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MINIVAP ON-LINE

The RVP profit analyzer



The MINIVAP-ONLINE from GRABNER INSTRUMENTS is a process monitoring analyzer used for the determination of vapor pressure of gasoline, crude oil, LPG and NGL. Its core shares the same triple expansion measurement method, which is used in the MINIVAP laboratory analyzers. Based on the results of extensive ASTM interlaboratory measurements, the MINIVAP ON-LINE outperforms other vapor pressure process analyzers in precision and helps refineries save millions of dollars each year.

BENEFITS

One analyzer for all vapor pressure standards

MINIVAP ON-LINE is a highly robust and precise process analyzer which directly measures RVP, TVP and vapor/liquid ratio according to all major industry standards – **in a single analyzer.**

Highest profits through best precision

MINIVAP ON-LINE performs RVP expansion methods, which considerably improves the quality of your measurements and reaches highest Round Robin proven precision. Blending as close as 0.3 kPa (0.05 psi) to vapor pressure limits is possible.

Optimize your profits.

Quality inspection of fuels

Only the triple expansion method allows for monitoring the amount of dissolved gas delivered in a batch of fuel. A high value indicates a leakage in the system or several light ends included within the batch.

Protect your investment.

New and improved maintenance

MINIVAP ON-LINE incorporates an automatic piston lubrication and extensive self diagnostic testing system. The measurement cell is mounted with quick fittings and can be exchanged within minutes:

Down time virtually eliminated.

Automatic calibration with laboratory precision

MINIVAP ON-LINE is automatically calibrated with onboard reference fluid, at programmed intervals, and calibration corrections are completed fully automatically for all measurements going forward. The result from the last calibration is always displayed together with the measured vapor pressure of the sample.

No need to adjust correlation formulas or take offline samples to verify analyzer results against laboratory equipment.

VAPOR PRESSURE

SAVINGS AT A GLANCE

How triple expansion profit optimization works

In the following example, normal Butane is blended into Unleaded Gasoline, while a maximum vapor pressure of 69 kPa has to be observed:

BLENDING BUTANE

RVP (Gasoline @ 37.8°C): Before: 62 kPa (9 psi) After: 69 kPa (10 psi)
Price per Barrel: n-Butane: $ 65.1 Gasoline: $ 81.9

PROFIT AND PRECISION PER METHOD

Method/Standard	Reproducibility (kPa)	Blending	Possible profit per 100 000 barrels	Possible profit per YEAR (volume: 100k bpd)
Triple Expansion Method	0.7	1.41%	$ 24 024	8.77 $M
ASTM D6378-08	1.89	1.14%	$ 19 320	7.05 $M
ASTM D5191-07 + EN 13016-1	2.75	0.95%	$ 16 128	5.89 $M
ASTM D5482-01 (ABB 4100)	4.14	0.64%	$ 10 752	3.92 $M
ASTM D323-06	5.2	0.38%	$ 6 384	2.33 $M

Interested in replacing your old RVP analyzer? Ask your distributor how to calculate your savings today!

MINIVAP ON-LINE

STANDARDS

Vapor Pressure of Gasoline:
- ASTM D6378, D5191, D4953, D323
- ASTM D5188 (V/L = 20)
- EN 13016-1+2
- IP 394
- IP 409

Vapor Pressure of Crude Oil:
- ASTM D6377, D323

Vapor Pressure of LPG:
- ASTM D6897, D1267

FEATURES

- High precision and performance
- US-EPA and CARB approved Grabner method
- Fully automatic calibration, verification and pressure correction
- Built-in diagnostic and safety features
- Remote control
- Adjustable shaker speed (true pressure equilibrium of crude oil)
- 7 minute cycle time
- 10 ml of sample for a complete measurement (including rinsing)
- Peltier heating and cooling
- Modular configuration
  – Multiple sample streams
  – Sample conditioning systems
- Automatic Lubrication System
- Directly connects to PLC/DCS via MODBUS

TECHNICAL DATA

Temperature Range	Internal operation: 5 to 60°C (41 to 140°F) Measurement temperature: 20 to 60°C (68 to 140°F)
Pressure Range	0 to 1000 kPa (0 to 145 psi)
Repeatability	0.3kPa (0.04psi) @ 37.8°C, 70kPa
Reproducibility	0.7kPa (0.10psi) @ 37.8°C, 70kPa
Power requirements	100/120/230/240 V AC, 50/60 Hz, 110 W
Maximum physical dimensions	W x H x D = 650 x 1380 x 400 mm (25.6 x 54.4 x 15.8 inches)
Weight	Approx. 50 kgs (110 lbs)
Fast loop sample stream	Minimum flow: 2 L/min, Minimum pressure (Gasoline): 50 kPa (7 psi), Minimum pressure (LPG): 500 kPa (70 psi), Maximum pressure: 7,000 kPa (1000 psi)
Explosion protection	Explosion proof Class 1, Type X or ATEX certified – EU EX Pressurized Enclosure-System (EN 60079: BVS 06 ATEX E 088; EN954-1 Cat. 3) – US EX px purge control unit (NEMA Class 1, Div 1, BCD, T6, Type X)
Data output	– ASCII code and MODBUS communication protocol – 4-20 mA analog data output – Central controller option

ACCESS.
ANYWHERE.
ANYTIME.

CELEBRATING OVER 35 YEARS OF ANALYTICAL EXCELLENCE

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