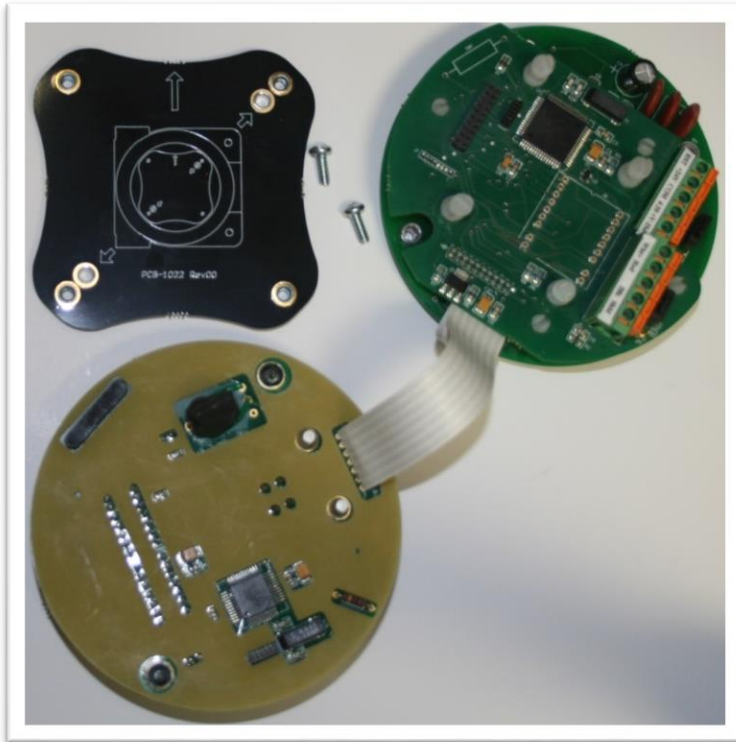


Net Safety™ Millennium Transmitter Replacement Board Kit



Important Instructions

Net Safety designs, manufactures and tests products to function within specific conditions. Because these products are sophisticated technical instruments, it is important that the owner and operation personnel must strictly adhere both to the information printed on the product nameplate and to all instructions provided in this manual prior to installation, operation, and maintenance.

WARNING

Installing, operating or maintaining a Net Safety Product improperly could lead to serious injury or death from explosion or exposure to dangerous substances. Comply with all information on the product, in this manual, and in any local and national codes that apply to the product. Do not allow untrained personnel to work with this product. Use Net Safety parts and work procedures specified in this manual.

Notice

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, expressed or implied, regarding the products or services described herein or their use or applicability. All sales are governed by Net Safety's terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time.

Net Safety does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Net Safety products remains solely with the purchaser and end user.

To the best of Net Safety's knowledge, the information herein is complete and accurate. Net Safety makes no warranties, expressed or implied, including implied warranties of merchantability and fitness for a particular purpose with respect to this manual and, in no event, shall Net Safety be liable for any incidental, punitive, special or consequential damages including, but not limited to, loss of production, loss of profits, loss of revenue or use and costs incurred including without limitation for capital, fuel and power, and claims of third parties.

Warranty

- 1. Limited Warranty.** Subject to the limitations contained in Section 10 (Limitation of Remedy and Liability) herein, Seller warrants that (a) the licensed firmware embodied in the Goods will execute the programming instructions provided by Seller; (b) that the Goods manufactured by Seller will be free from defects in materials or workmanship under normal use and care; and (c) Services will be performed by trained personnel using proper equipment and instrumentation for the particular Service provided. The foregoing warranties will apply until the expiration of the applicable warranty period. Sensors and detectors are warranted against defective parts and workmanship for 24 months from the date of purchase and other electronic assemblies for 36 months from the date of purchase. Products purchased by Seller from a third party for resale to Buyer (**Resale Products**) shall carry only the warranty extended by the original manufacturer. Buyer agrees that Seller has no liability for Resale Products beyond making a reasonable commercial effort to arrange for procurement and shipping of the Resale Products. If Buyer discovers any warranty defects and notifies Seller thereof in writing during the applicable warranty period, Seller shall, at its option, (i) correct any errors that are found by Seller in the firmware or Services; (ii) repair or replace FOB point of manufacture that portion of the Goods found by Seller to be defective; or (iii) refund the purchase price of the defective portion of the Goods/Services. All replacements or repairs necessitated by inadequate maintenance; normal wear and usage; unsuitable power sources or environmental conditions; accident; misuse; improper installation; modification; repair; use of unauthorized replacement parts; storage or handling; or any other cause not the fault of Seller, are not covered by this limited warranty and shall be replaced or repaired at Buyer's sole expense and Seller shall not be obligated to pay any costs or charges incurred by Buyer or any other party except as may be agreed upon in writing in advance by Seller. All costs of dismantling, reinstallation, freight and the time and expenses of Seller's personnel and representatives for site travel and diagnosis under this limited warranty clause shall be borne by Buyer unless accepted in writing by Seller. Goods repaired and parts replaced by Seller during the warranty period shall be in warranty for the remainder of the original warranty period or 90 days, whichever is longer. This limited warranty is the only warranty made by Seller and can be amended only in a writing signed by an authorized representative of Seller. The limited warranty herein ceases to be effective if Buyer fails to operate and use the Goods sold hereunder in a safe and reasonable manner and in accordance with any written instructions from the manufacturers. THE WARRANTIES AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE. THERE ARE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE OR ANY OTHER MATTER WITH RESPECT TO ANY OF THE GOODS OR SERVICES.
- 2. Limitation of Remedy and Liability.** SELLER SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE. THE REMEDIES OF BUYER SET FORTH IN THE AGREEMENT ARE EXCLUSIVE. IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL SELLER'S LIABILITY TO BUYER AND/OR BUYER'S CUSTOMERS EXCEED THE PRICE TO BUYER OF THE SPECIFIC GOODS MANUFACTURED OR SERVICES PROVIDED BY SELLER GIVING RISE TO THE CLAIM OR CAUSE OF ACTION. BUYER AGREES THAT IN NO EVENT SHALL SELLER'S LIABILITY TO BUYER AND/OR BUYER'S CUSTOMERS EXTEND TO INCLUDE INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES. THE TERM "CONSEQUENTIAL DAMAGES" SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF ANTICIPATED PROFITS, REVENUE OR USE AND COSTS INCURRED INCLUDING WITHOUT LIMITATION FOR CAPITAL, FUEL AND POWER, AND CLAIMS OF BUYER'S CUSTOMERS.

Contents

| | |
|---|-----------|
| Section 1 : Introduction | 1 |
| 1.1 Models covered | 1 |
| 1.2 Service support..... | 1 |
| 1.3 Return of material..... | 1 |
| 1.4 Product recycling/disposal..... | 2 |
| 1.5 Warnings..... | 2 |
| Section 2 : Installation | 3 |
| 2.1 Unpacking and inspection | 3 |
| 2.2 Kit contents..... | 3 |
| 2.3 Replacement procedure | 3 |
| Section 3 : Electrostatic sensitive device | 10 |

Section 1: Introduction

1.1 Models covered

The Net Safety Millennium transmitter replacement board kit is used to replace or update existing transmitter boards already installed. The following kits are included with this manual.

- ML7-TX100 - Replacement transmitter board for MLP-XX-ST1 toxic series c/w display, terminal, and input boards
- ML7-TX200 - Replacement transmitter board for MLP-XX-SC1100 series c/w display, terminal, and input boards
- ML7-TX400 - Replacement transmitter board for MLP-LP-XX-SC1100 series c/w display, terminal, and input boards
- ML7-TX500 - Replacement transmitter board for MLP-LP-XX-ST1 toxic series c/w display, terminal, and input boards
- ML7-TX600 - Replacement transmitter board for MLP-AR-APM and MLP-XX-SIR100 series c/w display, terminal, and input boards

1.2 Service support

Technical support for this product can be provided by contacting your local Emerson Process Management/Net Safety representative or by contacting the Net Safety™ Technical Support department at +1 866 347 3427 or Safety.CSC@Emerson.com.

1.3 Return of material

To expedite the repair and return of this product, proper communication between the customer and the factory is important. Before returning a product for repair, call +1 866 347 3427 or e-mail Safety.CSC@Emerson.com for a Material Return Authorization (MRA) number.

On the return of the equipment, include the following information:

1. MRA number provided to you by Net Safety
2. Company name and contact information
3. Purchase order, from your company, authorizing repairs or request for quote
4. Ship all equipment, prepaid to:
Emerson Process Management
6021 Innovation Blvd.
Shakopee, MN 55379
T +1 866 347 3427
F +1 952 949 7001
Safety.CSC@Emerson.com
5. Mark all packages with as **Return for Repair** and include MRA number

Pack items to protect them from damage and use anti-static bags or aluminum-backed cardboard as protection from electrostatic damage.

All equipment must be shipped prepaid. Collect shipments will not be accepted.

1.4 Product recycling/disposal

Recycling of equipment and packaging should be taken into consideration and disposed of in accordance with local and national legislations/regulations.

1.5 Warnings

WARNING

Failure to follow these installation guidelines could result in death or serious injury. Ensure that only qualified personnel perform the installation.

Electrical shock could cause death or serious injury. Use extreme caution when making contact with the leads and terminals.

Do not open the transmitter enclosure when in a classified area or when an explosive atmosphere may be present unless the power to the detection system has been removed.

Avoid touching electronic components as they are susceptible to electrostatic discharge (ESD). Proper care should be taken when handling the printed circuit boards.

NOTICE

Please read these instructions in their entirety before replacing the affected printed circuit board.

Section 2: Installation

2.1 Unpacking and inspection

Carefully remove all of the components from the packaging and verify them against the enclosed packing list. Inspect all components for any obvious damage such as broken or loose parts. If you find any components missing or damaged, notify your local Net Safety representative or the factory immediately.

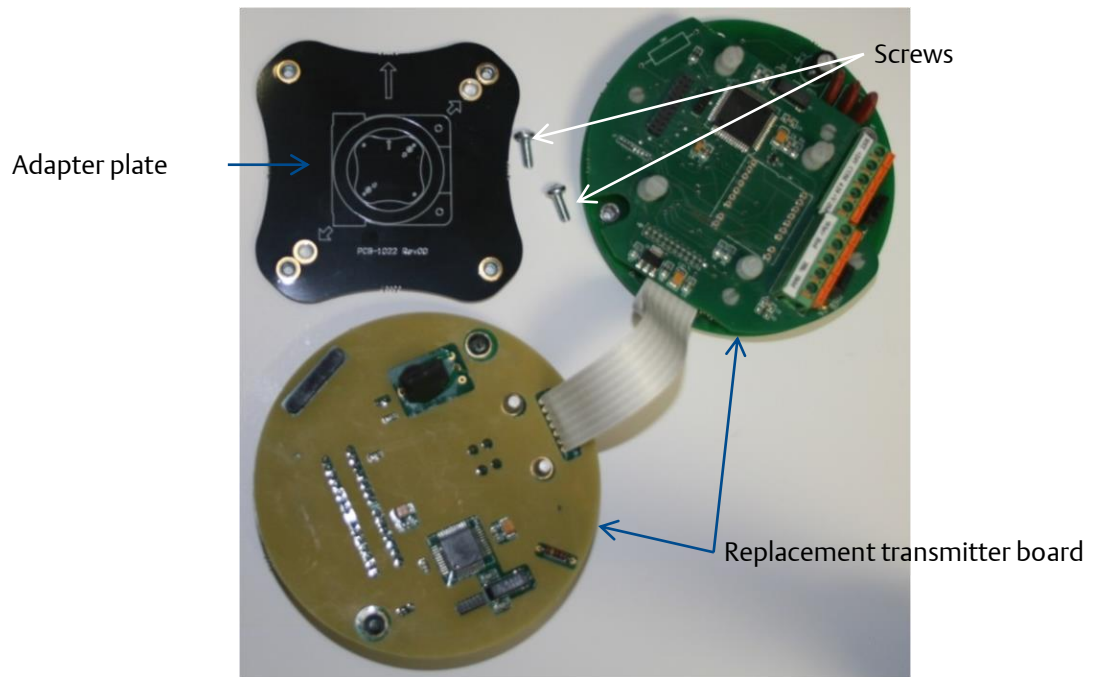
Recycling of packaging should be taken into consideration and disposed of in accordance with local and national legislations/regulations.

2.2 Kit contents

The replacement kit consists of the replacement transmitter PCB board, an adapter plate, and the necessary hardware to mount the adapter plate. The following table outlines the contents and [Figure 2-1](#) shows the kit contents.

| Part Number | Description | Quantity |
|-------------|---|----------|
| ML7-TXx00 | Replacement transmitter board | 1 |
| PCB-1022 | Adapter plate | 1 |
| SCR-0019 | Adapter plate machine screws (6-32 x 3/8-in.) | 2 |

Figure 2-1. Kit contents



2.3 Replacement procedure

Refer to the warnings outlined in [Section 1.5](#) prior to performing the steps outlined below.

1. Disable any alarm or notification systems that may be connected to the gas detector to ensure that unwanted false alarms do not occur.
2. Disconnect power from the transmitter.
3. Open the transmitter by removing the lid and place the lid to the side taking care to not damage the threads on the lid. Move the display board out of the way by loosening the thumb screws on the front of the display as shown in [Figure 2-2](#).

Figure 2-2. Thumb screw locations



4. Locate the external wiring coming from the alarm system, power supply, and sensor as shown in [Figure 2-3](#). Disconnect the wires using a small flathead screwdriver by pushing on the orange tab of the terminal block to release the wire from the terminal block as shown in [Figure 2-4](#). **Make note of the locations of the wires to ensure they are returned to the same terminal block location.**

Figure 2-3. Transmitter wiring locations

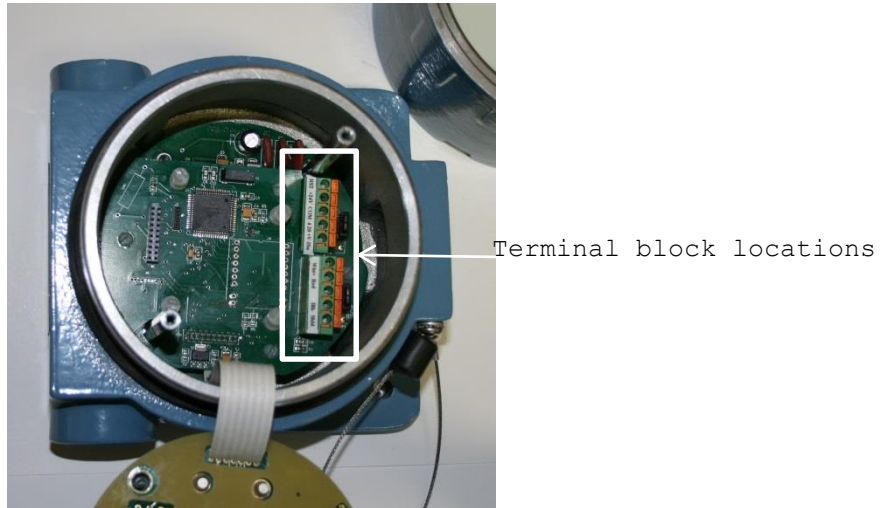
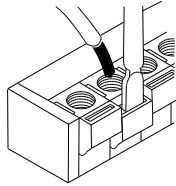


Figure 2-4. Terminal connection



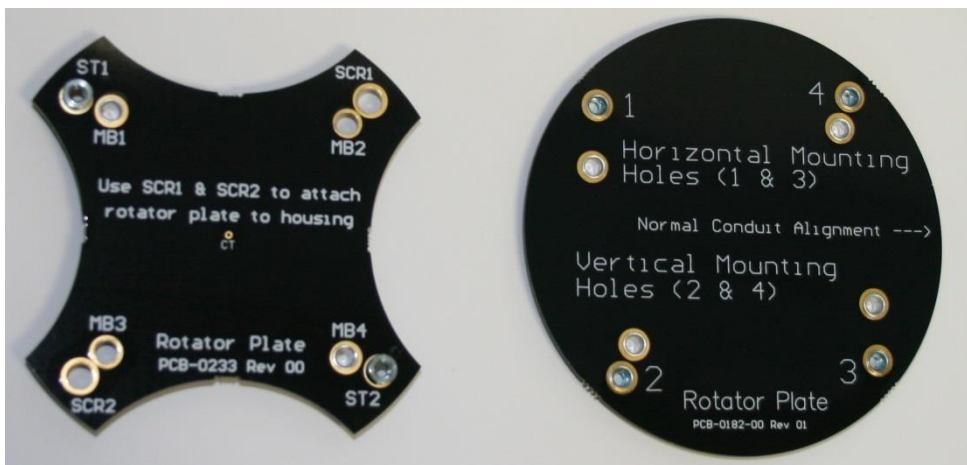
5. Locate the two (2) standoffs used to hold the printed circuit board in place as show in [Figure 2-5](#). Using a suitable 1/4-in. hex nut tool, loosen the standoffs to free the printed circuit board from the housing. **Store the standoffs in a safe location as they are required for the replacement printed circuit board.**

Figure 2-5. Standoff locations



6. Remove the printed circuit board from the transmitter housing, noting the orientation of the board, and place to the side.
7. Remove any installed adapter plates, examples shown in [Figure 2-6](#), and discard these adapter plates and their associated hardware.

Figure 2-6. Adapter plate examples



8. Refer to [Figure 2-7](#) to determine which housing configuration is being used in this installation. If the hole pattern in the installed housing matches the left-hand picture in [Figure 2-7](#) (HSG-0161), then proceed to step 10 as the adapter plate shown in [Figure 2-8](#) is not required. If the hole pattern matches the right-hand picture in [Figure 2-7](#) (HSG-0092), then proceed to the next step to install the new adapter plate provided with this kit.

Figure 2-7. Housing configurations



HSG-0161



HSG-0092

- Using the supplied screws (SCR-0019), install the adapter plate as shown in [Figure 2-8](#).

Figure 2-8. Adapter plate installation



- Locate the replacement printed circuit board. **Avoid touching electronic components on the printed circuit board as they are susceptible to electrostatic discharge (ESD).**
- Place the replacement printed circuit board into the housing ensuring that the orientation is the same as noted in step 6.

- Using the standoffs removed in step 5, mount the printed circuit board to the housing taking care to not over tighten the standoffs as this may cause damage to the printed circuit board. Recommended torque for tightening the standoffs should not be more than 5-in-lb. **In order to allow proper positioning of the printed circuit board do not tighten the standoffs down all of the way until both of them are in place.**

Figure 2-9. Standoff installation



-
- Reconnect the wiring removed in step 4. Refer to the noted wire locations from step 4 or the original manuals supplied with the transmitter.
 - Verify wiring is correct and that the wires are securely connected to the terminal blocks.
 - Reposition the display board on the standoffs and hand-tighten the thumb screws.
 - Re-secure the lid to the transmitter ensuring that it is tightly secured.
 - Return power to the transmitter and verify the operation of the transmitter as outlined in its associated manual.
 - Re-enable the alarm or notification system to return the products back to their operating mode.
 - Dispose of the affected printed circuit board as outlined in [section 1.4](#).

Section 3: Electrostatic sensitive device

Definition: Electrostatic discharge (ESD) is the transfer, between bodies, of an electrostatic charge caused by direct contact or induced by an electrostatic field.

The most common cause of ESD is physical contact. Touching an object can cause a discharge of electrostatic energy (ESD). If the charge is sufficient and occurs near electronic components, it can damage or destroy those components. In some cases, damage is instantaneous and an immediate malfunction occurs. However, symptoms are not always immediate—performance may be marginal or seemingly normal for an indefinite period of time, followed by a sudden failure.

To eliminate potential ESD damage, review the following guidelines:

- Handle boards by metal shields—taking care not to touch electronic components.
- Wear grounded wrist or foot straps, ESD shoes or heel grounders to dissipate unwanted static energy.
- Prior to handling boards, dispel any charge in your body or equipment.
- Ensure all components are transported and stored in static safe packaging
- When returning boards, carefully package in the original carton and static protective wrapping
- Ensure ALL personnel are educated and trained in ESD Control Procedures

In general, exercise accepted and proven precautions normally observed when handling electrostatic sensitive devices. A warning label is placed on the packaging, identifying product using electrostatic sensitive semiconductor devices.



EmersonProcess.com/FlameGasDetection

Americas

Emerson Process Management

6021 Innovation Blvd.
Shakopee, MN 55379
T +1 866 347 3427
F +1 952 949 7001

Safety.CSC@Emerson.com

Europe

Emerson Process Management AG

Neuhofstrasse 19a P.O. Box 1046
CH-6340 Baar
Switzerland
T + 41 (0) 41 768 6111
F + 41 (0) 41 768 6300

Safety.CSC@Emerson.com

Middle East & Africa

Emerson Process Management

Emerson FZE
Jebel Ali Free Zone
Dubai, UAE
P.O. Box 17033
T + 971 4 811 8100
F + 971 4 886 5465

Safety.CSC@Emerson.com

Asia Pacific

Emerson Process Management

1 Pandan Crescent
Singapore 128461
Singapore
T + 65 777 8211
F + 65 777 0947

Safety.CSC@Emerson.com



AnalyticExpert.com



[Twitter.com/Rosemount_News](https://twitter.com/Rosemount_News)



Facebook.com/Rosemount



Youtube.com/user/RosemountAnalytical

©2016 Emerson Process Management. All rights reserved.

Emerson Process Management, Rosemount Analytical, and Net Safety are marks of Emerson Process Management group of companies. All other marks are the property of their respective owners.

The contents of this publication are presented for information purposes only, and while effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request.

We reserve the right to modify or improve the designs or specifications of our products at any time without notice.