

CCU-1

The iWorX CCU-1 chiller controller is a stand-alone microprocessor based controller for supervisory central chiller control applications that utilize one air-cooled chiller or a water-cooled centrifugal chiller with cooling tower.

Overview

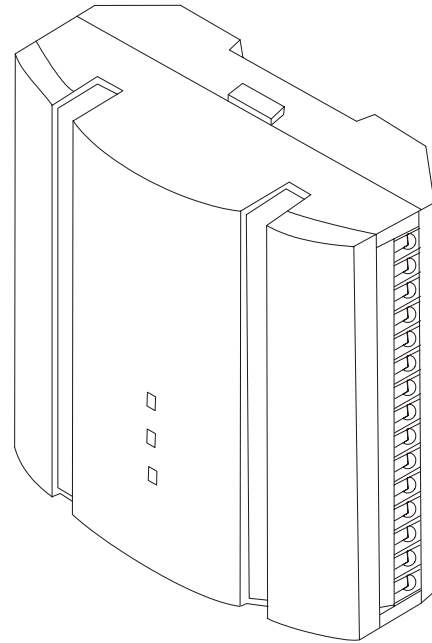
Analog inputs are provided for chilled water supply temperature, chilled water return temperature, condenser water supply temperature, and condenser water return temperature. Digital inputs are provided for chiller pump flow status, condenser pump flow proof, a cooling water demand proof, and a chiller general alarm.

The CCU-1 incorporates digital outputs in the form of triacs for chiller low limit status and the start and stop of the chiller and condenser pumps. In addition, three analog outputs are provided to control a modulated bypass valve, a variable speed fan, and set the adjustable setpoint of the chiller.

The controller is based on the LONWORKS® networking technology. The controller can be networked to a higher-level control system for monitoring and control applications, and provides chilled water in response to demand from other controllers.

Features

- Adjustable chiller setpoint
- Modulated cooling tower bypass valve
- Modulated cooling tower fan
- Minimum cycle timers for chiller On and Off
- Runtime accumulation for chiller, pumps, and fan
- Lead/Lag operation of water pumps
- Maximum of 60 cooling zones
- Proportional + Integral (P+I) control of the modulated bypass valve
- Proportional + Integral (P+I) control of a variable speed fan
- LONWORKS interface to building automation systems
- OAT low limit protection
- Flow proof inputs
- Chiller enable/demand input
- Chiller alarm input
- Automatic configuration with the LCI
- Alarm/Event reporting



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Specifications

Electrical

Inputs

- Cabling: twisted shielded pair, 18 AWG recommended—500 feet max. (152 meters)
- Resolution: 10 bit

Chiller Supply Temperature, Chiller Return Temperature, Condenser Supply Temperature, Condenser Return Temperature

- Precon Type III 10K thermistor

Chiller Alarm, Chilled Water Demand, Chiller Flow Proof, Condenser Flow Proof

- Dry Contact
- Normally Open
- 5 Volts DC Max

Outputs

Chiller Pumps 1 & 2, Condenser Pumps 1 & 2, Chiller Low Limit

- 24 Volts AC
- 1 Amp at 50 °C, 0.5 Amps at 85 °C

Chiller Setpoint, Cooling Tower Valve, Cooling Tower Fan

- 0-10 Volts DC
- 2K Ohm minimum load
- 8 bit resolution

FTT-10A Network

- Speed: 78 KBPS
- Cabling: Maximum node-to-node distance: 1312 feet (400 meters)
- Maximum total distance: 1640 feet (500 meters)
- 42.4 Volts DC max

Table 1: Network Wire Specifications

Cable Type	Pairs	Details	Connect Air Catalog No.
Level 4 22AWG (0.65mm)	1	Unshielded, Plenum, U.L. Type CMP	W221P-2001
Level 4 22AWG (0.65mm)	1	Unshielded, Non-Plenum, U.L. Type CM	W221P-1002

For detailed specifications, refer to the FTT-10A Free-Topology Transceiver User's Guide published by Echelon Corporation. For information on ordering Connect Air items, contact Connect Air International; 4240 B Street; Auburn, WA 98001 <www.connect-air.com>.

Power

Power Requirements

- 24 VAC nominal (requires an external supply)

Power Consumption

- With no external loads: 15 VA

Mechanical

Housing

- Dimensions: 4 3/8" high, 4 5/16" wide, 2" deep (111 mm high, 110 mm wide, 51 mm deep)
- ABS Polycarbonate

Weight

- Controller Weight: 0.45 pounds (0.22 kilograms)
- Shipping Weight: 0.60 pounds (0.28 kilograms)

Electronics

- Processor: 3150 Neuron 10 MHz
- Flash: 48 Kilobytes
- SRAM: 8 Kilobytes
- Termination: 0.197" (5.0 mm) Pluggable Terminal Blocks, 14-22 AWG

Environmental

- Temperature: -40 °F to 185 °F (-40 °C to 85 °C)
- Humidity: 0 to 90%, non-condensing

Agency Listings

- UL916

Agency Compliances

- FCC Part 15 Class A
- CE