

The use of the DELTA meter with others gases

Introduction

Delta meters are designed to measure natural gas and various filtered, and non-corrosive gases. This document gives a list of gases and their compatibility with the Delta meter.

1) Quality of the gas to be measured

The gas to be measured must be dry and clean; the temperature of the gas must be always above the dew point.

It is advisable to install a filter upstream of the meter; recommended level of filtration is 100µm or better.



DELTA DN150 ISO PN16 G650 in ductile iron



3) Compatibility of various gases with the Delta meter

No.	Gas Type	Chemical Formula	Density at 0°C 1,013 bar (kg/m ³)	Design		Remarks
				Standard	Special	
1	Acetylene (without acetone)	C ₂ H ₂	1,17	Yes		Cu – free
2	Air Dry Wet	4N ₂ +O ₂	1,29	Yes No	No	
3	Ammonia	NH ₃	0,77	No	No	Not possible
4	Argon	Ar	1,78	Yes		
5	Butane	C ₄ H ₁₀ ⁱ _n	2,67 2,70	Yes		
6	Carbon dioxide dry (and with CO% > 1%) wet (CO Vol. < 1%)	CO ₂	1,98	Yes No	No	CO content of 1÷2% blocks CO ₂ corrosion effect
7	Carbon monoxide	CO	1,25	Yes		
8	Carbon oxysulfide	COS	2,72	No	No	Not possible
9	Chlorine Wet or dry	Cl ₂	3,22	No	No	Not possible
10	City gas			Yes		
11	Ethane Dry Wet	C ₂ H ₆	1,36	Yes No	No	
12	Ethylene Dry Wet	C ₂ H ₄	1,26	Yes No	No	
13	Helium	He	0,18	Yes	Yes	Tightness test with Helium
14	Hydrogen	H ₂	0,09	Yes	Yes	Tightness test with helium.

For other than standard gases, a gas analysis is recommended.



No.	Gas Type	Chemical Formula	Density at 0°C 1.013 bar (kg/m ³)	Design		Remarks
				Standard	Special	
15	Hydrochloric gas Dry water-free Wet – with water	HCl	1,64	No	No	Not possible
16	Methane	CH ₄	0,72	Yes		
17	Natural gas		0,78	Yes		
18	Neutral gas	81% CH ₄ 14% N ₂ 5% CO ₂	~ 0,8 dry	Yes		
19	Nitrogen	N ₂	1,25	Yes		
20	Oxygen (pure)	O ₂	1,43	No	No	
21	Pentane	C ₅ H ₁₂ ⁱ _n	3,46	Yes		
22	Propane	C ₃ H ₈	2,02	Yes		
23	Propylene	C ₃ H ₆	1,92	Yes		
24	Acid gas with wet H ₂ S content partial pressure H ₂ S < 1 mbar partial pressure H ₂ S > 1 mbar			Yes	-	see the WEG/NACE Regulations More investigation required
25	Sewage gas H ₂ S in traces at 15°C	~70%CH ₄ ~30%CO ₂ H ₂ S		No	No	Not possible
26	Sulphur dioxide Dry Wet	SO ₂	2,93	No	No	Not possible

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