

شماره سند: PT-FO- شماره بازنگری: 01 شماره صفحه: 1 از 1	عنوان سند Gas Chromatograph DataSheet (ISO 9001:2008)	
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Item no	Technical Features	Requirements
1	OVEN	<p>Operating temperature range suitable for all columns and chromatographic separations. Ambient temperature +4 °C to 450 °C.</p> <ul style="list-style-type: none"> • Temperature set point resolution: 0.1 °C. • Supports 20 oven ramps with 21 plateaus. Negative ramps allowed. • Maximum achievable temperature ramp rate: 120 °C/min • Maximum run time: 999.99 min (16.7 h). • Oven cool down (22 °C ambient) 450 to 50 °C in 4.0 min (3.5 min with oven insert accessory). • Ambient rejection: < 0.01 °C per 1 °C.
2	PENOMATICS	<ul style="list-style-type: none"> • Compensation for barometric pressure and ambient temperature changes be standard. • Pressure must have typical control of ± 0.001 psi for the range of 0 to 150 psi. Pressure set points may be adjusted in increments of 0.001 for the range 0.000 to 99.999 psi; 0.01 psi for the range 100.00 to 150.00 psi. • User could select pressure units as psi, kPa, or bar. • Pressure/flow ramps: Three minimum. • Carrier and makeup gas settings be selectable for He, H₂, N₂, and argon/methane. • Flow or pressure set points for each inlet or detector parameter could be adjusted with instrument and Software. • Constant flow mode be available when capillary column dimensions are entered into the instrument. • Split/splitless, Multimode, and PTV inlets must have flow sensors for the control of split ratio. • Inlet modules <ul style="list-style-type: none"> • Pressure sensors: Accuracy: $< \pm 2\%$ full scale, Repeatability: $< \pm 0.05$ psi, Temperature coefficient: $< \pm 0.01$ psi/°C, Drift: $< \pm 0.1$ psi/6 months. • Flow sensors: Accuracy: $< \pm 5\%$ depending on carrier gas, Repeatability: $< \pm 0.35\%$ of set point, Temperature Coefficient $< \pm 0.20$ mL/min (NTP)* per °C for He or H₂; $< \pm 0.05$ mL/min NTP per °C for N₂ or Ar/CH₄. • Detector modules: Accuracy: $< \pm 3$ mL/min NTP or 7% of set point, Repeatability: $< \pm 0.35\%$ of set point <p>*NTP = 25 °C and 1 atmosphere</p>
3	S/SL INJECTOR	<ul style="list-style-type: none"> • Suitable for all capillary columns (50 μm to 530 μm id). • Split ratios up to 7,500:1 to avoid column overload. Setting split ratios (particularly low split ratios) is limited by column parameters and control of system flows (particularly low system flows). • Splitless mode for trace analysis. <ul style="list-style-type: none"> • Pressure-pulsed splitless be easily accessible for best performance. • Maximum temperature: 400 °C. • EPC be available in two pressure ranges: 0 to 100 psig (0 to 680 kPa) for best control for columns > 0.200 mm diameter; 0 to 150 psig for columns < 0.200 mm diameter. • Gas saver mode to reduce gas consumption without compromising performance. • Electronic septum purge flow control to eliminate "ghost" peaks. • Total flow setting range: 0 to 200 mL/min N₂ 0 to 1,250 mL/min H₂ or He • Turn top inlet sealing system i with each S/SL inlet for quick, easy, injector liner changes.

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4	PTV INJECTOR	<ul style="list-style-type: none"> • Support hot/cold split and splitless modes as well as large volume injections. • Temperature control: either LN2 (to -160 °C) or LCO2 (to -65 °C) cooling. • Temperature programming of up to 3 ramps at up to 720 °C/min. • Maximum temperature: 450 °C. • EPC pressure range 0 to 100 psig. • Split ratio up to 7,500:1. • Electronic septum purge flow control. • Choice of Gerstel septumless head or Merlin Microseal® septum head. • Total flow setting range: 0 to 200 mL/min N2 , 0 to 1,250 mL/min H2 or He
5	FID DETECTOR	<ul style="list-style-type: none"> • Electronic pneumatics control and electronic on/off for all detector gases. • EPC compensated for atmospheric pressure and temperature variation. • Minimum detectable level (for tridecane): < 1.4 pg C/s • Linear dynamic range: >10⁷(± 10%). • Full-range digital data path enables peaks to be quantified over the entire 10⁷ concentration range in a single run. • Data rates up to 500 Hz accommodate peaks as narrow as 10 msec at half height. • Standard electronic pneumatic control for three gases: <ul style="list-style-type: none"> - Air: 0 to 800 mL/min - H2: 0 to 100 mL/min - Makeup gas (N2 or He): 0 to 100 mL/min • adaptable for either packed or capillary columns. • Flameout detection and automatic reignition • 450 °C maximum operating temperature
6	TCD DETECTOR	<ul style="list-style-type: none"> • Electronic pneumatics control and electronic on/off for all detector gases. • EPC compensated for atmospheric pressure and temperature variation. • Minimum detectable level: 400 pg tridecane/mL with He carrier. • Linear dynamic range: > 10⁵ ± 5% • Unique fluidic switching design provide rapid stabilization from turn-on, low-drift performance. • Signal polarity could be run-programmed for components having higher thermal conductivity than the carrier gas. • Maximum temperature: 400 °C • Standard EPC for 2 gases (He, H2, or N2 matched to carrier gas type) • Make-up gas: 0 to 12 mL/min • Reference gas: 0 to 100 mL/min • The instrument must accommodate a third detector as TCD located on the left-hand side of the GC.

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7	PDHID DETECTOR	<ul style="list-style-type: none"> • Electronic pneumatics control and electronic on/off for all detector gases. • EPC compensated for atmospheric pressure and temperature variation. Dual mode <ul style="list-style-type: none"> • Mains (line): 230 V~50/60 Hz • Pressure: 6.9 kPa (1 psi) operating, 6.9 MPa (1000 psi) max working • Maximum temperature: 400°C • Sensitivity: 10X range: 1.0 V/nA, 1X range: 0.1 V/nA ± 1% • Range: 10X: 10 nA full-scale, 1X: 100 nA full-scale* • Noise: 1X: 20 fA/vHz (referred to the input) 0.1 - 10 Hz, 10X: 5 fA/vHz (referred to the input), 0.1 - 10 Hz • Rise time: 10 msec, 10% = 90% • Output impedance: < 1 Ω, attenuated, 1 KΩ, un attenuated, 1 V, 10 V • Environmental ratings: 10°C - 50°C, 10% - 95% relative humidity
8	PFPD Detector	<ul style="list-style-type: none"> • Electronic pneumatics control and electronic on/off for all detector gases. • EPC compensated for atmospheric pressure and temperature variation. • designed in single-wavelength flame photometric detector (FPD), or dual-wavelength flame photometric detector (DFPD) • MDL: < 45 fg P/s, < 2.5 pg S/s with methyl parathion • Dynamic range: > 10³S, 10⁴ P with methyl parathion • Selectivity: 10⁶ g S/g C, 10⁶ g P/g C • Data acquisition rate: up to 200 Hz • Standard EPC for three gases: <ul style="list-style-type: none"> - Air: 0 to 200 mL/min - H2: 0 to 250 mL/min - Makeup gas: 0 to 130 mL/min • Dual-wavelength versions. • 400 °C maximum operating temperature • the instrument must be able to handle 4 signals allows simultaneous use of DFPD, top-mounted GC detector, and TCD.