



PCF™ METERING SYSTEM

Precision Continuous Flow Metering and Dispense System
for Sealants and Adhesives

EUROPE, MIDDLE EAST & AFRICA



PROVEN QUALITY. LEADING TECHNOLOGY.

Precision dispensing in a flexible system



Applications:

- Bead dispensing
- Gasketing
- Seam sealing
- Hem flange
- Sound deadening
- Anti-flutter
- Body panel reinforcement
- Bonding
- Profile wrapping
- Cable filling
- Automotive underbody coating
- Solar frame sealing

Materials:

- Ambient, warm melt and hot melt materials to 400°F (204°C)
- Low to high-viscosity materials
- Unlimited volume

Reduce material usage with precise, reliable metering

The Graco PCF Metering System dispenses a precise, continuous flow of single-component sealants or adhesives in automotive and industrial applications. Advanced technology provides ultimate control, resulting in smooth, consistent beads, dots and spray patterns. You minimize material usage, reduce rework, and improve operational efficiencies.

Reduce your cost of ownership

- Low initial capital investment
- Fewer wear parts compared to shot meters simplifies maintenance

Improve your process efficiencies

- Provides consistent, continuous flow – no worry of slow shot meter refill times or the expense of more complicated mechanical solutions
- Intuitive user interface and control options
- Self-diagnostics allow for predictive and preventive maintenance strategies – improving process availability
- Multiple applicator capabilities – lets you program parameters for up to 16 different applicators
- Superior flow control saves material – less material waste



Control your entire cell with one Advanced Display Module (ADM). Take control of up to four systems with the ADM's easy-to-read system status and alert messages.

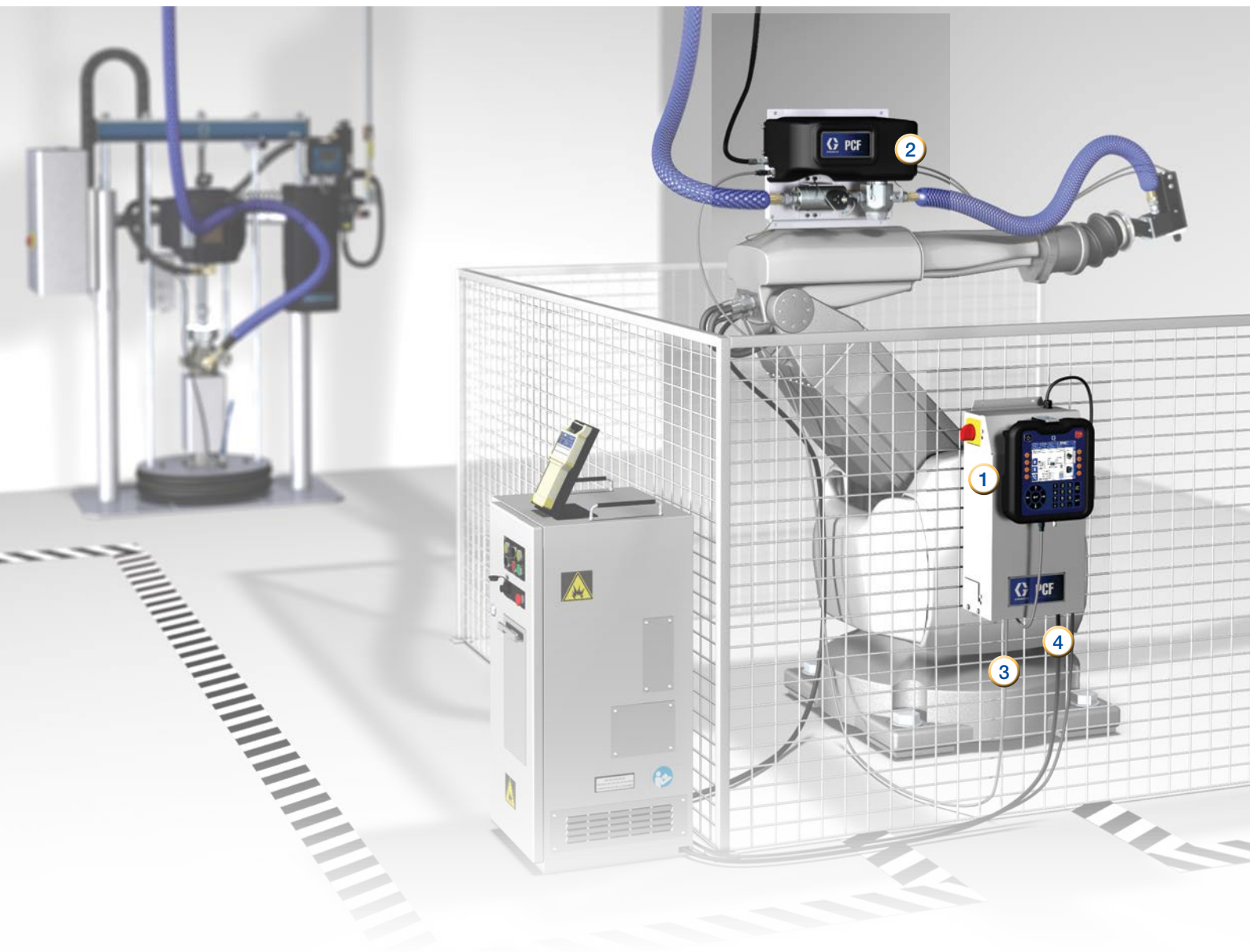
Get consistent, repeatable results

The Graco PCF ensures consistent material flow through closed-loop technology. It takes feedback from the fluid stream, and adjusts for changes in material temperatures, viscosities, dispense rates or robot speeds. Real-time adjustments mean the Graco PCF delivers a highly precise, continuous dispense.

Adapt to changing manufacturing needs

- Modular design for added system flexibility
- Compact, with few moving parts for easy maintenance
- Easy to integrate and install





Graco PCF Metering System – System components include:

1 Control Center/Advanced Display Module (ADM)

Provides easy setup, monitoring and system diagnostics – includes USB interface.

2 Fluid Plate

Advanced sensors provide feedback to system controls – where real-time adjustments are made for changes in material temperatures, viscosities, dispense rates or robot speeds.

3 Graco CAN Cable

Provides digital communications between the Advanced Display Module and the fluid plate.

4 Gateway Modules

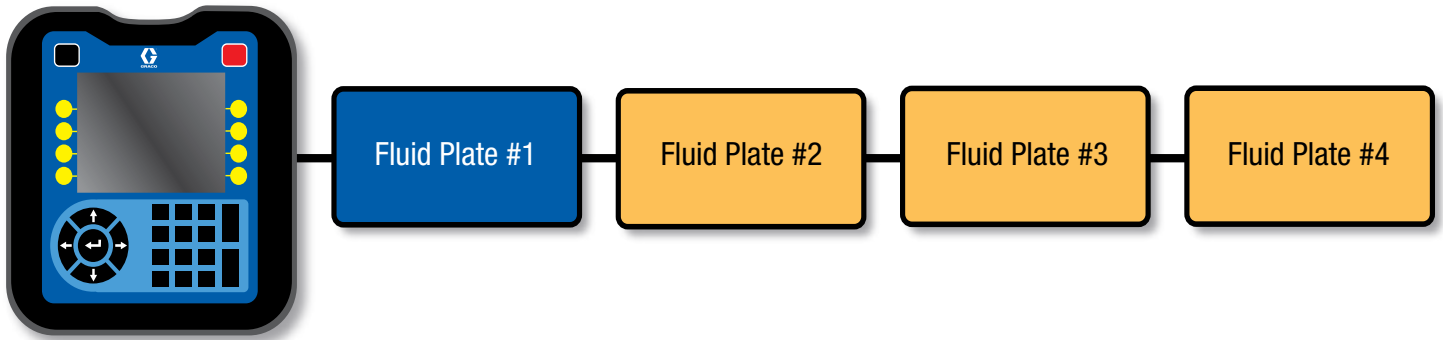
Allows the Graco PCF to communicate with other systems within your manufacturing process.

– Communications Gateway Module for EtherNet/IP™, PROFINET™

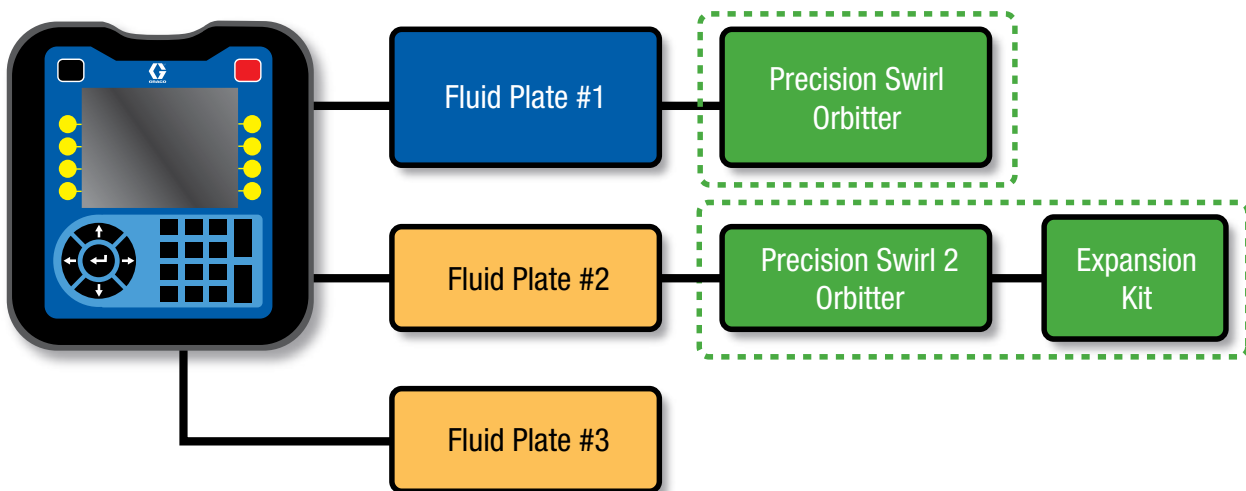
– Discrete Gateway Module

Take total control of your process

Control Center operates multiple fluid plates



- Controls each fluid plate independently
- Capable of operating multiple fluid plates – up to four with Communication Gateway Modules and up to two with Discrete Gateway Modules
- Controls up to 16 different applicators



- Operates additional PrecisionSwirl applicators with optional PrecisionSwirl Expansion Kit

 Additional fluid plates are optional and sold separately

 Optional (Sold Separately)



Advanced, intuitive user controls

The Control Center contains the electronics that communicate with the fluid plate. Its user interface is easy to use, and is detachable for in-plant mobility and flexibility.

- Monitors amount of material dispensed in each cycle
- Lets you change system values or do simple tests without reprogramming the robot controller
- Provides system diagnostics, helping you isolate problems more easily

Control modes include:

- Bead control – measures flow rate and pressure to ensure a consistent bead size
- Full open – opens regulator to allow for recirculation
- Shot dispense – for controlling specific volumes for cartridge filling or potting applications
- Pressure control – controls regulator outlet pressure for when a flowmeter is not being used

Integrated USB interface for easy data downloads

- Lets you download process data, plus job and error logs onto a flash drive for further analysis
- Allows you to archive valuable setup parameters

Fluid plate provides precision fluid dispensing

The fluid plate metering assembly monitors flow and makes continuous adjustments for changes in pressure and flow rate.

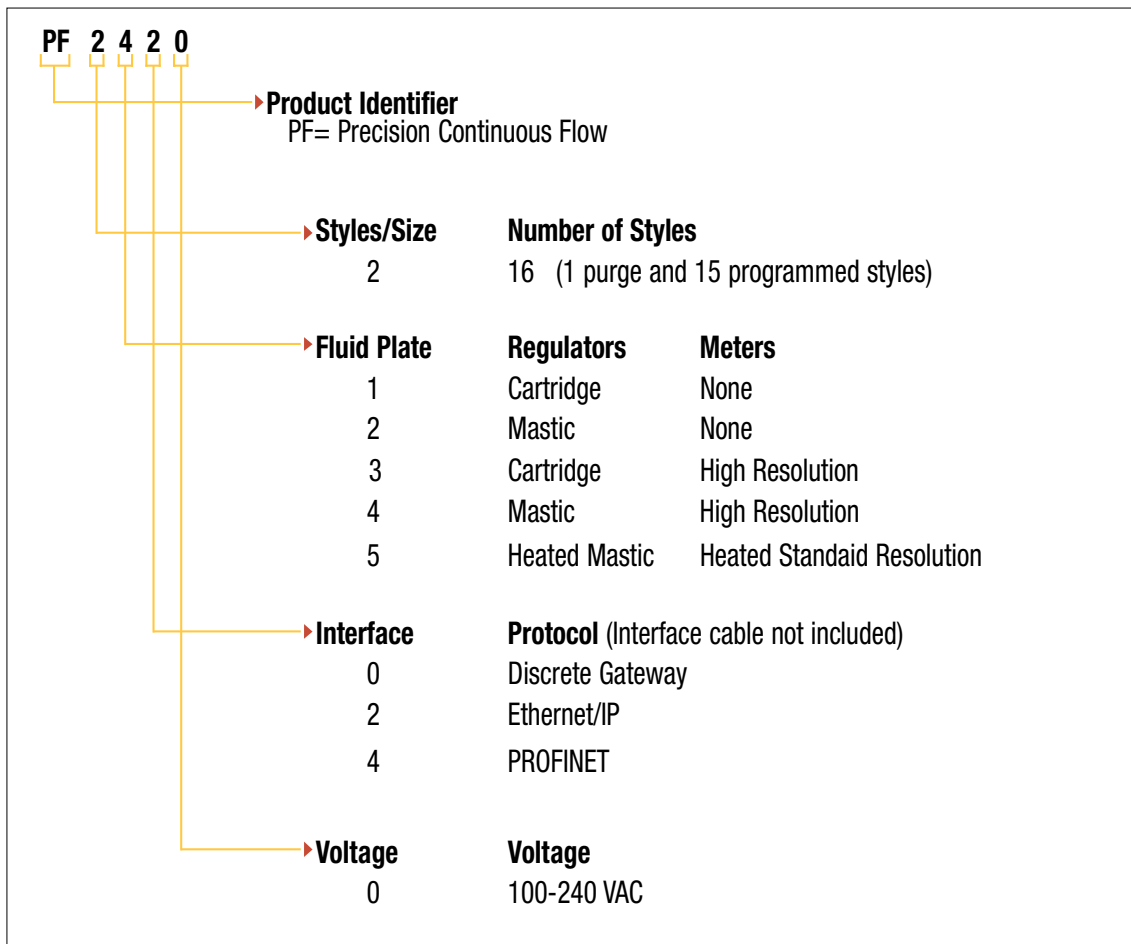
It uses flowmeters and advanced pressure sensors that operate in a closed loop to provide constant and instant adjustments to ensure an accurate dispense.

Graco offers a combination of fluid pressure regulators and flow meters to create six configurations to support a wide range of ambient or hot melt materials.



Ordering Information and Specifications

PCF Metering System Selection Matrix



PCF Metering System Specifications

Minimum flow rates*25 cc/minute with high-resolution helical flowmeter
50 cc/minute with heated helical flowmeter

Maximum flow rates*7,500 cc/minute with high-resolution helical flowmeter
22,500 cc/minute with heated helical flowmeter

Maximum fluid working pressure
 feed pressure to fluid plate cartridge regulator: 6000 psi (414 bar, 41.4 MPa)
 feed pressure to fluid plate mastic regulator: 5000 psi (345 bar, 34.5 MPa)
 at regulator outlet 4500 psi (310 bar, 31.0 MPa)
 at regulator outlet with electric heat components 3500 psi (241 bar, 24.1 MPa)

Minimum fluid working pressure
 at regulator outlet 100 psi (6.8 bar, 0.68 MPa)

Air supply pressure range 60 to 120 psi (4.1 to 8.3 bar, 0.4 to 0.8 MPa)
 filtration required

Fluid filtration required 30 mesh (500 micron) minimum

Viscosity range of fluids* up to 1,000,000 cps with helical meter

Minimum dispensed shot size* 6 cc with helical meter
3 cc with high-resolution helical meter

Wetted parts meters and fluid panels 303, 304, 321, 17- 4 stainless steel;
 tungsten carbide, PTFE, steel, fluoroelastomer

Power requirements
 100-240 VAC full load 1.4A, fuse rating-2.5A

Power supply voltage range
 100-240 VAC nominal 100 - 240 VAC, 50-60 Hz., single phase

Operating temperature range
 Controller 40° to 120°F (4° to 49°C)
 Fluid plate heated: 40° to 400°F (4° to 204°C)
 ambient: 40° to 120°F (4° to 49°C)

Operating humidity range 0 to 90% non-condensing

Manuals 3A1935, 3A2098

*Flow rates and viscosities are general estimates. Flow rates drop as viscosity increases. Fluids are expected to shear under pressure. New applications or fluids should always be tested to determine proper line sizes and equipment selections. See your Graco Authorized distributor for other capabilities.

REGULATOR	METER	STYLES	PART NUMBER
Cartridge	None	16	24K802
	High Resolution <small>(for flow rates above 25 cc's per minute)</small>	16	24K801
Mastic	None	16	24K804
	High Resolution	16	24K803
Heated Mastic	None	16	24K806
	Heated Standard Resolution	16	24K805

Note: Independent fluid plate sales include a 50 ft (15 m) CAN cable.

PrecisionSwirl Expansion Kits

PrecisionSwirl Expansion Kits include 20 ft (6 m) CAN cable to connect to Control Center. PrecisionSwirl orbiter and motor cable must be ordered separately.

16M350 Expansion kit for AC power

16M351 Expansion kit for DC power

CAN Cables

- 121201 Cable, standard flex operation, 20 ft (6 m)
- 121228 Cable, standard flex operation, 50 ft (15 m)
- 123341 Cable, standard flex operation, 130 ft (40 m)
- 123342 Cable, high flex operation, 20 ft (6 m)
- 123343 Cable, high flex operation, 50 ft (15 m)
- 123344 Cable, high flex operation, 130 ft (40 m)

PCF System Accessories

- 255468 Light tower
- 16M100 Meter enabled, 2 styles token
- 16M101 Meter disabled, 2 styles token
- 16M102 Meter enabled, 16 styles token
- 16M103 Meter disabled, 16 styles token
- 16M104 Meter enabled, 256 styles token
- 16M105 Meter disabled, 256 styles token
- 120010 V/P Regulator
- 121806 Cable, dispense solenoid, 0.5 m
- 123846 Cable, flowmeter, 2 m with flying leads
– use with 150887
- 24B693 Four-gun breakout kit
- 24B694 Kit, command cable
- 258334 Dispense solenoid



OUR BRAND PROMISE TO YOU

Since 1926, **innovation**, **quality** and **A+ Service** have been at the centre of Graco.

Experience Innovation

Our focus on innovation results in products and equipment that lead the industry with technologically-advanced features, pioneering design, high performance and unparalleled reliability. In short, innovation is how you get better products!

Building Quality

You're investing in high-quality products built to last for years of reliable service. Moreover, we partner with our customers to better understand how you're deploying our products in the field, then use your experiences to improve performance and durability.



A+ service, every time

You'll see A+ Service in action when you contact any of our support services options no matter where you are in the world. We'll listen to your situation and work methodically to resolve it as quickly as we can. We are guided by a mindset of integrity and a customer service view centred on collaboration and relationships, not transactions.



We're here to answer questions and help address your needs:

www.graco.com/contact

Graco is certified ISO 9001.

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