

CHEM-PRO C2 & C3

Feed Rates to 40 GPH / 153 LPH
System Pressures to 175 PSI / 12 bar
Diaphragm Failure Detection
PVDF/Ceramic Head Components
Full Stroke Every Time Avoids Vapor Lock
Quiet variable Speed Motor
NEMA 4X (IP 66) Washdown
2 Year Warranty



Applications:

- Chemical Metering
- Wastewater Treatment
- Municipal Water Treatment
- Boiler Treatment
- Cooling Tower Treatment
- Acid Injection
- Plating Chemical Injection
- Fluoridation
- Paper / Pulp Chemical Feed
- Fertilizer Injection

Features:

- Operator friendly digital controls with backlit LCD display and DFD alarm display.
- Signal inputs include: 4-20mA, pulse inputs, and Remote start/stop
- Signal outputs include: Relay (3 amp), open collector, 4-20mA (optional)
- Large PVDF, Ceramic, double ball check valves without metal springs.
- Backlit LCD displays motor speed, input signal values, service and alarm status.
- Includes Diaphragm Failure Detection (DFD) system.
- Compatible with Blue-White's Flow Verification Sensor (FVS) system.
- Alarm relay monitors the DFD system and the FVS system.
- SCADA ready 5-30V DC open collector output loop closes while motor is energized.
- NEMA 4X (IP66) wash-down, chemically resistant powder coated enclosure.
- **New Features Include :**
 - Patent pending Dia-Flex™ PVDF single-layer Diaphragm
 - Increased feed rate resolution, from 1% to 0.1%
 - Remote Start/Stop standard on all models
 - 4-20mA output available
 - Upgradeable firmware
 - Large single piece junction box – 40% larger
 - Terminal block connectors inside junction box
 - Larger, more intuitive control-pad
 - Protective LCD snap-on cover
 - Profibus, Profinet, Ethernet, Modbus TCP, and Modbus RTU options available

Specifications:

Maximum working pressure:

175 psig (12 bar) (model specific)

Maximum Fluid temperature:

130° F (54° C)

Operating Temperature:

14°F to 115°F (-10°C to 46°C)

Storage Temperature:

-40°F to 158°F (-40°C to 70°C)

Operating Voltage (Model Specific):

115VAC/60Hz, 1ph (1.5 Amp Maximum)

230VAC/60Hz, 1ph (0.7 Amp Maximum)

220VAC/50Hz, 1ph (1.0 Amp Maximum)

240VAC/50Hz, 1ph (1.0 Amp Maximum)

Power Cord Plug Type (Model Specific):

115V60Hz = NEMA 5/15 (USA)

230V60Hz = NEMA 6/15 (USA)

220V50Hz = CEE 7/II (EU)

240V50Hz = AS 3112 (Australia/New Zealand)

Accuracy:

+/- 2% of full scale

Repeatability +/- 0.5%

Duty cycle:

Continuous

Output adjustment range:

1-100% in 0.1% increments

Maximum viscosity:

1,000 Centipoise

Maximum suction lift:

15 ft. Water, 0 psig (4.5 m, 0 bar)

Display:

Backlit LCD, UV resistant.

Keypad:

Positive action tactile switch keypad.

Enclosure:

NEMA 4X (IP66), Powder coated aluminum.

Approximate shipping wt:

C2 models: 24 lb. (10.9 Kg)

C3 models: 29 lb. (13.1 Kg)

Materials of Construction:

Wetted components:**Pump Head Assembly:**

Pump Head:PVDF

Adapter Connections:PVDF

Valve Cartridges:PVDF

Valve Balls:Ceramic

Valve Ball Seats:TFE/P Tetrafluorethylene/propylene

Static Seals:TFE/P (optional EP)

Diaphragm:PVDF

Injection / Back-flow Check valve:

Body & insert:PVDF

Check Ball:Ceramic

Spring:Hastelloy C-276

O-ring seals:TFE/P (optional EP)

Foot Valve / Strainer:

Body & Adapter:PVDF

Check Ball:Ceramic

Spring:Hastelloy C-276

O-ring seals:TFE/P (optional EP)

Filter screen:PVDF

Suction Tubing:Clear PVC

Discharge Tubing

3/4" x 1/2" Tube connections:Not supplied

1/4" x 3/8" Tube connections:Natural Polyethylene (LLDPE)

Non-Wetted components:**Enclosure:**

413 Aluminum (Polyester powder coated)

Pump Head Cover:

413 Aluminum (Polyester powder coated)

Cover Screws:

300 Series Stainless Steel

DFD System Sensor pins:

Hastelloy C-276

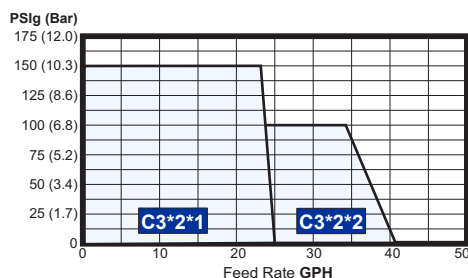
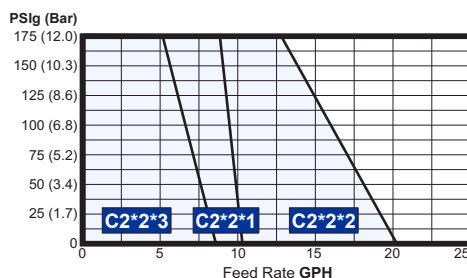
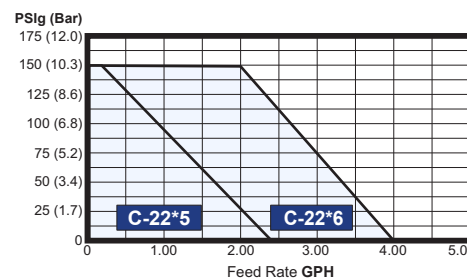
Power Cord:

3 conductor, SJTW-A Water-resistant

Mounting Brackets and Hardware:

316 Series Stainless Steel

Output Curves:

C3 Series Models**C2 Series Models****C2 Series Micro-Feed**

Control Options Comparison:

Feature	F controls	V controls
DFD (Diaphragm Failure Detection) System Alarm	•	•
FVS (Flow Verification System) Alarm *	•	•
Input: Remote Start/Stop (contact closure)	•	•
Output: One 3 Amp 125VAC (24VDC) Alarm Relay	•	•
Output: Motor Run/Stop Open Collector Loop		•
Output: 4-20mA		Optional
Local (manual) 100:1 variable Speed Drive Output Control	•	•
Auto Prime	•	•
Additional Control Inputs: 4-20mA, 0-10VDC, Pulse		•
Operating Modes:		
Manual Adjust Only (100:1 speed adjustment)	•	•
4-20 mA Input Signal		•
High Speed Frequency Input		•
Pulse Triggered Batch Dispensing		•
Serial and ethernet communications: Profibus, Profinet, Ethernet, etc.		•

* Requires Micro-Flo Sensor sold separately

Model Numbers and Output Specifications:

C2 Series Diaphragm Pump | Maximum Strokes per minute 166

Smaller overall size | Higher Pressure Capability | Superior chemical resistance

Feed Rate Range at 0 PSig		Max Pressure	Outlet Connection	C2F Model Numbers			C2V Model Numbers		
GPH	LPH	PSig (bar)	Size / Type	115V60 AC	230V60 AC	220V50 AC	115V60 AC	230V60 AC	220V50 AC
.02 - 2.3	.09 - 9.0	150 (10)	1/2" Male NPT	C2F245XVA	C2F255XVA	C2F265XVA	C2V245XVA	C2V255XVA	C2V265XVA
.02 - 2.3	.09 - 9.0	150 (10)	1/2" Female /NPT	C2F245XVB	C2F255XVB	C2F265XVB	C2V245XVB	C2V255XVB	C2V265XVB
.02 - 2.3	.09 - 9.0	150 (10)	3/4"OD x 1/2"ID Tube	C2F245XVC	C2F255XVC	C2F265XVC	C2V245XVC	C2V255XVC	C2V265XVC
.02 - 2.3	.09 - 9.0	150 (10)	3/8"OD x 1/4"ID Tube	C2F245XVD	C2F255XVD	C2F265XVD	C2V245XVD	C2V255XVD	C2V265XVD
.04 - 4.0	.15 - 15.0	150 (10)	1/2" Male NPT	C2F246XVA	C2F256XVA	C2F266XVA	C2V246XVA	C2V256XVA	C2V266XVA
.04 - 4.0	.15 - 15.0	150 (10)	1/2" Female NPT	C2F246XVB	C2F256XVB	C2F266XVB	C2V246XVB	C2V256XVB	C2V266XVB
.04 - 4.0	.15 - 15.0	150 (10)	3/4"OD x 1/2"ID Tube	C2F246XVC	C2F256XVC	C2F266XVC	C2V246XVC	C2V256XVC	C2V266XVC
.04 - 4.0	.15 - 15.0	150 (10)	3/8"OD x 1/4"ID Tube	C2F246XVD	C2F256XVD	C2F266XVD	C2V246XVD	C2V256XVD	C2V266XVD
.067 - 6.7	.254 - 25.4	175 (12)	1/2" Male NPT	C2F243XVA	C2F253XVA	C2F263XVA	C2V243XVA	C2V253XVA	C2V263XVA
.067 - 6.7	.254 - 25.4	175 (12)	1/2" Female /NPT	C2F243XVB	C2F253XVB	C2F263XVB	C2V243XVB	C2V253XVB	C2V263XVB
.067 - 6.7	.254 - 25.4	175 (12)	3/4"OD x 1/2"ID Tube	C2F243XVC	C2F253XVC	C2F263XVC	C2V243XVC	C2V253XVC	C2V263XVC
.067 - 6.7	.254 - 25.4	175 (12)	3/8"OD x 1/4"ID Tube	C2F243XVD	C2F253XVD	C2F263XVD	C2V243XVD	C2V253XVD	C2V263XVD
.10 - 10	.38 - 38	175 (12)	1/2" Male NPT	C2F241XVA	C2F251XVA	C2F261XVA	C2V241XVA	C2V251XVA	C2V261XVA
.10 - 10	.38 - 38	175 (12)	1/2" Female /NPT	C2F241XVB	C2F251XVB	C2F261XVB	C2V241XVB	C2V251XVB	C2V261XVB
.10 - 10	.38 - 38	175 (12)	3/4"OD x 1/2"ID Tube	C2F241XVC	C2F251XVC	C2F261XVC	C2V241XVC	C2V251XVC	C2V261XVC
.10 - 10	.38 - 38	175 (12)	3/8"OD x 1/4"ID Tube	C2F241XVD	C2F251XVD	C2F261XVD	C2V241XVD	C2V251XVD	C2V261XVD
.165 - 16.5	.625 - 62.5	175 (12)	1/2" Male NPT	C2F242XVA	C2F252XVA	C2F262XVA	C2V242XVA	C2V252XVA	C2V262XVA
.165 - 16.5	.625 - 62.5	175 (12)	1/2" Female /NPT	C2F242XVB	C2F252XVB	C2F262XVB	C2V242XVB	C2V252XVB	C2V262XVB
.165 - 16.5	.625 - 62.5	175 (12)	3/4"OD x 1/2"ID Tube	C2F242XVC	C2F252XVC	C2F262XVC	C2V242XVC	C2V252XVC	C2V262XVC
.165 - 16.5	.625 - 62.5	175 (12)	3/8"OD x 1/4"ID Tube	C2F242XVD	C2F252XVD	C2F262XVD	C2V242XVD	C2V252XVD	C2V262XVD

C3 Series Diaphragm Pump | Maximum Strokes per minute 130

Larger overall size | Lower Pressure Capability | Superior chemical resistance

Feed Rate Range at 0 PSig		Max Pressure	Outlet Connection	C3F Model Numbers			C3V Model Numbers		
GPH	LPH	PSig (bar)	Size / Type	115V60 AC	230V60 AC	220V50 AC	115V60 AC	230V60 AC	220V50 AC
.262 - 26.2	.99 - 99	150 (10.3)	1/2" Male NPT	C3F241XVA	C3F251XVA	C3F261XVA	C3V241XVA	C3V251XVA	C3V261XVA
.262 - 26.2	.99 - 99	150 (10.3)	1/2" Female /NPT	C3F241XVB	C3F251XVB	C3F261XVB	C3V241XVB	C3V251XVB	C3V261XVB
.262 - 26.2	.99 - 99	150 (10.3)	3/4"OD x 1/2"ID Tube	C3F241XVC	C3F251XVC	C3F261XVC	C3V241XVC	C3V251XVC	C3V261XVC
.406 - 40.6	1.54 - 154	100 (6.8)	1/2" Male NPT	C3F242XVA	C3F252XVA	C3F262XVA	C3V242XVA	C3V252XVA	C3V262XVA
.406 - 40.6	1.54 - 154	100 (6.8)	1/2" Female NPT	C3F242XVB	C3F252XVB	C3F262XVB	C3V242XVB	C3V252XVB	C3V262XVB
.406 - 40.6	1.54 - 154	100 (6.8)	3/4"OD x 1/2"ID Tube	C3F242XVC	C3F252XVC	C3F262XVC	C3V242XVC	C3V252XVC	C3V262XVC

Technical drawings of the 1000 Series Transducer showing three views: Top, Front, and Right. The dimensions are labeled as follows:

- Top View:** Shows the overall width (A) and height (D). The label "Top" is centered on the main body.
- Front View:** Shows the overall width (E) and height (G). The label "Front" is centered on the main body. The circular sensor element is visible on the right side.
- Right View:** Shows the overall width (B) and height (F). The label "Right" is centered on the main body. The circular sensor element is visible on the left side.

Note:
Optional Extended Bracket adds 4.5" (11.43cm) to overall height (dimension G and H). See page 3 for details.

C2 Dimensions			C3 Dimensions		
Dim	Inches	cm	Dim	Inches	cm
A	12.8"	32.5	A	14.1"	35.8
B	11.5"	29.2	B	12"	30.5
D	2.5"	6.4	D	2.5"	6.4
E	11.8"	29.9	E	13.1"	33.2
F	7.9"	20.1	F	9"	22.9
G	7.3"	18.4	G	7.8"	19.8
H	6.5"	16.4	H	6.5"	16.4
I	13.6"	34.6	I	15"	38
J	8"	20.3	J	8"	20.3

Chem-Pro Model Number									
C2	Smaller overall size, lower output, higher pressure capability								
C3	Larger overall size, higher output, lower pressure capability								
Series									
F	Single manual output control mode (manual control)								
V	Multiple automatic input output control and alarm modes (remote control)								
Maximum Strokes Per Minute									
2	C2 Series = 166 RPM, C3 Series = 130 RPM (maximum strokes per minute)								
Input Voltage									
4	115V / 60Hz, power cord NEMA 5/15 plug (US)								
5	230V / 60Hz, power cord NEMA 6/15 plug (US)								
6	220V / 50HZ, power cord NEMA 7/III plug (EU)								
8	240V / 50HZ, power cord AS 3112 plug (Australia / New Zealand)								
CAM Stroke Length and Diaphragm Size									
C2 Series Pumps					C3 Series Pumps				
1	.060" (1.52 mm) stroke with small diaphragm				1	.060" (1.52 mm) stroke with large diaphragm			
2	.060" (1.52 mm) stroke with large diaphragm				2	.100" (2.54 mm) stroke with large diaphragm			
3	.040" (1.02 mm) stroke with small diaphragm								
5	.040" (1.02 mm) stroke with Micro-Feed								
6	.060" (1.52 mm) stroke with Micro-Feed								
Electrical Options									
X	Standard equip. (standard pwr cord based on "input voltage" & junction box based on "output control" selection)								
A	4-20mA output signal, requires "V" series control								
Elastomer Material (o-rings)									
V	TFE/P								
E	EP (Ethylene Propylene)								
Fitting Connection Types									
A	½" Hose Barb Inlet, ½" Male NPT Outlet, with ½" Male NPT Injection Fitting								
B	½" Hose Barb Inlet, ½" Female NPT Outlet, with ½" Male NPT Injection Fitting								
C	½" Hose Barb Inlet and Outlet, with ½" ID Hose Barb Injection Fitting								
D	3/8" OD Tube Compression Inlet, Outlet, and Injection Fitting (C2 pump only)								
E	½" Male NPT Inlet and Outlet, with ½" Male NPT Injection Fitting								
F	½" Female NPT Inlet and Outlet, with ½" Male NPT Injection Fitting								
Miscellaneous Options (leave blank for standard model)									
A	Hastelloy C check valve balls, standard injection fittings								
B	Single ½" ceramic ball & Hastelloy C spring P/head check valve for viscous fluids								
C1	Communications Interface - Profibus DPV1 - (requires "V" series control)								
C2	Communications Interface - Modbus RTU - (requires "V" series control)								
C3	Communications Interface - Modbus TCP - (requires "V" series control)								
C4	Communications Interface - Industrial EtherNet/IP - (requires "V" series control)								
C5	Communications Interface - Profinet RT I/O - (requires "V" series control)								
C2	V	2	4	1	X	V	D	A	Sample Model Number