

S421

Thermal Mass Flow Meter (Inline)

1 Introduction

This quick user guide contains all instructions and safety information for operating and using the S421 Thermal Mass Flow Meter.



This guide is intended for qualified personnel involved in the operation of the S421.

Make sure you have fully read and understood the instructions before using the S421.




For more information, scan the QR code to see the instruction manual.

Symbols conventions


Symbol	Description
	Warning! Explosions or sudden releases of compressed air may occur.
	Warning! Electricity. Take care to avoid coming into contact with electricity.

3 Delivered components


S421




M12 connector



Quick User Guide



Calibration Certificate



The additional components are included as per your order.

⚠ **WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

2 Safety instructions

⚠ **WARNING**

- Only authorized and qualified personnel are permitted to install the device.
- Never disassemble the device.
- Always use proper tools for the installation of the device.
- Do not exceed the maximum permitted pressure (see label on the device).
- Always use the proper power supply (see label on the device).
- Do not exceed the maximum operation temperature.
- Avoid direct UV and solar radiation during storage.
- Always keep the storage temperature of the device is between -10 ... +50°C.
- Always keep the storage humidity of the device < 90% rH with no condensation.

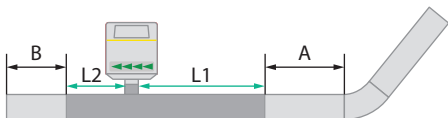
4 Calculate the additional straight pipe sections required

ATTENTION The S421 should always be installed upstream of obstacles such as valves, filters, and reductions. Generally, the device should be installed as far away as possible from any disturbances.

In the following figures:

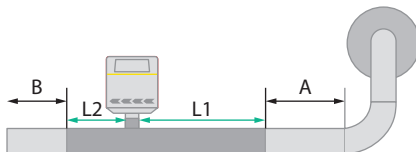
L1 = equipped inlet straight pipe section L2 = equipped outlet straight pipe section
 A = additional inlet straight pipe section B = additional outlet straight pipe section

1 Slight curve (bend < 90°)



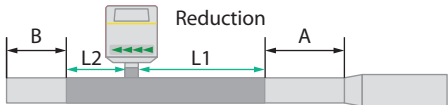
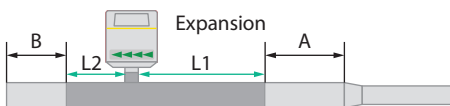
$A = 15 \times \text{Inner diameter} - L1$
 $B = 5 \times \text{Inner diameter} - L2$

2 Three dimensional bend

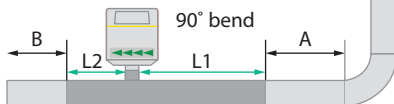


$A = 40 \times \text{Inner diameter} - L1$
 $B = 5 \times \text{Inner diameter} - L2$

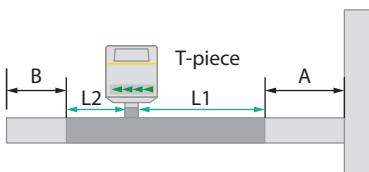
3 Expansion, reduction, and the 90° bend



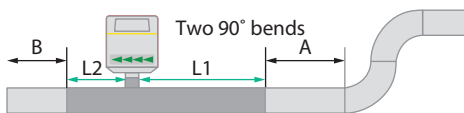
$A = 20 \times \text{Inner diameter} - L1$
 $B = 5 \times \text{Inner diameter} - L2$



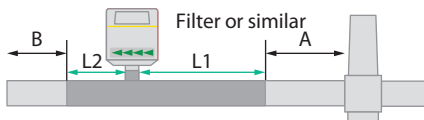
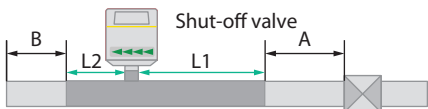
4 Two 90° bends and T-piece



$A = 25 \times \text{Inner diameter} - L1$
 $B = 5 \times \text{Inner diameter} - L2$



5 Shut-off valve and filter or similar

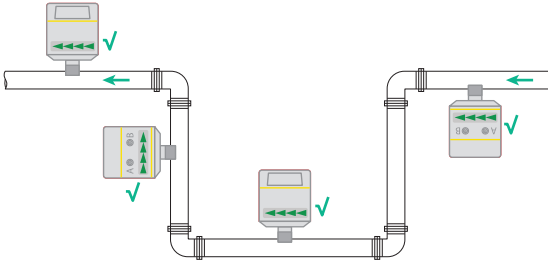


$A = 50 \times \text{Inner diameter} - L1$
 $B = 5 \times \text{Inner diameter} - L2$

5 Installation

ATTENTION The flow meter is not explosion-proof. Do not install it in places with explosion-proof requirements.

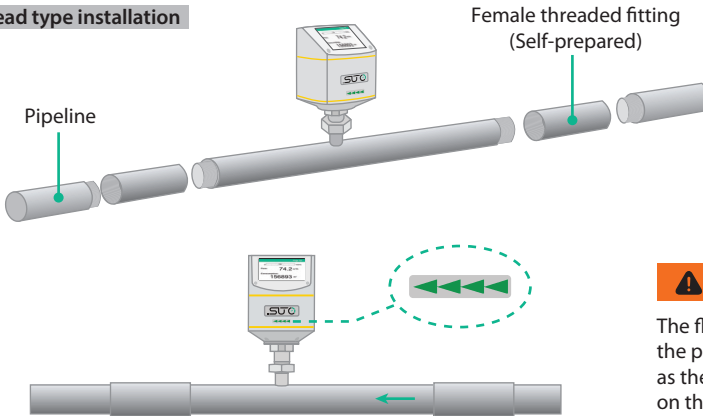
Installation orientation



ATTENTION

- The flow meter must be protected from solar radiation and rain at an outdoor installation.
- Do not install the flow meter in a wet environment such as the place after a compressor outlet.
- The S421 can be installed in horizontal or vertical pipes.

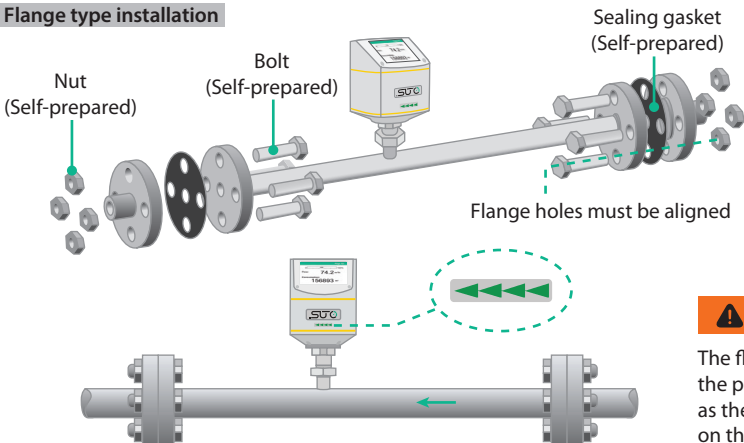
Thread type installation



ATTENTION

The flow direction of gas in the pipe must be the same as the direction of the arrow on the flow meter.

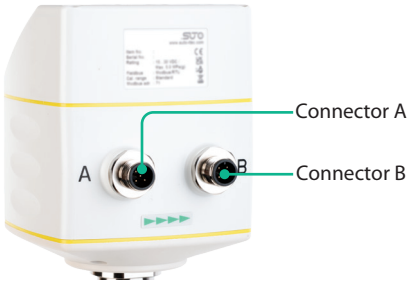
Flange type installation



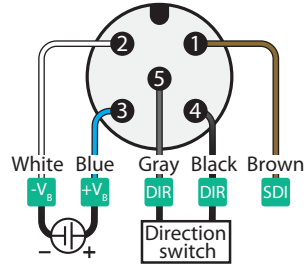
ATTENTION

The flow direction of gas in the pipe must be the same as the direction of the arrow on the flow meter.

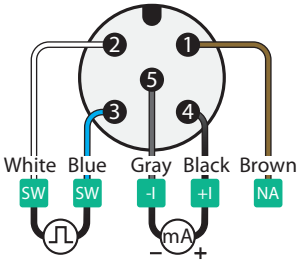
6 Electrical connection



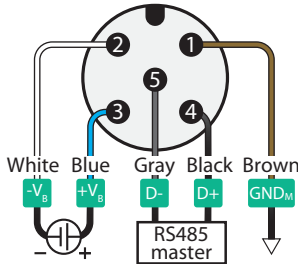
Connector A for 4 ... 20 mA+ pulse, Modbus/RTU, and Modbus/TCP



Connector B for 4 ... 20 mA + pulse



Connector B for 4 ... 20 mA + pulse



Connector B for Modbus/TCP

Use the supplied cable to connect the connector b for Modbus/TCP

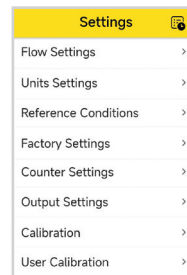


7 Configuration

Option 1 - via the display



Option 2 - via the S4C-FS App



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