





Pour Point Process Analyzer PPA-4

Pour Point Process Analyzer PPA-4 Analyzer

To remain competitive, today's refiners must employ all optimization and product control techniques available. The use of online physical property analyzers is one of the key features to reach those objectives because they measure important quality properties in the process directly.

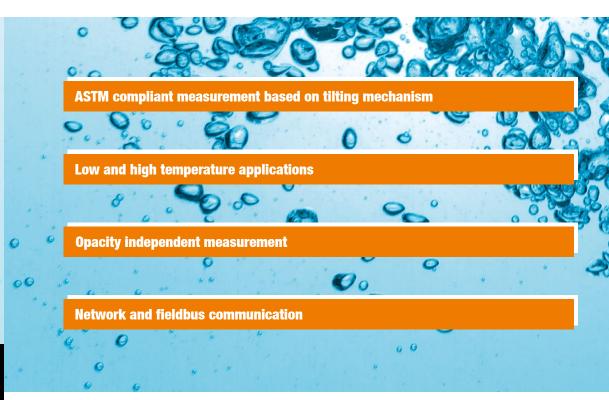
The pour point of a liquid is the temperature at which it still flows but starts losing its flow characteristics by becoming semi solid. For hydrocarbons the pour point temperature depends on the content of paraffin in the liquid but also on the viscosity that changes with temperature. The pour point temperature is an important quality parameter especially for lube oils but also for gas oils and fuel oils.

BARTEC BENKE

Your partner for innovative system solutions.



specialists have many years of experience. They create system solutions that you can rely on: efficient and dependable for decades to come.



APPLICATION

The BARTEC BENKE Pour Point Process Analyzer PPA-4 is a system for the fully automatic determination of the pour point of a variety of products. The PPA-4 is used by lube oil producers to optimize the production processes and the use of cold flow additives. It is also used by fuel oil producers to meet market demands. The PPA-4 is the only process analyzer that is compliant with the applicable norm using a tilting device.

BARTEC BENKE



Special Features:

- Real tilting measuring cell
- Rugged design of measuring cell
- Optimized assembly easy removal of complete cell
- Available communication interfaces:
 - Modbus/RTU, Modbus/TCP (bidirectional)
 - Remote access via Ethernet (VDSL or FOC is)
- Integrated failure diagnosis and self monitoring
- Validation report for quality assurance
- Freely programmable digital and analog inputs

Norms and Standards:

Compliant with:

- ASTM D97
- **DIN ISO 3016**
- IP 15

Make your decision for a strong partner!

Choose BARTEC GROUP also for:

- Fast Loop Systems
- Sample Conditioning Systems
- Validation Systems
- Recovery Systems
- Chillers
- Air Conditioning Systems/HVAC
- Pre Commissioned Analyzer Shelters/ Turn–Key Solutions





EXPLOSION PROTECTION

Marking ATEX: II 2 G IIB (or IIC) T4 Gb

NEC 500: Class I, Div. 2, Groups B, C and D NEC 505: Class I, Zone 1, AEx d e ib px IIB or

IIB+H2

TECHNICAL DATA

Technology Automatic tilting measuring cell

Method compliant with:

ASTM D97, DIN EN ISO 3016, IP 15

correlates with: ASTM D5949

Automatic Tilt Method similar to ASTM D5950

Measuring range -30 to 33°C (-22 to 91.4°F)

 Repeatability
 ≤ DIN EN/ASTM

 Reproducibility
 ≤ DIN EN/ASTM

 Measuring cycle
 discontinuous,

 cycle time 15 to be

cycle time 15 to 90 min

depends on pour point temperature

Product streams 1 x sample, 1 x validation (additional hardware required)

Electrical data

Nominal voltage 230 VAC \pm 10 %, 1 phase; 50 Hz;

other ratings on request

Maximum power consumption

onsumption approx. 600 W Protection class IP 54 (NEMA 13)

Ambient conditions

Ambient temperature operation 5 to 40°C (41 to 104°F)

storage 0 to 60°C (32 to 140°F)

Ambient humidity operation 5 to 80 % relative humidity,

non-corrosive

storage 5 to 85 % relative humidity,

non-corrosive

Sample

Quality filtered 50 µm, free of suspended water

(≤ 37 cSt at inlet temperature)

Consumption approx. 20 to 40 l/h

Pressure at inlet 1 to 3 bar (14.5 to 43.5 psi)

Temperature at inlet normal: 30 to 50°C (86 to 133°F)
min. 20 K above pour point temperature

Utilities

Instrument air

Consumption

Purge 8 Nm³/h while purging (~12 min)

Operation approx. 0.8 Nm³/h **Pressure at inlet** 2 to 5 bar (29 to 72.5 psi)

Quality humidity class 2 or better acc. to ISO 8573.1

Coolant controlled and supplied by chiller

Signal outputs and inputs

Digital outputs

Analog outputs pour point temperature

(others on request)
Alarm, Ready / Valid

Digital inputs Stream Selection, Validation Request, Reset

Electrical data of signal outputs and inputs

Analog outputs max. 8 (4 to 20 mA; 1000 Ω)

active isolated on request

Analog intputs4 to 20 mA; 160 Ω Digital outputs24 VDC; max. 0.5 ADigital inputshigh: 15 to 28 VDC

low: 0 to 4 VDC

Auxiliary power

supply output 24 VDC; max. 0.8 A

Control unit

Central control unit Industrial PC

Operating system Windows Embedded Standard 7[®]

Control software PACS

User interfaces

Display TFT display with touch function

1024 x 768 pixel

Keyboard virtual keyboard, controlled via

TFT display with touch function

Connections

Vent/Drain

Tube fittings Swagelok® 6 mm/8 mm/12 mm/18 mm

other fittings on request open to atmosphere,

backpressure on request

Weight and dimensions

Weight approx. 420 kg

Dimensions (W x H x D) approx. 1140 x 1900 x 710 mm **Space requirements** right: 500 mm / left: 500 mm

Optional interfaces

Analog outputs on request

MODBUS interface MODBUS/R

face MODBUS/RTU via RS485 or RS422 or FOC is, MODBUS/TCP via FOC is

Remote access via Ethernet (VDSL or FOC is)

Important notice PPA-4 is subject to continuous product improvement, specifications are preliminary and may be subject to change without notice. If your technical data do not comply with existing data, please contact us for technical clarification.