

# Air Driven OEM 8-Channel Pipettor SCP 8

Model PCNC-0090-xx

## 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.

PCNC-0090-00 : each channel can aspirate or dispense independently from others

PCNC-0090-10 : all channels aspirate or dispense at the same time



## Features :

- Wide dynamic range: 1  $\mu$ L to 5 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  $\pm 200$  to  $\pm 500$  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.

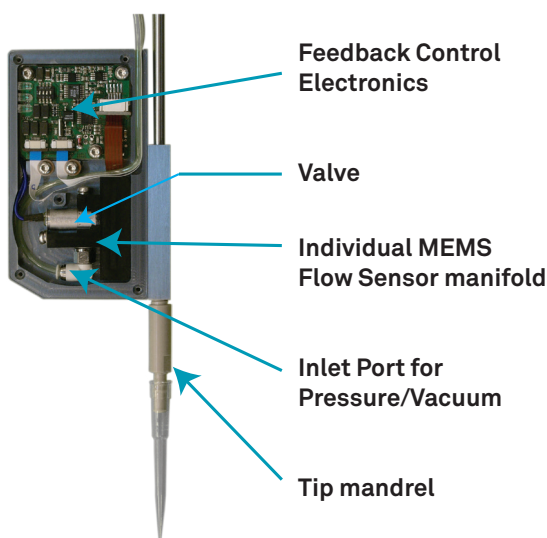
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## Operating Principle :

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

An inlet port provides aspiration/dispense pressure to the channel. 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.

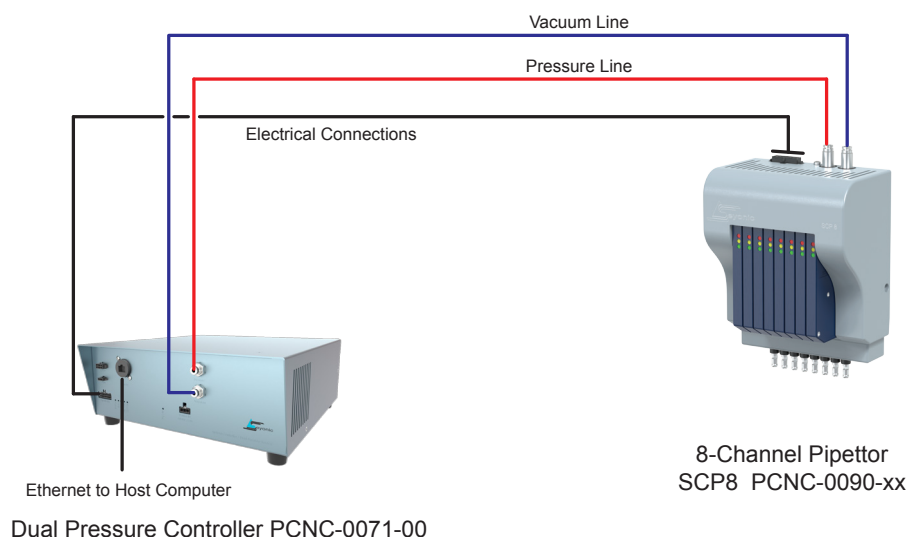


The Flow sensor and the control electronics provide precise Liquid Level Detection (LLD) on a per channel basis. The LLD signal can be read via a hardware line. Triggering of pipetting actions can be driven via a hardware line, in addition to being operable via software command on the serial line. A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

Within the SCP 8 pipetting module variant -00, the pressure or vacuum is fed individually, allowing each channel to aspirate or dispense independently from others. This feature allows for fast mixing and well controlled multi-dispense.

The more cost effective, variant -10 provides vacuum or pressure to all channels at the same time.

## System Architecture :



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## Specifications :

Operating temperature  
10 to 40 °C

Volume range[1]  
aspirate/dispense  
1 µL to 5 mL

Precision and accuracy data [2]

Precision

1 - 5 µL < 5 % CV  
6 - 20 µL < 2 % CV  
21 µL - 5 mL < 1 % CV

Accuracy

1 - 5 µL < 10 %  
6 - 20 µL < 2 %  
21 µL - 5 mL < 1 %

Typical speed [3]

Aspirate 20 to 1,000 µL/s [4]  
Dispense 20 to 1,800 µL/s [5]

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

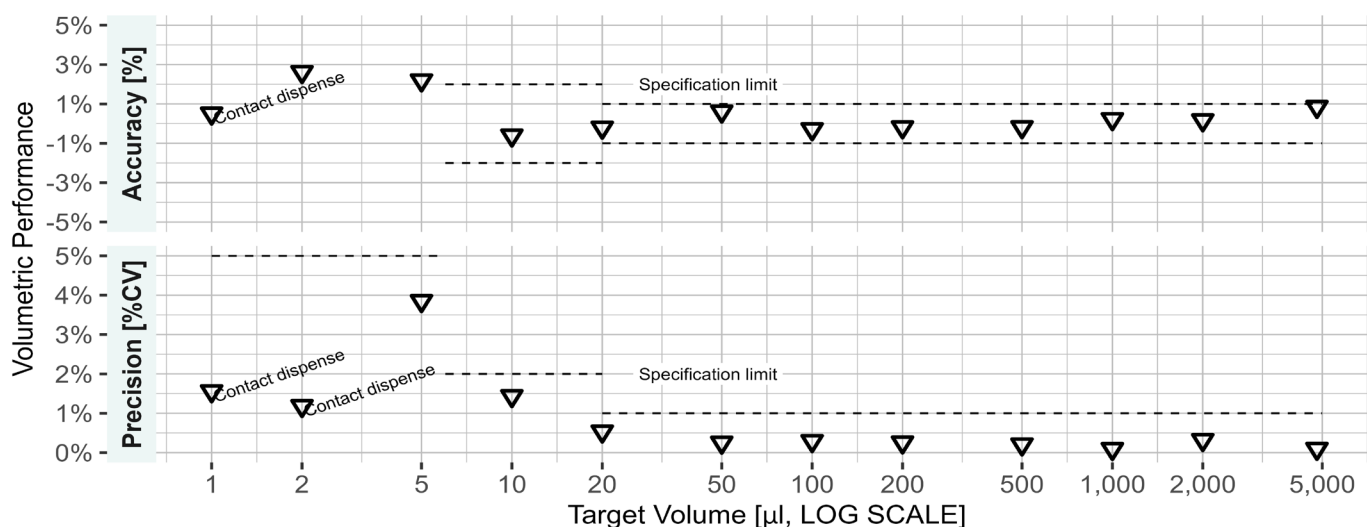
[1] Max aspiration volume depends on internal tip volume.

[2] Test protocol and conditions available upon request.

[3] Tested with water based solutions

[4] PCNC-0090-00 : 20 to 600 µL/s ; PCNC-0090-10 : 40 to 1,000 µL/s

[5] PCNC-0090-00 ; 20 to 800 µL/s ; PCNC-0090-10 : 40 to 1,800 µL/s



### Product Code

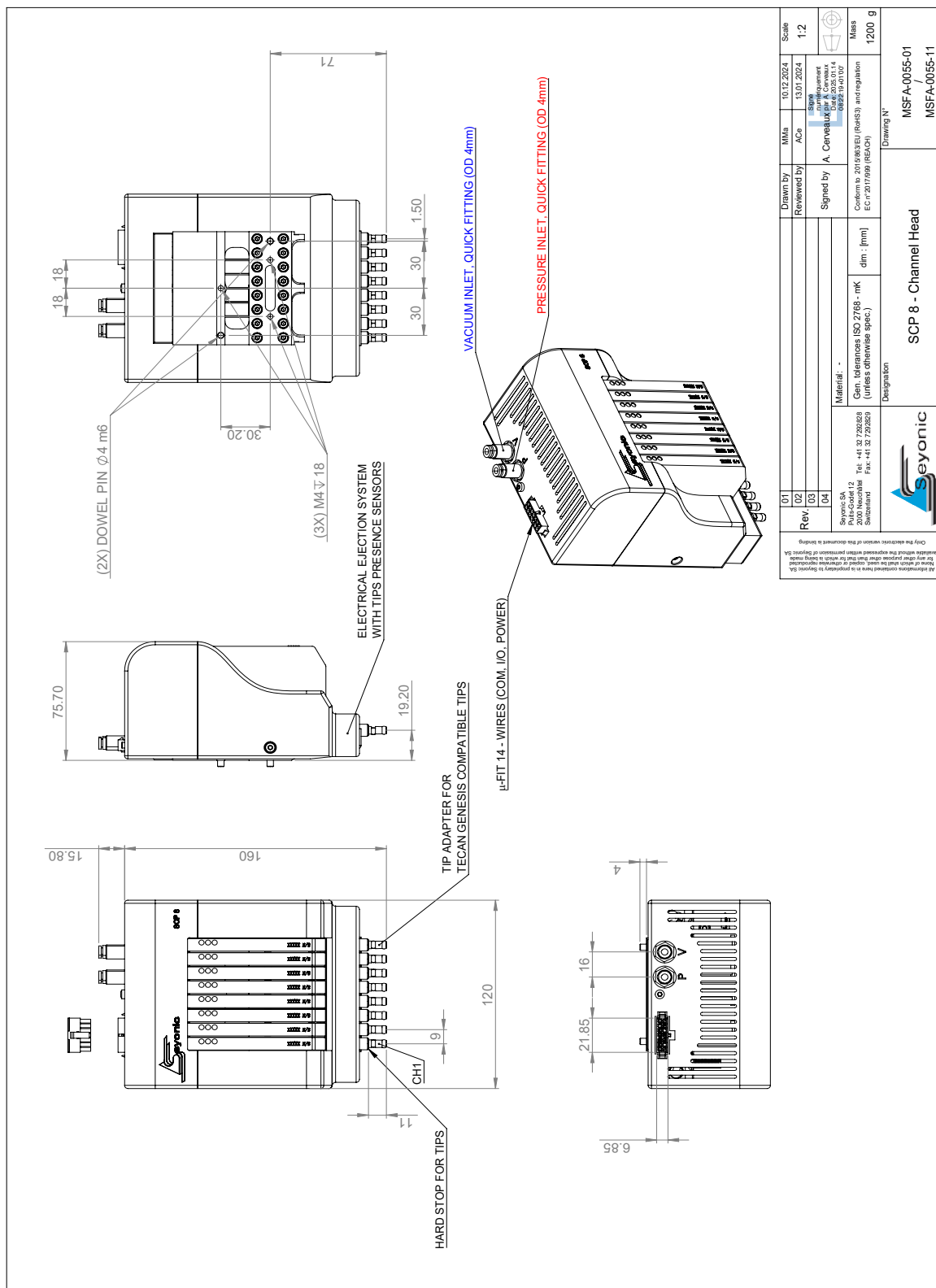
PCNC-0083-75 with  
PCNC-0055-00

### Description

- 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

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## Mechanical Drawing

Customized integration and solutions on request.