SAKS SEPmaster-2000 High Resolution Fast gas Chromatograph

Data Sheet

SEPmaster - 2000 series is a highly modular high resolution fast gas chromatograph. User can select from number of inlet systems. Split/-Splitless, conventional packed, PTV, valve inlets are developed from a unique purgefree monoblock system provide easy sample introduction. iDPC(inteligent Digital Pneumatic Controller) integrated both pressure and flow sensors with choice of true flow or pressure enable full digital control of all the injector and detector flows with excellent repeatability

Most of the detector systems are available make use of the new age cutting technologies
and modern age manufacturing practices. FID, TCD, PID, HID, micro TCD, NPD, FPD and PDECD
are available. All the detectors undergone and passed quality tests as per ASTM standards.

A latest generation digital PID control accomodating newer generaion ADC's help us to achieve excellent temperature and flow repeatabilities thus a final excellent repeatability of retention times

A 7" big multitouch touchscreen user interface helps to set all the control parameters also featuring a live pinch zoom chromatogram screen
first of its kind. GC can be fully controlled via SAKS CRYSTAL Chromatography data station as well, which developed most inexperianced users in mind.

Real time clock that allows auto swith on and off programming in a future data and time. Septum and column change warning, auto diagnostics, column leak check facility,
FID flameout detection and re-ignition, Single touch autozero and software autozero, low pressure column flow cut-off and warning, password protected configuration menu are standard. Option for multidimensional GC-GC (heart-cutting), on-line purge and trap, monovial head space, coupling to MS and AS-1000 automatic sample preparation systems.

Automatic atomosheric pressure and temperature compenation as standard to ensure the data integrity even if the laboratory atmospheric conditions change.

Supports open connectivity to enable communication to third party vendor softwares.

A run time log will save all method parameters to the GC memory which can be reviewed later.

COLUMN OVEN

- Column oven (H × W × D): 30 × 30 × 20 cm; 18 L capacity.
- Operating temperature range: ambient +5 °C to 450 °C
- Cryogenic option minimum temperature: -100 °C with liquid nitrogen; -50 with liquid CO2
- Temperature set point resolution: 0.1 °C
- Ambient Rejection: <0.01°C per 1 °C
- Number of ramps/plateaus: 24/25
- Maximum heating rate: 140 °C/min
- Oven cool-down (22 °C ambient): 300 °C to 50 °C in less than 4 minute.
- Maximum run time : 999.99 min
- Oven temperature ramp ~ 2%
- Programming temperature repeatability ~ 1%

INLETS

- All inlets are enabled with iDPC(intelligent Digital Pneumatic Controller having true flow control and atmospheric pressure & temperature compensation as standard)
- Three inlets can be installed simultaneously

Available inlet options

Split/Splitless Injector

- Mono block purge-free injector
- iDPC as standard
- Septum purge as optional
- Column Head pressure control upto 1000 kpa with 0.01 kpa resolution
- True flow controller
- Split ratio from 10 to 1250 mL/min
- Injection modes: split, splitless, split/splitless, pulsed split/splitless, large volume injections (LVI), packed column Simulation
- compatible with Head Space and On-line Purge & Trap
- Upto 7 ramps of flow or pressure
- Split ratio: upto 1:12500
- Max Temp: 450 °C
- Adjustable splitless time upto 2 minutes through SAKS Crystal or through touchscreen
- Gas Saver function for reduction in gas flow
- Available with manual pneumatics on request for economical version

Packed Injector.

- Mono block purge-free injector
- iDPC as standard
- Septum purge as optional
- Column Head pressure control upto 1000 kpa with 0.01 kpa resolution
- Max flow: 200mL/min with 0.1mL resolution
- Compatible with 1/8" and 1/16" packed columns as well 0.53mm ID semi capillary columns
- Max Temp: 450 °C
- Available with manual pneumatics on request for economical version

PTV(Programmable Temperature Vapourizer) Injector.

- Injection of a large sample volume without concentration
- iDPC as standard
- Temperature programming: from -50 ºC(LN2) up to 450ºC at a heating rate up to 10ºC/sec
- Injection volume: up to 5 mL
- Allows splitless time and cooling time programming

Cool On Column Injector.

- Direct liquid injection to column
- iDPC as standard
- Column Head pressure control upto 1000 kpa with 0.01 kpa resolution
- True flow controller
- Seven ramps or oven tracking
- Max Temp: 450 °C

Gas and Liquid sampling valve injector.

- Automatic Temperature controlled valves
- iDPC as standard
- Exchangeable external loops of different volumes: 0.1, 0.2, 0.5, 1.0 or 2.0 mL.
- Allows control and temperature programming of the injection valve through the touchscreen and/or software
- Max Temp: 350 °C

DETECTORS

FID(Flame Ionization Detector)

- iDPC as standard
- Automatic ignition
- Automatic flamout detection and re-ignition and automatic shutoff of H2 and Air.
- Inert quartz jet with ID 0.3mm for sensitivity or 0.5 mm for general purpose options
- Minimum detectable level: <1.4 pg C/s(Tridecane)
- Linear Dynamic range: 10^7
- Max flow rate of H2: 100mL/min
- Max flow rate of Air:1000 mL/min
- Max flow rate of Makeup:1000 mL/min
- Max Temp: 450 °C

TCD(Thermal Conductivity Detector)

- iDPC as standard
- Hot wire two filament or four filament or thermistor options
- Automatic shutoff of filament current in case flow stops
- Linear Dynamic range: 10^5
- Minimum detectable level: <400 pg propane/mL with He
- Filament current: 0-350mA
- Max Temp: 400 °C

NPD(Nitrogen Phosphorous Detector)

- iDPC as standard
- Minimum detectable level: < 0.4 pg N/s, < 0.2 pg P/s with azobenzene/malathion mixture
- Linear Dynamic range: 10^4
- Max Temp: 400 °C

FPD(Flame Photometric Detector)

- iDPC as standard
- Minimum detectable level:
- < 200 fg P/s, < 6 pg S/s with methylparathion
- Linear Dynamic range: > 103 S, 104 P with methylparathion
- Max Temp: 350 °C

PDD/HID/PDECD(Pulsed Discharge/ Helium Ionization/Electron Detector)

- iDPC as standard
- Minimum detectable level:
- <100 ppb for fixed gases in PDD mode and 0.02 pg/mL lindane in PDECD mode
- Linear Dynamic range: > 10^4 with lindane
- Max Temp: 400 °C

AS-1000 Autosamler and HS-1000 Headspace interface

- Liquid autosampler AS-1000 and Headspace analyser HS-1000 interfaces are builtin to the main board. Data and power can be supplied to up to two HS or AS.

Data Communications/Method storage

- USB communication channel to PC as standard. On demand LAN or WIFI is available
- Two analog output channels of 1-mV, 1-V, and 5-V are available
- Two remote start stop outputs
- 11 method storage as standard and can be upto 99 on request.
- Detailed video help available inbuilt

Maintanance and support

- Remote diagnostics
- Online help integrated to touchscreen for easy access
- Maintanace activities can be programmed through touch screen for early warning of routine maintanance activities like septa, column change etc. Counters will be incremented during each injection and will provide warning through touch screen message menu and through buzzer warning

Environmental conditions and safety

- Implemented a ISO 9001 system for the design and manufacturing. Instrument complies with international regulatory requirements, safety and electromagnatic compatibility requirements.
- Conforms to Europian Conformity standards(CE

Complient)

- Ambient Temperature: 15 to 35 °C
- Ambient Operating Humidity: 5-60% preferable
- Line voltage variations acccepted: ±10% max

General Specifications

- Height: 480mm
- Width: 680mm
- Depth: 600mm
- Weight: 50kg for only GC
- Operating Voltage: 220V, 50Hz as standard. 110V/60Hz and other voltages are available on request
- Power consumption: 13A for 220V models and 26A for 110V models. 2400W max for duel injectior and detector models. 2900W max for all accessories including methanizer.
- External Events: 8 outputs
- GC display and keypad: 7" Capacitive touch pad with advanced video rendering

- Launguage: English as standard. Other launguages on request
- Available with remote diagnostics facility as standard

Ph: +91 484 2781266
Mobile: +91 8891680266
Email: sales@saks.net.in
service@saks.net.in

For more information please visit
www.saks.net.in

An ISO 9001:2015 certified company

Information furnished is subject to change without notice due to continuous R&D and improvement.

100% Made in India(Part of Make in India initiative)

Factory: SAKS Equipments Pvt Ltd
MRA8, Memana Road, Choorakkad
Tripunithura P.O, Cochin, Kerala
India – 682301