BLMC Boiler Control Module
Self-Contained Interoperable Controller Model UCP-1

SUPERSEDES: November 12, 2010   EFFECTIVE: June 11, 2012

Job: _____   Engineer: _____

Contractor: _____   Rep: _____

Date: _____   Tag/Item #: _____

BLMC

The iWorx® BLMC is a stand-alone microprocessor based controller for controlling boilers.

Overview

Boiler pumps and system pumps are controlled by digital outputs. Four analog outputs are provided for controlling up to four 0-10 V modulating boilers.

Analog inputs are provided for measuring the temperature of the outside air, primary loop supply, primary loop return. Digital inputs are provided for status alarms for up to four boilers. Two inputs can be configured to operate as digital inputs for auxiliary demand and reset demand, or as analog inputs for auxiliary temperature and reset temperature.

The controller is based on LONWORKS® networking technology. It can be networked to a higher-level control system for monitoring and control.

Features

- Four modulated boiler outputs
- Provides direct control of individual boiler pumps
- Provides a system output with configurable outdoor cutoff
- Sequential or parallel operation
- Equal run-time rotation with fixed lead and fixed last options
- Auxiliary demand/temperature control with a separate pump
- Outdoor reset or setpoint operation
- Individual temperature setpoint for reset demand
- Demand inputs are configurable for dry contact (switch operation) or Temperature
- System Proof input
- Automatic heating shutoff (Warm Weather Shutdown) in warm weather for energy savings
- Maintains primary loop temperature to protect non-condensing boilers
- Night time setpoint shift (also called night setback)
- Boiler status alarms for all connected boilers
- Networked Auxiliary Demand for cascading
- Weekday and weekend scheduling for stand-alone mode
- Optional Display and keypad provided for on-site configuration and/or stand-alone mode
- Automatic configuration with a Local Control Interface (LCI) touchscreen
- Alarm/Event reporting
- LONWORKS® network interface to integrate BLMC with other iWorx® products

Specifications

Electrical

Inputs

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

Outside Air Temperature, Primary Supply Temperature, Primary Return Temperature, (optional Aux Temperature, Reset Temperature)

- Precon Type III or Type II 10K Thermistor

Aux Demand, Reset Demand, System Proof

- Dry Contact
- Normally Open

BLM1, BLM2, BLM3, BLM4 Status

- Dry Contact
- Normally Open or Closed (Software Configurable)

Outputs

Aux Pump, Primary Pump, Boiler 1-4 Enable or Pump, Unit Alarm, System Output

- 24 Volts AC
- 1A @ 50C, 0.5A @ 60C, limited by the Class 2 supply rating.

Modulating Outputs for Boiler 1-4

- 0-10V
- 2K Ohm Minimum load
- 8 bit resolution

Recommended Sensor Wire

Cable Type	Pairs	Details	Taco Catalog No.
18AWG	1	Stranded Twisted Shielded Pair, Plenum	WIR-018

FTT-10A Network

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

Cable Type	Pairs	Details	Taco Catalog No.
Level 4 22AWG (0.65mm)	1	Unshielded, Plenum, U.L. Type CMP	WIR-022

For detailed specifications, refer to the *FTT-10A Free-Topology Transceiver User's Guide* published by Echelon Corporation (www.echelon.com/support/documentation/manuals/transceivers).

Power

Power Requirements

- 24VAC (20VAC to 28VAC), requires an external Class 2 supply

Power Consumption

- 7.2W with no external loads, maximum limited by the Class 2 supply rating.

Mechanical

Housing

- Dimensions: 5.55" (141mm) high, 6.54" (166 mm) wide, 1.75" deep (44 mm)
- ABS

Weight
- Controller Weight: 0.70 pounds (0.32 kilograms)
- Shipping Weight: 1.0 pounds (0.46 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: 32 °F to 140 °F (0 °C to 60 °C)
- Humidity: 0 to 90%, non-condensing

Agency Listings
- UL Listed for US and Canada, Energy Management Equipment PAZX and PAZX7.

Agency Compliances
- FCC Part 15 Class A

CONTROLS MADE EASY®

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