

SYMAX

Spetec Syringe Pump



The Spetec syringe pump is used for metering fluids in the microliter and nanoliter range. Its core components consist of the stepper motor drive, high-precision carriage, adjustable syringe holder, and replaceable syringe. Thanks to the high resolution of 25,600 steps per revolution, individual steps during the movement sequence are barely perceptible.

With the built-in universal holder, plastic syringes with volumes of up to 50 ml or precision glass syringes with volumes of up to 25 ml can be used. The smallest volume that can be delivered on each individual pulse when standard syringes are used is 0,004 nl. Depending on the size and diameter of the employed syringe, the total amount delivered per minute can be adjusted between 0,5 nl and 44 ml per minute.

Features

- **Unrestricted choice of syringes thanks to adjustable syringe holder**
- **Gearless stepper motor drive**
- **Control via PC software by default**
- **Individual control of multiple pumps**
- **USB-RS485 interface**
- **LED status display**

Applications

- **Metering of microvolumes**
- **Long-term trials**
- **Extremely high-precision filling of fluids**

	Order number
Symax with evaluation kit	10-0102
• Symax syringe pump with adjustable syringe holder	
• Electrical connection kit	
• Operating instructions and software	
• USB interface	
• Power supply	
• USB cable	
• 5 ml PP syringe	

	Order number
Symax without evaluation kit	10-0103
• Symax syringe pump with adjustable syringe holder	
• Usable as additional channel	
• 5 ml PP syringe	



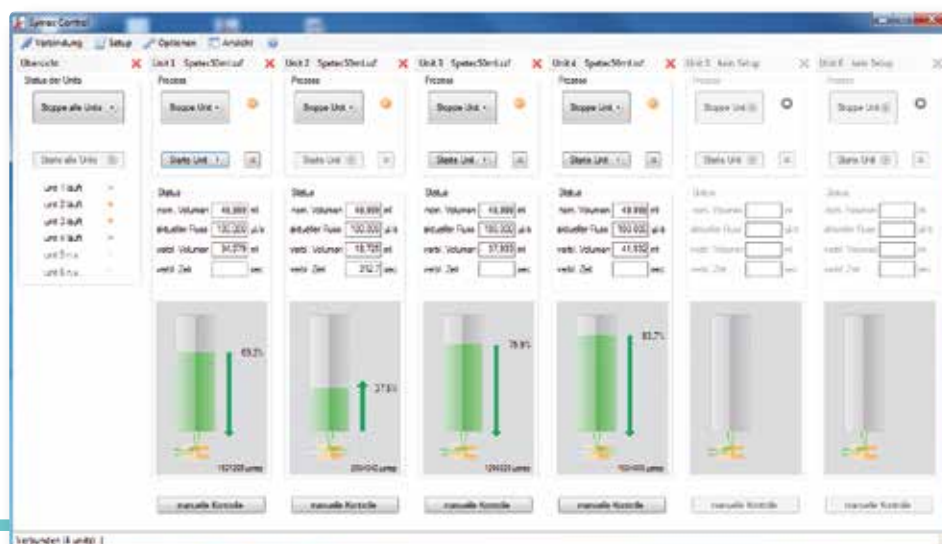
Technical Data SYMAX

Mechanical Data	
Dimensions LxWxH (without syringe holder)	270 x 95 x 85 (mm)
Weight	2.100 g
Maximum stroke	91,5 mm
Minimum feed rate	0,248 nm/s
Maximum feed rate	1,24 mm/s
Smallest step resolution	24,8 nl of feed
Accuracy	+/- 2%
Reproducibility	+/- 2%
Transverse force	100N at 0.0254 mm/s
Extendable	Up to six individually control- lable channels per group; two groups can be operated from one PC
Main materials	Anodized aluminum Powder- coated stainless steel fluoro- rubber (support for syringes)
Adjustable syringe holder	Permitted syringe diameters from 9 mm to 34 mm

Electrical Data	
Power supply	Input: 100 – 240 V / 50 – 60 Hz Output: 24 V / 2.5 A
Power consumption per pump	Standby current: 210 mA Operating current: 420 mA
Data interfaces	RS 485 / USB
Operating Conditions	
Temperature range	+10 to +40°C
Relative humidity	20 % to 80 %, non-condensing
Suitable media	Aqueous, acidic and alkaline media
Control option	
PC-Software Symax control	Standard application
Trigger control	Control with any trigger signals E.g. via SPS or foot switch (after software configuration)
RS 485 interface	Custom control via open protocol (DLL-data on request)








Control via Symax Control software

- Software can be stored as desired, individual setting options
- Operable via interface with any Windows computer with USB interface
- Up to 6 pumps can be operated and configured from the same user interface
- Individually configurable syringe set
- Adaptable configuration of solenoid valve
- GoTo mode for easy approach of individual volumes or % values
- AdHoc mode for quick implementation of individual movement sequences
- Setup mode for automated processes
- Manual control window for moving to the reference point and for manually moving the syringe to the desired positions (venting the syringe)
- Configuration of one-shot fluid delivery (absolute quantity)
- Specification of individual flows for metering and filling operations
- Continuous metering during a specified period (continuous flow)
- Automatic repeat cycle with individually defined rest time and repetition rate settings
- Display of syringe volume and remaining volume
- Feedback signal on termination of metering
- Metering via trigger signal or foot switch
- Three trigger inputs after previous software configuration (start / stop / fill) and one output (pump running status)
- Languages: German, English
- Software and firmware updates via Internet



SYMAX Accessories

Order number

Plastic syringes		
• Material PP	10-0025 – 5,0ml	
• Connector Luer-Lock	10-0026 – 10,0ml	
• Other syringes available on individual request	10-0027 – 20,0ml	
	10-0028 – 50,0ml	
Glass syringes		
• Material syringe barrel glass	10-0015 – 1,0ml 10-0016 – 5,0ml 10-0017 – 10,0ml 10-0018 – 25,0ml	
• Material Syringe plunger PTFE silicone-lubricated		
• Connection tio 1/4 inch – 28 UNF Male		
• Connection piston 6 – 32 UNC Female		
• Other syringes available on individual request		
Electrical connection kit (is included in 10-0102)		
• Operating instructions and software	10-0060	
• USB interface		
• Power supply, input: 100 – 240V AC / 50 – 60Hz, output: 24V DC / 2.8A		
• USB cable		
3-way valve set		
• Software controlled 3-way solenoid valve for switching between filling and dosing curtains	10-0080	
• Mounting block to bolt the valve to the pump		
• PEEK base unit with 1/4 – 28UNF thread connections, optimally used together with Teflon tubing set		
• Equipped with 1/8" tubing connector as standard		
Foot switch		
• Connection to pump's trigger input (closing contact)	10-0050	
• When the pump has been configured at the PC, it can be operated using a start trigger		
Connecting cable, 1m		
• Cable used to connect two Symax pumps that are not mechanically coupled but are located at a distance of up to 1 m from one another.	10-0061	
• Cable end 1: Sub-D Female		
• Cable end 2: Sub-D Male		
OEM network cable, 2m		
• Cable for connection to user's own power supply (24V / 2.8A) and interface	10-0062	
• The pump can be operated without the electrical connection kit at the user's own RS485 interface		
• The trigger signals can also be introduced		
• Cable end 1: Sub-D Female		
• Cable end 2: non-terminated cable for custom wiring		
OEM trigger cable, 2m		
• Cable for connection to user's own controller via trigger signals (3 closing contacts: meter/fill/stop; 1 output: pump operating)	10-0063	
• Cable end 1: Sub-D Male		
• Cable end 2: non-terminated cable for custom wiring		

Notes