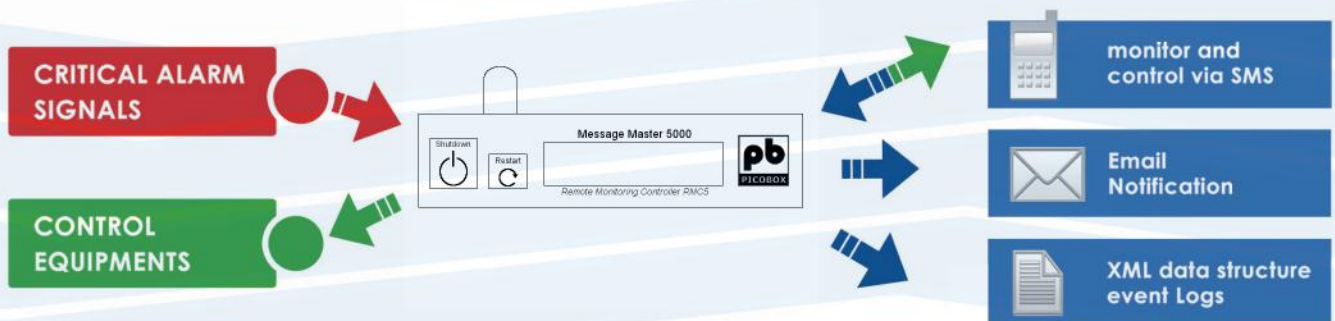# MESSAGE MASTER 5000

Model: RMC5

PICOBOX

Comprehensive Environmental Monitoring System with SMS alert and email notification

Overview

Facilities are essential part of every building installation. As machineries, they are also needed for profit generation. It is important that facilities are operated efficiently and well maintained to avoid unnecessary downtime. Down time is an expensive affair which can lead to many business losses when an important facility breaks down. An aspect of maintenance is to know the condition of equipment, being able to monitor them and reduce their downtime.

In response to the fast phase technological advancement, Linkwise's research and development team strives hard in improving its product line, thus releasing its latest model of Picobox system. Picobox system is a Critical monitoring System designed to meet all aspects of facility monitoring.

Message Master 5000 is a comprehensive and improved model from its predecessor yet maintains its simplicity, reliability, scalability, quality and ease of use. It's SMS alert sending was improved utilizing 3G network, E-mail alert sending through mobile data and to make it more efficient standalone monitoring system, a remote access via mobile data was also included. Another new feature is the capability of receiving and transmitting high level signals from equipment via Modbus RTU and Modbus TCP.
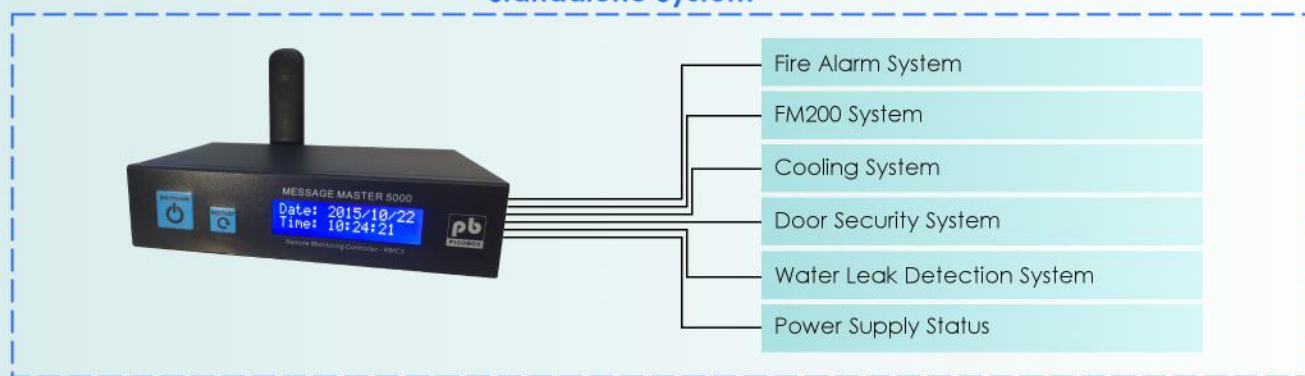
Expansion Module for Message Master 5000

Message Master 5000 is designed as standalone system. For flexibility, MM5K has the capability to communicate with equipment via Modbus TRU / Modbus TCP protocol.

Picobox DAQ communicates with message master 5000 via Modbus RTU protocol to monitor additional input points. It offers wide variety of selection/combination of IO's depending on system requirements.
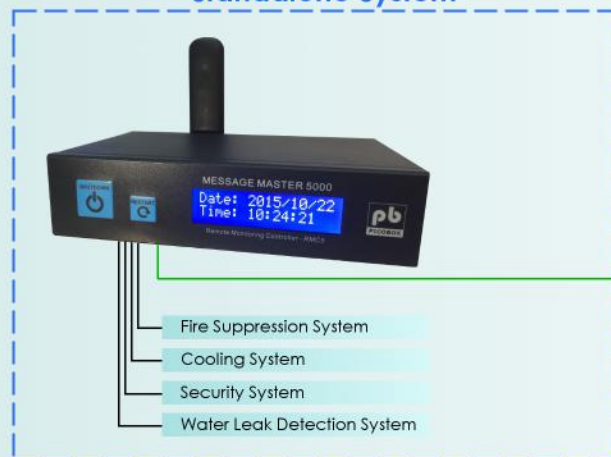
Standalone System – Dry contact signal is the most common type of monitored points in a facility. Message master 5000 has built-in terminals capable of monitoring up to 12 dry contacts directly. Below example illustrates the connection of equipment to message master.

Standalone System

- Fire Alarm System
- FM200 System
- Cooling System
- Door Security System
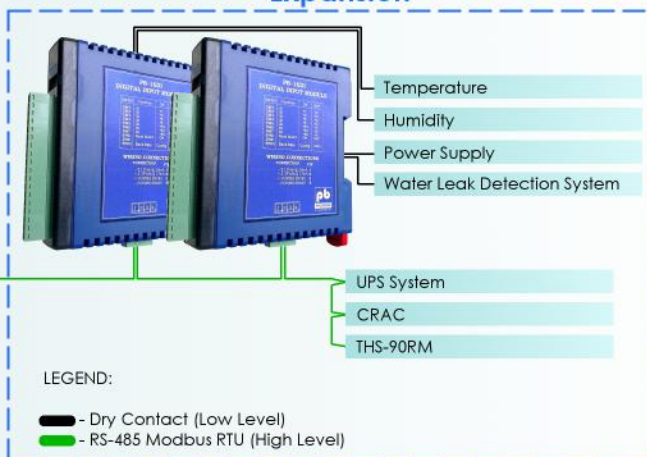- Water Leak Detection System
- Power Supply Status

Expansion – When the monitoring points required exceeds what MM5K provides, Picobox DAQ is added as expansion module to increase the number of IO points. Picobox DAQ send the status of each monitoring points to MM5K via high level communication (Modbus RTU). The MM5K then process the signal and send necessary notifications to users. Below example illustrates the connection of Picobox DAQ to message master.

Standalone System

- Fire Suppression System
- Cooling System
- Security System
- Water Leak Detection System

Expansion

- Temperature
- Humidity
- Power Supply
- Water Leak Detection System
- UPS System
- CRAC
- THS-90RM

LEGEND:

- Dry Contact (Low Level)
- RS-485 Modbus RTU (High Level)

Application

There are some real questions facility managers and building owners frequently ask. Do I need to monitor my equipments? Can I afford not to monitor? Does the monitoring system provide data to help me make decisions? Is it worth the investment? Does it help my engineers to be more productive? Wlil it help me to be proactive in my facility management?
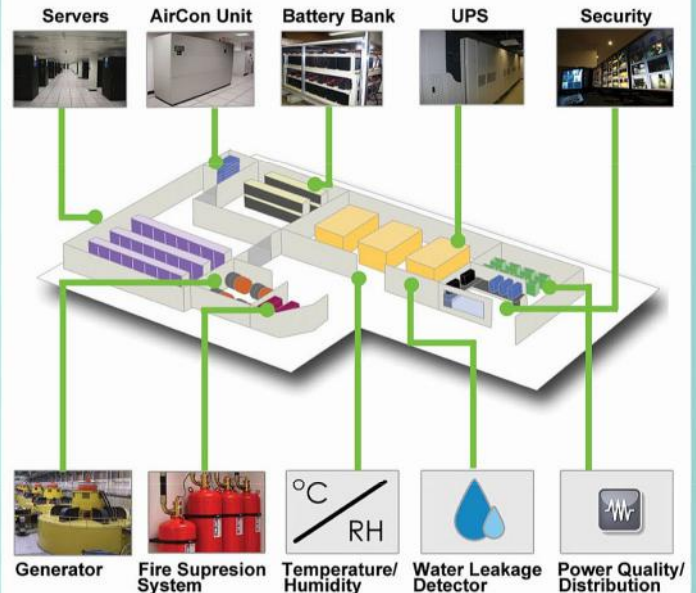
The answer is to estimate the tangible losses when, say a central air conditioning break down. What if the water to guest rooms is too cold? How does the hotel guests react? Is it negligible or serious? What damages in dollar terms and customer satisfaction level does it amount to?

Message Master 5000 and its companion products easily addresses the above concerns. It is very cost effective, easy to deploy, operate and maintain. Below are some examples of monitoring and control applications. This list is by no means exhaustive.

HVAC | CRAC | Standby Generators | Water Tanks | Boilers | Smoke & Toxic Gas Detection | Elevators | UPS | Fire Alarm Panels | Security | Telecom Equipments | Cold Rooms | Pumps | Water Leakage | Power Outages | Air-Con | Door Security | Motion Detection | Swimming Pool | Power Sub-station | SPA Equipments | Aquariums | Power Supply | Temperature & Humidity | Flow Rate | Energy Consumption | Car Park Management

Typical Data Centre Setup

Message Master 5000 is a miniature, standalone, facility monitoring system with alarm message notification using SMS and E-mail. Perfect companion products for all IT Data centers, server rooms and any related facility. Providing 24 x 7 continuous monitoring of all your critical facilities and alerting you instantly on any alarm.

Servers | AirCon Unit | Battery Bank | UPS | Security

Generator | Fire Supresion System | Temperature/ Humidity | Water Leakage Detector | Power Quality/ Distribution

Optional Accessories

Intelligent Battery Charger — IBC-100

Power	: 230VAC
Output	: 12V, 1A max
Battery	: 12V, 7.2AH Sealed Lead Acid (External)
Dimension	: 150 (W) x 61 (D) x 92 (H) mm
Weight	: 1.8 kg (battery) , 790 g (charger)
Features	: Smart charger with over-charging & over discharging protection
	: Relay output signal for power failure Alarm
	: LED indicators for AC and DC power supply

DAQ Module — DAQ

Power:	30mA @ 12Vdc
	17mA @ 24Vdc
Dimension:	97.6(l) x 22.6(w) x 109(h) mm
Features:	Wide variety of selection depending on system requirements

Temperature Sensor — TS-70

Power	: DC 12V
Interface	: 2 wire loop powered, non polarized
Output	: 4 - 20mA
Dimension	: 75(l) x 55(w) x 25(h) mm
Accuracy	: +/- 0.5 °C
Range	: Range 0-70 °C
Features	: IC sensor provides linear and accurate measurement

Temperature & Humidity Sensor — THS-90R

Power	: DC 12V
Interface	: 4 wire (2 Power, 1 Temp, 1 Humidity)
Output	: 4 - 20mA
Dimension	: 112(l) x 88(w) x 42(h) mm
Accuracy	: +/- 0.5 °C, +/- 5% RH
Range	: Range 0-50 °C, 0-100 % RH
Features	: IC sensor provides linear and accurate measurement

Water Detection Sensor — SP-11

Power	: 12V or 24V DC
Output	: Open collector drive
Type	: Spot Water Detection Sensor
Dimension	: 24(h), 44(diameter) mm
Features	: Detects water on flat surface
	: Fully sealed water proof casing
	: Adjustable sensing height
	: Visual alarm indication

Specifications

Physical

Name	: Message Master 5000
Models	: **RMC5**
Operating Voltage	: 9 to 30VDC, 2W max power consumption
Processor	: 32 bit 50MHz microcontroller
Memory	: Non-volatile storage memory stores history logs
GSM modem*	: USB modem Quad-Band HSDPA/UMTS (900/2100MHz)
Operating Environment	: 0 – 55 degree Celsius, 0 – 90% non-condensing
Size & Weight	: 160 (L) x 40 (H) x 100 (D) mm, 500 gm
Security Feature	: 2 security levels, Administrator and User level
Real Time Clock	: Date & time with NTP Support
LCD Display	: 16 x 2 Characters with backlight, display date and time	Network Status	Device Name	Device ID	Telco Signal Strength*	Digital Input State	Digital Input Alarm State
Communications port	: 1 x RJ45 port, Ethernet 10 / 100Mbps
Interface	: Web-based, accessible via web browser software

Network

Network Support	: Static IP
Network Protocol	: TCP (Transmission Control Protocol), IP (Internet Protocol), UDP (User Datagram Protocol) , HTTP (Hyper Text Transfer Protocol) , DNS (Domain Name Server) , SNTP (Simple Network Time Protocol) , SMTP (Simple Mail Transfer Protocol)

Digital Inputs

No of input points	: 12 optically coupled dry contact
Configuration	: Independent configuration of input description open / close status description
Response Time	: Individual selection of response time for each input from 0.2 to 3600 secs (trigger sensitivity)
Alarm State	: Definable normally open (NO) or close (NC) as Alarm condition

Relay Outputs

No of Out puts points	: 2 relay outputs, contact rated at 24VDC 2A
Configuration	: User definable output description
Output control	: Through SMS or Local On / Off relay outputs through web-browser
Internal buzzer	: Option time interval from 10 to 60 secs on Alarm state

Analog Input

No of Analog points	: Requires DAQ module, up to 8 analog inputs per module
Configuration	Configurable input description, scaling, trigger delay, high / low alarm points
Alarm Delay Time	: Individual selection of alarm delay time for each analog input from 0 to 3600 secs (trigger sensitivity)

Email Alert

Email group	: up to 64 email recipients
Time stamp	: Email sent with time stamp with configurable subject

Event Logs

Event logging	: Stores up to 500 History events with Date and time Stamp, FIFO event recording
Data Format	: XML (Extensible Markup Language), allows user to define their own tags in excel or web interface

Specifications

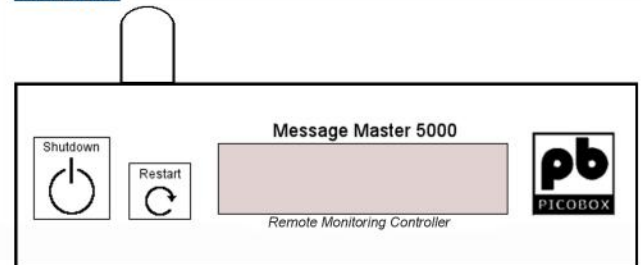## Remote Management

Remote Command via SMS	: a) Query health check
	b) Query input / output / analog status
	c) On / Off / equipment / devices
	d) Add / Edit / Delete contacts
	e) Query Operational / Authorizer / Escalation / Forwarder contacts
	f) Acknowledgements

SMS Alert

Phone Groups	: a) 64 mobile phone numbers for operational
	b) 8 mobile phone number for 1st level escalation
	c) 8 mobile phone numbers for 2nd level Escalation
	d) 8 mobile phone numbers for authorizer
	e) 1 mobile phone number for Forwarder
	**Accepts international Phone Numbers format and support Auto Roaming
SMS Configuration	: Digital inputs, relay outputs & analog inputs (2 messages per input), 1 for Alarm State and 1 for Normal State
Auto Health Check	Programmable date & time system health check
Time Stamp	SMS sent & received with time stamps

**Note: In the interest of product development, specifications are subject to changes wihtout prior notice

Front / Rear View

MM5K Front View

MM5K Rear View