Carrier COMFORT NETWORK

PRODUCT DATA

Comfort Controller 1600

The Comfort Controller 1600 (part number CEPL130202) is a microcontroller-based module that provides general purpose HVAC control and monitoring capability in a standalone or network environment using closed-loop, direct digital control. The *1600* gives the Carrier Comfort Network (CCN) the capability to control and communicate with non-Carrier equipment and Carrier HVAC equipment not equipped with Product Integrated Controls (PIC) controls.

You can connect 16 field points (8 inputs and 8 outputs) to this controller.

FEATURES

- Stand-alone control and monitoring of up to 16 field points, using proven algorithms.
- Compatibility with all standard CCN user interfaces.
- Two LEDs, conveniently located on the front of the module, indicate processor status (red), and CCN Communication Bus status (yellow).
- Entire database at your disposal. Based on your application's requirements, you determine how many and which algorithms, inputs/outputs, schedules, alarms, and system functions to include in the database. Therefore, the database will only consist of the items that are necessary for the application — valuable memory space is not wasted.
- Ability to display the amount of available database space.
- Ability to add items to database as necessary.
- Local connection for LID and CCN.
- Total facilities management when linked to a CCN.
- Two-day backup of clock and data such as Data Collection and Runtime.
- No need for batteries.

FUNCTIONS

Cooling and Heating Control
Space Temperature Comfort Zone
Humidification and Dehumidification
Mixed Air Damper Optimization
VAV Fan Control
VAV Supply and Return Fan Tracking
Indoor Air Quality
Generic PID Control
Time Scheduing with/without Override
Analog Temperature Control
Discrete Interlock

8 INPUTS

Numbers	Specifications
1 to 4	Discrete or analog (0-10 Vdc)
5 & 6	Temperature
7 & 8	Discrete, analog, or temperature
	Discrete Dry contact Pulsed dry contact Analog 4-20 mA 0-10 Vdc Temperature 5K & 10K ohm thermistors 1K ohm nickel RTD

8 OUTPUTS

Numbers	Specifications
1 to 4	Discrete
5 & 6	Analog
7 & 8	Discrete or analog
	Discrete 24 Vdc@80 mA Analog 4-20 mA 0-11 Vdc (varies with point type)

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Staged Thermostat
Proportional Thermostat
Primary/Secondary Pump Control
Staged Discrete Control
Permissive Interlock
Night Time Free Cooling
Morning Warm-up
Adaptive Optimal Start/Stop
Control Point Reset

On-Board Consumable Point
Calculates a usage value (kwh, gal/hr, lbs/hr,etc.) in applications where simple data collection is required.

On-Board Trending
Collects up to 60 data samples per point (with an adjustable iteration rate) on a revolving basis, or stops the trending after 60 samples are collected. Use as a means of troubleshooting.

Linkage to Airside (TSM) and Waterside (WSM) Systems

Optimizes efficiency by fully integrating all HVAC operations (DAV).

Custom Programming (BEST^{++})
Enhances or supplements the industry-proven, pre-engineered algorithms with BEST^{++} by creating new algorithms to meet any unique control requirements.

CCN FEATURES

When included in a network with other CCN controllers, Option Modules, and user interfaces, the following additional capabilities are possible:

- Alarm processing, messages, and annunciation.
- Runtime, history, and consumable data collection and report generation.
- Demand limiting/loadshedding.
- Broadcast of data such as outside air temperature, outside air humidity, and time of day.
- Data transfer between system elements.
- Timed overrides for use with Tenant Billing.
- Airside and waterside linkage.

ENCLOSURE AND POWER SUPPLY

The *1600* is designed so that it can be easily installed in a field-supplied NEMA-1 enclosure.

The *1600* uses any standard, Class II, SELV-compatible, field-supplied 24 Vac, 60 VA transformer.

SPECIFICATIONS

Power Requirements ..... 60VA@24 Vac ± 15%
1.5A@33 Vdc ± 15%
Dimensions ..... 13 in H x 2.75 in W x 5.5 in D
(33 cm x 7 cm x 14 cm)
Operating Temperature ..... 32°F to 140°F
(0°C to 60°C)
Storage Temperature ..... -40°F to 185°F
(-40°C to 85°C)
Operating Humidity ..... 0 to 90%, non-condensing

Discrete Out Specifications
Output Signal ..... 24 Vdc@80 mA current limited

Analog Out Specifications
4-20 mA Milliamp Type
Load Resistance ..... 0-600 ohms
Resolution ..... 0.085 mA
Accuracy ..... ±2%
0-11 Vdc Voltage Type (varies with point type)
Load Resistance ..... >50,000 ohms
Resolution ..... 50 mV
Accuracy ..... ±2%

Discrete In Specifications
Dry Contacts ..... Switch Closure
Pulsing Dry Contacts
Repetition Rate ..... 5 Hz max.
Minimum Pulse Width ..... 100 msec

Analog In Specifications
4-20 mA Milliamp Type
Wire type 2-wire
Resolution ..... 0.025 mA
Accuracy ..... ±1%
0-10 Vdc Voltage Type
Resolution ..... 0.0125 V
Accuracy ..... ±1%
5K Thermistor Type
Nominal reading @ 5,000 ohms ..... 77°F (25°C)
Resolution 0.1ºF
Accuracy ..... ± 1ºF
10K Thermistor Type
Nominal reading @ 10,000 ohms ..... 77°F (25°C)
Resolution 0.1ºF
Accuracy ..... ± 1ºF
Nickel RTD Type
Nominal reading @ 1,000 ohms ..... 70°F (21°C)
Resolution 0.1ºF
Accuracy ..... ±2ºF

The *1600* is UL 916 PAZX, VDE, ULc, and CE Mark listed.

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