

# WRS

[www.wrsdosing.com](http://www.wrsdosing.com)



## SOLENOID DRIVEN DOSING PUMP

EML, MLS & ML MODELS

V240808

## COMPANY INTRODUCTION:

WRS, adhering to the concept of worldwide application, reliable performance, and smart intelligent operation strives to provide better services for more customers and higher demand in the dosing pump industry. Combining years of engineering experience and in-depth understanding of the practical applications of related industries.

WRS has been committed to the continuous improvement of the brand, using simpler design and easier application to solve the more complex process of fluid addition. Each part is carefully designed, each process is refined, and each finished product is strictly tested, always striving for a perfect product. WRS quality management standards focus on quality awareness, standardizes operations, and materialize the core competitiveness which is our product quality.

WRS's strong technical team leads the transformation of dosing pumps in the digital era, integrating digital control to all our product series, and continuously provides customers with higher standards and better designed products. WRS focuses on the sustainable development of the industry and aims to create a smart leading brand in the chemical dosing industry.

### OUR VISION:

Become the smart leading brand in the chemical dosing industry.

### OUR MISSION:

Continuous exploration and innovation, pursuit of excellent quality.

### OUR DECLARATION:

Underpromise, overdeliver, provide the most optimized solution in the chemical dosing industry.



## OVERVIEW OF SOLENOID DRIVEN DOSING PUMP MODELS



EML MODEL



MLS MODEL



ML MODEL

**PRODUCT OVERVIEW:**

WRS solenoid driven dosing pump is a diaphragm metering pump controlled by a microprocessor, with adjustable stroke frequency. WRS solenoid driven dosing pump uses a diaphragm and solenoid assembly to displace the fluid into the discharge line.

The solenoid 'drive' consists of an electromagnet and spring assembly, which is activated/deactivated with a series of electrical impulses. As the solenoid is activated, the electromagnet pushes the diaphragm, which displaces the fluid. As the solenoid is deactivated, the spring mechanism returns the diaphragm, allowing more fluid from the suction line to enter the chamber ready for delivery.

WRS solenoid driven dosing pump aspect is determined by programming the pump to a rate of delivery. The rate can be arbitrarily set by the operator or according to an external signal e.g. 4-20mA or through RS485 RTU Modbus to control the flowrate.



EML Model Front View



PVC

SS316L

PVDF



Tubing Accessories



Signal Cable

\*Notes: Tubing accessories & does not come with all models, please see model comparison table in next page.

**HIGHLIGHTS**

1. The default maximum strokes per minute is 225, which can be customized up to 360 strokes.
2. Completely chemical resistant, various choices of pump head materials to cover majority corrosive fluid dosing applications.
3. IP65 Protection.
4. Steady Stead Accuracy of 1%.
5. Digital display of pumping information.
6. Leak-free diaphragm design.
7. Double valve ball check valve design to ensure flow accuracy.
8. The stroke rate can be set in 1% increments between 0 and 100%.
9. Drip hole design to prevents the medium from entering the solenoid drive end and to warn user when there is a diaphragm rupture.
10. Heat dissipation design on the solenoid drive end. Never overheat while working long hours.

## MODEL COMPARISON TABLE

		EML	MLS	ML
<b>GENERAL</b>				
Pump Display	48 x 30mm Back Light LCD Screen	√	-	-
	4 Digit 7-segment LED Display	-	√	√
Home Screen Display Information	Flowrate Percentage (%)	√	√	√
	Current Dosing Flowrate Display (LPH)	√	-	-
	Accumulated Dosed Volume (L)	√	-	-
Operating Method	3 Soft Buttons (Start/Stop; Up; Down)	√	√	√
Calibration Function	Enter the actual flowrate to get the true performance range of the pump	√	-	-
Stroke Speed Adjustment	Every pump comes with Stroke Speed adjustment feature. Allowing user to fine tune discharge flowrate.	√	√	√
Included Accessories*	Injection valve, foot valve, bleed valve, PE Hose, Ceramic Weight. *(Not available for Stainless Steel Pump Head)	√	√	√
Signal Cable	Included as accessories for EML & MLS for signal connection.	√	√	-
<b>CONTROLS</b>				
Manual	The dosing flowrate can be set on the pump through flowrate percentage adjustment. The setting range is 0-100% of the design flowrate. 100% is the maximum flowrate of the pump, and 0% is zero flowrate.	√	√	√
Signal	Current analog control (4-20-mA). In this operating mode, the pump doses according to an external analog signal, and the flow rate being pumped is proportional to the signal input value (mA), where 4mA = 0% of the design flow rate and 20mA = 100% of the design flow rate.	√	√	-
	Pulse signal multiply (1:N). The pump can be controlled by receiving a pulse signal from an external source. The pump performs "n" strokes for each incoming pulse. Where "n" can be set between 1 and 255.	√	√	-
	Pulse signal divide (N:1). The pump can be controlled by receiving a pulse signal from an external source. The pump performs "1" strokes for "n" incoming pulse. Where "n" can be set between 1 and 255.	√	√	-
Remote On/Off	Dry contact (normally open). By connecting two wires, the pump can be remotely turn on/off via potential-free contacts. Typically used in programmable logic controllers (PLCs) or a level float switch.	√	√	-
Communication	RS485 RTU Modbus. Pumps can be remotely controlled using an Intelligent Pump Controller (IPC) by connecting to a dedicated RS485 terminal strip using a cable from the remote connection device. Common parameters include device address, baud rate and start/data/stop bits.	√	-	-

## IDENTIFICATION CODE

Example	EML	0020	P	R	1	E
Category	Model	Flowrate	Fluid-End Material	Connection Method	Power Required	Plug Type

Category	Description
Model	EML - SMART model with 4-20mA / pulse signal / RS485 RTU control. MLS - Simple model with 4-20mA / pulse signal control. ML - Basic model with manual control.
Flowrate	001 ... 020 - See table in next page.
Fluid-End Material	P - PVC            S - SS316L F - PVDF        X - Customized
Connection Method	R - Hose Connection (5*8mm ID*OD)            X - Customized
Power Required	1 - 220V / 50Hz or 60Hz / 1Phase    2 - 110V / 50Hz or 60Hz / 1Phase
Plug Type	A - America    I - Australia / New Zealand C - China    N - No Plug E - Europe    X - Customized G - United Kingdom

\*Notes: Identification code are for identifying the pump not for complete selection. If there are any question on selection, please contact with us or our representative.

## TECHNICAL PARAMETERS

		001	002	004	005	008	010	012	015	020
Max. Discharge Flowrate (50Hz)	Lph	1	2	4	5	8	10	12	15	20
Max. Discharge Pressure *1	Bar	10	10	8	5	4	3	3	2	1.5
Stroke Speed *2	spm	80	140	180	140	170	130	150	160	180
Stroke Length	mm	1.5		2						
Diaphragm Diameter	mm	34			41		52			
Maximum Suction Lift	m	1.5								
Max. Allowable Viscosity	cps	200								
Max. Particle Size		Particle Diameter < 0.2mm, Solid Content < 20%								
Maximum Suction Pressure	Bar	2								
Minimum Differential Pressure	Bar	1								
Standard Material Allowable Fluid Temperature (No Freezing Allowed)	°C	PVC: -10 to +60 PVDF: -10 to +90 SS316L: -10 to +110								
Ambient Temperature	°C	-30 to +50								
Steady State Accuracy	%	1%								
Standard Suction & Discharge Connection		Tube Compression Fitting (ID*OD: 5*8mm)								
Power Required		Default: 220V / 50Hz or 60Hz / 1Phase Optional: 110V / 50 or 60Hz / 1Phase								
Max. Current	Amp	0.1								
Average Power Consumption	Watt	28								
Ingress Protection	IP	65								
Signal Cable		Included for EML & MLS Models ONLY								

\*Data are tested based on water at 20°C, fully primed and at maximum back pressure. Actual flowrate may differ in actual setup, depending on your system back pressure, pumping fluid and piping design.

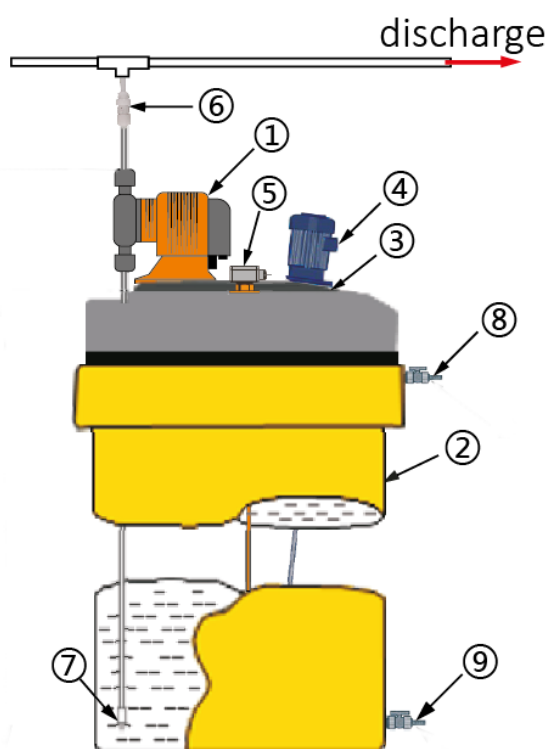
## MATERIAL TABLE

Material Code		P	F	S	
Pump Fluid End:					
Pump Head Material		PVC	PVDF	SS316L	
Diaphragm		PTFE Composite	PTFE Composite	PTFE Composite	
Inlet & Outlet Valve	Body	PVC	PVDF	SS316L	
	Seat	PTFE	PTFE	SS3161L	
	Ball	Ceramic	Ceramic	Ceramic	
Seal		FKM	FKM	PTFE	
Standard Accessories (Inclusive in box)					
Injection Valve, Foot Valve, Bleed Valve	Body	PVC	PVDF	No accessories included for Stainless Steel pump head.	
	Seat	PTFE	PTFE		
	Ball	Ceramic	Ceramic		
Seal		FKM	FKM		
Spring		SS316L / Hastelloy	SS316L / Hastelloy		
Stabilizing Weight		Ceramic	Ceramic		
Flexible Tube		PE	PE		
Others					
Pump Body		Reinforced Nylon			

## PACKING DIMENSION & WEIGHT

Pump Head Material	PVC	PVDF	SS316L
Net Weight	3.5	3.5	4.5
Gross Weight	4.5	4.5	5.5
Packing Dimension (1 set)	270 x 270 x 170 mm		

## COMPLETELY CUSTOM MAKE DOSING STATION

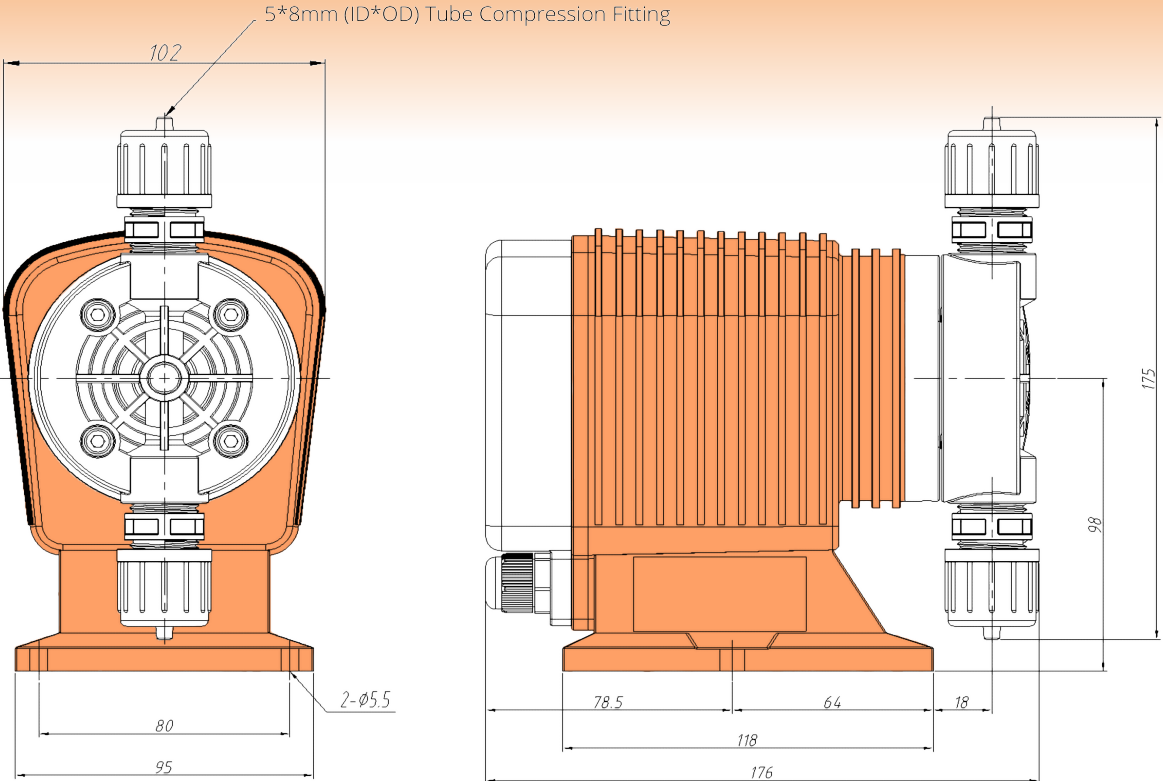


Despite just being a pump manufacturer, WRS supplies a comprehensive selection of chemical dosing systems from small to large-scale applications within disinfection, flocculation, and pH adjustment. Our engineers have expertise in proposals regarding “plug and pump” including complete packages. We manufacture chemical dosing systems with custom-made solutions that are intended to produce available dosing technology in complete packages. Fully customizable chemical dosing systems offer a wide range of capacities to meet various chemical treatment applications. Each system includes the chemical dosing pump and polyethylene chemical tank, along with the necessary hoses and fittings for the pump.

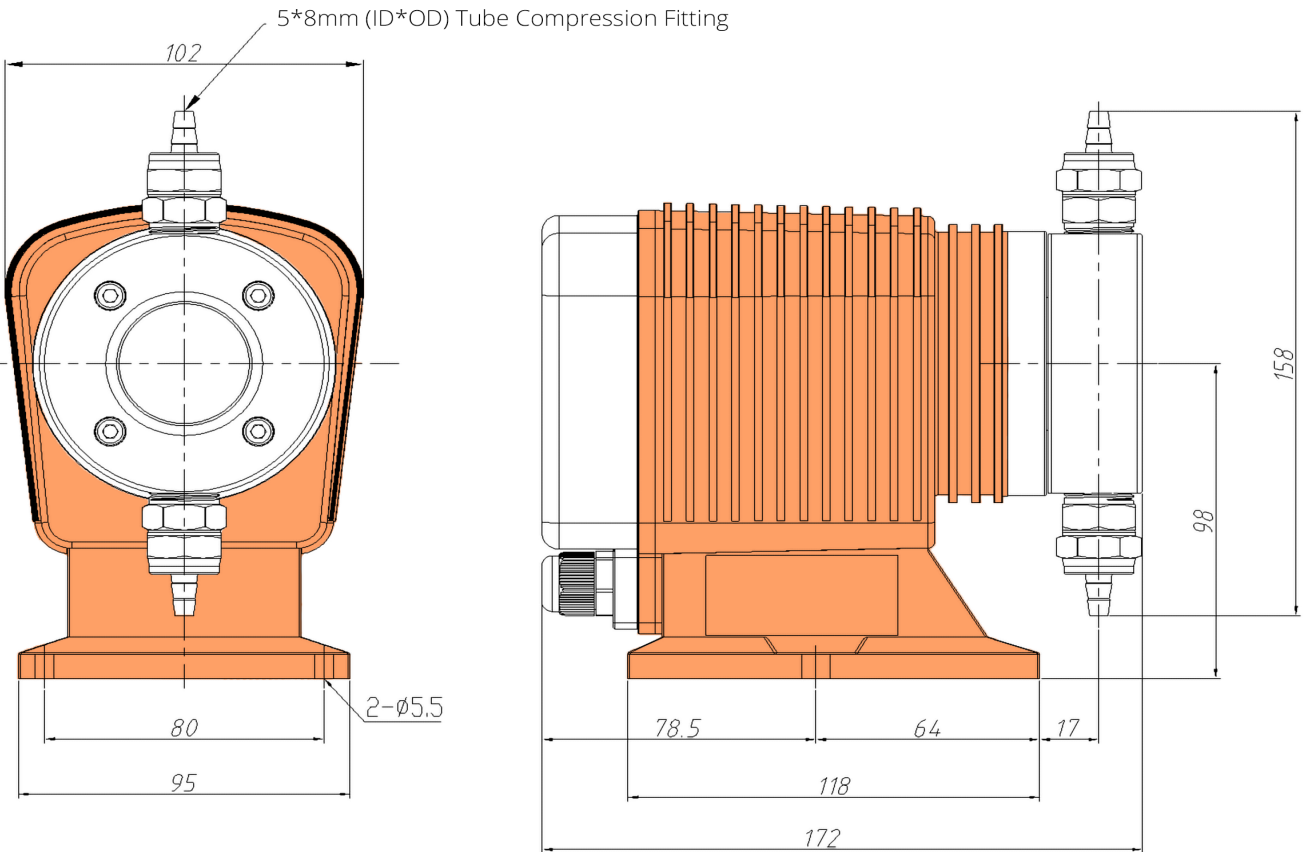
Typical 1+1 dosing station. Consist of one tank and one solenoid driven dosing pump.

1. Dosing Pump
2. Tank
3. Base Plate
4. Mixer
5. Level Sensor
6. Injection Valve
7. Foot Valve
8. Overflow
9. Drain

**PVC & PVDF PUMP HEAD DIMENSION**



**SS316L PUMP HEAD DIMENSION**





# WRS

Local Representative:

Main Office:  
WRS PTE LTD  
60 Paya Lebar Road, #11-37 Paya Lebar Square, Singapore 409051

Factory:  
ZHEJIANG WRS MACHINERY EQUIPMENT CO., LTD  
501, Building 2 New World Wealth Center, 108 Shixin North Rd, Xiaoshan District, Hangzhou City, Zhejiang Province, China

Website: <https://www.wrsdosing.com>

ISO9001:2015  
ISO14001:2015  
ISO45001:2018



LL-C  
Certification

