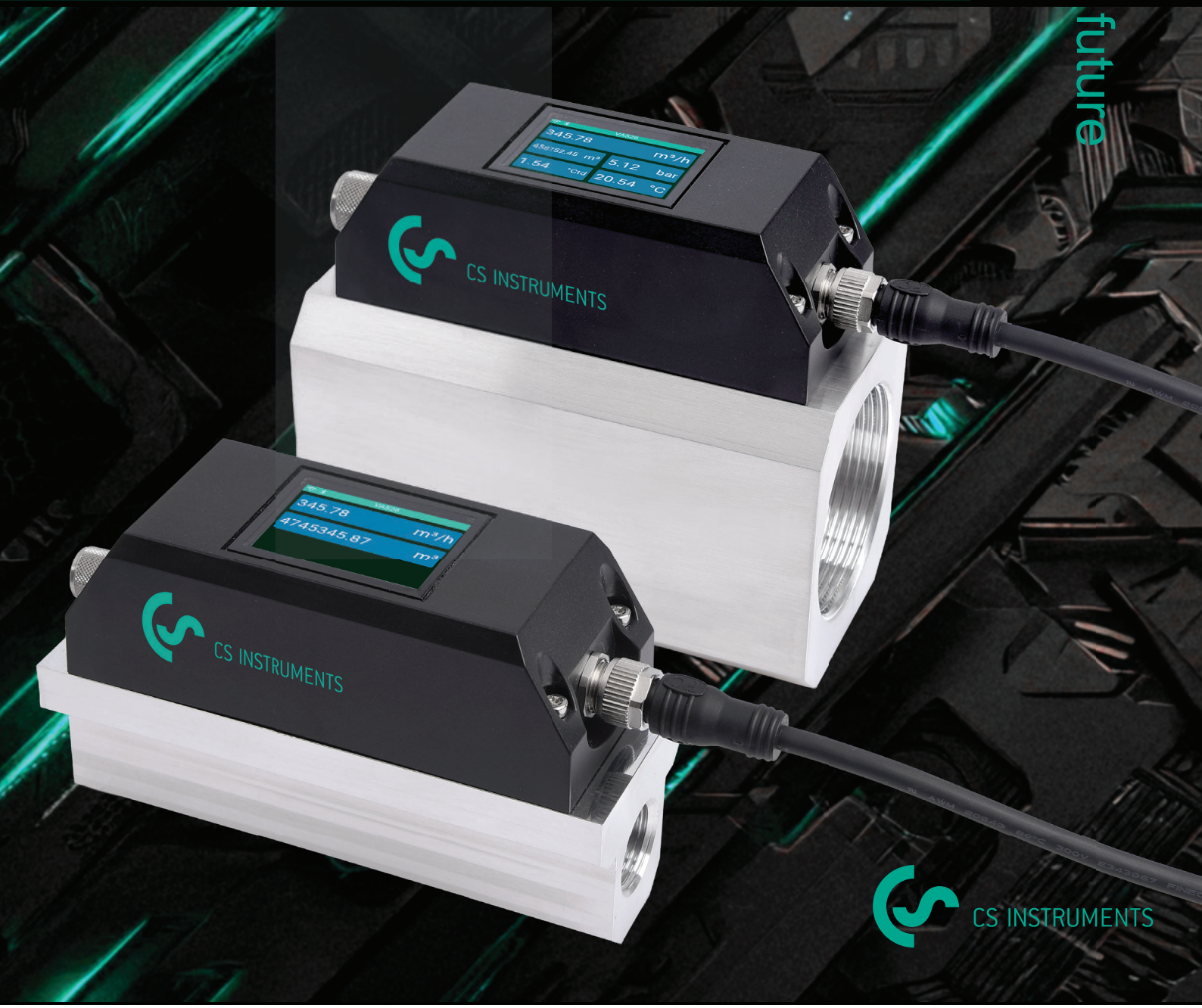
madshean

Compact flow sensor for compressed air and gases

VA 526

Ready for the digital future



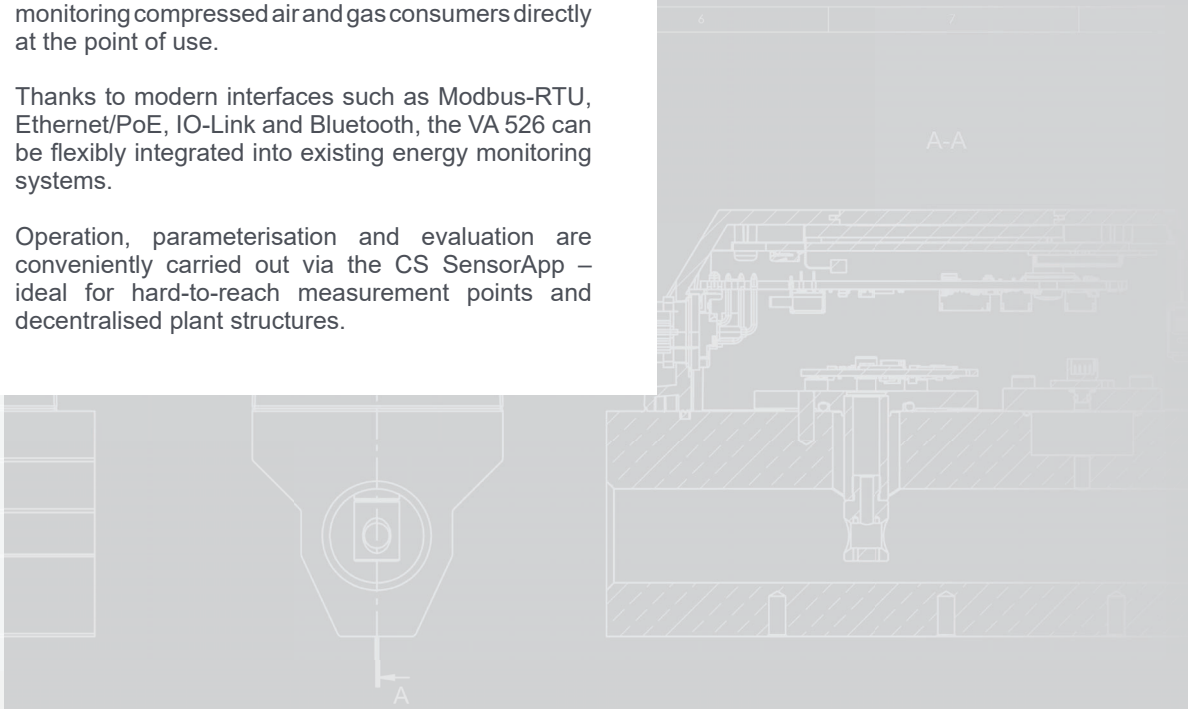
COMPACT.
CONNECTED.
FUTURE-PROOF.

The VA 526 combines precise flow measurement, consumption monitoring, temperature measurement and, optionally, pressure and humidity/dew point monitoring in a compact inline sensor.

It thus offers a space-saving complete solution for monitoring compressed air and gas consumers directly at the point of use.

Thanks to modern interfaces such as Modbus-RTU, Ethernet/PoE, IO-Link and Bluetooth, the VA 526 can be flexibly integrated into existing energy monitoring systems.

Operation, parameterisation and evaluation are conveniently carried out via the CS SensorApp – ideal for hard-to-reach measurement points and decentralised plant structures.



CONTENTS

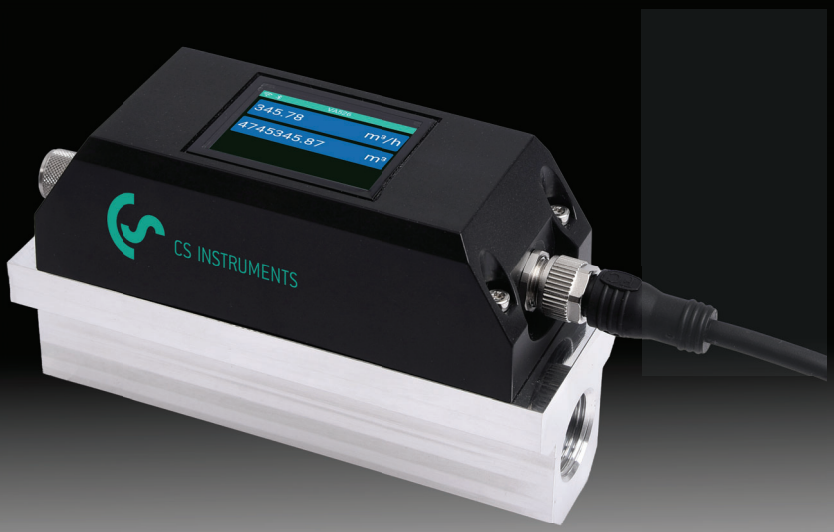
FEATURES	4-5
CS SensorApp	6-7
ORDER CODES / TECHNICAL SPECIFICATIONS	8
DIMENSIONS / MEASURING RANGES TABLE	9
MEASURING RANGE LIMIT VALUES	10
NEW PRODUCTS	11

The VA 526 has been developed for modern compressed air and gas networks, where transparency, energy efficiency and easy integration are becoming increasingly important.

On the following pages, you will find the key features, interfaces, applications and technical specifications of the compact inline flow sensor.

VA 526

Compact inline flow sensor for compressed air and gases



4 values at a glance

- Consumption measurement
- Dew point measurement
- Pressure measurement
- Temperature measurement

Optionally available with flow rectifier, pressure sensor and humidity/dew point monitoring

The newly developed VA 526 combines modern digital interfaces for connection to energy monitoring systems with a small, compact design. The VA 526 is used whenever a large number of machines (compressed air or gas consumers) are to be integrated into an energy monitoring network.

Advantages at a glance:

- **Bluetooth** as standard
- **Compact design** – for use in machines or behind the maintenance unit at the end user
- Classic **analogue signals** (4…20 mA) or digital interfaces such as Modbus-RTU, Ethernet (including PoE), M-Bus or IO-Link
- Optional: No run-in sections required, thanks to integrated **flow straightener**
- Optional: **Pressure and dew point measurement** for comprehensive monitoring
- CS SensorApp for easy operation, parameter setting, viewing of measured values, and online service support on site

Applications:

- Consumption analysis directly at the end user (point of use)
- Consumption billing in accordance with ISO 50001
- Reducing costs by minimising leaks
- Compact OEM integration without the need for inlet sections
- Efficiency monitoring of nitrogen or oxygen generators

Robust measuring tips



Unlike standard flow sensors on the market, the sensor element is installed in the centre of the flow within a stainless steel tube fitted with baffles.

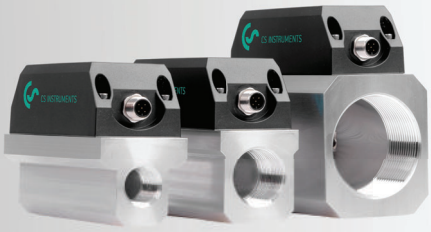
Baffles protect the sensor element from mechanical stress caused by dirt and particles.

The sensor element is extremely stable over the long term and is protected from moisture and condensation by a glass coating.

In most cases, compressed air is not free of oil, condensate, dirt and particles. Consumption meters currently available on the market cannot usually be cleaned and are replaced when contaminated.

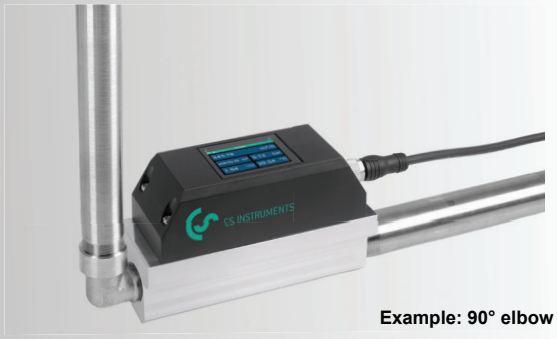
The robust measuring tips can be cleaned with water and a non-aggressive cleaning agent.

Various pipe cross-sections available



The VA 526 is available for all standard pipe sizes from 1/4” to 2” with G or NPT threads.

Optional flow straightener

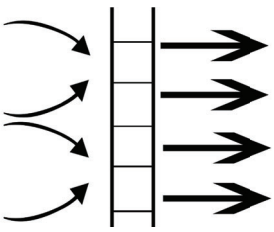


Example: 90° elbow

The integrated flow straightener ensures a defined and stable flow profile immediately at the measurement point, thereby minimising measurement errors caused by turbulence or swirl as far as possible.

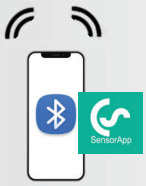
This flow stabilisation significantly reduces the required inlet and outlet runs, enabling space-saving installation even in compact systems.

This guarantees consistently high reproducibility of the measured values, regardless of the upstream piping configuration.



Integrated flow straightener – no inlet sections required

Ready for the digital future:
Full compliance with the EU Cyber Resilience Act (CRA) – already implemented as standard today



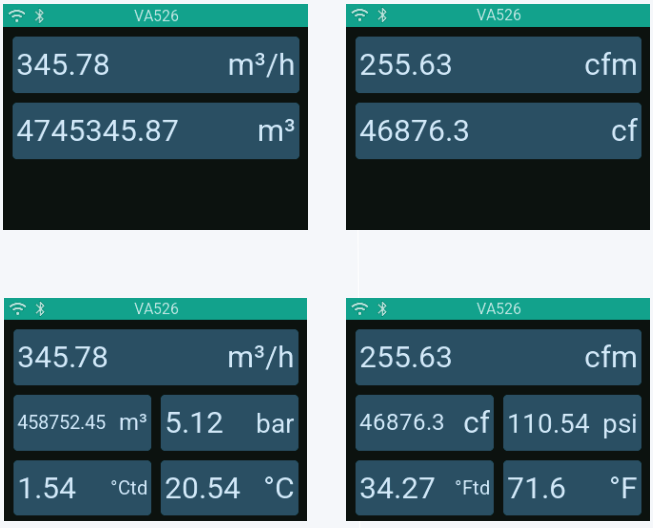
IO-Link Modbus TCP/IP

CS SensorApp

- The free CS SensorApp quickly and easily detects all VA 526 units nearby
- The sensors are configured via your mobile device
- Available for iOS and Android devices – App Store (Apple) or Play Store (Android)
- Live measurement data, sensor settings and parameterisation
- Easy access via the CS SensorApp to hard-to-reach sensors
- User-friendly and intuitive operation

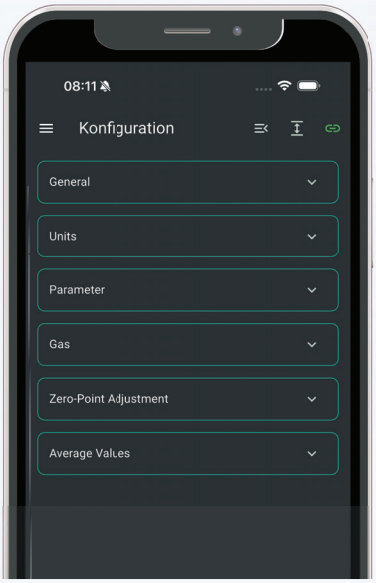


VA 526 – Display configuration



- Select your most important display values (e.g. in m³/h, m³, l/min, °C/°F, etc.)
- Easily change units via the app
- Software-controlled display rotation – perfect readability in any installation position

App / Sensor configuration



Configuring of sensor settings

Name the measuring point, reset the meter reading, change units, set gas type, zero point adjustment, settings for average value calculation.

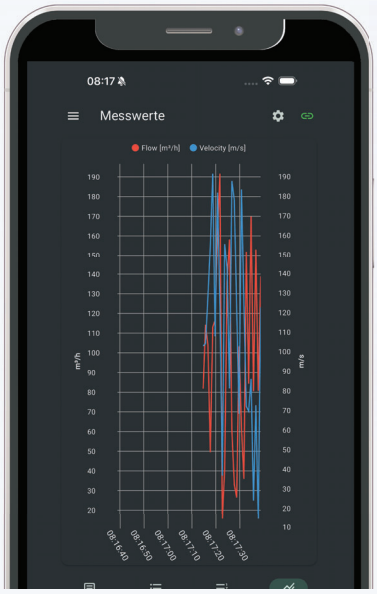
App / Current readings



Everything you need at a glance

Current readings, serial numbers and calibration dates are clearly displayed.

App / Current readings and graphs

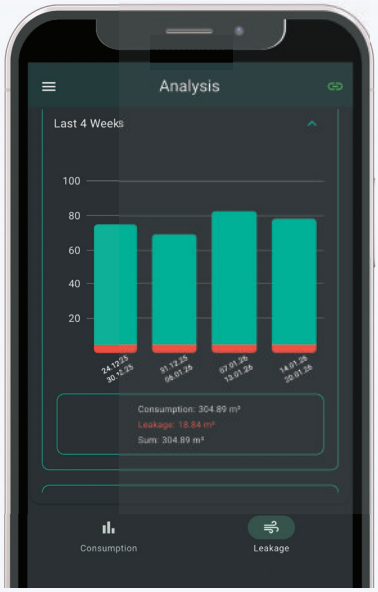


Live readings and data analysis

Current readings can be accessed in real time and visualised as coloured measurement curves.

Essential functions such as zooming, selecting/ deselecting individual measurement curves, free selection of time periods, axis scaling, colour selection, etc. are integrated.

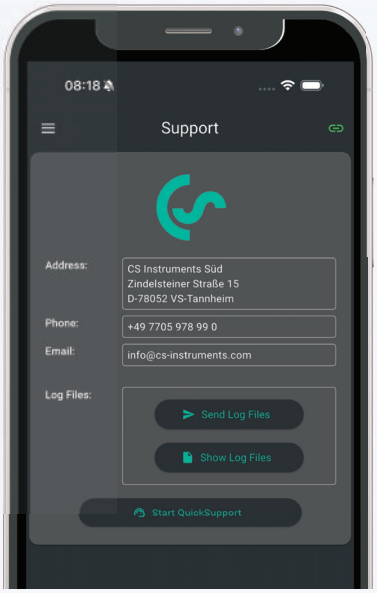
App / Consumption and Leakage Analysis



Exportable as a CSV or PDF file

Analysis of consumption and leakage profiles for the last 2 years (measured at 10-minute intervals) thanks to internal ring buffer.

App / Remote access via TeamViewer



Support - Help

By clicking on “Start Quick Support”, you allow one of our service engineers to contact you directly and assist you with your enquiry.

VA 526 - Inline flow sensor

Example order code VA 526:

0695 5260_A1_B1_C1_D1_E1_F1_G1_H1_I1_J1_K1_L1_M1_N1_R1

Measuring section	
A1	1/4"
A2	3/8“
A3	1/2“
A4	3/4“
A5	1“
A6	1 1/4“
A7	1 1/2“
A8	2"

Threaded version	
B1	G-female thread
B2	NPT-female thread

Material type	
C1	Aluminium
C2	Stainless steel 316 L

Adjustment/calibration	
D1	No real gas adjustment
D2	Real gas adjustment

Gas type	
E1	Compressed air
E2	Nitrogen (N2)
E3	Argon (Ar)
E4	Carbon dioxide (CO2)
E5	Oxygen (O2)
E6	Nitrous oxide (N2O)
E90	Other gases available on request

Measuring range (see table)	
F1	Max version (185 m/s)
F2	Low-speed version (50 m/s)
F3	Standard version (92,7 m/s)
F4	High-speed version (224 m/s)

Reference standard	
G1	20 °C, 1000 mbar
G2	0 °C, 1013,25 mbar
G3	15 °C, 981 mbar
G4	15 °C, 1013,25 mbar

Humidity measurement option	
H1	without humidity measurement
H2	with humidity measurement (-20...+50 °Ctd.)

Pressure measurement option	
I1	without a pressure sensor
I2	with integrated pressure sensor 0…16 bar
I3	with integrated pressure sensor10…2000 mbar (abs.)
I4	with integrated pressure sensor 0…40 bar

Signal output/bus connection option	
J1	1x 4…20 mA, RS485 (Modbus-RTU)
J2	1x 4...20 mA, IO-Link
J3	Ethernet interface PoE (Modbus/TCP), 1 x 4…20 mA, RS485 (Modbus-RTU)

Flow Straightener	
K1	without flow straightener
K2	with a single-phase flow straightener

Accuracy class	
L1	± 1.5% of m.v. ± 0.3% of f.s.
L2	± 6% of m.v. ± 0.5% of f.s.
L3	± 1% of m.v. ± 0.3% of f.s.

Maximum pressure	
M1	16 Bar
M2	40 bar (not available with NPT threads > 1“), (only with C2)

Surface condition	
N1	Standard version
N2	special cleaning, oil- and grease-free (e.g. for oxygen applications)
N3	Silicone-free version, including special oil- and grease-free cleaning

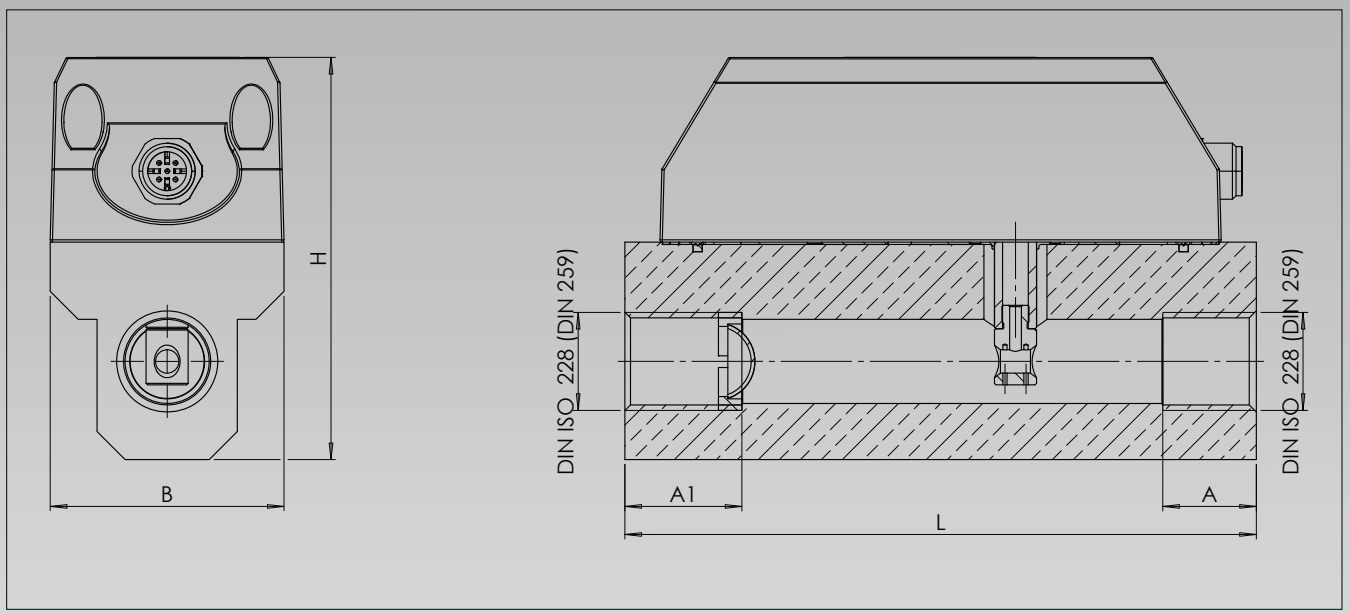
Special measurement range	
R1	On request

Order no. VA 526

DESCRIPTION	ORDER NO.
Compact inline flow sensor for compressed air and gases	0695 5260 + Order code A_…R_

TECHNICAL DATA VA 526	
Parameters:	m³/h, l/min (1000 mbar, 20 °C) for compressed air, or Nm³/h, Nl/min (1013 mbar, 0 °C) for gases
Units can be set via the SensorApp:	m³/h, m³/min, l/min, l/s, ft/min, cfm, m/s, kg/h, kg/min, g/s, lb/min, lb/h
Sensor:	Thermal mass flow sensor
Measured medium:	Air, gases
Measuring range:	See table
Accuracy: **(o. M. V. = of measured value)** **(o. F. S. = of full scale)**	± 1.5% of m.v. ± 0.3% of f.s. on request: ± 1% of m.v. ± 0.3% of f.s. or ± 6% of m.v. ± 0.5% of f.s.
Accuracy pressure measurement:	+ 1% m.v.
Operating temperature:	-20…80 °C
Operating pressure:	Up to 16 bar, optionally up to 40 bar
Digital output:	RS 485 interface (Modbus RTU), M-Bus (optional), Ethernet interface or PoE, IO-Link, Bluetooth
Analogue output:	4…20 mA for m³/h or l/min
Supply:	18…36 VDC, 5 W
Burden:	< 500 Ω
Housing:	Polycarbonate (IP 65)
Measuring block:	Aluminium, 316 L
Connection threads on the measuring blocks:	G 1/4″ to G 2″ (BSP – British Standard Pipe) or 1/4″ to 2″ NPT threads
Installation position:	any
Data logger:	Memory: 50 MB Example: Measurement interval 10 mins Memory capacity for 2 years

VA 526 Dimensions:



Flow measurement ranges for the VA 526 (Max version 185 m/s) for compressed air (ISO 1217: 1000 mbar, 20 °C) For measurement ranges for other gases, see pages xx to xx								
Measurement section	**Thread**	**Measuring range full scales**		**L**	**B**	**H**	**A1**	**A**
		m³/h	cfm	mm	mm	mm	mm	mm
DN 8	G 1/4″	105 l/min	3,6	135	50	86	15	15
DN 10	G 3 /8″	50 m³/h	29,4	135	50	86	15	15
DN 15	G 1/2″	90 m³/h	50	135	50	86	25	20
DN 20	G 3/4″	170 m³/h	100	135	50	90	26	20
DN 25	G 1″	290 m³/h	170	135	50	90	29	25
DN 32	G 1 1/4″	530 m³/h	310	135	70	120	35	30
DN 40	G 1 1/2″	730 m³/h	430	135	70	120	36	25
DN 50	G 2″	1195 m³/h	700	135	70	120	44	30

Measuring range

		1/4“	3/8“	1/2"	3/4"	1"	1 ¼"	1 ½"	2"
		l/min (cfm)	m³/h (cfm)	m³/h (cfm)	m³/h (cfm)	m³/h (cfm)	m³/h (cfm)	m³/h (cfm)	m³/h (cfm)
Referenzbedingungen DIN 1945 / ISO 1217: 20 °C, 1000 mbar									
Air	Low-Speed (50 m/s)	25 (0,9)	225 Nl/min (8)	20 (14)	45 (25)	75 (45)	140 (80)	195 (115)	320 (190)
	Standard (92,7 m/s)	50 (1,8)	25 (14,7)	45 (25)	85 (50)	145 (85)	265 (155)	365 (215)	600 (350)
	Max (185 m/s)	105 (3,6)	50 (29,4)	90 (50)	175 (100)	290 (170)	530 (310)	730 (430)	1195 (700)
	High -Speed (224 m/s)	130 (4,5)	60 (35,3)	110(60)	215 (125)	355 (210)	640 (375)	885 (520)	1450 (850)
Setting to DIN 1343: 0 °C, 1013.25 mbar									
Argon (Ar)	Low-Speed (50 m/s)	45 (1,5)	330 Nl/min (11,7)	35 (20)	75 (40)	120 (70)	220 (130)	305 (180)	505 (295)
	Standard (92,7 m/s)	85 (3)	35 (20,5)	70 (40)	135 (80)	230 (135)	415 (245)	570 (335)	935 (550)
	Max (185 m/s)	170 (6)	75 (44,1)	140 (80)	275 (160)	460 (270)	830 (485)	1140 (670)	1870 (1100)
	High-Speed (224 m/s)	205 (7,2)	95 (55,9)	170 (100)	335 (195)	555 (325)	1005 (590)	1385 (815)	2265 (1330)
Carbondi-oxide (CO2)	Low-Speed (50 m/s)	25 (0,9)	225 Nl/min (7,9)	20 (14)	45 (25)	75 (45)	140 (80)	195 (115)	320 (185)
	Standard (92,7 m/s)	50 (1,8)	25 (14,7)	45 (25)	85 (50)	145 (85)	260 (155)	360 (210)	590 (345)
	Max (185 m/s)	105 (3,6)	50 (29,4)	90 (50)	175 (100)	290 (170)	525 (305)	720 (425)	1185 (695)
	High-Speed (224 m/s)	130 (4,5)	60 (35,3)	105 (60)	210 (125)	350 (205)	635 (370)	875 (515)	1430 (840)
Nitrogen (N2)	Low-Speed (50 m/s)	25 (0,9)	205 Nl/min (7,2)	20 (13)	40 (25)	70 (40)	130 (75)	180 (105)	295 (175)
	Standard (92,7 m/s)	50 (1,5)	20 (11,7)	40 (20)	80 (45)	135 (75)	240 (140)	335 (195)	550 (320)
	Max (185 m/s)	100 (3,3)	45 (26,4)	80 (45)	160 (95)	270 (155)	485 (285)	670 (395)	1100 (645)
	High-Speed (224 m/s)	120 (4,2)	55 (32,3)	100 (55)	195 (115)	325 (190)	590 (345)	815 (475)	1330 (780)
Oxygen (O2)	Low-Speed (50 m/s)	25 (0,9)	215 Nl/min (7,5)	20 (13)	45 (25)	75 (40)	135 (80)	185 (110)	305 (180)
	Standard (92,7 m/s)	50 (1,8)	20 (11,7)	40 (25)	80 (45)	140 (80)	250 (145)	345 (205)	570 (335)
	Max (185 m/s)	100 (3,6)	45 (26,4)	85 (50)	165 (95)	280 (165)	505 (295)	695 (410)	1140 (670)
	High-Speed (224 m/s)	125 (4,2)	55 (32,3)	105 (60)	205 (120)	340 (200)	610 (360)	845 (495)	1380 (810)
Nitrous oxide (N2O)	Low-Speed (50 m/s)	25 (0,9)	220 Nl/min (7,7)	20 (14)	45 (25)	75 (45)	140 (80)	190 (110)	315 (185)
	Standard (92,7 m/s)	50 (1,8)	20 (11,7)	40 (25)	85 (50)	140 (85)	260 (150)	355 (210)	585 (345)
	Max (185 m/s)	105 (3,6)	45 (26,4)	85 (50)	170 (100)	285 (170)	520 (305)	715 (420)	1170 (690)
	High-Speed (224 m/s)	125 (4,5)	60 (35,3)	105 (60)	210 (120)	345 (205)	630 (370)	865 (510)	1420 (835)

SAFELY DIMENSIONED FOR EVERY APPLICATION

Whether for low consumption, standard applications or high flow rates:

The various measuring range options allow the VA 526 to be optimally configured for pipe size, gas type and maximum flow rate.

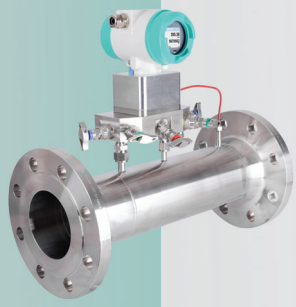
MORE NEW PRODUCTS

LC 600 - LeakCam - Leak detector



- "Power Beam Forming" sets new standards in leak detection
- Only 64 microphones are needed to achieve unique dynamics and sensitivity
- With Power Beam Forming, several sound sources can be recognized simultaneously, even if they are at different volumes
- Precise leak detection from a large distance with acoustic zoom
- With the "acoustic zoom" of the LeakCam 600, leaks can be precisely localized from great distances by focusing ultrasonic noises even more strongly
- Laser distance module for precise determination of the leak rate in l/min and the costs in Euro

CMM 500 - Compressor Master Meter



- Precision Redefined: Accuracy < 0.5%
- Flow measurement with Venturi tube manufactured according to ISO 5167-3
- Reference measuring device for compressor test benches
- Measurement on the „wet side“ directly behind the compressor
- High-precision measurement of the volume of compressed air supplied to third parties for billing purposes

OIL CHECK 500 - Measurement of the vapor oil content



- Patented „Forced Pressure Variation“ method for long-term stable measurement results
- 24/7 online monitoring: recognizes an increase of the oil content long before damage occurs
- The sensor unit can be replaced by the customer on site. This eliminates the need to return the entire device for recalibration
- Can be used in compressed air, nitrogen, argon, helium and hydrogen

FA 500 - Dew point sensor with display



- Monitoring of refrigeration, membrane and adsorption dryers
- Residual moisture measurement in gases such as N2, O2, etc
- Wide measuring range from -80 to +20 °Ctd
- The integrated buttons allow simple, menu-guided operation
- Analogue output, Modbus RTU and alarm output, optional M-Bus or Ethernet
- Pressure-resistant up to 500 bar (special version)
- New: Optional integrated pressure measurement up to 30 bar

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