



Committing to the future

0699 6446

0699 6447

## Compressed Air Meters For Large Pipe Diameters

DN65 – DN250 (2½" to 10") – Optionally with probe removal under pressure

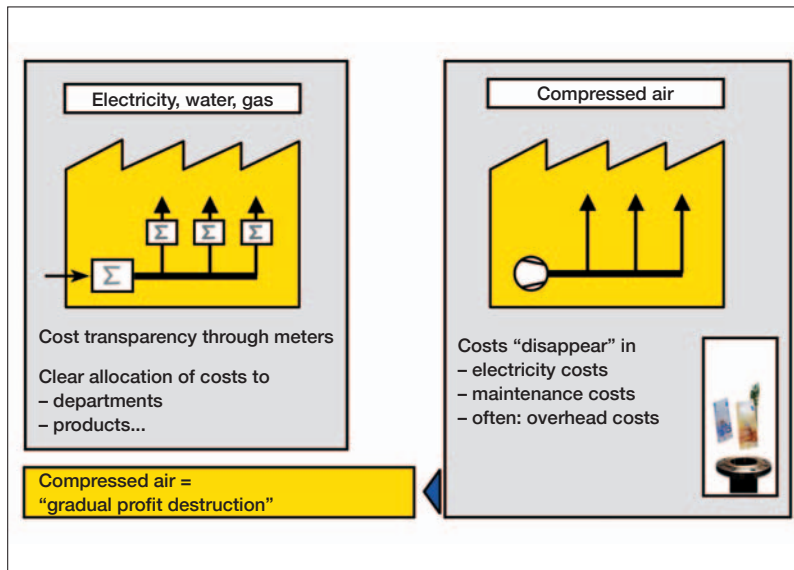
**NEW!**

Nm<sup>3</sup>/h

Nl/min



## Compressed air meters 0699 6446/47 – Application and versions



### Why does industry need compressed air meters?

In every company, full transparency is available for resources such as electricity, water or also gas: main meters reflect amounts used; sub-meters indicate how consumption is distributed.

By contrast, the resource, compressed air, is created and distributed internally without any information about quantities and in which areas it is consumed. Without this information, there is no motivation to eliminate leakage or reduce consumption.

Compressed air meters also provide you with the option of continuous leak detection which account for 35% of all compressed air consumption.

### testo 0699 6446 – The convincing standard solution

There are a number of compressed air meters for larger diameters on the market which use a stick-in probe. At first glance, these solutions appear attractive because mounting is comparatively easy.

However, if the probe is turned by just a few degrees, it causes huge measurement errors. As a result, there are far greater inaccuracies in the field than would appear from looking at the technical data.

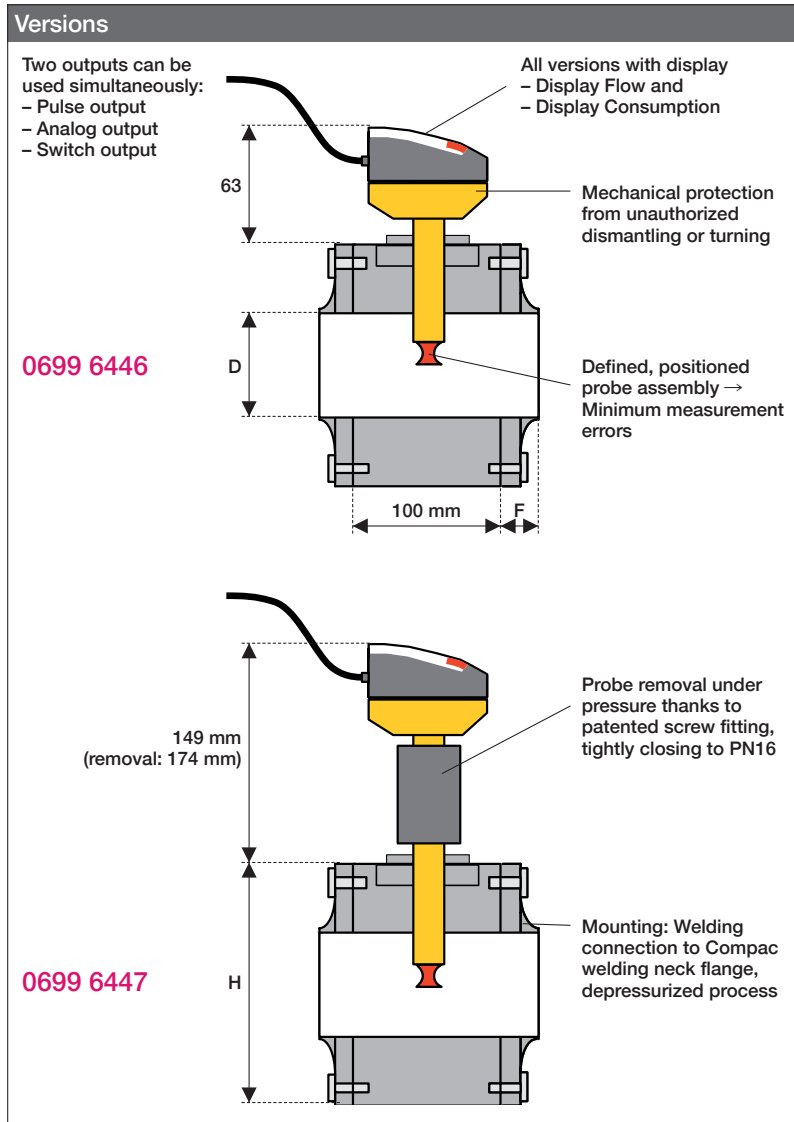
Testo has solved this problem with testo 0699 6446: thanks to a mechanical highly accurate measurement block, the thermal sensor is always properly positioned – horizontally, vertically and based on the tilt angle.

### testo 0699 6447 – With probe removal under pressure

This version offers everything the 0699 6446 offers but with probe removal as an extra.

Particularly with large diameters, important compressed air pipelines or even the main line after preparation are involved. System availability is therefore very important. For this reason, a bypass is required for other measurement solutions while the patented screw-on connection is easily used in testo 0699 6447 and the whole sensor together with electronics can be removed under pressure.

Recalibration, cleaning, exchange – No system downtime... and that's without a bypass!



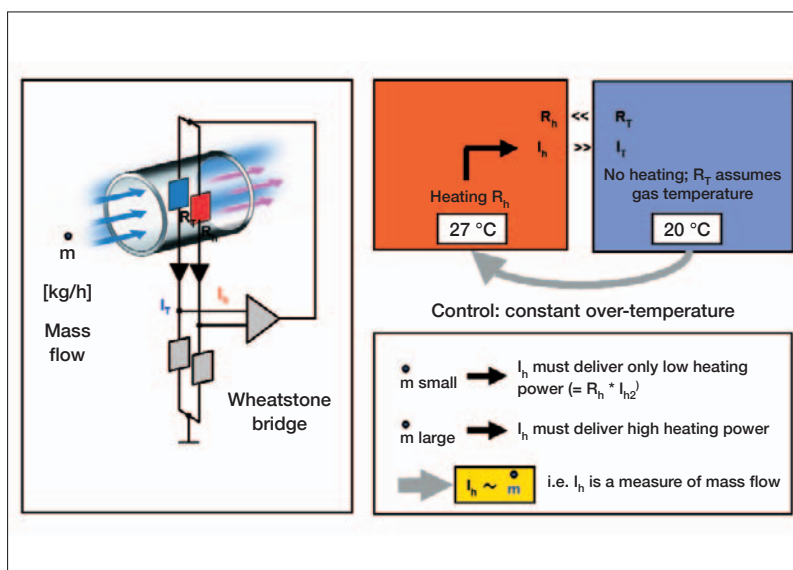
## Compressed air meters 0699 6446/47 – Features

### The optimum measurement principle...

...for compressed air standard volume flow measurement is thermal mass flow measurement. Only this

- is independent of process pressure and temperature
- causes no permanent loss of pressure

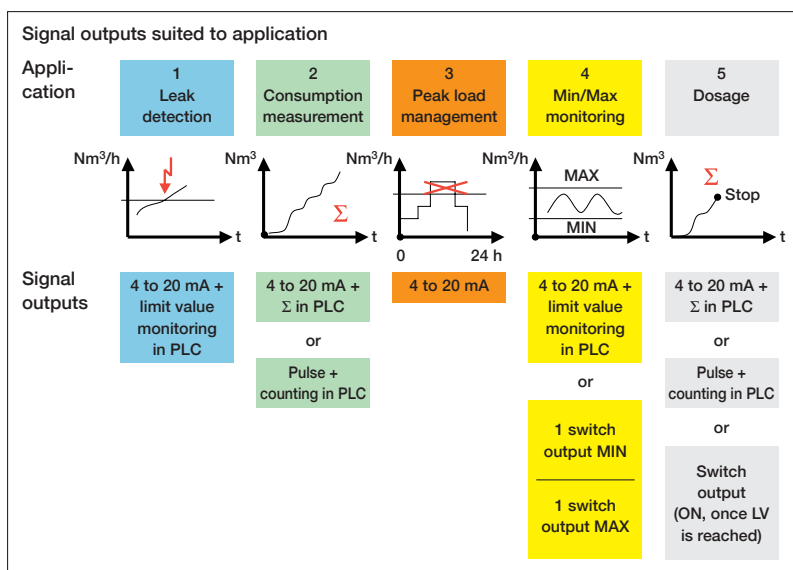
Two glass-passivated ceramic sensors, developed specially for demanding compressed air applications, are exposed to the process temperature and switched with a Wheatstone bridge.



### Highly flexible: testo 0699 6446/47 offers the signals required for every application

Two signal outputs can be parameterized depending on the application (see Fig. right). It is thus possible to represent every application:

- Consumption measurement (pulse output)
- Consumption monitoring (preselection meter, i.e. quantity dependent switch output)
- Leak monitoring (volume flow dependent switch output or analog output)
- Flow measurement (analog output)



### Diameter Data

DN mm	DN inch	Length Inlet pipe mm (without obstructions)	Length (mm) testo 0699 644x	D mm	F mm	H mm	Length Outlet pipe mm (without obstructions)	Weight (g)	Pulse value $Nm^3/Pul.$	Measurement range $Nm^3/h$
65	2½	975	124	70,3	12	125	325	9.300	1	6 to 2.000
80	3	1200	130	82,5	15	141	400	11.560	1	9 to 2.750
100	4	1500	130	107,1	15	165	500	13.740	10	15 to 4.440
125	5	1875	136	131,7	18	205	625	21.620	10	23 to 7.000
150	6	2250	140	159,3	20	235	750	26.400	10	33 to 10.000
200	8	3000	140	207,3	20	290	1000	36.980	10	58 to 17.500
250	10	3750	148	260,4	24	335	1250	49.400	10	92 to 27.500

\*The weights stated refer to 0699 6447, for 0699 6446, subtract 1400 g.

## Compressed air meters 0699 6446/47 – Technical data/Ordering data

Technical data of all versions	
Sensor	Thermal, glass passivated ceramic sensor
Resource	Compressed air (process conditions, see below), also CO <sub>2</sub> or N <sub>2</sub> on request
Accuracy	for compressed air quality classes (ISO 8573: particle – humidity – oil) 1-4-1: ±3 % of reading ±0.3 % of full-scale value for compressed air quality classes (ISO 8573: particle – humidity – oil) 3-4-4: ±6 % of reading ±0.6 % of full-scale value
Pressure dependency	Does not apply on account of thermal measurement principle (mass flow base)
Temperature dependency	Minimized by stored temperature coefficients
Reaction time	< 0.1 sec (for damping parameter = 0), delay via operating menu (0 s to 1 s)
Temperature display	0 to +60 °C, inaccuracy ±2K
Display, operation	4-figure alpha-numeric display, two operation buttons, operating menu, LED (4x green for phys. units, 3x yellow for "display x 1,000" or switch status)
Display units	Nm <sup>3</sup> /h, NI/min, Nm <sup>3</sup> , °C (selected unit displayed by green LED)
Electrical connection	M12x1 plug, load to 250 mA, short circuit-proof (synchronized), reverse polarity-proof, overload-proof. Testo recommends accessory cable Part no. 0699 3393
Power supply	19 to 30 VDC, current consumption < 100 mA
Output signals	Via operating menu, 4 combinations are parameterable, cf. page 3
Pulse output	Consumption meter (value available after reset or power loss due to non-volatile memory), value 1 or 10 Nm <sup>3</sup> , pulse length 0.02 s to 2 s, 24 VDC level
Analog output	4 to 20 mA (4-wire), max. load 500 Ohm, freely scalable from 0 to end of measuring range
Switch output	2 switch outputs, parameterable, (dependent on consumption or volume flow, NO contact, NC contact, hysteresis, window), loadable with max. 19 to 30 VDC or 250 mA each, switch status is displayed via 2 LEDs
Process conditions	0 to +60 °C, PN 16 (max. 16 bar), rel. humidity < 90 %RH, air quality ISO 8573: recommended classes 1-4-1
Ambient temperature	0 to +60 °C
Storage temperature	-25 to +85 °C
Resource contact	Materials: stainless steel or zinc coated, PEEK, polyester, viton, anodized aluminium, ceramic
Housing	PBT (GF 20%), zinc diecast, IP65 / III
EMC	In accordance with guideline 89/336 EEC
Standard reference	Standard flow (e.g. Nm/s) and standard volume flow (e.g. Nm <sup>3</sup> /h) are based on DIN ISO 2533, 15 °C, 1013.25 mbar, 0 %RH

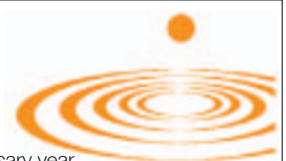
### Ordering data for Testo Compressed Air Meter

Versions		0699 6446 / ... (standard solution)				0699 6447 / ... (with probe removal under pressure)			
DN mm	DN inch	Material Steel, Zinc coated		Material Stainless steel		Material Steel, Zinc coated		Material Stainless steel	
65	2½	... / 1		... / 11		... / 1		... / 11	
80	3	... / 2		... / 12		... / 2		... / 12	
100	4	... / 3		... / 13		... / 3		... / 13	
125	5	... / 4		... / 14		... / 4		... / 14	
150	6	... / 5		... / 15		... / 5		... / 15	
200	8	... / 6		... / 16		... / 6		... / 16	
250	10	... / 7		... / 17		... / 7		... / 17	

**Order example:** A compressed air meter DN 150 with probe removal under pressure and stainless steel has Part no. 0699 6447 / 15

Accessories Ordering data	Part no.
Connection cable 5 m long, with M12x1 socket / open wire ends	0699 3393
testo 54-2 AC process display, 2 relay outputs (to 250 VAC/300 VDC, 3 A), mains supply: 90 to 260 VAC	5400 7553
testo 54-7 AC process display, 2 relay outputs (to 250 VAC/300 VDC, 3 A), mains supply 90 to 260 VAC, RS485 output for online monitoring and with totalizer display	5400 7555
Mains unit (desk-top) 110 to 240 VAC/24 VDC (350mA)	0554 1748
Mains unit (rail mounting) 90 to 264 VAC/ 24 VDC (2.5A)	0554 1749

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- More innovative than ever
- 50 innovations in the anniversary year



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