Vehicle Service Equipment Buyer's Guide

Fluid Handling Equipment for Industrial and Commercial Applications

Construction | Fleets and Transportation | Industrial | Mining | Energy | Agriculture

PROVEN QUALITY. LEADING TECHNOLOGY.

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About Graco

Established in 1926, Graco has built a worldwide reputation for high quality, reliable and technically advanced products, world-class manufacturing and outstanding customer service. Headquartered in Minneapolis, Minnesota, Graco works closely with distributors around the world to offer innovative products that set the quality standard for spray finishing, paint circulation, lubrication, sealant and adhesives dispensing, process application and contractor power equipment. These best-in-class products are manufactured in the U.S. and China and supplied through our distribution centers around the world. Every day, Graco's fluid-handling equipment and systems move, measure, mix, control, dispense and spray a variety of fluids and materials.
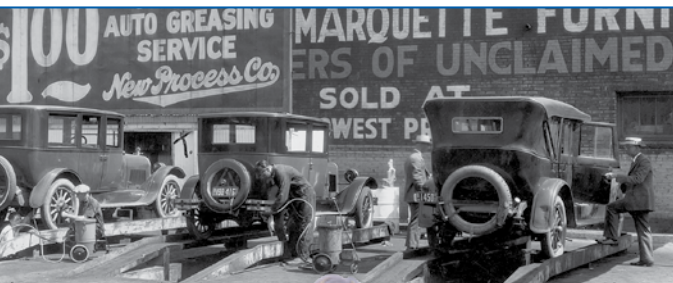
Lubrication Equipment Division

From the first air-powered grease gun to our industry-leading Fire-Ball pump, Graco's Lubrication Equipment Division is what started it all. We manufacture equipment to monitor, control, manage and dispense fluids. Offering innovative equipment for all your vehicle services, industrial and automatic lubrication needs. We offer a full range of high-quality pumps, meters, valves, hose reels and accessories to increase production and reduce waste and downtime.

Graco offers a full line of quality equipment to meet the varying needs of vehicle maintenance and repair. Streamline your workflow and move more lubricants through your shop. We offer reliable, high-quality equipment you can depend on for fuel, diesel, antifreeze, oil and grease. Our versatile fluid inventory control and management systems are designed to accurately track the use of oil, grease and other automotive fluids at vehicle maintenance facilities, and our lubrication equipment ensures you deliver fluids to the right spot in your shop. From light-duty applications to high-performance concepts designed for heavy-duty jobs, our equipment is known for its rugged, durable and long-life design.

More than **3,300** distribution partners offer local service and support in more than **100** countries all over the world

Machining is a core competency of Graco – it enables complete control of the component parts needed to ensure precise metering, reliable dispensing and fluid movement.

When it comes to **research and development**, Graco is one step ahead, ensuring we offer the best possible solutions. To guarantee superior quality and to meet the changing requirements of your markets, we prioritize investing resources in research and development. Innovative technologies and extensive field testing are a natural part of our process to develop new products. Also, every aspect of our production is subject to constant testing and evaluation. It's the foundation to deliver products with long service life and low cost of ownership. The insurance to help you grow your business.

We understand our customers. We build a partnership, working and striving towards new solutions, together. We are at the service of our distribution partners, supporting you along the way. Look at Graco not just as a manufacturer or supplier but as an extension of your business. Our dedicated and experienced teams offer unique capabilities to help you meet your specific goals and challenges.

- Innovative, high-quality products with unique features
- A professional warranty and high service rate
- Purchasing conditions aimed at profitable growth
- A committed sales and marketing team for tailor-made support of expanding sales opportunities
- Continuous technical, commercial and hands-on training

Our world-class distribution centers and unrivaled global distributor network give Graco a unique industry advantage that allows us to rapidly deliver our products to end users worldwide.

Exceeding customer expectations is our priority. Our multilingual team of customer service specialists and technical engineers are available to you. Graco offers instructor-lead training sessions in the United States, EMEA and Asia Pacific. These courses teach theory and hands-on practical applications, covering basic operational to advanced technical knowledge. Each training session can be adapted to your specific needs.

Offering more than just products, we are focused on building relationships, identifying and developing business opportunities with you. Our sales team is available to collaborate, define strategies to assist in navigating through our product offering and provide advice on promotional activities.

Graco's marketing specialists investigate ways to expand the market and develop the right technologies for any application, in close cooperation with distributors and field users. We offer tailor-made promotional and communication support, from defining strategic requirements to developing marketing campaigns, organizing events and creating digital or printed material.

Did You Know?

Graco also manufactures and sells a complete line of automatic lubrication systems and accessories!

Keep your equipment running at peak performance. Graco automatic lubrication solutions give you the ultimate machine performance by lubricating key wear points – the right amount of lubricant, at the right time, in the right location. Graco has automatic lubrication solutions for the industrial, on-road mobile, off-road mobile, energy industries and more.

Visit www.graco.com/autolube

Graco Resources

Graco has developed tools and resources to help educate and better serve our distribution channel. Check them out today:

Graco Sales Book

Stay up-to-date with the newest information from Graco by downloading the Graco Sales Book App.

Graco Sales Book is an innovative mobile application, designed to give Distributors access to Graco product information, including brochures, manuals, videos, and training documents – all on your mobile device.

Download today by visiting
Salesbook.graco.com

Graco University

Graco University is an e-learning module that can be accessed online, anytime, and contains assets that help educate you on Graco products.

This innovative online learning program gives the tools to stay on the leading edge with a variety of resources such as virtual and instructor led courses, online books, live and on-demand video presentations, and much more.

Learn more today at
training.graco.com

Graco Gear

Graco Gear is your one-stop shop for branded merchandise and other tools that will help you build customer relationships.

Order shirts, hats, banners, and more whenever you need! You can even add your logo for a small fee. Most orders ship next day.

Start shopping today at
gracogear.com

FLUID MANAGEMENT SYSTEMS

GRACO®

GRACO®

Choosing a Graco Fluid Management Solution

FEATURE	Traditional Box	Pulse FC	Pulse Pro
Control. Regulate the amount of fluid that's dispensed to reduce spillage and waste.			
Allow control of dispenses	✔	✔	✔
Restrict the quantity of fluid	✔	✔	✔
Ensure correct amount of fluid	✔	✔	✔
Meters. Put control into the hands of your technicians so they can be more productive, accurate and accountable.			
Works with petroleum, synthetic based oils, antifreeze	✔	✔	✔
Works with windshield wash solvent	✔		✔
Meter displays quantity dispensed		✔	✔
Fluid measured at dispense point (highly accurate)		✔	✔
Installation. Seamless integration simplifies dispenses without compromising workflows or productivity.			
Works with oil bar	✔	✔	✔
Wire-free installation		✔	✔
Wireless communication			✔
Pump air control (PAC)	✔		✔
Flexibility. Accommodate emerging demands to maintain or expand productivity and profitability.			
Works with mobile roll-around packages		✔	✔
Easy expansion with additional fluids		✔	✔
Easy upgrade to comprehensive fluid management		✔	**N/A**
User Interface. Access the information necessary to make more informed decisions quickly.			
Simple PC-based software		✔	
No software to install			✔
Accessible from any PC, phone or tablet			✔
Fluid Management. Improve accountability for your entire operations.			
Track dispenses by invoice or work order			✔
Track dispenses by technician			✔
Record fluid type and quantity dispensed			✔
Keeps technician in service bay			✔
Fluid Inventory. Simplify how you re-order and store inventory to minimize delays.			
Monitor tank levels (TLM)			✔
Dealer Management Solution (DMS) integration			✔
Reporting. Capture critical information and insights to simplify decision-making.			
Print on dispense			✔
Automated customizable reports			✔
Automated alerts to simplify inventory tasks			✔
Software updates		✔	✔
Permanent record of all dispenses or authorizations		✔	✔

Fluid Management

Pulse® Pro Fluid Management simplifies how forward-thinking shops track and manage bulk fluids in real time – adding more transparency and accountability to drive productivity and profitability.

Fluid Management

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B
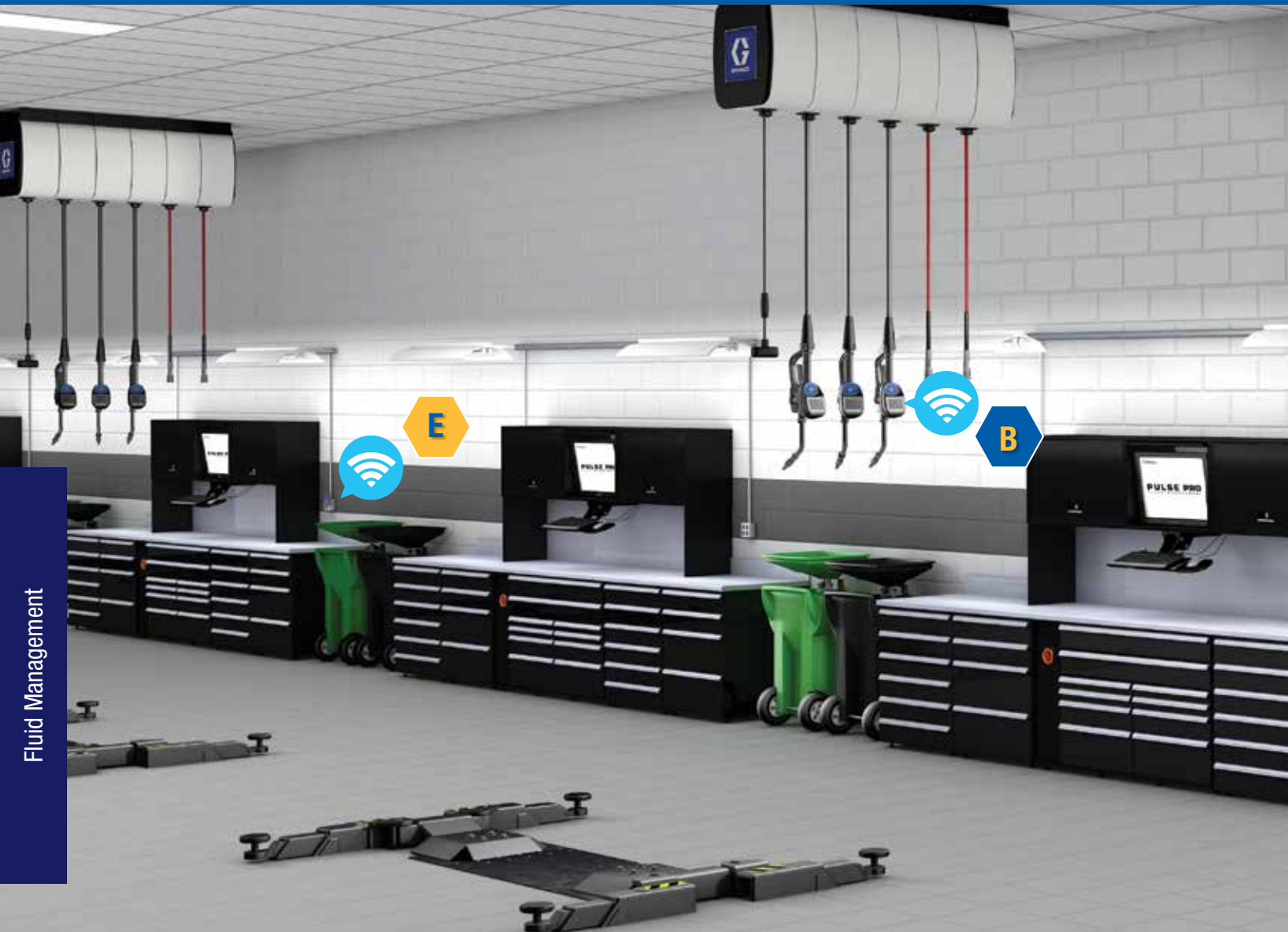
Benefits of Pulse Pro Fluid Management

Transparency. Monitor every drop, every time – automatically – and minimize shrinkage, rounding and discrepancies.

Accountability. Track issues to the source via advanced technology, including automated alerts and customizable reports.

Integration. Capture data, integrate it with popular DMSs and share it with other stakeholders quickly.

Portability. Pair with mobile dispense units and drums easily to reduce extra steps and hassles for technicians.

Scalability. Add Pulse into almost any environment quickly, and even retrofit applications or multiple buildings within the same facility.

Accurate billing. Automatically assign every ounce of fluid directly to a work order to simplify billing and maximize profit margins.

Simplicity. Avoid surprises, interruptions and delays. Fluids are tracked and recorded instantly and automatically.
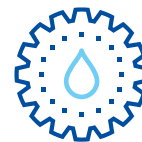
Inventory management. Monitor fluid inventory and schedule refills to minimize delays and excessive costs.

Fluid Management

Steps to Build Your Pulse Pro System:

A Hub with Software

1 REQUIRED

B Add Meters

MINIMUM **1** REQUIRED

Add Accessories

C Tank Level Monitor (TLM)

Tank Level Monitor can be used as a standalone product.

OPTIONAL

D Pump Air Controller (PAC)

OPTIONAL

E Pulse Extender and Pulse Remote Extender

OPTIONAL

F Roll Around Package

OPTIONAL

G Oil Bar Dispenser

OPTIONAL

Pulse® Pro Fluid Management

A Pulse Hub

Simply connect the Pulse Hub to a power source and access your local network to get started. The self-contained device includes everything necessary for users to access monitoring and reporting tools instantly from any network-connected PC, tablet or smartphone.

Pulse Software

Pulse Pro Fluid Management software is pre-installed on the Pulse HUB and focused on simple intuitive design with powerful information at your fingertips. Get a quick consolidated view of all dispenses for the entire shop via specifically designed web page and easy-to-use software. Track tank levels at a glance. Generate customizable reports and automated e-mail alerts to share critical information with other key decision-makers. For further efficiency and automation, Pulse software can be integrated with your DMS through Pulse standard integrations or our generic third-party interface.

Wireless Communication
Communicates with Pulse devices.

No PC Software to Install
Pulse software delivered via web pages to any PC, tablet or phone.

Status Lights
Quickly verify Hub status.

Ethernet and Wi-Fi
LAN connection for flexible installations.

Built-In Backup
Includes SD card for database backup and restore.

Built-In Computer
Runs custom operating system to eliminate common PC operating system issues.

Universal Power Connections
Facilitates installation using 100–240 VAC electrical outlets.

Easily Updates
Automatic updates through internet connection.

Features and Benefits

- No PC software to install – Pulse Hub generates a local web page
- Responsive web design – Use any-size screen, from a PC to a phone
- Consolidated dispense queue – Find everything you need in one convenient table
- Advanced reporting – Create and schedule automated reports to track history and fluid usage
- Informative and preventive alerts – The software offers over two dozen alert activities
- Automatic software updates – Software notifies you when updates are ready to install

Technical Specifications

Weight	1.0 lb (454 gm)
Power Supply	
Input Power	100–240 VAC line voltage (0.05 A)
To Hub	5 VDC (0.5 amps)
Warranty	Two years electronics

A Ordering Information

Part Number	Description
24Z978	Hub for non-European installation with global power adapter

graco.com

DMS Integration Options for Pulse Pro

An integration, put simply, is the communication between two separate business systems. Pulse uses integrations to provide enhanced control and monitoring for fluid dispenses.

Option 1 – *Partner Integrations*

AssetWORKS
- Requires FleetFocus: FA or M5 with FluidFocus Module
- Communication through Enterprise Asset Management System

CDK Global.
- Requires CDK Drive DMS
- Communication through CDK's Third-Party Access Program

Dealertrack
- Requires Dealertrack DMS
- Communication through Dealertrack's Opentrack API

procede software
- Requires Excede v9.22+ with Excede Database
- Communication through Excede API v2.0

PBS
- Requires PBS DMS
- Communication through PBS Partner Hub

Reynolds & Reynolds RCI
- Requires ERA
- Communication through RCI Web Service

Option 2 – *Communication through Graco Third Party Interface*

PULSE FLUID MANAGEMENT **DMS INTEGRATION**
- Requires End-user developed integration for non-supported DMS
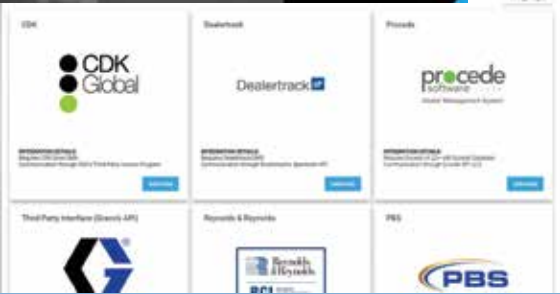
How It Works

The interface to business systems or DMS provides two important basic functions:

1 WORK ORDER VALIDATION

With DMS integration, dispenses occur only when a valid work order exists.

Work Order or Technician PIN
Authorization to Dispense → DMS

2 WORK ORDER POSTING

Pulse software communicates with the DMS, posting the dispense to the work order.

Post Dispense
Confirm Posting → DMS
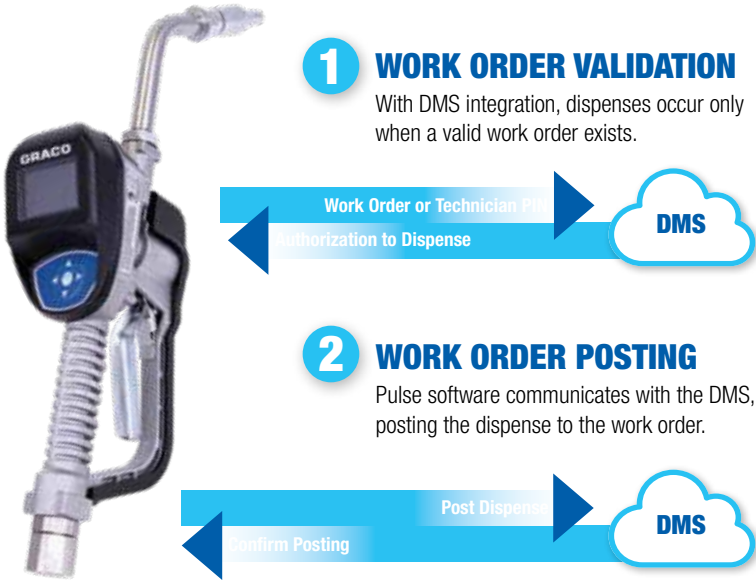
Interface Activation Codes

Part Number	Description
25R975	Pulse software with CDK Global Drive
25R976	Pulse software with Dealertrack
25R977	Pulse software with AssetWORKS
25R978	Pulse software with Reynolds & Reynolds
25R979	Pulse software with Procede Software – 2nd site
25R980	Pulse software with Procede Software
25R981	Pulse software with PBS

Fluid Management

Oil	Gear Lube	Antifreeze	Washer Fluid	ATF

B — Pulse Dispense Meter

The dispense meter is durable and easy to use, giving technicians everything they need at their fingertips. PINs and other data can be entered in moments via a larger, more intuitive display. NFC tags can be used for immediate PIN entry and faster access to work orders.

5 Year Warranty!

Large, Intuitive Display
High-contrast display for low- and bright-light conditions.

Faster PIN Entry
Built-in NFC reader and simple, efficient controls.

Wireless Communication
Communicates dispense information with Hub.

Ergonomic Design
Lower button placement.

Fluid Extension Kits
Choose from rigid, flexible or gear lube extensions with automatic flush-mount nozzle design.

Long Battery Life
Uses four off-the-shelf AA batteries – easy to replace.

Long-Life Valve Design
Cartridge design for long life and easier repair.

Protective Trigger Guard
Prevents accidental dispenses.

Technical Specifications

Flow Range*	0.25 to 18 gpm (0.9 to 68 lpm)
Maximum Working Pressure	1,500 psi (103.4 bar)
Units of Measure (factory set to quarts)	Pints, quarts, gallons, liters
Weight	5.3 lbs (2.4 kg)
Inlet	1/2 in NPT or 3/4 in NPT
Outlet	3/4 in straight thread O-ring boss
Dimensions (without extension)	
Length	13 in (33 cm)
Width	3.75 in (9.5 cm)
Height	5.75 in (14.6 cm)
Maximum Recorded Dispense	999.99 units
Operating Temperature Range	4°F to 158°F (-16°C to 70°C)
Storage Temperature Range	-40°F to 158°F (-40°C to 70°C)
Battery**	4 AA alkaline or lithium batteries
RF Frequency Band	2,400 to 2,483.5 MHz
Maximum RF Transmit Power	8 dBm
Wetted Parts	Aluminum, stainless steel, PBT, nitrile rubber, zinc-plated carbon steel, nickel-plated carbon steel
Fluid Compatibility	Antifreeze, gear oil, crankcase oil, ATF, windshield wash (up to 50% alcohol-based solutions)
Meter Accuracy†	+/- 0.5 percent
Warranty	Five year structural, 3 years electronics, 1 year wear components

*Tested in 10W motor oil. Flow rates vary with fluid pressure, temperature and viscosity.
**Battery required to meet life expectancy: Energizer® Alkaline E91.
†At 2.5 gpm (9.5 lpm), at 70°F (21°C), with 10W oil and 1 gallon dispensed. May require calibration; out-of-box accuracy is +/- 1.25 percent.

Fluid Management

Oil Gear Lube Antifreeze Washer Fluid ATF

B Ordering Information

8 gpm (30 lpm) Meters

Fluid	Extension	Nozzle	Size (in)	Part Number
Oil	Flexible	Automatic Quick-Close	1/2	25M319
Oil	Rigid	Automatic Quick-Close	1/2	25M317
Antifreeze	Flexible	Manual Antifreeze	1/2	25M320
Antifreeze	Rigid	Manual Antifreeze	1/2	25M318
Gear Lube	Gear Lube	Manual	1/2	25M326
Windshield Wash	Rigid	None	1/2	25M328

18 gpm (68 lpm) Meters

Fluid	Extension	Nozzle	Size (in)	Part Number
Oil / Antifreeze	Flexible	Manual High-Flow	1/2	25M324
Oil / Antifreeze	Rigid	Manual High-Flow	1/2	25M323
Oil / Antifreeze	Flexible	Manual High-Flow	3/4	25M330
Oil / Antifreeze	Rigid	Manual High-Flow	3/4	25M329

Accessories

Nozzle and Extension Kits

	Extension	Fluid	Nozzle Description	Part Number	Compatible Meters
	Rigid	Oil	Automatic, non-drip, quick-close	255852	Pulse 8 gpm
	Rigid	Antifreeze	Non-drip, quick-close	26C267	Pulse 8 gpm
	Rigid	Oil/Antifreeze	High-flow, non-drip, quick-close	255857	Pulse 18 gpm
	Rigid	Gear lube	Non-drip, quick-close	255854	Pulse 8 gpm
	Flexible	Oil	Automatic, non-drip, quick-close	255853	Pulse 8 gpm
	Flexible	Antifreeze	Non-drip, quick-close	26C268	Pulse 8 gpm
	Flexible	Oil/Antifreeze	High-flow, non-drip, quick-close	255858	Pulse 18 gpm
	Nozzle Only	Oil	Automatic, non-drip, quick-close	17R220	Pulse 8 gpm
	Nozzle Only	Antifreeze	Non-drip, quick-close	17T207	Pulse 8 gpm
	Nozzle Only	Oil/Antifreeze	High-flow, non-drip, quick-close	255461	Pulse 18 gpm
	Nozzle Only	Gear lube	Non-drip, quick-close	255470	Pulse 8 gpm
	Flexible	Oil/Antifreeze	Extension only, 2 ft length	131733	Pulse 8 gpm
	Rigid	Windshield wash	Extension, nozzle	273079	Pulse 8 gpm

NFC Tags

	Part Number	Description
	131462	NFC tags for user identification with meter. 25-pack, blue.

Pulse Meter Filter Kits

Part Number	Description
25D906	Filter kit includes filters/strainers (15M308) and O-rings (155332)

Swivel Covers / Impact Protection

	Part Number	Description
	15T366	Black swivel cover (standard color with meter)
	15T367	Red swivel cover
	15T368	Blue swivel cover
	15T369	Green swivel cover
	15T370	Yellow swivel cover
	131226	Pulse / SD meter boot

Fluid Management

Pulse® Pro Fluid Management

C — Pulse Tank Level Monitor (TLM)

Measure your largest tanks accurately with minimal effort. The monitor's ultrasonic sensor records the tank level and can be configured to e-mail a daily report to key stakeholders detailing tank volumes, low- or high-level warnings and more.

2 Year Warranty!

Simple Wireless Setup
Automatic network identification.

Long Battery Life
Allows for remote installations. Uses four off-the-shelf AA batteries – easy to replace.

Built-In Display
Real-time level visible from built-in display.

Supports Multiple Tank Shapes
Ability to input strapping table for any tank shape.

Tough Exterior
Sealed enclosure to accommodate outdoor usage.

Compact Design
Easily fits into more spaces.

On-Demand Readings
Ability to take reading at any time.

C — Ordering Information

Part Number	Description
25M449	Tank Level Monitor (TLM)

Technical Specifications

Ultrasonic Tank Depth Measurement range (Not for use in pressurized tanks)	5 in to 30 ft (12.7 cm to 9.14 m)
Fluid Level Measurement Accuracy	+/- 1.8 in (4.57 cm)
Mounting	1.5 in and 2 in threaded NPT connector (Adapter for BSPP and BSPT thread options available)
Weight (with batteries installed)	1.25 lb (567 g)
RF Frequency Band	2,400 to 2,483.5 MHz
Operating Temperature Range (Display will not function below 32°F [0°C])	-22°F to 185°F (-30°C to 85°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)
Batteries	Four AA alkaline
Enclosure	IPX5
RF Communication	2,400 to 2,483.5 MHz
Vertical Tanks	
Maximum Volume	999,999 gal (999,999 l)
Maximum Height	30 ft (9.14 m)
Cylindrical Tanks	
Maximum Volume	999,999 gal (999,999 l)
Maximum Height	30 ft (9.14 m)
Maximum Length	30 ft (9.14 m)
Maximum Width	30 ft (9.14 m)
Fluid Compatibility	Automatic transmission fluid, antifreeze, window wash, coolant, waste water
Warranty	Two years electronics

Fluid Management

D

Pulse Pump Air Control (PAC)

Prevent unauthorized access to fluid inventory. Pump air supply is shut off automatically after the dispense, preventing spills and expensive cleanup if a broken line occurs. Pump operation is enabled only when a dispense has been activated from the meter.

2 Year *Warranty!*

Easy Installation
Built-in mounting bracket.

Simple Wireless Setup
Automatic network identification.

High-Volume Air Valve
Supports a variety of pumps.

Multiple Thread Options
NPT and BSPP air valve options.

Compact Design
Allows for mounting directly on pump or in tight spaces.

Rugged Exterior
Sealed enclosure to protect internal components.

Multiple Wiring Options
NEMA 5-15 plug or flying leads.

D Ordering Information

Part Number	Description
24Z728	NPT with NEMA 5-15 plug

Technical Specifications

Minimum Operating Pressure	36 psi (0.25 MPa, 2.5 bar)
Maximum Operating Pressure	145 psi (1.0 MPa, 10 bar)
Maximum Air Flow	93 SCFM (2.6 m^3/min)
Power Supply	100–240 VAC line voltage, 24 VDC solenoid
Power Cord	
Model 24Z676, 24Z677	6 ft SJOOW, 3-wire, 18-gauge cable with flying leads
Model 24Z728	Power cord with integrated NEMA 5-15 plug
Current	25 to 60 mA
RF Frequency Band	2,400–2,483.5 MHz
Connection Ports Size (inlet, outlet, exhaust)	
Model 24Z676, 24Z728	3/8 in NPT
Model 24Z677	3/8 BSPP
Operating Temperature Range	14°F to 122°F (-10°C to 50°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)
Weight	2.44 lbs (1.11 kg)
Dimensions	
Length	9.5 in (241.3 mm)
Width	2.25 in (57.2 mm)
Height	3.75 in (95.3 mm)
Warranty	Two years electronics

Fluid Management

Pulse® Pro Fluid Management

2 Year Warranty!

Pulse Extender

The Pulse wireless network can easily be expanded to accommodate large shops or a large number of devices. Simply plug the Extender into wall power to extend the network.

Expands Pulse Network
Supports 20 devices and extends the network range.

Simple Wireless Setup
Automatic network identification.

Integrated Electrical Plug
Simply plugs into wall.

Compact Design
Place conveniently in standard electrical outlet locations.

Technical Specifications

Operating Temperature	32°F to 140°F (0°C to 60°C)
Power Input	Universal AC input (100 - 240 VAC)
Length	2.31 in (5.87 cm)
Width	1.27 in (3.23 cm)
Height	3.28 in (8.33 cm)
Weight	0.5 lb (0.25 kg)
Warranty	Two years electronics

E Ordering Information

Part Number	Description
20A058	Pulse Pro Extender

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2 Year Warranty!

Pulse Remote Extender

The Pulse wireless network can easily be expanded to accommodate devices in secondary on-site buildings. Connect the Remote Extender to wall power and local network via Ethernet or Wi-Fi to extend the network.

Expands Pulse Network
Supports 20 devices and extends the network range.

Simple Wireless Setup
Automatic network identification.

Multiple Network Connection Options
Utilizes local network Ethernet or Wi-Fi to communicate back to Hub.

Compact Design
Easy to place even in tight spaces.

Electrical Power
Includes plug-in power adapter.

Technical Specifications

Connections	Ethernet or Wi-Fi
Ethernet	10/100Base-T
Wi-Fi	802.11 b/g/n
Operating Temperature	32°F to 104°F (0°C to 40°C)
Length	3 in (7.62 cm)
Width	3 in (7.62 cm)
Height	1 in (2.54 cm)
Warranty	Two years electronics

E Ordering Information

Part Number	Description
17F878	Remote Extender with global power adapter

F

Roll Around Package

Pulse Pro Fluid Management wireless technology allows you to control your mobile drums and dispenses by providing security for expensive drums of synthetic and semi-synthetic fluids. Each package contains everything you need to manage your drums in existing Pulse installations. Drum not included.

Proven Durability

Graco LD® Series 3:1 pump is a durable, high performance pump solution.

Ease-of-Use

The battery-powered meter means only an air connection is needed to pump and manage fluid dispenses.

Ready to Roll

Packages include everything you need to set up the pump and meter system on your 55-gallon oil drum.

Mobile Productivity

Dispense fluids anywhere in your shop without compromising security or productivity.

F Ordering Information

Package Number	Extensions	Package Includes					
		Meter	Pump	Downtube	Drum Cart	Air Regulator	Hose
25D948	8 GPM, Rigid	25M317	24G576	16F878	24F915	24H420	24H865
25D952	8 GPM, Flexible	25M319					
25D953	8 GPM, Gear Lube	25M326					

G Ordering Information

Oil Bar

Part Number	Description
25D121	Oil Bar Console
25D130	Oil Bar Dispense Kit
25N415	Oil Bar Pulse Dispense Meter

Oil Bar
Components ordered separately. For complete unit, order console (25D121), dispense kit (25D130) (one per meter) and Pulse meters (25N415) as needed.

Accessories

Part Number	Description
249440	Console bracket

Pulse Pro Demo Kit

Pulse Pro demo case with everything needed to show customers how Pulse Pro will save them time, gain them more billable hours and maximize their fixed operation's profitability.

Part Number	Description
25D625	Includes Pulse Hub (24Z978), Pulse Dispense Meter, Pulse TLM (25M449), Pulse PAC (24Z728), Pulse Extender (20A058), Pulse Remote Extender (17F878), Pulse NFC Tag, case and protective foam

Fluid Management

Pulse® FC is wire-free, so installation and configurations are easier and cheaper. We've replaced the big box console with fast, reliable and convenient fluid cards scanned at easy-to-handle meters, so users can employ the same type of familiar technologies they use elsewhere.
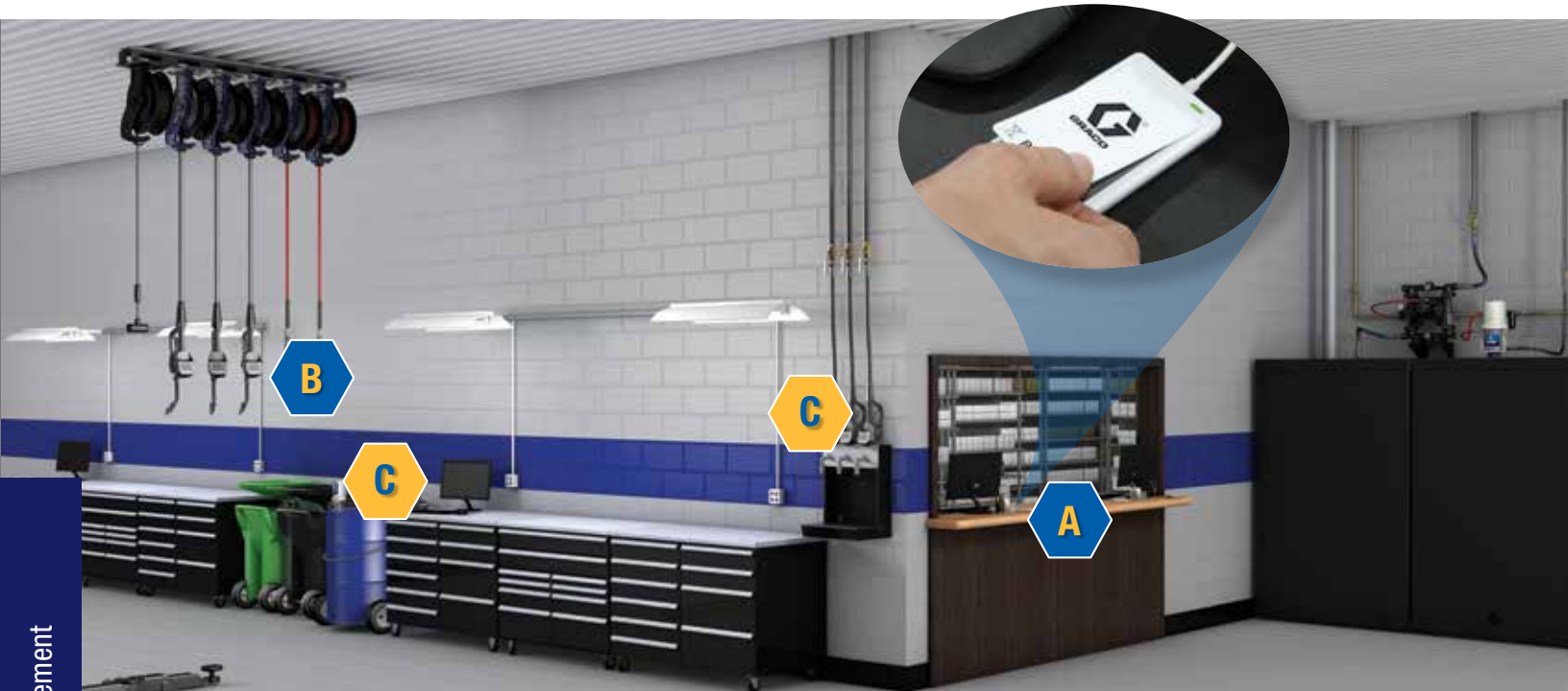
Steps to Build Your Pulse FC System:

A Starter Kit
1 REQUIRED

B Add SD™ Preset Meters
MINIMUM 1 REQUIRED

Add Accessories

C Oil Bar Dispenser
Roll Around Package
OPTIONAL

HOW IT WORKS

Pulse FC is a fluid control system that utilizes SD Preset meters. When put into Pulse FC mode, SD Preset meters will only dispense fluid when authorized with Fluid Cards. These included cards are programmed using the Pulse FC Software and Card Programmer. Once programmed, the cards are simply tapped to the meter which will be preset for the authorized amount of fluid and will not dispense any more than authorized.

PARTS ROOM/BACK OFFICE	TECHNICIAN	WORKSHOP
1 Program fluid card with Pulse FC software and card programmer	2 Card passed to technician	3 Card tapped on any meter of correct fluid and meter is preset and restricted to the programmed quantity
5 Software indicates card has been returned and is ready to be reused	4 Card is returned to parts room	
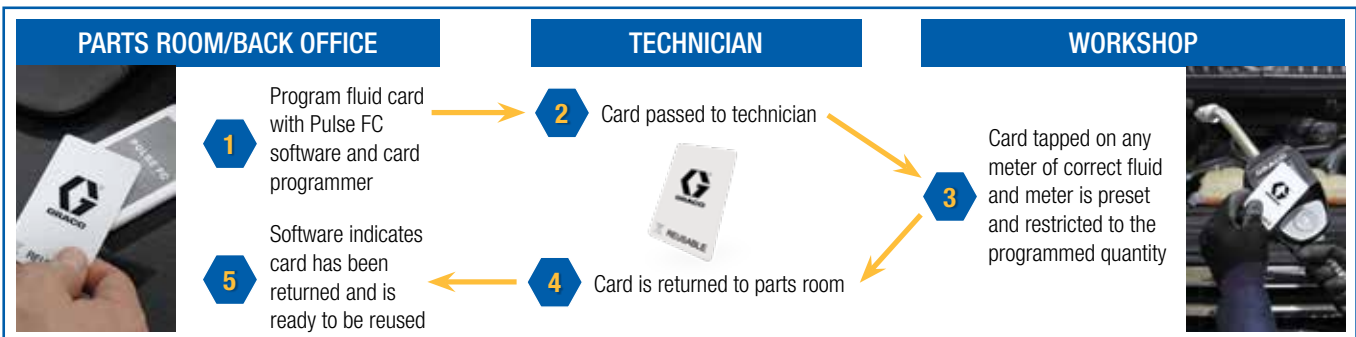
GAIN INSIGHT INTO AND CONTROL OF YOUR BULK FLUIDS

Simplicity. Avoid surprises, interruptions and delays. Fluids are easily controlled so technicians can spend more time serving more customers.
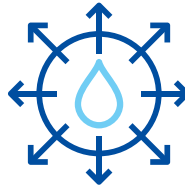
Accountability. Be assured every vehicle or machine receives the appropriate amount of fluid for more accurate billing.

Scalability. Add Pulse FC into almost any environment quickly, even retrofit applications and avoid excessive installation costs and delays. You can also easily upgrade to Graco's Pulse Pro.

Mobility. Pair with mobile dispense units and drums quickly so your team can conveniently dispense without delays, hassles or extra steps.

Pulse FC Software

Pulse FC is a Windows PC-based software. Paired with the card programmer it allows setup and operation of the system. Cards can be utilized to authorize dispenses, totalize all fluids dispensed, as well as setup and calibrate SD™ Preset meters.

Fluid Management

Oil Gear Lube Antifreeze ATF
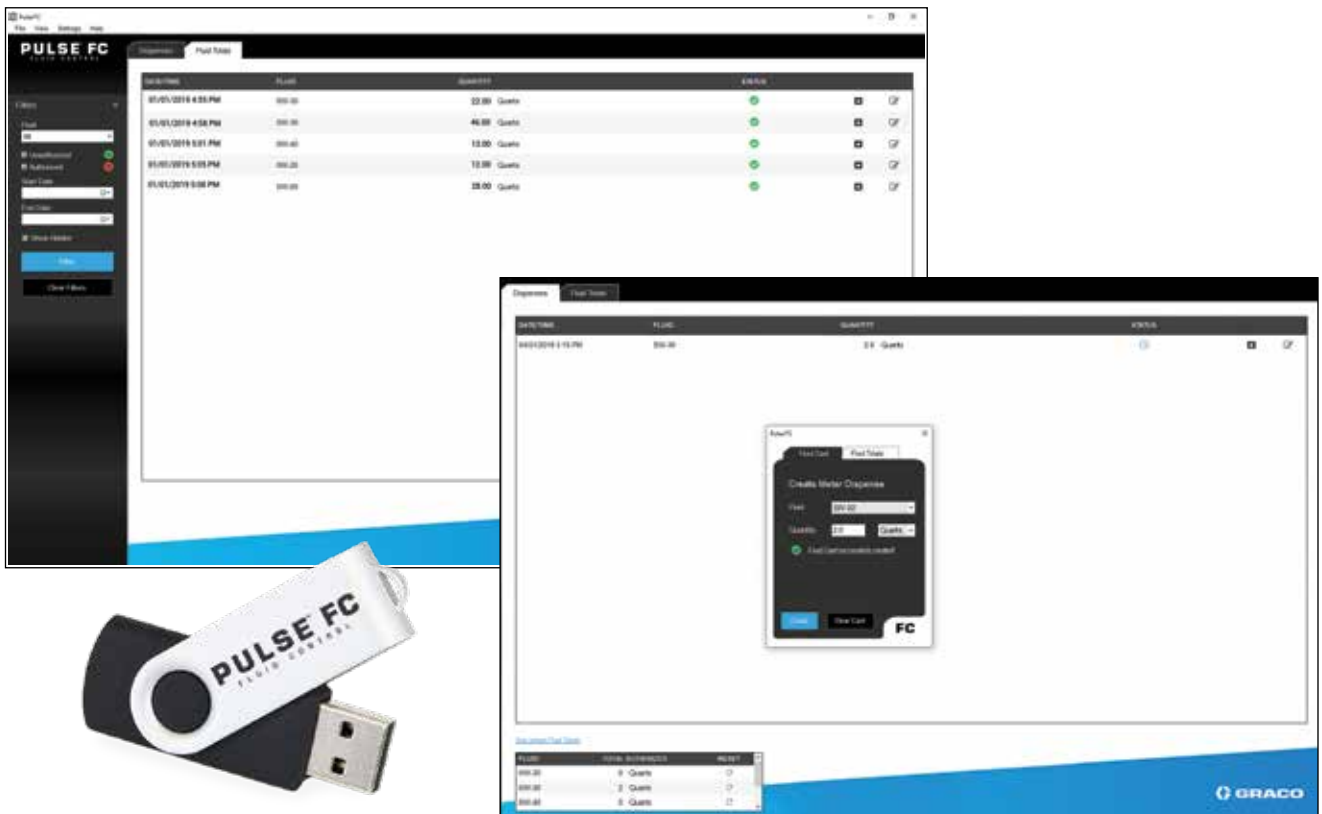
A

Pulse FC Starter Kit

Enjoy an easy-to-use, easy-to-install, out-of-the-box fluid control system designed for fast wire-free setup and configuration. Pulse FC integrates into existing or new environments quickly and cost-effectively without interrupting daily operations.

Pulse FC Programmer
Easily program cards for dispense or fluid totals.

Pulse FC Fluid Cards
Reusable fluid cards can be scanned directly on the SD preset meter's built-in NFC reader.

Pulse FC Software
Simple PC-based software is used in conjunction with Pulse FC Programmer.

Pulse FC Software Quick Start
Easy-to-follow instructions for quick system setup.

A Ordering Information

Part Number	Description
26C401	Pulse FC Starter Kit – Includes Software, Card Programmer, Software Quick Start and 50-Pack of Fluid Cards

Fluid Management

Oil Gear Lube Antifreeze ATF

Up to 18 gpm *(68 lpm)*

B SD™ Preset Dispense Meters

With Pulse FC, dispense only precise volumes to create efficiencies for your entire shop operation. Monitor how much fluid you're using. Choose the amount of fluid each technician can dispense in order to maintain accurate inventory.

Large LCD High-Contrast Display
High-contrast screen for reading in all lighting conditions with easy setup and navigation. See what fluid the meter is setup for and exactly how much you are dispensing.

Upgrade Option
Compatible with Pulse™ FC and upgradeable to Pulse™ Pro.

High Flow
Available in two models – 8 gpm (30 lpm) or 18 gpm (68 lpm).

Durable Cast Body
Designed for heavy duty and harsh applications.

Automatic Quick-Close Nozzle
Choose from rigid or flexible extensions with non-drip performance.

Long-Life Valve Design
Cartridge design for fewer and easier repairs.

Ergonomic Handle Design
Four-finger trigger and easy-to-use button pad reduce worker fatigue.

Typical Applications
- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Mining

Typical Fluids Handled
- Petroleum- and synthetic-based oils (motor gear, and ATF)
- Antifreeze

Technical Specifications

Flow Range*	0.25 gpm to 18 gpm (0.9 lpm to 68 lpm)
Maximum Working Pressure	1,500 psi (103.4 bar)
Units of Measure	Pints, quarts, gallons, liters (factory set to quarts)
Metered Dispense Valve Accuracy**	+/- 0.5%
Inlet	1/2 in–14 NPT or 3/4 in–14 NPT
Outlet	3/4 in–16 straight thread O-ring Boss
Maximum Recorded Dispense	9999 units (factory set in quarts)
Operating Temperature Range	4°F to 158°F (-20°C to 70°C)
Storage Temperature Range	-40°F to 158°F (-40°C to 70°C)
Wetted Parts	Aluminum, stainless steel, PBT, nitrile rubber, zinc plated carbon steel, nickel plated carbon steel
Dimensions (without extension)	13 in L x 3.75 in W x 5.75 in H (33 cm x 9.5 cm x 14.6 cm)
Weight	5.3 lb (2.4 kg)
Warranty	Five years overall, three years electronics
Instruction Manual	3A6711 and 3A6673

*Tested in 10W motor oil. Flow rates vary with fluid pressure, temperature and viscosity.
**At 2.5 gpm (9.5 lpm), at 70°F (21°C), with 10-weight oil and 1 gallon dispensed. May require calibration.
***Battery required to meet life expectancy: Energizer® Alkaline E91.

Fluid Management

Pulse® FC Fluid Control

Oil   Gear Lube   Antifreeze   ATF

B Ordering Information

SD™ Preset Electronic Meters

26C384

	Dispense Type	Flow Range gpm (lpm)	Fluid	Extension	Inlet in (NPT)	Part Number
SDP8	Preset (Pulse FC enabled)	0.25–8 (1–30)	Oil	Rigid	1/2	26C384
				Flexible	1/2	26C354
			Antifreeze	Rigid	1/2	26C385
				Flexible	1/2	26C355
			Gear lube	Rigid	1/2	26C358
SDP18	Preset (Pulse FC enabled)	0.25–18 (1–68)	Oil	Rigid	1/2	26C356
				Flexible	1/2	26C357
				Rigid	3/4	26C360
				Flexible	3/4	26C361

Nozzle and Extension Kits

	Extension	Fluid	Nozzle Description	Part Number	Compatible Meters
	Rigid	Oil	Automatic, non-drip, quick-close	255852	SDP8
		Antifreeze	Non-drip, manual open/close	26C267	SDP8
		Oil/Antifreeze	High-flow, non-drip, quick-close	255857	SDP18
	Rigid	Gear lube	Non-drip, quick-close	255854	SDP8
	Flexible	Oil	Automatic, non-drip, quick-close	255853	SDP8
		Antifreeze	Non-drip, manual open/close	26C268	SDP8
		Oil/Antifreeze	High-flow, non-drip, quick-close	255858	SDP18
	Nozzle Only	Oil	Automatic, non-drip, quick-close	17R220	SDP8
	Nozzle Only	Gear lube	Non-drip, quick-close	255470	SDP8
	Nozzle Only	Oil/Antifreeze	Non-drip, manual open/close	17T207	SDP8
	Flexible	Oil/Antifreeze	Extension only, 2 ft length	131733	SDP8

Fluid Management

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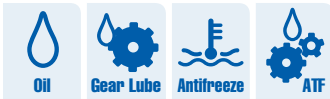
C Ordering Information

Roll Around Package

Pulse FC wire-free technology allows you to control your mobile drums and dispenses by providing security for expensive drums of synthetic and semi-synthetic fluids. Each package contains everything you need to manage your drums in existing installations. Drum not included.

Package Number	Extensions	Package Includes					
		Meter	Pump	Downtube	Drum Cart	Air Regulator	Hose
26C366	8 GPM, Gear Lube	26C358					
26C367	8 GPM, Flexible	26C354	24G576	16F878	24F915	24H420	24H865
26C409	8 GPM, Rigid	26C384					

Oil Bar

Part Number	Description
25D121	Oil Bar Console
25D130	Oil Bar Dispense Kit
25N771	Oil Bar SD Preset Dispense Meter

Oil Bar
Components ordered separately. For complete unit, order console (25D121), dispense kit (25D130) (one per meter) and Pulse FC meters (25N771) as needed.

Accessories

Pulse FC Fluid Cards

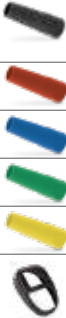| Part Number	Description
130783	Pulse FC Fluid Cards – 50-Pack, White

Pulse FC Demo Kit

Part Number	Description
26C399	Includes Pulse FC Dispense Meter, Software, Card Programmer and 5-Pack of Fluid Cards

SD Meter Filter Kits

Part Number	Description
25D906	Filter kit includes filters/strainers (15M308) and O-rings (155332)

Swivel Covers / Impact Protection

Part Number	Description
15T366	Black swivel cover (standard color with meter)
15T367	Red swivel cover
15T368	Blue swivel cover
15T369	Green swivel cover
15T370	Yellow swivel cover
131226	Pulse / SD meter boot

Fluid Management

Graco Pulse® Level offers highly intuitive tank-level-visibility options to help you optimize deliveries, margins and customer service. Choose from multiple tank-level-monitoring technologies, including a system that can run entirely on Wi-Fi. Track tank levels, capture and apply data, and assign distribution routes quickly, accurately and confidently from the industry's leading fluid management expert.

Choose Your Pulse Level System:

25T460

25T461

25T462

Ultrasonic Wi-Fi
There are other TLM solutions on the market – but none of them are designed for Wi-Fi configuration. When connected to a reliable network, marketers and their customers can avoid service fees or contracts entirely.

Ultrasonic Cellular
No need to worry about obsolete cellular network, we use a long term data solution. Versatile multi-thread adapter allows for installation on all different tank types.

Pressure Cellular
No need to worry about obsolete cellular network, we use a long term data solution. Our pressure unit is approved for hazardous locations and measures tanks up to 30 feet tall.

Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- Fuel (diesel/gasoline/kerosene)
- Water/waste water
- Antifreeze
- Windshield washer fluid
- Waste oil
- DEF

Typical Applications

- Heavy-duty truck dealers
- Fleet maintenance
- Mining maintenance
- Public works garage
- Construction vehicle maintenance
- Heavy-duty mobile service trucks
- Mining
- Remote job sites

Part Number	25T460	25T461	25T462
No Monthly Fees	•		
No Maintenance Contract	•	•	•
Easy-to-Use Software for Monitoring Data	•	•	•
Easily Replaceable Batteries	•	•	•
NPT Thread for Easy Installation	•	•	•
Viewable Data with Other Models of Pulse Level	•	•	•
LTE Cellular Coverage		•	•
Works in Remote Locations		•	•
30 ft Tanks			•
Hazardous Environment Approved			•

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Pulse® Level Fluid Management

Ultrasonic Wi-Fi

No Ongoing Fees
Wi-Fi connection.

Long Battery Life
7-year battery life with replaceable C batteries.

On-Demand Reading
Ability to take reading at any time.

Ultrasonic Sensor
Measure tanks 10 ft tall.

Ultrasonic Cellular

Cellular Communication
No need for local network connection.

Long Battery Life
5-year battery life with replaceable C batteries.

On-Demand Reading
Ability to take reading at any time.

Ultrasonic Sensor
Measure tanks 13 ft tall.

Pressure Cellular

Cellular Communication
No need for local network connection.

Long Battery Life
Up to 10-year battery life.

Submersible Pressure Sensor
Measure tanks up to 30 ft tall.

Hazardous-Location Rating
Approved for use with flammable fluids such as gasoline.

Fluid Management

Pulse® Level Fluid Management

Oil	Gear Lube	ATF	Fuel	Water	Antifreeze	Washer Fluid	Oil/Waste Oil	Diesel Exhaust Fluid (DEF)

Technical Specifications

	Ultrasonic Wi-Fi TLM	Ultrasonic Cellular TLM	Pressure Cellular TLM
Compatible Fluids	Oil, kerosene, diesel, lubricants, additives, DEF/AdBlue, coolants, water, waste oil, waste water	Oil, kerosene, diesel, lubricants, additives, DEF/AdBlue, coolants, water, waste oil, waste water	Oil, kerosene, diesel, lubricants, additives, DEF/AdBlue, coolants, water, waste oil, waste water, gasoline
Tank Depth Measurement Range	5.0 in to 9 ft-7 in	5.0 in to 13 ft	30 ft
Fluid Level Measurement Accuracy	+/- 1.0 in	+/- 1.0 in	+/- 1.0 in
Mounting	1.25 in,1.5 in and 2.0 in threaded NPT connector	1.25 in,1.5 in and 2.0 in threaded NPT connector	1 in threaded NPT connector with wall-mounted logger
Clearance Height Above Tank for TLM	7.5 in	7.5 in	N/A
Weight	0.5 lb	1.17 lb with batteries	0.75 lb
RF Frequency Band	2.412 GHz - 2.462 GHz	LTE CAT-M1	LTE CAT-M1
Maximum RF Transmit Power	18 dBm	23 dBm	23 dBm
Operating Temperature Range	0°F to 122°F	0°F to 122°F	-4°F to 131°F
Batteries	Li-SOC12 Size R14, 3.6V C-cell	4 x Alkaline C-cell	Graco Part Number 19D216
Battery Life	7.5 years* from activation	5 years*	10 years* from activation
Enclosure (Ingress Protection)	IP67	IP67	IP68
Tanks			
Maximum Volume	999,999 gallons	999,999 gallons	999,999 gallons
Maximum Height	9 ft-7 in	13 ft	30 ft
Altitude	<6,000 ft	<6,000 ft	<6,000 ft

*The battery life is based upon four (4) measurements per day and one (1) data drop per day from a location with adequate coverage, and a normal distribution over the operating temperature range centered at +25°C (77°F).

Pulse Level Software

Pulse Level software has a simple intuitive design and gives you powerful information at your fingertips. Get a quick consolidated view of key sites via a specifically designed web page. Track tank levels at a glance, generate customizable reports and automated email alerts, and share critical information with other key decision makers.

- Intuitive alerts ensure your customers never run out of products
- See the status of each customer site on an easy-to-view map
- Advanced reporting – create and schedule automated reports to track history and see usage trends
- Expand the capabilities of your existing software systems with tank data from Pulse Level's API
- Simple annual and monthly billing options, or avoid charges altogether with Wi-Fi
- Allow customer to find insights on their own tanks by sharing Pulse Level data
- Use customers' existing Pulse Pro hardware to avoid the cost of additional monitors

Fluid Management
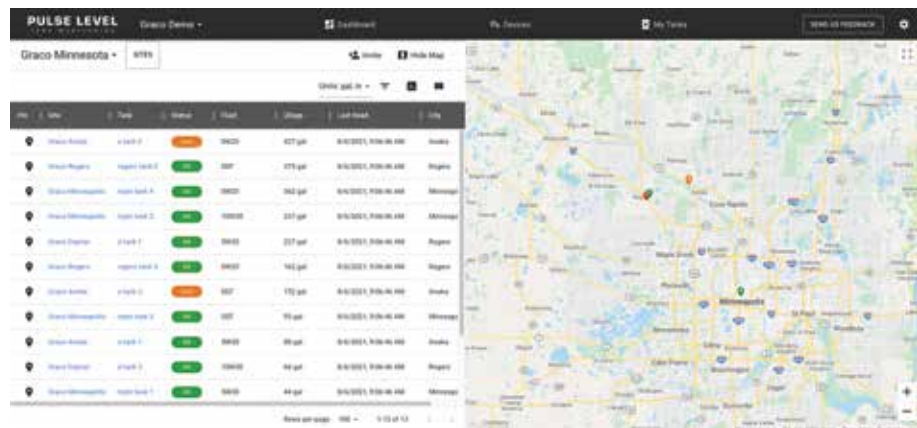
>> Ordering Information

In-Line Meters

Part Number	Description
236763	Electronic pulse output meter (quarts)
236764	Electronic pulse output meter (liters)
215474	Mechanical pulse output meter (quarts)
244342	Meter pulse converter, used when upgrading old-style modular fluid commander to electronic allows use of 215474/215475 with the EFC.

Air Solenoid Valves

Part Number	Description
215407	Air solenoid valve, 150 psi (10 bar) (1/2 npsm (f) conduit ports for wiring; 1/4 in NPT(F) air ports, adapted to 3/8 (f) IN, 3/8 (m) OUT) operates on 24V DC and 110 VAC. Automatically shuts-off air inlet to pump when pre-set dispensed amount is reached. Materials of construction: brass, SST, Buna.
105474	Air solenoid valve (bare) 150 psi (10 bar), same as 215407 but without wire connectors or adapters. 1/2 in npsm (f) conduit ports for wiring; 1/4 in NPT(F) air ports.150 psi (10.3 bar) max. working pressure.

Fluid Solenoid Valves

Part Number	Description
215487	Fluid solenoid valve, 1/2 in NPT(F) 3,000 psi (207 bar) operates on 24V DC. Automatically shuts-off fluid when pre-set dispensed amount is reached. Includes tube, valve, pin connector, wire plug connector and adapter.
514150	Fluid solenoid valve for antifreeze, 150 psi max. (10 bar), 1/2 in NPT(F), same as features as 215487.
110025	Bare fluid solenoid valve, 1/2 in NPT(F) 3,000 psi, same features as 215487 above, but without wiring connectors or adapters.

Ready-Light Kits

Part Number	Description
218588	Ready-light kit, signals operator when dispensing can begin. Includes "ready to dispense" indicator light (239019), strainer (240417), fluid solenoid valve (215487) and hardware.
238996	Ready-light with junction box (no solenoid or strainer)
239019	Ready-to-dispense indicator light only
113859	Lamp for indicator only

Installation Components

Part Number	Description
111620	Check valve
223179	Fluid filter kit (for bare electronic meter)
186472	Wall-mounting bracket
108458	Fluid shut-off valve
237893	Thermal relief kit for 900 psi (62 bar), relieves excess heat-induced pressure from dispense system. Male and female ends allow for simple installation.

Connecting Cables for Connecting Solenoids and Consoles, 90-volt, 2-wire, 18-gauge

Part Number	Description
215481	100 ft (30.5 m) pre-connected at both ends

Fluid Management

Notes

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Fluid Management

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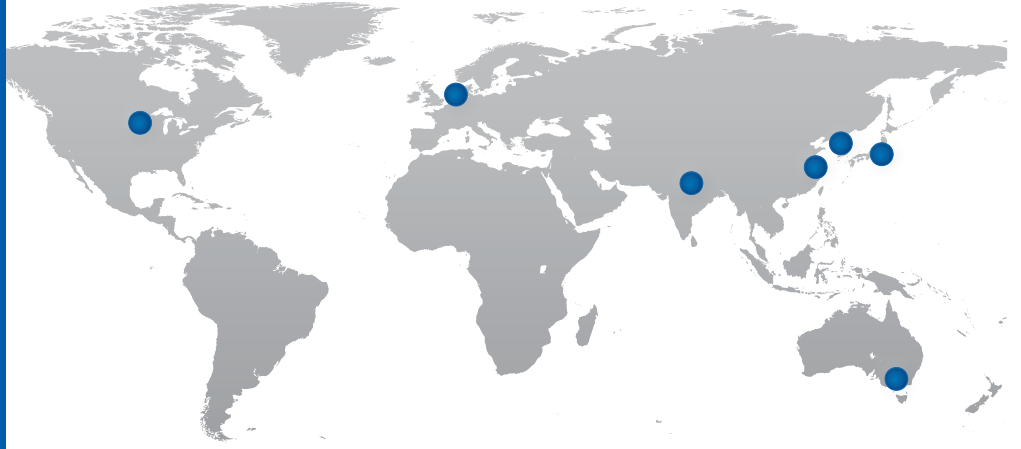Tel: 91 124 435 4208 Fax: 91 124 435 4001

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Facilities Worldwide for Global Support

Quality First
At Graco, we pride ourselves on providing best-in-class products. Engineered solutions are manufactured in our own facilities, with the highest standards in the industry. We provide you with world-class customer support and expertise to help solve your lubrication challenges.

Global Reach
Graco has facilities across the globe to provide you with the products and service *you* need, where *you* live. Plus, Graco has dedicated field experts in all areas of the world to support the products we sell.

Product Capabilities
Graco has a broad range of products to provide solutions that meet your needs. Our products are engineered and tested to perform in the harshest environments so you can be certain your equipment is protected and working at peak performance.

Contact us today!

Call **800-533-9655** to speak with a Graco representative, or visit **www.graco.com** for more information.