

## Instruction and operation manual

# Measuring chamber

## A699 3491/3493/3301



Dear Customer,

Thank you for choosing our product.

The operating instructions must be read in full and carefully observed before starting up the device. The manufacturer cannot be held liable for any damage which occurs as a result of non-observance or non-compliance with this manual.

Should the device be tampered with in any manner other than a procedure which is described and specified in the manual, the warranty is cancelled and the manufacturer is exempt from liability.

The device is destined exclusively for the described application.

SUTO offers no guarantee for the suitability for any other purpose. SUTO is also not liable for consequential damage resulting from the delivery, capability or use of this device.

Revision: 2024-2



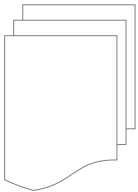
Last modifications: Mai, 2024

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## 1 Safety instructions



**Please check if this instruction manual matches with the product type.**

Please observe all notes and instructions indicated in this manual. It contains essential information which have to be observed before and during installation, operation and maintenance. Therefore this instruction manual has to be read carefully by the technician as well as by the responsible user / qualified personnel.

This instruction manual has to be available at the operation site of the device at any time. In case of any obscurities or questions, regarding this manual or the product, please contact the manufacturer.



### **WARNING!**

#### **Compressed air!**

**Any contact with quickly escaping air or bursting parts of the compressed air system can lead to serious injuries or even death!**

- Do not exceed the maximum permitted pressure range (see chamber label).
- Only use pressure tight installation material.
- Avoid that persons get hit escaping air or bursting parts of the instrument.
- The system must be pressureless during maintenance work.



### **WARNING!**

#### **Permitted operating parameters!**

**Observe the permitted operating parameters, any operation exceeding this parameters can lead to malfunctions and may lead to damage on the instrument or the system.**

- Do not exceed the permitted operating parameters.
- Make sure the product is operated in its permitted limitations.
- Do not exceed or undercut the permitted storage and operation temperature and pressure.
- The product should be maintained frequently, at least annually.

## General safety instructions

- It is not allowed to use the product in explosive areas.
- Please observe the national regulations before/during installation and operation.

## Remarks

- It is not allowed to disassemble the product.
- Always use spanner to mount the product properly.



### **ATTENTION!**

**Measurement values can be affected by malfunction!**

**The product must be installed properly and frequently maintained, otherwise it may lead to wrong measurement values, which can lead to wrong results.**

## Storage and transportation

- Make sure that the transportation temperature of the device is between  $-30 \dots +70^{\circ}\text{C}$ .
- For transportation it is recommended to use the packaging which comes with the device.
- Please make sure that the storage temperature of the device is between  $-10 \dots +50^{\circ}\text{C}$ .
- Avoid direct UV and solar radiation during storage.
- For the storage the humidity has to be  $<90\%$ , no condensation.

## 2 Registered trademarks

SUTO® Registered trademark of SUTO iTEC

### 3 Application

The measuring chamber is designed to bypass the air and gases through the chamber to the measured instrument within the permissible operating parameters. These parameters can be found in section 5.

The measuring chamber is not developed to be used in explosive areas. For the use in explosive areas please contact the manufacturer.

The measuring chamber is mainly used in compressed air systems in industrial environment.

### 4 Features

- Easy installation through quick connector or thread connection.
- Convenient to all the dew point sensors of the manufacturer.
- Mounted to the dew point transmitter through the 1/2" G-type thread connection.

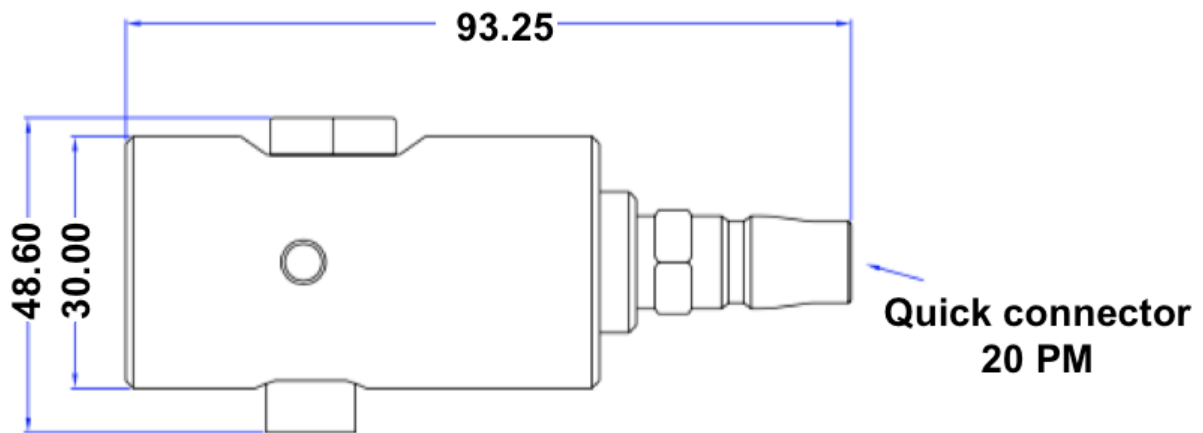
### 5 Technical data

CE	
Measuring medium	Air, gas (non corrosive gas)
Operating temperature	-20 ... +50°C
Humidity of the measuring medium	< 90%, no condensation
Operating pressure	0.3 ... 1.5 MPa(g) (A699 3491 / A699 3301) 0 ... 1.5 MPa(g) (A699 3493)
Housing material	Aluminium
Dimensions	See dimensional drawing on the page 7
Weight	150 g
Flow rate	In order to reach a fast response time please ensure a flow rate of 2... 5 l/min at the sensor tip. *

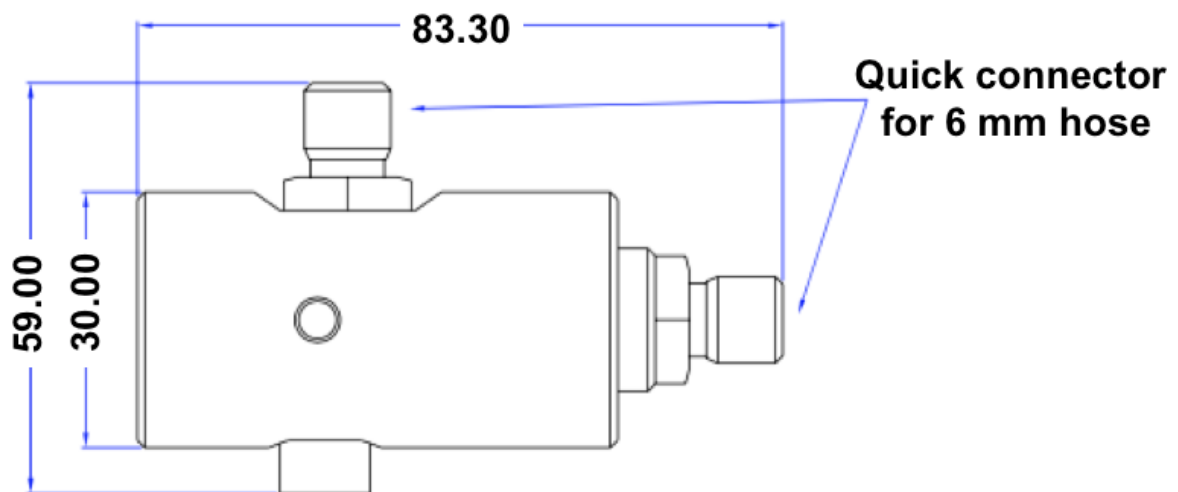
\* If the Measuring chamber A699 3491 or A699 3301 is used, this flow rate will be maintained by the chamber at a pressure > 0.3 MPa. The by-pass measuring chamber A699 3493 will not regulate the flow based on pressure, please ensure a flow rate of 2... 5 l/min in your system.

## 6 Dimensional drawing

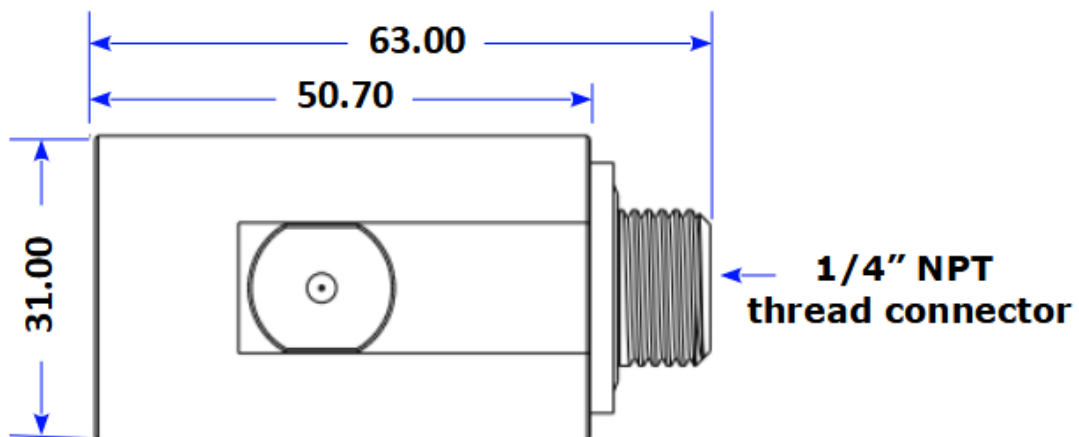
Model A699 3491



Model A699 3493



Model A699 3301



## 7 Installation

Please make sure that all components listed below are included in your package.

Qty	Description	Item No.
1	Measuring chamber	A699 3491/A699 3301 – 0.3 ... 1.5 MPa(g) A699 3493 – 0 ... 1.5 MPa(g)
1	Instruction manual	No P/N

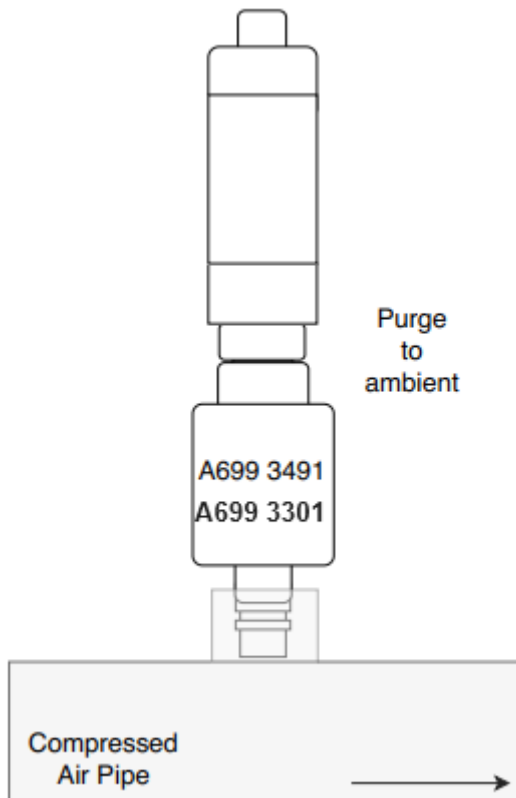
### 7.1 Installation requirements

The chamber is mounted to the dew point sensors through the 1/2" G-type thread connection. To connect the chamber with the compressed air system a quick connector on the system is needed.

### 7.2 Installation procedure

The following steps explain the procedure of an appropriate installation.

#### Installation of measuring chamber A699 3491/A699 3301



1. Mount the sensor on the measurement chamber by using the G1/2" connection.
2. Make sure the sensor is tightly sealed, therefore the sealing ring on the dew point sensor must be used.
3. Connect the measuring chamber to the compressed air system using a quick connector (A699 3491) or by using the 1/4" NPT thread (A699 3301). Make sure the dew point sensor is screwed on the chamber before connecting. The measurement chamber will create a purge flow.



**Installation with the by-pass measurement chamber A699 3493**

For the model A699 3493, there are two installation methods:

Method 1: Full pass through by-pass installation

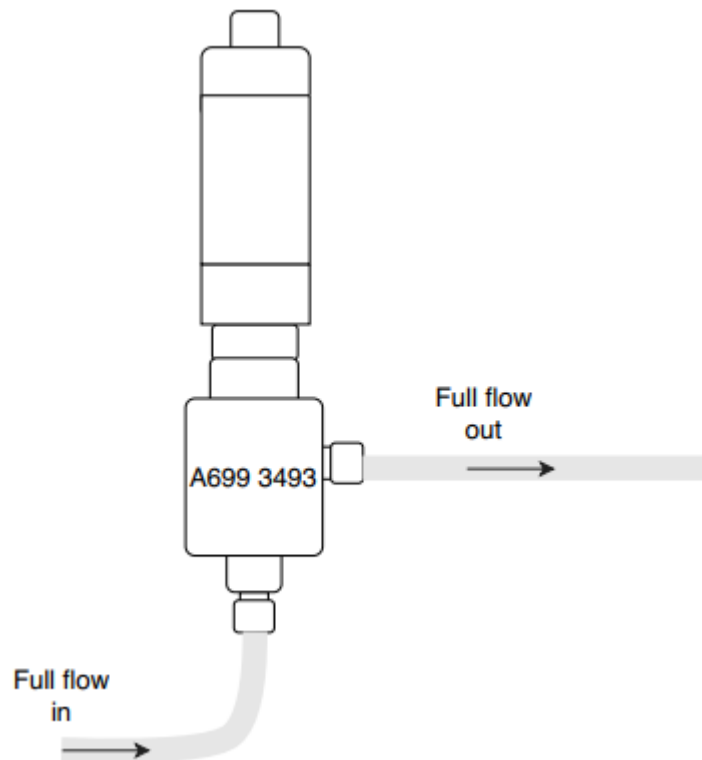
This method is to be used when the full air flow is passing through the measuring chamber.

1. Connect the inlet of the chamber using a 6 mm teflon hose to your system.

**Note:** The full flow must pass the measuring chamber. Ensure a certain flow rate to get fast response time.

2. Connect the outlet of the chamber to your system using the 6 mm hose quick connector.

See below figure for details.

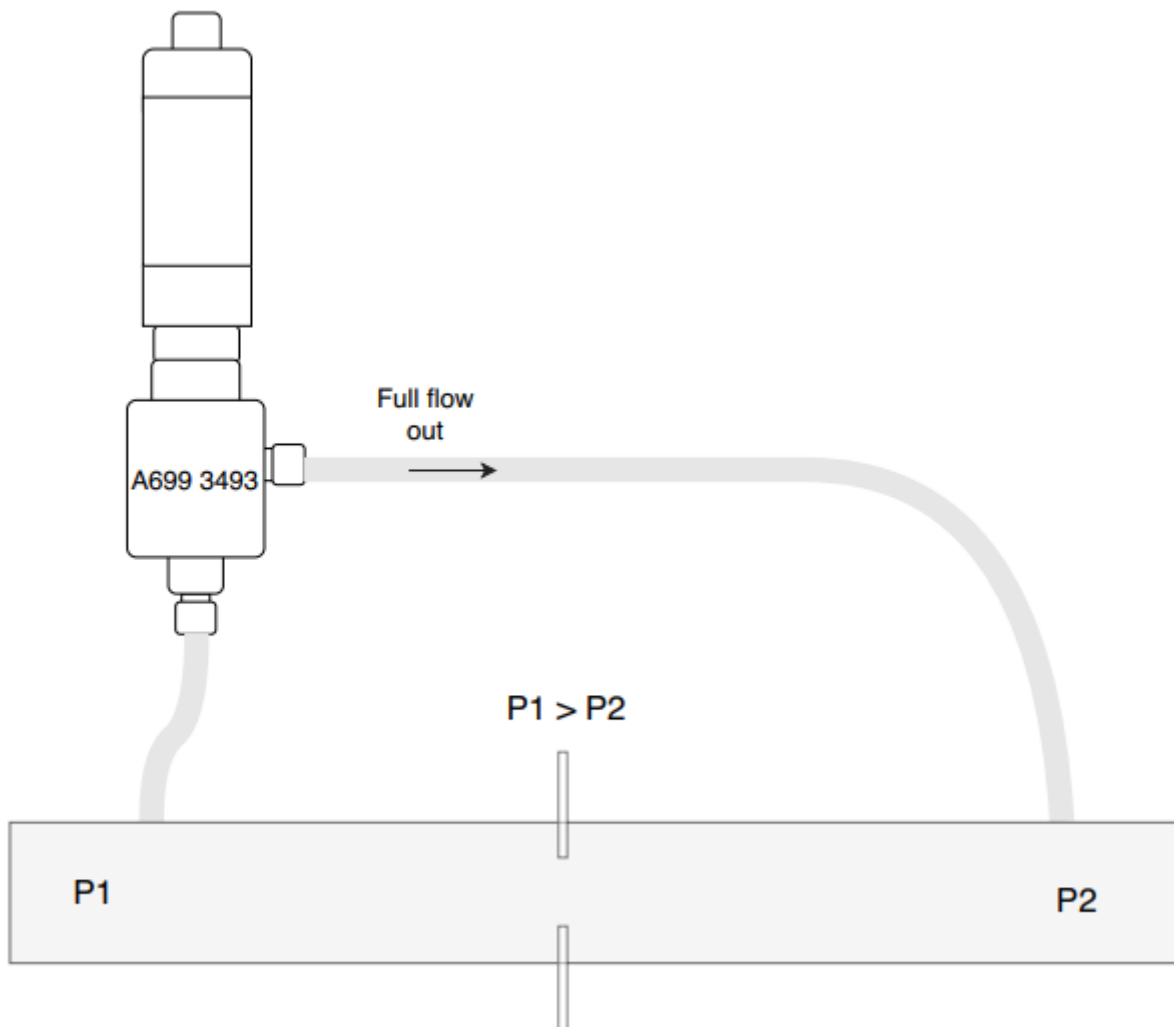


## Method 2: By-pass installation

**Note :** In order to use the measurement chamber in a by-pass you must ensure a pressure difference between P1 and P2 as indicated in the picture below.

1. Connect the inlet of the chamber to your pipe system.
2. Connect the outlet of the chamber to your pipe system where the pressure is known to be lower than the inlet pressure.

**Note :** The pressure difference  $P1 > P2$  is needed to create a by-pass flow through the chamber. If there is no pressure difference between P1 and P2, there will be no flow through the chamber and therefore the response time will be very slow or the sensor will not even respond at all to the dew point changes.



**Remark:** Ensure that the teflon hose remains dry and clean. Wet and contaminated hoses can effect the measurement and should be exchanged.

## Removal of measuring chamber

1. Disconnect the chamber through the quick connector.
2. Remove the teflon hoses if some was needed.



### **ATTENTION!**

**Do not install or uninstall the measuring chamber under pressure!**

**Remark:** There is also a mountable version available the model A699 3496. This model is recommended for dryer installation. Please contact the manufacturer for more information.

## 8 Maintenance

To clean the measuring chamber it is recommended to use distilled water or isopropyl alcohol only.

## 9 Disposal or waste



Electronic devices are recyclable material and do not belong in the household waste.

The sensor, the accessories and its packings must be disposed according to your local statutory requirements.

The dispose can also be carried by the manufacturer of the product, for this please contact the manufacturer.

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