

## Reactor<sup>®</sup> Connect Installation Kit

3A5540D

For Reactor 2 Electric and Hydraulic Systems

EN

*For remotely changing system settings on Graco Reactor 2 E-30, E-XP2, H-30, H-40, H-50, H-XP2, and H-XP3 systems. For professional use only.*

**Models: 25D612, 25E656**



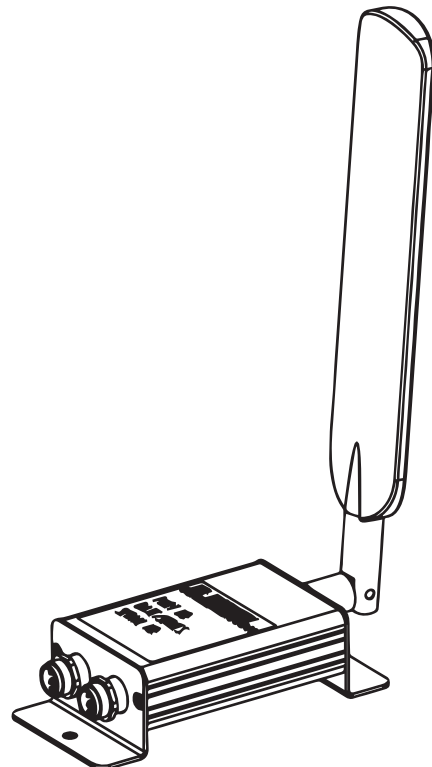
### Important Safety Instructions

Read all warnings and instructions in this manual and in the Reactor<sup>®</sup> 2 manual. Save all instructions.

#### **IMPORTANT**

By operating your Reactor 2 system with the cellular module installed, you are accepting the Graco Reactor Connect Terms and Conditions and Software License Agreement ("Terms").

To review the Terms, install the Reactor Connect on your mobile device or visit [www.graco.com](http://www.graco.com).



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## Models


Kit	Included Cellular Module	Description
25D612	25M720	3G cellular module, operational worldwide
25E656	25E372	LTE CAT-1 (4G) cellular module, only operational in the United States and Canada

## Related Manuals

Manual in English	Description
333023	Reactor 2 E-30 and E-XP2 Proportioning Systems (Operation)
333024	Reactor 2 E-30 and E-XP2 Proportioning Systems (Repair-Parts)
334945	Reactor 2 Hydraulic Proportioning Systems (Operation)
334946	Reactor 2 Hydraulic Proportioning Systems (Repair-Parts)








# Agency Approvals

**NOTE:** Cellular module kit 25M833 contains Part 25M720. Cellular module kit 25E658 contains Part 25N372.

Description	Approvals
MODULE, cellular, worldwide (25M720)	
MODULE, cellular, United States and Canada only (25N372)	

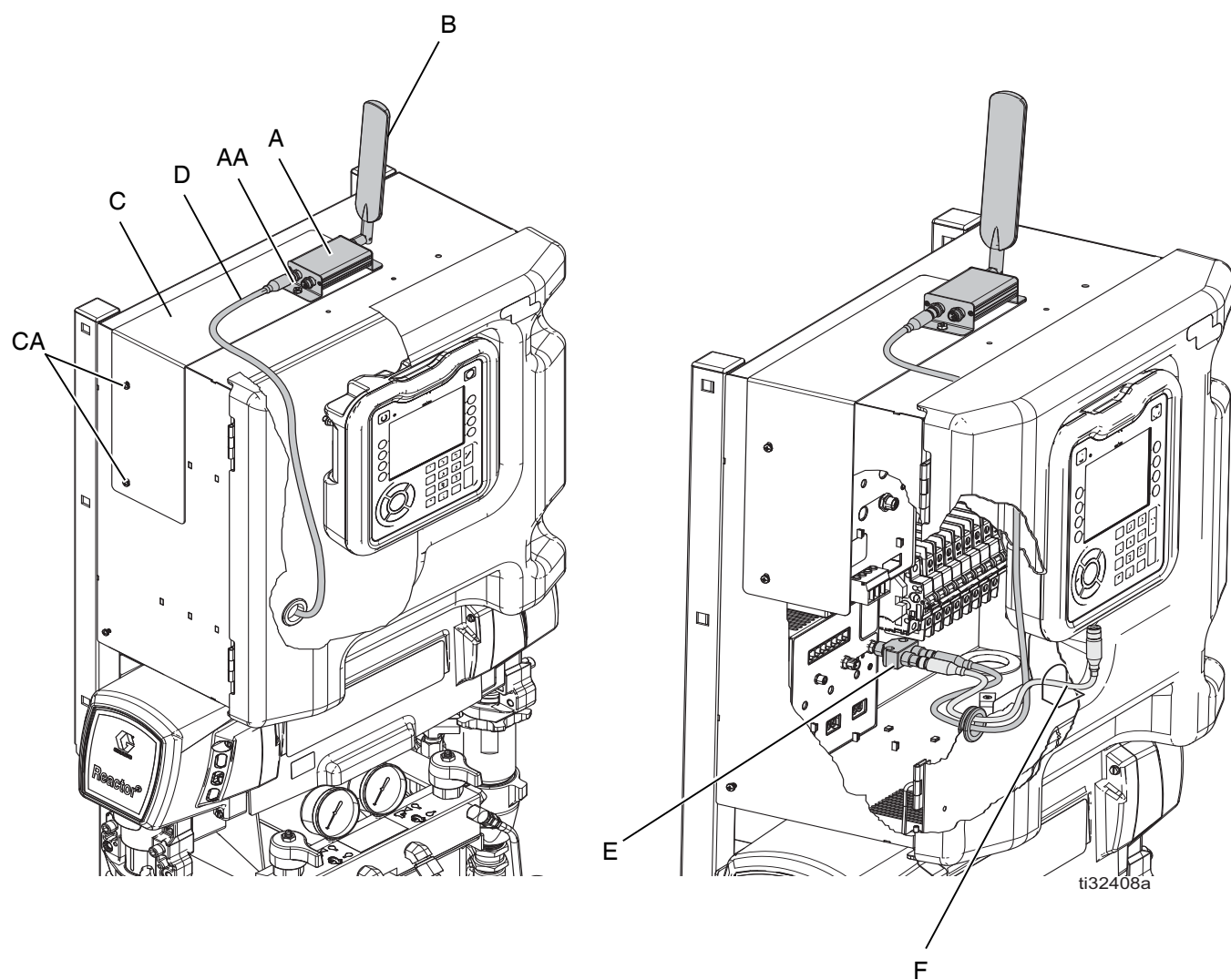
# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

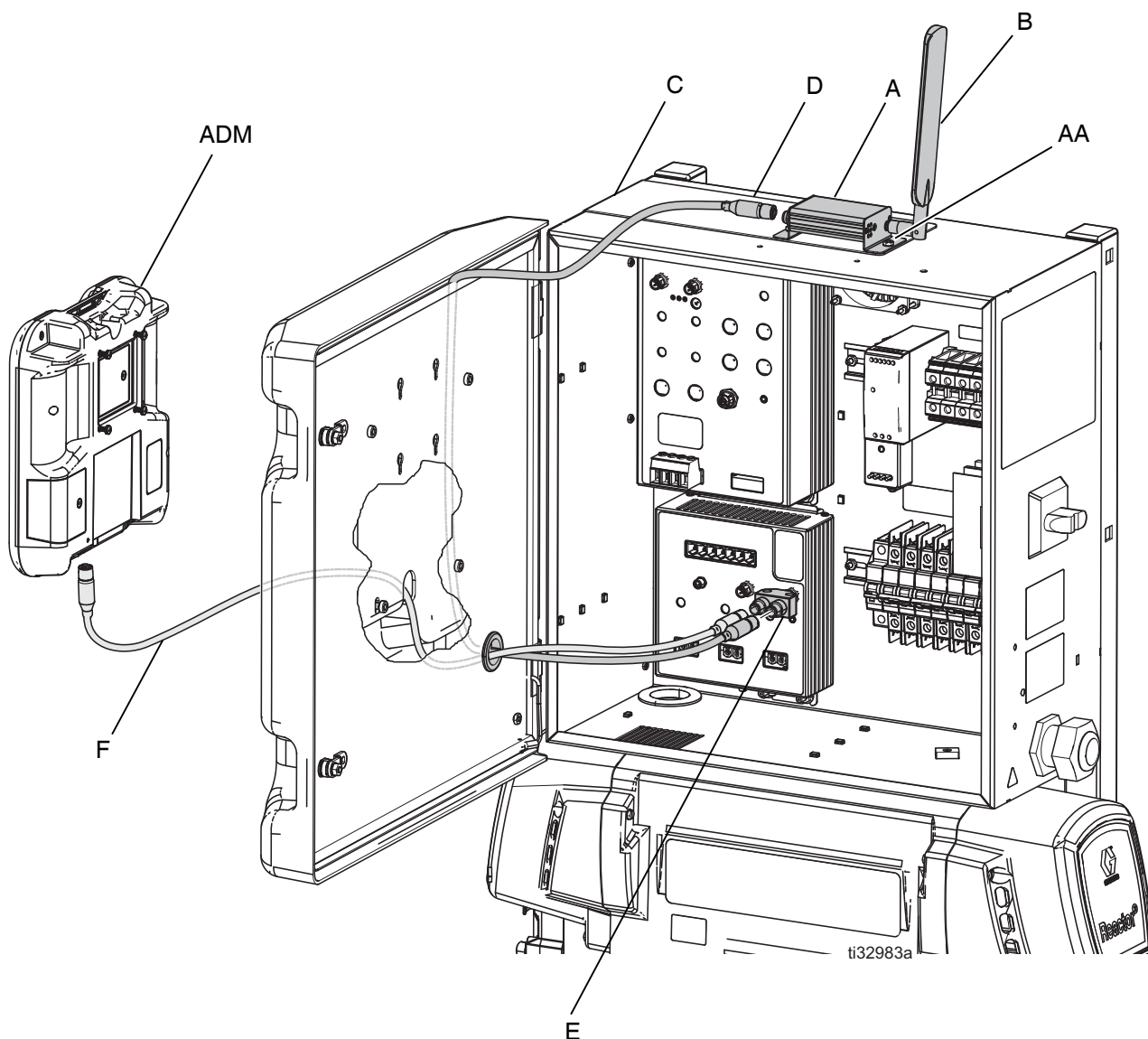
 <b>WARNING</b>	
 	<b>ELECTRIC SHOCK HAZARD</b> This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. <ul style="list-style-type: none"> <li>• Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment.</li> <li>• Connect only to grounded power source.</li> <li>• All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</li> </ul>
 	<b>EQUIPMENT MISUSE HAZARD</b> Misuse can cause death or serious injury. <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Specifications</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Specifications</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
 	<b>MOVING PARTS HAZARD</b> Moving parts can pinch, cut or amputate fingers and other body parts. <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## Typical Installation



**FIG. 1: Typical Reactor Connect Cell Module Installation (Reactor 2 Electric Shown)**






**FIG. 2: Typical Reactor Connect Cell Module Installation (Reactor 2 Electric Shown)**

Ref.	Description
A	Cellular Module
AA	Cellular Module Nuts
ADM*	Advanced Display Module
B	Antenna
C	Bracket
CA*	Bracket Screws

Ref.	Description
D	Cellular Module CAN Cable
E	CAN Cable Tee
F*	TCM CAN Cable
*	<i>Included with Reactor 2 proportioner.</i>

# Overview

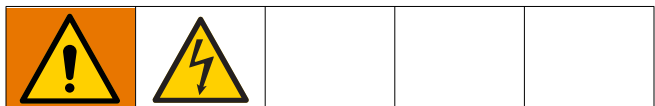
				
<p>To avoid injury due to unexpected machine operation initiated by remote controller, disconnect the cellular module from the system prior to troubleshooting. See <b>Disconnect Cellular Module</b>, page 14.</p>				

The Reactor Connect allows the Graco Reactor 2 to be monitored and operated remotely. The Reactor 2 is intended to be controlled by an on-site operator. In any lock-out, tag-out procedure, take into consideration the potential for changes to the Reactor 2 settings due to remote operation.

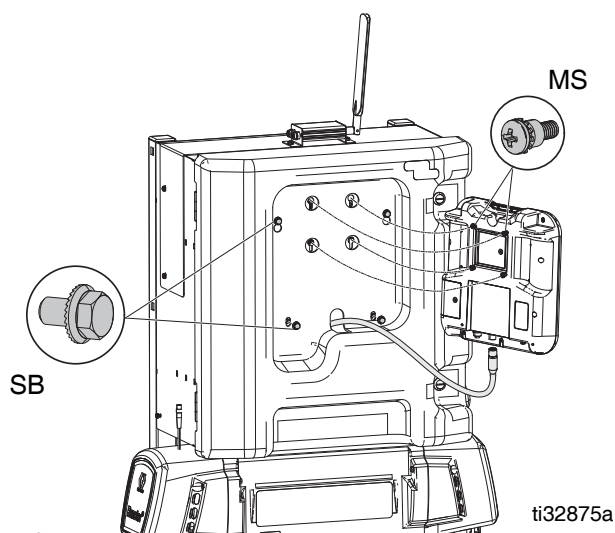


# Installation

## Mount Cellular Module



1. Shut down the system. See your Reactor operation manual for shutdown instructions.
2. Disconnect incoming power at the source.
3. Open the top and bottom door latches to the electrical cabinet.
4. Open the electrical cabinet.
5. Inside the electrical cabinet, remove the TCM CAN cable from the TCM. Install the CAN cable tee (E). See , page 5.
6. Install the TCM CAN cable (F) and the cellular module CAN cable (D) onto the cable tee (E).
7. Using a Phillips screwdriver, loosen the four ADM mounting screws (MS) in the inside of the cabinet door.



**FIG. 3**

8. Lift up the ADM and pull it away from the Reactor to unseat the mounting screws. For easy reassembly, leave the loosened screws attached to the ADM.
  9. Gently lower the ADM until it is hanging from the TCM CAN cable (F). This exposes four shroud bolts (SB). See FIG. 3.
  10. Remove the four bolts (SB) attaching the shroud to the Reactor frame. The door latches will hold the plastic shroud in place.
  11. Slide the unattached end of the cellular module CAN cable (D) through the grommet in the electrical cabinet door.
  12. Gently pull back the bottom inside corner of the shroud to access the unattached end of the cellular CAN cable.
  13. Slide the CAN cable to the top inside corner of the electrical cabinet door.
- NOTE:** To minimize cable strain during door operation, locate the CAN cable as close to the corner of the electrical cabinet door as possible.
14. Remove the two screws (CA) on the left side of the Reactor electrical cabinet.
- NOTE:** For units with Graco InSite, remove both the mounting screws and the InSite module. Set aside.
15. Place the cellular module mounting bracket (C) over the exposed electrical cabinet holes. Reinstall the screws (CA).
- NOTE:** For units with Graco InSite, reinstall the InSite module over the same holes but on top of the cellular module mounting bracket.
16. Install the antenna (B) onto the cellular module (A). Tighten by hand.
  17. Install the cellular module (A) onto the mounting bracket (C) weld studs. Fully tighten the nuts (AA).
  18. Connect the unattached end of the cellular module CAN cable (D) to the cellular module (A).
- NOTE:** Leave enough slack in the cable so that the door swings freely. Check both ends of the cable for slack so the cable is not stressed during door operation
19. Reinstall the shroud bolts (SB).
  20. During first use, complete **Update ADM Software**, page 10.
  21. Remount the ADM using the four ADM mounting screws (MS). Tighten the screws fully.
  22. Close the cabinet door and tighten the door latches.

# Update ADM Software



1. Shut down system. See your Reactor operation manual for shutdown instructions.
2. Open the top and bottom door latches to the electrical cabinet.
3. Open the electrical cabinet. Using a Phillips screwdriver, loosen the four ADM mounting screws in the inside of the cabinet door.
4. Lift up the ADM and pull it away from the Reactor to unseat the mounting screws. For easy reassembly, leave the loosened screws attached to the ADM.
5. Remove the token access panel on the back of the ADM.
6. Insert and press the software upgrade token firmly into the slot.

**NOTE:** There is no preferred orientation of the token.

7. Turn on the system power.

**NOTICE**

A status is shown while software is updating to indicate progress. To prevent corrupting the software load, do not remove the token until the status screen disappears.

**NOTE:** When the ADM display turns on, you may see the following screens:

<b>First:</b> <i>Software is checking which modules will take the available updates.</i>	
<b>Second:</b> <i>Status of the update with approximate time until completion.</i>	
<b>Third:</b> <i>Updates are complete. Icon indicates update success/failure. See the following table.</i>	

Icon	Description
	Update successful.
	Update unsuccessful.
	Update complete, no changes necessary.
	Modules were updated or didn't require an update; however, one or more modules need to be updated manually with a token.



8. Remove the software update token.
9. Replace the token access panel.
10. Remount the ADM using the four ADM mounting screws. Tighten the screws fully.
11. Close and lock and the cabinet door with the door latches.
12. Press to continue to the operation screen.

# Setup

Download the Graco Reactor Connect on the Apple App Store® or the Android Google Play™ store.

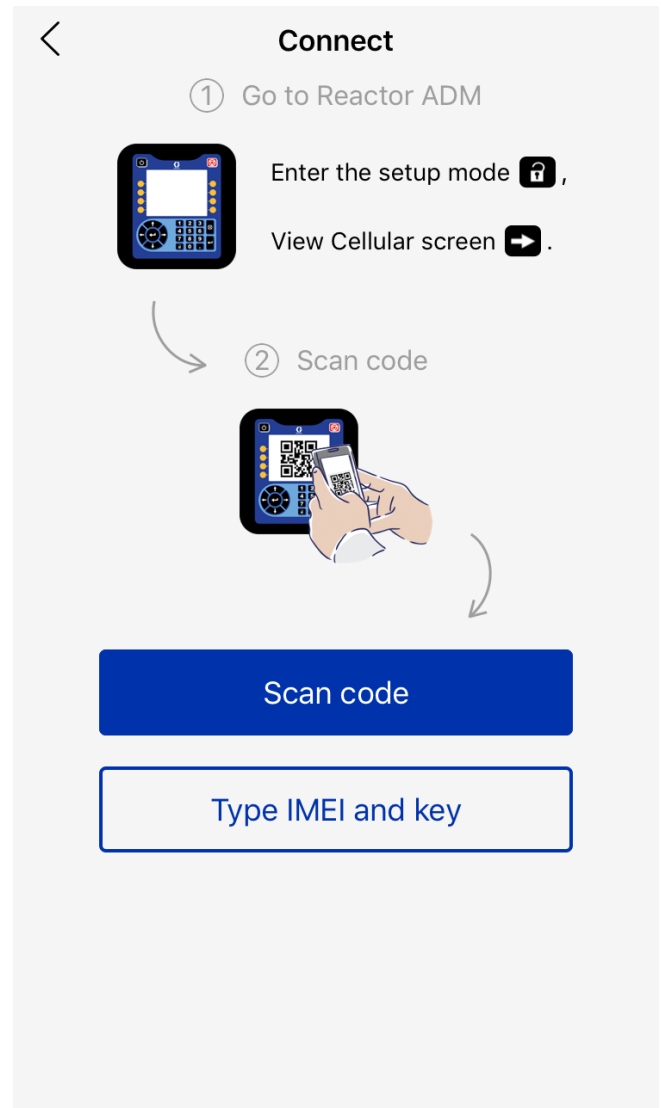
1. Open the Reactor Connect on your smartphone.
2. Read and accept the Terms of Use and data usage notification.
3. Review the app tutorial.

## Connect App to Reactor

1. On the Reactor ADM, press  to enter the setup mode.
2. Press  to go to the Cellular screen (see FIG. 5).

**NOTE:** Before connecting the Reactor to an app for the first time, **Reset Reactor Key**. See page 13.

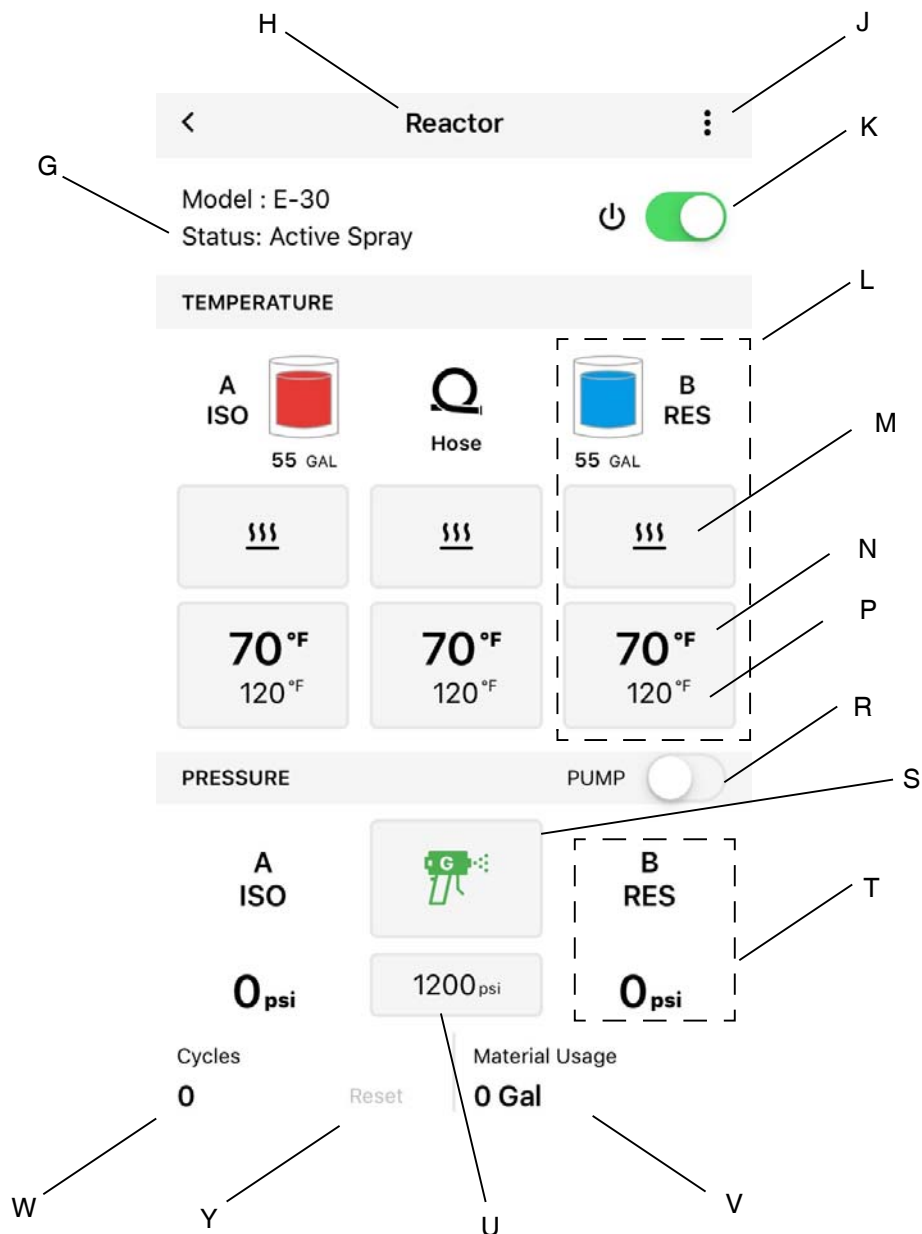
3. To connect the app to the Reactor, scan the code.
  - a. Select the Scan code button on the app. (See FIG. 4.)
  - b. Using the app and your smartphone camera, scan the code displayed on the ADM Cellular screen.
4. If you have trouble scanning the code, type in the IMEI and the key instead.
  - a. Select Type in IMEI and key. (See FIG. 4.)
  - b. Enter the Reactor IMEI found on the ADM Cellular screen.
  - c. Enter the Reactor key found on the ADM Cellular screen.
  - d. Select the Connect button on the app.



**FIG. 4: Connect Screen in App**

# Operation

## Reactor Connect



### Ref. Description

G	Reactor Status
H	Reactor Name
J	Menu
K	Reactor Power Switch
L	Heat Zone Settings
M	Heat Zone On/Off
N	Heat Zone Actual Temperature
P	Heat Zone Temperature Setpoint
R	Proportioner Start/Stop Switch

### Ref. Description

S	Proportioner Mode (Spray, Jog, Park)
T	Pump Pressure
U*	Pump Pressure Setpoint
V	Material Usage
W	Cycle Count
Y	Reset Cycle Count

\* Not available with Reactor 2 Hydraulic systems.



# Cellular Screen



FIG. 5: ADM Cellular Screen



Use this screen to connect the Reactor Connect to the Reactor, determine the cellular signal strength, or reset the Reactor Key.

## View Cellular Screen

1. On the Reactor ADM, press  to enter the setup mode.
2. Press  to go to the Cellular screen.

## Reset Reactor Key

Resetting your Reactor Key prevents other users from remotely changing or viewing Reactor settings without first reconnecting to the Reactor.

1. On the Reactor ADM Cellular screen, press  to reset the Reactor key.
2. Press  to confirm resetting the Reactor key.
3. Reconnect your app to the Reactor. See **Connect App to Reactor**, page 11.

**NOTE:** After resetting your Reactor key, all operators using the Graco Reactor Connect must reconnect to the Reactor.

**NOTE:** For security of wireless control, change the Reactor key on a regular basis and whenever there is a concern about unauthorized access.

# Troubleshooting





For information on troubleshooting a Reactor, refer to the Reactor repair manual.

## Disconnect Cellular Module

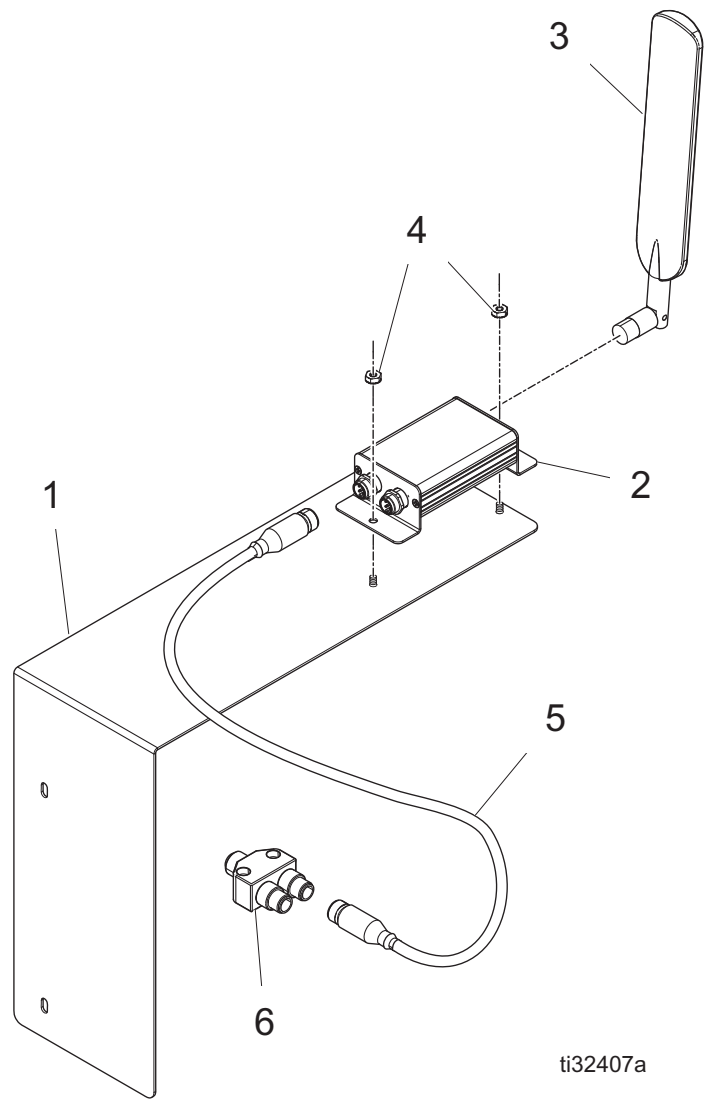
**NOTE:** Before troubleshooting the Reactor, disconnect the cellular module (A). The Reactor Connect cannot change Reactor 2 settings while the cellular module is disconnected.

- 1. Shut down system. See your Reactor 2 operation manual for shutdown instructions.
- 2. Disconnect incoming power at the source.
- 3. Disconnect the cellular module CAN cable (D) from the cellular module (A).

Problem	Cause	Solution
No module status LEDs are illuminated.	No power to cellular module.	Turn Reactor proportioner on.
		Ensure cellular module is properly installed. See <b>Installation</b> , page 9.
No network connection. 	Still establishing cellular connection.	Wait a few minutes for the unit to establish a connection.
	Unable to establish cellular connection.	To establish cellular connection, move system to a location with cellular service. Mount accessory antenna 25D878 on the outside of your trailer.
Network is connected, but there is no server connection. 	Cellular module software is incorrect.	Go to ADM Advanced Software screen and confirm that software is correct. If it is not, update the ADM software.
	Server is not responding.	Wait a few minutes for the unit to establish a connection.

# Parts

## Cellular Module and Antenna



Ref.	Part	Description	Qty.
1	25M831	BRACKET	1
2	25M833	KIT, cellular module, worldwide	1
	25E658	KIT, cellular module, United States and Canada only	1
3	25M828	ANTENNA, paddle	1
4	127158	NUT, 8-32	2
5	121002	CABLE, can	1
6	124654	TEE, CAN	1
7	25M832	TAG, agreement (not shown)	1
8	17E206	TOKEN, Reactor 2	1
		Electric/Hydraulic (not shown)	

## Accessories

Part	Description
25D878	KIT, antenna, external use (not shown)

## Parts

[illegible]



# Technical Specifications

<b>Cellular Module (25M720)</b>	
<b>FCC/IC</b>	
Contains FCC ID	XPY1CGM5NNN
Contains IC ID (Industry Canada)	8595A-1CGM5NNN
<p>The enclosed device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). 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.</p> <p>Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p>	
<b>Cellular Radio Data</b>	
Cellular Radio	u-blox SARA-U201
Band Support	Band 19 (800 MHz) Band 5 (850 MHz) Band 8 (900 MHz) Band 2 (1900 MHz) Band 1 (2100 MHz)
WCDMA/HSDPA/HSUPA Power Class	Power Class 3 (24 dBm) for WCDMA/HSDPA/HSUPA mode

<b>Cellular Module (25N372)</b>	
<b>FCC/IC</b>	
Contains FCC ID	MCQ-XB3C1 RI7XE866A1NA
Contains IC ID (Industry Canada)	1846A-XB3C1 5131A-XE866A1NA
<p>The enclosed device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). 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.</p> <p>Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p>	
<b>Cellular Radio Data</b>	
Cellular Radio	Telit LE866
Band Support	Band 12 (700 MHz) Band 4 (1700 MHz) Band 2 (1900 MHz)

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

**GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO.** These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## **FOR GRACO CANADA CUSTOMERS**

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

## Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the nearest distributor.  
**Phone:** 612-623-6921 or **Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

Original instructions. This manual contains English. MM 3A5540

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