

Series C Electronic Metering Pumps

Configuration Data

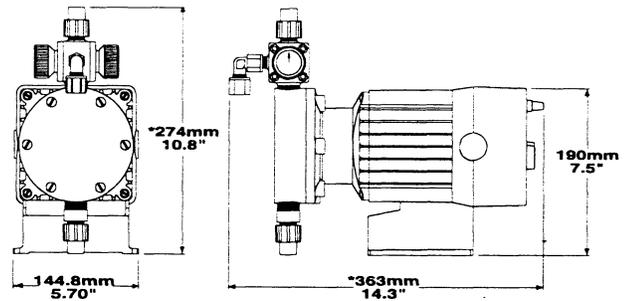
Model **C73** **1** - **112S**

Control & Output Code	
Manual Control	
Speed (stroking frequency) and stroke length manually adjustable.	
C10	--- 4.9 L/H (1.3 GPH) ----- 20.7 Bar (300 psi)
C11	--- 9.5 L/H (2.5 GPH) ----- 10.3 Bar (150 psi)
C12	--- 15.1 L/H(4.0 GPH) ----- 6.9 Bar (100 psi)
C13	--- 34 L/H (9.0 GPH) ----- 4.1 Bar (60 psi)
C14	--- 76 L/H (20 GPH) ----- 1.7 Bar (25 psi)
Instrument Responsive/Manual Control	
Manual adjustment features of C1 Series plus switch conversion to external control for automatic systems.	
C70	--- 4.9 L/H (1.3 GPH) ----- 20.7 Bar (300 psi)
C71	--- 9.5 L/H (2.5 GPH) ----- 10.3 Bar (150 psi)
C72	--- 15.1 L/H(4.0 GPH) ----- 6.9 Bar (100 psi)
C73	--- 34 L/H (9.0 GPH) ----- 4.1 Bar (60 psi)
C74	--- 76 L/H (20 GPH) ----- 1.7 Bar (25 psi)
C77	--- 38 L/H (10 GPH) ----- 5.5 Bar (80 psi)
C78	--- 95 L/H (25 GPH) ----- 2.07 Bar (30 psi)

Voltage Code	
1	----- 120 VAC US Plug
2	----- 240 VAC US Plug
3	----- 220-240 VAC DIN Plug
5	----- 240-250 VAC, UK Plug
6	----- 240-250 VAC, Aust./NZ Plug
7	----- 220-240 VAC, Swiss Plug

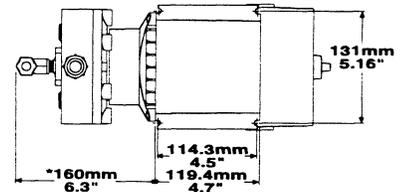
Liquid End	
See next page for complete liquid end specifications & selection.	

Specifications



DIMENSIONS

*Dimensions shown are maximums for largest available Liquid End. Dimensions will vary depending on Liquid End selected.



Series	Strokes per Minute (adjustable)		Stroke Length (adjustable) recommended minimum	Average Input Power @ Max Speed	Shipping Weight
	MIN	MAX			
C10,C70*					
C11,C71*					
C12,C72*	5	100	10%	44 watts	9.1 kg (20 lbs)
C13,C73*					
C14,C74*					
C77*	5	100	10%	87 watts	12.7 kg (28 lbs)
C78*					

Output Information

Series	Liters per Hour		Gallons per Hour		mL/cc per minute		mL/cc per Stroke		Maximum Injection Pressure
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
C10,C70*	0.025	4.9	0.007	1.3	0.41	82	0.08	0.82	20.7 Bar (300 psi)
C11,C71*	0.048	9.5	0.013	2.5	0.79	158	0.16	1.58	10.3 Bar (150 psi)
C12,C72*	0.076	15.1	0.020	4.0	1.26	252	0.25	2.52	6.9 Bar (100 psi)
C13,C73*	0.170	34	0.045	9.0	2.83	567	0.57	5.67	4.1 Bar (60 psi)
C14,C74*	0.380	76	0.100	20.0	6.33	1267	1.27	12.67	1.7 Bar (25 psi)
C77*	0.190	38	0.050	10.0	3.17	633	0.63	6.33	5.5 Bar (80 psi)
C78*	0.475	95	0.125	25.0	7.92	1583	1.58	15.83	2.07 Bar (30 psi)

* Minimum output can be reduced to zero (0) when in external mode.

SERIES C SPECIFICATIONS

GENERAL

Chemical metering pumps shall be positive displacement, Liquifram type pumps. Output volume shall be adjustable while pumps are in operation from zero to maximum capacity of:

C10, C70	—	1.3 GPH	(4.9 liters/hour)
C11, C71	—	2.5 GPH	(9.5 liters/hour)
C12, C72	—	4.0 GPH	(15.2 liters/hour)
C13, C73	—	9.0 GPH	(34.0 liters/hour)
C14, C74	—	20.0 GPH	(76.0 liters/hour)
C77	—	10.0 GPH	(38.0 liters/hour)
C78	—	25.0 GPH	(95.0 liters/hour)

Chemical metering pumps shall be capable, without a hydraulically backed diaphragm, of injecting chemicals against pressures up to:

C10, C70	—	300 psig	(20.7 Bar)
C11, C71	—	150 psig	(10.3 Bar)
C12, C72	—	100 psig	(6.9 Bar)
C13, C73	—	60 psig	(4.1 Bar)
C14, C74	—	25 psig	(1.7 Bar)
C77	—	80 psig	(5.5 Bar)
C78	—	30 psig	(2.1 Bar)

C1 Series

Adjustment shall be by means of readily accessible dial knobs, one for changing stroke length and the other for changing stroke frequency (speed). Both knobs are to be located opposite the liquid handling end.

C7 Series

Control of C7 series metering pumps shall be selectable between internal and external pulsing by means of a 3-position center-off switch. When in external pulsed mode, C7 series units shall accept signals from LMI Remote Programmable Flowmeter-Pulsar Assemblies, LMI Micropace Controls or LMI Liquitron™ Current to Frequency Converter without the use of electrical timer or internal timer. External pulse circuit voltage shall not exceed 16 volts.

Pump pressure capacity shall be electronically adjustable.

DRIVE

The pump drive shall be totally enclosed with no exposed moving parts. Solid state electronic pulser shall be fully encapsulated with no exposed printed circuit etch and with quick connect terminals at least 3/16" (4.75 mm) wide. Electronics shall be

housed in chemical resistant enclosure at the rear of the pump for maximum protection against chemical spillage. Electrical power consumption shall not exceed 56⁷ watts under full speed and maximum pressure conditions. Pump weight shall not exceed 26 lbs. (11.8 kg.).

AUTOMATIC PRESSURE RELIEF

To eliminate need for pressure relief valve, Liquifram shall automatically stop pulsating when discharge pressure exceeds pump pressure rating by not more than 35%.

MATERIAL

Chemical metering pump housing shall be of chemically resistant glass fiber reinforced thermoplastic with a glass fiber reinforced polypropylene EPU carrier⁸. All exposed fasteners shall be stainless steel. Chemical metering pump valves shall be ball type, with ceramic balls¹ seating on combination valve seat and seal ring. Valve seat and seal ring shall be renewable by replacing only the combination seat-seal ring.² Pump head shall be of transparent acrylic³ material capable of resisting the pumped chemical. Fittings and connections at pump head shall be PVC.⁴

CHECK VALVE AND TUBING

A total of 16 ft. (4.8 m) of polyethylene tubing⁵ shall be provided per pump complete with compressing connections. A foot valve with integral one piece strainer shall be provided for the suction line, and an injection check/back pressure⁶ valve with 1/2" NPT male connection for the injection point. The injection check valve shall incorporate a dilating orifice which inhibits accumulation of crystalline deposits.

NOTES:

¹Type 316 stainless steel or Teflon may be specified.

²Hypalon, Viton or Teflon may be specified.

³PVC, polypropylene, or Type 316 stainless steel may be specified.

⁴Polypropylene or Type 316 stainless steel may be specified.

⁵6 ft. (1.8 m) of vinyl suction tubing may be specified in place of polyethylene for the suction side only. 1/4" or 1/2" male pipe thread may be specified.

⁶Combination pressure relief-anti-syphon valve may be specified.

⁷87 watts for Series C77 and C78.

⁸With plastic coated cast iron EPU carrier for Series C77 and C78.



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