



# PourPoint

Powered by icon



## All icon products are...

**Easy to use:** with an intuitive glass touch-screen, wipe-clean graphic user interface 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.

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



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# What does it do?

The Pour Point Analyser is used to provide an indicator of the lowest temperature at which typically a fuel oil may be used. The analyser uses advanced thermoelectric cooling to provide exceptional results, in most cases without the need for chilled water.

To improve performance and eliminate condensation, and ice formation, the whole system is housed in a patented, sealed containment vessel held under vacuum. The vessel features detection systems to monitor the vacuum and alert you to any sample leakage. The obtained results are compatible with those of Pour and No Flow point test methods such as ASTM D97, D5853, D5949 and D5985.

# How does it work?

The low mass measuring cell traps a small amount of the sample in a "U" tube. This is then cooled at a controlled rate by the Peltier cooler. At pre-set temperature intervals the sample is pulsed at one end of the "U" tube by a cylinder equipped with a piston driven by a stepper motor. Sample movement is then detected by a differential pressure sensor connected to the ends of the "U" tube. The cooling is continued until the applied differential pressure pulse has been attenuated sufficiently to indicate that the sample is no longer moving. This temperature is taken as the pour point. The old sample is then warmed and flushed away and the cycle is repeated.

# Why choose the icon scientific PourPoint Analyser?

- Self-contained all explosion proof construction ATEX and IECEx certified, no purge gas required for operation.
- Advanced Peltier cooling system.
- GUI via wipe clean glass explosion proof 17" touch screen.
- Variable cooling rates.
- Vacuum insulation with monitor to eliminate condensation.
- Sample flow monitor.
- Internal sample leakage detectors.
- User friendly software, easy to learn and configure.
- Standard Modbus and 4-20mA outputs.
- Auto validation and calibration options.
- Extensive diagnostics
- Maintenance warning alarms.
- Low sample consumption.



## Specification

Measuring range	Adjustable for any range between -50°C to +30°C
Repeatability	Equal to or better than the reproducibility criteria of the relevant test.
Cycle Time	4-8 minutes depending on sample.

## Sample Requirements

Filtration	Sample should be free from non-dissolved water and filtered to 10 microns
Sample Pressure at Inlet	Between 1–5 barg
Sample Pressure at Outlet	At least 1 bar below the sample inlet pressure and not exceeding 4 bar.
Sample Temperature at Inlet	Not exceeding 50°C.
Viscosity at Inlet	Application dependent
Sample Consumption	6-30L/h.

## Utility Requirements

Instrument Air	Not required.
Coolant	Water or antifreeze mixture at a temperature not more than 40°C above the lowest Pourpoint to be measured is required. The typical flowrate is 40-60L/hr. Maximum pressure is 10 bar.
Power	100-240VAC 50-60Hz, Max 500VA

## 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 pour point, 1 for no-flow point).
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;  <b>New Result:</b> a 10 second contact to notify that a new analyser result is available.  <b>Data Valid:</b> 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.  <b>Calibration/Validation:</b> indicates that the analyser is in calibration/validation.  <b>Spill Alarm:</b> This contact will operate in the case of a leak being detected in the Pourpoint cell or analyser enclosure.  All contact ratings are 24VDC 0.5A, 230VAC, 1A
Hazardous Area Certification	The icon Pourpoint analyser is Exd certified to ATEX, IECEx, 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

## Certification

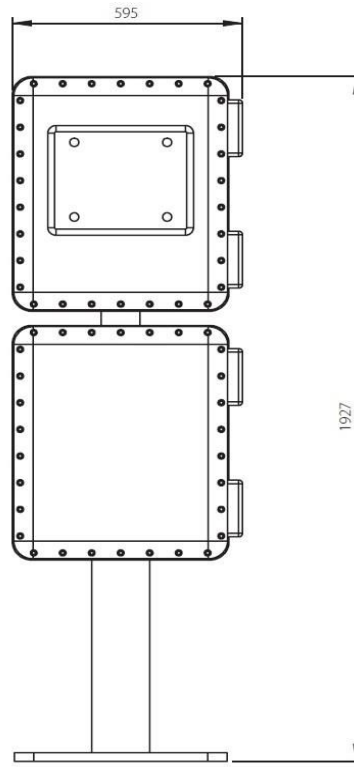
# Dimensions & Weights

## Notes:

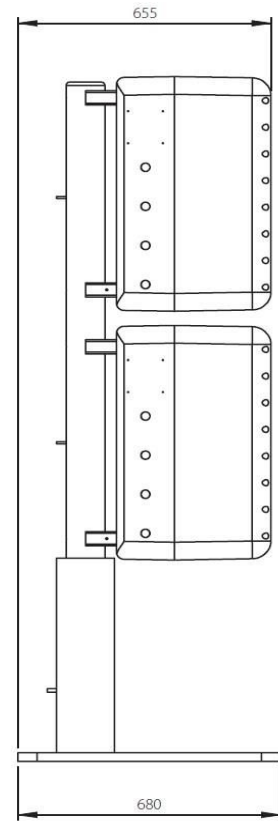
All dimensions in mm  
 Unpacked weight approx. 414kg  
 Packed weight approx. 521kg



Front view



Side view



*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 (11/2016)*

