Solenoid-Driven Metering Pump Overview

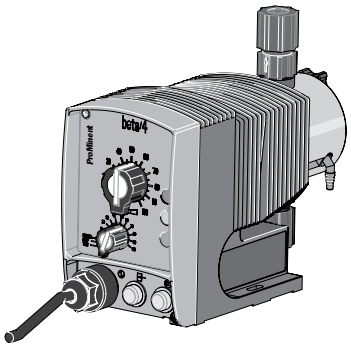
Concept^{PLUS}

Ideal for basic chemical feed applications

(see page 31 for complete details)

- Solenoid driven diaphragm pump
- Capacities: 0.20 gph (0.74 lph) to 3.9 gph (14.9 lph)
- Maximum pressure: 232 psi
- Turndown: 40:1
- Manual, external contact pulse 1:1 operation
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: 5 distinct settings (0, 25%, 50%, 75% and 100%)
- Liquid ends: NP, PP and PVT
- Adjustable bleed valve with fine adjustment for continuous degassing

Beta®

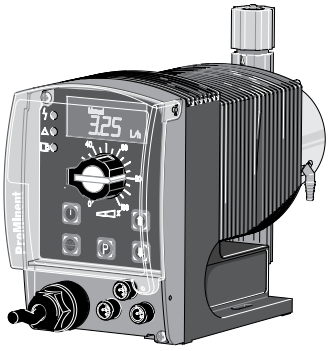


Ideal for basic chemical feed applications

(see page 35 for complete details)

- Solenoid driven diaphragm pump
- Capacities: 0.19 gph (0.74 lph) to 8.4 gph (32 lph)
- Maximum pressure: 232 psi
- Turndown: 100:1
- Manual, external contact pulse 1:1 operation
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: 10 distinct settings @ 10% increments
- Liquid ends: NP, PP, PVT, TT and SST
- Auto degassing and high viscosity (HV) available

gamma/ L



Ideal for applications requiring automation, large turndown and/or feed verification

(see page 41 for complete details)

- Solenoid driven diaphragm pump
- Capacities: 0.19 gph (0.74 lph) to 8.4 gph (32 lph)
- Maximum pressure: 232 psi
- Turndown: 1,800:1
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: digital from 1 to 180 spm
- Liquid ends: NP, PP, PVT, TT and SST
- Auto degassing and high viscosity (HV) available
- Flow verification
- 14-day programmable timer
- Profibus interface

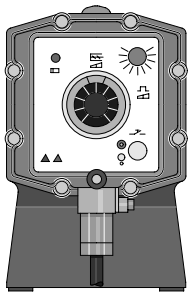
Solenoid-Driven Metering Pump Overview

delta®

Ideal for applications requiring metering pump accuracy with minimal pulsation *(see page 51 for complete details)*

- Solenoid driven diaphragm pump driven by optoDrive® and protected by OptoGuard®
- Capacities: 2.99 gph (11.3 lph) to 19.8 gph (75.0 lph)
- Maximum pressure: 232 psi
- Turndown: 36,000:1
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: digital from 1 to 200 spm
- Adjustable suction and discharge stroke duration to minimize pulsation
- Liquid ends: PVT and SST
- Flow verification
- 14-day programmable timer
- Profibus and CAN-bus interface
- Integrated hydraulic monitoring identifies air lock and pressure changes

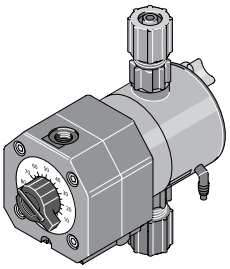
EXtronic®



Ideal for explosion proof applications
(see page 57 for complete details)

- Solenoid driven diaphragm pump designed for ex-proof applications
- Capacities: 0.05 gph (0.19 lph) to 15.9 gph (60 lph)
- Class 1, Div 1, Groups B, C and D
- Maximum pressure: 363 psi
- Turndown: 1,200:1
- Manual, external contact pulse and analog operation
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: 0 to 120 spm via potentiometer
- Liquid ends: NP, PP, TT and SST
- Auto degassing and high viscosity (HV) available

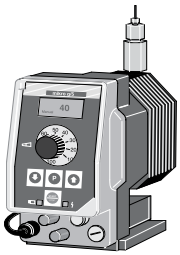
Pneumados



Ideal for applications where only compressed air is available
(*Call factory for more information*)

- Pneumatically driven diaphragm pump requiring compressed air
- Capacities: 0.24 gph (0.9 lph) to 3.9 gph (14.8 lph)
- Maximum pressure: 232 psi
- Manual operation only
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: 1 to 120 spm via the use of a pneumatic pulser
- Liquid ends: NP, PP, TT and SST

mikro g/5a

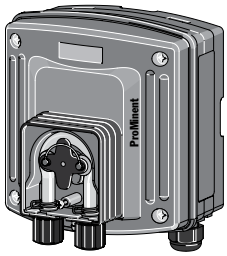


Ideal for applications requiring extremely low flow rates
(*Call factory for more information*)

- Microprocessor based plunger pump
- Capacities: 150 ml/hr to 1500 ml/hr
- Maximum pressure: 580 psi
- Turndown: 500:1
- Manual, external contact pulse with multiplier/divider and analog operation
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: digital from 1 to 50 spm
- Liquid ends: SS, TT

Solenoid-Driven Metering Pump Overview

DULCO®flex

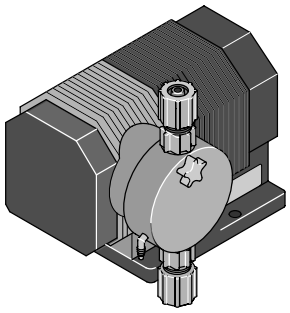


Ideal for swimming pool applications
(*Call factory for more information*)

- Peristaltic metering pump
- Capacities: 0.10 gph (0.4 lph) to 0.64 gph (2.4 lph)
- Maximum pressure: 21 psi
- Manual operation only
- Tygon or PharMed tubing
- Minimum order quantity of 20 pcs
- Self priming
- NEMA 4X enclosure

Motor-Driven Metering Pump Overview

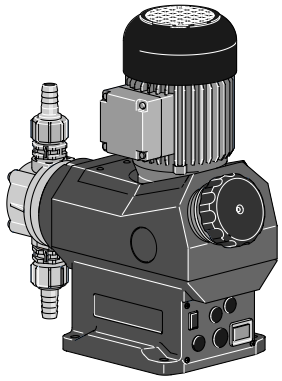
alpha®



Designed for simple applications requiring limited adjustability
(*Call factory for more information*)

- Motor driven diaphragm pump
- Capacities: 0.37 gph (1.4 lph) to 5.7 gph (21.5 lph)
- Mechanically actuated
- Maximum pressure: 145 psi
- Turndown: 10:1
- Stroke length: 0-100% (adjustable in 10% increments)
- Stroke Frequency: fixed
- Liquid ends: PP and NP
- Power: 115 V 60 Hz
- Motor: single phase

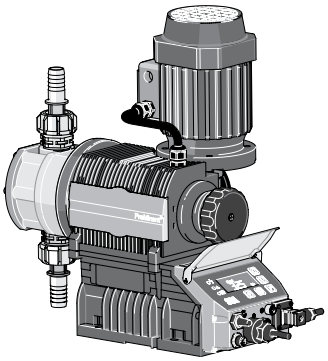
Vario C



Ideal for basic chemical feed applications
(see page 67 for complete details)

- Motor driven diaphragm pump
- Capacities: 2.5 to 20.3 gph (9.6 to 76.8 l/h)
- Mechanically actuated
- Maximum pressure: 145 psig (10 bar)
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: fixed
- Liquid ends: SST and PVT
- Power: 115 V 60 Hz
- Motor: single or three phase available

Sigma/1



Economical mid-range applications
(see page 71 for complete details)

- Mechanical diaphragm pump
- Includes 115/230 V motor
- Maximum pressure: 174 psi
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Liquid ends: PVT and SST

Basic Version

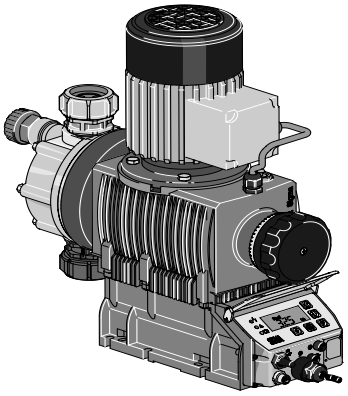
- Capacities: 5.2 gph (20 lph) to 38 gph (144 lph)
- Maximum pressure: 174 psi
- Turndown: 10:1

Control Version

- Microprocessor driven
- Capacities: 5.2 gph (20 lph) to 31.7 gph (120 lph)
- Turndown: up to 2000:1
- Stroke Frequency varies by model: digital from 1 to 90, 170, 200 spm
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Flow verification
- 14-day programmable timer
- Profibus interface

Motor-Driven Metering Pump Overview

Sigma/2



Economical mid-range applications

(see page 81 for complete details)

- Mechanical diaphragm pump
- Maximum pressure: 174 psi
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Liquid ends: PVT and SST

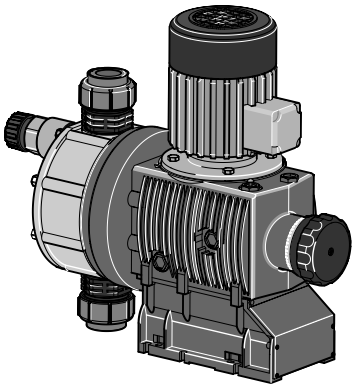
Basic Version

- Capacities: 15.9 gph (60 lph) to 111 gph (420 lph)
- Standard 56-C flange. Motor not included
- Turndown: 100:1 with variable speed motor
- Stroke Frequency: Only with SCR or VFD

Control Version

- Capacities: 15.9 gph (60 lph) to 92.5 gph (350 lph)
- Includes 115/230 V motor
- Turndown: up to 2000:1
- Stroke Frequency varies by model: digital from 1 to 90, 160, 200 spm
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Flow verification
- 14-day programmable timer
- Profibus interface

Sigma/3



Ideal for applications requiring automation, large turndown and/or Flow verification

(see page 99 for complete details)

- Capacities: 46 gph (174 lph) to 264 gph (1000 lph)
- Mechanical diaphragm pump
- Maximum pressure: 174 psi
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Liquid ends: PVT and SST

Basic Version

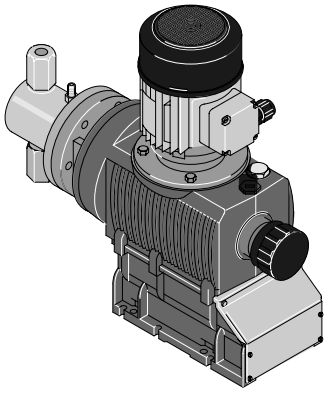
- Standard 56-C flange. Motor not included
- Capacities: 46 gph (174 lph) to 264 gph (1000 lph)
- Turndown: 100:1 with variable speed motor
- Stroke Frequency: Only with SCR or VFD

Control Version

- Includes 115/230 V motor
- Capacities: 46 gph (174 lph) to 264 gph (1000 lph)
- Turndown: up to 2000:1
- Stroke Frequency varies by model: digital from 1 to 90, 160, 200 spm
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Flow verification
- 14-day programmable timer
- Profibus interface

Motor-Driven Metering Pump Overview

Sigma/2 HK



Ideal for high pressure applications requiring significant turndown

(see page 91 for complete details)

- Motor driven packed plunger pump
- Maximum pressure: 4600 psi
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Liquid ends: SST

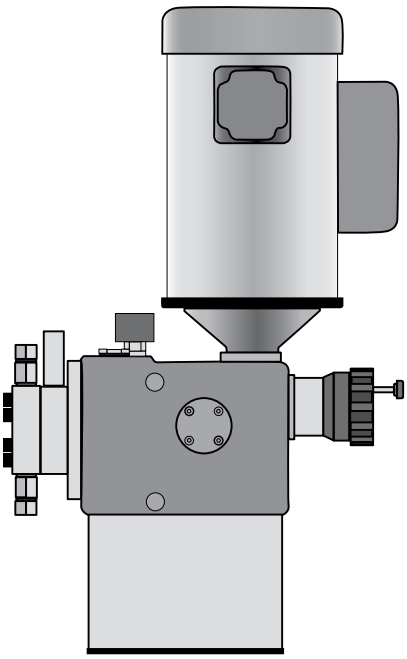
Basic Version

- Capacities: 0.6 gph (2.3 lph) to 20.1 gph (76 lph)
- Standard 56-C flange. Motor not included.
- Turndown: 100:1 with variable speed motor
- Stroke Frequency: Only with SCR or VFD

Control Version

- Capacities: 0.6 gph (2.3 lph) to 17.3 gph (65.4 lph)
- Includes 115/230 V motor
- Turndown: up to 2000:1
- Stroke Frequency varies by model: digital from 1 to 90, 160, 200 spm
- Manual, external contact pulse with multiplier/divider and analog operation
- Displays gph (lph) and totalized flow (gallons or liters)
- Flow verification
- 14-day programmable timer
- Profibus interface

ProMus



High pressure chemical process metering

(see page 107 for complete details)

- Hydraulic diaphragm pump
- Capacities: 0.61 gph (2.3 lph) to 101.5 gph (384.2 lph)
- Maximum pressure: 3500 psi
- Built in accordance to API 675
- Turndown: 100:1 with variable speed motor
- 115/60/1 motor included
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: Only with SCR or VFD
- Liquid ends: PVT, SST, Hastelloy C and Alloy 20

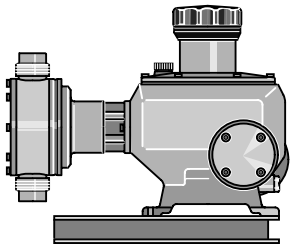
Motor-Driven Metering Pump Overview

Meta

Predecessor to the Sigma series pump
(*Call factory for more information*)

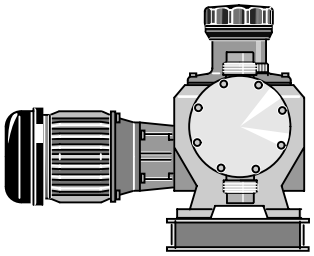
- Mechanical diaphragm pump
- Capacities: 20.6 to 168 gph (78 to 636 l/h)
- Maximum pressure: 174 psi
- Turndown: 100:1 with variable speed motor
- Standard 56-C flange. Motor not included.
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: Only with SCR or VFD
- Liquid ends: PP, PVC, TT and SST

Makro TZb



Ideal for high volume and high pressure applications
(see page 119 for complete details)

- Available with add-on and multi-head designs
- Capacities: 2.6 gph (10 lph) to 529 gph (2004 lph)
- Turndown: 100:1 with variable speed motor
- Motor not included
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: Only with SCR or VFD
- Liquid ends: PP, PVC, TT, SST

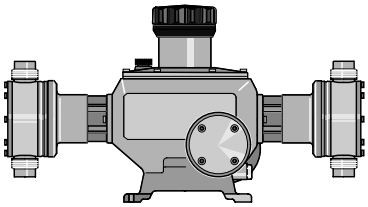


TZMb

- Mechanical diaphragm pump
- Models: 82 gph (312 lph) to 529 gph (2004 lph)
- Maximum pressure: 174 psi

TZHb
(*Call factory for more information*)

- Hydraulic diaphragm pump
- Models: 112 gph (424 lph) to 318 gph (1204 lph)
- Maximum pressure: 232 psi

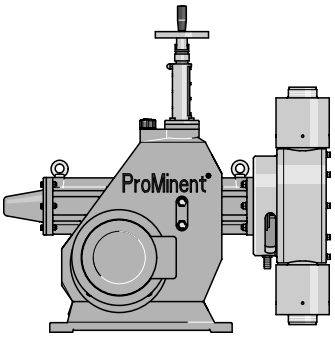


TZKb
(*Call factory for more information*)

- Mechanical packed plunger pump
- Models: 2.6 gph (10 lph) to 301 gph (1141 lph)
- Maximum pressure: 4627 psi
- SST only

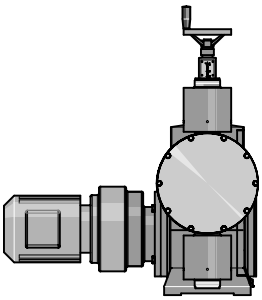
Motor-Driven Metering Pump Overview

Makro/ 5



Ideal for high volume/ high pressure applications
(*Call factory for more information*)

- Capacities: 11 gph (44 lph) to 1618 gph (6108 lph)
- Available with add-on and multi-head designs
- Turndown: 100:1 with variable speed motor
- Motor included
- Stroke length: 0-100% (30% minimum recommend for most repeatable accuracy)
- Stroke Frequency: Only with SCR or VFD
- Liquid ends: PP, PVC, TT, SST

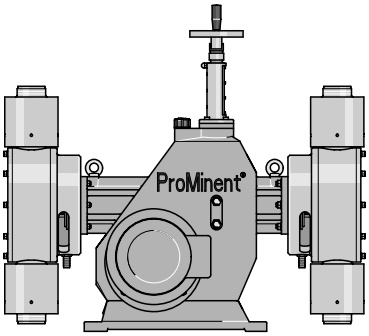


M5Ma

- Mechanical diaphragm pump
- Models: 482 gph (1812 lph) to 1076 gph (4064 lph)
- Maximum pressure: 58 psi

M5Ha

- Hydraulic diaphragm pump
- Models: 142 gph (537 lph) to 1618 gph (6108 lph)
- Maximum pressure: 362 psi

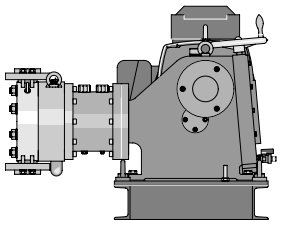


M5Ka

- Mechanical packed plunger pump
- Models: 11 gph (44 lph) to 1593 gph (6014 lph)
- Maximum pressure: 4640psi
- SST only

Motor-Driven Metering Pump Overview

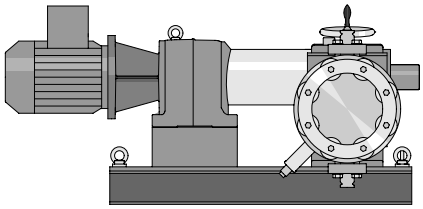
ORLITA®



Ideal for high volume applications
(*Call factory for more information*)

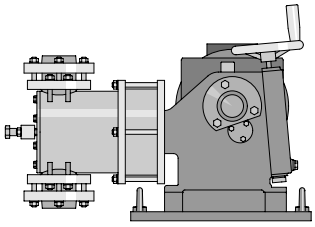
MfS

- Hydraulic diaphragm pump
- Capacities: 0.5 gph (2 l/h) to 7500 gph (28,400 l/h)
- Maximum pressure: 10,000 psi (700 bar)
- Built in accordance to API 675



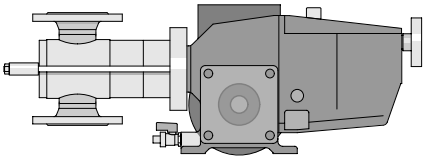
MhS

- Hydraulic diaphragm pump
- Capacities: 0.26 gph (1 l/h) to 200 gph (757 l/h)
- Maximum pressure: 44,000 psi (3000 bar)
- Stainless steel diaphragm
- Built in accordance to API 675



PS

- Plunger metering pump
- Capacities: 0.26 gph (1 l/h) to 9,800 gph (2,600 l/h)
- Maximum pressure: 5,800 psi (400 bar)
- Stainless steel only
- Built in accordance to API 675

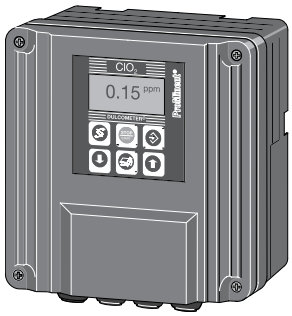


DR

- Valveless rotary piston pump
- Capacities: 0.26 gph (1 l/h) to 1,100 gph (4,000 l/h)
- Maximum pressure: 5800 psi (400 bar)
- Stainless steel only

Analytical Instrumentation Overview

D1C

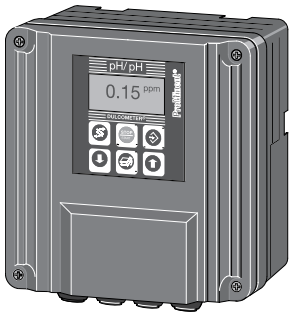


Microprocessor based single process variable analyzer

(see page 230 for complete details)

- Controls or measures one of 14 different variables
- Menu driven calibration with limit and control settings
- Sensor diagnostics alarms upon sensor failure
- Programmable access code
- Non-volatile memory
- Two current analog signal outputs
- Feed forward for compound loop control
- pH and temperature correcting variables
- Proportional or PID control
- Wall or panel mount available

D2C

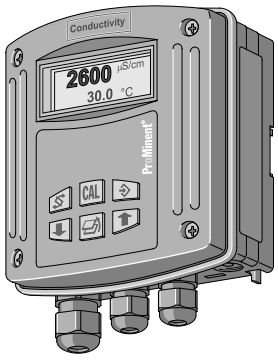


Microprocessor based dual process variable analyzer

(see page 230 for complete details)

- Controls or measures two variables in one of the following combinations: Free and Total chlorine, pH/chlorine, pH/pH, Cl02/pH, pH/ORP
- Menu driven calibration with limit and control settings
- Sensor diagnostics alarms upon sensor failure
- Programmable access code
- Non-volatile memory
- Two current analog signal outputs
- pH and temperature correcting variables
- Proportional or PID control
- Wall or panel mount available

DMT



Single process variable transmitter

(see page 244 for complete details)

- Measures pH, ORP, chlorine, conductivity and temperature
- Menu driven calibration
- Automatic buffer recognition (pH)
- Two-wire technology
- 12-40 VDC, loop powered
- One current analog signal output
- NEMA 4X wall mounted unit

PROFI® PROCESS FIELD BUS

Analytical Instrumentation Overview

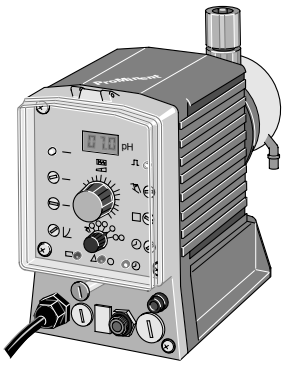
DDC

Microprocessor based multi-variable disinfection analyzer

(see page 246 for complete details)

- Controls or measures up to 5 different variables
  Free chlorine, Total chlorine, pH, ORP, temperature
- Display of combined chlorine
- Menu driven calibration with limit and control settings
- Integrated videographic recorder
- LAN interface
- OPC server
- 64MB SD card
- CAN bus chlorine sensors
- Intelligent analyzer with dosing time restrictions
- 5 contact inputs

D_4a



Solenoid pump with built-in process variable analyzer

(see page 257 for complete details)

- Analyzes pH or ORP
- NEMA 4X enclosure
- Proportional control
- Temperature correction for pH
- Single analog output
- Available relay outputs
- 6 pump models to choose from
- Liquid end materials to match chemical compatibility
- Auto-degassing liquid end available
- Single stage level switch option