ISO-14001
ISO-9001

SPECIFICATION SHEET

TOA DKK

POUR POINT ANALYZER

Model: **PPA**

This analyzer measures the Pour Point of Gas Oil. The instrument is used in oil refineries for process and product quality control.

FEATURES

- Certified flameproof explosion protected construction (JIS d2G4) (Certification No.43733)
- Fully automatic measurement, controlled by a microprocessor based controller.
- The output signal representing Pour Point temperature is held until the next measured value is obtained.
- Correlation with the pour point test method specified under JIS K2269 or ASTM D97.

SPECIFICATIONS

Product Name : Pour point analyzer
Model : PPA

• Analyzer

Measurement Object : Pour point of oil product (gas oil)
Measurement Method : Batch, torque detection method
Explosion Protection Standard : Flameproof explosion protected construction JIS d2G4 Certification No. 43733
Measurement Range : -30~+20°C (mV/I range-50~+50°C)
Temperature Sensor : Thermocouple
Measurement Cycle : 10~30 mm (depending on sample pour point temperature and sample inlet temperature)

Repeatability : Within ±1%FS (for mV/I range)
Power Requirements : 100VAC ±10% 50/60Hz
Power Consumption : 200VA
Stabilization Time : 3 hours
Ambient Temperature : 0~40°C
Installation Site Conditions : Avoid direct sun light, and provide a rainproof construction when installed outdoors.
Paint Colour : Metallic silver (analyzer frame)
Dimensions : 1500(W) x 885(D) x 2000(H)mm
Weight : Approx. 450kg as an integrated construction including analyzer and preconditioner

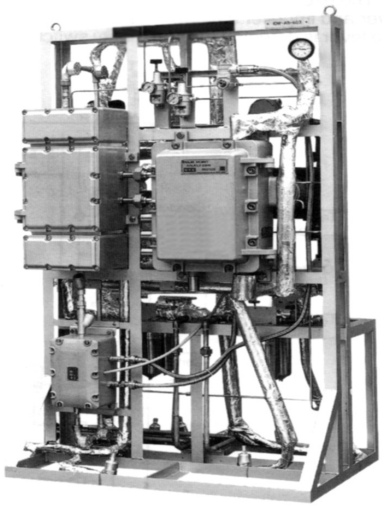
Sample Conditions
Temperature : 20~40°C
Pressure : 0.4MPa or higher
Supply : 0.2~0.5L/min.
Viscosity : Max. 30MPa•s or less (30°C)
Moisture content : Max. 500ppm

Piping Connections
Sample inlet : Rc½
Sample outlet : Rc½
Air inlet : Rc¼

Instrument Air
Pressure : 0.4~0.7MPa
Consumption : 0.5NL/batch (max.)

Cooling Water
Inlet : Rc½
Outlet : Rc½
Quality : Equivalent to city water
Temperature : 0~20°C
Pressure : 0.1~0.3MPa
Flow rate : 2L/min

When cooling water temperature exceeds 20°C, a separate explosion protected cooler has to be installed.



• Sample Preconditioner section
(Consisting of reducer valve and Coalescer. Mounting on the same rack as the analyzer. Cooling apparatus is optional.)

Dehydration Ability : 1% moisture is reduced to several hundred ppm.
Sample Inlet Connection : Rc½
Sample Temperature : 20~40°C
Sample Pressure : Max 20 kgf/cm²G
Sample Flow Rate : 0.5~1L/min
Alternative piping connections are available on request.

• Controller
Model : U-32
Programming : Program setting using keypad

FUNCTION

Auto calibration : Auto sampling of standard solution and calibration
Self diagnosis : Self diagnosis of failures on sampling, level sensing, refrigerator, thermocouple are performed and message is displayed.
Remote control : Auto START/STOP function available by input signal from host PC.
2-flow paths measurement : Up to 2-flow paths can be taken into analyzer section either path can be selected (option)

Outputs
Contact output : Sensor, analysis start & flow signals (option), 110V, 0.1A or 30V DC, 0.5A
Transmission output : Temp. hold (isolated), 4~20mA DC (resistive load 600Ω or less)

Input : Connectable to host PC (option)
Ambient Temperature : 0~40°C
Power Source : 100V AC, ±10%, 50/60Hz
Power Consumption : 100VA
Dimensions : 288(W) x 195(D) x 192(H)mm
Weight : Approx. 7kg
Installation : Panel Mount (DIN standard)
Installation Site Conditions : Safe Area.

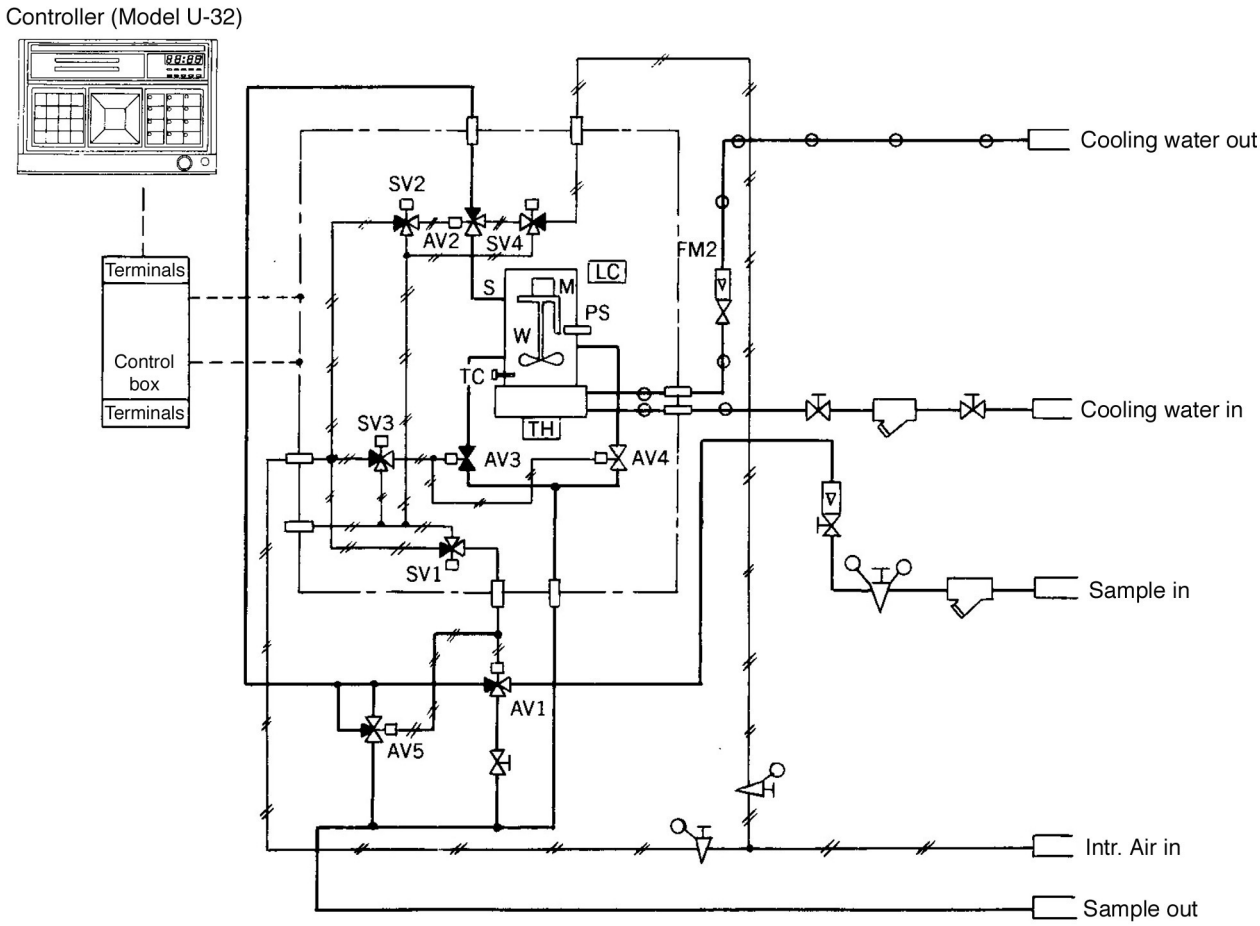
RELATED EQUIPMENT

Recorder
Thermoelectromotive converter : Installed in analyzer, External installation available on request.

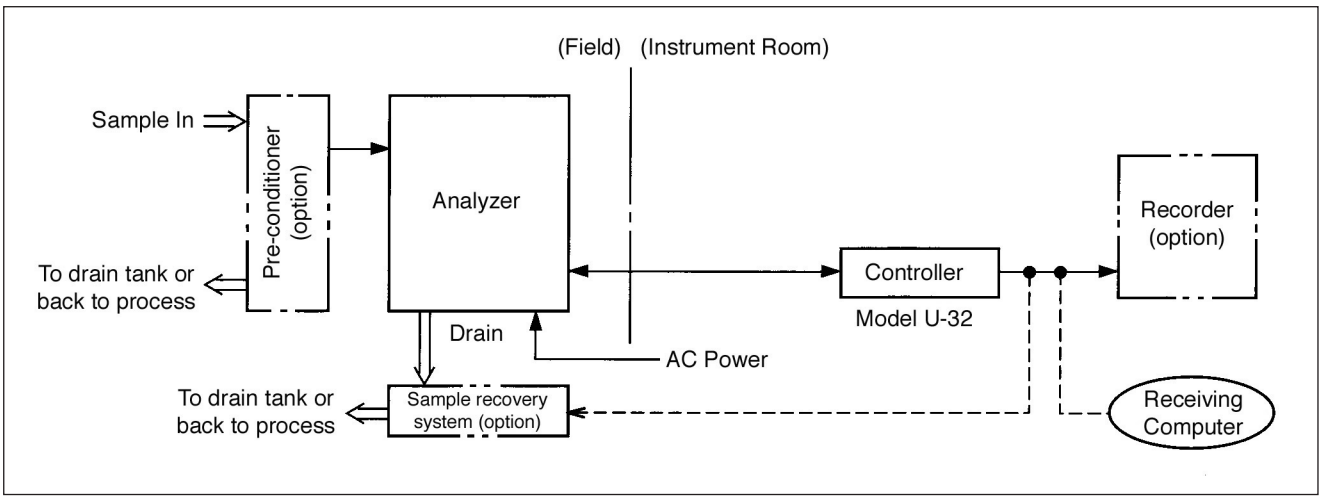
PRINCIPAL OF OPERATION

The sample solution is pneumatically expelled by opening SV_1, SV_2, AV_3 and closing AV_4. Fresh Sample is then introduced by opening AV_2, closing AV_3 and opening AV_4. Sample is volumetered by successively opening SV_2. The sample is continuously cooled by the thermo-module. Power is supplied to a coil every 1°C drop in sample temperature. The excitation of the coils repels a magnet attached to a lever and impeller assembly, thus rotating it. The rotation of the lever is detected by a proximity switch. As the sample is cooled, its fluidity is reduced, the impeller rotation is gradually reduced until it finally stops. The lever rotation also stops and this is detected by the proximity switch. The sample temperature at this point is detected by the thermocouple and is determined as the Pour Point. On completion of the measurement cycle, the polarity of the thermo-module is reversed to heat the sample, melt it and allow it to be discharged.

FLOW SCHEMATIC

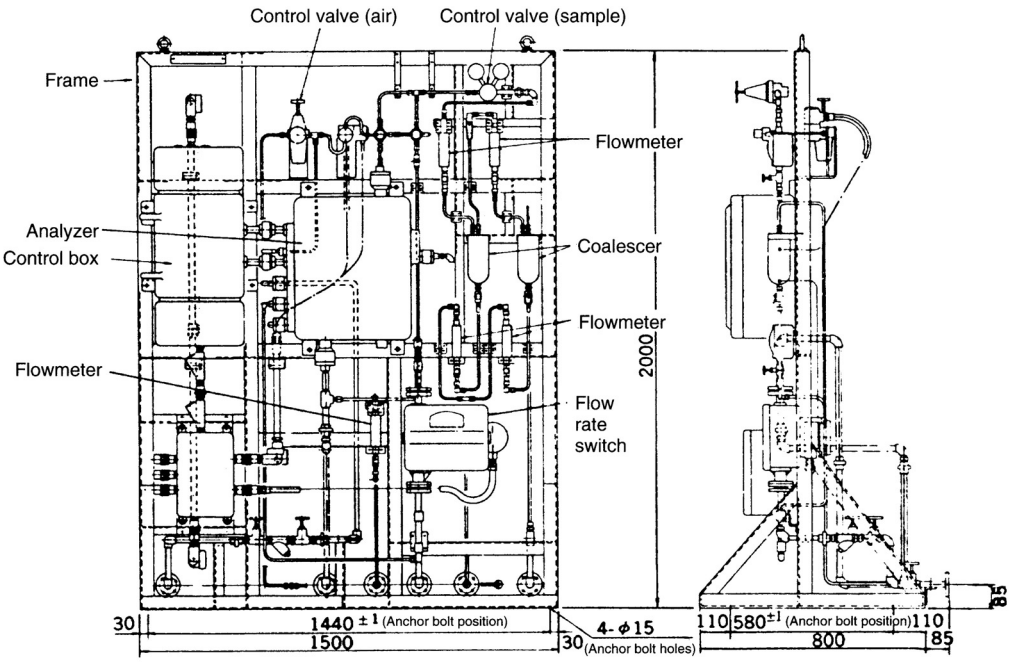


SYSTEM CONFIGURATION

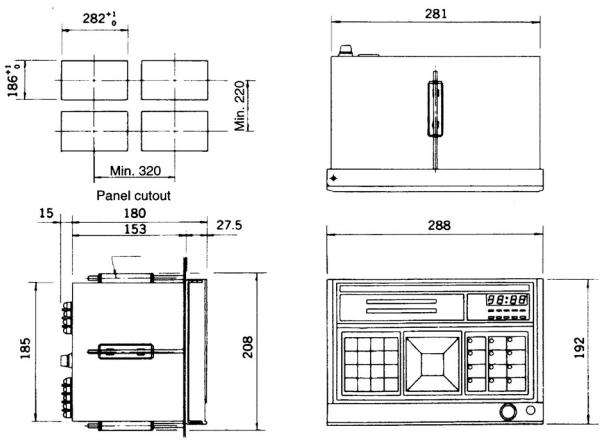


DIMENSIONS (Units: mm)

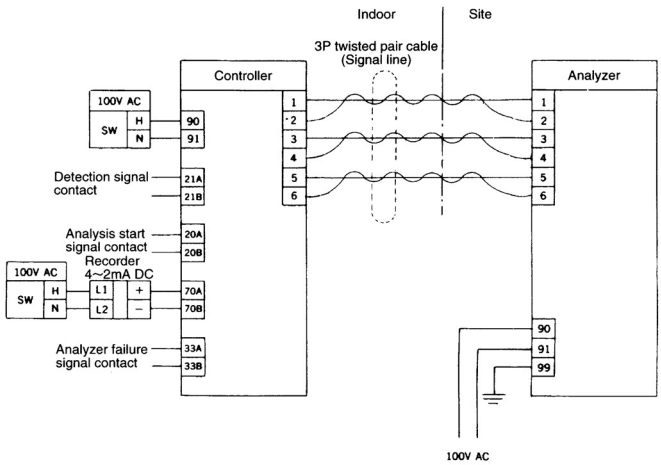
- **Analyzer and Preconditioner**



- **Controller**



- **Terminal Connections**



APPLICATION DATA SHEET

Please fill the columns below with your requirements for your inquiry to DKK-TOA

Client		Location	
Model No.		Delivery, required.	
Instrument Tag No.			
		Date	

1. Stream Conditions

Fluid Name		Sample Pressure at inlet	
Sample Temperature		Sample Return Pressure	
Density, Specific Gravity	At °C	Additives, contained.	
Viscosity cSt. CP	At °C	Pour Point	
Water contents		Sulphur contents	
Removal of sludge			

2. Measurement

Measurement Item			
Measurement Range			
Normal value		Analysis Cycle Time, Requested.	

3. Utilities

Power Supply		Cooling Water	
Power Supply Inlet		Cooling Water Temperature/Pressure	
Signal Outlet		Filtering for Cooling Water	
Instrument Air Supply Pressure		Steam Temperature/Pressure	
Nitrogen Supply Pressure			

4. Outputs & Calibration

Transmission Outputs	
Calibration Method	

5. Electrical & Plumbing Connections

Sample Inlet		Instrument Air Inlet	
Sample Outlet		Steam Inlet	
Cooling Water Inlet		Nitrogen Gas Inlet	
Others			
Customer connection			

6. Pump Specifications

Sampling Pump
Recovery Pump

7. Installation

Location			
Surface Color			
Ambient Temperature		Ambient Humidity	

8. Remarks & Special Accessories, requested.

DKK-TOA CORPORATION

CAUTION Do not operate products before consulting instruction manual.

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