

OPTICORE LS-1628u

Large Application Controller

The OEMCtrl® OptiCORE™ LS-1628u is a high-performance, BACnet native direct digital controller (DDC). It provides the speed, power, memory, and I/O flexibility needed for the most demanding control applications in the industry. Capable of controlling HVAC equipment with high I/O point counts including 44 points on the base controller and up to 224 through expandable I/O boards. Made with integration in mind, the LS-1628u can integrate with building automation systems via BACnet (IP or MSTP) or Modbus (IP or serial). It also allows for connecting to communicating devices like VFDs via BACnet or Modbus.

Key Features and Benefits

Performance / Hardware

- Powered by 32-bit ARM Cortex-A8, 600MHz, processor with multi-level cache memory with 16 GBs eMMC Flash memory and 512 MB DDR3 DRAM
- Flexible, color-coded and easy to wire I/O

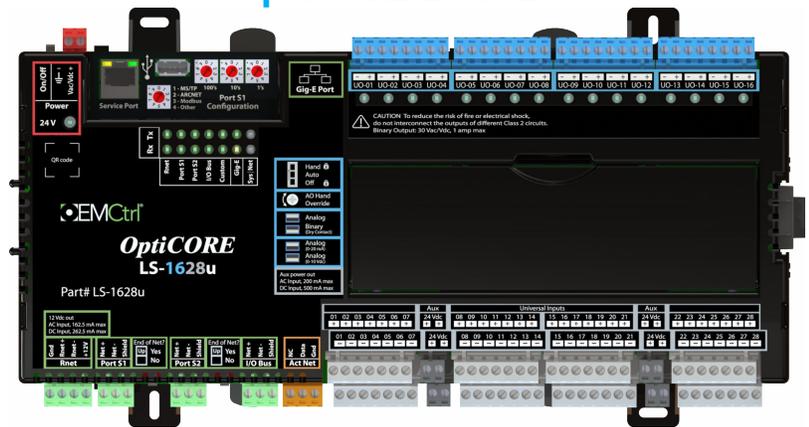
Communication Features:

- 3 - Configurable Communication Ports
 - Gig-E: 10/100/1000 Base T Ethernet Port for BACnet or Modbus communication, includes DHCP addressing
 - Port S1: Rotary configurable EIA-485 Port for BACnet MS/TP or Modbus (primarily for BAS connection)
 - Port S2: Firmware configurable EIA-485 Port for BACnet MS/TP or Modbus (primarily for communicating device connection)
- 6 - Dedicated Communication Ports
 - Service Port: 10/100 Base T Ethernet port for technician access or for high-speed touchscreen connection
 - Rnet: Sensor Network or for touchscreen connection
 - I/O Bus Port: for I/O point expansion via screw terminal for remote mounting
 - I/O Bus Edge Connector: for I/O point expansion (includes power)
 - Act Net: Network of communicating valves and actuator
 - Comm Expansion Edge Connector Port: for comm expansion

Servicability:

- Fully programmable using our powerful EIKON® graphical programming tool. Control sequences can also be fully simulated off-line within EIKON or on-line via "Live Logic" for real-time troubleshooting of the control logic while the equipment is running.
- Built-in support for the OEMCtrl ZS intelligent communicating sensors and touchscreen display units including the Equipment Touch 4.3" touchscreen, and the OptiCORE EQT3s, the rugged, Android, panel-mount interfaces which come in 4.3", 7", & 10" sizes.

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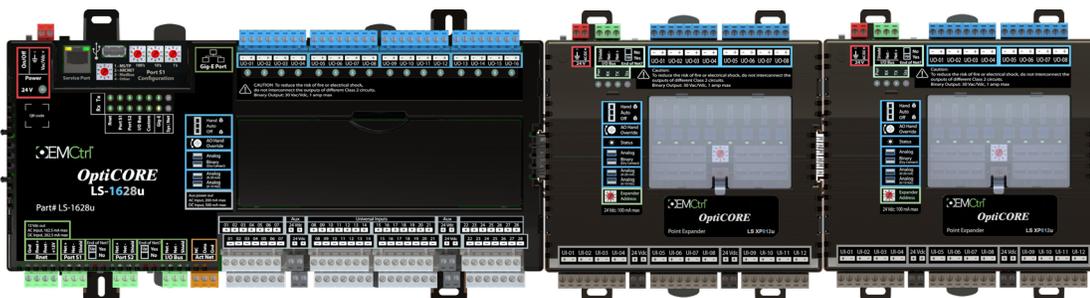
ASHRAE **BACnet**
Modbus

Support for EQT3 touchscreens



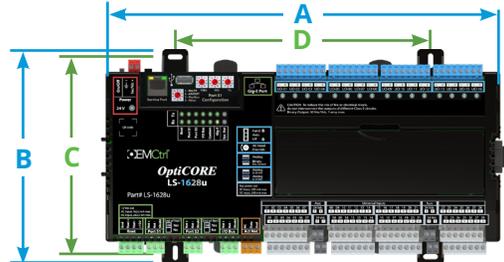
EQT3-7

Support for up to **9** I/O expanders
(224 total points)



OEMCtrl

Specifications

Power	24 Vac \pm 15%, 50-60 Hz, 100 VA, 24 Vdc \pm 10%, 48 W, Single Class 2 source only, 100 VA or less
Operating Range	-40° to 158° F (-40° to 70° C); 10 to 95% relative humidity, non-condensing
Universal Inputs (28) (Software selectable)	28 channels electronically configured to any of the following input types: Digital - Dry Contact OR Pulse Counting inputs up to 60Hz Analog - Voltage (0-5 or 0-10 Vdc) OR Current (0-20 mA) OR Thermistor (Precon Type II 10k Ω OR Carrier YSI 5k Ω OR S-5700-850 10k Ω w/ 11k Ω shunt) OR RTD (Platinum RTD TS-8000 1k Ω @ 32°F (0.00385 TCR) OR Platinum RTD 1k Ω @ 32°F (0.00375 TCR) OR Nickel-iron RTD 1k Ω @ 70°F, 699 Ω @ -40°F OR Balco (Nickel-iron) TS8000 RTD 1k Ω @ 70°F, 779 Ω @ -40°F. 16 bit A/D resolution 24VDC auxiliary sensor power(8): 200mA max. (AC power input) 500 mA max. (DC power input)
Universal Outputs (16) (Hardware selectable)	16 channels configurable to any of the following output types: Voltage (0-10 Vdc) OR Current (0-20 mA) OR Relay contacts, potential free, normally open, rated 24VAC/DC @ 1 Amp (resistive) Hand/Auto/Off override switches for all outputs. Potentiometer for manual adjustment of all analog outputs. Status LED for all outputs. 12 bits D/A Resolution (AOs)
Communication Ports BACnet Modbus	Gig-E port: 10/100/1000 BaseT Ethernet port for BACnet/IP and/or BACnet/Ethernet and/or MODBUS TCP/IP communication on the Ethernet at 10, 100, or 1000 Mbps, full duplex Port S1: High-speed EIA-485 port with End of Net switch configurable with rotary switch: <ul style="list-style-type: none"> BACnet MS/TP network at 9.6, 19.2, 38.4, 57.6, 76.8, or 115.2 kbps Modbus RTU network at 9.6, 19.2, 38.4, 57.6, 76.8, or 115.2 kbps Port S2: Electrically isolated EIA-485 port with End of Net switch configurable in firmware: <ul style="list-style-type: none"> BACnet MS/TP or Modbus RTU network at 9.6, 19.2, 38.4, 57.6, 76.8, or 115.2 kbps Service port: 10/100 Base T Ethernet port for technician use and local EQT displays Rnet port: Communicate with ZS communicating sensors and local EQT displays USB port: USB 2.0 host port for device recovery
Real Time Clock	Real-time clock keeps track of time in the event of a power failure for up to 3 days
Protection	Two fast acting, 5mm x 20mm glass fuses: <ul style="list-style-type: none"> A 2A fuse for the LS-1628u's power / A 4A fuse for the I/O bus edge connector The power and network ports comply with the EMC requirements EN50491-5-2.
Microprocessor / Memory	32-bit ARM Cortex-A8, 600MHz, processor with multi-level cache memory / 16 GBs eMMC Flash memory and 512 MB DDR3 DRAM
Compliance/Listing  	BACnet: Conforms to the BACnet Building Controller (B-BC) Standard Device and BACnet BBMD (B-BBMD) Device as defined in BACnet 135-2001 2012 Annex L and tested to Protocol Revision 14. United States: FCC compliant to Title CFR47, Part 15, Subpart B, Class A; UL Listed, File E143900; CCN PAZX, UL 916, Energy Management Equipment; ANZ: RCM Mark AS/NZS 61000-6-3; Canada: UL Listed File E143900, CCN PAZX7, CAN/CSA C22.2 No. 205 Signal Equip., Industry Canada Compliant ICES-003, Class A; CE Mark Compliant with 2014/30/EU, and RoHS Compliant: 2015/863/EU; UKCA Mark compliant with Electromagnetic Compatibility Regulations 2016 – Gov.UK and RoHS for Electrical and Electronic Equipment 2012.
Physical	Supports up to 9 OptiCORE I/O expanders OptiCORE I/O expanders <ul style="list-style-type: none"> LS-XP812u LS-XP48u LS-XP012u DIN rail or Screw mounting Minimum panel depth: 2.75 in. (7 cm) Dimensions Overall A: 12.75 in. (32.38 cm) B: 6.95 in. (17.68 cm) Depth: 2.09 in. (5.31 cm) Weight: 2.7 lb. (1.22 kg) Screw Mounting C: 6.45 in (16.38 cm) D: 8.25 in. (20.96 cm)  Fire-retardant plastic ABS, UL94-5VA

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1025 Cobb Place Boulevard, Kennesaw, GA 30144
770-429-3060 | oemctrl.com