HEAT PUMP TERMINAL UNIT CONTROLLER

OVERVIEW

The HVAC controls market requires an economical DDC controller that provides optimum zone control for packaged water–source or air–source heat pump terminal unit applications.

The Circon SCC–300–HPC comes complete with easy to configure heat pump unit control software combined with a cost–effective hardware platform to provide exceptional application flexibility. Configurable for a variety of applications, the SCC–300–HPC is all you need in a 13–point heat pump terminal unit DDC controller.

APPLICATIONS

The SCC–300–HPC can be used in any packaged water–source or air–source heat pump terminal unit application. It maintains a constant zone temperature by configurable, energy–efficient, sequenced control of the fan, reversing valve, one or two compressor stages, and an optional outdoor air damper and exhaust air damper or fan. Optional secondary terminal or perimeter heating control increases application flexibility.

An internal time–of–day schedule allows the SCC–300–HPC to optimize energy usage by adapting its control sequence to occupied, unoccupied or standby setpoints. Using demand limiting, a supervisory controller can instruct the SCC–300–HPC to decrease the heat pump unit's energy usage with minimal impact on comfort.

A versatile general–purpose side loop provides three styles of independent control for wide range of equipment including unit heater, baseboard heater, exhaust fan, lighting, maintaining space static or duct pressure, and more. The side loop together with otherwise unused I/O saves the cost of additional controllers for simple applications.

The SCC–300–HPC's inputs, outputs, control sequences, demand limiting and alarming, trending, and scheduling functions are all easily configured using simple Windows® –based software which is all fully compatable with Echelon® Corporation's LNS®.

ORDERING INFORMATION

Part number 10–0391

FEATURES AND BENEFITS

⇢ Seamless integration into interoperable LonWorks® networks; adaptable for standalone installation

⇢ Easily mounts directly on heat pump enclosure

⇢ Nine configurable heat pump styles allows use in any water– or air–source application

⇢ Five digital (TRIAC) outputs and two analog outputs simplify connecting to a variety of digital, floating and analog–controlled actuators for standard heat pump units – use spare outputs for secondary heat control

⇢ Five resistive inputs for space temperature (required) with / without bypass button and any four of: supply air temperature, mixed air temperature, setpoint adjust, fan, filter, window and occupancy sensors

⇢ An analog input enables CO_2–based demand control ventilation or dehumidification control

⇢ A side loop provides independent control for additional simple HVAC equipment

⇢ Transmits alarms for local or remote annunciation

⇢ Faster, easier to use LNS plug–ins

⇢ LonMark® Space Comfort Controller functional profile 8503

LONMARK®3.3

LONMARK® SPONSOR

ECHELON OPEN SYSTEMS ALLIANCE

CIRCON

SPECIFICATIONS

I/O CAPABILITY

6 Inputs	Five 10 kΩ thermistor, Precon curve: Type II model 24 or Type III model 3, or dry contact.
	One voltage 0–10 VDC
2 Analog outputs	0–10 VDC Max drive 100 mA per output
5 Digital outputs	Isolated TRIAC 800 mA maximum 30 mA minimum, at 24 VAC Short circuit protected, auto–reset

COMMUNICATIONS

Transceiver	Echelon Free Topology Transceiver (FTT–10A) @ 78 kbps
Wire type	AWG 22 to AWG 16 stranded (use only twisted pair wiring and copper conductors for network)
Neuron®	3150, 10 MHz

POWER SUPPLY

Controller	2.0 A, 24 VAC 50–60 Hz or 24 VDC
Fuse	2.0 A slow–blow (Bussman GMD–2.0A, Littlefuse 23902.0A)
Rectifier	Half–wave

MECHANICAL

Operating temperature	32°F to 122°F (0°C to 50°C)
Relative humidity	5% to 95% RH (non–condensing)
Weight	15 oz. (420 grams)
Dimensions	0.8″ x 5″ x 5.8″ (20.3 mm x 127 mm x 147 mm)
Enclosure material	Metal
Mounting	Four sheet metal screws, optional DIN rail adaptor

AGENCY LISTINGS AND REGULATORY COMPLIANCE

Class II device when powered by class II supply
CSA 22.2 #205–M1983, #950–M89
UL 916 certification for Energy Management Equipment
This device complies with Part 15, Class B of the FCC rules for Radio Frequency Devices
This device complies with EMC Directive 89/336/EEC
LonMark 3.3 certified, LonMark functional profile: 8503

NRTL/C
LR102822

CIRCON SYSTEMS CORPORATION

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HEAT PUMP TERMINAL UNIT CONTROLLER

OVERVIEW

The HVAC controls market requires an economical DDC controller that provides optimum zone control for packaged water–source or air–source heat pump terminal unit applications.

The Circon SCC–310–HPC comes complete with easy–to–configure heat pump unit control software combined with a cost–effective hardware platform to provide exceptional application flexibility. Configurable for a variety of applications, the SCC–310–HPC is all you need in a 13–point heat pump terminal unit DDC controller with onboard relays.

APPLICATIONS

The SCC–310–HPC can be used in any packaged water–source or air–source heat pump terminal unit application. It maintains a constant zone temperature by configurable, energy–efficient, sequenced control of the fan, reversing valve, one or two compressor stages, and an optional outdoor air damper and exhaust air damper or fan. Optional secondary terminal or perimeter heating control increases application flexibility.

An internal time–of–day schedule allows the SCC–310–HPC to optimize energy usage by adapting its control sequence to occupied, unoccupied or standby setpoints. Using demand limiting, a supervisory controller can instruct the SCC–310–HPC to decrease the heat pump unit's energy usage with minimal impact on comfort.

A versatile general–purpose side loop provides three styles of independent control for wide range of equipment including unit heater, baseboard heater, exhaust fan, lighting, maintaining space static or duct pressure, and more. The side loop together with otherwise unused I/O saves the cost of additional controllers for simple applications.

The SCC–310–HPC's inputs, outputs, control sequences, demand limiting and alarming, trending, and scheduling functions are all easily configured using simple Windows® –based software which is all fully compatable with Echelon® Corporation's LNS®.

ORDERING INFORMATION

Part number 10–0432

FEATURES AND BENEFITS

⇢ **Seamless integration into interoperable LonWorks® networks; adaptable for standalone installation**

⇢ **Easily mounts directly on heat pump enclosure**

⇢ **Nine configurable heat pump styles allows use in any water– or air–source application**

⇢ **Five relay outputs and two analog outputs simplify connecting to a variety of digital, floating and analog–controlled actuators for standard heat pump units – use spare outputs for secondary heat control**

⇢ **Five resistive inputs for space temperature (required) with / without bypass button and any four of: supply air temperature, mixed air temperature, setpoint adjust, fan, filter, window and occupancy sensors**

⇢ **An analog input enables CO_2–based demand control ventilation or dehumidification control**

⇢ **A side loop provides independent control for additional simple HVAC equipment**

⇢ **Transmits alarms for local or remote annunciation**

⇢ **Faster, easier to use LNS plug–ins**

⇢ **LonMark® Space Comfort Controller functional profile 8503**

LONMARK®3.3

LONMARK®
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SPECIFICATIONS

I/O CAPABILITY

6 Inputs	Five 10 kΩ thermistor, Precon curve: Type II model 24 or Type III model 3, or dry contact.
	One voltage 0–10 VDC
2 Analog outputs	0–10 VDC. Max drive 100 mA per output
5 Digital outputs	Dry contact relay: 2.0 A maximum at 24 VAC or 24 VDC

COMMUNICATIONS

Transceiver	Echelon Free Topology Transceiver (FTT–10A) @ 78 kbps
Wire type	AWG 22 to AWG 16 stranded (use only twisted pair wiring and copper conductors for network)
Neuron®	3150, 10 MHz

POWER SUPPLY

Controller	2.0 A, 24 VAC 50–60 Hz or 24 VDC
Fuse	2.0 A slow–blow (Bussman GMD–2.0A, Littlefuse 23902.0A)
Rectifier	Half–wave

MECHANICAL

Operating temperature	32°F to 122°F (0°C to 50°C)
Relative humidity	5% to 95% RH (non–condensing)
Weight	15 oz. (420 grams)
Dimensions	0.8″ x 5″ x 5.8″ (20.3 mm x 127 mm x 147 mm)
Enclosure material	Metal
Mounting	Four sheet metal screws, optional DIN rail adaptor

AGENCY LISTINGS AND REGULATORY COMPLIANCE

Class II device when powered by class II supply
CSA 22.2 #205–M1983, #950–M89
UL 916 certification for Energy Management Equipment
This device complies with Part 15, Class B of the FCC rules for Radio Frequency Devices
This device complies with EMC Directive 89/336/EEC
LonMark 3.3 certified, LonMark functional profile: 8503

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