



ProBell™ System

3A4384B

CGM Installation Kit 24Z574

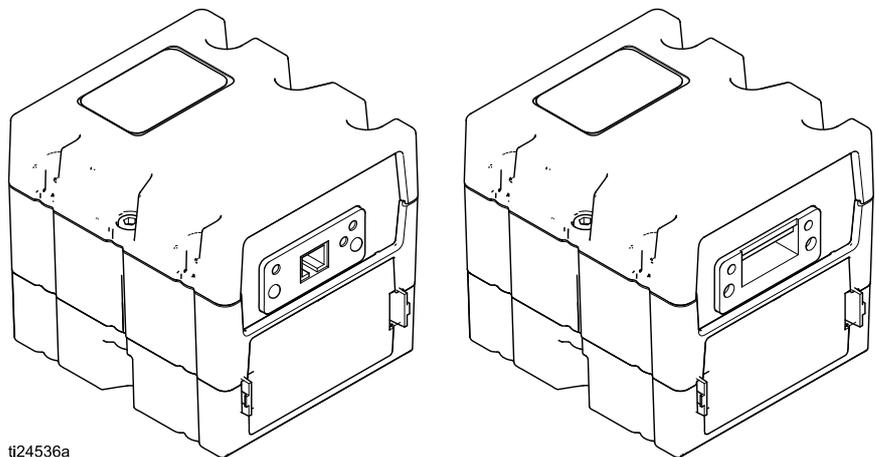
EN

For use when installing a Communication Gateway Module in a ProBell System to provide FieldBus communication abilities. For professional use only.



Important Safety Instructions

Read all warnings and instructions in this manual and in your system installation, operation, and repair manuals. Save these instructions.



ti24536a

Related Manuals

Manual No.	Description
334452	ProBell Rotary Applicator
334626	ProBell Rotary Applicator, Hollow Wrist Style
3A3657	ProBell Electrostatic Controller
3A3953	ProBell Speed Controller
3A3954	ProBell Air Controller
3A3955	ProBell System Logic Controller
3A4232	ProBell Cart Systems
3A4346	ProBell Hose Bundle
334183	Modbus TCP Communication Gateway Module
312864	DeviceNet, Ethernet/IP, PROFINET Communication Gateway Modules

Introduction

This manual provides instructions for installing a communication gateway module (CGM) in a ProBell™ system. This kit contains mounting hardware, cables, and a programming token specific to the ProBell. A Communication Gateway Module (purchased separately) is needed to complete the installation.

- See Manual 334183 for detailed information on the CGM for Modbus TCP protocol.
- See Manual 312864 for further information on the CGM for DeviceNet, EtherNet/IP and PROFINET protocols.
- See the ProBell Logic Controller manual (3A3955) for setup details and available internal data.

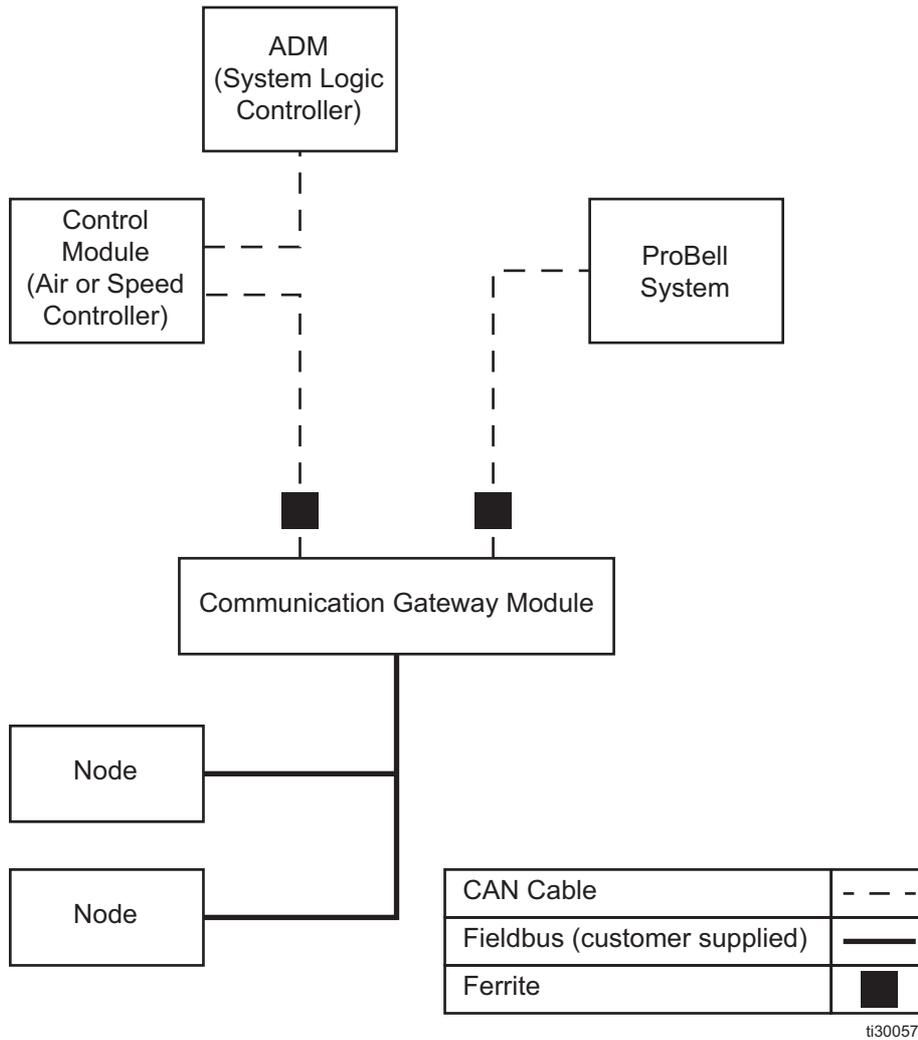


Figure 1 ProBell System Communication Diagram

Installation

Mount the Module

1. Remove power from the system.
2. Remove access cover (C). Loosen two screws (D) and remove CGM (A) from the base (B). See Figure 2.

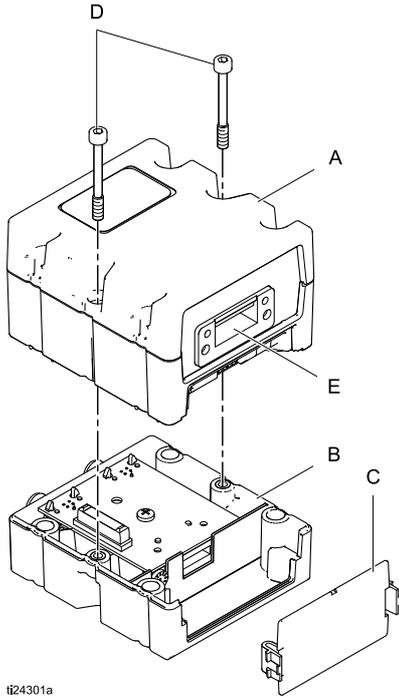


Figure 2 CGM, Access Cover, and Base

3. A CGM can be installed in a speed control box, electronic air control box, or a manual air control box.

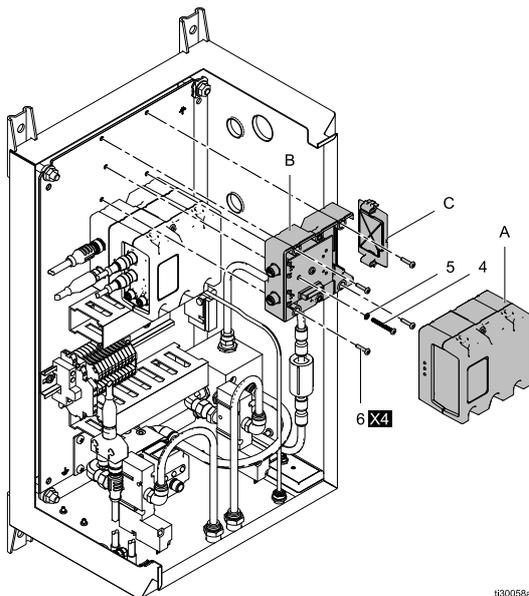


Figure 3 Speed Control Box

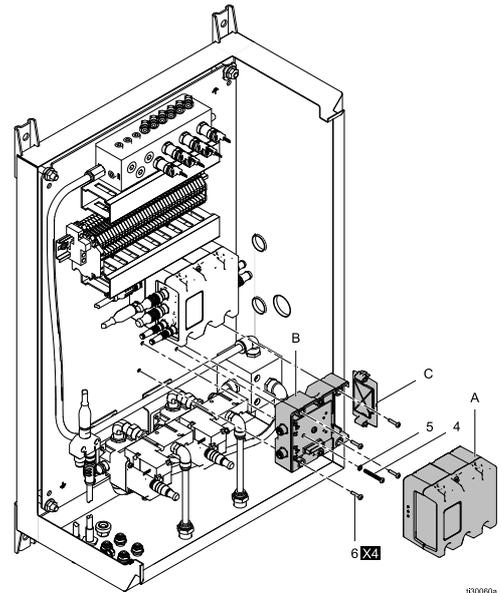


Figure 4 Electronic Air Control Box

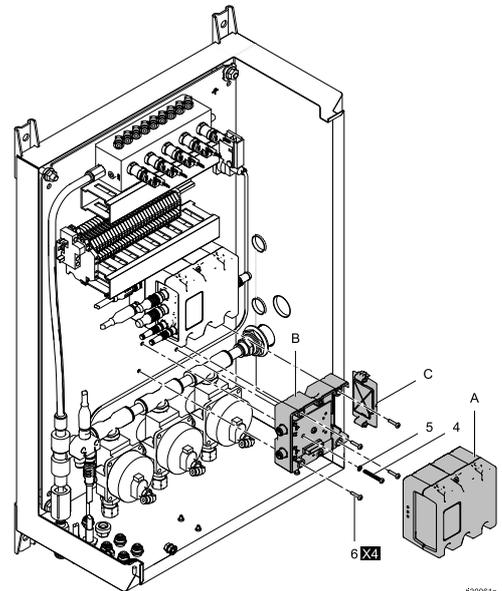
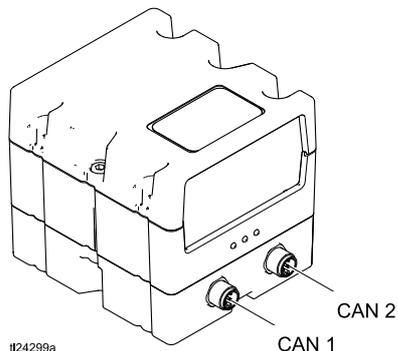


Figure 5 Manual Air Control Box

- a. Use four screws (6) to mount the base (B) in the electrical control box (see Figures 3, 4, and 5 above).
- b. Install the grounding screw (4) and washer (5) and tighten so that the grounding screw threads into the mounting bracket.
- c. Mount the CGM on the base with the two previously removed screws and replace the access cover.

Connect the Cables

NOTE: CAN ports are located on the base of cube-shaped modules.



1. Install the CGM module (see [Mount the Module, page 4](#))
 - a. For speed control modules: Disconnect the cable from CAN 1 on the control module. Connect it to CAN 1 on the CGM, and connect the supplied CAN cable from CAN 1 on the control module to CAN 2 on the CGM.

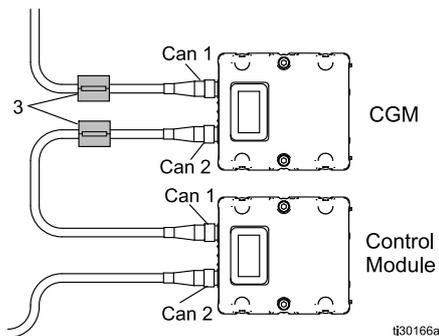


Figure 6 Speed Control

- b. For air control modules: Disconnect the cable from CAN 2 on the control module. Connect it to CAN 2 on the CGM, and connect the supplied CAN cable from CAN 1 on the CGM to CAN 2 on the control module.

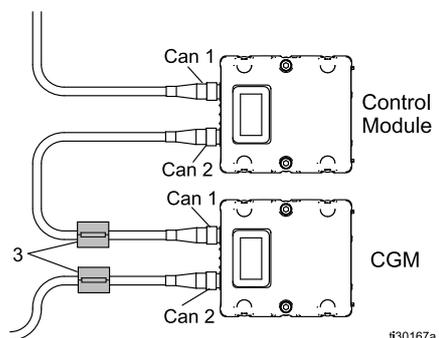


Figure 7 Air Control

NOTICE

To avoid severe damage to the CGM modules, ensure that the CAN cable is connected to the appropriate CAN connection.

2. Clamp the 2 ferrites (3) onto the CGM cables.

3. If used, connect the ethernet or DeviceNet cable to the CGM as applicable. Connect the other end of the cable to the FieldBus device.

NOTE: Connect the CGM to the FieldBus per FieldBus standards. The Ethernet and Modbus TCP interface operate at 100Mbit, full duplex. The interface is auto polarity sensing and auto-crossover capable.

Install Cable Fitting

1. Locate the 1-5/16" plug on the side of the control box enclosure. (See Figures 8 and 9).

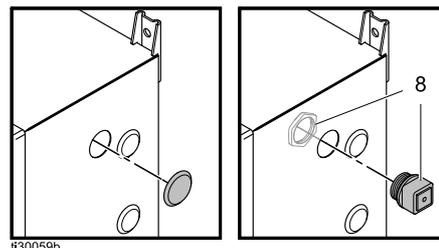


Figure 8 Speed Controller Plug, Cable Fitting, and Nut

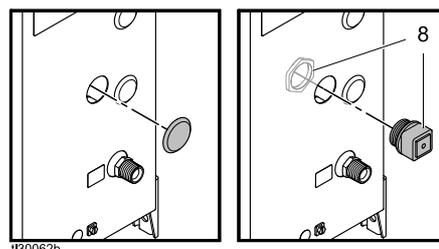


Figure 9 Air Controller Plug, Cable Fitting, and Nut

2. Remove the plug with a screwdriver or other device by pushing from the inside of enclosure.
3. Locate cable fitting that came with the kit. Pop open cable fitting (with screwdriver, if necessary) and remove grommet.
4. Open grommet and place FieldBus cable (EC) (Figure 10) inside, making sure there is enough length coming out to allow for routing within the box and for connection to the CGM (9).

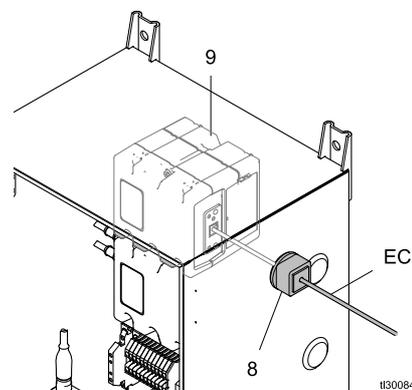


Figure 10 CGM, EC, and Cable Fitting

5. Close grommet.
6. Place grommet back inside of cable fitting, and close fitting.
7. Insert cable/fitting (8) into control box hole.

Installation

8. Install nut to fitting on the inside of enclosure to keep the cable fitting in place (see Figures 8 and 9).

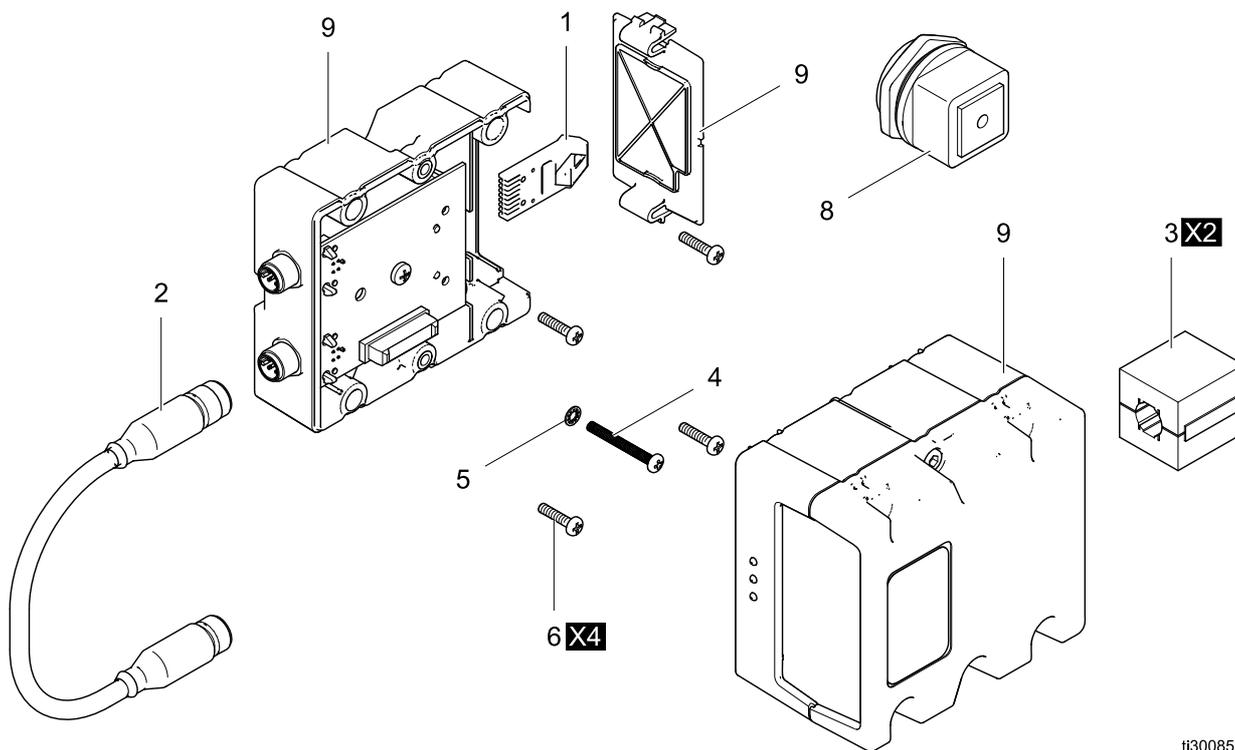
Install the Data Map from the Map Token. See installation instructions in the gateway manual (312864 or 3A3955).

Install the Data Map

NOTICE

The Data Map must be installed before operation.

Parts



ti30085b

Kit 24Z574

Ref	Part	Description	Qty
1	24Z578	TOKEN, map, for ProBell	1
2	130193	CABLE, CAN, female/female, 0.5m	1
3	121901	SUPPRESSOR, box snap, ferrite	2
4	—	SCREW, machine, #6-32 x 1.5 in.	1
5	—	WASHER	1
6	—	SCREW, pan head, #6-32 x 0.75 in.	4
8	—	GROMMET, Bulkhead, cable entry	
9★		MODULE, Communications Gateway	1
	CGMDN0	DeviceNet	
	CGMEP0	EtherNet/IP	
	CGMPN0	PROFINET	
	24W462	Modbus TCP	

★ Not included in kit. See Manual 312864 for parts list for CGMxxx models. See Manual 334183 for parts list for 24W462.

Appendix A: Integration with Allen Bradley PLC

This appendix outlines how to integrate a ProBell system with an Allen Bradley Studio 5000 Programmable Logic Controller (PLC).

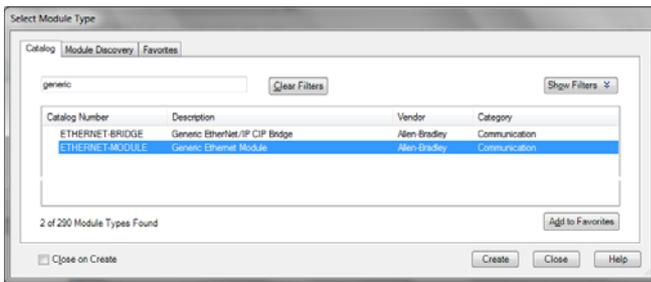
To integrate, the ProBell system must have the Ethernet/IP protocol for PLC CGM (Graco Part number CGMEPO) installed prior to performing this procedure.

In the PLC software, perform the following steps:

1. Add the new Ethernet module.

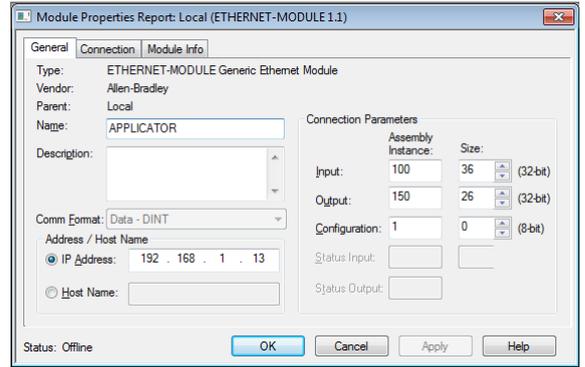


2. The **Select Module Type** screen opens.



- a. In the search field, type “generic” .
- b. Select ETHERNET-MODULE Generic Ethernet Module.**NOTE:** Do not select the Close on Create checkbox.
- c. Click the Create button.

3. The **New Module** screen opens.

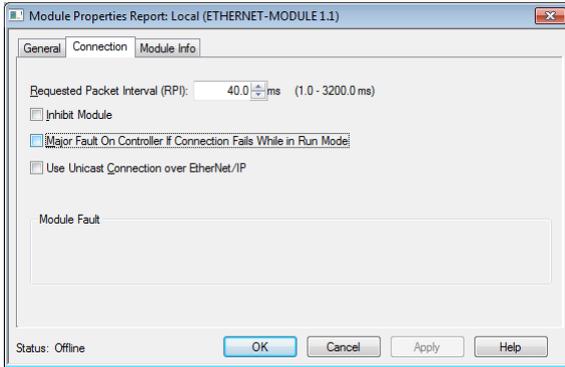


Configure the module by defining the fields as follows:

NOTE: The Open Module Properties checkbox must remain selected so that the configuration can be completed after completing this screen.

- a. Name (required): Enter a name for the module (select a name that will have meaning for you when viewed on the Ethernet directory shown by the figure in step 1).
- b. Description (optional): Use any description desired.
- c. IP Address (required): Enter the static IP address of the Graco EtherNet/IP CGM installed in the ProMix PD2K.
- d. Input: Assembly Instance (required): Enter “100”, which is a device-specific parameter for the Graco EtherNet/IP CGM.
- e. Input: Size (required): Enter “36”, which is the number of 32-bit registers that are allocated for input variables in the Graco EtherNet/IP CGM.
- f. Output: Assembly Instance (required): Enter “150”, which is the device-specific parameter for the Graco EtherNet/IP CGM.
- g. Output: Size (required): Enter “26”, which is the number of 32-bit registers that are allocated for output variables in the Graco EtherNet/IP CGM.
- h. Configuration: Assembly Instance (required): Enter “1”.
- i. Configuration: Size (required): Enter “0”.
- j. Click the OK button. The **Module Properties Report** window will be displayed.

4. On the Connection tab:



NOTE: An asterisk appears after the tab heading if unsaved changes are present. Click the Apply button to save changes without exiting this screen.

- a. Enter a Requested Packet Interval (RPI) value.
NOTE: Graco recommends a value of 30 ms or greater.
- b. If desired, select the available checkboxes.
- c. Click the OK button to save all changes and exit this screen.

Table 1 Potential Configuration Problems

Connection Request Error — Invalid Input Application Path	This error, which also triggers an I/O Fault on the PLC, is caused by an invalid number being entered for the Input: Assembly Instance parameter. The correct value for this parameter is “100”.
Connection Request Error — Invalid Output Application Path	This error, which also triggers an I/O Fault on the PLC, is caused by an invalid number being entered for the Output: Assembly Instance parameter. The correct value for this parameter is “150”.
Connection Request Error — Invalid Input Size	This error, which also triggers an I/O Fault on the PLC, is caused by an invalid number being entered for the Input: Size parameter. The correct value for this parameter is “36”.
Connection Request Error — Invalid Output Size	This error, which also triggers an I/O Fault on the PLC, is caused by an invalid number being entered for the Output: Size parameter. The correct value for this parameter is “26”.
Module Configuration Rejected — Format Error	This error, which also triggers an I/O Fault on the PLC, is caused by an invalid number being entered for the Configuration: Size parameter. Because there are no configuration registers associated with the module, the correct value for this parameter is “0”.

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Original Instructions. This manual contains English. MM 3A4384

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