ADVANCED DATACENTRE SYSTEMS

REAL WORLD INTELLIGENCE

MAVIN **POWERCUBE**

CONTAINERISED MODULAR DATACENTRES

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Why should you include SENSORIUM™ software when designing a Data Centre?

Definition: A SENSORIUM™ is the sum of an organism's perception, the "seat of sensation" where it experiences and interprets the environments within which it lives. In earlier use it referred, in a broader sense, to the brain as the mind's organ (Oxford English Dictionary 1989). In medical, psychological, and physiological discourse it has come to refer to the total character of the unique and changing sensory environments perceived by individuals. These include the sensation, perception, and interpretation of information about the world around us by using faculties of the mind such as senses, phenomenal and psychological perception, cognition, and intelligence.

In a similar way to the definition, SENSORIUM™ software gathers information from the Data Centre nerve ends (sensors). This information is then transmitted to the nerve centres (network controllers). The network controllers then provide managed packets of data to the SENSORIUM™ engine (the brain) which carries out bespoke routines to produce a management tool in graphic form showing the status and reactivity of a Data Centre facility.

Using the SENSORIUM™ Automatic Monitoring and Targeting (AMT) system Data Centre managers are provided with an important tool in the developing area of energy efficiency. Methods such as regression monitoring can be used with this tool. This is essential in order to be compliant with the Climate Change Agreement targets, ECA scheme or EU Emissions' Trading.

As real time environmental monitoring is the only way to accurately track and monitor the impact of new data centre designs and strategies, rather than relying on multiple sources of information from in-cabinet PDU'S, chillers, air handling units, UPS, generators, etc. Sensorium brings all the information together in one user-friendly application. Using various protocols, Sensorium is able to provide real time alerts of any issues that may arise such as Air con/ UPS failure, power outages, temperature increases etc. By accurately measuring your facility's power load it also gives Data Centre Managers the ability to utilise and accurately capacity plan.

With a powerful reporting engine, users have the ability to produce real-time and historical reports which coupled with regression analysis can be of real benefit when planning data centre deficiencies. Users are able to drill down into each individual piece of plant/hardware and retrieve real-time or historical values. We do not believe in a one size fits all solution, therefore Sensorium is a fully customisable, bespoke offering tailored to your exact requirements.

With numerous blue chip companies already trusting Sensorium to monitor and manage their facility, it really is the smart choice.

We also need to ensure that the nerve end devices such as intelligent metered PDU's, network controllers and sensors are designed and manufactured to be accurate to fiscal standard but also energy efficient with low environmental impact themselves.

To conclude we believe that DCIM with a bias towards power and environmental management can give a better return on investment in the long term than one biased towards asset management.

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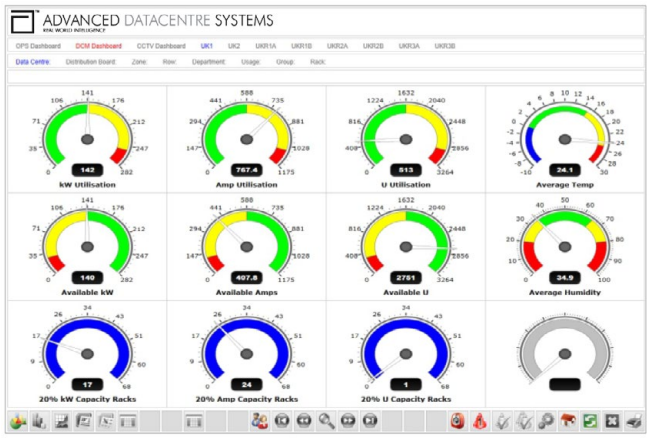
Unrivalled Performance



NMS Dashboard

NMS Dashboard Designed to be displayed in a Network Management System environment, this index page is populated with configurable gauges to display building performance, the operating status of selected infrastructure monitoring points (Generators, UPS etc.) and active alarm text descriptions.

Dynamic Icon Floorplan

Designed to display the physical location, and operating status of cabinets in the datacentre for any given monitored point (Amps, kW, temp, hum, security etc). The dynamic cabinet icons use a Red/Amber/Green (R.A.G) colour scheme to identify cabinets whose current operational status approaches or exceeds customer adjustable thresholds. The dynamic icons also act as hyperlinks to navigate or 'drill down' to view more detailed individual cabinet information. The Data Panel at the foot of the page provides more detailed analysis of the datacentre metrics and as with the cabinet icons, the data panel also provides R.A.G status information based on user adjustable thresholds.

Cabinet Details Page

Accessed from the Dynamic Cabinet Icon hyperlinks on the Dynamic Icon floorplan page, this page is configured to display a combination of both historical and real-time data for all monitoring points in a given cabinet. Information from multiple vendor systems is presented in a single interface.

Active alarms or breaches of user definable thresholds for selected cabinets are easily identified using the R.A.G system when displaying the real-time data, as the cabinet details page is configured to highlight both the real-time values that are in alarm and display the associated alarm text.

Threshold adjustment for multi-vendor systems is provided in a single process regardless of the configuration or the source protocol of the various vendors monitoring systems.

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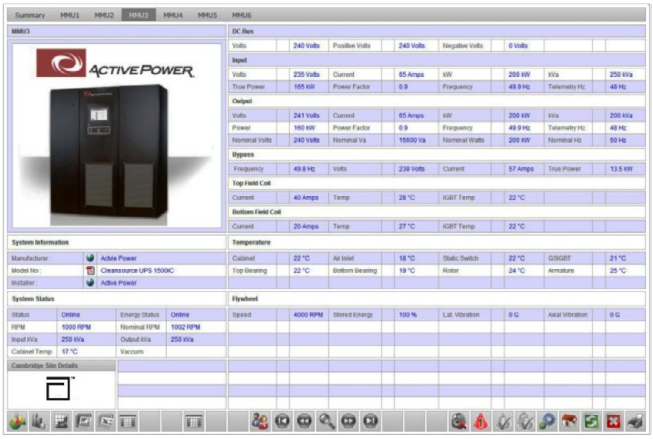
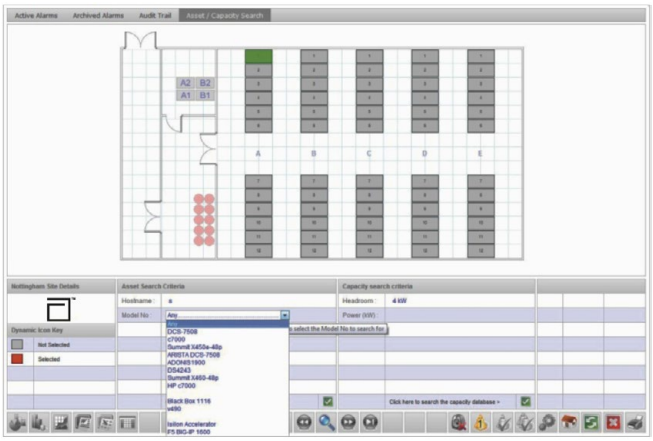
Peerless Integration



Main Plant Details Page

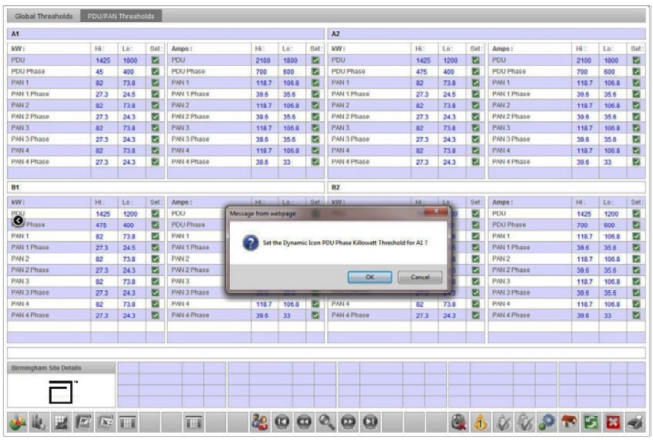
These pages are designed to provide real-time information relating to the operation of individual items of plant. These pages provide all the values that one would expect from a full Building Management System in order to provide the stake holders with the information they require, to fully benchmark the operation and performance of all the component that make up the 'holistic' data centre monitoring model.

Both run-time and maintenance information is provided, alongside hyperlinks to the manufacture and installer website, datasheets and O&M manual information.



PDU/PAN Threshold Adjustment Page

Here the operator can adjust the threshold that configure the R.A.G status for the Dynamic Floorplan Data Panel.



Asset / Capacity Search

This enables you to locate and identify individual assets, their location and corresponding switches.

You can also search for remaining capacity which enables you to install new assets in appropriate cabinets.

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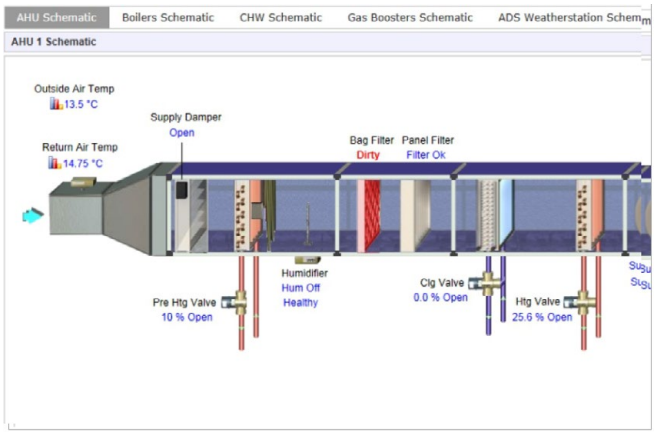
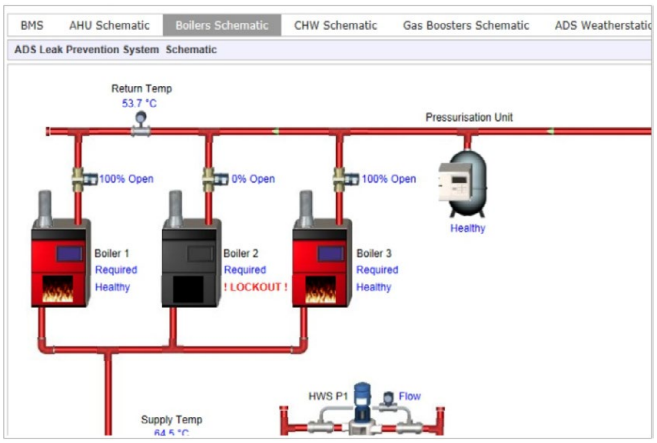
Superior Flexability



Building services integration

Sensorium™ offers unrivalled integration capabilities with the building services infrastructure.

Our vendor neutral, multi-protocol communication server combined with our 20 year track record in the integration of building management systems and established relationships with best of breed market leading third party interface manufacturers ensures the highest possible levels of integrated communications, even with legacy systems.



Information can be displayed in whatever format the customer requires, from a simple data grid, all the way up to 3D Schematics. Hyperlinks to User, configuration, and O&M manuals can be included to provide a single repository for information relating to the operation and maintenance of the services infrastructure.

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