

Explosion protection

Marking	ATEX: II 2G Ex h IIC T4 Gb X IECEX: Ex IIC T4 Gb NEC 500: Class I, Division 2, Group B,C and D NEC 505: Class I, Zone 1, AEx d e ib px IIB resp. IIB+H2 T3 resp. T4 CEC Sec. 18: Ex d e ib px IIC T3 resp. T4 TR CU: II Gb T4 X
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Technical data

Technology	optical turbidity detection
Method	compliant with: ASTM D2386, ASTM D1015, DIN ISO 3013, ASTM D7153-05, ASTM D7154-05, ASTM D2500
Cloud point measuring range	down to -40 °C (-40 °F) down to -70 °C (-94 °F) with integrated FKS 1.4-KWS Chiller optional: down to -80 °C (-112 °F) with integrated FKS 0.5-KWS Chiller
Repeatability	≤ DIN EN/ASTM e.g. kerosene typ. 0.2 °C at -50 °C (-58 °F)
Reproducibility	≤ DIN EN/ASTM
Measuring cycle	discontinuous, cycle time 8 to 20 min depends on freezing point temperature cycle time 4 to 10 min depends on cloud point temperature
Product streams	2 x sample, 1 x validation (additional hardware required)
– Electrical data	
Nominal voltage	230 V AC ± 10 %, 1 phase; 50 Hz; other ratings on request
Maximum power consumption	approx. 800 W
– Protection class	
IP 54 (comparable to 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. 5 to 30 l/h
Pressure at inlet	2 to 3 bar (29 to 43.5 psi)
Temperature at inlet	5 to 15 °C (41 to 59 °F) min. 15 K above expected cloud point temp.
Utilities	
– Instrument air Consumption	
Purge	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*	60 to 100 l/h
Temperature	20 to 40 °C (68 to 104 °F)
Pressure at inlet	1 to 3 bar (15 to 44 psi)
Quality	filtered 50 µm
Signal outputs and inputs	
Analog outputs	freezing point temperature, cloud point temperature, (others on request)
Digital outputs	Alarm, Ready signal, see options
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	4 to 20 mA; 160 Ω
Digital outputs	24 V DC; max. 0.5 A
Digital inputs	high: 15 to 28 V DC low: 0 to 4 V DC
Auxiliary power supply output	24 V DC; max. 0.8 A
Control unit	
Central control unit	Industrial PC
Operating system	Windows 10 Enterprise LTSC
Control software	PACS
User interfaces	
Display	TFT display with touch function 1366 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 (without options)
Dimensions (W x H x D)	approx. 1140 x 2050 x 710
Space requirements	right: 160 mm/left: 390 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)