



Meter for compressed air and gas including measurement section

### Description

The affordable consumption counter TMS 300 works according to the proven calorimetric measuring principle. An additional pressure and temperature compensation is not necessary. The newly developed evaluation electronic detects, unlike the bridge circuits commonly used, all readings digitally. Thus very precise and fast measurements are possible. Due to the new evaluation electronic all TMS 300 come with a Modbus output. Thus all measured variables can be transmitted via Modbus.

Due to its compact design it is possible the new cheap consumption meters TMS 300 are usable for all pressure air pipe lines, from production to consumption smallest unit („1/4 to 2 inches). For larger pipe diameters from DN 50 to DN 300 the consumption sensors TMS 500 are available.

In addition to pressure air, other gases can e.g. Nitrogen, oxygen, CO2 be measured, too.

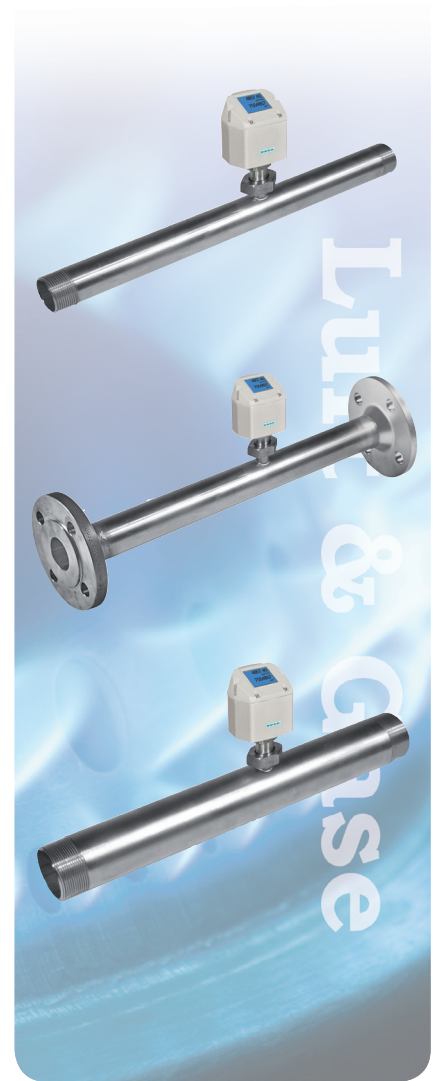
The installation of the meter TMS 300 is simple and fast. A particular advantage is the removable measuring unit. This allows the unit of measurement for calibration or cleaning purposes be removed quickly and easily without removing the complete measuring section.

### Application

- Mobile compressed air measurement in front of single machines / systems
- Flow measurement of process gases such as Nitrogen, CO2, Oxygen, argon, nitrous oxide
- Flow measurement at nitrogen generators
- Determine leakage air / leak rate
- For accounting and consumption measurement of compressed air
- Display shows 2 values: Current consumption in m3 / h, l / min ... Total consumption (meter reading) in m3, l
- Units freely selectable via keypad: m3 / h, m3 / min, l / min l / s, kg / h, kg / s, cfm
- Compressed air meter up to 1,999,999,999 m3, resetable to „zero“ via keyboard

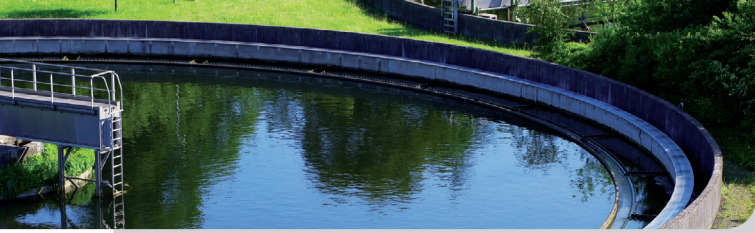
### Your benefits

- Modbus RTU output: Connection to higher-level systems such as energy management systems, central building control systems, PLC, SCADA ...
- Simple and inexpensive installation
- Display head and display values rotatable by 180 ° eg in the reverse direction of flow or overhead installation
- Measuring device removable: Dismounting of the whole measuring section is not necessary, no bypass required
- 4 ... 20 mA output, pulse output (galvanically isolated)
- High accuracy in the lower measuring range (ideal for leakage measurement)
- Negligible small pressure loss
- Calorimetric principle, no additional pressure and temperature measurement required, no mechanical moving parts
- Gas types adjustable via software (nitrogen, oxygen, CO2, nitrous oxide, argon)
- Extensive diagnostics functions readable on the display or remotely via Modbus RTU such as exceeded Max. / Min values ° C, calibration cycles, error codes, serial number - all parameters via Modbus readable / changeable



### Specials





## Technical data

Technical data	
Measurement:	Flow and consumption
Standard settings ex works:	DIN 1945, ISO 1217 at 20°C and 1000 mbar
Selectable Units:	m <sup>3</sup> /h (Standard settings ex works) m <sup>3</sup> /min, l/min, l/s, ft <sup>3</sup> /min, cfm, m/s, kg/h, kg/min, kg/s
Measuring principle:	calorimetric measurement
Sensor:	Pt45, Pt1000
Measuring medium:	Air, gases
Operating temperature:	-30 ... 80°C
Operating pressure:	up to 16 bar, special version PN 40 (40 bar)
Power supply:	18 to 36 VDC
Power consumption:	max. 5W
Digital output:	RS 485 interface (Modbus RTU)
Analog output:	4...20 mA (see table below), max. burden < 500 Ohm
Pulse output:	pulse output potential free (dry contact) passive: max. 48Vdc, 500mA; 1 pulse pro m <sup>3</sup> resp. pro l Valency adjustable with the display keys
Accuracy:	± 1,5 % m.v., ± 0,3 % f. s.* (* m.v. = measured values; f.s. = full scale)
Display:	TFT 1.8 Resolution 220 x 176
Mounting thread:	R 1/4", R1/2", R3/4", R1", R 1 1/4" R1 1/2", R 2" DIN EN 10226 (ISO 7-1)
Material:	Stainless steel 1.4301 / 1.4404 Version with flange DIN EN 1092-1: Stainless steel 1.4404

## Details



Inner diameter adjustable via keys



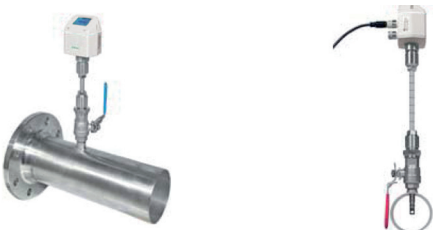
Dismounting of the whole measuring section is not necessary



Stationary use



Mobile use

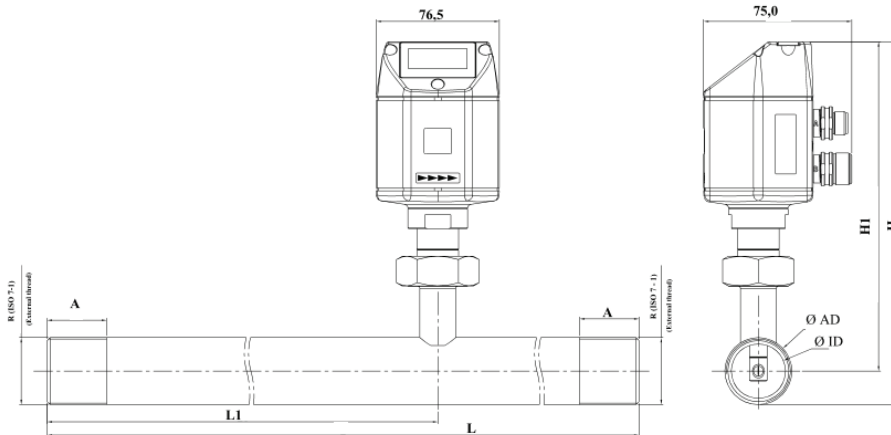


Solution for big screw-on pipe diameters up to DN300 with the TMS 500

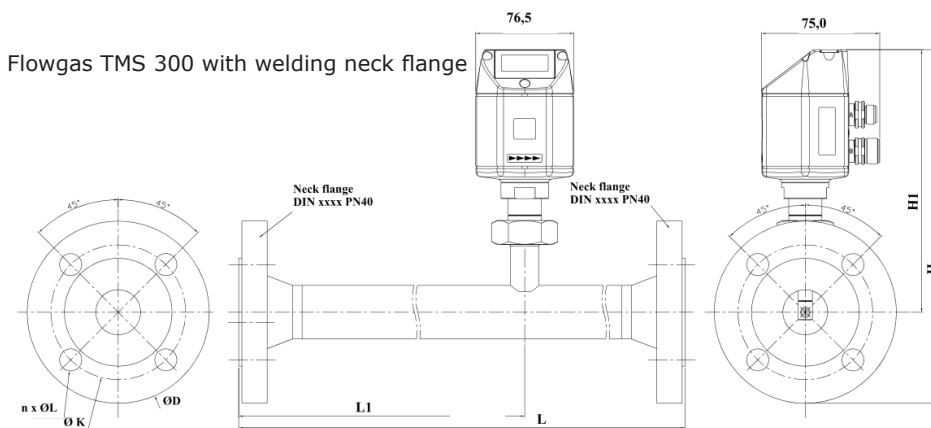


Application sample

Flowgas TMS 300 without flange with connection thread



Dimensions Flowgas TMS 300 with connecting thread							Flow measuring ranges Flowgas TMS 300 for compressed air (ISO 1217: 1000 mbar, 20 ° C)			
Pipe size	AD / ID (mm)	L (mm)	L1 (mm)	H (mm)	H1 (mm)	R	A (mm)	A mm	Measurement ranges	
DN 8	13,7 / 8,5	194	137	176,6	166,3	R 1/4"	15	165,7	0,8...90 l/min	
DN 15	21,3 / 16,1	300	210	177,0	166,3	R 1/2"	20	165,7	0,2...90 m³/h	
DN 20	26,9 / 21,7	475	275	179,8	166,3	R 3/4"	20	165,7	0,3...170 m³/h	
DN 25	33,7 / 27,3	475	275	183,2	166,3	R 1"	25	165,7	0,5...290 m³/h	
DN 32	42,4 / 36,0	475	275	187,5	166,3	R 1 1/4"	25	165,7	0,7...530 m³/h	
DN 40	48,3 / 41,9	475	275	190,5	166,3	R 1 1/2"	25	165,7	1,0...730 m³/h	
DN 50	60,3 / 53,1	475	275	196,5	166,3	R 2"	30	165,7	2,0...1195 m³/h	



Dimensions Flowgas TMS 300 with weld neck						Flange DIN EN 1092-1			Flow measuring ranges Flowgas TMS 300 for compressed air (ISO 1217: 1000 mbar, 20 ° C)
Pipe size	AD/ID	L (mm)	L1 (mm)	H (mm)	H1 (mm)	Ø D (mm)	Ø K (mm)	n x Ø L (mm)	Measurement ranges
DN 15	21,3 / 16,1	300	210	213,8	166,3	95	65	4 x 14	0,2...90 m³/h
DN 20	26,9 / 21,7	475	275	218,8	166,3	105	75	4 x 14	0,3...170 m³/h
DN 25	33,7 / 27,3	475	275	223,8	166,3	115	85	4 x 14	0,5...290 m³/h
DN 32	42,4 / 36,0	475	275	263,3	166,3	140	100	4 x 18	0,7...530m³/h
DN 40	48,3 / 41,9	475	275	2 40,7	166,3	150	110	4 x 18	1,0...730 m³/h
DN 50	60,3 / 53,1	475	275	248,2	166,3	165	125	4 x 18	2,0...1195 m³/h

# Order Code

**model**  
300 standard

**process connection**  
0 connection thread 1/4"  
1 connection thread 1/2"  
2 connection thread 3/4"  
3 connection thread 1"  
5 connection thread 1 1/2"  
6 connection thread 2"  
4 connection thread 1 1/4"  
A connection flange DN15  
B connection flange DN20  
C connection flange DN25  
D connection flange DN32  
E connection flange DN40  
F connection flange DN50  
Y special version

**material (medium contact)**  
V2 1.4301 stainless steel  
V4 1.4404 stainless steel  
Y special version

**pressure stage**  
16 PN16  
40 PN40  
Y special version

**gas type standard measuring range**  
LUFT air - measuring range according to DIN 1945/ ISO 1217 please specify  
11AR argon measuring range according to DIN 1343 please specify  
1CO2 carbon dioxide CO2 measuring range according to DIN 1343 please specify  
11O2 oxygen incl. cleaning oil and fat free measuring range according to DIN 1343 please specify  
111N nitrogen measuring range according to DIN 1343 please specify  
111Y special medium

**accuracy calibration**  
A +/- 1,5% from measured value (standard).  
B +/- 1,0% from measured value.  
Y special calibration via 5-point ISO-certificate

**output**  
AP analog output: 4 .. 20 mA for m³/h resp. l/min  
impulse output: 1 impulse pro m³ resp. per liter galvanically isolated  
digital output: RS 485 interface (Modbus-RTU)  
5-pol. cable socket M12 included  
Y special version

**supply**  
2 24 VDC smoothed +/- 15%  
5-pol. cable socket M12 included  
Y special version

Order code

<b>Flowgas TMS</b>	300
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