

# OPTIFLEX™ PLANTCTRL®

## CHILLER PLANT CONTROLS SOLUTION



# Automated Logic

PLANT CONTROL FOR THE WEBCTRL® BUILDING AUTOMATION SYSTEM

The OptiFlex PlantCTRL controller is a factory-engineered, cutting-edge control solution that offers algorithms designed to provide optimized control over all aspects of a chiller plant, coordinating the control of chillers, pumps and towers into a finely tuned, cohesive system. The solution consists of a dedicated chiller plant controller, I/O expanders, and a library of factory-engineered control programs that are specifically designed to cover the most common chiller plant configurations.



## KEY FEATURES AND BENEFITS

## Application Features

- Responds to the building load, automatically starting, staging and stopping the plant, resetting the chilled water supply temperature, and matching the tonnage produced to the tonnage required by the building
  - Proven, reliable, factory-engineered and supported control algorithms for plant management
  - Designed to reduce engineering and commissioning labor
  - Supports advanced algorithms, optimizations, diagnostics, and analytics add-ons
  - Supports optional flow meter inputs for tonnage calculations
  - Graphically programmed with self-documenting control sequences and a live view of all sequence components
  - Supports Equipment Touch, providing local access to the system
  - Supports full integration with chiller plant equipment via BACnet or Modbus® protocols.

## Hardware Features

- Includes four energy dashboards: water-cooled plant home screen, air-cooled plant home screen, chilled water system detail screen, condensed water system detail screen
  - Native BACnet communications to field devices over TCP/IP, Ethernet, or BACnet MS/TP networks
  - Supports MEX and FIO expanders panel configuration or remotely mounted for flexible modernization and scalable solutions (180 I/O points total)
  - Fully graphically programmable, with full communications with other Automated Logic controllers
  - Universal inputs and outputs, with HOA override switches and potentiometer adjustment available on all outputs
  - Battery-backed real-time clock provides true stand-alone capability allowing complete recovery from power outages



The WebCTRL building automation system gives you the ability to understand your building operations and analyze the results. Integrate environmental, energy, security and safety systems into one powerful management tool that helps you reduce energy consumption, increase occupant comfort, and achieve sustainable building operations.

## SPECIFICATIONS

Part # OF-PSM	
BACnet Conformance	Conforms to the BACnet Building Controller (B-BC), BACnet Router (B-RTR), and BACnet Broadcast Management Device (B-BBMD) profiles as defined in Annex L of the BACnet standard. The device is certified to the BACnet standard ISO 16484-5 protocol revision 1.15 and protocol revision 15 (135-2016). The product supports multiple data link layers including BACnet/IP (Annex J), MS/TP Master, Ethernet (ISO 8802-3), and ARCNET (see BTL listing page <a href="https://www.bacnetinternational.net/btl/index.php?m=11">https://www.bacnetinternational.net/btl/index.php?m=11</a> for details).
Control Program Execution	Maximum number of control programs: 999 depending upon available memory.
BACnet Objects	Maximum number of BACnet objects: 12,000 depending upon available memory.
Third-Party Integration	Supports up to 1,500 third-party BACnet points, and 1,000 Modbus points depending upon available memory.
Power	24 Vac ±10%, 50–60 Hz, 50 VA   26 Vdc ±10%, 15 W
Communication	
Gig-E Port	10/100/1000 BaseT Ethernet port for BACnet/IP and/or BACnet/Ethernet and/or Modbus TCP/IP communications, full duplex
Serial Port 1	For communication with either of the following: <ul style="list-style-type: none"><li>• A BACnet MS/TP network at 9,600 to 115,200 bps</li><li>• A Modbus serial network at 9,600 to 115,200 bps</li></ul>
Serial Port 2	For communication with either of the following: <ul style="list-style-type: none"><li>• A BACnet MS/TP network at 9,600 to 115,200 bps</li><li>• A Modbus at 9,600 to 115,200 bps</li></ul>
Service Port	Ethernet port at 10 or 100 Mbps for system start-up and troubleshooting through a local connection to a computer or connecting to the OptiPoint™ interface
Rnet Port	Supports Up to 15 ZS wireless and/or ZS sensors, and one Equipment Touch or OptiPoint interface
XNet Port	Supports up to 6 MEx expanders powered by an external power supply
USB Port	USB 2.0 host port for recovery device
I/O Expanders	Supports up to 9 FIO expanders and/or 6 MEx expanders, but no more than 9 expanders total
I/O Bus Port	Provides communication for up to 9 wired FIO expanders powered by an external power supply
I/O Bus Edge Connector	6-pin connector providing communication and power to a directly-connected FIO expander
Microprocessor	32-bit ARM Cortex-A8, 600 MHz, processor with multi-level cache memory, and USB 2.0 host port for device recovery
Memory	16 GBs eMMC Flash memory and 256 MB DDR3 DRAM (22 MB available to use). User data is archived to non-volatile Flash memory when parameters are changed, every 90 seconds, and when the firmware is deliberately shutdown or restarted
Real Time Clock	Real-time clock keeps track of time in the event of a power failure for up to 3 days
Protection	Device is protected by 2 fast acting, 5 mm x 20 mm glass fuses: A 2A fuse for the OF-PSM's power and a 4A fuse for the I/O bus edge connector. The power and network ports comply with the EMC requirement EN50491-5-2
Environmental Range	-40 to 158°F (-40 to 70°C), 10-95% relative humidity, non-condensing
Compliance	<b>United States:</b> FCC compliant to Title CFR47, Part 15, Subpart B, Class A. UL Listed, File E143900; CCN PAZX, UL916, Energy Management Equipment; <b>AS/NZS:</b> RCM Mark 61000-6-3; <b>Canada:</b> UL Listed File E143900, CCN PAZX7, CAN/CSA C22.2 No. 205 Signal Equip., Industry Canada Compliant, ICES-003, Class A; CE Mark Compliant with 2014/30/EU, and RoHS Compliant: 2015/863/EU; <b>UKCA</b> Mark compliant with Electromagnetic Compatibility Regulations 2016 – Gov.UK and RoHS for Electrical and Electronic Equipment 2012.
Plastic Rating	Fire-retardant plastic ABS, UL94-5VA
Mounting	35mm DIN rail mounting or screw mounting

Figure 1: Physical Dimensions



	in.	cm
Width:	7.1	18.03
Height:	6.95	17.65
Depth:	2.09	5.31
Weight:	1.0 lb	0.45 kg

Assembled in the United States

