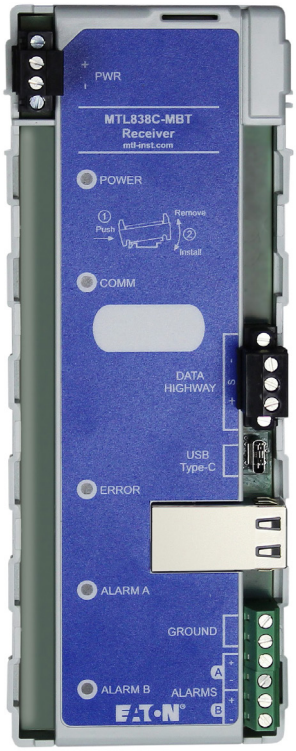
Instruction manual
MTL intrinsic safety solutions

March 2021
INM MTL838C-MBT Rev 2

CROUSE-HINDS SERIES

MTL838C-MBT

Receiver



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DECLARATION OF CONFORMITY

A printed version of the Declaration of Conformity has been provided separately within the original shipment of goods. However, you can find a copy of the latest version at -

http://www.mtl-inst.com/certificates

CONTENTS

GENERAL SAFETY INFORMATION

The following methods are used in this manual to alert the user to important information:-

WARNING !
Warnings are provided to ensure operator safety and MUST be followed.

CAUTION
Cautions are provided to prevent damage to the instrument.

NOTE
These are used to give general information to ensure correct operation.

SAFETY INSTRUCTIONS FOR INSTALLATION AND OPERATING PERSONNEL

The operating instructions provided here contain **essential safety instructions** for installation personnel and those engaged in the operation, maintenance and servicing of the equipment.

WARNING !
Failure to comply with these instructions can endanger the lives or health of personnel and risk damage to the plant and the environment.

WARNING !
The responsibility for planning, installation, commissioning, operation and maintenance, particularly with respect to applications in explosion-hazard areas, lies with the plant operator.

Before commencing installation or commissioning:

- Read and understand the contents of this manual and the product datasheet
- Ensure installation and operating personnel have received adequate training for this task
- Ensure that any operating instructions are fully understood by the personnel responsible.
- Observe national and local installation and mounting regulations (e.g. IEC 60079-14).

- **During operation:**
- Make the relevant instructions available at all times to the operating personnel.
- Observe safety instructions.
- Observe national safety and accident prevention regulations.
- Operate the equipment within its published specification.
- Servicing, maintenance work or repairs not described in this manual must not be performed without prior agreement with the manufacturer.
- Any damage to this equipment may render its explosion protection null and void.
- No changes to any of the components that might impair their explosion protection are permitted.

If any information provided here is not clear:

- Contact Eaton's MTL product line or one of its representatives.

NOTE
Improper installation and operation of the enclosure can result in the invalidation of the guarantee.

MTL838C-MBT
Receiver

Figure 1.1 - MTL838C-MBT Receiver

1 ABOUT THIS MANUAL

The purpose of this manual is to provide the user with information on the installation, connection, and hardware configuration of the MTL838C-MBT Receiver.

1.1 Related documents

This manual does NOT cover the connection or configuration of the MTL831C Analog Transmitter. For details of this item consult:

- **INM MTL831C**

Additional documents for the MTL838C-MBT are:

- **INM MTL83xC Modbus - PC Software Manual**
- **INM5500 for installation instruction for MTL5553 Isolator/Power Supply module.**

1.2 Product description

The MTL838C-MBT Receiver may be connected to one or two MTL831C Analog Transmitters. It holds the configuration for the transmitters and receives measurement data from up to 32 sensors (16 from each transmitter). The data is then made available via Modbus TCP. The MTL838C-MBT must be installed in a safe area. However, by using the MTL5553 Isolator/Power Supply, the MTL831C's may be installed in Zone 0, 1, or 2.

The MTL831C can monitor up to 16 inputs from THC or millivolt sources or 2, 3 or 4-wire RTDs.

The MTL838C-MBT, MTL5553, and MTL831C are connected by a data highway consisting of a single shielded, twisted-pair cable.

The data highway carries both signal and power over distances up to 2km, depending on the application, the cable, and the (noise) environment- see Section 4.4. The data highway cables can be simple twisted-wire pairs or pairs of wire within an IS multi-core cable.

** Modbus® is a registered trademark of Schneider Automation Inc.*

2 GETTING STARTED

Installation of the MTL838C-MBT Receiver is divided into three main topics.

- **Mechanical Installation -** how to mount the MTL838C-MBT and how it may be fitted into an enclosure.
- **Electrical Connections -** power, data highway, Ethernet, and alarm connections. If units are installed in our enclosures, it details any special wiring arrangements.
- **Configuration -** all configuration is either over a Modbus TCP® link or via a USB connection to software on a PC and is covered in separate documents.

NOTE

A new user might find it helpful to set up the system, or a simple version of it, in an indoor test area to gain familiarisation before undertaking installation on site.

3 MECHANICAL INSTALLATION

3.1 Location

The MTL838C-MBT must be installed in a safe area.

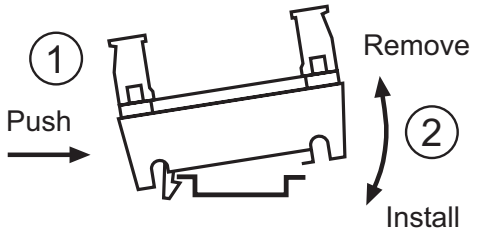
3.2 Mounting options

The unit can be mounted on T-section DIN-rail. Eaton has a range of enclosures - ENC8, ENC8-SS, ENC83 or ENC83-SS- to provide suitable IP67 protection if the Receiver is located in an exposed area.

3.2.1 Mounting on T-section DIN-rail

To install, tilt the MTL838C-MBT to the left and hook to the left side of the standard 35mm DIN46277 T-section rail. Push to the right and allow the unit to rotate down to sit flat on the DIN Rail. Allow it to spring back to the left and the right side will hook to the DIN Rail.

To remove, push the MTL838C-MBT to the right and tilt the right side away from the DIN Rail. While tilted, allow it to spring back to the left and remove from the DIN



4 CONNECTIONS

The connection terminals are along the edges of the Receiver.
The various connections are detailed in the following sub sections.

4.1 General wiring recommendations

Use of ferrules and a torque screwdriver is recommended to guarantee proper wire termination. All wire terminals should be torqued to 0.5N-m. The retaining screws on the two pluggable connectors should be tightened to 0.3N-m.

4.2 Input Power

A nominal 24VDC power supply should be wired to the 2 pin pluggable connector labeled "PWR". An SELV rated power supply is recommended. The cable from the supply to the MTL838C-MBT should be less than 30m in length. The 24VDC power supply negative lead should be grounded to a clean instrument ground.

4.3 Data Highway

The Data Highway connects the MTL838C-MBT to the MTL831C (or MTL5553 if installed). It supplies power to as well as communication with the MTL831C's. A shielded, twisted-pair cable should be used for this set of 3 terminals. Connect the two wires to the "+" and "-" terminals in a way that will ensure that polarity is maintained when connected to the MTL831C. The shield is connected to the "S" terminal which is also internally wired to the "GROUND" terminals.

The Data Highway cable is usually long and 16 gauge Foundation Fieldbus cable that has been checkmarked as meeting the FF standard for cables is recommended. This will help ensure that the maximum cable lengths can be achieved with successful communication in the presence of noise.

The maximum data highway length will depend upon two key factors: the type and quality of the cable used, and the level of electrical interference present in the environment.

Typically a user might expect: IS applications- 1km

Non-IS applications- 2km.

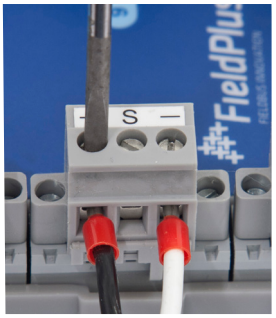
WARNING !
When connecting the MTL838C-MBT directly to one or two MTL831C's (non-IS application), do not ground the shield at either MTL831C as this may cause a ground loop which can adversely affect communication.

4.4 Electrical connections

The Power and Data Highway connectors are pluggable. The Ground and Alarm terminals are fixed screw terminals. The terminals can accept the following conductor sizes:

Type	Conductor size
Pluggable screw terminals	0.2 to 2.5mm2 12-24 AWG
Fixed screw terminals	0.14 to 1.5mm2 16-26 AWG

NOTE
A *torque screwdriver* set between 0.5 - 0.6Nm is recommended for tightening all terminal screws.



Screw Terminal

4.5 USB Type-C

This connection is used to temporarily connect the MTL838C-MBT to a PC to configure the system, verify its operation, and diagnose issues. This connection is not intended to be permanent. When the unit is connected to a PC and the MTL83x Configuration software is communicating with the MTL838C-MBT, the Ethernet port is disabled. This is to prevent an attempt to configure the device from two sources at the same time.

4.6 Ethernet Modbus TCP

Modbus TCP is delivered to/from the unit via Ethernet using the RJ45 connection built into the MTL838C-MBT.

Connect an Ethernet cable from the Modbus Control System network to the RJ45 connector on the MTL838C-MBT. The MTL838C-MBT does not support auto MDI-X. An appropriate device (e.g. an Ethernet switch) should be used to connect the MTL838C-MBT to the Modbus Control System network.

4.7 Ground and Cable Shields (Screens)

The two MTL838C-MBT GROUND terminals must be grounded to a clean instrument ground. This is to protect the unit from electromagnetic interference. The "S" shield terminal on the Data Highway port is internally connected to this point. Proper connection of shields on the cables connecting the MTL838C, MTL831C, and sensors is critical to error-free operation of the system. See INM MTL831C for detailed information.

4.8 Alarms

There are two sets of dry alarm contacts (A and B) that are available on the MTL838C-MBT. These contacts can be programmed to activate on various conditions of the unit, system, or sensors. See the PC software manuals for more details.

NOTE

The "+" and "-" do not imply polarity as these are literally dry contacts.

CAUTION

Do not apply power directly across these contacts as they may become damaged. Observe the voltage and current limitations on the contacts. (2A, 220VDC, 250VAC)

4.9 IS applications

Please see INM MTL831C for installation information for intrinsically safe applications.

5 ROUTINE MAINTENANCE

Check the general condition of the installation periodically to make sure that no deterioration has occurred. At least every two years (and more frequently for particularly harsh environments) check that:

- cable, wire connections, terminations, and screens are in good condition
- the green Power LED is lit
- Red Error LED is not lit
- no signs of damage or corrosion are present

6 CONFIGURATION

There is no hardware configuration required for the MTL838C-MBT. Configuration of the Ethernet port settings is done by connecting a PC to the MTL838C-MBT USB port and using the PC software. The remaining Modbus configuration may be done via Modbus or by using the PC software with a USB cable (not supplied) connected to the MTL838C-MBT. Please see the PC software manual (INM MTL83xC PC Modbus) and the Modbus Implementation Manual (INM MTL838C-MBF) for more information.

NOTE

The MTL838C-MBT and the MTL831C support firmware updates using the PC software. Please see the PC software manuals for more information.

7 LED INDICATORS

There are 5 LEDs to indicate the health and status of the system. The following are their meanings:

POWER:	This green LED indicates that there is adequate 24VDC power.
COMM:	When blinking (green), this indicates that data is being received from an MTL831C.
ERROR:	Red illumination means that there was a CRC error in a packet received from the MTL831C, or the MTL831C failed to respond to a request for data. This LED goes off after 1/4sec without an error.
ALARM A:	When illuminated (red), alarm contact A is open indicating there is an active alarm condition.
ALARM B:	When illuminated (red), alarm contact B is open indicating there is an active alarm condition.
RJ45 LEFT LED:	This indicates the status of the Link. Off indicates no link, Amber is 10Mbps link, and Green is 100Mbps link.
RJ45 RIGHT LED:	This is the Activity LED. Off indicates no activity, Amber is Half Duplex, and Green is Full Duplex

.

7.1 Power up behavior

The POWER LED is on and stays on so as long as the input voltage is adequate. Immediately after power is applied, the remaining 4 LEDs should come on for about 1 second and then go off.

Shortly thereafter, the LEDs should function as indicated above.

7.2 Firmware Update

During the Firmware update which is initiated from the PC software, the COMM and ERROR LEDs alternately blink. When the firmware update is complete, the unit restarts.

8 FAULT-FINDING IN THE MTL838C-MBT

Use the following tips to resolve issues when the system does not seem to be functioning correctly. If you are still unable to solve the issue, please contact Eaton Technical Support for assistance.

The POWER light is not ON

- The unit is not receiving power. Use a Voltmeter to verify there is adequate input voltage at the PWR connection. Make sure the polarity is correct.

The COMM light is not ON

- The unit is not receiving any response to its queries to the MTL831Cs. Make sure all wiring is correct and that the MTL831Cs are receiving power (for non-IS applications they are powered from the MTL838C). See also this same topic in the Installation manual for the MTL831C.
- Use the PC software to check the diagnostic information.
- Try power cycling the unit to see if it recovers.

The COMM light blinks erratically

- This indicates poor communication with the MTL831Cs (not enough good packets are being received).
- Use the PC software to check the diagnostic information.
- Try power cycling the unit to see if it recovers. The issue may be with one of the MTL831Cs. Try power cycling them as well.

The ERROR light comes on periodically

- This is likely a CRC error on packet receipt (bad packet).
- An extreme noise source is affecting the data highway cable. This could include VFDs, welders, etc.
- Check all wiring terminations to see that they are tight and there are no unintended shorts.
- Verify that the data highway shield is grounded at only one location. (This is normally through the GROUND connection on the MTL838C-MBT. For IS installations the Data Highway shield must also be grounded after the MTL5553.)
- Verify the integrity of the data highway cable.
- Use the PC software to check the diagnostic information.
- Try power cycling each device connected to the data highway one at a time.

The COMM and ERROR lights alternately turn on and off

- This is an indication that the unit is being updated with new firmware. However, if a firmware update fails to complete properly, the unit can get stuck in this mode. Try performing the firmware update again to correct the situation. Contact Eaton for assistance if the unit fails to properly update.

MTL838C[-xxx] Receiver FMCUS and IECEx Safety Instructions (Relcom Doc. No. 503-546 Rev A.0 26 NOV 2020)

The following information is provided for safe product use in accordance with IECEx, Canadian, and US standards.

Description

The MTL838C[-xxx] Receiver is part of a multi-component system that aggregates temperature or mV measurements from field sensors and provides them to the control system (DCS, PLC, etc.). The system consists of the Transmitter (e.g. MTL831C[-xx]), which can connect to multiple sensors, and a Receiver (MTL838C[-xxx]) that makes the data from the sensors available to the control system. Multiple Transmitters can be connected on the bus to a single Receiver.

General

In common with all other electrical apparatus installed in hazardous areas, this apparatus must only be installed, operated and maintained by competent personnel. Such personnel shall have undergone training, which included instruction on the various types of protection and installation practices, the relevant rules and regulations, and on the general principles of area classification. Appropriate refresher training shall be given on a regular basis. [See clause 4.2 of IEC 60079-17].

Installation

a) The installation must comply with the appropriate national and local regulations, which may include reference to the IEC code of practice IEC 60079-14. In addition, particular industries or end users may have specific requirements relating to the safety of their installations and these requirements should also be met. For Canadian installations CEC Part 1 is applicable. For US installations the National Electrical Code and ANSI/ISA-RP12.6 are applicable.
b) This apparatus must not be subjected to mechanical and thermal stresses in excess of those permitted in the certification documentation, this document and the product specification.
c) The apparatus must not be installed in a position where it may be attacked by aggressive substances and must be protected from excessive dust, moisture and other contaminants.
d) If necessary in the end use application, the product must be installed in an enclosure to protect it from excessive dust, moisture, and mechanical damage.
e) Mount on 7.5mm x 35mm 'top hat' DIN Rail according to the instructions on the device cover. Use of DIN Rail end stops is recommended for vertical DIN Rail installations.
f) Connect per the Control Drawing provided in this document.
g) Fusing of the power source is recommended.

Inspection and maintenance

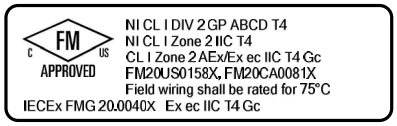
a) Inspection and maintenance should be carried out in accordance with applicable IEC, Canadian, and US national and local regulations which may refer to the IEC standard IEC 60079-17. In addition, specific industries or end users may have specific requirements which should also be met.
b) The product contains no user serviceable parts. Non-functioning units should be returned to the manufacturer for replacement or repair.
c) Access to the internal circuitry must not be made during operation or at any other time.
d) If the outer enclosure of the apparatus needs to be cleaned, this should be done with a cloth lightly moistened by a dilute mixture of detergent in water.

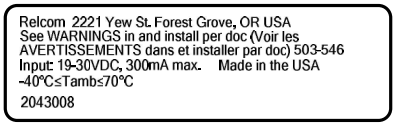
Repair

The product contains no user serviceable parts. Non-functioning units should be returned to the manufacturer for replacement or repair.

Marking

The following example label diagrams indicate the required markings for the product. Other items may be included on the certification labels as required. These additional items may be related to other certifications. Also, the items shown below may be re-arranged, combined, or separated to other labels if it is clear which information is relevant to each certification. The product model number will be on a separate label (overlay) on the product cover.





Note that the “2043008” is the serial number and may be replaced by a date code.

“Made in the USA” must indicate the country of manufacture.

Labels must have permanent adhesive and be printed with permanent ink to meet the requirements of the certifying agencies (and standards).

Labels should be placed on the product so that they are as visible as possible when the product is in service.

Specific Conditions of Use

The surface of the equipment may cause risk of electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.

WARNINGS (AVERTIESSEMENTS)

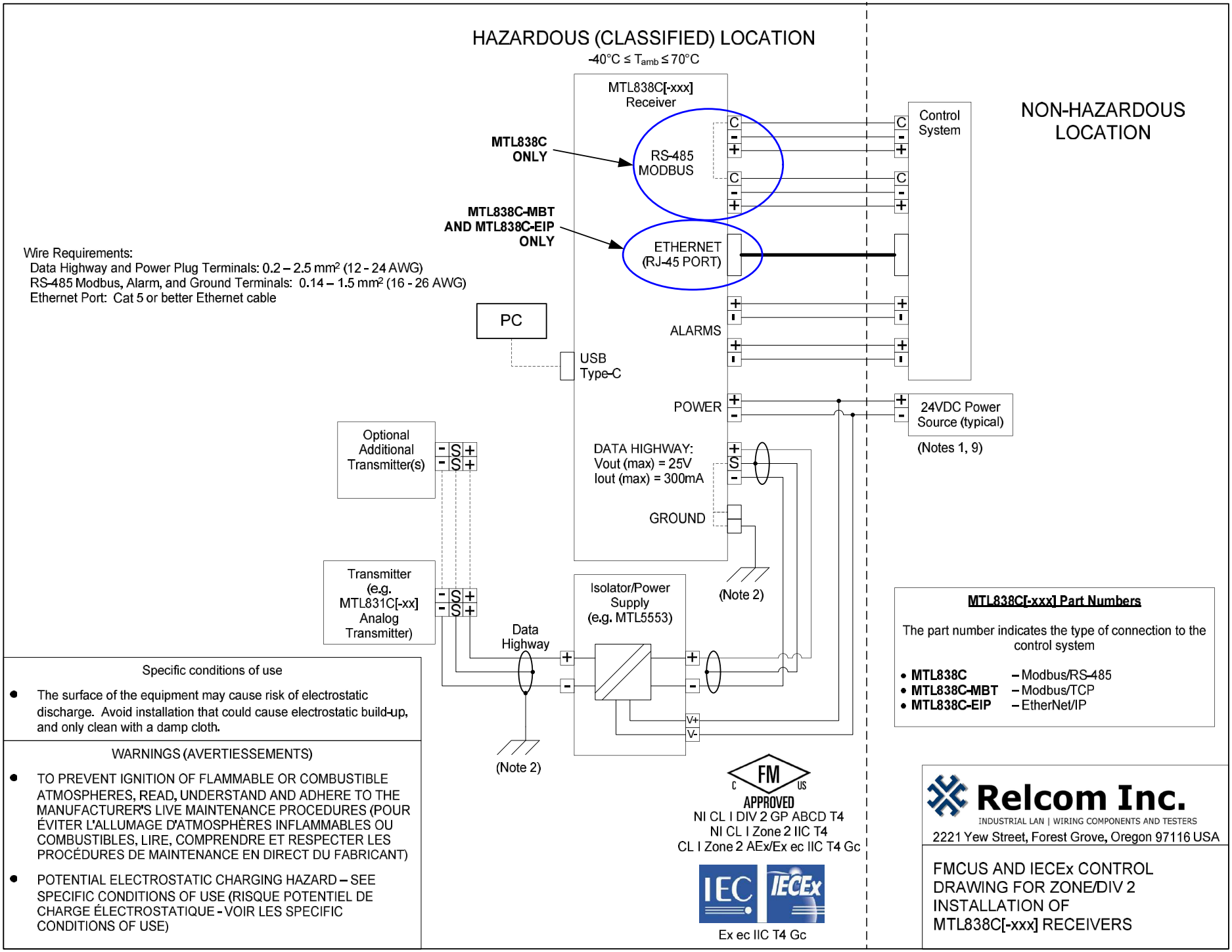
a) TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, READ, UNDERSTAND AND ADHERE TO THE MANUFACTURER'S LIVE MAINTENANCE PROCEDURES (POUR ÉVITER L'ALLUMAGE D'ATMOSPHÈRES INFLAMMABLES OU COMBUSTIBLES, LIRE, COMPRENDRE ET RESPECTER LES PROCÉDURES DE MAINTENANCE EN DIRECT DU FABRICANT)

b) POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE SPECIFIC CONDITIONS OF USE (RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE - VOIR LES SPECIFIC CONDITIONS OF USE)

Standards

This product complies with the following standards:

FM Class 3600:2018, FM Class 3611:2018, FM Class 3810:2018,
ANSI/UL 60079-0:2019, ANSI/UL 60079-7:2017, ANSI/UL 61010-1:2016,
ANSI/UL 121201:2019
IEC 60079-0:2017, IEC 60079-7:2015
CSA C22.2 NO. 60079-0:19, CAN/CSA-C22.2 NO. 60079-7:16
CAN/CSA C22.2 No. 213:2017


HAZARDOUS (CLASSIFIED) LOCATION
-40°C ≤ Tamb ≤ 70°C
NON-HAZARDOUS LOCATION
MTL838C[-xxx] Receiver
MTL838C ONLY
RS-485 MODBUS
MTL838C-MBT AND MTL838C-EIP ONLY
ETHERNET (RJ-45 PORT)
Control System
Wire Requirements:
Data Highway and Power Plug Terminals: 0.2 – 2.5 mm² (12 - 24 AWG)
RS-485 Modbus, Alarm, and Ground Terminals: 0.14 – 1.5 mm² (16 - 26 AWG)
Ethernet Port: Cat 5 or better Ethernet cable
PC
USB Type-C
ALARMS
POWER
24VDC Power Source (typical)
(Notes 1, 9)
Optional Additional Transmitter(s)
DATA HIGHWAY:
Vout (max) = 25V
Iout (max) = 300mA
GROUND
Transmitter (e.g. MTL831C[-xx] Analog Transmitter)
Isolator/Power Supply (e.g. MTL5553)
(Note 2)
Data Highway
(Note 2)
V+
V-
MTL838C[-xxx] Part Numbers
The part number indicates the type of connection to the control system
• MTL838C – Modbus/RS-485
• MTL838C-MBT – Modbus/TCP
• MTL838C-EIP – EtherNet/IP
Specific conditions of use
• The surface of the equipment may cause risk of electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
WARNINGS (AVERTIESSEMENTS)
• TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, READ, UNDERSTAND AND ADHERE TO THE MANUFACTURER'S LIVE MAINTENANCE PROCEDURES (POUR ÉVITER L'ALLUMAGE D'ATMOSPHÈRES INFLAMMABLES OU COMBUSTIBLES, LIRE, COMPRENDRE ET RESPECTER LES PROCÉDURES DE MAINTENANCE EN DIRECT DU FABRICANT)
• POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE SPECIFIC CONDITIONS OF USE (RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE - VOIR LES SPECIFIC CONDITIONS OF USE)
FM
APPROVED
NI CL I DIV 2 GP ABCD T4
NI CL I Zone 2 IIC T4
CL I Zone 2 AEx/Ex ec IIC T4 Gc
IEC IECEx
Ex ec IIC T4 Gc
Relcom Inc.
INDUSTRIAL LAN | WIRING COMPONENTS AND TESTERS
2221 Yew Street, Forest Grove, Oregon 97116 USA
FMCUS AND IECEx CONTROL DRAWING FOR ZONE/DIV 2 INSTALLATION OF MTL838C[-xxx] RECEIVERS

NOTES:

1: If the 24VDC Power Source or Isolator/Power Supply is certified for installation in Hazardous Locations, it may be installed in the Hazardous Area.

2: Screen grounding is for reasons other than electrical safety. The screen of the Data Highway cable between the Receiver and the Isolator/Power Supply is grounded by connecting the Receiver ground terminals to a local earth ground. The screen of the Data Highway cable between the Isolator/Power Supply and the Transmitter(s) is connected to either an earth rail near the IS Isolator/Power Supply or connected to an earth rail in the Transmitter's field enclosure.

3: No revision to drawing without prior FM Approval.

4: Installations in the U.S. shall be in accordance with the latest edition of the National Electrical Code (ANSI/NFPA 70).

5: Installation in Canada shall be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.

6: 18: Installations for IECEx certification shall be in accordance with IEC 60079-14 and the wiring practices for the country of origin.

7: Field wiring shall be rated for 75°C.

8: Fusing of the Power Source is recommended.

9: The Power Source must comply with IEC 61010-1 isolation requirements for electrical safety (e.g. an SELV rated power supply).

Relcom Inc.
INDUSTRIAL LAN | WIRING COMPONENTS AND TESTERS
2221 Yew Street, Forest Grove, Oregon 97116 USA

FMCUS AND IECEx CONTROL DRAWING FOR ZONE/DIV 2 INSTALLATION OF MTL838C[-xxx] RECEIVERS

MTL838C[-xxx] Receiver ATEX Safety Instructions (Relcom Doc. No. 503-561 Rev A.0 04 FEB 2021)

The following information is in accordance with the Essential Health and Safety Requirements (Annex II) of the EU Directive 2014/34/EU [the ATEX Directive - safety of apparatus] and is provided for those locations where the ATEX Directive is applicable.

General

a) This equipment must only be installed, operated, and maintained by competent personnel. Such personnel shall have undergone training, which included instruction on the various types of protection and installation practices, the relevant rules and regulations, and on the general principles of area classification. Appropriate refresher training shall be given on a regular basis. [See clause 4.2 of EN 60079-17].
b) This equipment has been designed to provide protection against all the relevant additional hazards referred to in Annex II of the directive, such as those in clause 1.2.7.

Installation

a) The installation must comply with the appropriate European, national, and local regulations, which may include reference to the code of practice EN 60079-14. In addition, particular industries or end users may have specific requirements relating to the safety of their installations and these requirements should also be met. For most installations, the Directive 1999/92/EC [the ATEX Directive - safety of installations] is also applicable.
b) This apparatus must not be subjected to mechanical and thermal stresses in excess of those permitted in the certification documentation, this document and the product specification.
c) The apparatus must not be installed in a position where it may be attacked by aggressive substances and must be protected from excessive dust, moisture, and other contaminants.
d) If necessary in the end use application, the product must be installed in an enclosure to protect it from excessive dust, moisture, and mechanical damage.
e) Mount on 7.5mm x 35mm ‘top hat’ DIN Rail according to the instructions on the device cover. Use of DIN Rail end stops is recommended for vertical DIN Rail installations.
f) Fusing of the power source is recommended.
g) Read also the Specific Conditions of Use (below) for any additional or more specific information.

Inspection and maintenance

a) Inspection and maintenance should be carried out in accordance with European, national, and local regulations which may refer to the standard EN 60079-17. In addition, specific industries or end users may have specific requirements which should also be met.
b) The product contains no user serviceable parts. Non-functioning units should be returned to the manufacturer for replacement or repair.
c) Access to the internal circuitry must not be made during operation or at any other time.
d) The surface of the equipment may cause risk of electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.

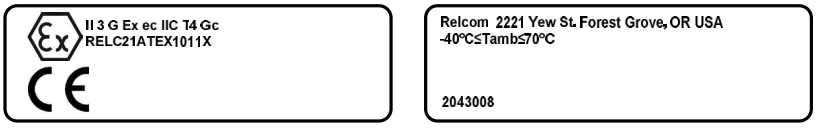
Repair

The product contains no user serviceable parts. Non-functioning units should be returned to the manufacturer for replacement or repair.

Marking

The following example label diagrams indicate the required markings for the product. Other items may be included on the certification labels as required. These additional items may be related to other certifications. Also, the items shown below may be re-arranged, combined, or separated to other labels if it is clear which information is relevant to each certification. The product ID (model number) will be on a separate label (overlay) on the product cover.

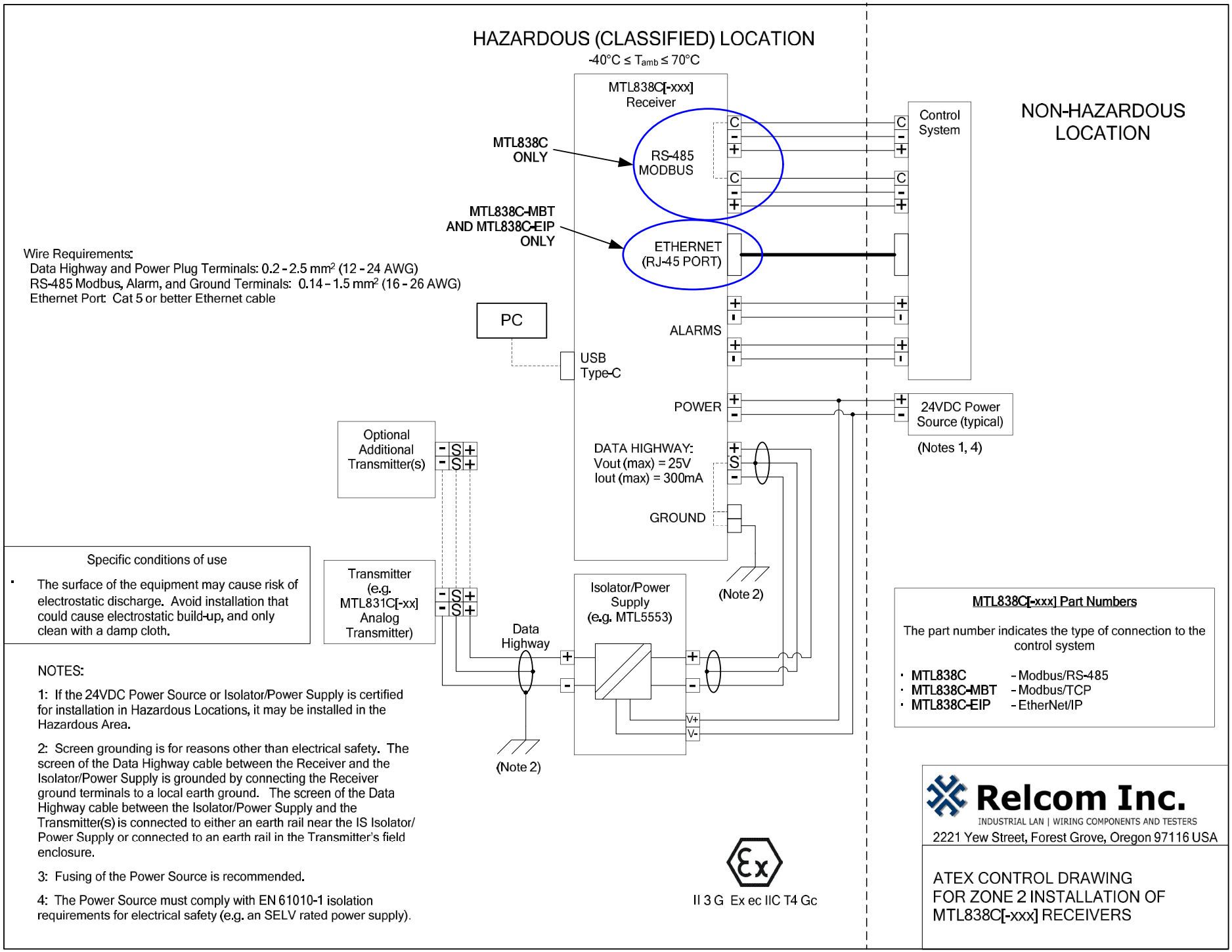
Typical certification marking



Note that the “2043008” is the serial number and may be replaced by a date code.

Specific Conditions of Use

The surface of the equipment may cause risk of electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.


HAZARDOUS (CLASSIFIED) LOCATION
-40°C ≤ Tamb ≤ 70°C
NON-HAZARDOUS LOCATION
MTL838C[-xxx] Receiver
MTL838C ONLY
RS-485 MODBUS
MTL838C-MBT AND MTL838C-EIP ONLY
ETHERNET (RJ-45 PORT)
Control System
PC
USB Type-C
ALARMS
POWER
24VDC Power Source (typical)
(Notes 1, 4)
DATA HIGHWAY:
Vout (max) = 25V
Iout (max) = 300mA
GROUND
Optional Additional Transmitter(s)
Transmitter (e.g. MTL831C[-xx] Analog Transmitter)
Isolator/Power Supply (e.g. MTL5553)
Data Highway
(Note 2)
(Note 2)
Wire Requirements:
Data Highway and Power Plug Terminals: 0.2 - 2.5 mm² (12 - 24 AWG)
RS-485 Modbus, Alarm, and Ground Terminals: 0.14 - 1.5 mm² (16 - 26 AWG)
Ethernet Port: Cat 5 or better Ethernet cable
Specific conditions of use
The surface of the equipment may cause risk of electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
NOTES:
1: If the 24VDC Power Source or Isolator/Power Supply is certified for installation in Hazardous Locations, it may be installed in the Hazardous Area.
2: Screen grounding is for reasons other than electrical safety. The screen of the Data Highway cable between the Receiver and the Isolator/Power Supply is grounded by connecting the Receiver ground terminals to a local earth ground. The screen of the Data Highway cable between the Isolator/Power Supply and the Transmitter(s) is connected to either an earth rail near the IS Isolator/ Power Supply or connected to an earth rail in the Transmitter's field enclosure.
3: Fusing of the Power Source is recommended.
4: The Power Source must comply with EN 61010-1 isolation requirements for electrical safety (e.g. an SELV rated power supply).
II 3 G Ex ec IIC T4 Gc
MTL838C[-xxx] Part Numbers
The part number indicates the type of connection to the control system
MTL838C - Modbus/RS-485
MTL838C-MBT - Modbus/TCP
MTL838C-EIP - EtherNet/IP
Relcom Inc.
INDUSTRIAL LAN | WIRING COMPONENTS AND TESTERS
2221 Yew Street, Forest Grove, Oregon 97116 USA
ATEX CONTROL DRAWING FOR ZONE 2 INSTALLATION OF MTL838C[-xxx] RECEIVERS

11 APPENDIX A

11.1 Maintenance

It is advisable to check the general condition of the installation from time to time to make sure no deterioration has occurred, and that no unauthorized modifications have been made. The following should be checked at intervals of not more than two years, and more frequently for systems used in particularly harsh environments.

Check that .....

a. units are of the types specified in the relevant documentation.
b. unit labelling and tagging is clearly legible, and the details given comply with the relevant documentation.
c. units and enclosures are securely mounted.
d. there are no signs of damage or corrosion affecting the installation.
e. interconnecting cables are of the specified type and ratings, correctly routed and segregated, and not frayed or otherwise damaged.
f. all connections are properly made.
g. the locations in which the units are mounted have not been degraded by the introduction of harmful materials.
h. access lids and doors to protective enclosures and cabinets are correctly secured.

11.2 Disposal

Product - End of Life

Eaton's MTL product line sells products world-wide that must meet the environmental and regulatory requirements of different countries and regions.

European directives on Waste Electronic and Electronic Equipment (WEEE) define the requirements on a producer to provide for the end-of-life recovery and recycling of electronic products when they become waste at the end of their life.

Eaton's MTL838C-MBT is marked with the 'crossed out wheelie-bin" symbol which indicates that the item is electronic or electronic equipment, and must be disposed of in the appropriate manner.

Other countries and regions may have their own environmental regulatory requirements regarding recovery and recycling of electronic products at the end of their life.

For more detailed information about take-back and equipment recycling please contact your local Eaton MTL representative.

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