

AO-90357

INSTALLATION INSTRUCTION

CLEVELAND-KIDDER[®] **INTRINSICALLY SAFE BARRIER BLOCK** **KIT FOR USE ON ULTRA TRANSDUCERS**

KITS: MO-13866 & MO-13867



REVISION

AA

Industrial Products Division

REVISION HISTORY

Rev	ECO	Author	Date	Description of Change
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WARRANTY

Cleveland Motion Controls warrants the goods against defects in design, materials and workmanship for the period of 12 months from the date of delivery on the terms detailed in the Cleveland Motion Controls, Inc. Terms and Conditions of Sale, document number AO-90131

Cleveland Motion Controls, Inc. reserves the right to change the content and product specification without notice.

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INTENDED USERS

This Instruction Manual is to be made available to all persons who are required to configure, install or service the equipment described in this manual or any other related activity.

ADDITIONAL INFORMATION

ATTENTION: The following information is provided merely as a guide for proper installation. Cleveland Motion Controls cannot assume responsibility for the compliance (or failure to comply) to any code (national, local or other) that prescribes the proper installation of this electro-mechanical device or associated equipment. A hazard of personal injury and/or property damage can exist if applicable codes are not adhered to.

CE EMC RESPONSIBILITY

The Intrinsicly Safe Barrier Block may be used by a manufacturer as a component of a larger system, along with other components, which may or may not bear the CE mark. The system assembler is responsible for the compliance of the system as a whole with the EMC Directive.

Before installing the Intrinsicly Safe Barrier Block you must clearly understand who is legally responsible for conformance with the EMC Directive. Misappropriation of the CE mark is a criminal offense.



INTRINSICALLY SAFE APPLICATION RESPONSIBILITY

The Cleveland-Kidder Ultra Transducer may be used by a manufacturer as a component of a larger system, along with other components, which may or may not be rated for Intrinsicly Safe Applications. The system assembler is responsible for the compliance of the system as a whole to any applicable Intrinsicly Safe specifications required.

The use of an approved Intrinsicly Safe Barrier block with the Ultra Series Transducers falls under the “Modular Approach” or “Entity Concept” with the Ultra Transducers being classified as a “Simple Device” or “Simple apparatus” and the barrier block as the “Intrinsicly Safe” or “associated apparatus”.

1 IMPORTANT INFORMATION

1.1 ORDER NUMBERS

There are two kits available depending on whether there is one transducer like the CLT type or two transducers in the system.

The MO-13866 Barrier Block kit is for one transducer systems.

The MO-13867 Barrier Block kit is for two transducers systems.

1.2 CONTACT INFORMATION AND SERVICE ASSISTANCE

For service assistance, have the following information available:

- Type of Transducer you are using
- Barrier Block Part number
- Purchase order number

You can contact Cleveland Motion Controls at:

Phone: 216.524.8800

Fax: 216.642.5155

For the latest product information, technical literature etc., visit our website at www.cmcccontrols.com



Disassembly by improperly trained personnel may result in additional damage to these units. Should repairs be required or for warranty repairs, contact the Customer Service Department for a return authorization number before returning the units.

1.3 RECEIVING AND UNPACKING

After receiving the Barrier Block Kit you should:

- Carefully, unpack and inspect the equipment
- Compare the received shipment with the packing list
- Report any damage to the carrier and your CMC representative
- Store equipment that will not be used in a clean, dry location
- Take appropriate precautions to prevent moisture, dust and dirt from accumulating in storage and installation areas

1.4 EXCITATION VOLTAGE



*Maximum Excitation Voltage for the Ultra Series transducers must be limited to 5.6 VDC or 5.6 VRMS. **Do not use 10 Volt excitation** or possible damage to the semiconductor strain gage elements can occur. Before applying power to the amplifier, verify that the amplifier excitation voltage has been set to 5.0 VDC.*

2 INSTALLATION

2.1 BEFORE INSTALLING THE BARRIER BLOCKS

Before installing the Barrier Blocks, perform the following steps:

1. Review the Installation manual for the amplifier or control system being used.
2. Review the Installation manual for the Cleveland-Kidder Transducers being used
3. Review the Installation manual part number INM7700 for the MTL 7700 Series Barrier Blocks.

2.1.1 INSTALLATION PRECAUTIONS

To ensure proper installation of the barrier blocks in an intrinsically safe application, all wiring instructions, safety considerations and warnings must be followed in the MTL INM7700 Instruction Manual.



Failure to follow the MTL INM7700 Instruction Manual can result in a system that does not meet the intrinsically safe specifications and could result in loss of life and property. Cleveland Motions Controls cannot be held responsible for improper installation of the Barrier Blocks.

2.1.2 SAFETY CONSIDERATIONS



Safety practices should not be an afterthought. Before installing, servicing or calibrating review and follow applicable policies and procedures to ensure worker safety. Machinery must be in a safe state and be aware of any additional hazards that can arise when installing and calibrating Intrinsically Safe Systems.

2.2 MOUNTING THE BARRIER BLOCKS

The barrier blocks are attached to a Din Rail which is isolated from the main mounting surface by isolation blocks. The isolation blocks are required per section 5.3 in the MTL INM7700 instruction manual.

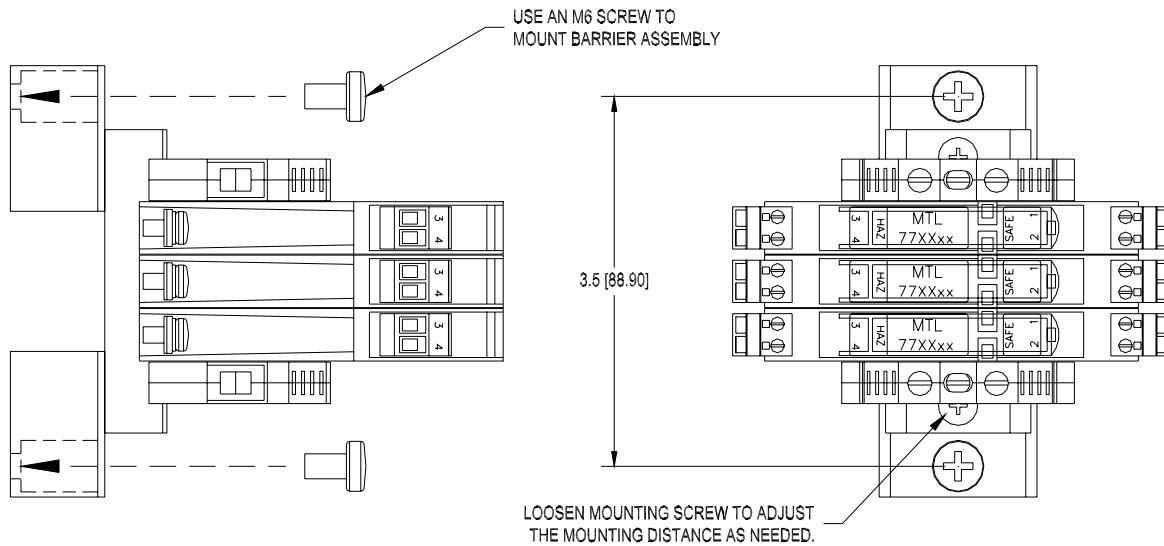


Figure 1 –Mounting Diagram

2.3 ELECTRICAL CONNECTIONS AND WIRING

The intrinsically safe barrier blocks are connected to the Cleveland-Kidder Ultra Series Tension Transducers and control equipment or an Ultra Din Rail Amplifier as shown in figure 2a for single transducers such as the CLT style and figure 2b for dual transducers. There are additional wiring requirements for the IS barrier blocks such as the Isolated Earth Ground that are described in more detail in the MTL INM7700 Instruction Manual that need to be connected properly to ensure Intrinsically Safe compliance.

Also make certain that:

- The cables do not interfere with the web path, and that they are away from gearing or other moving parts.
- You exercise care when routing the cables to avoid pick-up from noise-radiating power cabling (motor armature leads, AC main wiring, etc).
- In environments with severe electromagnetic noise, it may be necessary to route the cables inside metallic conduit.

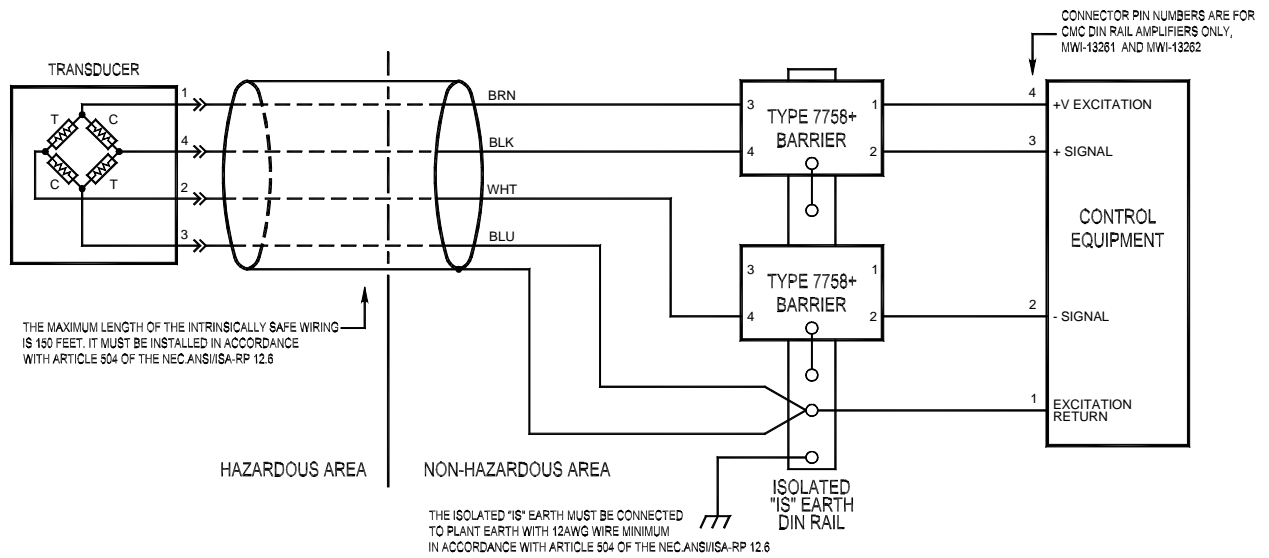


Figure 2a – Single Transducer Wiring Diagram

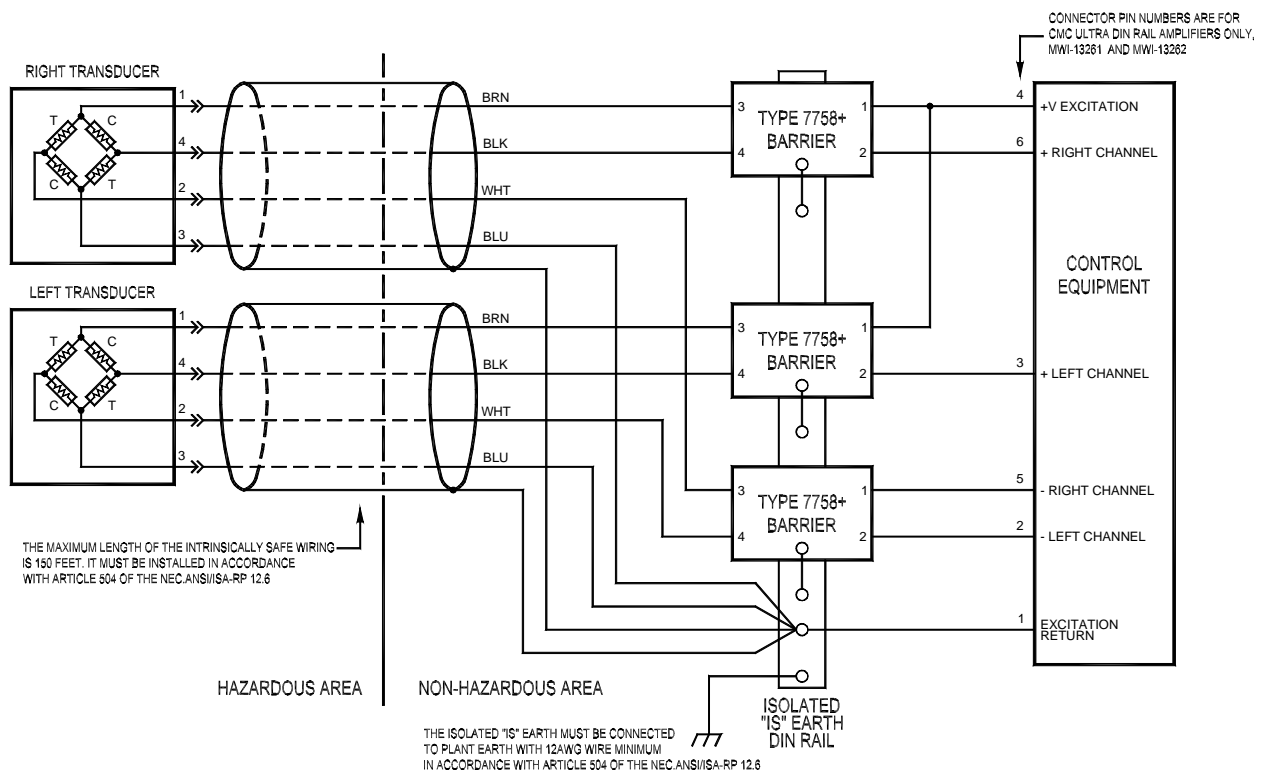


Figure 2b – Two Transducer Wiring Diagram

Figure 2c shows a typical wiring installation for the Intrinsically Safe Barrier Blocks.

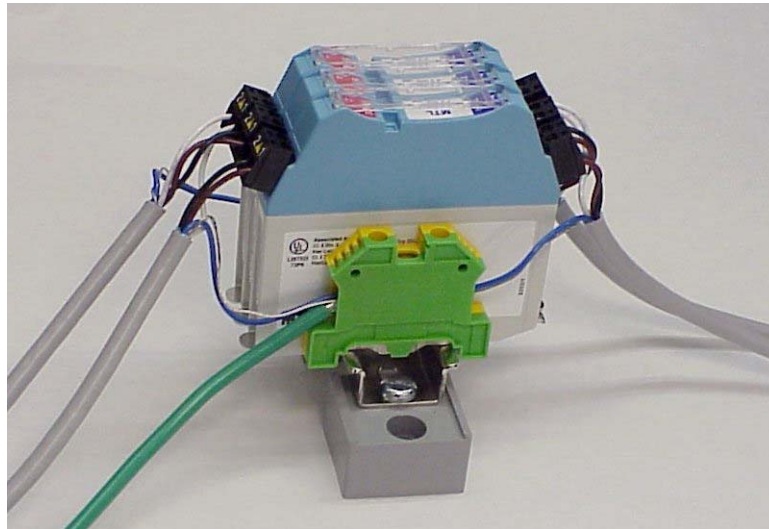


Figure 2c. – Example of a Two Transducer Wiring Installation

2.4 MATING CONNECTORS

The M12 connector used on the Ultra Series transducer is a four-pin, DC keyed, male connector that mates directly with the molded cordsets offered by Cleveland Motion Controls. The following table lists the pin numbers and cable colors that apply:

Pin Number	Wire Color	Signal
1	brown	Excitation Voltage
2	white	Output - (low going)
3	blue	Excitation Return
4	black	Output + (high going)



If you choose to make your own cables or need to repair damaged connectors, you can purchase a separate mating connector from Cleveland Motion Controls. To order, use CMC part number, X43-34338.

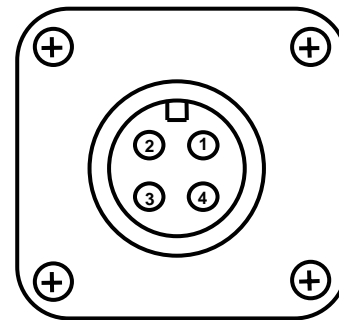


Figure 3 - Front View of M12 Connector

When mating the connector, align the keying mechanism and pins so that they enter the socket without you having to apply excessive force. Use your fingers to sufficiently tighten the coupling nut enough to ensure an adequate seal and to discourage accidental loosening.

2.5 CALIBRATION

For the proper calibration procedure, refer to the Instruction Manual that accompanied your amplifier or tension controller.

Trademark Information

Cleveland - Kidder is a registered trademark of Cleveland Motion Controls.
