

# iSTEP STEPPER MOTOR PUMP



# STEPPER MOTOR PUMP FOR DEMANDING METERING REQUIREMENTS

## iSTEP - THE STEPPER MOTOR PUMP

The new iSTEP stepper motor pump by **sera** combines an intelligent drive concept with the accuracy of a diaphragm dosing pump and sets standards with regard to reproducibility and reliability. By means of the variable frequency control and a power range of 0.02..50 l/h at 10..3bar, the application possibilities are almost unlimited. It is intuitive to use, long lasting and is particularly suitable for demanding dosing tasks.

### SCOPE OF APPLICATION

- Chlorine dosing for the treatment of drinking water
- Flocculating agent dosing in wastewater treatment
- Dosing of flocculant aids
- CIP Use

### INPUTS & OUTPUTS

- 3 inputs programmable as
  - 3x digital inputs
  - 2x analogue inputs 0/4...20mA
- 2 digital outputs
- 1 analogue output for 0/4...20mA signal
- All inputs and outputs can be freely parameterised

### OVERVIEW OF ADVANTAGES

- Extremely high performance range with only one pump
- Adjustment range 1:1000, thereby optimally adaptable
- Low-pulsation dosing
- Microprocessor-controlled drive
- Remote execution
- Energy-efficient drive technology (annual energy costs below 100 euro)
- Batch dispensing with recipe storage
- Intuitive menu guidance, including parameterisation
- Pulse transformation and reduction
- Weekday/timer functions with 10 storage spaces
- Low chemical consumption due to high dosing accuracy
- Slow mode operation for viscous media



# ADDITIONAL FEATURES



## EASY PARADOSING OF SEVERAL PUMPS BY MEANS OF REMOVABLE CONTROL ELEMENT

The iSTEP is operated via the detachable control element by means of keys and a click-wheel. It ensures the rapid commissioning of several pumps with the same function. The parameterisation of an iSTEP is saved in the control element. Subsequently, the control element can be connected to other pumps and the stored parameters can be transferred. Operation without a control element is also possible, since there is also an additional status LED as well as a start/stop button directly on the pump.

## PROFIBUS- / PROFINET-INTERFACE MODULE (OPTIONAL)

The control electronics of the iSTEP can be expanded by interface modules for PROFIBUS or PROFINET networks.

The PROFIBUS INTERFACE MODULE has a level input and two connections, with which the iSTEP can be directly integrated into a bus system. The connection / termination directly on the module. Additional distributors are not required.

The PROFINET INTERFACE MODULE offers the possibility of integrating the dosing pump into a ProfiNet network. With two ProfiNet connections, it can be integrated in both ring and tree structures.



## OPERATING CONDITION DISPLAY THROUGH COLOUR CHANGE

The status of the iSTEP (ready, active, warning, error message) is indicated by a colour change in the display and is thus instantly recognisable. Messages are displayed on the graphic display in plain text and in several languages. The pump comes equipped with a diaphragm monitoring system as standard. Service recommendations are also displayed, thus minimising downtimes.

# ADDITIONAL FEATURES

## APPLICABLE INTERNATIONALLY

The CE and TR certifications are proof of the safe use of the iSTEP in all relevant markets. Individual power plugs (voltage range 100-240V) ensure smooth operation anywhere in the world, and the display is available with nine menu languages (de, en, es, fr, nl, cz, fi, tr, sv), enabling intuitive operation internationally.



STANDARD



OPTIONAL



OPTIONAL



OPTIONAL

## STANDARD AND SLOW MODE OPERATION

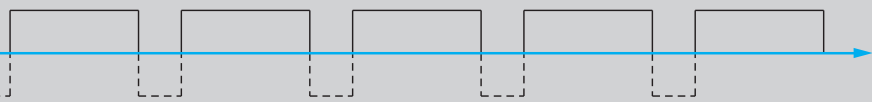
The iSTEP allows different speeds of suction and pressure stroke depending on the desired flow amount and suction height. This results in a constant flow rate and, thereby, a gentle and low-pulsation dosing. When transporting viscous media, a slow mode function (in contrast to standard operation) enables a reduction of the maximum suction speed.

### STANDARD OPERATION

Amount transported  
100%



Amount transported  
50%



Amount transported  
20%



### SLOW MODE OPERATION FOR VISCOUS MEDIA

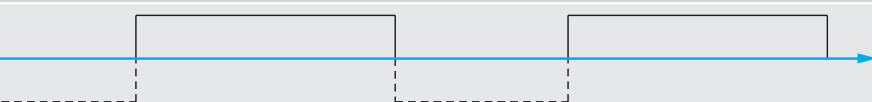
Amount transported  
20%  
Slow mode  
75%



Amount transported  
20%  
Slow mode  
50%



Amount transported  
20%  
Slow mode  
25%



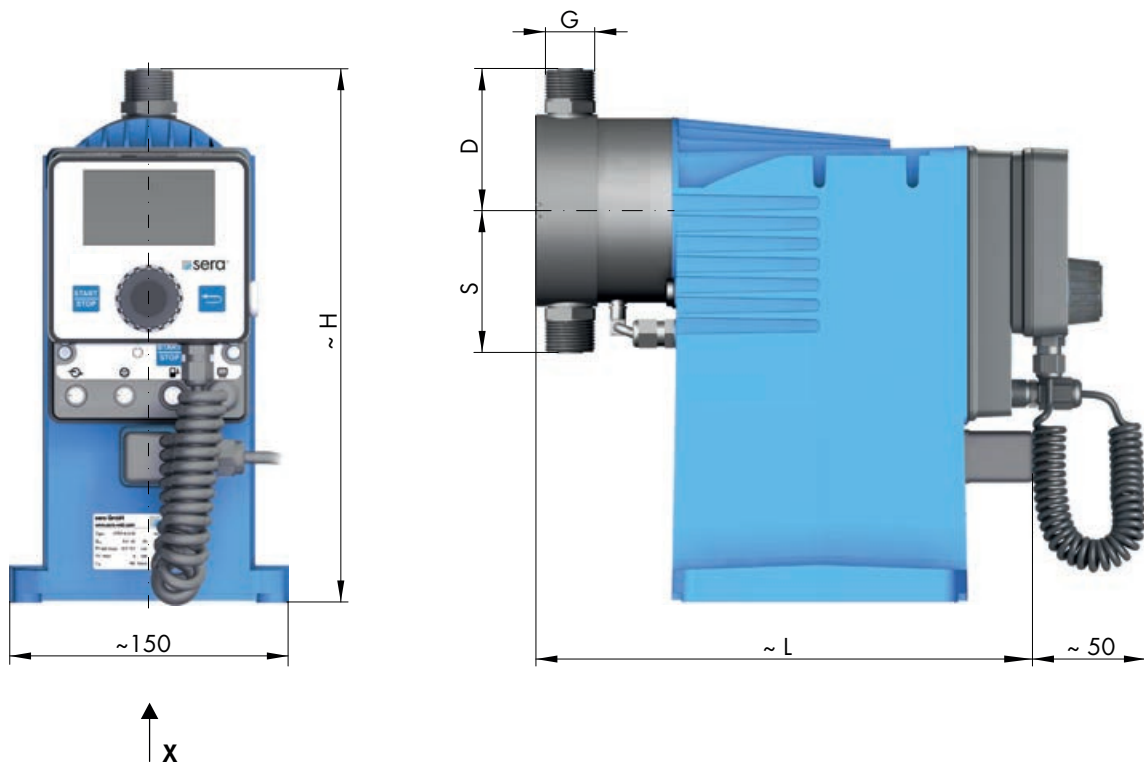
————— Pressure stroke      —————> Time      - - - - - Suction stroke

# TECHNICAL DATA

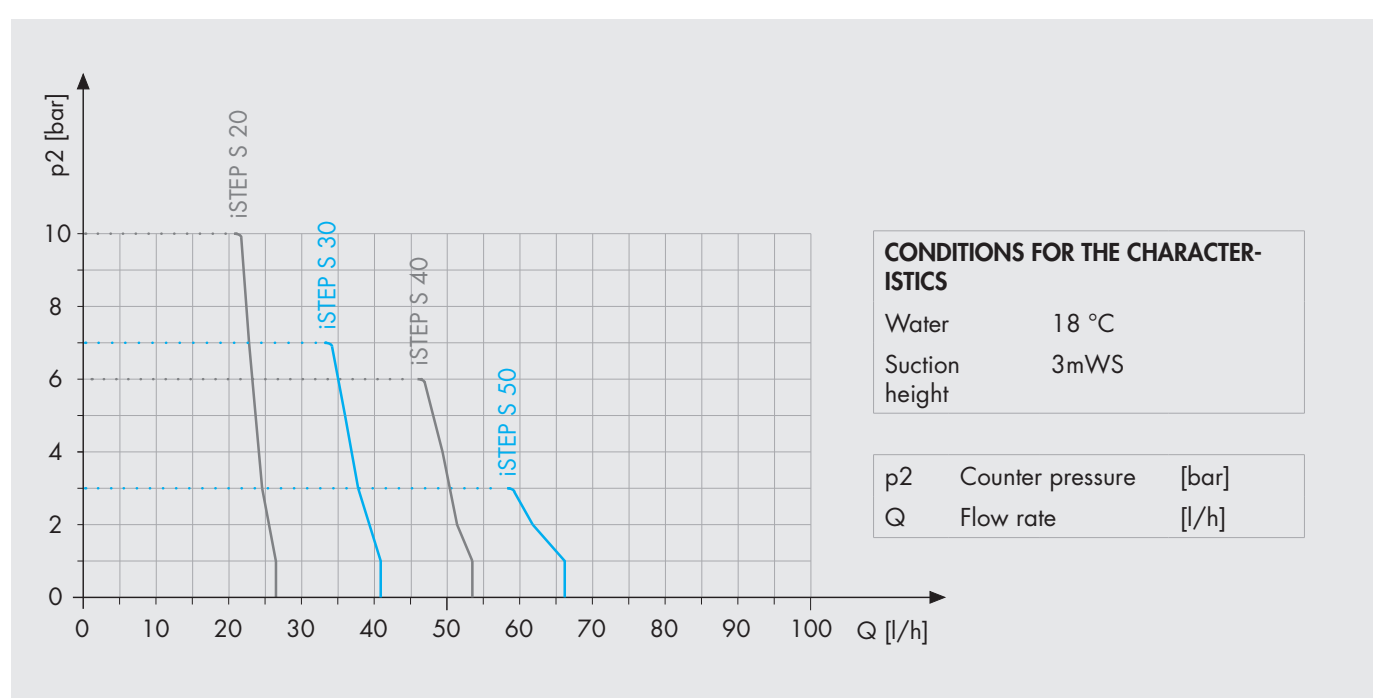
PUMP DATA			iSTEP S 20	iSTEP S 30	iSTEP S 40	iSTEP S 50
Permissible pressure p <sub>2max</sub> . at the pump outlet	bar		10	7	6	3
Nominal capacity Q <sub>N</sub> at p <sub>2</sub> max.	l/h	50/60 Hz	20	30	40	50
Capacity min. (1:1000)	l/h	50/60 Hz	0,02	0,03	0,04	0,05
Capacity min. (1:100)*	l/h	50/60 Hz	0,2	0,3	0,4	0,5
Quantity per stroke	ml/stroke	(100%)	1,75	3,33	3,51	4,39
Max. suction height	mWC		3	3	3	3
Min./max. permissible pressure at the pump inlet	bar	p <sub>1min/max</sub>	-0,3/0,5	-0,3/0,5	-0,3/0,5	-0,3/0,5
Recommended nominal diameter DN of the connecting pipes	mm		5	5	5	8
Nominal stroke frequency	1/min	50/60 Hz	190	150	190	190
Weight approx.	kg	plastic	7,3	7,3	7,3	7,4
		stainless steel	7,9	8,5	8,5	8,7
		stainless steel (CIP)	9,0	11,7	11,7	11,8

ELECTRICAL DATA		iSTEP S...
Power consumption	W	75
Voltage	V	110 - 240 AC
Frequency	Hz	50/60
Insulation class	ISO	F
Recommended fuse	(circuit breaker)	C10A
Enclosure		IP65
Certifications		CE, TR

# MEASUREMENT



# CHARACTERISTICS



# MEASUREMENT TABLE

SUCTION VALVES		iSTEP S 20	iSTEP S 30	iSTEP S 40	iSTEP S 50	
<b>DN</b>	Nominal weight	5	5	5	8	
<b>G</b>	Connection thread	PVC, PP-/PVDF-FRP, 1.4571	G3/4	G3/4	G3/4	
<b>G</b>	Connection thread	1.4435	Rd28x1/8"	Rd28x1/8"	Rd28x1/8"	
<b>S</b>	Double valves	PVC	65	72	75,1	
<b>S</b>	Double valves	PP-/PVDF-FRP	56,6	69,6	76,1	
<b>S</b>	Double valves	1.4571	65	72	75,5	
<b>S</b>	Double valves	1.4435	122,5	122,5	122,5	
PRESSURE VALVES						
<b>DN</b>	Nominal weight		5	5	8	
<b>G</b>	Connection thread	PVC, PP-/PVDF-FRP, 1.4571	G3/4	G3/4	G3/4	
<b>G</b>	Connection thread	1.4435	Rd28x1/8"	Rd28x1/8"	Rd28x1/8"	
<b>D</b>	Double valves	PVC	65	72	75,1	
<b>D</b>	Double valves	PP-/PVDF-FRP	64,6	69,6	76,1	
<b>D</b>	Double valves	1.4571	65	72	75,5	
<b>D</b>	Double valves	1.4435	122,5	122,5	122,5	
TOTAL HEIGHT						
<b>H</b>		PVC	275	282	282	285
<b>H</b>		PP-/PVDF-FRP	275	280	280	286
<b>H</b>		1.4571	275	282	282	286
<b>H</b>		1.4435	333	333	333	333
TOTAL LENGTH						
<b>L</b>		PVC	270	275	275	275
<b>L</b>		PP-/PVDF-FRP	270	270	270	270
<b>L</b>		1.4571	270	275	275	275
<b>L</b>		1.4435	295	295	295	295

(Dimensions in mm)

