



Process Analyzer

Pour Point Process Analyzer PPA-4

Credible Solutions for the Oil and Gas Industry

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Process 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.

ASTM compliant measurement based on tilting mechanism

Low and high temperature applications

Opacity independent measurement

Network and fieldbus communication

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.

**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
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TECHNICAL DATA

Technology Method	Automatic tilting measuring cell compliant with: ASTM D97, DIN EN ISO 3016, IP 15 correlates with: ASTM D5949 Automatic Tilt Method similar to ASTM D5950
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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 90 min depends on pour point temperature

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

Nominal voltage	230 VAC ± 10 %, 1 phase; 50 Hz; other ratings on request
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Maximum power consumption	approx. 600 W
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■ Protection class	IP 54 (NEMA 13)
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■ 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)
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Consumption	approx. 20 to 40 l/h
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Pressure at inlet	1 to 3 bar (14.5 to 43.5 psi)
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Temperature at inlet	normal: 30 to 50°C (86 to 133°F) min. 20 K above pour point temperature
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Utilities

■ Instrument air

Consumption	8 Nm ³ /h while purging (~12 min)
Purge	approx. 0.8 Nm ³ /h
Operation	

Pressure at inlet	2 to 5 bar (29 to 72.5 psi)
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Quality	humidity class 2 or better acc. to ISO 8573.1
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■ Coolant	controlled and supplied by chiller
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Signal outputs and inputs

Analog outputs	pour point temperature (others on request)
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Digital outputs	Alarm, Ready / Valid
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Digital inputs	Stream Selection, Validation Request, Reset
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Electrical data of signal outputs and inputs

Analog outputs	max. 8 (4 to 20 mA; 1000 Ω) active isolated on request
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Analog inputs	4 to 20 mA; 160 Ω
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Digital outputs	24 VDC; max. 0.5 A
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Digital inputs	high: 15 to 28 VDC low: 0 to 4 VDC
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Auxiliary power supply output	24 VDC; max. 0.8 A
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Control unit

Central control unit	Industrial PC
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Operating system	Windows Embedded Standard 7®
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Control software	PACS
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User interfaces

Display	TFT display with touch function 1024 x 768 pixel
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Keyboard	virtual keyboard, controlled via TFT display with touch function
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Connections

Tube fittings	Swagelok® 6 mm/8 mm/12 mm/18 mm other fittings on request
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Vent/Drain	open to atmosphere, backpressure on request
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Weight and dimensions

Weight	approx. 420 kg
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Dimensions (W x H x D)	approx. 1140 x 1900 x 710 mm
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Space requirements	right: 500 mm / left: 500 mm
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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)
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DASTEC S.R.L.

Representantes / Distribuidores Exclusivos

Buenos Aires, Argentina

Tel.: (54 - 11) 5352-2500

Email: info@dastecsr.com.ar

Web: www.dastecsr.com.ar

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.