

# XMTCpro

## New Generation Thermal Conductivity Binary Gas Analyzer



Panametrics' XMTCpro is a compact, and robust analyzer with SIL 2 by design for continuous measurement of gas concentrations in binary gas mixtures, including hydrogen, carbon dioxide, methane, helium, and many others.

## Key Benefits

The XMTCpro is available with an integrated display and intuitive user interface. The XMTCpro also combines computer enhanced signal measurement for fastest response, real-time error detection, and MODBUS digital communication.

XMTCpro brings the user:

- Ultra-stable thermal conductivity sensor,
- Compact design for economic sample system integration,
- Intuitive operating interface allows short learning curve, easy and flexible to use,
- Integrated high contrast, easy-to-read multiparameter display,
- MODBUS digital communication provides measurement and configuration data,
- High level of reliability with SIL 2 by design.

## Minimal calibration and service

The XMTCpro is the most stable thermal conductivity analyzer on the market today. The rugged XMTCpro measuring cell resists contamination and remains insensitive to flow variations.

Since the design uses no moving parts, the transmitter can easily withstand the shock, vibration and harsh environments found in many industrial applications.

If the transmitter requires maintenance, its modular construction permits fast and easy servicing. Users can field-calibrate it quickly and replace the plug-in measuring cell with a pre-calibrated spare in minutes.

## Sample system

Sample systems deliver a clean, representative sample to the XMTCpro at optimal temperatures, pressures and flow rates.



Panametrics offers sample systems for a wide variety of applications. For assistance in designing your own sample system, please consult our application engineering team.

## Applications

The stable and accurate thermal conductivity sensor, certified globally for use in hazardous area environments, make the XMTCpro the tool of choice for use in:

### Hydrogen Economy

H<sub>2</sub> in various applications along the hydrogen value chain

### Metals industry

H<sub>2</sub> in N<sub>2</sub> atmosphere in metal heat-treating furnaces

### Electric power industry

H<sub>2</sub> in cooling systems for generators

### Petroleum industry

H<sub>2</sub> in hydrocarbon streams

### Chemical industry

- H<sub>2</sub> in NH<sub>3</sub> and in CH<sub>3</sub>OH synthesis gas
- H<sub>2</sub> in chlorine plants

### Methane industry

- CO<sub>2</sub> in CH<sub>4</sub>

### Landfill/biogas industry

- CO<sub>2</sub> in biogas
- CH<sub>4</sub> in biogas

### Gas production industry

Purity monitoring of Ar, H<sub>2</sub>, N, and He

### Food Industry

CO<sub>2</sub> in fermentation process

## Performance

**Accuracy:** ±2% of span\*

**Linearity:** ±1% of span

**Repeatability:** ±0.5% of span

**Zero Stability:** ±0.5% of span per week

**Span Stability:** ±0.5% of span per week

**Response Time:** 20 seconds for 90% step change

### Measurement Ranges

- 0% to 1%
- 0% to 2%
- 0% to 5%
- 0% to 10%
- 0% to 25%
- 0% to 50%
- 0% to 100%
- 50% to 100%
- 80% to 100%
- 90% to 100%
- 95% to 100%
- 98% to 100%

### Measurement Gases (Typical)

- H<sub>2</sub> in N<sub>2</sub>, air, O<sub>2</sub> or CO<sub>2</sub>
- He in N<sub>2</sub> or air
- CO<sub>2</sub> in N<sub>2</sub> or air
- SO<sub>2</sub> in air
- Ar in N<sub>2</sub> or air
- H<sub>2</sub>/CO<sub>2</sub>/air for hydrogen-cooled generators

### Required Sample Flow Rate

0.1 to 4.0 SCFH (10 to 2,000 cc/min);

0.5 SCFH (250 cc/min) nominal

## Functional

### Functional Safety

IEC61508 SIL 2 (optional)

### Analog Output

Two 4 to 20 mA isolated, 550 Ω maximum load, field-programmable

### Power

24 VDC ±4 VDC, 1.2 A maximum

### Temperature

Ambient Operating temperature range (2 options)

Option 1: -20°C to +50°C

Option 2: -5°C to +65°C

Storage temperature range: -20°C to +65°C

## Physical

### Sensor wetted materials

- Standard: 316 stainless steel, glass and Viton® O-rings
- Optional: Hastelloy C276 and Chemraz® O-rings

### Dimensions

- Wp. (H x D x W): 228 x 178 x 142mm (9 x 7 x 6in)
- Ex-proof (H x D x W): 252 x 178 x 142mm (10 x 7 x 6in)

### Weight

- Aluminum version: 4.5kg / 9.9 lb
- Stainless Steel version: 11.0 kg / 24.2 lb

### Connections

- 3/4 in NPT (electrical)
- 1/4 in NPTF (sample gas inlet/outlet)

### Environmental

- IP66, Type 4X

### IECEx compliance

- Ex db IIC T6 Gb,  
Ex tb IIIC T78°C Db,  
-20°C < Tamb < +65°C

### European Union compliance

- EMC Directive 2014/30/EU
- ATEX 2014/34/EU: II 2 GD Ex db IIC T6 Gb, Ex tb IIIC T78°C Db, -20°C < Tamb < +65°C

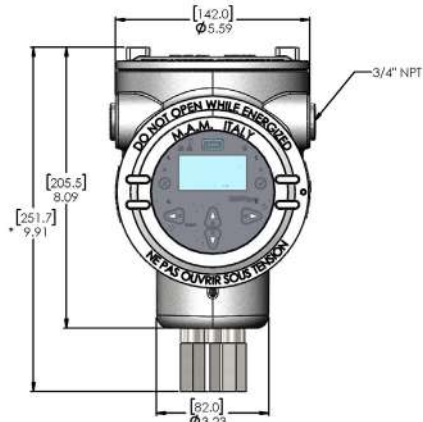
### NEC/CEC

- CI I, II, III Div 1, Groups ABCDEFG, T6
- CI I, Zn 1 AEx/Ex db IIC T6 Gb
- CI II, Zn 2I AEx/Ex tb IIIC T78°C Db
- CI I, II, III Div 2, Groups ABCDEFG, T6/T5\*\*
- -20°C < Tamb < +65°C

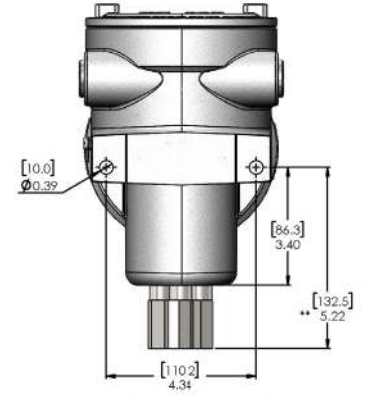
\* Accuracy may vary and depends on the gases and concentration ranges measured.

\*\* T5 applies for higher max ambient temperatures (from +55°C to +65°C) for Division 2 (US/Canada).

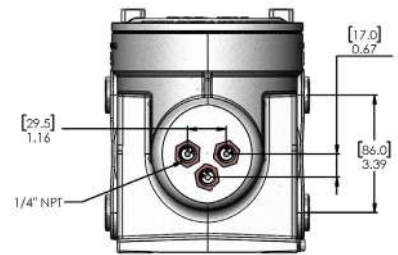
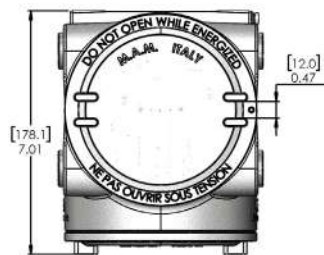
## Aluminum Version



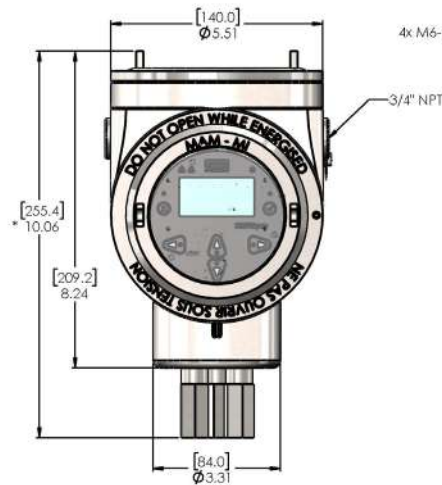
\*8.96 [227.6] WEATHERPROOF VERSION



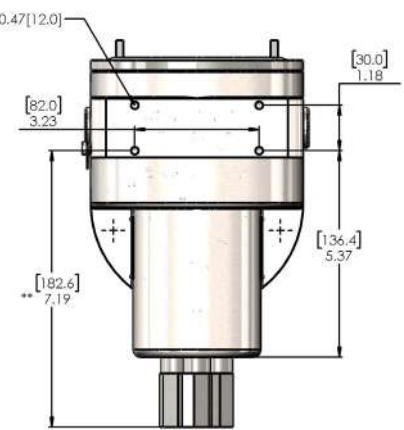
\*\*4.27 [108.5] WEATHERPROOF VERSION



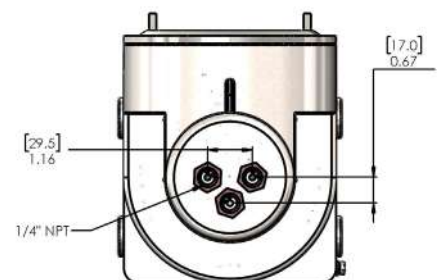
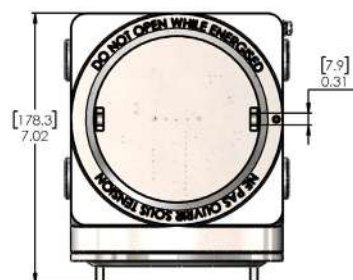
## Stainless Steel Version



\*9.11 [231.4] WEATHERPROOF VERSION



\*\*6.24 [158.5] WEATHERPROOF VERSION



## Order and calibration information

Model	XMTCpro, Thermal Conductivity Analyzer											
Installation Site Requirements	XMTCpro	<ul style="list-style-type: none"> <li>● <b>Enclosure Package</b> <ul style="list-style-type: none"> <li>1 Aluminium enclosure, weatherproof, with display</li> <li>2 Aluminium enclosure, explosion proof, with display</li> <li>3 Stainless steel enclosure, weatherproof, with display</li> <li>4 Stainless steel enclosure, explosion proof, with display</li> <li>5 Aluminium enclosure, weatherproof, no display</li> <li>6 Aluminium enclosure, explosion proof, no display</li> <li>7 Stainless steel enclosure, weatherproof, no display</li> <li>8 Stainless steel enclosure, explosion proof, no display</li> <li>9 Without enclosure</li> </ul> </li> <li>● <b>Wetted Material</b> <ul style="list-style-type: none"> <li>1 316 Stainless Steel, Viton O-Rings, PTFE</li> <li>2 Hastelloy, Chemraz O-Rings, PTFE</li> <li>3 316 Stainless Steel, Chemraz O-Rings, PTFE</li> <li>4 316 Stainless Steel, Viton O-Rings, CPVC</li> <li>5 Hastelloy, Chemraz O-Rings, CPVC</li> <li>6 316 Stainless Steel, Chemraz O-Rings, CPVC</li> </ul> </li> <li>● <b>Certification</b> <ul style="list-style-type: none"> <li>1 Safe Area/General Purpose Area</li> <li>2 USA/CAN Div 1, Zone 1/21</li> <li>3 USA/CAN Div 2, Zone 2/22</li> <li>4 ATEX/IECEX</li> </ul> </li> </ul>										
	Analytical Performance, Software, and Specials		<ul style="list-style-type: none"> <li>● <b>Cell Temperature Set Point</b> <ul style="list-style-type: none"> <li>0 55 °C</li> <li>1 70 °C</li> </ul> </li> <li>● <b>Concentration Range</b> <ul style="list-style-type: none"> <li>1 0 to 1%</li> <li>2 0 TO 2%</li> <li>3 0 TO 5%</li> <li>4 0 TO 10%</li> <li>5 0 TO 25%</li> <li>6 0 TO 50%</li> <li>7 0 TO 100%</li> <li>8 50 TO 100%</li> <li>9 80 TO 100%</li> <li>10 90 TO 100%</li> <li>11 95 TO 100%</li> <li>12 98 TO 100%</li> <li>S OTHER</li> </ul> </li> <li>● <b>Calibration Gas</b> <ul style="list-style-type: none"> <li>1 H<sub>2</sub>/N<sub>2</sub></li> <li>2 He/N<sub>2</sub></li> <li>3 He/Air</li> <li>4 CO<sub>2</sub>/Air</li> <li>5 CO<sub>2</sub>/N<sub>2</sub></li> <li>6 CH<sub>4</sub>/CO<sub>2</sub></li> <li>7 CO<sub>2</sub>/CH<sub>4</sub></li> <li>8 H<sub>2</sub>/CO<sub>2</sub>/Air</li> <li>9 H<sub>2</sub>/O<sub>2</sub></li> <li>10 O<sub>2</sub>/H<sub>2</sub></li> <li>S OTHER</li> </ul> </li> <li>● <b>Software</b> <ul style="list-style-type: none"> <li>0 Standard</li> <li>1 Hydrogen Cooled Generator</li> </ul> </li> <li>● <b>Safety Level</b> <ul style="list-style-type: none"> <li>SIL SIL2 By Design</li> <li>NON-SIL Safety Model Standard</li> </ul> </li> <li>● <b>Special</b> <ul style="list-style-type: none"> <li>0 No Special</li> <li>S Special</li> </ul> </li> </ul>									
			XMTCpro	-2	-1	-4	0	-7	-9	0	- SIL	0

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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