FlashPoint

Powered by icon

icon

intelligent scientific analysis

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All icon products are…

Easy to use: with a glass touch-screen, wipe-clean graphic user interface, intuitive software with multi-language options.

Certified to global standards: ATEX, IECEx, TIIS, EAC-EX, ETL approved to give absolute confidence and peace of mind in hazardous areas and manufactured under an ISO9001:2008 certified Quality Management System.

Robust and fully explosion proof: no air or inert gas purging required for safe operation in explosion hazard areas.

Safety assured: with an alarm for internal sample leakage.

Highly efficient: with low sample consumption and a sample flow monitor.

Flexible: with auto validation calibration options and standard modbus, 4-20mA and alarm contact outputs.

What does it do?

The icon scientific FlashPoint Analyser measures the lowest temperature at which typically kerosene or diesel fuel will form a flammable vapour mixture with air. The analyser heats a sample and applies a test spark to the headspace above the liquid. Delivering exceptional results, it enables you to determine the safe storage temperatures for various petroleum products.

Using sample heating and spark ignition to measure flash point, the analyser correlates well with standard laboratory tests and is immune to sulphur compounds. It is equipped with computer-controlled air and sample flow rates, positive spark detection, integral sample cooler, internal camera and electrode decoking system. These state-of-the art features allow you to observe the spark and inspect the electrodes without having to open the explosion-proof box. The results are compatible with those produced by any standard flash point test methods, such as IP170, ASTM D92 and ASTM D93.

How does it work?

The sample is pumped into a test cup and trapped within it. At a controlled rate, air is also introduced to the test cup, which is then heated. At selected intervals, a high-voltage spark is generated by electrodes positioned over the sample. When it is reached, the flash point is detected by a highly sensitive low-mass thermocouple. The sample flow is then re-established and the air flow increased, allowing the test cup to cool in preparation for the next cycle.

Why choose the icon scientific FlashPoint Analyser?

Inbuilt sample metering pump: internal, programmable flow metering pump provides more accurate flow-rate control than traditional flowmeters.

Mass flow controller: provides programmable air flow and more accurate flow rate control than traditional flowmeters.

Inbuilt inspection facility: internal camera enables flash point observation without the need to open the explosion-proof box. This makes the whole process safer and easier to monitor.

Spark electrode cleaning system: air is blown through the electrode assembly during cooling, and the electrodes are sparked to remove any deposits that have formed. This keeps the electrodes clean and enables routine maintenance without having to open the explosion-proof box.

Return to Pressure option: where no atmospheric return point is available an internal recovery unit is available to return against back pressures up to 5 barg.

Inbuilt sample cooler: Peltier-based sample cooler to ensure that incoming sample is cooled below the flash point temperature.

Atmospheric pressure compensation: analyser results are adjusted according to atmospheric pressure as defined in the standard test methods.

Specification

Measuring range	Adjustable for any range between 30^0C to 200^0C.
Repeatability	Equal to or better than the repeatability criteria of the relevant test.
Cycle Time	4-10 minutes.

Sample Requirements

Filtration	Sample should be free from non-dissolved water and filtered to 10 microns
Sample Pressure at Inlet	Between 0.2–1 Barg
Sample Pressure at Outlet	Atmospheric drain (standard). Continuous fall to drain required. Maximum of 5 Barg with optional internal recovery system.
Sample Viscosity at Inlet	Maximum 10 centipoise (IIB+H2) Maximum 30 centipoise (IIA)
Sample Temperature at Inlet	Ideally 20°C below the actual flash point or, with internal cooler, up to 5°C below the actual flash point (ambient related). Not higher than 80°C in all cases.
Sample Consumption	2-6L/h.

Utility Requirements

Instrument Air	Required at 1–2 Barg, flow 100-1000ml//min.
Power	115VAC 50Hz, 230VAC 50Hz 115VAC 60Hz, 230VAC 60Hz Max 800VA

Installation Requirements

Location	Unit must be located out of direct wind sun and rain
Ambient Temperature	+5 to +40 Deg.C
Ambient Humidity	0-95% RH, non-condensing.

Control System

Control System	Based on fan-less industrial PC with solid state hard drive.
Graphical User Interface(GUI)	17" armoured glass touch-screen. The GUI is used to program the unit and display current and historical analyser results and alarm status.
Language	User selectable multi-language.

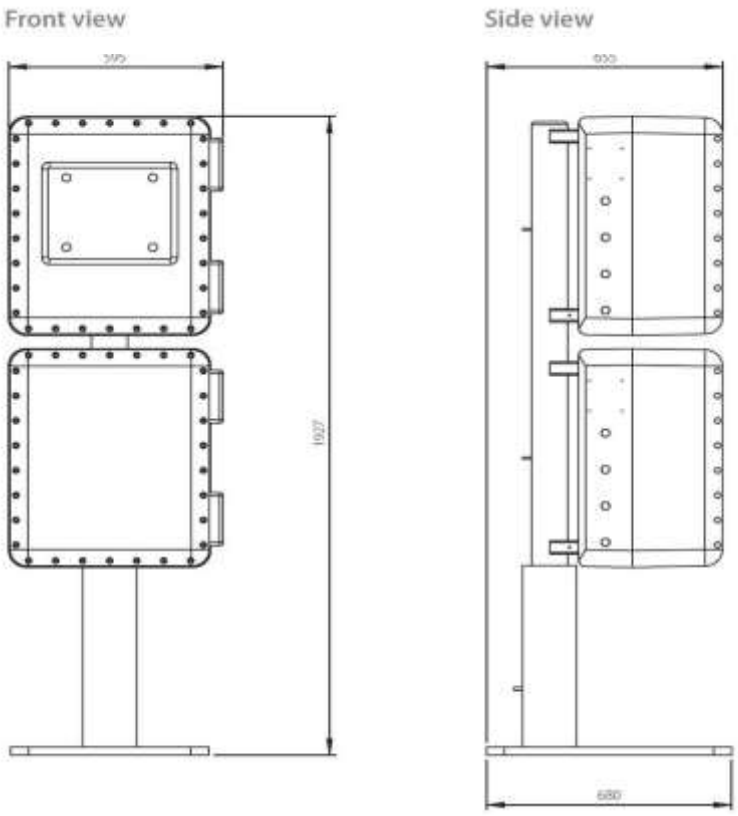
Inputs/Outputs

Analog Output	2 x 4-20ma active isolated outputs are provided as standard (1 for process, 1 for calibration).
Communications	Modbus RTU over RS485, Ethernet (TCP/IP) or optional fiber optics. Optional OPC c/w server software over RS485.
Analog Inputs (optional)	The analyser can read in up to 4 active 0-10V or 4-20mA signals. These inputs may be named scaled and displayed and the values can have alarm levels associated with them.
Digital (contacts) Inputs (optional)	The analyser can monitor up to four volt free external contacts. The contacts can be allocated names for screen display and may be included in the alarm table.
Alarms	Any available alarm condition within the analyser may be allocated as active or inactive. Active alarms are notified on screen and stored in the alarm history table. Active alarms can be set by the user to activate a warning alarm contact or a fatal alarm contact. A warning alarm is for notification only while a fatal alarm causes the analyser to suspend its operation.
Digital (contacts) Outputs	In addition to the above Alarm contacts, the analyser also provides the following contact outputs; **New Result**: a 10 second contact to notify that a new analyser result is available. **Data Valid**: this contact will operate if the analyser is operating but the data is not valid because calibration or validation is in progress or the analyser is being run in manual mode. **Calibration/Validation**: indicates that the analyser is in calibration/validation. **Spill Alarm**: This contact will operate in the case of a leak being detected in the analyser enclosure. All contact ratings are 24VDC 0.5A, 230VAC, 1A

Certification

Hazardous Area Certification	The icon Flashpoint analyser is Exd certified to ATEX, IECEx, TIIS and EAC-EX standards, for zone 1 or zone 2 use in gas groups IIA, IIB or IIB+H2 with a variable T-rating depending upon application. It is also ETL listed for Canada and the USA Class 1, Div 1, groups B,C,D.
IP Ratings	Tested and certified to IP67 (dust tight and protected from temporary total immersion in water). Classification broadly equivalent to NEMA 6

Dimensions & Weights



Notes:

All dimensions in mm

Unpacked weight approx. 416kg

Packed weight approx. 523kg

__Note:__ icon scientific products are subject to a program of continuous development and improvement and specifications are liable to change without notice. Please check that you have the latest information available before relying on any specification. V02 (04/2017)