

UHP Gas Purity Monitors

ta7000F Special

Model designation and detection limit specifications

Sample gas	Model	Lower Detection Limit (LDL)			
		Methane (CH ₄) parts per billion (ppb)	CO ₂ ppb	Non-methane hydrocarbons (NMHC) ppb	Carbon monoxide (CO) ppb
Nitrogen (N ₂)	ta7000F – N ₂	< 0.5	< 1.0	< 1.0	
Argon (Ar)	ta7000F – Ar	< 0.5	< 1.0	< 1.0	
Helium (He)	ta7000F – He	< 0.5	< 1.0	< 1.0	
Oxygen (O ₂)	ta7000F – O ₂	< 1.0	< 1.0	< 1.0	
Hydrogen (H ₂)	ta7000F – H ₂	< 1.0	< 1.0	< 1.0	
Hydrogen (H ₂)	ta7000F – H ₂ (CO only)				< 1.0
Carbon dioxide (CO ₂)	ta7000F – CO ₂	< 1.0		< 1.0	

PERFORMANCE SPECIFICATIONS

Accuracy, EDL mode	Greater of ± 0.25 ppb CH ₄ ; ± 0.5 ppb CO ₂ ; ± 1.0 ppb NMHC; ± 1.0 ppb CO; $\pm 10\%$ of reading
Range	0 to 199.9 ppb
Response time	10 mins. to 99% response. 60 mins. to 75% response in EDL mode. Response time is independent of sample concentration
Ambient operating temperature	16 to 32°C (60 to 90°F)
Sample compatibility	Specific models available for N ₂ , Ar, He, O ₂ , or H ₂ analysis
Resolution, display	0.1 ppb
Resolution, communication ports	0.01 ppb
Inlet pressure range	70 to 90 psig (4.8 to 6.1 bar)
Inlet pressure stability	$\pm 2\%$, regulator required
Return pressure	Atmospheric vent is optimal, ± 0.5 psig maximum. Consult AMETEK for more details
Flow rate	300 cc/min minimum, sample at 50 cc/min
Temperature	16 to 38°C (60 to 100°F), optimum when temperature maintained $+2^\circ\text{C}$ ($\pm 3.6^\circ\text{F}$)
Maximum impurity levels	200 ppb moisture, CO ₂ , hydrocarbons
Dimensions (W x H x D)	430 x 180 x 670 mm (16.8 x 7 x 26.5 in.)
Weight	15.9 kg (35 lb)
Power	100-120 VAC, 50/60 Hz; 200-240 VAC, 50/60 Hz
Carrier/sample inlet	1/4-inch face seal fitting
Sample inlet	1/4-inch face seal fitting (H ₂ and O ₂ models only)
Flame ionization detector (FID) air	1/16-inch VICI compression
FID H ₂	1/16-inch VICI compression
Aux (calibration)	1/16-inch VICI compression
Sample outlet	1/16-inch VICI compression
FID H ₂ shut-off	1/8-inch VICI compression supplied at 57 psi (3.9 bar)
Aux (calibration)	1/16-inch VICI compression
Sample outlet	1/16-inch VICI compression
FID H ₂ shut-off	1/8-inch VICI compression supplied at 57 psi (3.9 bar)
Actuator gas	1/8-inch VICI compression
Display	LCD graphics, backlit, 100 x 150 mm
Printer port	Concentration, chromatogram, and diagnostic reports
Serial PLC port	Concentration data and alarms via RS232
4-20 mA (optional)	Concentration signals and status relay contacts

INSTALLATION REQUIREMENTS

SAMPLE GAS	
Inlet fitting	1/4-inch face seal fitting
Inlet pressure range	70 to 90 psig (4.8 to 6.2 bar)
Inlet pressure stability	±2%, UHP regulator required
Vent pressure	Atmospheric pressure vent is optimal, +0.5 psig maximum
Flow rate	300 cc/min minimum, sample bypass at 50 cc/min
CALIBRATION GAS	
Inlet fitting	1/16-inch VICI compression fitting
Cylinder concentration	5 to 10 parts per million (ppm) H ₂ , CO, CH ₄ , CO ₂ , and ethane (C ₂ H ₆), balance N ₂
Cylinder volume	100 cubic feet minimum (2800L)
Supply pressure	80 to 90 psig (5.5 to 6.2 bar)
Consumption	Approximately 1.0 L per calibration (4 to 8 L/month), automatic shut-off between calibrations
FID H ₂	
Inlet fitting	1/16-inch VICI compression fitting
Inlet pressure range	50 to 60 psig (3.4 to 4.1 bar)
Inlet pressure stability	±2%, UHP regulator required
Flow rate	35 cc/min
Purity	Hydrocarbons, CO, CO ₂ < 1 ppm
FID AIR	
Inlet fitting	1/16-inch VICI compression fitting
Inlet pressure range	50 to 60 psig (3.4 to 4.1 bar)
Inlet pressure stability	±2%, regulator required
Flow rate	250 cc/min
Purity	< 1 ppm total hydrocarbons dew point temperature < -65°C (-85°F)
NITROGEN CARRIER GAS (O ₂ & H ₂ MODELS ONLY)	
Inlet fitting	1/4-inch face seal fitting
Inlet pressure range	70 to 90 psig (4.8 to 6.2 bar)
Inlet pressure stability	±2%, UHP regulator required
Flow rate	300 cc/min
Purity	99.9999% (< 1 ppm total impurity content)

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