

MSEA

CPO10

Central Plant Optimization™

Johnson Controls has combined expertise from designing YORK® chillers and Metasys® controls to bring the best world-class program to operate your chiller plant. The result is Johnson Controls Central Plant Optimization™ 10, which saves energy and improves reliability in your facility. A facility's central chiller plant uses a significant portion of the HVAC energy, typically 35%. Managing this load, while still maintaining occupant comfort is a primary strategy for overall energy management. CPO 10, which is powered by the Metasys® system, provides such a strategy. The Metasys CPO 10 application uses field-proven, factory-tested and fully documented best practices to select the most efficient combination of chillers, pumps, heat exchangers and cooling towers needed to match the building load. The application then commands the selected devices to the appropriate state or speed, providing the necessary sequencing of pumps, isolation valves and main equipment, while observing all the timing delays for safe and stable operation of the central chiller plant.



Features

- Advanced Control Algorithms - Evaluate all possible combinations of devices considering capacities, efficiencies, runtimes, and number of starts resulting in the most efficient operating state rather than simply selecting the next available device as the building load increases.
- Total Automation of All Equipment - Provides proper sequencing of all devices in a safe and stable fashion.
- Simulation Mode Application Preview - Allows you to test a newly generated program prior to downloading the program to the field controllers.
- Optional Integration of Third-Party Equipment - Provides additional energy savings.
- Control Sequences Created by the System Selection Tool (SST) within Controller Configuration Tool (CCT) - Allow you to select from tens of thousands of possible equipment combinations, piping configurations, and control strategies, each resulting in the automatic creation of a software program using proven best practices.
- CCT Editor Allowing Customization of Individual Components of the Program Created Using SST - Addresses special situations that cannot be described in SST and easily customizes the program, without the need to build the entire program from scratch.

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The CPO10 application supports:

- Up to eight chillers, centrifugal (mix of constant or variable speed), screw, reciprocating or scroll compressor of mixed sizes, piped in parallel
- Up to eight primary chilled water pumps of mixed sizes, all dedicated or headered and all constant or variable speed
- Up to eight secondary chilled water pumps that are mixed in size, are piped in parallel and are variable speed
- Up to eight condenser water pumps that are mixed in size, all dedicated or headered and all constant or variable speed
- Up to four heat exchangers of mixed sizes, piped in parallel
- Up to eight cooling towers piped in common to the chillers, are single speed (with optional vernier control), multispeed or variable speed with a variety of tower/sump valve arrangements
- A non-integrated waterside economizer able to control up to eight total devices (chillers and heat exchangers) piped in parallel
- Air-cooled chillers

The CPO10 application offers a variety of primary control strategies including measuring building chilled-water flow and differential temperature, the chillers' kW load and flow through a decoupler pipe in a primary/secondary system, or differential temperature only in a constant speed chilled water pump system. You can also select dozens of secondary strategies, such as open loop control of the cooling towers (as defined by the American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE]) or closed loop control of condenser-water setpoint. The CPO10 application supports 24 sequences through any combination of the following chilled water systems and condenser water systems:

Chilled Water Systems

- Variable Primary Headered
- Variable Primary Dedicated
- Primary Secondary Headered
- Primary Secondary Dedicated
- Constant Headered

Condenser Water Systems

- Constant Dedicated
- Variable Headered
- Variable Dedicated
- Constant Headered