ProControl 1KE Plus

In-Line Fluid Monitoring and Control Packages

The **Affordable** Way to Control Fluids, Reduce Waste & Improve Quality

The **ProControl 1KE Plus** is an **easy-to-use** fluid monitoring and control package that accurately measures and regulates single component fluid and gun atomizing air, improving your finishing process.

Reliable Information and Control

Choose the ProControl 1KE Plus to manage your fluids and atomizing air. Built to save you time and money, ProControl 1KE Plus packages are backed by Graco's proven reliability standards.

Easy-to-Read Display
Navigate easily using icons and number based screen

PIN Protected Versatility
Lock system settings or limit adjustable ranges

Maintenance Alert
Alerts you when equipment needs service

Comprehensive Information
Tracks and monitors fluid pressure, flow rates, atomizing air, material usage
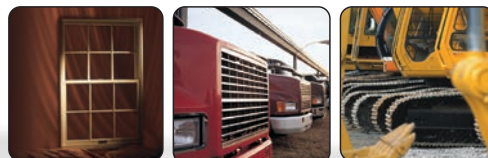
Includes job logs and event logs with date and time stamps

Optimize operation, material savings and reporting with unique modes for filling, flushing and dispensing

Key Applications
- Manual spray finishing
- Automatic spray finishing
- Solvent metering
- Single fluid dispensing

Key Industries
- Auto feeder
- Truck and bus
- Automotive
- Farm and construction
- Aerospace
- Wood

ProControl 1KE Plus

Manage Fluids for Better Spray Performance

Actively manage fluid pressure or flow rate and air pressure to lock in precise spray parameters. The ProControl 1KE Plus not only monitors fluids, its closed loop controls manage fluids and improve spray performance for manual and automatic applications.

Precise Control

Liquid Material
Prevent overspray and material waste by managing pressure or flow rate

Atomizing Air
Maintain a high quality finish by managing fan or atomizing air

Easy Adjustment

Pressure & Flow Rate
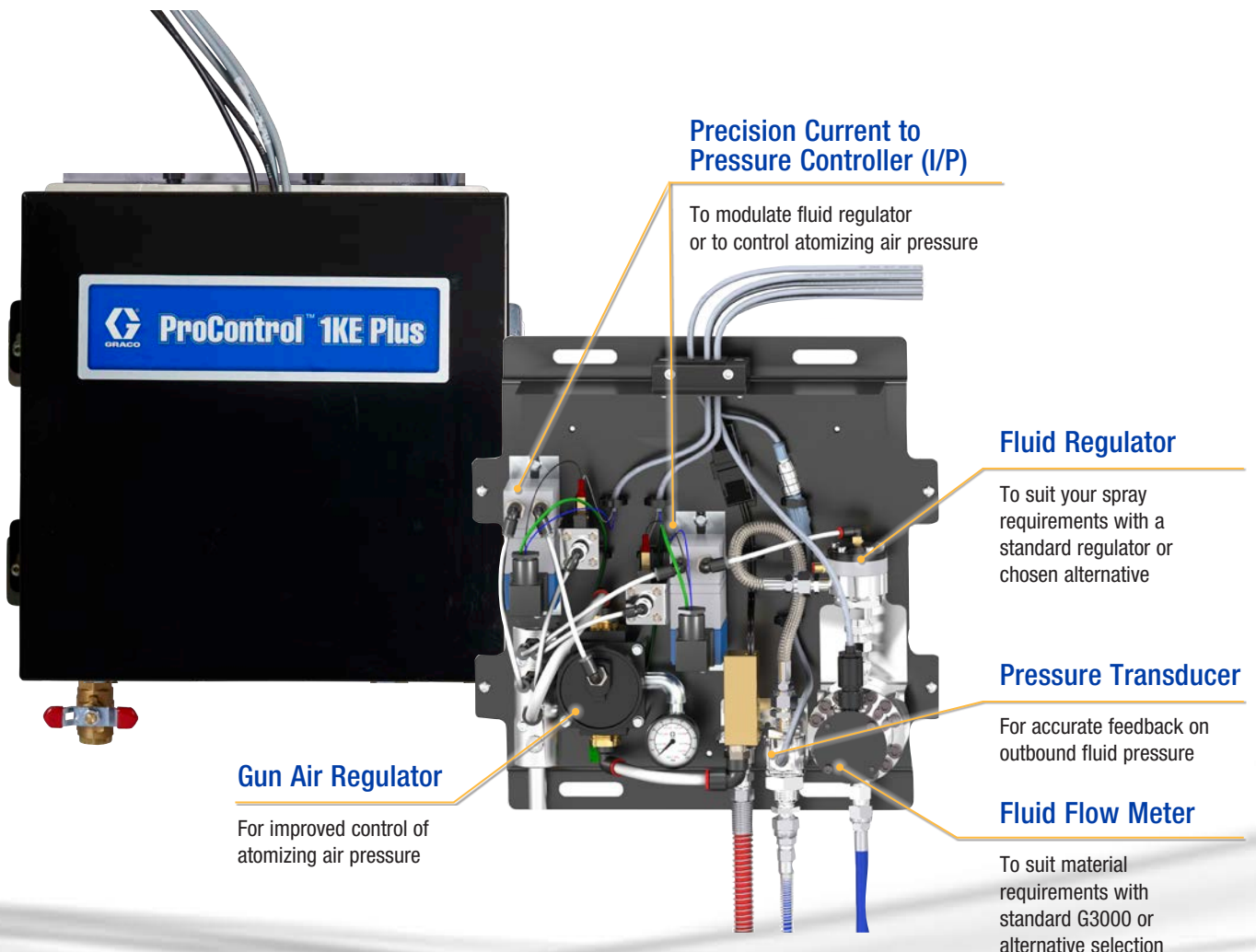Manage the spray pressure or flow rate with true closed loop control for manual or automatic applications

Lock settings or preset upper and lower limits, allowing operator to adjust the output within those limits

Accurate Reporting

Material Use
Easily collect material use data to:

• Track material usage for individual jobs, times and operators

• Improve operational efficiency and quality

• Report solvent and paint usage for environmental compliance

Precision Current to Pressure Controller (I/P)

To modulate fluid regulator or to control atomizing air pressure

Fluid Regulator

To suit your spray requirements with a standard regulator or chosen alternative

Pressure Transducer

For accurate feedback on outbound fluid pressure

Gun Air Regulator

For improved control of atomizing air pressure

Fluid Flow Meter

To suit material requirements with standard G3000 or alternative selection
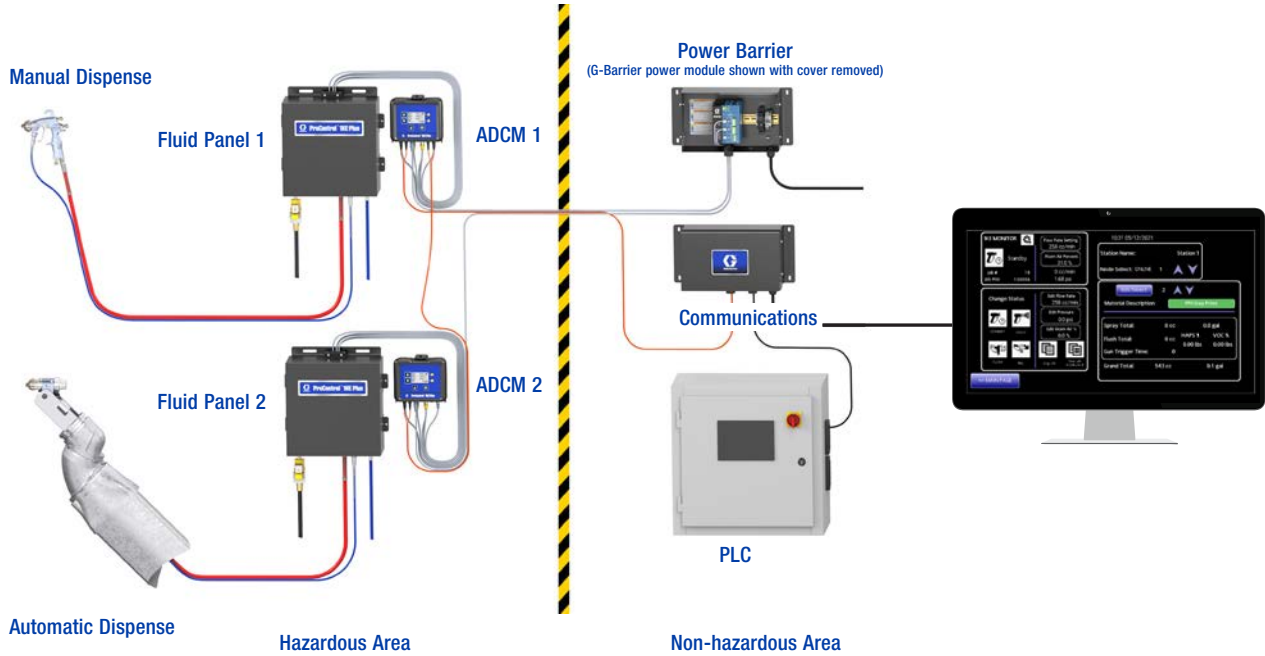
3

PLC Integration Strengthens Communication

Integrating ProControl 1KE Plus with a programmable logic controller (PLC) strengthens remote monitoring, control and reporting for manual and automatic applications.

Flexible Installation

The advanced display control module (ADCM) can to be mounted directly within or outside of the spray booth's hazardous area.
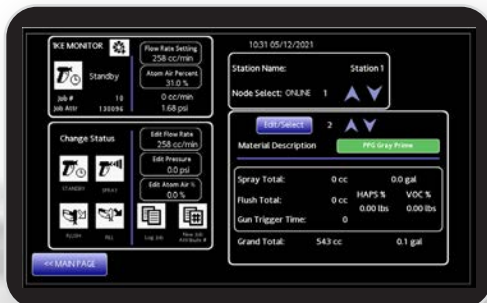
Communication Gateways

- Fiber optic cable and converters connect the PLC to as many as five ProControl 1KE Plus systems.
- PLC communication protocols prioritize the data you need to see on each ADCM.
- Details about the many communication gateway options available are in the accessories section.

User-Friendly, Customizable & Scalable Interface

Graco developed an easy-to-use interface to enhance remote monitoring, control and reporting with up to five ProControl 1KE Plus units with PLC integration. Compatible with Microsoft Windows and iOS Apple platforms, the interface works with most major web browsers.

For multiple-gun spray applications, the PLC interface synthesizes and displays comprehensive information about each gun, as well as the entire system.

Ordering Information

Application Requirement	STEP 1 G3000 Meter	STEP 2 Standard 1:1 Fluid Regulator	STEP 3 Pressure Transducer	Qty I/P current to pressure transducers for managing fluid and atomizing air control	Air Regulator and Gauge	STEP 4 ProControl 1KE Plus Package Part Number
Advanced Display Control Module (ADCM) with software and bracket only	NA	NA	NA	NA	NA	25B283
Flow Monitor (ADCM w/G3000 and short cable, no fluid panel)	✓	NA	NA	NA	NA	25B284
Flow Monitor with open loop fluid pressure control (includes fluid panel & I/P to operate fluid pressure regulator)	✓	✓	NA	1	NA	25B285
	✓	—	NA	1	NA	25B286
	—	✓	NA	1	NA	25B287
	—	—	NA	1	NA	25B288
Gun Atomizing Air Control	NA	NA	NA	1	✓	25B289
Closed Loop Fluid Pressure Control	NA	✓	✓	1	NA	25B290
	NA	—	✓	1	NA	25B291
Closed Loop Fluid Pressure or Fluid Flow Control	✓	✓	✓	1	NA	25B292
	✓	—	✓	1	NA	25B293
	—	✓	✓	1	NA	25B294
	—	—	✓	1	NA	25B295
Closed Loop Fluid Pressure and Flow + Gun Atomizing Air Control	✓	✓	✓	2	✓	25B296
	✓	—	✓	2	✓	25B297
	—	✓	✓	2	✓	25B298
	—	—	✓	2	✓	25B299

STEP 1 — **Determine level of control** needed.

STEP 2 — **Determine flow meter** (if applicable for level of control chosen)
Gun Atomizing Air Control and Closed Loop Fluid Pressure Control units do not use a flow meter
- ✓ G3000 meter is the standard recommended meter.
- — Refer to replacement parts and accessories section for alternate Graco offerings.

NOTE: Not all meters are allowed in hazardous locations see meter brochure 336165 and instruction manuals for details.

STEP 3 — **Determine fluid pressure regulator** (if applicable for level of control chosen)
Gun Atomizing Air Control units do not use a fluid pressure regulator
- ✓ 24C375 1:1 Low Flow Regulator is standard (see manual 3A0427)
- — Refer to replacement parts and accessories section for alternate Graco offerings.

STEP 4 — **Select base model package** part number from table above.

Ordering Information

Determine power supply and order separately
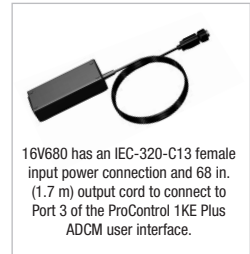
NON-HAZARDOUS LOCATIONS

For non-hazardous locations, order power supply 16V680 AC/DC Converter and select a power cord below.

16V680 has an IEC-320-C13 female input power connection and 68 in. (1.7 m) output cord to connect to Port 3 of the ProControl 1KE Plus ADCM user interface.

Cord Options

245202	120 in (3 m) North American 120 VAC power cord
116281	72 in (1.8 m) extension (Male x Female) IEC-320 cord
242001	Short, 8 in (0.2 m), IEC-320 Europe style power cord
242005	Short, 8 in (0.2 m), IEC-320 x ANZ style power cord

Power Cord

HAZARDOUS LOCATIONS

To determine the correct Power Module for your application, answer these questions:

Yes	No	
_____	_____	Will you be using 1KE Plus models 25B296-24B299 for fluid and atomizing air control?
_____	_____	Would you want to upgrade a 1KE Plus model to control fluid and atomizing air in the future?
_____	_____	Do you need to power more than one 1KE Plus unit or in the future want to power up to three units from one power module?
_____	_____	Will the application ever require greater than 50 psi (3.4 bar) of fluid pressure at the outlet of the 1KE Plus for units with the standard 1:1 24C375 fluid regulator **OR** for units using an alternate air operated fluid regulator?
_____	_____	Will the application ever require greater than 50 psi (3.4 bar) of air pilot pressure to the fluid regulator?

26C724 I.S. G-Barrier Power Module (shown with cover removed)

If you answered **YES** to **ANY** of these questions, order the 26C724 I.S. G-Barrier Power Module
If you answered **NO** to **ALL** of these questions, consider ordering the 16M167 Single I.S. Barrier Power Module*

* Note: The 16M167 Single I.S. Barrier Power Module has power limitations. It cannot be used on 1KE Plus units that require greater than 50 psi of fluid pressure (50 psi of pilot air pressue for alternate air-operated fluid regulator use) or on units that control fluid and atomizing air.

Flow Meters

Highly accurate gear and mass flow meters are ideal for finishing applications using most solventborne and waterborne paints and resins.

G250, G3000 and S3000
- Positive displacement, spur gear flow meter
- Designed for low to medium viscosity materials
- Stainless steel compatible

HG6000/HG6000 HR
- Positive displacement, helical gear flow meter
- Designed for higher flow rates and higher viscosity materials
- Stainless steel, water-base compatible

Coriolis Mass Flow Meter with or without Display
- Non-intrusive mass flow meter
- Designed for all abrasive and filled materials
- Stainless steel, waterborne and acid compatible

G3000   S3000   HG6000

Coriolis Mass Flow Meter with Display   Coriolis Mass Flow Meter without Display

Ordering Information

Replacement Parts - Accessories

Power (See page 6 for important information on proper power selection)

16V680   Non-Intrinsically Safe (Non-IS) Power Supply, 100-240 VAC input, 50/60 Hz, 15 VDC output

16M167   Intrinsically Safe (IS) Power Supply Module, 100–240 VAC input. Includes 50 ft (15 m) IS power cable

26C724   G-Barrier Intrinsically Safe (IS) Power Module, provides up to three IS power output circuits. 100-240 VAC, 50/60 Hz, input. Includes one IS 50 ft (15 m) IS Power Cable

Cables

Non-Intrinsically Safe Cables

18A987   Meter Cable Extension, 50 ft (15 m), for meter cable, port #4

16V069   Non-IS Power Cable, 50 ft (15 m)

16V070   Non-IS Power Cable, 100 ft (30 m)

16V380   Non-IS Sensor Cable, 50' (15 m), port #7 (pressure transducer) and #10 (air flow switch or gun trigger)

16P791   Non-IS Control Cable, 50' (15 m), port #8 (fluid pressure/flow control) and #9 (atomizing air pressure control)

18A986   Indicator Light Cable, 50' (15 m), fluid panel to light

Intrinsically Safe Cables

19Y499   IS Power Cable, 50 ft (15 m), for power supply

19Y502   IS Power Cable, 100 ft (30 m), for power supply

18B244   IS Meter Cable Extension, 50 ft (15 m), meter cable, port #4

16V381   IS Sensor Cable, 50' (15 m), port #7 (pressure transducer) and #10 (air flow switch or gun trigger)

16V071   IS Control Cable, 50' (15 m), port #8 (fluid pressure/flow control) and #9 (atomizing air pressure control)

Fiber Optic Communication Cable

17T898   10 ft (3 m) Fiber Optic Cable

16M172   50 ft (15 m) Fiber Optic Cable

16M173   100 ft (30 m) Fiber Optic Cable

17B160   330 ft (100.5 meter) Fiber Optic Cable

Hardware Upgrades

25B322   Basic Upgrade Kit for converting ProControl 1KE to the new 1KE Plus platform includes software token, fluid plate with basic hardware. User must provide ADCM display, fluid meter, I/P transducer, fluid regulator, pressure transducer, and power supply from original ProControl 1KE or purchase separately. Gun air control is not included. If air control hardware is needed order 25B323 separately. See manual 3A6948 for details

25B323   Air Control Upgrade Kit adds air control to a ProControl 1KE Plus fluid plate

25B325   Pressure Switch Conversion Kit converts ProControl 1KE Plus fluid plate gun air flow switch to a pressure switch for detection of gun trigger status

Communication Gateway

25B471   Ethernet Communication Gateway Assembly

25B472   DeviceNet Communication Gateway Assembly

25B473   Profibus Communication Gateway Assembly

25B486   Ethernet Communication Gateway Assembly with Fiber Conversion Module, no cable

18C235   Bare Ethernet Gateway Module

18C236   Expansion Module, DeviceNet for 18C235

18C237   Expansion Module, Profibus for 18C235

Indicators

25P594   IS Indicator Light Tower, 2 color light with bracket and cables connects to the ADCM

Supply Air

570122   Dual Unit Air Filter and Regulator Assembly with 5 μm filter, manual drain, and mounting bracket

Interfaces

24R086   Fiber Optic to Serial Converter Module with 24V, 2 amp power supply and enclosure, commicates from ProControl 1KE Plus to a PLC See manual 332356 for details

24N978   Fiber Optic to Serial Converter, communicates from the ProControl 1KE Plus to a PLC. See manual 332356 for details

Meters & Transducers

289813   G3000 Meter
Positive displacement, gear flow meter, 0.02 to 1.0 gpm (75 to 3800 cc/min), for low to medium viscosity materials

280560   HG6000 Meter
Positive displacement, helical gear flow meter, 0.013 to 6.0 gpm (50 to 22,712 cc/min), for high flow, high viscosity materials

258718   S3000 Solvent Meter
Positive displacement, gear flow meter, 0.01 to 0.5 gpm (38 to 1900 cc/min), for light viscosity materials

25P592   Pressure Transducer Kit, 100 psi (7 bar, 0.7 MPa)
Used to measure fluid pressure

25P593   High Pressure Sensor Kit, 4500 psi (310 bar, 31.0 MPa)
Used to convert to higher pressure operation
See manual 3A6948 component pressure ratings

25B359   Medium Pressure Sensor Kit, 2000 psi (138 bar, 13.8 MPa)
Used to convert to higher pressure operation
See manual 3A6948 component pressure ratings

Coriolis Meter Kit

Non-intrusive Mass Flow Meter, for abrasive and filled materials and a range of flow rates

24N525   1/4 in Coriolis Flow Meter Kit with Display

19D786   1/4 in Coriolis Flow Meter Kit without Display

19D559   CommuBox for Coriolis Flow Meter without Display

19D558   Software and USB memory stick assembly

Fluid Regulators

24C375   1:1 Low Flow Regulator (5-90 psi, 0.3-6.3 bar, 35-620 KPa)

24E471   1:2 Low Flow Regulator (5-50 psi, 0.3-3.5 bar, 35-350 KPa)

24E472   1:3 Low Flow Regulator (5-30 psi, 0.3-2.1 bar, 35-201 KPa)

234272   Low Pressure Fluid Regulator (6-145 psi, 0.4-10.0 bar, 40-1000 KPa), 7 gpm

234266   High Pressure Fluid Regulator (70-900 psi, 5.0-60.0 bar, 0.5-6 MPa), 11.3 gpm

ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

GRACO LOCATIONS

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SALES/ DISTRIBUTION/ SERVICE

Call today for product information or to request a demonstration.
877-84GRACO (1-877-844-7226) or visit us at www.graco.com/procontrol1keplus

Graco Inc. is registered to I.S. EN ISO 9001

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