BARTEC BENKE

Cold Filter Plugging Point Process Analyzer CFPP–4

Credible Solutions for the Oil and Gas Industry

Cold Filter Plugging Point Process Analyzer CFPP–4

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 cold filter plugging point (CFPP) is the lowest temperature at which diesel and domestic heating fuels will pass through a filter in a given time when cooled under certain conditions. CFPP is supposed to give an estimate for the lowest temperature at which these fuels will flow in fuel systems without problems. This temperature is important especially in cold temperature regions where high CFPP of diesel fuel could result in clogging up vehicles' fuel systems.

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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.

The only ASTM compliant CFPP process analyzer

Identical test mesh filter as used in the laboratory

Stepped and linear cooling

Network and fieldbus communication

APPLICATION

The BARTEC BENKE Cold Filter Plugging Point Process Analyzer CFPP-4 is a system for the fully automatic determination of the cold filter plugging point of diesel and domestic fuels. The CFPP-4 allows diesel fuel producers to optimize the use of cold flow additives that allows spreading the usage of winter grade diesel at temperatures below the cloud point. Besides the step-cooling procedure the CFPP-4 also offers linear sample cooling.

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Special Features:

- **Visible function cycles by using a measuring cell made of plexiglass/glass**
- **Optimized assembly –** easy removal of complete cell
- **No paraffin–adhesions on test mesh filter by flushing with preheated sample**
- **No correlative measurement, but exact reconstruction of cycles as described in ASTM D6371**
- **Identical test mesh filter as used in laboratory method**
- **Possibility to shorten cycle time by:**
  - Switching between summer and winter setting
  - Reading cloud point value (if available)
- **Integrated failure diagnosis and self monitoring**
- **Available communication interfaces:**
  - Modbus/RTU, Modbus/TCP (bidirectional)
  - Remote access via Ethernet (VDSL or FOC is)
- **Validation report for quality assurance**
- **Freely programmable digital and analog inputs**

Norms and Standards:

Compliant with:

- **ASTM D6371**
- **DIN EN 116**
- **IP 309**
- **EN 16329**

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**

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EXPLOSION PROTECTION

Marking	ATEX: II 2 G IIC T4 Gb NEC 500: Class I, Div. 2, Groups B, C, D, T4 NEC 505: Class I, Zone 1, AEx IIB+H2 T4 CEC Sec. 18: Class I, Zone 1, Ex IIB+H2 T4

TECHNICAL DATA

Technology	plugging sieve
Method	compliant with: ASTM D6371, DIN EN 116, DIN EN 16329, IP 309
Measuring range	-35 to 15°C (-31 to 59°F)
Repeatability	≤ DIN EN/ASTM
Reproducibility	≤ DIN EN/ASTM
Measuring cycle	discontinuous 25 to 90 min depends on CFPP temperature
Product streams	2 x sample, 1 x validation (additional hardware required)
■ **Electrical data**	
Nominal voltage	230 VAC ± 10 %, 1 phase; 50 Hz; chiller: 400 VAC ± 10 %, 3 phases; 50 Hz other ratings on request
Maximum power consumption	approx. 700 W chiller: approx. 1200 W
■ **Protection class**	IP 54 (NEMA 13)
■ **Ambient conditions**	
Ambient temperature	operation 5 to 35°C (41 to 95°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 10 µm, moisture content max. 550 ppm (≤ 37 cSt at inlet temperature)
Consumption	20 to 40 l/h
Pressure at inlet	1 to 4 bar (14.5 to 58 psi)
Temperature at inlet	≥ 15°C (59°F)

Utilities

■ **Instrument air**	
Consumption	
Purge	8 Nm³/h while purging (~12 min)
Operation	approx. 2.3 Nm³/h
Pressure at inlet	3 to 7 bar (43.5 to 101.5 psi)
Quality	dew point ≤ -40°C (-40°F) humidity class 2 or better acc. to ISO 8573.1
■ **Coolant**	FKS-KWS with „Temper -55“ integrated

Signal outputs and inputs

Analog outputs	Cold Filter Plugging Point (others on request)
Digital outputs	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
Digital outputs	24 VDC; max. 0.5 A
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
Keyboard	virtual keyboard, controlled via TFT display with touch function

Connections

Tube fittings	Swagelok® 6 mm/12 mm/18 mm other fittings on request
Vent/Drain	open to atmosphere

Weight and dimensions

Weight	approx. 400 kg
Dimensions (W x H x D)	approx. 1140 x 2030 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 CFPP-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.

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