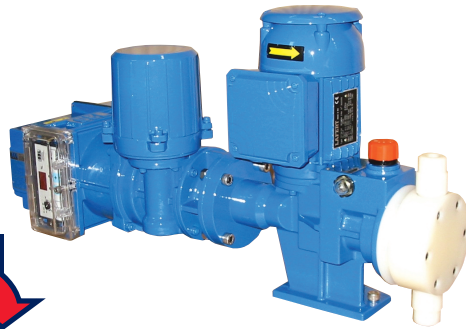




Signal
S300 SERIES



S300 XR/XRN Series Spring Return Hydraulic Diaphragm Metering Pump

Operating capacities from
0.6 to 105 litres/hour at 17 to 4 bar

- The plunger operates within an oil bath, maintaining the volumetric efficiency of the pump for 30,000 hours or longer.
- With an integral internal safety valve which makes a significant saving on installation cost and protects pump against over pressure.
- Combines the simplicity and economy of spring return with the advantages of a hydraulic diaphragm.
- Available with pneumatic or electric servos, giving remote control of stroke length.
- Minimum maintenance required.
- S300 XR and XRN models are hydraulic diaphragm spring return metering pumps with a capability of metering acids, alkalis, foodstuffs, solvents, slurries and high viscosity fluids up to 22,000cps.

S300 Specification and Performance

S300 XR/XRN Spring Return Hydraulic Diaphragm Metering Pump

Operating capacities from 0.6 to 105 litres/hour at 17 to 4 bar

Pumps

- Single and double ball valve options.
- Suction and discharge connections threaded as standard (flanged optional).
- Pump weight 15 kg.
- S300 XR and XRN models are hydraulic diaphragm spring return metering pumps with a capability of metering acids, alkalis, foodstuffs, solvents, slurries and **high viscosity** fluids up to **22,000cps**.
- The use of an integral safety valve gives a significant saving on installation cost.

Diaphragm

- The diaphragm is constructed of PTFE and, for ease of maintenance, is held independently of the pump head. This means that when the head is removed, the diaphragm is retained in the body and no oil is lost.

Construction materials

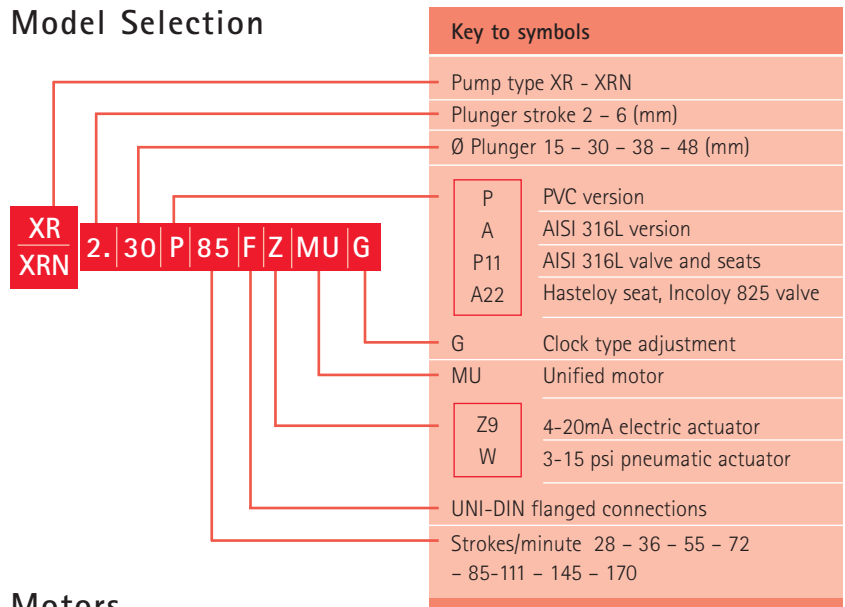
Choice of construction materials for pump heads and other components are as follows:

	A	P	P11	A22	P32*
Pump Head	AISI 316L	PVC	PVC	AISI 316L	PVC
Valve guide	PE	PE	PE	PVC	PE
Valve seat	AISI 316L	PVC	AISI 316L	Incoloy 825	Incoloy825
Valve	AISI 316L	Glass	AISI 316L	Carpenter20	Hasteloy
Valve seal	Viton	Viton	Viton	Viton	Viton
Valve housing	AISI 316L	PVC	PVC	AISI 316L	PVC
Diaphragm	PTFE	PTFE	PTFE	PTFE	PTFE

Special materials available on request

*XRN only

Model Selection



Motors

- Three phase
 - XR 0.09kW 4 poles 230/400v 50/60Hz
 - XRN 0.18kW 4 poles 230v 50 Hz
 - UNEL-MEC options of 0.18kW available.
- Single phase
 - XR 0.13kW 2 poles 230v 50 Hz alt. 110v 50Hz
 - XRN 0.09kW 4 poles 230v 50 Hz
 - UNEL-MEC options of XRN - 0.09kW XR - 0.18kW

Stroke adjustment

- Stroke control within 10% to 100% of the nominal flow rate.
- Standard manual adjustment is 0% to 100% via a micrometer knob adjustment.
- The non-gravity dial adjuster will not lose its datum if turned over during movement.
- Flow rate adjustment is smooth and linear and can be made whether the pump is running or stationary.
- Optional servo giving automatic remote adjustment of flow rate (for details see separate Signal specification sheet on S300 series servo controls).

TECHNICAL DATA

S300 XR

Type	*Flow Rate L/h	Strokes (spm)	Max. back pressure (bar)				Connections			
			0.09 kW (OBL std)		0.18kW (MU)		Threaded	Flanged		
			A	P	A	P		UNI	ANSI	
XR2. 15	0.6	55	10	10	10	10	1/4" BSPF	15	1/2"	
XR2. 15	0.9	72	10	10	10	10		15	1/2"	
XR2. 15	1.2	85	10	10	10	10		15	1/2"	
XR2. 15	1.5	111	10	10	10	10		15	1/2"	
XR2. 15	2	145	10	10	10	10		15	1/2"	
XR2. 30	1.8	28	20	10	20	10	1/4" BSPF	15	1/2"	
XR2. 30	2.5	36	20	10	20	10		15	1/2"	
XR2. 30	3.8	55	20	10	20	10		15	1/2"	
XR2. 30	5	72	20	10	20	10		15	1/2"	
XR2. 30	5.5	85	20	10	20	10		15	1/2"	
XR2. 30	7.5	111	20	10	20	10	1/4" BSPF	15	1/2"	
XR2. 30	11	145	20	10	20	10		15	1/2"	
XR6. 30	10	55	17	10	20	10		3/8" BSPF	15	1/2"
XR6. 30	14	72	17	10	20	10			15	1/2"
XR6. 30	20	85	17	10	20	10			15	1/2"
XR6. 30	23	111	17	10	20	10	15		1/2"	
XR6. 30	30	145	17	10	20	10	15		1/2"	
XR6. 38	26	72	10	10	15	10	3/8" BSPF	15	1/2"	
XR6. 38	32	85	10	10	15	10		15	1/2"	
XR6. 38	42	111	10	10	15	10		15	1/2"	
XR6. 38	54	145	10	10	15	10		15	1/2"	
XR6. 38	65	170	10	10	15	10		15	1/2"	
XR6. 48	42	72	7	7	10	10	3/8" BSPF	15	1/2"	
XR6. 48	50	85	7	7	10	10		15	1/2"	
XR6. 48	66	111	5	5	8	8		15	1/2"	
XR6. 48	87	145	5	5	8	8		15	1/2"	
XR6. 48	105	170	5	5	8	8		15	1/2"	

* Flow rates valid also for single-phase motors M1 with half number of strokes

S300 XR FOR FLUIDS WITH VISCOSITY 1000-2000 cps 3-PHASE AND SINGLE PHASE MOTORS

Type	Flow Rate L/h	Strokes (spm)	Max. back pressure (bar)		Connections		
			AISI	PVC	Threaded	Flanged	
						UNI	ANSI
XR6. 30	5	28	20	10	3/8" BSPF	15	1/2"
XR6. 38	10	28•	15	10	3/8" BSPF	15	1/2"
XR6. 38	13	36•	15	10		15	1/2"
XR6. 48	17	28•	8	8	3/8" BSPF	15	1/2"
XR6. 48	21	36•	8	8		15	1/2"

• Also available with basic single-phase motor

BUILT-IN RELIEF VALVE SETTING/WORKING PRESSURE

Built-in relief valve settings	Max. working pressure
5 bar	4 bar
7 bar	5.5 bar
8 bar	6.5 bar
10 bar	8.5 bar
15 bar	13 bar
17 bar	14.5 bar
20 bar	17 bar

S300 XR FOR HIGH VISCOSITY FLUIDS (in excess of 2000 cps) 3 PHASE AND SINGLE PHASE MOTORS

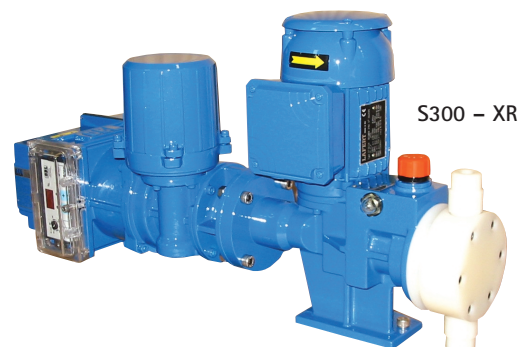
Type	Flow Rate L/h	Max. Pressure bar	Strokes (spm)	Connections		Valves	
				Threaded	Flanged	Seat	Ball
XR6. 30HV	5	17	28•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 30HV	6	17	36•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 30HV	8	17	42	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 38HV	10	15	28•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 38HV	13	15	36•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 38HV	15	15	42	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 48HV	17	8	28•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 48HV	21	8	36•	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 48HV	25	8	42	1/2" BSPF	DN15 or 1/2"	11	5/8"
XR6. 48HV	33	8	55	1/2" BSPF	DN15 or 1/2"	11	5/8"

• Also available with basic single-phase motor

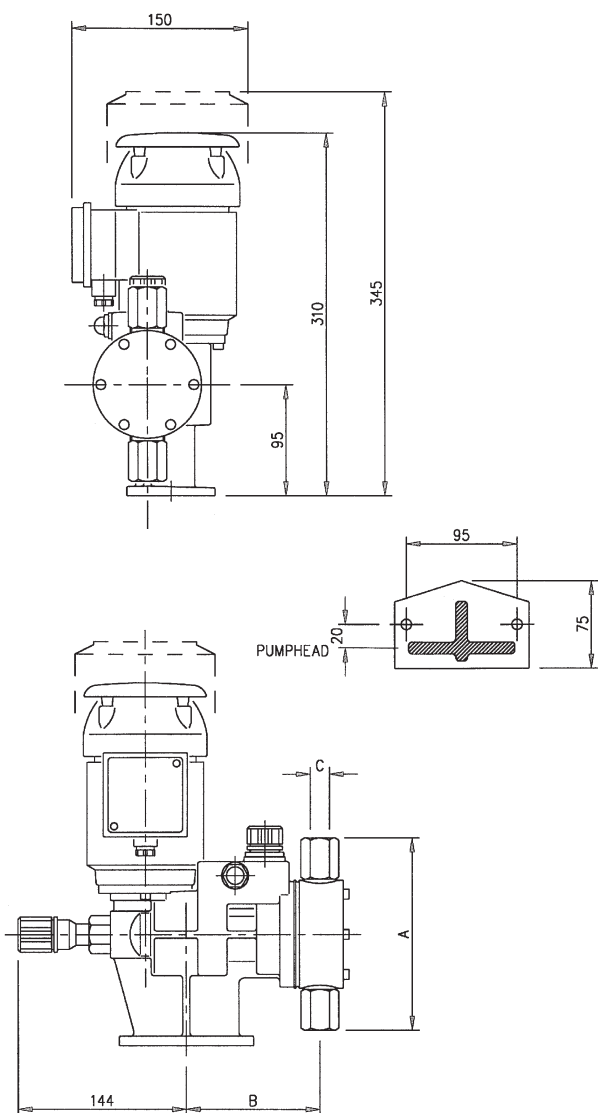
S300 XRN

Type	Flow Rate L/h	Strokes (spm)	Max. back pressure (bar)				Connections		
			A		P		Threaded	Flanged	
			1PH	3PH	1PH	3PH		UNI	ANSI
XRN2. 30	1.8	28	20	20	10	10	1/4" BSPF	DN15	1/2"
XRN2. 30	2.5	36	20	20	10	10		DN15	1/2"
XRN2. 30	3.8	55	20	20	10	10		DN15	1/2"
XRN2. 30	5	72	20	20	10	10		DN15	1/2"
XRN2. 30	5.5	85	20	20	10	10		DN15	1/2"
XRN2. 30	7.5	111	20	20	10	10		DN15	1/2"
XRN2. 30	11	145	20	20	10	10		DN15	1/2"
XRN6. 30	10	55	16	20	10	10	3/8" BSPF	DN15	1/2"
XRN6. 30	14	72	16	20	10	10		DN15	1/2"
XRN6. 30	20	85	16	20	10	10		DN15	1/2"
XRN6. 30	23	111	16	20	10	10		DN15	1/2"
XRN6. 30	30	145	16	20	10	10		DN15	1/2"
XRN6. 38	26	72	10	15	10	10	3/8" BSPF	DN15	1/2"
XRN6. 38	32	85	10	15	10	10		DN15	1/2"
XRN6. 38	42	111	10	15	10	10		DN15	1/2"
XRN6. 38	54	145	10	15	10	10		DN15	1/2"
XRN6. 38	65	170	10	15	10	10		DN15	1/2"
XRN6. 48	42	72	7	10	7	10	3/8" BSPF	DN15	1/2"
XRN6. 48	50	85	7	10	7	10		DN15	1/2"
XRN6. 48	66	111	5	8	5	8		DN15	1/2"
XRN6. 48	87	145	5	8	5	8		DN15	1/2"
XRN6. 48	105	170	5	8	5	8		DN15	1/2"

• Anodised aluminium gearbox



EXTERNAL DIMENSIONS



Drawing dimensions may vary depending upon model/pump head. mm (unless stated)

S300 XR/XRN Accessory Range

Optional equipment for enhancing the control and performance of the S300 XR/XRN pump series.

Foot valve and strainer

Assists in maintaining the prime of the pump under suction lift conditions and prevents large solids from entering the pump.

Suction lance

Combining a foot valve and strainer, the suction lance is inserted into the suction vessel, where it ensures maximum draw-down. It allows low level switching to stop the pump and can provide low-level cut-out. A further option of low-level warning may be incorporated.

Injection fitting

This maintains back pressure on the pump, even when the pump is disconnected. It generally assists with the control of flow and also injects material into the centre of the flow. Additionally, it serves as an anti-syphon device and non-return valve.

Pressure loading valve

On systems operating below 1 bar, the pressure loading valve maintains back pressure on the pump and ensures that accurate flow control is sustained. It also serves as an anti-syphon device.

Pressure relief valve

A safety device that protects the pump and system from damage if over pressure occurs.

Multifunction valve

Combines the function of pressure loading and pressure relief valve into a single unit that saves in installation cost and provides anti-syphon protection and drain facility.

Flow switch

Provides a positive indication that the pump is operating and the fluid is flowing.

Electronic controller

A complete control system that provides a loop back to the pump to maintain the required chemical dose. It can make the system more efficient and more economical and it can also be integrated with redox. or pH control.

Pulsation damper

Fitted to the suction or discharge side of the pump, it reduces pressure surges on arduous applications such as long dosing lines.

Tubing

Available in a wide range of diameters and materials, including PVDF, PFA, PE, nylon-reinforced PVC and others on request.

Servo motor

Provides motorised control of stroke length, and hence, flow - usually from a 4-20mA signal, which allows for remote control of the pump. A scaling facility is available which allows a reduction of the maximum flow rate anywhere in the region of 60-100% of the pump rated capacity.

VSD motor

A three-phase motor suitable for operation from a variable frequency inverter supply.

Hazardous areas

Hazardous area motors available with ATEX certification.

Tank and pump sets

A stand-alone and single-sourced chemical delivery system that can be bonded if required and can incorporate stirrers. Pre-engineered and tested, they are delivered to site ready to install and are available in a range of tank capacities up to 4,500 litres, although larger sets can also be engineered.

Stroke Counter

For batching operations.

Signal Metering Pumps

Gee House

Holborn Hill

Birmingham B7 5JR

T 0121 326 1745

F 0121 326 1779

E info@signal-pumps.co.uk

W www.signal-pumps.co.uk

A division of GEE & CO

FURTHER TECHNICAL SUPPORT

The **Signal** team of fully qualified sales engineers are on hand to assist you in any aspect of metering pump technology. Whether you need advice on general application needs, metering, pump performance, health and safety, product selection, accessory choice, ongoing operation or maintenance issues, please call a member of our **Technical Team on 0121 326 1745**

We are here to support you before your purchase - and right through the long service life of your **Signal** pumps.