ALERTON

ACM

Installation Instructions

LT-ACM-II-03

WARNING! Install all equipment in accordance with the National Electric Code and in a manner acceptable to the local authority having jurisdiction. Read these instructions and the ACM Installation & Operations Guide (LT-ACMIOG) carefully before installing equipment. Failure to follow all instructions may result in equipment damage or a hazardous condition.

ATTENTION! Installez tout le matériel en conformité avec le Code national de l'électricité et d'une manière acceptable pour l'autorité localecompétente. Lisez ces instructions et le guide d' installation et fonctionnement de l'ACM (LT-ACMIOG) avant l'installation du matériel. Le non respect des instructions peut entraîner desdes dommages matériels ou une situation dangereuse.

Overview

ACMs are intended for indoor applications. Ensure that the installation location is dry, away from direct sunlight, and free from excessive dust, vibration, and electrical interference. The ambient temperature range is -4 °F (-20 °C) to 149 °F (65 °C).

Mounting

The ACM mounts on a standard DIN rail in one of two ways:

- vertically, with the connections on the right and left sides of the unit.
- horizontally, with the connections on the top and bottom of the unit.

The controller can also be screw-mounted using the four key-holes located at each corner, accessible under the covers. Install the ACM in a UL Listed enclosure only.

WARNING! Be sure the ACM does not have power connected while mounting.

ATTENTION! Assurez-vous que l'appareil n'est pas connecté à l'alimentation lors du montage.

- **To mount the ACM on a DIN rail [standard EN50022; 1-3/8 in. x 9/32 in. (7.5 mm x 35 mm)]**
  1. Holding the controller with its top tilted in towards the DIN rail, hook the two top flex snaps on the back of the controller onto the top of the DIN rail.
  2. Push down and in to latch the two bottom latching tabs of the controller onto the DIN rail.

- **To remove the ACM from the DIN rail**
  1. Push straight down from the top to release the bottom tabs.
  2. Rotate the bottom of the controller out towards you and pull the controller up and away from the DIN rail to release the bottom latching tabs.

- **To mount the ACM on the wall**
  1. Lift the front covers of the ACM, position the unit against the wall in the desired location, and then mark the key holes with a pencil.
  2. Use screws (not packed) to scurely fasten the ACM to the wall.
     Use care when installing screws to avoid damaging circuit board components.

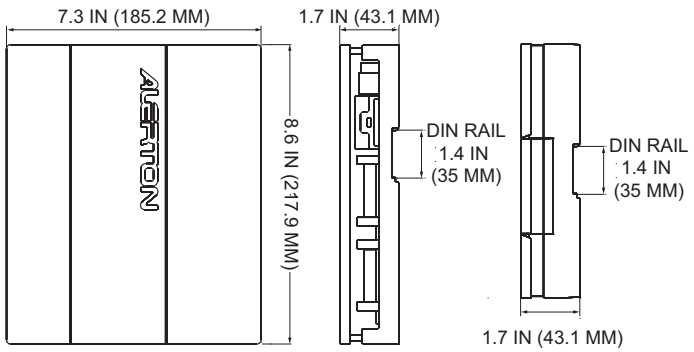


Fig. 1 ACM mounting dimensions.

Power

The ACM requires a dedicated 24 VAC, 50/60 Hz @ 40 VA minimum Class 2 transformer.

WARNING! Do not ground either leg of transformer secondary! This may damage the ACM. Do not power other devices from the same transformer. Use a dedicated transformer for the ACM.

ATTENTION! Ne pas raccorder les bornes secondaires du transformateur à la terre. Cela peut endommager l'ACM. Ne pas alimenter d'autres appareils a partir du meme transformateur. Utiliser un transformateur dédié pour l'ACM.

Recommended cable 18 AWG (max. 4 ft.) for power connections. Mount the transformer inside the enclosure with the ACM.

Using terminal blocks

The ACM uses removable terminal blocks to simplify field wiring of power and cabling. If desired, you can remove the terminal blocks from the unit, terminate cable, and re-seat the block when you finish.

- **To terminate cable**

  1. Strip a maximum of 3/8" (10 mm) of the wire jacket from the end of the cable.
  2. Use a small screwdriver (1/8" max.) to turn the adjustment screw fully counter-clockwise. The clamps in the wire slot separate as you turn the screw.
  3. When the clamps in the wire slot are fully open, insert the stripped end of the cable (the insulation end must be flush with the terminal block). Be sure to insert all cable strands into the wire slot.
  4. Hold the cable in place and turn the adjustment screw clockwise to tighten it until the clamps in the wire slot secure the cable.
  5. Tug gently on the cable to ensure that it's securely terminated.

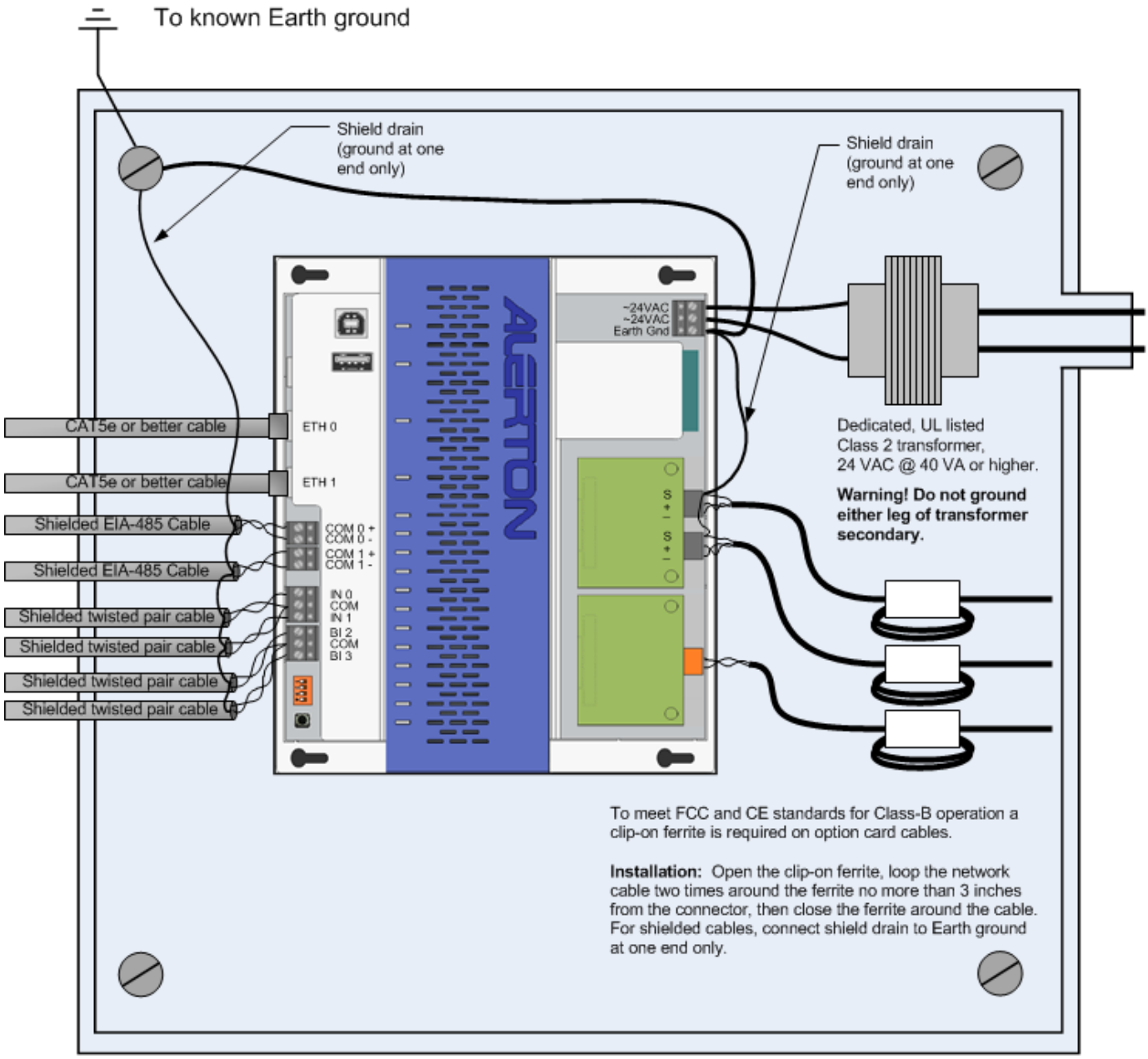
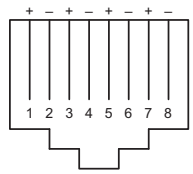


Fig. 2 ACM wiring.

Ethernet connections

The ACM has two RJ-45 jacks that support 10BASE-T (10 Mbps), 100BASE-TX (100 Mbps), and 1000BASE-T (1000 Mbps) Ethernet connections. The ACM automatically operates at 1000 Mbps if other devices and cabling support it.

Table 1 Ethernet connections

Ethernet RJ-45 jack	An RJ-45 jack for connection to Ethernet is on top of the ACM. Pin designations for the RJ-45 jack are shown.		
		**Pin**	**Assignment**
		1	Bi-directional pair A+
		2	Bi-directional pair A-
		3	Bi-directional pair B+
		4	Bi-directional pair C+
		5	Bi-directional pair C-
		6	Bi-directional pair B-
		7	Bi-directional pair D+
		8	Bi-directional pair D-
Cable type and length	Use an approved Category 5e or better Ethernet drop cable with RJ-45 plugs. Use professionally manufactured cables of no more than 328 feet (100 meters).		

MS/TP connections

MS/TP is a LAN standard designed specifically for BACnet applications. It uses the EIA–485 signaling standard on twisted-pair cabling in a simple bus configuration.

Table 2 MS/TP connections

Terminal identification	Terminals for MS/TP are on the top edge of modules and are labeled MS/TP + and MS/TP –.
Cable type and length	BACnet specifies shielded, twisted-pair cabling with characteristic impedance between 100 and 130 Ohms. Distributed capacitance between conductors must be less than 30 pF/foot (100 pF/m). Distributed capacitance between conductor and shield must be less than 60 pF/foot (200 pF/m). Foil or braided shield is acceptable. Cable length should be 4000 feet (1200 meters) per segment. Maintain polarity throughout the MS/TP segment.
Terminating resistors	Matched precision resistors are required at each end of the MS/TP segment. Wire the resistors across + and –. Tune the MS/TP LAN to obtain optimum resistor values.
Shield grounding	Terminate shield drain at one end of the MS/TP segment to ground. Tie shield drain through with wire nut at each intermediate device and insulate to avoid potential ground contact. Tape shield drain back at other end of segment.

Binary Input and Analog Input

ACMs have two terminal blocks for connecting analog and binary monitoring inputs. Each terminal block has three screw-connections. The terminals are:

Table 3 Binary Input (BI) and Analog Input (AI)

IN-0 **IN-1**	Support 10k ohm thermistor, non-pulse dry-contact, and 0-10vDC input signals to monitor inputs such as outdoor temperature or relative humidity. Can handle 4-20mA with an external resistor.
COM	Common terminals for their blocks.
BI-2 **BI-3**	Support non-pulse dry-contact input signals. Can also be configured to monitor any binary status point, such as a Fire Alarm dry contact or a door switch.

Canadian conformance statement

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Cet équipement a été testé et jugé conforme aux limites de Classe B pour un appareil numérique, en vertu de l’article 15 de la réglementation de la FCC. Ces limites ont été instaurées pour fournir une protection raisonnable contre toute interférence nuisible dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l’énergie radiofréquence. S’il n’est pas installé et utilisé conformément aux instructions, il peut provoquer des interférences sur les communications radio. Cependant, il n’est pas garanti que des interférences ne se produiront pas dans certaines installations. Si cet équipement cause des interférences à la réception radio ou télévisée (ce qui peut être vérifié en éteignant l’appareil puis en le remettant sous tension), l’utilisateur peut tenter de les résoudre en suivant une ou plusieurs des mesures ci-après:

- Réorienter ou déplacer l’antenne réceptrice.
- Augmenter l’espace entre l’appareil et le récepteur.
- Brancher l’appareil à une prise de courant différente de celle sur laquelle le récepteur est branché.

Pour obtenir de l’aide, contacter le vendeur ou un technicien radio/télévision expérimenté.

Notice

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.

Ascent Control Module

Addendum: ACM Option Card Wiring Instructions

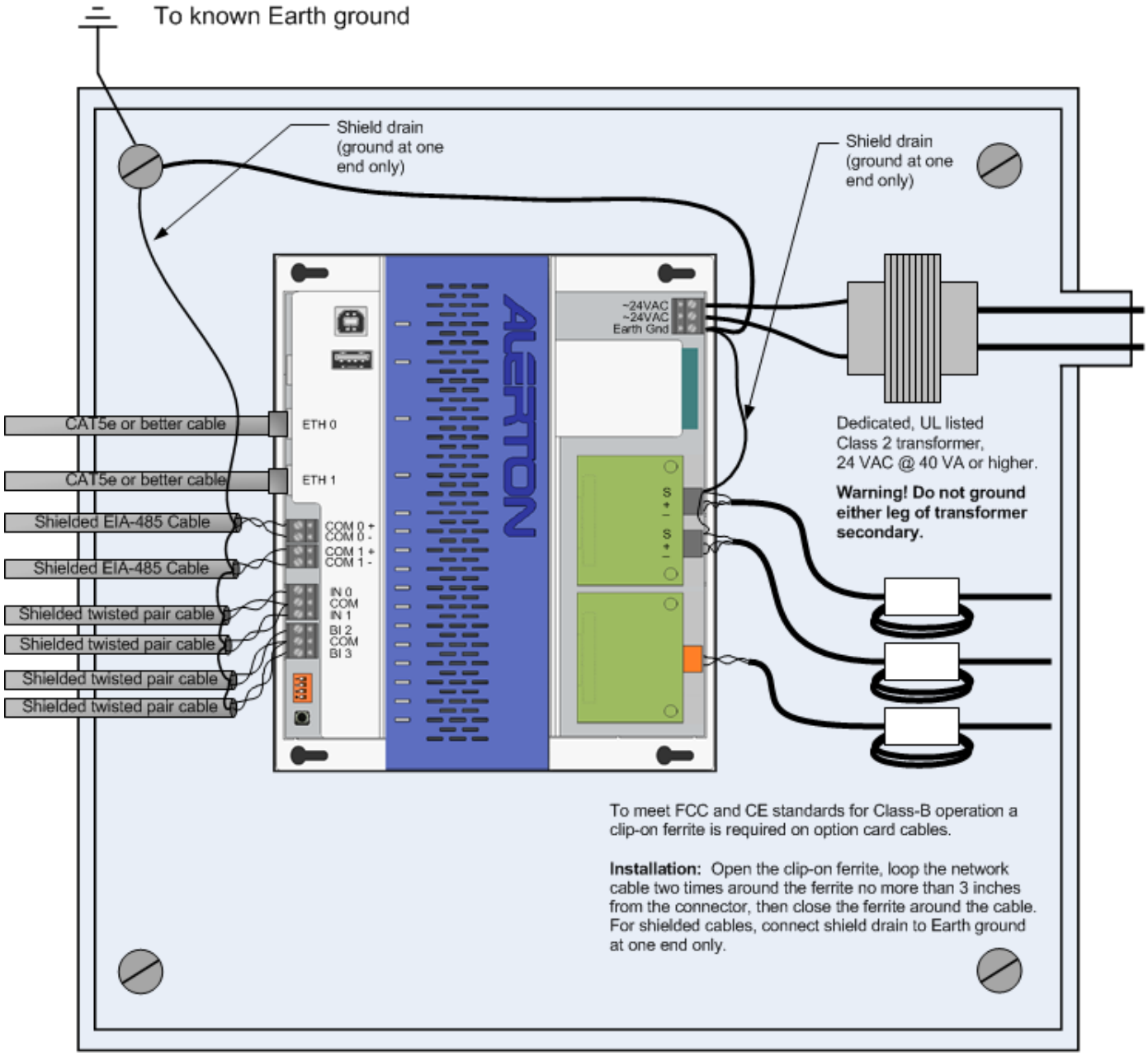
50096253-001

Purpose: To meet FCC and CE standards for Class-B operation a clip-on ferrite is required on option card cables.

- **To install the clip-on ferrite:**

  1 Open the clip-on ferrite, loop the network cable through the ferrite no more than 3 inches from the connector, and then close the ferrite around the cable.

  2 For shielded cables, connect shield drain to Earth ground at one end only (not shown).



ACM EULA and Open Source Declarations

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