



The Alerton VisualLogic® VLC-651R-E is a versatile, BACnet-compliant, fully programmable field controller, with three software-controlled high-current relays. The VLC-651R-E is well suited for unit ventilator and fan-coil applications, or any application that requires multi-speed fan or motor control. As a native BACnet controller, it integrates seamlessly with your BACnet system, communicating at up to 115 Kbps on a BACnet MS/TP LAN.

The VLC-651R-E supports the Alerton Microtouch™, as well as the BACTalk® Microset, Microset II, and Microset 4 intelligent wall sensors, which offer convenient data display, setpoint adjustment, and technician access to equipment setup parameters.

All VLC-651R-E control logic is programmed using Alerton's easy-to-learn graphical programming language, VisualLogic®. Programming and setup data is stored in non-volatile flash memory, ensuring stable and reliable operation.

High-resolution 16-bit universal inputs are auto-selectable for thermistor, dry contact, pulse, 0-5 V, 0-10 V, or 4-20 mA. High-resolution 16-bit analog output is auto-selectable for 0-10 V or 0-20 mA. Isolated relay contacts are rated to handle motor loads of 120VAC-1HP, 240VAC-2HP, and 277VAC-3/4HP; as well as general purpose loads of 120VAC @ 15A and 240/277VAC @ 10A.

VISUALLOGIC® UNITARY FIELD CONTROLLER

FEATURES AND HIGHLIGHTS

- Fully BACnet-compliant on MS/TP LAN at up to 115.2 Kbps.
- Programmable control logic can be field-modified.
- Downloadable operating code to allow for future software improvements.
- 32-bit processor architecture with all program data backed up in nonvolatile flash memory.
- High-speed processing of DDC program, with an internal logical loop time of 100 msec.
- Backwards compatible with older VLC-651R and VLC-651RC3 models.

APPLICATIONS

Recommended for fan-coil, unit ventilator and other multi-speed fan or motor applications.

SPECIFICATION STATEMENT

Solution shall be a BACnet certified VisualLogic Control device capable of communicating on an MS/TP LAN or as a stand-alone controller. Device shall provide 32-bit processor to maintain programmable timers. Terminal configurations shall provide six universal inputs, two binary triac outputs, three binary high-current relay outputs and one analog output. Device shall support the Microset protocol.

VLC-651R-E						
UI	HBO	GBO	RO	AO	AF	F
UNIVERSAL INPUTS	HOT SWITCHED TRIAC BINARY OUTPUTS	GROUND SWITCHED BINARY OUTPUTS	RELAY OUTPUT	ANALOG OUTPUTS	AIR-FLOW SENSOR	FILTER
6	2	0	3	1	-	-

TECHNICAL DATA

POWER – 24VAC @ 50-60 Hz. 21 VA minimum (maximum 67 VA with loads). Half-wave rectified.

INPUTS – 16-bit universal inputs accept 3k (Ibex) or 10k thermistor (type II), dry contact, 0-20 mA, 0-10V, 0-5V, or dry-contact pulse. External 250-ohm resistor required for 0-20 mA inputs. Pulse input maximum frequency of 100 Hz. Pulse input minimum duty cycle 5mS ON / 5mS OFF (pulse input not supported on IN-0).

POWER OUTPUT FOR EXTERNAL SENSORS – 20VDC $\pm 10\%$ @ 100 mA maximum

BINARY OUTPUTS – Triacs rated 24VAC @ 50/60 Hz, 500 mA continuous and 800 mA (AC rms) for 60 milliseconds.

RELAY OUTPUTS – Form-A normally open isolated contacts. Motor load rating: 120VAC, 1HP (15FLA); 240VAC, 2HP (12FLA); 277VAC, 3/4HP (6.9FLA). General purpose rating: 120VAC @ 15A; 240/277VAC @ 10A.

ANALOG OUTPUT – 16-bit universal analog output support Voltage Mode: 0-10VDC @ 10 mA maximum (1k ohm minimum); Current Mode: 4-20 mA @ 550 ohms Maximum.

MICROSET – supports BACtalk[®] Microset[™], Microset II, or Microset 4 on input 0 (IN-0).

INPUT/OUTPUT TERMINATIONS – Removable header-type screw terminals accept 14-24 AWG wire.

MAX DIMENSIONS – 4.9" (125mm) H x 5.5" (140mm) W x 1.4" (36mm) D

MOUNTING – Screw mounting

ENVIRONMENTAL – 0 to 158°F (-17 to 70°C) / 5 to 95%RH, non-condensing

COMMUNICATIONS – EIA-485 (RS-485) over twisted shielded-pair (TSP); auto-baud switching (9.6kbps, 19.2kbps, 38.4kbps, 76.8kbps, or 115.2kbps); communication status LED.

PROTOCOLS – BACnet MS/TP (master)

PROGRAMMING – Supports Alerton's BD4 DDC file format using Alerton's VisualLogic[®] toolset.

MICROPROCESSOR – 32-bit ARM Cortex-M4F, 80 MHz

MEMORY – 512 MB non-volatile flash.

SECURITY – Integrated secure boot prevents loading of tampered firmware.

ORDERING INFORMATION**ITEM NUMBER**

VLC-651R-E ALERTON VISUALLOGIC
CONTROLLER BACNET

CERTIFICATION AND CONFORMANCE

BACNET CONFORMANCE – An application specific controller (ASC) level device; tested and approved by BTL. See Protocol Implementation Conformance Statement (PICS).

UL – Listed Underwriters Laboratory for Open Energy Management Equipment (PAZX) under the UL Standard for Safety 916; listing includes both U.S. and Canadian certification. Listed under UL 2043 for Plenum applications.

EMC – EMC Directive 89/336/EEC (European CE Mark).

FCC – This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



16201 25th Avenue W., Lynnwood, WA 98087
Telephone: (425) 921-4900 / Fax: (425) 921-4872
alerton.com / sales@alerton.com