Protocol)** **b.IP (Internet Protocol)** **c.HTTP (Hypertext Transfer Protocol)**
DIGITAL INPUT	
Digital Input Description	8x Digital Input Logic high: 8 to 40VDC Logic Low: -5 to 3 VDC Impedance: $3.3k\Omega$
Configuration	Independent configuration of input description, trigger delay, open/close status description
DIGITAL OUTPUT	
Digital Output Description	8 x digital solid-state digital output Max. 36 volt / 1.5 A per. channel Short-circuit, ESD, Inductive kick-back protected up to 20 mH User-supplied power
Configuration	User defined output description
Output Control	Through SMS or locally on/off relay outputs through web browser and through Logic Expression

ANALOG INPUT	
Analog Input Description	4 x analog inputs Range is 0-5, 0-10VDC or 0-20, 4-20 mA Resolution: 12 bit Accuracy: Typ. ±0.3% FSR @ 25°C Impedance: 40 kΩ (V)/504 ohm (C)
Configuration	Configurable input description, scaling, critical high/high/low/critical low alarm points
ANALOG OUTPUT	
Analog Output Description	4 x analog outputs. Range is 0-5, 0-10VDC or 0-20, 4-20 mA Resolution: 12 bit Accuracy: Typ. ±0.3% FSR @ 25°C
Configuration	--
Output Control	--
MODBUS PROTOCOL	
Maximum No. of IO pts.	64
Maximum No. of Expansion Modules	5
Acceptable Addresses	1-247
Maximum Cable Length	1,000 m @ <100kbit; this limit is highly influenced by the quality of the cable, signaling rate, noise etc.
Baud Rate	9600, 14400, 19200, 38400, 56000, 57600, 115200
Data Bits	7, 8
Parity	None, Odd, Even
Stop Bit	1, 2
REMOTE MANAGEMENT	
Remote Command	a. Add / edit / delete mobile phone groups, repeat time b. Query Operational / Authorizer / Forwarder mobile phone numbers c. Query digital input / digital output / analog input / analog output status d. Query health check e. On / Off output equipment / devices f. Acknowledgment
SMS AND EMAIL ALERT	
Phone Groups	a. 40 Operation Numbers/Email b. 4 Authorized Numbers/Email c. 8 Escalation Numbers/Email d. Accepts International phone number format and supports auto roaming
Configurable SMS Message	Digital Inputs, Digital Outputs: Alarm and Normal Analog Inputs, Analog Outputs: Critical low, Low, Normal, High and Critical High
Auto Health Check	Programmable daily or once a week health check
Time Stamp	SMS and Email sent and received with time stamps

PHYSICAL LAYOUT

Front view

Left view

Top view

Back view

Right view

Bottom view

OPTIONAL ACCESSORIES

ANTENNA EXTENDER

Model: Ant3db3m
Type: 3db gain 900/1800 MHz Antenna
Mount: Magnetic base mounting
Length: 32cm
Cable: 3m RG179 coaxial cable
Features: Boost up GSM signal in enclosed area. Use to maximize signal performance.

TEMPERATURE AND HUMIDITY SENSOR

Model: THS-100MD
Power: 12-4V DC
Range: -20-70 DegC, 0-100%RH
Accuracy: +/-0.3 DegC, +/- 3%RH
Dimension: 86 x 86 x 34 mm
Modbus Connection: 2 wired Modbus RTU
Connection Interface: RS485

SPOT SENSOR

Model: SP-12
Type: Spot water detection probe
Power: 1 2VDC or 24VDC non polarity
Output: Normally close (NC) relay dry contact 12 or 24VDC, 1A (non polarity)
Sensing Height: 1mm to 6mm (adjustable)
Dimension: 24 (h) x 44 (diameter) mm

TEMPERATURE AND HUMIDITY SENSOR

Model: THS-104D
Power: 12-24V DC
Range: 0-50 DegC, 0-100% RH
Accuracy: +/- 0.5 DegC, +/- 5% RH
Output: 4-20mA