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**niagara**  
framework

**PlantPRO CORE is Conserve It's chiller plant automation and control solution for chiller plants.**

Building on the success of PlantPRO 2.0, PlantPRO CORE is a low cost, high feature chiller plant control system. Incorporating the trusted and proven control algorithms of PlantPRO 2.0 with a light weight yet informative HTML5 user experience.

PlantPRO CORE is the ideal control system for chiller plant control projects that are particularly cost sensitive. Small chiller plants, or chiller plants with low energy consumption and run time would benefit most from PlantPRO CORE.

As with PlantPRO 2.0, PlantPRO CORE will include the ability to control chillers, pumps and cooling towers in a very wide array of plant configurations. PlantPRO CORE uses feedback from its on-board real time measurement systems to continually readjust the chiller plant for efficient performance.

PlantPRO 2.0's reliable charting and alarming features will be present in PlantPRO CORE to allow end users to chart historical data effortlessly.

PlantPRO CORE features a data rich, automatically generated HTML5 user interface. End users can access PlantPRO via desktop, tablet or mobile web browsers.

The PlantPRO CORE user interface allows the end user to view live plant data, compare chiller performance, chart historical data, view active and past alarms. In addition, if required manual control can be undertaken through the PlantPRO CORE plant manager page.

**Low Cost Chiller Plant Control System**

Chiller Plant Performance Monitoring	Chiller Plant Charting	Chiller Plant Alarming	Chiller Plant and Control and Automation	Standard Chiller Plant Optimisation	Chiller Plant Continuous Commissioning And Tuning

	PlantPRO <sup>®</sup> CORE	BMS
<b>Engineering Effort</b>	<b>Low</b> Standard Wizard based Configuration Interface	<b>High</b> Fully Custom on Every Site
<b>Deployment Effort</b>	<b>Low</b> Predefined Point Mapping to Standard PlantPRO Panels and IO Points	<b>High</b> Tedious Integration Process
<b>Maintenance Effort</b>	<b>Low</b> Extensively Tested, Self Correcting, Robust & Reliable Control Algorithms	<b>High</b> Difficult debugging process due to custom non-standard programming
<b>Maintenance Cost</b>	<b>Low</b> Relatively Low Annual Maintenance Fee providing complete access to every functionality improvement & new feature developed by Conserve It	<b>Potentially High</b> Maintenance cost impacted by the high Maintenance Effort
<b>Energy Savings</b>	<b>Significant</b> Significant savings on energy consumption by using real-time dynamic controls and optimisation algorithms compared to standard controls	<b>Low-Medium</b> Focus on providing basic controls with limited attempt at optimisation
<b>User Interface</b>	<b>Web Browser based Responsive Design</b> HTML5 based responsive design allows for access from any mobile device	<b>Requirement for Special Access Tool</b> Non-responsive design with occasional requirement for special tool to access
<b>Haystack Compatibility</b>	<b>Fully Compatible</b> Haystack tags are built in which makes data integration and analytics much easier	<b>No</b>
<b>OEM Adoption</b>	<b>Multiple Chiller Manufacturers</b> Several chiller manufacturers OEM PlantPRO CORE as their preferred Chiller Plant Manager	<b>Not Applicable</b>

Product Name	PlantPRO CORE (PlantPRO is an acronym for <b>Plant Performance Reliability Optimisation</b> )	
Developer	Conserve It	
Summary of Features	<p>HTML5 user interface</p> <p>Chiller plant control &amp; basic optimisation</p> <p>Chilled water temperature optimisation</p> <p>Condenser water temperature optimisation</p> <p>Pumping and distribution control and optimisation</p> <p>Optimised cooling tower control strategies</p> <p>Alarming</p>	
Applicable plant type	<p>Support for Primary and Condenser Pumps</p> <ul style="list-style-type: none"> <li>• Dedicated Pump Configuration</li> <li>• Headered Pump Configuration</li> <li>• Lead-Lag Pump Configuration</li> </ul> <p>Support for Primary CHW circuit</p> <p>Support for Primary HW circuit</p> <p>Support for Condenser water circuit</p> <ul style="list-style-type: none"> <li>• Single condenser water circuit</li> <li>• Multiple condenser water circuits</li> </ul> <p>Support for Secondary Pumps</p> <ul style="list-style-type: none"> <li>• Single secondary circuit</li> <li>• Multiple Secondary Circuits</li> </ul> <p>Support for Cooling Tower systems</p> <ul style="list-style-type: none"> <li>• Single cooling tower</li> <li>• Multiple headered cooling towers</li> <li>• Multiple dedicated cooling towers</li> </ul> <p>Support for chillers</p> <ul style="list-style-type: none"> <li>• Air cooled or water cooled</li> <li>• Any brand</li> <li>• Series or parallel configuration</li> <li>• New or existing</li> </ul>	
Chiller brand compatibility	Any chiller brand (e.g. Multistack, Mitsubishi, Daikin, Trane, York, Carrier, PowerPax/Smardt + all other brands)	
Communication protocol compatibility	BACnet IP, BACnet MSTP, Modbus TCP, Modbus RTU, LON IP, encrypted FOX protocol (Niagara), OPC + more	
Applicable sectors	Shopping centre, commercial, university, industrial, hotels, casino, medical facilities, warehousing, government facility, smart cities, airport, marine application + more	
Web user interface technology	<p>Accessible via standard web browser without need for proprietary tools.</p> <p>Desktop, mobile and tablet access.</p> <p>Secured by HTTPS protocol</p> <p>User access level control. Read only access for general user, operator access for plant manager user, engineering access for commissioning user.</p>	
Hardware platform	<p>CI-DEG-3000</p> <p>Intel® Atom™ E3815 1.46 GHz / 512 KB + 400 MHz GPU</p> <p>2 GB, DDR3L - 1066 MHz</p> <p>2 x 10/100 Fast Ethernet (RJ-45)</p> <p>USB: 1x USB 2.0, 1x USB 3.0</p> <p>24VDC + PoE</p> <p>WLAN, Bluetooth LE 4.0, WWAN/Cellular</p> <p>12.5x12.5x5.1cm foot print</p>	<p>CI-534</p> <p>1GHz AM335x ARM Cortex A-8 Processor</p> <p>4G eMMC Flash Memory</p> <p>10/100 Mbps Ethernet (2), RS-485 (2), USB (2)</p> <p>24VDC</p> <p>10 Digital Outputs</p> <p>8 Analog Outputs</p> <p>16 Universal Inputs</p> <p>11.4x10.8x5.7cm foot print</p>
Software platform	PlantPRO CORE software, developed by Conserve It Niagara N4 framework, developed by Tridium	