E-Flo® DC

Dual Control Electric Pumps

PROVEN QUALITY. LEADING TECHNOLOGY.

Single Pump. Dual Control.

Constant pressure when you want it. Constant flow when you need it. Get the benefits of a pneumatic motor with the energy efficiency of an electric drive unit! Choose between our supply pump or circulation pumps for your application.

E-Flo DC Circulation Pumps

Graco's original 4-ball circulation pump is ideal for small to medium ciruculation systems. These pumps have outputs up to 2000 cc per cycle.

We doubled our orginal 4-ball circulation pump technology to give you less pulsation, increased flow rates and less downtime.

Unlike competitive pumps that are linked and controlled together, Graco's lowers operate independently. This allows the pump to adjust to varying pressure and flow rate demands thousands of times per second. Each pump can also run alone to keep production running if maintentance is required.

Available with outputs up to 4000 cc per cycle.

E-Flo DC Supply Pumps

Our 2-ball supply pump is for applications requiring high pressure, up to 3000 psi (206 bar). Plus the minimal pulsation at changeover provides a more consistent finish.

Make the Switch to Savings!

Tap into the energy savings and advanced features of Graco's electric motor. It's easier than you think to make the switch.

Save Energy

5x More Efficient

Electric motor means big savings when compared to similar-sized pneumatic motors – helping lower your energy bill and saving you money.

Outperform

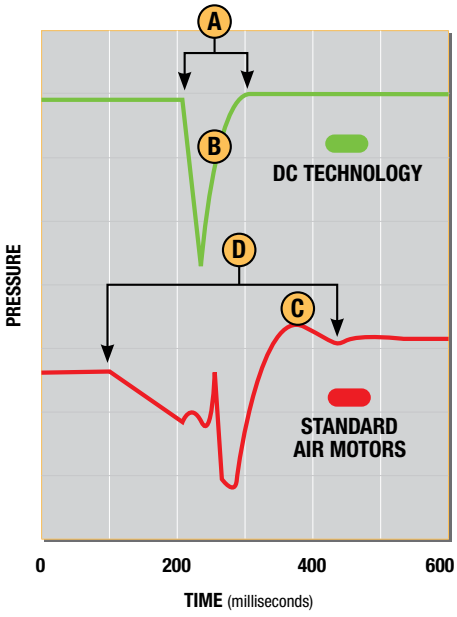
Gain More Control

Advanced Control Module allows you to easily integrate the pump into a PLC network for even greater control and visibility.

Improve Quality

Dual Control (DC) technology gives you less pulsation and smooth, rapid changeovers – for better, more consistent finishes.

Changeover Comparison



- **A** Less than 0.09 second changeover
- **B** Quick changeover and recovery with less pulsation
- **C** Pressure spike at changeover
- **D** Longer changeover causing pulsation

Improve Productivity

Spend Less Time Training

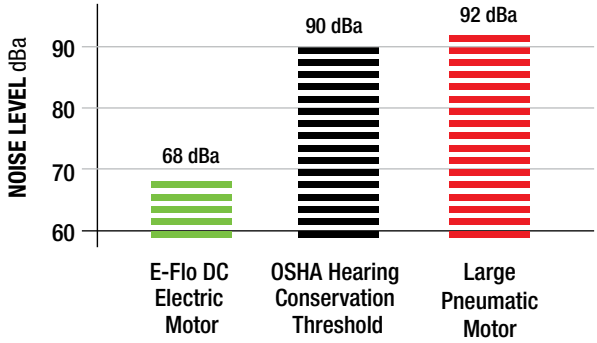
Electric pump functionality, with the simplicity of a pneumatic pump, makes it easy for anyone to operate.

Stay Up and Running Longer

Increased reliability means you'll spend less time maintaining and more time up and running.

Better Working Environment

Quiet electric motor means happier operators and better results. Exceeds OSHA sound regulations and **over 20 dbA's quieter** compared to similar-sized pneumatic motors.



Note: All pressures 100 psi

Boost Your Profits

Prevent Material Loss

Integrated runaway protection protects your pump from premature wear and prevents costly material loss.

Eliminate Costly Rework

Electric motor eliminates icing – giving you smoother pump operation and better finished product.

Lower Cost of Ownership

Use less energy and spend less on maintenance costs with the field-proven reliability of Graco's 2- and 4-ball pumps.

Made in the USA

Boost Your Bottom Line

with Energy Savings and Advanced Pump Control

Advanced Motor with Control Module

Efficient and smart, the E-Flo DC with Advanced Control Module gives you additional control of pump performance and allows you to manage several pumps from a single module.

Control Module

- Integrate the pump easily into a PLC Network for better visibility and control outside of the hazardous area
- Configure different operating profiles of pump
- Mount directly on pump motor or remotely on nearby wall
- Up to two pressure transducers can be added for greater control
- Connect pneumatic BPR controller to automate an “off-production” profile for even greater energy savings
- Password protect pump settings to protect against unauthorized access

Simple to Install

Basic installation requires only a single-phase *110/220 V, 50/60 Hz power

No VFD’s Required.

** 110 V power available with 1HP motor only.*

Basic Motor

Operator-friendly control knobs have clear symbols making it easy to adjust pump settings. Gives you local control at the pump and runaway protection.

Choose the Right Pump for You!

How to Select Your E-Flo DC Pump

STEP 1 Pump Selections

Refer to the **Pump Selection Table** on the next page to answer the following questions:

Lower Size – Based on desired pressure and flow rates, what size lower is required?
Circulation Pumps: 750 cc, 1000 cc, 1500 cc, 2000 cc, 3000 cc or 4000 cc
Supply Pumps: 145 cc, 180 cc, 220 cc or 290 cc

Motor Size & Controls – What motor size and control type would you like on the motor? 1 or 2 hp, Basic or Advanced? What approvals are required?

Lower, Fittings and Packings – What lower material, type of fitting and packings are required on the lower?

Mount – How would you like to mount the pump? Choose either Stand Mount, Wall Mount Bracket or None.

STEP 2 Control Module & Cable

If **Basic** motor control is desired, your pump selection is complete. Refer to the Pump Selection Table on the next page for your part number.

If **Advanced** motor control is desired, a Control Module and CAN Cable will be required. Determine the desired mounting location of the Control Module. The Control Module can be mounted directly on the pump or on a nearby wall. Select the appropriate CAN cable length from the table on the right.

High flow rate circulation pumps (2X) include the Control Module and CAN Cable. No additional equipment is required.

Part Number	Description
24P822	Control Module Kit
16P911	3 ft (1 m) CAN Cable
16P912	25 ft (8 m) CAN Cable

E-Flo DC Circulation Pump Selection

Part Number Matrix

Electric	Circulation Pump	Lower Size	Motor Size, Controls & Approvals	Pump Type/Fittings	Mount
E = Electric	C = Circulation	1 = 750 cc	1 = 1 hp Motor, Basic Controls, ATEX/FM/IECEx	1 = Hard Chrome, NPT	0 = No Stand
		2 = 1000 cc	2 = 1 hp Motor, Advanced Controls, ATEX/FM/IECEx	2 = Hard Chrome, Tri-Clamp	1 = Stand
		3 = 1500 cc	3 = 2 hp Motor, Basic Controls, ATEX/FM/IECEx	3 = MaxLife, Tri-Clamp	2 = Wall Mount Bracket
		4 = 2000 cc	4 = 2 hp Motor, Advanced Controls, ATEX/FM/IECEx		
		5 = 3000 cc	5 = 1 hp Motor, Basic Controls, ATEX/IECEx/TIIS/KCS		
		6 = 4000 cc	6 = 1 hp Motor, Advanced Controls, ATEX/IECEx/TIIS/KCS		
			7 = 2 hp Motor, Basic Controls, ATEX/IECEx/TIIS/KCS		
			8 = 2 hp Motor, Advanced Controls, ATEX/IECEx/TIIS/KCS		
			9 = 2 x 2 hp Motor, Advanced Controls, ATEX/FM/IECEx		
			0 = 2 x 2 hp Motor, Advanced Controls, ATEX/IECEx/TIIS/KCS		

Pump Specifications

Model	750	1000	1500	2000	3000	4000
Output per Cycle	750cc	1000cc	1500cc	2000cc	3000 cc	4000 cc
Maximum Working Pressure psi (bar)	285 (20.6)	1 hp: 210 (13.8) 2 hp: 380 (27.6)	285 (20.6)	2 hp: 210 (14.5) 2 x 2 hp: 380 (27.6)	285 (20.6)	210 (14.5)
Output at 20 CPM gpm (lpm)	4.00 (15)	5.25 (20)	8.00 (30)	10.50 (40)	15.90 (60)	21.10 (80)
Pump Manual	3A2096	3A2096	3A2096	3A2096 or 334359 (2X)	334359	334359
Motor Manual	3A2526	3A2526	3A2526	3A2526	3A2526	3A2526
Control Module Manual	3A2527	3A2527	3A2527	3A2527	–	–

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E-Flo DC Circulation Pump Selection

Ordering Information

Motor Size & Controls			Approvals		Lower Material, Fittings			Mount			Output per Cycle					
Motor Size	Basic Controls	Advanced Controls	ATEX / FM / IECEx	ATEX / IECEx / TIIS / KCS	Hard Chrome, NPT	Hard Chrome, Tri-Clamp	MaxLife, Tri-Clamp	No Stand	Stand	Wall Mount Bracket	750 cc	1000 cc	1500 cc	2000 cc	3000 cc	4000 cc
1 hp	•		•		•			•			EC1110	EC2110				
1 hp	•		•		•				•		EC1111	EC2111				
1 hp	•		•		•					•	EC1210	EC2112				
1 hp		•	•		•			•			EC1210	EC2210				
1 hp		•	•		•				•		EC1211	EC2211				
1 hp		•	•		•					•	EC1212	EC2212				
1 hp	•			•	•			•			EC1510	EC2510				
1 hp	•			•	•				•		EC1511	EC2511				
1 hp	•			•	•					•	EC1512	EC2512				
1 hp		•		•	•			•			EC1610	EC2610				
1 hp		•		•	•				•		EC1611	EC2611				
1 hp		•		•	•					•	EC1612	EC2612				
2 hp	•		•		•			•				EC2310	EC3310	EC4310		
2 hp	•		•		•				•			EC2311	EC3311	EC4311		
2 hp	•		•		•					•		EC2312	EC3312	EC4312		
2 hp		•	•		•			•				EC2410	EC3410	EC4410		
2 hp		•	•		•				•			EC2411	EC3411	EC4411		
2 hp		•	•		•					•		EC2412	EC3412	EC4412		
2 hp	•		•			•		•				EC2320	EC3320	EC4320		
2 hp	•		•			•			•			EC2321	EC3321	EC4321		
2 hp	•		•			•				•		EC2322	EC3322	EC4322		
2 hp		•	•			•		•				EC2420	EC3420	EC4420		
2 hp		•	•			•			•			EC2421	EC3421	EC4421		
2 hp		•	•			•				•		EC2422	EC3422	EC4422		
2 hp	•		•				•	•				EC2330	EC3330	EC4330		
2 hp	•		•				•		•			EC2331	EC3331	EC4331		
2 hp	•		•				•			•		EC2332	EC3332	EC4332		
2 hp		•	•				•	•				EC2430	EC3430	EC4430		
2 hp		•	•				•		•			EC2431	EC3431	EC4431		
2 hp		•	•				•			•		EC2432	EC3432	EC4432		
2 hp	•			•	•			•				EC2710	EC3710	EC4710		
2 hp	•			•	•				•			EC2711	EC3711	EC4711		
2 hp	•			•	•					•		EC2712	EC3712	EC4712		
2 hp		•		•	•			•				EC2810	EC3810	EC4810		
2 hp		•		•	•				•			EC2811	EC3811	EC4811		
2 hp		•		•	•					•		EC2812	EC3812	EC4812		
2 hp	•			•		•		•				EC2720	EC3720	EC4720		
2 hp	•			•		•			•			EC2721	EC3721	EC4721		
2 hp	•			•		•				•		EC2722	EC3722	EC4722		
2 hp		•		•		•		•				EC2820	EC3820	EC4820		
2 hp		•		•		•			•			EC2821	EC3821	EC4821		
2 hp		•		•		•				•		EC2822	EC3822	EC4822		
2 hp	•			•			•	•				EC2730	EC3730	EC4730		
2 hp	•			•			•		•			EC2731	EC3731	EC4731		
2 hp	•			•			•			•		EC2732	EC3732	EC4732		
2 hp		•		•			•	•				EC2830	EC3830	EC4830		
2 hp		•		•			•		•			EC2831	EC3831	EC4831		
2 hp		•		•			•			•		EC2832	EC3832	EC4832		
2 x 2 hp		•	•			•			•					EC4921	EC5921	EC6921
2 x 2 hp		•	•				•		•					EC4931	EC5931	EC6931
2 x 2 hp		•		•		•			•					EC4021	EC5021	EC6021
2 x 2 hp		•		•			•		•					EC4031	EC5031	EC6031

E-Flo DC Supply Pump Selection

Part Number Matrix

Electric	Supply Pump	Lower Size	Motor Size, Controls & Approvals	Pump Type/Fittings	Mount
E = Electric	S = Supply	7 = 145 cc	3 = 2 hp Motor, Basic Controls, ATEX/FM/IECEx	4 = Xtreme/3 Xtreme, 2 Leather	0 = No Stand
		8 = 180 cc	4 = 2 hp Motor, Advanced Controls, ATEX/FM/IECEx	5 = DuraFlo/4 Leather, 1 PTFE	1 = Stand
		9 = 220 cc	7 = 2 hp Motor, Basic Controls, ATEX/IECEx/TIIS/KCS	6 = DuraFlo/4 Leather, 1 PTFE	2 = Wall Mount Bracket
		0 = 290 cc	8 = 2 hp Motor, Advanced Controls, ATEX/IECEx/TIIS/KCS		

Pump Specifications

Model	290	220	180	145
Output per Cycle	290cc	220cc	180cc	145cc
Maximum Working Pressure psi (bar)	1520 (105)	2030 (140)	2430 (168)	3040 (210)
Output at 20 CPM gpm (lpm)	1.53 (5.8)	1.16 (4.4)	0.95 (3.6)	0.77 (2.9)
Pump Manual	333389	333389	333389	333389
Motor Manual	3A2526	3A2526	3A2526	3A2526
Control Module Manual	3A2527	3A2527	3A2527	3A2527

Ordering Information

Motor Controls		Approvals		Lower Material		Packings		Mount			Ratio			
Basic Controls	Advanced Controls	ATEX / FM / IECEx	ATEX / IECEx / TIIS / KCS	DuraFlo (SST)	Xtreme (CS)	3 XTREME / 2 LEATHER	4 LEATHER / 1 PTFE	No Stand	Stand	Wall Mount Bracket	290 cc	220cc	180cc	145 cc
•		•			•	•		•			ES0340	ES9340	ES8340	
•		•			•	•			•		ES0341	ES9341	ES8341	
•		•			•	•				•	ES0342	ES9342	ES8342	
•		•		•			•	•			ES0350	ES9350	ES8350	ES7360
•		•		•			•		•		ES0351	ES9351	ES8351	ES7361
•		•		•			•			•	ES0352	ES9352	ES8352	ES7362
	•	•		•			•	•			ES0450	ES9450	ES8450	ES7460
	•	•		•			•		•		ES0451	ES9451	ES8451	ES7461
	•	•		•			•			•	ES0452	ES9452	ES8452	ES7462
•			•		•	•		•			ES0740	ES9740	ES8740	
•			•		•	•			•		ES0741	ES9741	ES8741	
•			•		•	•				•	ES0742	ES9742	ES8742	
•			•	•			•	•			ES0750	ES9750	ES8750	ES7760
•			•	•			•		•		ES0751	ES9751	ES8751	ES7761
•			•	•			•			•	ES0752	ES9752	ES8752	ES7762
	•		•	•			•	•			ES0850	ES9850	ES8850	ES7860
	•		•	•			•		•		ES0851	ES9851	ES8851	ES7861
	•		•	•			•			•	ES0852	ES9852	ES8852	ES7862

STEP 3 Accessories

Control Module Accessories

Part Number	Description	Comments
24R050	Pressure Transducer, NPT	Up to two pressure transducers can be connected to one Control Module. Cable length: 4.5 ft (1.4 m)
24X089	Pressure Transducer, Inline Tri-clamp	Up to two pressure transducers can be connected to one Control Module. Cable length: 4.5 ft (1.4 m)
16V103	Transducer Extension Cable	For extending length of pressure transducer. Length: 6.5 ft (2 m)
24V001	Pneumatic BPR Control System	For use when implementing an “off-production” or “sleep” profile with the Control Module
16U729	Run/Stop Switch	Additional, separate switch for running and stopping the pump
16M172	50 ft (15 m) Fiber Optic Cable	Used for communicating outside of a hazardous area
16M173	100 ft (30 m) Fiber Optic Cable	Used for communicating outside of a hazardous area
17B160	330 ft (100 m) Fiber Optic Cable	Used for communicating outside of a hazardous area
24R086	Fiber/Serial Converter	For converting Fiber Optic Cable to RS485/Modbus RTU Serial. Located outside of the hazardous area.
15V331	Ethernet IP Gateway Assembly	For interfacing with a PLC network. Located outside of the hazardous area.

Motors

Part Number	Description	Approvals
EM0011	1 hp Motor, Basic Controls	ATEX / FM / IECEx
EM0012	1 hp Motor, Advanced Controls	ATEX / FM / IECEx
EM0013	1 hp Motor, Basic Controls	ATEX / IECEx / TIIS / KCS
EM0014	1 hp Motor, Advanced Controls	ATEX / IECEx / TIIS / KCS
EM0021	2 hp Motor, Basic Controls	ATEX / FM / IECEx
EM0022	2 hp Motor, Advanced Controls	ATEX / FM / IECEx
EM0023	2 hp Motor, Basic Controls	ATEX / IECEx / TIIS / KCS
EM0024	2 hp Motor, Advanced Controls	ATEX / IECEx / TIIS / KCS
EM0025*	2 hp Motor (for "2X" E-Flo DC 2000-4000cc Circulation Pumps), Advanced Controls	ATEX / FM / IECEx
EM0026*	2 hp Motor (for "2X" E-Flo DC 2000-4000cc Circulation Pumps), Advanced Controls	ATEX / IECEx / TIIS / KCS

**System requires two motors*

Back Pressure Regulators

Part Number	Description
288117	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 1-1/4 npt)
288311	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 1-1/2 npt)
288262	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 2 in Tri-Clamp)

Other Accessories

Part Number	Description
255143	Wall Mount Bracket
253692	Floor Stand
24R101	Basic Controls Securing Kit

Call today for product information or to request a demonstration.

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