Pitot Tube Flow Sensor S 430 - Installation & Configuration
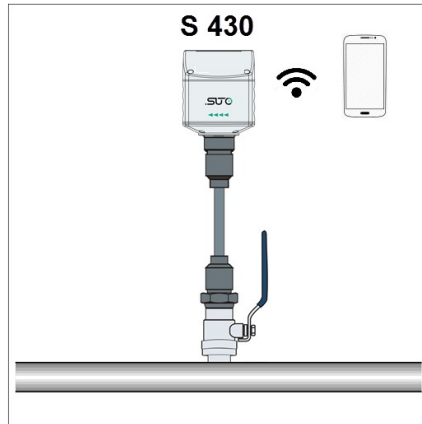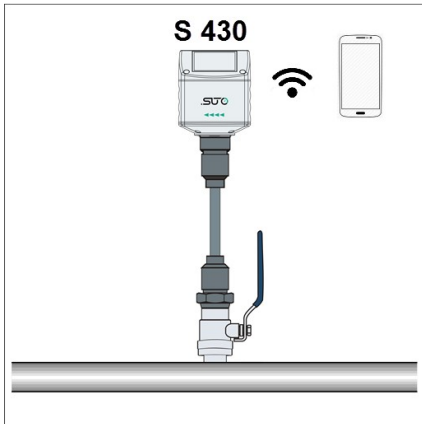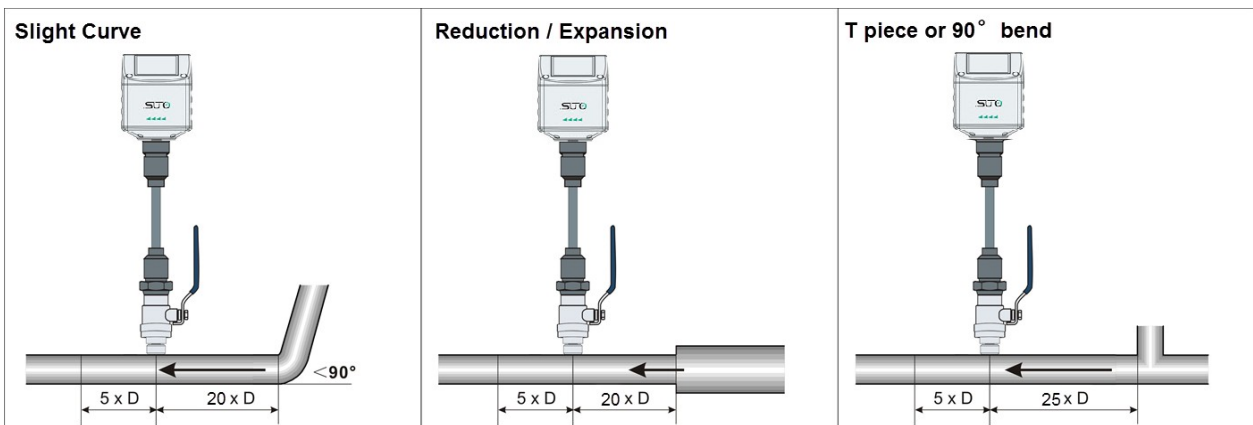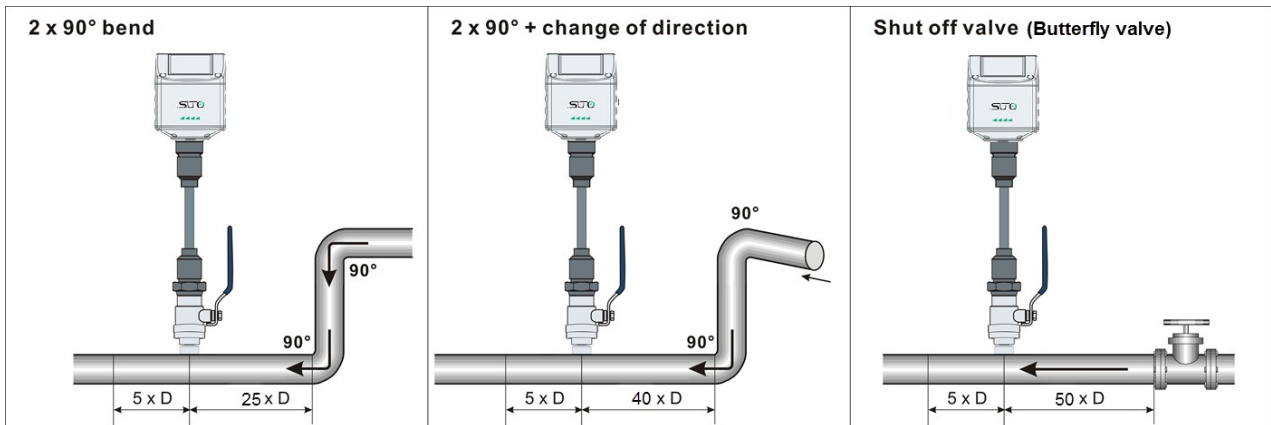
1 Application

Flow and consumption measurement on compressed air and a variety of other gases in wet air or high mass flow and velocity applications. Applicable to wet and dirty gases.
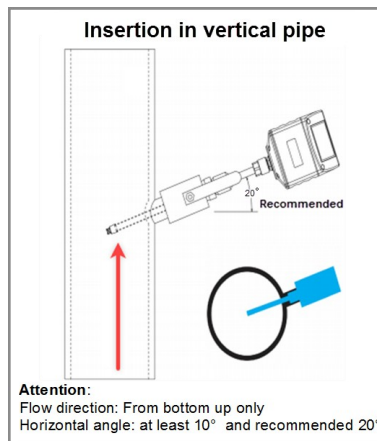
Set A - S 430 with the local display

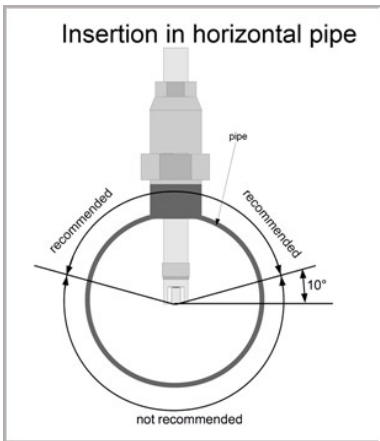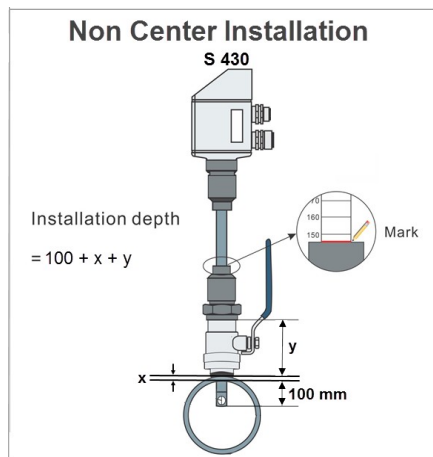**Set B** - S 430 without the local display
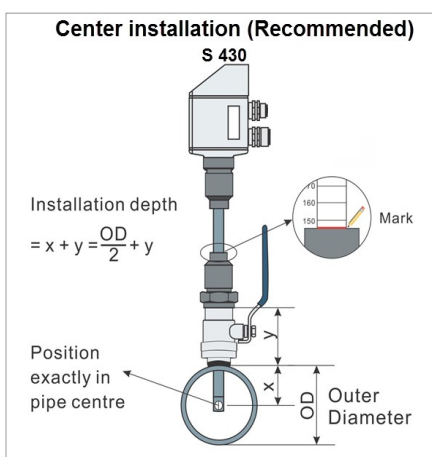

2 Choose the installation point

Install the sensor as far as possible away from any disturbances.

2 x 90° bend — 5 x D / 25 x D

2 x 90° + change of direction — 5 x D / 40 x D

Shut off valve (Butterfly valve) — 5 x D / 50 x D

Slight Curve — 5 x D / 20 x D

Reduction / Expansion — 5 x D / 20 x D

T piece or 90° bend — 5 x D / 25 x D

3 Determine the installation angle

Insertion in horizontal pipe

pipe

recommended

recommended

10°

not recommended

Insertion in vertical pipe

20°

Recommended

Attention:
Flow direction: From bottom up only
Horizontal angle: at least 10° and recommended 20°

4 Mount a ball valve and insert the sensor

Weld nipple on pipe

18 mm

G 3/4"

≥ 18 mm

≥ 18 mm

Use full bore ball valve!

Center installation (Recommended)
S 430

Installation depth

$= x + y = \dfrac{OD}{2} + y$

Mark

Position exactly in pipe centre

x

y

OD Outer Diameter

Non Center Installation
S 430

Installation depth

$= 100 + x + y$

Mark

x

y

100 mm
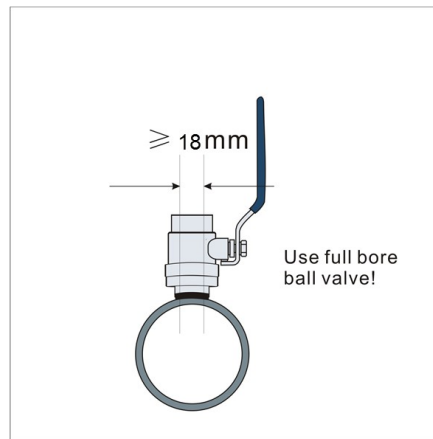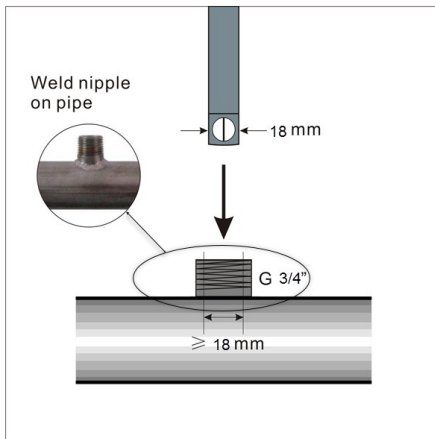
5 Align flow direction
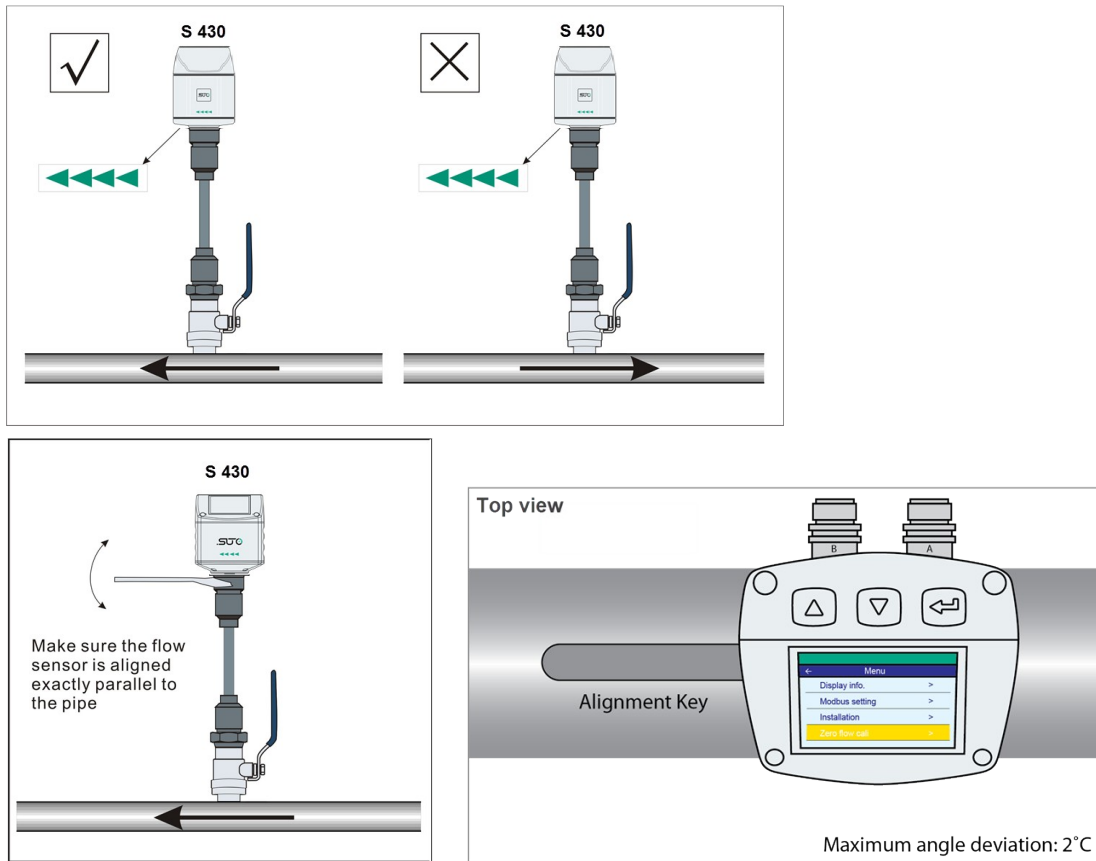
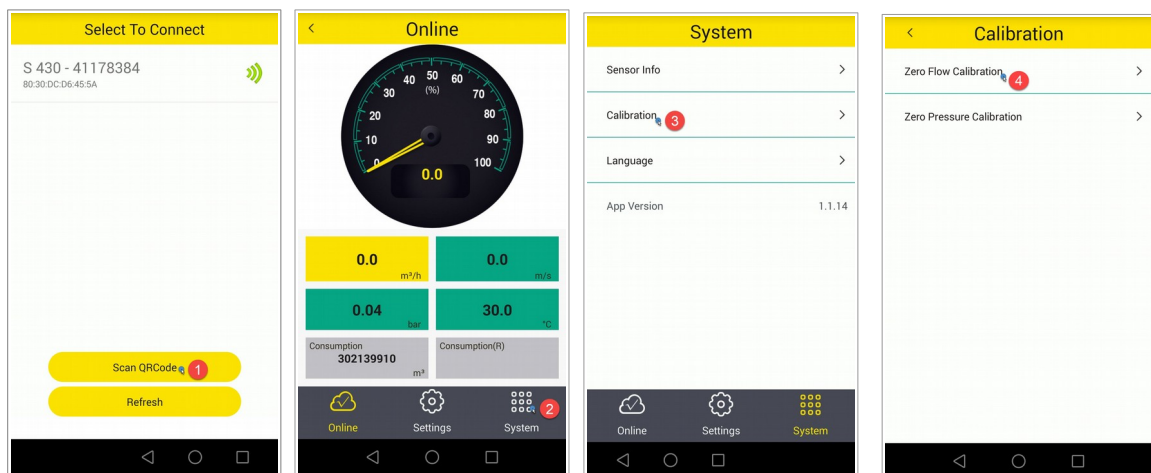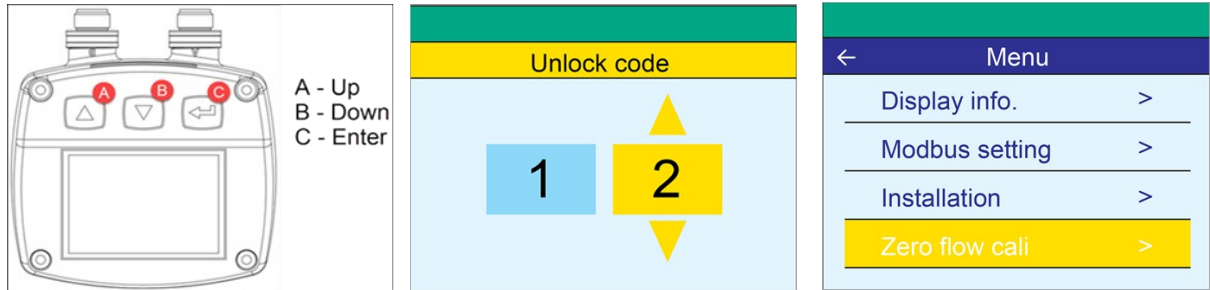## 6 Perform zero flow calibration
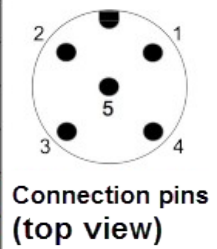
- **Using service APP S4C-FS**

- **Using the optional local display**

7 Connect the Cable

Pin assignment – M12 connector plug

Output Version	Connector	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Modbus	A	SDI	-VB	+VB	N/A	N/A
	B	GND	-VB	+VB	+D	-D
Pulse and analog	A	SDI	-VB	+VB	N/A	N/A
	B	N/A	SW	SW	+I	-I
M-Bus	A	SDI	-VB	+VB	N/A	N/A
	B	N/A	-VB	+VB	M	M
Wire colour		brown	white	blue	black	grey

Connection pins (top view)

Legend for pin assignment

|			
GND:	Ground for Modbus	SW:	Isolated pulse switch input/output
SDI:	Digital signal (internal use)	D+:	Modbus data +
-VB:	Negative supply voltage	D-:	Modbus data -
+VB:	Positive supply voltage	M:	M-Bus data
+I:	Positive 4...20 mA signal	N/A:	Not applicable
-I:	Negative 4... 20 mA signal		

8   Configure the sensor

Key settings: Pipe diameter, gas type, flow type, installation, unit settings, reference conditions, factory settings, and Modbus output settings.

• **Using service APP S4C-FS**
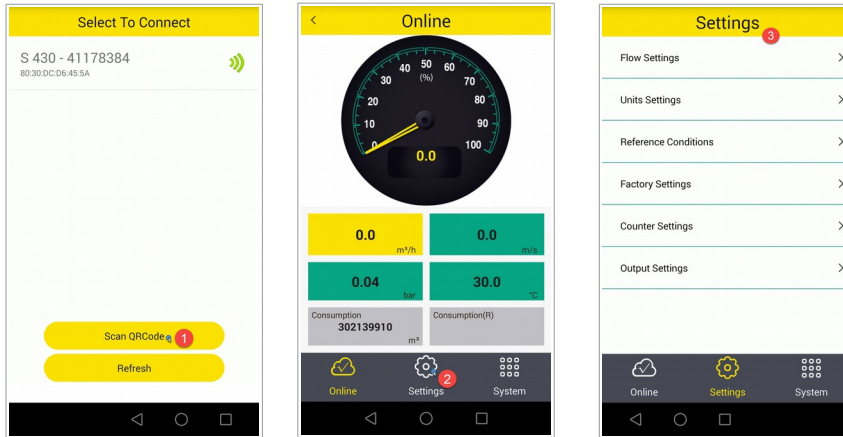
• **Using the optional local display**
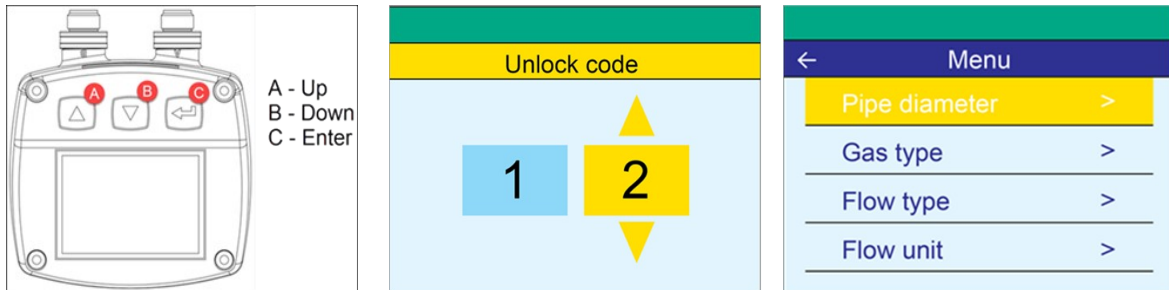
Attention:
This is a quick user guide which cannot replace the corresponding instruction and operation manual. Only trained and authorized staff who read and understood the instruction and operation manual shall perform the installation, setup and operation.