



# ProControl 1KE Plus

In-line fluid monitoring and control packages



PROVEN QUALITY. LEADING TECHNOLOGY.

# 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 atomising air, improving your finishing process.



## Reliable information and control

Choose the ProControl 1KE Plus to manage your fluids and atomising 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 a service

### Comprehensive information

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

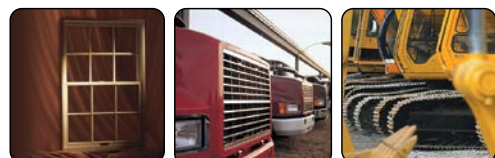
Optimise operation, material savings and reporting with unique modes for filling, flushing and dispensing

### 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 the fluid pressure or flow rate and air pressure to lock in precise spray parameters. The ProControl 1KE Plus not only monitors fluids; it's 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 the pressure or flow rate

#### Atomising 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 close-loop control for manual or automatic applications

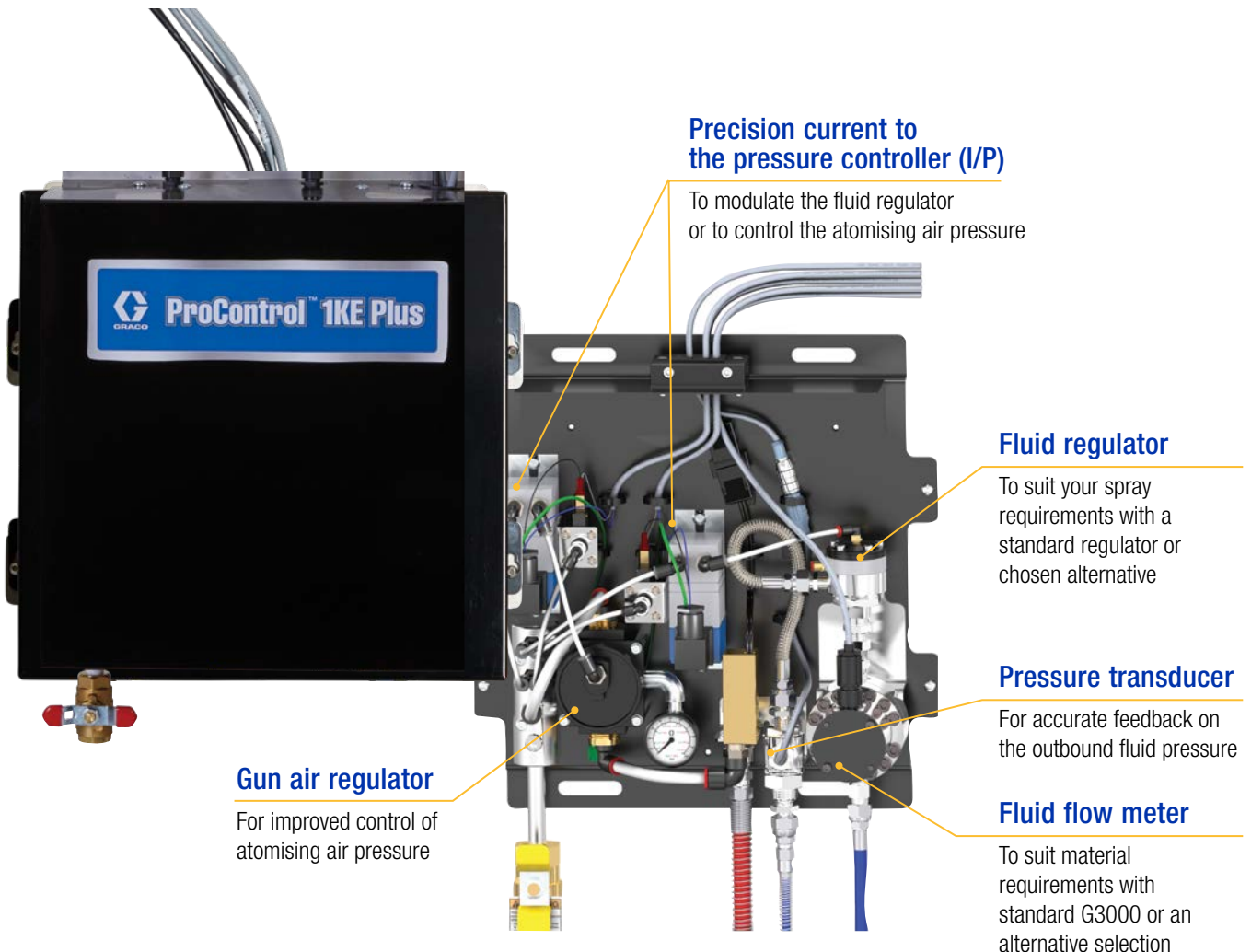
Preset upper and lower limits, allowing the operator to adjust the output within those limits or lock the setting entirely

### Accurate reporting

#### Material use

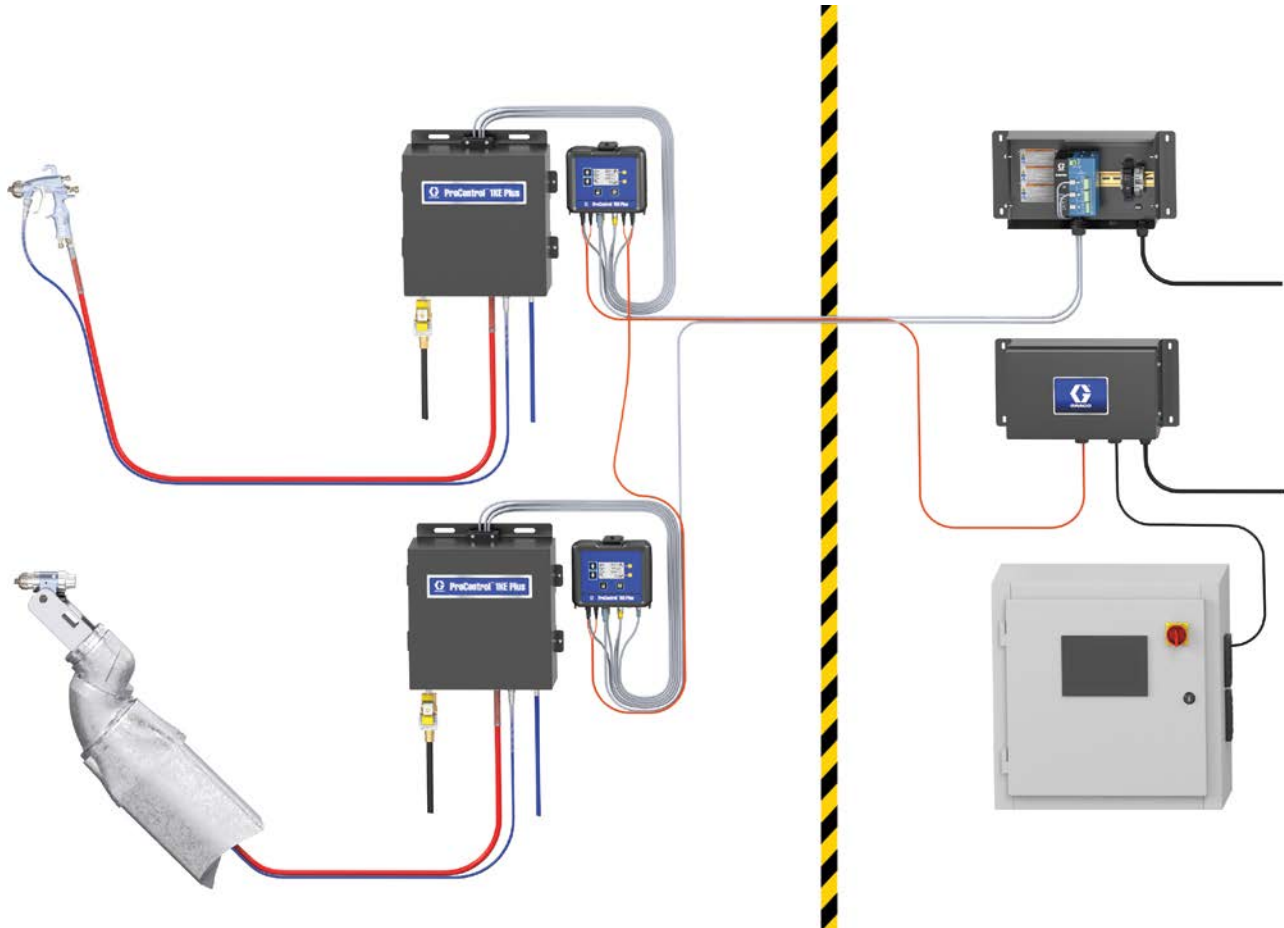
Easily collect material use data to:

- Track material usage for individual jobs, times and operators
- Improve operational efficiency and quality
- Report solvent and paint usage for environmental compliance



# System installation and integration

## Integration and remote communication with the programmable logic controller (PLC)



Automatic dispense

Hazardous area

Non-hazardous area

- ✓ Flexible installation options for the operator interface or fluid panel. Can be directly mounted in spray booth hazardous locations or outside the hazardous area
- ✓ Communications with the ProControl 1KE Plus display are achieved through fibre optical cable and converters connected to the PLC
- ✓ Multiple ProControl 1KE Plus systems can be linked to the PLC
- ✓ Many PLC communication protocols are available. Refer to Accessories for details

# Ordering information

Application requirement	STEP 2 G3000 meter	STEP 3 Standard 1:1 fluid regulator	Pressure transducer	Quantity of the I/P current to pressure transducers for managing fluid and atomising 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 the fluid pressure regulator)	✓	✓	NA	1	NA	25B285
	✓	—	NA	1	NA	25B286
	—	✓	NA	1	NA	25B287
	—	—	NA	1	NA	25B288
Gun atomising 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 atomising air control	✓	✓	✓	2	✓	25B296
	✓	—	✓	2	✓	25B297
	—	✓	✓	2	✓	25B298
	—	—	✓	2	✓	25B299

## STEP 1 Determine the level of control needed

## STEP 2 Determine the flow meter (if applicable for the level of control chosen)

Gun atomising air control and closed loop fluid pressure control units do not use a flow meter

- ✓ The G3000 meter is the standard recommended meter.
- Refer to replacement parts and the 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 the fluid pressure regulator (if applicable for the level of control chosen)

Gun atomising air control units do not use a fluid pressure regulator

- ✓ The 24C375 1:1 low flow regulator is standard (see manual 3A0427)
- Refer to replacement parts and the accessories section for alternate Graco offerings.

## STEP 4 Select a base model package part number from table above



# Ordering information



## Determine the power supply and order separately

### NON-HAZARDOUS LOCATIONS

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

#### Cord options

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



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

### 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 atomising air control? Would you potentially want to upgrade a 1KE Plus model in the future for use with fluid and atomising air control?
_____	_____	Do you need to power more than one 1KE Plus unit or want the ability to power up to three units from one power module in the future?
_____	_____	Will the application ever require a greater than 3.4 bar (50 psi) of fluid pressure at the outlet of the 1KE Plus for units with the standard 1:1 24C375 fluid regulator <b>OR</b> , for units using an alternate air operated fluid regulator, will the application ever require greater than 3.4 bar (50 psi) 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, you may 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 a greater than 50 psi of fluid pressure (50 psi of pilot air pressure for alternate air-operated fluid regulator use) or on units that control fluid and atomising 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



G3000



S3000

### HG6000/HG6000 HR

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



HG6000



Coriolis mass flow

### Coriolis mass flow

- Non-intrusive mass flow meter
- Designed for all abrasive and filled materials
- Stainless steel, waterborne and acid compatible

# Ordering information

## Replacement parts - accessories

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

- 16V680 Non-intrinsically safe (non-I.S.) power supply, 100-240 VAC input, 50/60 Hz, 15 VDC output
- 16M167 Intrinsically safe (I.S.) power supply module, 100–240 VAC input. Includes 15 m (50 ft) I.S. power cable
- 26C724 G-barrier intrinsically safe (I.S.) power module, provides up to three I.S. power output circuits. 100-240 VAC, 50/60 Hz, input. Includes one I.S. 15 m (50 ft) I.S. power cable

### Cables

#### Non-intrinsically safe cables

- 18A987 Meter cable extension, 15 m (50 ft), for meter cable, port #4
- 16V069 Non-I.S. power cable, 15 m (50 ft)
- 16V070 Non-I.S. power cable, 30 m (100 ft)
- 16V380 Non-I.S. sensor cable, 15 m (50 ft), ports #7 and #10
- 16P791 Non-I.S. control cable, 15 m (50 ft), ports #8 and #9
- 18A986 Indicator light cable, 15 m (50 ft), fluid panel to light

#### Intrinsically safe cables

- 19Y499 I.S. power cable, 15 m (50 ft), for power supply
- 19Y502 I.S. power cable, 30 m (100 ft), for power supply
- 18B244 I.S. meter cable extension, 15 m (50 ft), meter cable, port #4
- 16V381 I.S. sensor cable, 15 m (50 ft), ports #7 and #10
- 16V071 I.S. control cable, 15 m (50 ft), ports #8 and #9

### Fibre optic communication cable

- 17T898 3 m (10 ft) fibre optic cable
- 16M172 15 m (50 ft) fibre optic cable
- 16M173 30 m (100 ft) fibre optic cable

### Hardware upgrades

- 25B322 Basic upgrade kit for converting a previous generation ProControl 1KE to the new 1KE Plus platform. The kit includes a software token and fluid plate with basic hardware. The user must provide an ADCM display, fluid meter, I/P transducer, fluid regulator, pressure transducer, and power supply from original ProControl 1KE or purchase these separately. Gun air control is not included; order 25B323 separately for air control hardware if necessary. See manual 3A6948 for details
- 25B323 Air control upgrade kit adds air control to a ProControl 1KE Plus fluid plate
- 25B325 The pressure switch conversion kit converts a ProControl 1KE Plus fluid plate gun air flow switch to a pressure switch for detection of the gun trigger status

### Indicators

- 25P594 I.S. indicator light tower, 2 colour light with bracket and cables

### Supply air

- 570122 Dual unit air filter and regulator assembly with a 5 µm filter, manual drain and a mounting bracket

### Interfaces

- 24R086 Fibre optic to serial converter module with a 24V, 2 amp power supply and enclosure, communicates from the ProControl 1KE Plus to a PLC. See manual 332356 for details.
- 24N978 Fibre 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, 75 to 3800 cc/min (0.02 to 1.0 gpm), for low to medium viscosity materials
- 280560 HG6000 meter  
Positive displacement, helical gear flow meter, 50 to 22,712 cc/min (0.013 to 6.0 gpm), for high flow, high viscosity materials
- 258718 S3000 Solvent meter  
Positive displacement, gear flow meter, 38 to 1900 cc/min (0.01 to 0.5 gpm), for light viscosity materials
- 25P592 Pressure transducer kit, 7 bar (100 psi, 0.7 MPa)  
Used to measure fluid pressure
- 25P593 High pressure sensor kit, 310 bar (4500 psi, 31.0 MPa)  
Used to convert to higher pressure operation.  
See manual 3A6948 component pressure ratings
- 25B359 Medium pressure sensor kit, 138 bar (2000 psi, 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

### Fluid regulators

- 24C375 1:1 Low flow regulator (0.3-6.3 bar, 5-90 psi, 35-620 KPa)
- 24E471 1:2 Low flow regulator (0.3-3.5 bar, 5-50 psi, 35-350 KPa)
- 24E472 1:3 Low flow regulator (0.3-2.1 bar, 5-30 psi, 35-201 KPa)
- 234272 Low pressure fluid regulator  
(0.4-10.0 bar, 6-145 psi, 40-1000 KPa), 7 gpm
- 234266 High pressure fluid regulator  
(5.0-60.0 bar, 70-900 psi, 0.5-6 MPa), 11.3 gpm



## About Graco

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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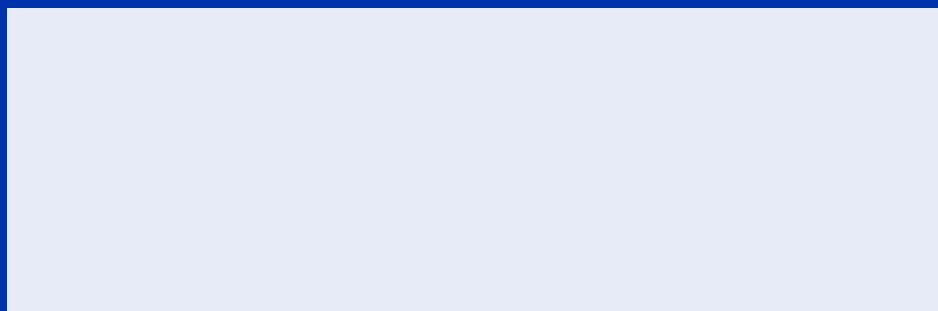
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