



BARTEC GROUP

protects people and

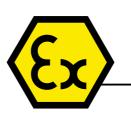
the environment

by the safety

of components,

systems and plants.







# 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.



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



### **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

# **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.

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**

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

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** 

Automatic tilting measuring cell **Technology** 

Method compliant with:

ASTM D97, DIN EN ISO 3016, IP 15

correlates with: ASTM D5949

Automatic Tilt Method similar to ASTM D5950

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

Repeatability ≤ DIN EN/ASTM Reproducibility ≤ DIN EN/ASTM **Measuring cycle** discontinuous,

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 ±10 %, 1 phase; 50 Hz;

other ratings on request

**Maximum power** consumption

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)

operation 5 to 80 % relative humidity, **Ambient humidity** 

non-corrosive

storage 5 to 85 % relative humidity,

non-corrosive

**Sample** 

filtered 50 µm, free of suspended water Quality

(≤ 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) normal: 30 to 50°C (86 to 133°F) **Temperature at inlet** 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)

humidity class 2 or better acc. to ISO 8573.1 Quality 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 intputs** 4 to 20 mA: 160 Ω 24 VDC; max. 0.5 A **Digital outputs Digital inputs** high: 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

virtual keyboard, controlled via Keyboard

TFT display with touch function

**Connections** 

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

other fittings on request open to atmosphere,

**Vent/Drain** backpressure on request

**Weight and dimensions** 

Weiaht 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/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.