Air Driven OEM 8-Channel Pipettor SCP 8

Model PCNC-0090-00

Seyonic Pipetting Technology :

Seyonic's Sensor Controlled Pipetting technology allows very precise monitoring of the liquid handling process. It thus provides not only accurate volume control but also detects pipetting errors in real time. Therefore every pipetting operation can effectively be validated as it is going on. The Process Control Diagnostics allow detection of partial or complete air aspiration while calculating the actually aspirated sample volume. In case of tip clogging, operation is halted immediately to permit the best possibility for recovery. Process Control Diagnostics are based on analysis of changes in pipetting flow. It is therefore largely independent of the volume or pipetting speed and does not need to establish guide band reference curves for every possible specific pipetting operation.

Features :

Wide dynamic range: 0.5 µL to 1 mL

Reporting and validation for all actions on all channels

High precision

Individual channel control

Independent mix capability

Independent Liquid Level Detection (LLD) on each channel

Tip Clogging Detection (TCD)

9 mm tip spacing

Electrical tip ejection with tip presence sensors

Applications :

General liquid handling

Clinical diagnostics

High throughput screening

Product Summary:

The Air-driven OEM 8-Channel Pipetting Head with integrated flow sensor is suited for liquid handling in microliter to milliliter volume range.

This product has been designed to fit a wide range of applications where action validation and process surveillance is required. The use of a dedicated MEMS flow sensor at the pipetting site allows complete validation of aspiration and dispense actions in real time, as well as providing clogging detection and other process monitoring information.

The Pipettor operates with a pressure/vacuum source, typically in the range of ± 200 mbar gauge for aspiration/dispense pressure. The pressure controller further acts as System Controller by providing a single port access from the host computer. Integrated high level coordination between the pressure source and the pipetting unit allows an efficient and rapid integration of the unit onto our customer's automated platforms.
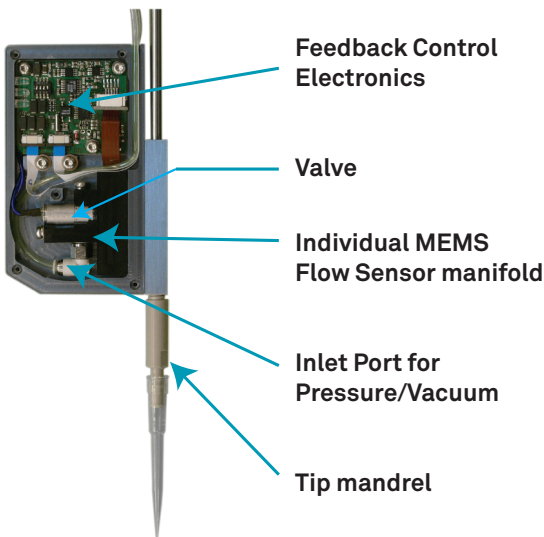
Air Driven OEM 8-Channel Pipettor SCP 8
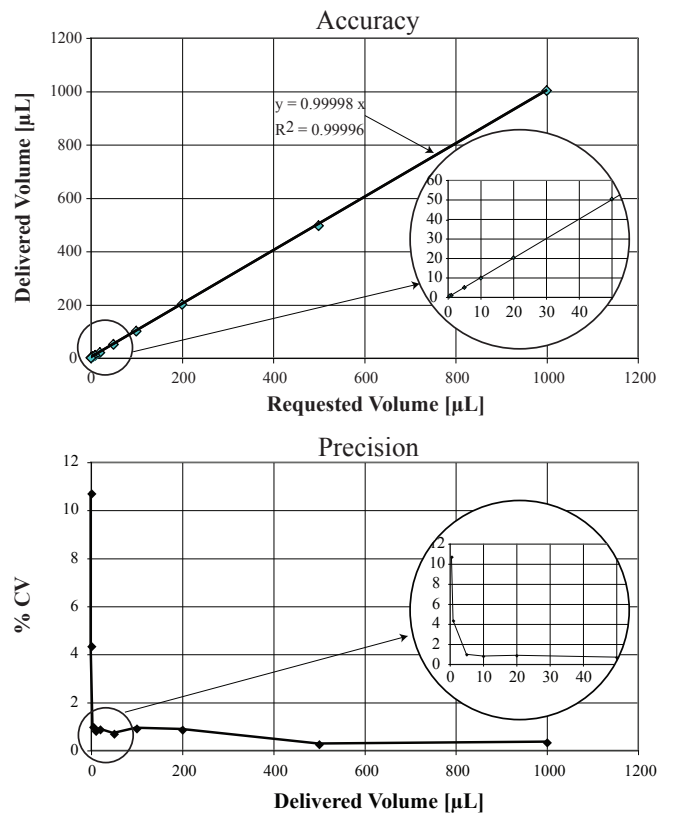
Model PCNC-0090-00

Operating Principle :

Aspiration and dispense of the liquid sample is driven by vacuum and positive pressure.

A common inlet port provides aspiration/dispense pressure to all channels. In each channel, a solenoid valve is coupled to a silicon MEMS flow sensor that controls the pipetted volume and allows precise tracking of the operation of the channel.

Feedback Control Electronics

Valve

Individual MEMS Flow Sensor manifold

Inlet Port for Pressure/Vacuum

Tip mandrel

The Flow sensor and the control electronics provide precise Liquid Level Detection (LLD) on a per channel basis. The LLD signal can be read via a hardware line. Triggering of pipetting actions can be driven via a hardware line, in addition to being operable via software command on the serial line. A wide range of applications can thus be rapidly implemented.

Accuracy

$y = 0.99998\,x$
$R^2 = 0.99996$

(graph: Requested Volume [µL] vs Delivered Volume [µL])

Precision

(graph: Delivered Volume [µL] vs % CV)

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Specifications:

Operating temperature
10 to 40 °C

Volume range[1]
aspirate/dispense
0.5 µL to 1 mL

Precision and accuracy data [2]
Precision
1 µL   < 5 % CV
5 µL   < 2 % CV
> 20 µL   < 1 % CV

Accuracy
1 µL   < 10 %
5 µL   < 2 %
> 20 µL   < 1 %
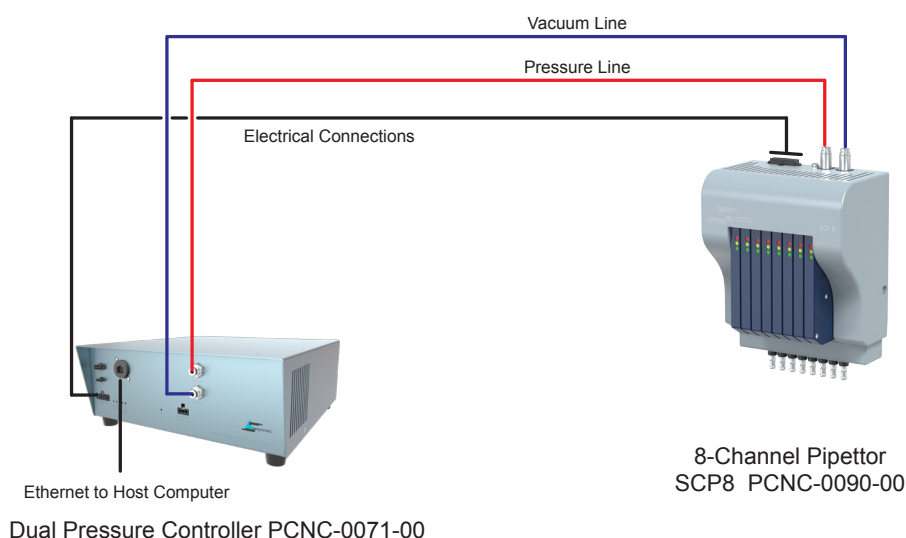
Typical Dispensing speed:
20 to 600 µL/s

Power requirements
24V / 60W, includes Pressure Controller PCNC-0071-00

Communication
TCP/IP

Weight
1.2 kg

Accessories
Dual Pressure/Vacuum Source
PCNC-0071-00
see separate datasheet

[1] Max aspiration volume depends on internal tip volume.   [2] Test protocol and conditions available upon request.

Vacuum Line
Pressure Line
Electrical Connections
Ethernet to Host Computer
Dual Pressure Controller PCNC-0071-00
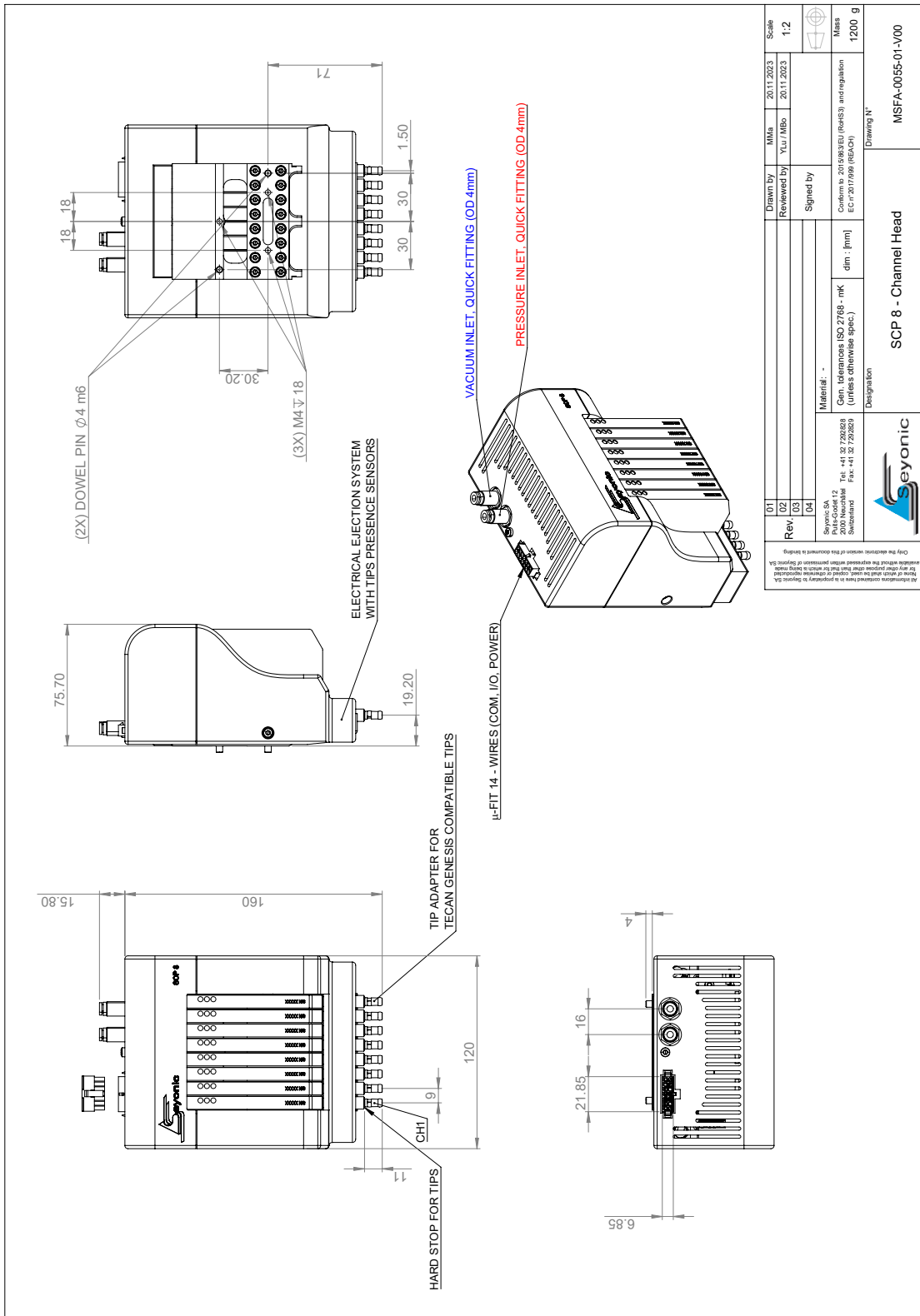8-Channel Pipettor
SCP8 PCNC-0090-00

Product Code	Description
PCNC-0083-75	• Starter-kit: Pipetting head SCP8 with Pressure Vacuum Controller, tubing and cables • User manual, protocol and command set description • Compiled stand-alone User Interface Software and Software API for User Application Development

Air Driven OEM
8-Channel Pipettor SCP 8

Model PCNC-0090-00

VACUUM INLET, QUICK FITTING (OD 4mm)

PRESSURE INLET, QUICK FITTING (OD 4mm)

(2X) DOWEL PIN ⌀4 m6

(3X) M4 ⊽ 18

ELECTRICAL EJECTION SYSTEM WITH TIPS PRESENCE SENSORS

µ-FIT 14 - WIRES (COM, I/O, POWER)

TIP ADAPTER FOR TECAN GENESIS COMPATIBLE TIPS

HARD STOP FOR TIPS

CH1

Mechanical Drawing

Customized integration and solutions on request.

Drawn by	MMla	20.11.2023	Scale	1:2
Reviewed by	YLu / MBo	20.11.2023		
Signed by			Mass	1200 g

Conform to 2015/863/EU (RoHS3) and regulation EC n°2017/699 (REACH)

Drawing N° MSFA-0055-01-V00

SCP 8 - Channel Head

dim : [mm]

Material: -

Gen. tolerances ISO 2768 - mK (unless otherwise spec.)

Designation

Rev.		
01		
02		
03		
04		

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