

# Pulse™ Remote Extender

3A6943B

EN

*For use with Pulse Fluid Management System Components only. The Pulse Extender creates a supplementary Pulse Device Network. It connects to the Pulse HUB over the facilities LAN.*

Not approved for use in European explosive atmosphere locations.  
For Indoor use only.

## Part 25P363



### Important Safety Instructions

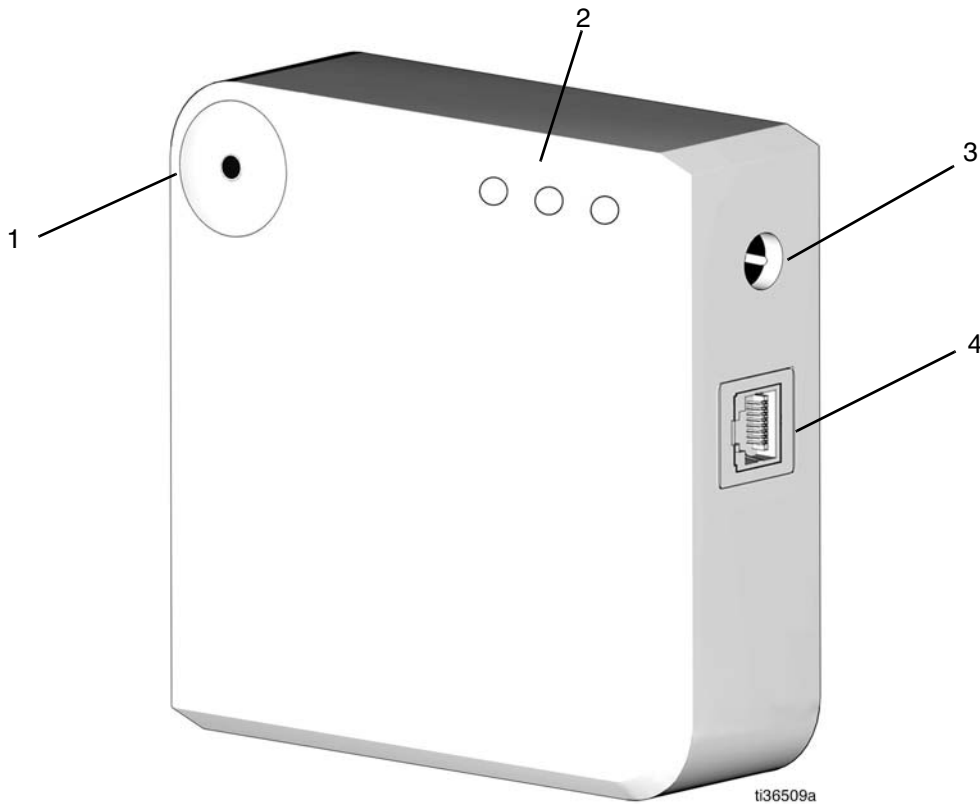
Read all warnings and instructions in this manual before using the equipment.  
Save these instructions.



# Pulse Remote Extender Overview

## Component Identification

The Pulse Remote Extender manages remotely deployed Pulse components. The components reside on a Personal Area Network (PAN) hosted by the Pulse Remote Extender. The Pulse Remote Extender sends component information to the Pulse HUB using a user supplied Local Area Network (LAN) connection (FIG. 1).



**FIG. 1: Pulse Remote Extender Components**

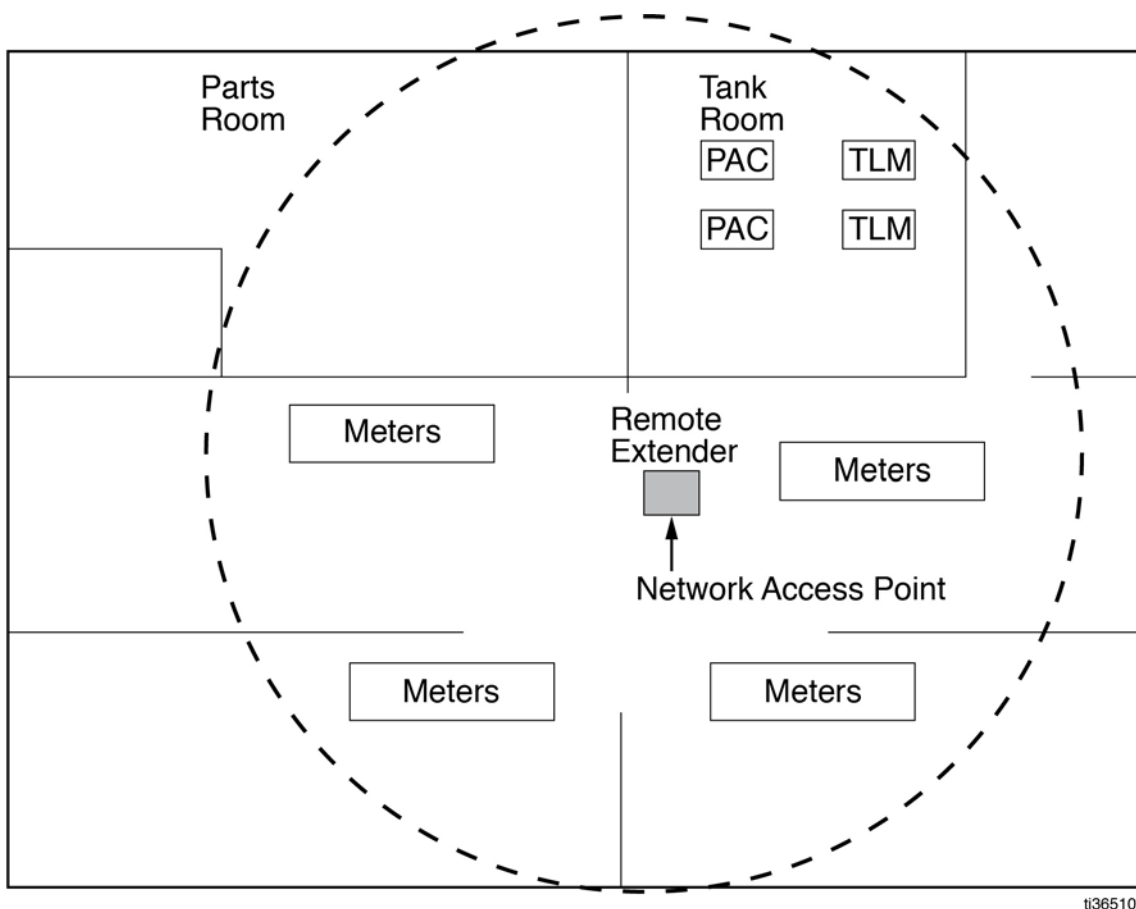
- 1 Button: Not used.
- 2 LED Status Lights
  - Power: indicates power is on when lit
  - Xbee: indicates hardware/configuration is active when lit
  - Network: indicates network is active when lit
- 3 Power Inlet Port (5VDC)
- 4 Ethernet (Network) Connection

# Installation

Place the Pulse Remote Extender in the main part of the facility, located either high on a wall or on the ceiling.

Install the Pulse Remote Extender on an unobstructed line of sight of any Meters, Pump Air Controls or Tank Level Monitors (FIG. 2).

Installation should comply with all applicable local, state and national fire, electrical and safety codes and regulations.



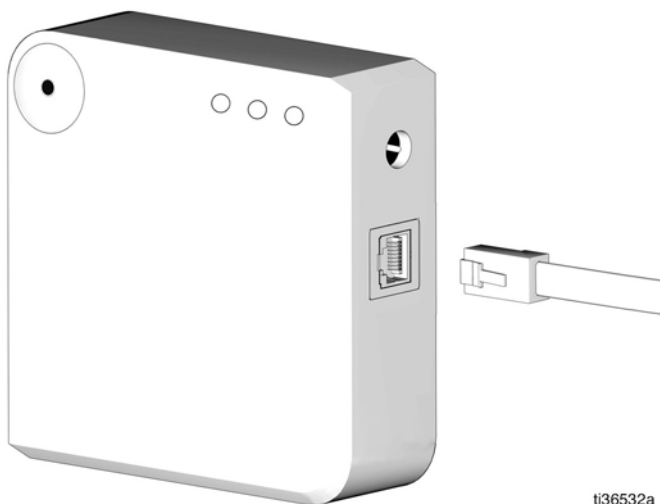
**FIG. 2: Example of Facility Layout**

# Operation

The Remote Extender is configured for Dynamic Host Configuration Protocol (DHCP). On most networks, the Remote Extender automatically connects to the local network. It is recommended that the facility's IT department be contacted to provide the Remote Extender a reserved IP address located on the same sub-network as the Pulse HUB.

## Remote Extender Discovery

1. Pulse HUB is stable on the local network at a fixed IP address.
2. Connect the Ethernet to the Remote Extender (FIG. 3).



t36532a

**FIG. 3: Connecting Ethernet**

3. Connect the power adapter to the Inlet Port. The other end of the power adapter is plugged into a 120-240VAC electrical outlet.
4. Place Pulse HUB into Discovery Mode to begin the process of connecting the Remote Extender to the Pulse HUB.

NOTE: If the Remote Extender is in the initial listening state, this should only take a few seconds.

5. After the Remote Extender is found, exit Discovery Mode on the Pulse HUB.

## Device Discovery

1. From the Pulse software, navigate to the Device Network Screen.
2. There are multiple sections listed under the Device Network header, one for the HUB and others for the Remote Extenders.
3. Toggle on Discovery Mode under the Remote Extender section.
4. Register devices with the Remote Extender following the instructions for your devices, similar to the device registration process for the HUB.

# Troubleshooting

Problem	Cause	Solution
Power LED is not lit	Not being powered	Verify the power supply is connected to a power source.  Verify that the device is connected to a power source.
	Hardware Failure	Disconnect power and reconnect. If problem persists, replace hardware.
XBee LED is not lit	Hardware/Configuration Failure	Disconnect power and reconnect. If problem persists after 60 sec., replace the hardware.
Network LED is not lit	Hardware/Configuration Failure	Disconnect power and reconnect. If problem persists after 60 sec., replace the hardware.
Network LED flashing yellow, slower than once per second	No Ethernet connection.	Disconnect Ethernet cable and reconnect. If that does not solve the issue, replace the Ethernet cable.
Network LED is flashing yellow, faster than twice per second	DHCP server is not responding.  The device may not be connected to the DHCP server, even if there is a link to a hub or switch.	Check with network administrator.

# Technical Specifications

<b>Pulse Extender</b>		
	<b>US</b>	<b>Metric</b>
Dimensions	3.0 x 3.0 x 3.0 in.	7.62 x 7.62 x 7.62 cm
Weight	0.15 lb	0.07 kg
Operating Voltage	5VDC	
Power Consumption	Typical: 1.2 W, Max: 2.5 W	
Operating Temperature	32° F to 104° F	0° C to 40° C
Relative Humidity	5% to 95% (non-condensing)	
RF Frequency Band	2.4 GHz (ISM) 2412-2472 MHz	
Maximum Transmit Power	6.3 mW (+8dBm)	
RF Range	200 ft.	60 m
PAN Bandwidth	5 MHz	
PAN Modulation	O-QPSK	
Maximum WiFi Transmit Power	18 MW (12 dBm)	
WiFi Bandwidth	20 MHz	
WiFi Modulation	OFDM, QPSK	

## California Proposition 65

### CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

# 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:** 612-623-6928 or **Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

*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 3A6943

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**  
**Copyright 2019, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.**

[www.graco.com](http://www.graco.com)  
Revision B, July 2021