

TX 401M POINT GAS DETECTOR

ATEX II 2GD – EEx d IIC T6

3-wire 4-20mA + RS485 Modbus + 3 alarm relays + 18-bit microprocessor
Real non intrusive + one man local calibration and configuration



TX401M key features

- Extremely robust IP66 flameproof aluminium die casting enclosure with yellow chromatic RAL 1007 epoxy coating. Optional AISI 316L heavy and oxidation free stainless steel execution.
- 3-pieces removable AISI 316L sensor enclosure for easy sensor replacement, with wind/water/dust IP66 sensor protection and integrated calibration adapter.
- Ideal for harsh environment as chemical and petro-chemical industry, offshore oil and gas platforms, onshore oil and gas terminals, refineries, LNG/LPG storage and bottling plants, Bio-ethanol plants, solvent and painting industry, Industrial hygiene & safety monitoring, Soil contamination and remediation, Landfill, Biogas and Biomass applications, Hazmat sites and spills, waste water, paper and pulp, ...
- Diffusion mode detection principle, no moving parts (pump), higher reliability, lower maintenance costs
- No sensor failure risk by condensation (water droplets formation) due to air compression/dilatation effects of pump membrane operation

- All-in-one detector: 5 digit display, 4 status LED, 4-20mA output, RS485 half/full duplex Modbus, 3 freely programmable alarm relays, measure of ambient T° with automatic compensation (option), non-intrusive one man local calibration, continuous monitoring of detector failure en sensor operation en life time.
- Extended choice of gas sensors :
 - Catalytic combustion (CC) for %LEL HC, NH₃ and H₂
 - Electrochemical (EC) for ppm toxic gases and %Oxygen
 - Infrared (NDIR) for %LEL and %HC, ppm and %CO₂
 - Zirconium Oxide (ZrO₂) for %Oxygen (heated sensor, up to 100% RH condensing)
 - Photo-ionisation (PID) for ppm Volatile Organic Compounds (VOC)
 - Solid State (SS) for ppm H₂S for petrochemical applications
- Programmable response factors to reference gas for CC and PID sensors.
- Included accessories: wall mounting bracket, ATEX brass cable gland, magnet interface, wind/water/dust sensor protection with integrated calibration adapter.



Gas Detection and Analysis
Industrial Processes Gas Monitoring
Landfill & Environmental Gas Monitoring



GEIT

Gas Engineering
& Instrumentation
Technologies Europe

Mechanical

Safety Approval	ATEX II 2G - EEx d IIC T6 (CESI 03 ATEX 283 and 282U), GOST (NDIR)
Detector enclosure	Anodised aluminium dye casting with marine grade epoxy finish (stainless steel AISI 316L in option) Windowed cover - Dimensions : Ø 90 mm x depth 73 mm
Sensor enclosure	3-pieces removable AISI 316L sensor enclosure for easy sensor replacement, with "all weather" IP66 sensor protection and integrated calibration adapter
Ingress protection	Electronics enclosure : IP66; Sensor enclosure : IP65 ; Nickel plated cable gland : IP65
Weight	± 0,9 kg (1,6 kg for stainless steel)
Supply voltage	Nominal 24 VDC (operates from 10 to 32 VDC)
Cable gland entries	3x 3/4" NPT
Wiring	SWA type 3-wire 1,5 mm ² max. cable for supply voltage and 4-20mA signal SWA type 6-wire 1,5 mm ² max. cable for gas alarm A1, A2 and fault relay contacts. 4-wire + hearth cable for serial RS485 full duplex

Electronics

Electronics	18-bit microprocessor-based electronics
Operating temperature range	- 40°C to + 85°C
Display	5 digits 7 segments LED display
Supervision and fault codes	- Sensor remaining lifetime and end of life - Temperature transducer - Negative drift and over-range - EEPROM communication failure
Analogue Output	0-22mA, source type, continuously controlled by the microprocessor
Digital output	Current loop test function (4 and 20mA) for detector operation control without gas Half/Full duplex RS485 Modbus RTU communication bus, up to 256 addressable detectors @ 9200 bauds on the same bus reducing field wiring requirements; up to 1200m bus loop w/o repeater.
Output contacts	3 built-in programmable relays for gas alarm A1 & A2 and fault alarm, voltage free, manually configurable by software as NO/NC, excited, latching, memorized and delayed or not.
Configuration et calibration	Safe non-intrusive one-man local calibration & adjustments via magnetic key interface; No need of Ex-proof certified handheld interrogator unit for field configuration and/or calibration
Electromagnetic conformance	EMC complies with EN 50081-1 and EN 50082-1

Sensors

Operating RH range	0 - 95% RH non condensing (up to 100% RH condensing with heated ZrO2 sensor)
Operating temperature range	Electrochemical : - 20°C to + 50°C Infrared (NDIR) : - 40°C to + 50°C Catalytic combustion : - 40°C to + 85°C Solid state : - 40°C to + 85°C Zirconium Oxide : - 10°C to + 50°C PID : - 20°C to + 40°C
Resolution, linearity, repeatability	Sensor dependent, at least better than 1% of full scale value
Response time	From < 5 sec to 45 seconds, sensor dependent
Sensor types and gases	Electrochemical (ppm ranges): CO, NO, NO ₂ , SO ₂ , H ₂ S, H ₂ , NH ₃ , CL ₂ , HCL, HCN, O ₃ , PH ₃ , C ₂ H ₄ , CH ₂ O, ETO Galvanic fuel cell : O ₂ (0-100%) Non Dispersive Infrared : general hydrocarbons (0-100% LEL or 0-100%), methane (0-5% or 0-100%), propane (0-2% or 0-100%), propylene (0-2%), pentane (0-2%), butane (0-2%), ETO (0-3%), ethane (0-3%), hexane (0-1%), ethanol (0-5%), ethylene (0-3%), isopropanol (0-2%), acetic acid (0-4%), methanol (0-5,5%), toluene (0-1,1%) and CO ₂ from 0-500 ppm to 0-100% Catalytic combustion : CH ₄ and ± 34 different HC %LEL (RF to reference gas methane) Solid state (MOS) : H ₂ S 0-100 ppm Photo-ionization : 9,6 eV and 10,6 eV UV lampen; ± 125 different VOC (RF to reference gas Isobutylene) ZrO₂ : O ₂ (0-25%) - fully operational even with 100% condensing relative humidity.

Standard accessories

Wall mounting shaft, Nickel plated Brass ATEX cable gland, Magnetic key interface

Options

Stainless steel ATEX AISI 316L electronics enclosure and cable gland
Flow chamber in stainless steel AISI 316L, for gas sampling applications
Duct mounting plate with calibration connection
Automatic temperature compensation (included in the standard delivery for infrared sensors)

Non contractual pictures and specifications - subject to change without prior notification - issue EN09v1

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Special Hazard Fire Detection & Suppression

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