



VA 410

The compact consumption counter for compressed air and gases

Special features

- Optimum accuracy due to compact design
- Integrated inlet/outlet section
- Stabilized flow profile
- Indication of the actual value in m³/h resp. l/min and the counter in m³ resp. l



Technical data VA 410

Parameters:	m ³ /h, l/min acc. DIN 1945, ISO 1217 20°C, 1000 mbar
Adjustable via software:	m ³ /h, m ³ /min, l/min, l/s, ft/min, cfm, m/s, kg/h, kg/min
Meas. principle:	calorimetric measurement
Sensor:	2 x silicium chip
Meas. medium:	air, gases
Gas types adjustable via software:	air, nitrogen, argon, helium, CO ₂ , oxygen
Meas. range:	see table at the right
Accuracy:	± 3 % m. v. ± 2 % m. v. via 5 point ISO precision calibration
Operating temp.:	-30...80 °C
Operating pressure:	up to 16 bar
Analogue output:	4...20 mA for m ³ /h resp. l/min
Pulse output:	1 pulse for m ³ , signal high 24 VDC, for 30 ms
PC connection:	SDI interface
Power supply:	24 VDC smoothed ± 15 %
Burden:	< 500 Ohm
Housing:	polycarbonate
Meas. section:	stainless steel, 1,4301
Mounting thread meas. section:	1/4", 1/2", 3/4", 1", 1 1/2" external thread

Flow measuring ranges VA 410

Inch	Inner pipe diam. mm	Measuring range from	to	Total length of meas. section mm
1/4"	8.8	0.8	90 l/min	194
1/2"	16.1	0.2	80 m ³ /h	324
3/4"	21.7	0.2	140 m ³ /h	439
1"	27.3	0.2	240 m ³ /h	549
1 1/2"	41.8	1.8	400 m ³ /h	839

Description

Description	Order no.
VA 410 with integrated 1/4" measuring section	0695 0410
VA 410 with integrated 1/2" measuring section	0695 0411
VA 410 with integrated 3/4" measuring section	0695 0412
VA 410 with integrated 1" measuring section	0695 0413
VA 410 with integrated 1 1/2" measuring section	0695 0414

Connection cables:

Connection cable, 5 m (power supply, analogue output, pulse output)	0553 0104
Connection cable 10 m (power supply, analogue output, pulse output)	0553 0105

Additional accessories:

CS Service Software for FA/VA 400 sensors including PC connection set, USB adapter and interface adapter to sensor as well as CS Soft Professional software for data recording	0554 2005
Mains unit in wall housing 230 VAC/24 VDC	0699 3395
External wall display multifunction measuring instrument DS 300	see page 22
5 point precision calibration with ISO certificate	3200 0001



VA 400

Consumption sensor for compressed air and gases

The new VA 400 for consumption measurement of compressed air and gases in a robust housing with and without display with actual consumption in m³/h and counter in m³.

Special features

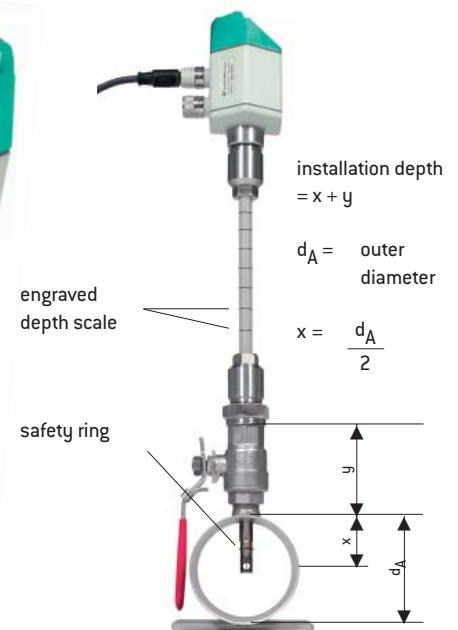
- Integrated display for m³/h und m³
- Depth scale for accurate installation
- Usable from 1/2" to 12" (DN 300)
- Easy installation under pressure
- 4...20 mA analogue output for m³/h resp. m³/min
- Pulse output for m³
- Inner diameter adjustable via keypad
- Consumption counter resettable



Inner diameter adjustable via keypad

flexible mounting thread G1/2"

safety ring Ø 11.7 mm



Technical data VA 400

Parameters:	m ³ /h standard, acc. DIN 1945, ISO 1217 20°C, 1000 mbar
Adjustable via software:	m ³ /h, m ³ /min, l/min, l/s, ft/min, cfm, m/s, kg/h, kg/min.
Adjustable via keypad:	diameter for volume flow calculation, counter resettable
Meas. principle:	calorimetric measurement
Sensor:	2 x silicium chip
Meas. medium:	air, gases
Gas types adjustable via software:	air, nitrogen, argon, helium, CO ₂ , oxygen
Meas. range:	see table page 18
Accuracy:	± 4 % m.v. ± 3 % m.v. via 5 point ISO precision calibration
Operating temp.:	-30...110 °C probe tube -30...80 °C housing
Operating pressure:	up to 50 bar
Analogue output:	4...20 mA for m ³ /h resp. l/min; on request: scaling for cfm, m ³ /min, l/min, l/s, ft/min, m/s
Pulse output:	1 pulse per m ³ , signal high 24 VDC, for 30 ms
PC connection:	SDI interface
Power supply:	24 VDC smoothed ± 15 %
Burden:	< 500 Ohm
Housing:	polycarbonate
Probe tube:	stainless steel, 1,4301 mounting length 220 mm, Ø 10 mm
Mounting thread:	G1/2"
Diameter housing:	65 mm

Description	Order no.
VA 400 consumption sensor in basic version: Standard (92.7 m/s), probe length 220 mm, without display	0695 4001
Options for VA 400:	
Display	Z695 4000
Max. version (185 m/s)	Z695 4003
HighSpeed version (224 m/s)	Z695 4002
Probe length 120 mm	ZSL 0120
Probe length 160 mm	ZSL 0160
Probe length 300 mm	ZSL 0300
Probe length 400 mm	ZSL 0400
Connection cables:	
Connection cable, 5 m (power supply, analogue output, pulse output)	0553 0104
Connection cable, 10 m (power supply, analogue output, pulse output)	0553 0105
Additional accessories:	
CS Service Software for FA/VA 400 sensors incl. PC connection set, USB adapter and interface adapter to sensor as well as CS Soft Professional software for data recording	0554 2005
Mains unit in wall housing 230 VAC/24 VDC	0699 3395
External wall display multifunction measuring instrument DS 300	see page 22
5 point precision calibration with ISO certificate	3200 0001



Useful accessories: Measuring sections



• Measuring section 1/2"



• Measuring section 1/4"

Measuring sections for precise measurements

Meas. section made of stainless steel 1.4301 incl. ball valve, up to DN 65 (G2 1/2") with external thread, from DN 80 with weld neck flange according to DIN 2633.

External thread	Pipe (ouero x wall thickness)	Total length	Order no.
G1/4"	20.0 x 7.0 mm	180 mm	4000 0006
G1/2"	21.3 x 2.6 mm	500 mm	4000 0015
G3/4"	26.9 x 2.6 mm	600 mm	4000 0020
G1"	33.7 x 3.2 mm	750 mm	4000 0025
G1 1/4"	42.4 x 3.2 mm	900 mm	4000 0032
G1 1/2"	48.3 x 3.2 mm	1000 mm	4000 0040
G2"	60.3 x 3.6 mm	1250 mm	4000 0050
G2 1/2"	76.1 x 3.6 mm	1500 mm	4000 0065
from DN 80 with flange DIN 2633			
DN 80/88.9	88.9 x 2.0 mm	1850 mm	4000 0080
DN 100/114.3	114.3 x 2.0 mm	2104 mm	4000 0100
DN 125/139.7	139.7 x 3.0 mm	2860 mm	4000 0125
DN 150/168,3	168,3 x 3,0 mm	3110 mm	4000 0150

Drilling jig for drilling under pressure

By means of a special drilling device a measuring site with 1/2" ball valve can be easily set up within a few minutes.

As an alternative to the welding of the 1/2" fitting also a spot drilling collar (see page 27) can be used.



• Drilling jig



• High-pressure protection



• Drilling under pressure

Description	Order no.
Drilling jig incl. drill (Ø 13 mm)	0530 1108
High-pressure protection recommended for installation from 10 to 50 bar	0530 1105