

## MONOCOLOR 1N and 2Ex Hydrogen Sulfide Gas Analyzer

H<sub>2</sub>S gas analysis with the colorimetric measuring principle

### Design

- **MONOCOLOR 1N**
  - 19" slide-in unit, 6 HU for non-Ex areas, IP 20
- **MONOCOLOR 2Ex**
  - Wall mounting case for Ex zone 1, IP 65, II 2 G EEx de (ib) IIB T4
  - When used in a hazardous area the valid EC-Type Examination Certificate PTB 02 ATEX 2177 X has to be observed.

### Typical applications

- Desulfurization plants
- Natural gas purity monitoring
- Sewage treatment gas
- Land fill gas
- Pulp and paper industry
- Ambient air monitoring
- Coke oven gas
- Emission monitoring

### Measuring Principle

The H<sub>2</sub>S gas analyzer MONOCOLOR operates semi-continuously by the colorimetric measurement principle. H<sub>2</sub>S is measured with a dry reaction on a test paper strip which is saturated with a chemically selective color indicator (lead acetate or silver nitrate). The intensity of the test paper strip is proportional to the mean concentration and to the flowrate and will be determined by comparison between gased or not gased test paper strip.

This measuring principle is very selective, even in case of different sulfur compounds in the sample gas and allows the measurement of smallest H<sub>2</sub>S concentrations.



MONOCOLOR 1N



MONOCOLOR 2EX

Technical Data	MONOCOLOR 1N	MONOCOLOR 2Ex
<b>Measuring parameters</b>		
Measuring principle	Colorimetric (discoloration of test paper)	
Measuring component	H <sub>2</sub> S (hydrogen sulfide)	
Available measuring ranges	<ul style="list-style-type: none"> <li>As per customer specification, from 0 to 0.8 ppm (approx. 0 ... 1.25 mg/m<sup>3</sup>) to 0 ... 1.6 vol % (approx. 0 ... 25 g/m<sup>3</sup>)</li> <li>Measuring range switching possible</li> <li>Measuring ranges higher than 160 ppm (approx. 250 mg/m<sup>3</sup>) are realized by using an integrated proportioning device</li> </ul>	<ul style="list-style-type: none"> <li>As per customer specification, from 0 to 0.8 ppm (approx. 0 ... 1.25 mg/m<sup>3</sup>) to 0 ... 1.6 vol % (approx. 0 ... 25 g/m<sup>3</sup>)</li> <li>Measuring ranges higher than 160 ppm (approx. 250 mg/m<sup>3</sup>) are realized by using an integrated proportioning device</li> </ul>
Reproducibility	≤ 3 % of measuring range end value (for 50 % of measuring span)	
Response time, T <sub>90</sub>	9 min. (for measuring ranges higher than 0 ... 6.4 ppm)	
<b>Sample gas conditions</b>		
Sample gas temperature	+5 ... +40 °C (+40 ... +104 °F)	
Sample gas pressure	60 ... 120 hPa (0.9 ... 1.7 psi)	
Sample gas flow	15 ... 60 l/h (4 ... 16 gal/hr)	
Purge gas flow	> 60 l/h (> 16 gal/hr), (H <sub>2</sub> S-free air)	
<b>Ambient conditions</b>		
Ambient temperature	+5 ... +40 °C (+40 ... +105 °F)	
Ambient humidity	20 ... 80 % relative humidity	
<b>Approvals</b>		
Protection class	IP 20	IP 65
Ex approvals	-	II 2 G EEx d e (ib) IIB T4 PTB 02 ATEX 2177 X
Electrical safety	CE	
<b>Outputs</b>		
Analog output	0, 2, 4, ... 20 mA, load 500 W galvanically isolated only with linearization	4 ... 20 mA, load < 750 W intrinsically safe; out of external isolating transformer, which is installed outside the Ex area
<b>General</b>		
Models	19" slide-in unit, 6 HU	Wall mounting case for Ex zone 1
Failure indication	Via contacts, in case of pressure drop in gas line or end of paper	Via analog output at 1.6 mA, in case of measuring signal < 3.6 mA, torn paper or end of paper, defect lamp, motor break down, pressure drop in gas line