**Distillation Process Analyzer DPA–4**

**EXPLOSION PROTECTION**

**Marking**
- ATEX: II 2 G 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
- TR CU Certification available

**TECHNICAL DATA**

**Technology** batch distillation

**Method** SAM compliant with:
- ASTM D86, DIN EN ISO 3405, IP 123
- Correlates with:
  - ASTM D4814 (calculation of TVL)
  - ASTM D4737 (Calculated Cetane Index)
- RAM correlates with:
  - ASTM D86, DIN EN ISO 3405, IP 123

**Measuring range**
- 20 to 420°C (68 to 788°F)
- Output of any temperature/distillate amount via Modbus

**Repeatability**
- ≤ DIN EN/ASTM
e.g. gasoline typ. T@ 50% rec. 1°C

**Reproducibility**
- ≤ DIN EN/ASTM

**Measuring cycle**
- Typical time for gasoline/diesel in SAM (in min)
  - IBP: approx. 24/29
  - 50% recovered: approx. 36/41
  - FBP: approx. 45/50
- Cycle time will be reduced by approx. 40% in RAM

**Product streams**
- Up to 3 x sample, 1 validation sample each
- 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)
- **Ambient humidity**
  - Operation: 5 to 80 % relative humidity, non-corrosive
  - Storage: 5 to 85 % relative humidity, non-corrosive

**Sample**
- **Quality**
  - Filtered 50 µm, bubble-free
  - ≤ 37 cSt at inlet temperature
- **Consumption**
  - Approx. 10 to 40 l/h
  - ≥ 10 cSt: max. 15 l/h
- **Pressure at inlet**
  - 1.5 to 2 bar (21.8 to 29 psi)
- **Temperature at inlet**
  - Depends on application, max. 55°C (131°F)

**Utilities**
- **Instrument air**
  - Consumption: 8 Nm³/h while purging (~12 min)

**Operation**
- Approx. 1 Nm³/h

**Pressure at inlet**
- 2 to 7 bar (29 to 101.5 psi)

**Quality**
- Humidity class 2 or better acc. to ISO 8573.1

**Coolant**
- **Consumption** max. 60 l/h
- **Temperature** -10 to 55°C (14 to 131°F)
- **Pressure at inlet** 2 to 7 bar (29 to 101.5 psi)
- **Quality** filtered 50 µm

**Signal outputs and inputs**
- **Analog outputs**
  - Temperature at specific distillation batch
- **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 inputs**
  - Density
- **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
  - Backpressure on request

**Weight and dimensions**
- **Weight** approx. 250 kg
- **Dimensions (W x H x D)** approx. 1140 x 1900 x 710 mm
- **Space requirements** right: 150 mm / left: 100 mm

**Optional interfaces**
- **Analog outputs**
  - MODBUS/RTU via RS485 or RS422 or FOC is, MODBUS/TCP via FOC is
- **Remote access**
  - Via Ethernet (VDSL or FOC is)

**Important notice** DPA-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.