



Pivotal
TECHNOLOGIES

EMSpro

Real Time Environmental Monitoring for Mission Critical Environments

3D Graphical Representations and Customised Dashboard Views

Multiple Alarm Transmission Paths – Email/SMS/SNMP/GPRS

Rich web based user interface supported by in-built web server

Real Time Energy Monitoring and Branch Circuit Monitoring [BCM]

High Resolution Data Capturing for Advanced Graphing/Trending Analysis

Reports Module Allowing for Customised Reports on all Captured Data

Assets Management and Maintenance Scheduling Module

THE EMSpro ADVANTAGE

EMSpro is the latest advancement in environmental monitoring solutions from Pivotal Technologies. Mission critical operations such as data centers require solutions that surpass conventional thinking, and this is where EMSpro stands alone among its competitors. EMSpro packages together a sophisticated, highly configurable software platform with a modular hardware backbone, leaving it unchallenged by the complexity of today's data centre.

Whether you host a small comms room or an all out enterprise data centre, the modular design of the EMSpro platform allows for future expansion capabilities as your business grows.

The EMSpro has been designed and manufactured with a high level of redundancy in mind, it is a standalone environmental monitoring panel which is capable of monitoring almost any device whether it be a digital status point, analogue sensor or high level device such as UPS or A/C unit. It's advanced logging, reporting and management capabilities mean that you can be assured that you will receive alerts in the event of pre-defined conditions.

Standard alarm transmission paths on the EMSpro include SMS, Email, SNMP traps and Contact ID over GPRS. All of these alert types are generated within the EMSpro hardware itself and do not require third party devices or software like similar products on the market.

INTEGRATION SUPPORT

The EMSpro has inbuilt hardware capable of monitoring almost any compliant sensor on the market. Whether it be digital, 0-10v, 4-20ma, thermistor, rtd or a custom interface, the EMSpro has advanced signal processing capabilities which eliminate noise and provide extremely accurate data.

The EMSpro also comes standard with high level device net drivers which are capable of communicating across a diverse range of networks and protocols. Supporting Modbus, SNMP, Bacnet IP and Lonworks protocols, virtually no "end device" in the modern data centre will be left un-monitored.

For data centres where integration is required from other 3rd party systems such as security or BMS, the EMSpro supports a diverse range of protocols which will allow seamless integration between platforms.

SYSTEM SPECIFICATIONS

- Modular architecture allowing for logical expansion
- User interface supported by embedded web server which is cross browser compliant
- Monitoring capability of analogue, digital, pulsed or high level interfaced inputs
- High resolution plotting of all inputs with advanced graph and reporting capabilities
- Alarm processing for up to 8000 alarm logic blocks with highly configurable parameters
- Support for protocols such as Modbus, SNMP, Bacnet IP and Lonworks to interface to almost any device
- Full system integration with Pivotal Technologies branch circuit monitoring [BCM] solutions
- Integration with all types of intelligent energy meters for advanced energy monitoring and reporting
- Up to 128 User definable Areas for simple classification of data centre areas
- Up to 64 User definable Area Groups for classifying logical Areas together
- Up to 32 users, configurable for alert types, accessibility and administrative rights
- Up to 32 configurable email addresses for alarm notifications
- Up to 32 configurable SMS numbers for alarm notifications
- Full support for SNMP traps on alarm event and SNMP browsing
- Encrypted contact ID over GPRS for 24hr monitoring centre support
- Real time detailed event logging capabilities
- Advanced search and export features for inputs, outputs, alarms & custom parameters
- Syslog integration support
- Advanced lighting control capabilities
- Support for advanced control of Air-Conditioning duty cycle / fault changeover

APPLICATIONS**DCIM
VISUALISATION**

- 3D Graphical Representation
- Customised Dashboard Views
- PUE, DCiE, BCM, Reporting and Analysis
- Asset Management and Maintenance Scheduling
- Real-Time Power Flow Graphics

**ANALOGUE
DIGITAL
MONITORING**

- Room Temperature and Humidity Sensing
- Water Under Floor Sensing
- VESDA, UPS's, CRAC Units, Generators, Switchboards
- Branch Circuit and Mains Current Monitoring
- Condenser / Chiller Water Temperature

**HIGH LEVEL
DEVICE
MONITORING**

- UPS's, PDM's, PDU's
- Generators
- CRAC Units, In-Row Cooling Units
- Intelligent Power meters, ATS Units, ACB's
- VESDA and Fire Panels

**HIGH
LEVEL
PROTOCOLS**

- Modbus RTU/TCP
- SNMP
- BACnet
- LON works
- MBus

**CONTROL
APPLICATIONS**

- CRAC unit duty standby / Fault changeover
- Lighting automation and sensing control
- Monitor and shutdown critical infrastructure
- Switchboard Shunt Trip Control
- Building Access Control

**ALARM
TRANSMISSION
PATHS**

- Email
- SMS
- GPRS - Contact ID
- SNMP Traps
- HLI Security system

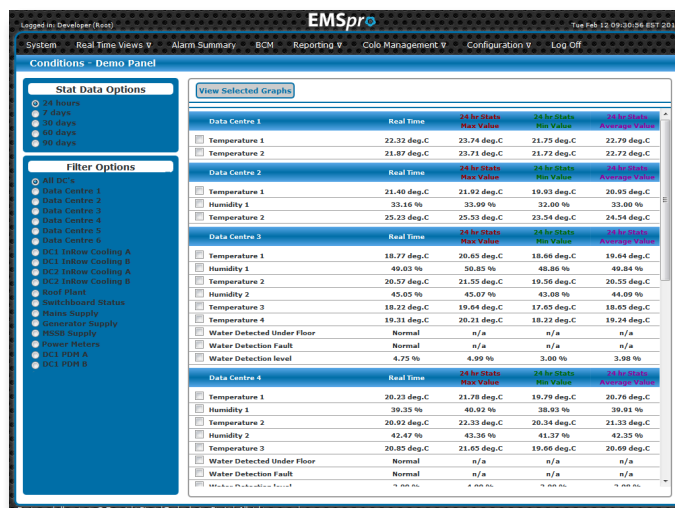
USER INTERFACE

The standalone nature of the EMSpro platform negates the need for additional software in order to view the user interface. A built-in web server allows multiple clients to be connected to the EMSpro using only a web browser enabled device. The embedded web server technology provides the user with a platform which utilises the latest in web technologies to deliver a rich cross browser compliant experience.

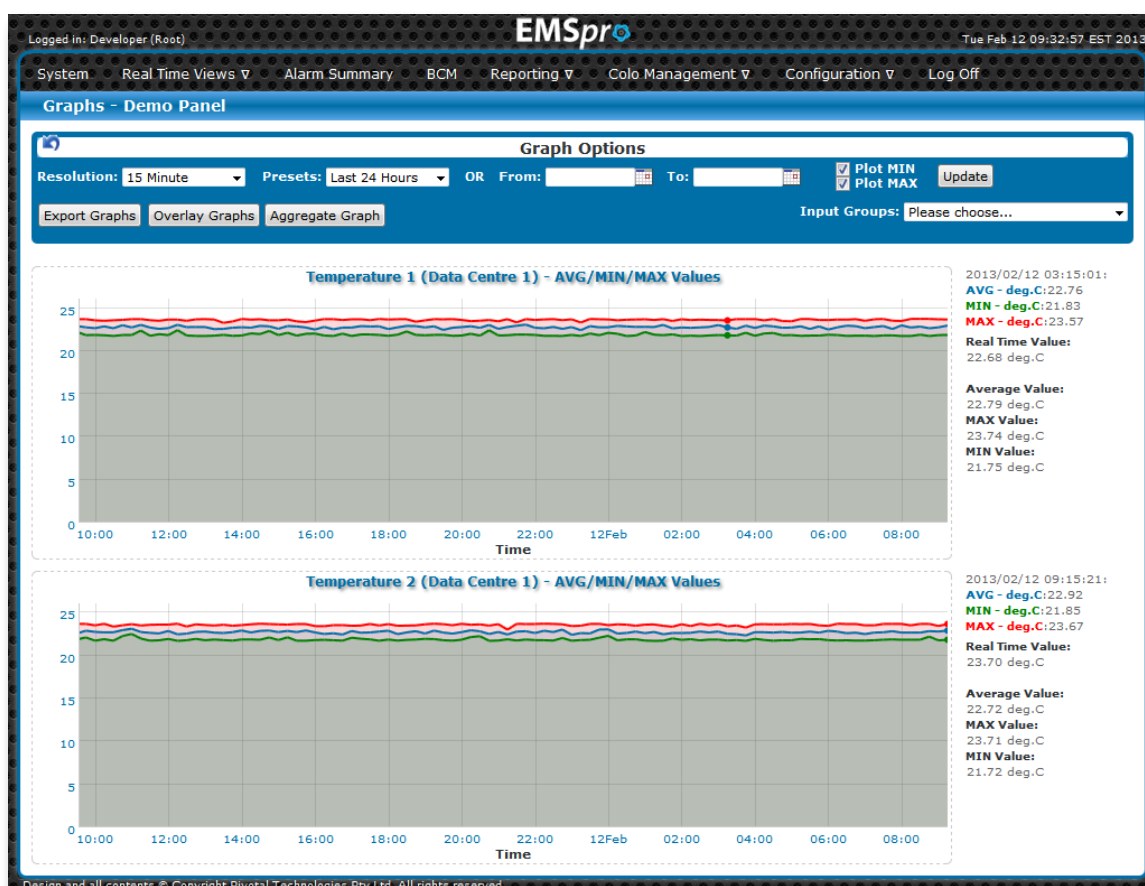
The EMSpro user interface provides the user with a diverse range of options to view, manage, administer and report on the monitored data centre. The following are some of the user interface features:



System status page for an in initial overview of the data centre including active and isolated alarms and general system status



Real time environmental conditions overview with advanced filtering options



Advanced historical graphing and reporting on all monitored inputs

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BRANCH CIRCUIT MONITORING

Energy management, monitoring and sustainability are a key aspect of smart organizations concerned with energy conservation and accountability.

Energy monitoring and reporting, what was once a complex task, has been revolutionized by Pivotal Technologies using the Branch Circuit Monitoring [BCM] energy management suite.

It should come as no surprise that energy costs have risen significantly in the past few years and will continue to do so with the implementation of the carbon tax in July 2012. Progressive, forward thinking companies can benefit directly from the installation of a BCM energy monitoring system in a number of ways. In order to manage and report upon energy consumption within the workplace, it is a necessity to measure your energy consumption.

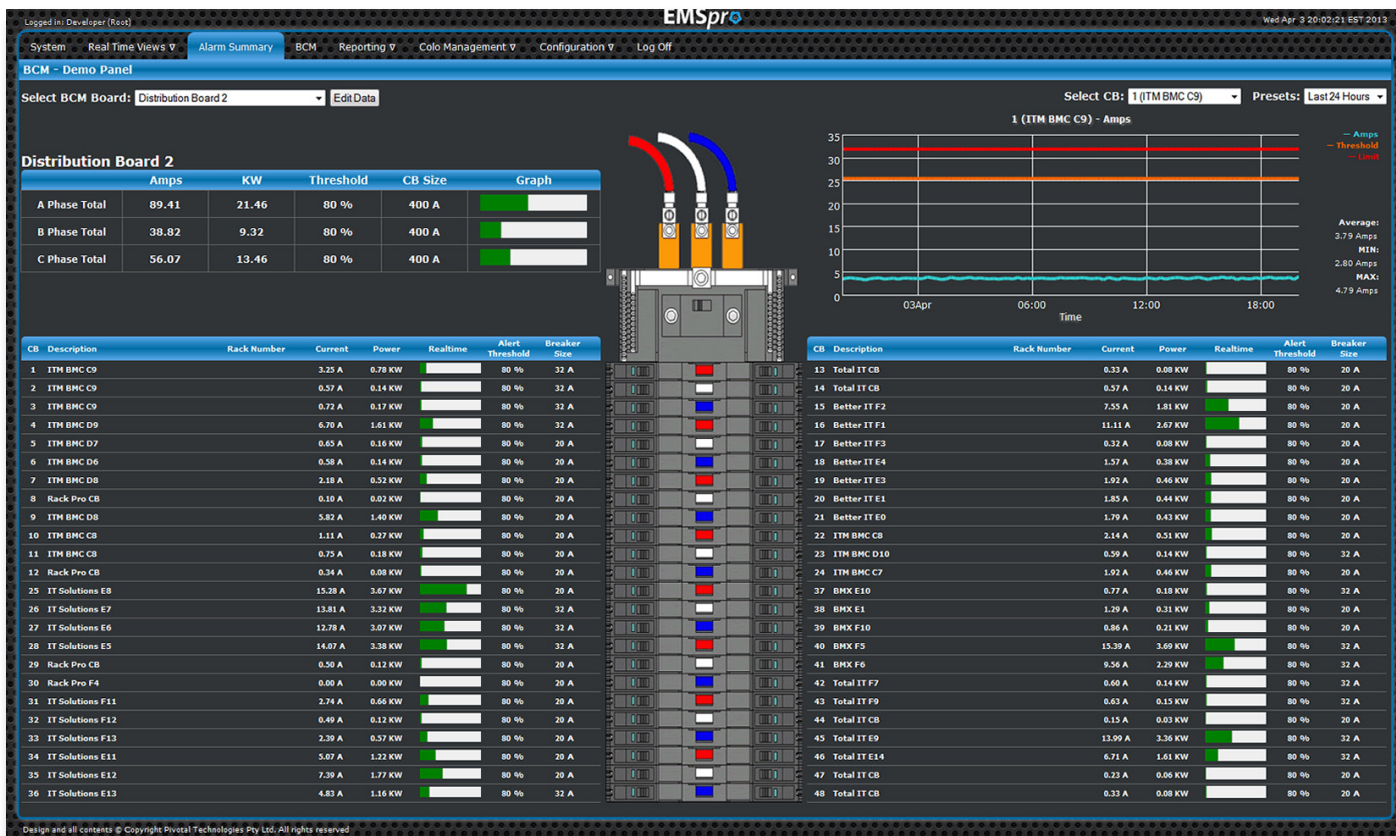
You can't manage what you don't measure.

The BCM energy management system can provide the user with easy access to highly accurate and reportable energy measurements, allowing the user to monitor energy consumption throughout the workplace in a concise and meaningful way.

- Monitor total site energy consumption
- Review which devices or areas use the most energy
- Monitor devices that are increasing their energy consumption
- Review energy consumption throughout the day using the graphical interface
- Accurately pass on energy consumption costs to downstream clients
- Actively reduce daily energy usage using a correctly implemented energy management plan.

BCM can measure real time energy usage from a range of different inputs and devices including individual switchboard circuits, sub main switchboard feeders, mechanical services, generators and main switchboard incoming supplies

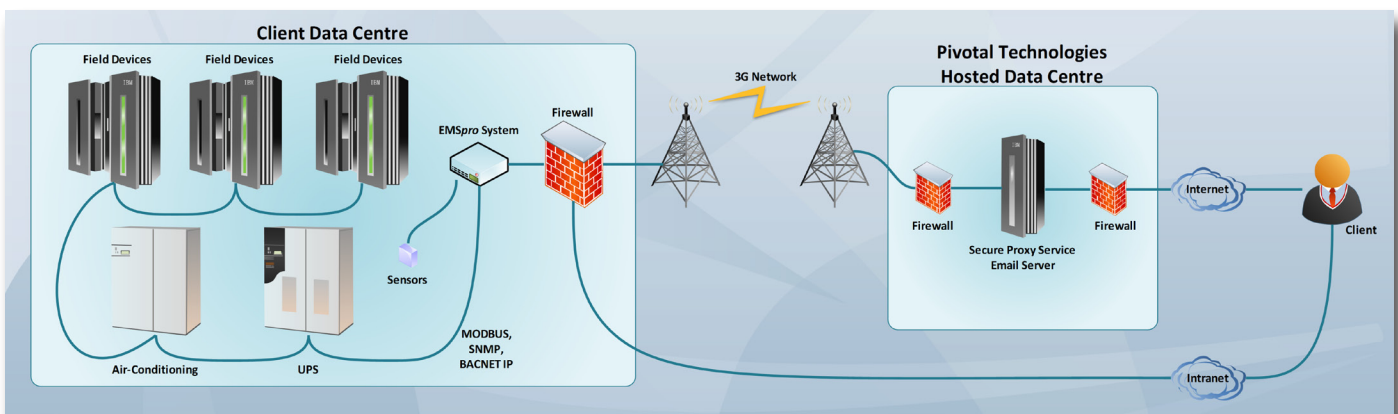
Real time information is collated and presented in an easy to use graphical user interface, which can be viewed from any web browser enabled device. Alternatively for users already on the EMSpro environmental monitoring platform, the BCM energy monitoring system can be seamlessly integrated into one platform.



REMOTE MONITORING FUNCTIONS

Despite the EMSpro platform itself being an absolute solution for all your environmental monitoring needs, partnering it with the services of a 24 hour manned monitoring station circumvents the risk of human error in reacting too, or more importantly not reacting too critical failures. Pivotal Technologies can provide such a service through its alliance partners by utilising the secure remote proxy access and GPRS connectivity built into the EMSpro platform. To ensure fail safe monitoring the service operates with a 90 second poll rate. In the event of an alarm, both the monitoring centre and the predefined system users are now alerted. As standard procedure the monitoring centre then proceeds to a call list, ensuring key personnel are notified of the alarm condition.

To ensure fail safe monitoring 24 hours a day this is the ultimate solution. For larger corporate entities this is an ideal solution to oversee multi-panel, multi-site installations across the nation. Adding such integrity and redundancy to any data centre will no doubt increase both revenue and credibility of your data centre within the industry.



SECURE PORTAL ACCESS

The Secure Portal Access [SPA] option allows clientele to remotely access the EMSpro interface using a remote proxy access. The service is hosted through Pivotal Technologies own secure servers located in multiple enterprise data centre's in Australia. A key design feature of the SPA is the ability to allow key service providers or clientele (with infrastructure within the data centre) access to EMSpro interface. It offers the enterprise data centre a degree of transparency to downstream clientele and negates the need for VPN connections.

Each user gains remote access to the User Interface with a personal login. While access levels and user rights are controlled by key personnel within your company. The GPRS modem which allows the SPA to operate is fully integrated into the battery backed control panel. In the event of a power failure, the EMSpro remains online, easily accessible and places you in complete control of the situation at hand.

Data Centre						User logged in: User	
Site	Address	Status	Active Alarms	Isolated Alarms			
Brisbane	Wickham Terrace	ONLINE	0	0			
Perth	St Georges Terrace	ONLINE	0	0			
Sydney	Market Street	ONLINE	0	1			
Melbourne	Collins Street	ONLINE	0	0			
Insurance Company							
Site	Address	Status	Active Alarms	Isolated Alarms			
Sydney	Chiffley Square	OFFLINE	0	0			
Sydney	Castlereagh Street	ONLINE	0	0			
Brisbane	George Street	ONLINE	1	0			
Melbourne	St Kilda Road	ONLINE	0	2			
Melbourne	La Trobe Street	ONLINE	0	0			
Adelaide	King William Street	ONLINE	0	0			
Bank							
Site	Address	Status	Active Alarms	Isolated Alarms			
Brisbane	Mary Street	ONLINE	0	3			
Brisbane	Queen Street	OFFLINE	0	0			



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