

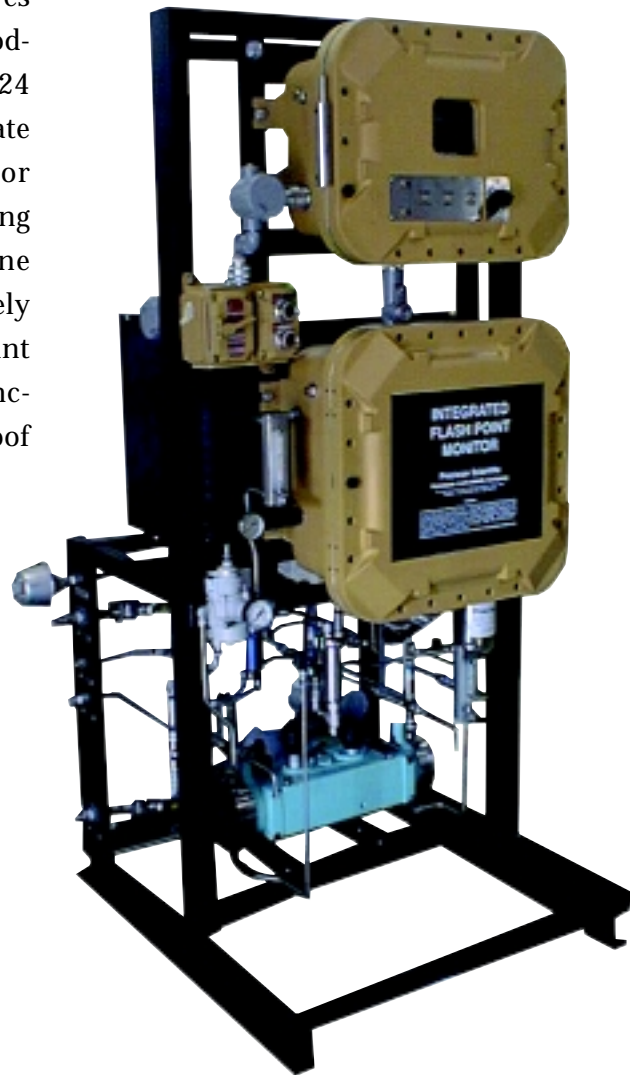
ON-LINE INTEGRATED FLASH POINT MONITOR

45624 NEC Ex-Proof

A quick and simple integrated flash point monitor that's right for your application!

The PSPI On-line Integrated Flash Point Monitor measures the flash point of distillate fuels (other than gasoline products) as they flow through a process line. Because the 45624 is a complete analyzer system, there's no need for a separate sample conditioning system, sample recovery system or chiller! It simulates ASTM D 56 and ASTM D 93 testing procedures with an average cycle time of less than one minute. No catalyst is used, so sulfur sensitivity is completely eliminated. With the 45624 Integrated On-Line Flash Point Monitor, analyzer software configuration and other functions can be modified without opening the explosion-proof enclosure, making it simple to operate and maintain.

- Measures flash point temperatures from 10° to 121°C (50° to 250°F) with repeatability of $\pm 1.5^{\circ}\text{C}$ ($\pm 3^{\circ}\text{F}$)
- Measurements correlate to ASTM D 93 (Pensky Martens) or ASTM D 56 (Tag) Closed Cup
- Includes an integral sample conditioning system, refrigeration unit and pumps
- Local, back-lit LCD display
- No catalyst used, therefore monitor is insensitive to sulfur
- Designed for installation requiring a compact, turn-key solution for on-stream continuous measurement of product flash point temperatures



ON-LINE INTEGRATED FLASH POINT MONITOR

45624 NEC Ex-Proof

THEORY OF OPERATION

The PSPI Integrated Flash Point Monitor is designed to provide an on-line flash point determination of hydrocarbon products with flash points between 10° to 121°C (50° to 250° F).

Fuel enters the system through a block valve and strainer to remove large particles from the sample. Opening the shut-off valve in the fast loop allows the strainer to be self-cleaning. When the system is powered up, the two sample inlet solenoid valves open and allow sample to flow through to the integral sample conditioning system. To protect internal parts of the system, the inlet solenoid valves close automatically if power is lost. Product passes through a pressure regulator and then the filter-coalescer, where water and small particles are removed. A feed pump regulates the flow of the conditioned sample to provide a steady flowrate. The sample then passes through a refrigeration system that cools the sample (if necessary) before it enters the analyzer. Instrument air enters the analyzer through an air pressure regulator. The sample/air mixture flows past a cartridge heater and a liquid space RTD sensor into the base of the flash cup. Excess liquid overflows to drain while fuel-air vapors rise past a splash shield, a vapor-space thermocouple and high voltage electrode assembly before venting to drain. The temperature of the fuel-air mixture is slowly raised while a high voltage electrode circuit generates a spark. The vapor-space thermocouple is continuously monitored for the sudden spike in temperature, which signifies that a flash has occurred. The sample temperature (as measured by the RTD sensor) at the moment of ignition is reported as the flash point temperature and a new measurement cycle is initiated. The flash point temperature is displayed on the monitor's digital readout and output as a 4-20 mAdc signal. Spent sample merges continuously with the coalescer bypass stream. The combined streams return through the exhaust pump to the process line.

SPECIFICATIONS

Performance

- **Accuracy:** $\pm 1.0^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$); Correlates with ASTM D 56 Tag Closed Cup or D 93 Pensky Martens Closed Cup methods
- **Response Time:** Cycle time varies with process operating conditions; typically 1 to 7 minutes
- **Ambient Temperature Limits:** 5° to 40°C (41° to 104°F); weather protection required; no direct sunlight

Sample Requirements

- **Flow Rate:** 400 ml/minute maximum; 30–40 ml/minute minimum through analyzer
- **Pressure:** 70 kg/cm² (1000 psig) maximum
- **Return Pressure:** 33 kg/cm² (480 psig) maximum back pressure
- **Temperature:** 120°C (250°F) maximum above flash point at inlet fitting; at least 15°C (30°F) below lowest expected flash point temperature at inlet to analyzer
- **Viscosity:** No greater than 220 cSt (1000 SSU) at 38°C (100°F)

Utility Requirements

- **Electrical:** 115/230 ($\pm 10\%$), 50/60 Hz, single phase, 1400 watts
- **Instrument Air:** Clean, dry filtered and regulated at 2.1 kg/cm² (30 psig); Combustion air to 1000 cc/minute maximum

Signal Outputs

- **Analog Outputs:** Isolated 4–20 mAdc Flash Temperature (standard); Isolated 4–20 mAdc Sample Temperature (optional)
- **Alarm Relays:** SPST fail-safe alarm relay
- **Serial Output:** Optional RS-232C serial output available
- **"Come Read" Contact:** Dry relay contact (standard)

Signal Inputs

- **Customer Alarm:** Terminals available for customer-supplied dry contact alarm connection
- **Remote Standby:** Terminals available for customer-supplied dry contact control of instrument; Allows control room to take monitor "off-line"

Area Classification

- NEC Class 1, Div 1, Group D

Dimensions & Weight

Uncrated:	H	W	D	units
• 300 kg (660 lbs)	1778	762	889	mm
	70	30	35	inches
Crated:	H	W	D	units
• 386 kg (850 lbs)	1905	864	991	mm
	75	34	39	inches

Due to PSPI's commitment to continual product development, specifications are subject to change without notice.

For more information, please contact us:

ExpotechUSA

10700 Rockley Road
Houston, Texas 77099
USA

281-496-0900 [voice]

281-496-0400 [fax]

E-mail: sales@expotechusa.com

Website: www.ExpotechUSA.com