

# ATAC MODEL 7612

## OPACITY MONITOR

The ATAC Model 7612 is a completely automatic process stream opacity monitor for measuring opacity due to 'dirt and haze' in a liquid stream.

- In-line stainless steel cell suitable for high process stream temperatures and pressures
- Rapid validation facility for quick & simple operational check
- Fibre optic technology for improved precision
- Single unit installation - no separate safe area controller required
- ATEX certified for hazardous area installation



### TYPICAL APPLICATIONS

- Monitoring of water in liquid process streams
- Detection of leaks in large heat exchangers

### PRINCIPLE OF OPERATION

A schematic of the Model 7612 is shown in figure 1. The unit works on the principle of comparing the intensity of two light signals. A source of filtered light from a tungsten lamp illuminates the foot of a randomised fibre optic "Y" piece. One arm of the "Y" goes to an in-line stainless steel sample cell and the other to a reference light attenuator which reduces light intensity by a pre-set amount and incorporates a test facility. The two emerging beams are fed via additional fibre optics to a photocell. A chopper in front of the photocell selects the beams alternatively.

The rotation of the chopper is co-ordinated so that alternate outputs from the photocell are individually stored and compared, and their ratio determined.

If the comparison shows the sample is more than a predetermined amount darker than selected, the alarm operates. Alternatively, by means of links in the electronics, the alarm can operate where the sample is lighter than selected. The only external control is a self re-setting "twist-to-test" facility which enables the light beams to be unbalanced in order to test the system. A continuous 4 to 20mA floating output is generated based on the ratio of the two beams. This can be calibrated in terms of % transmission of light. There are internal controls for the alarm level, zero and span.

The monitor is principally used for detection of haze in gas oil.

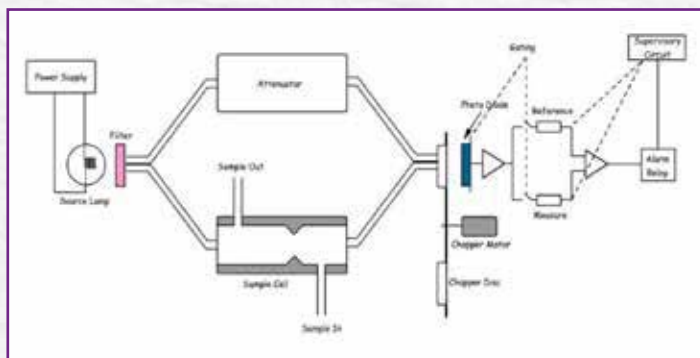



Figure 1: Model 7612 schematic

## SPECIFICATIONS

Monitor performance	Alarm temperature coefficient generally 0.1% relative transmission per °C (max.) over ambient temperature range but may vary slightly according to application.
Output signal (Relay contact)	Alarm: 1 fully adjustable alarm point having 2 C/O contacts rated at 250V, 5A, 100VA non-inductive. Transition to light or dark operation available by selection of interlinks, reversal of the "twist-to-test" facility and minor adjustments of internal controls.
Output signal (Analogue)	Range: 4-20mA (isolated) into 500 ohms max.
Check facilities	Externally mounted spring loaded knob providing "twist-to-test" feature
Sample conditions required at inlet	Pressure: 80 bar (max. continuous). Tested to 400 bar. Temperature: -20°C to +150°C Flow: 2 litres/minute (recommended)
Sample conditioning	Complete systems can be supplied to pre-condition process sample to the conditions required at the analyser inlet.
Sample disposal	Return to process or a recovery system.
Power supply	Voltage: 110/127V or 200/250V ±10% Frequency: 50Hz or 60Hz ±5Hz Consumption: 20W
Standard connections	Sample inlet: ¼" NPT (female) Sample outlet: ¼" NPT (female) Electrical: 20mm conduit (2 off) Earth: M6 screws on bottom of case
Explosion protection	The analyser is ATEX certified  II 2G EEx d IIB T6 (T <sub>amb</sub> +55) for use in zone 1 hazardous areas. Certificate no. DEMKO 04 ATEX 136616.
Environmental protection	IP54, 0°C to +55°C
Dimensions and weight	Width: 475mm Depth: 185mm Height: 420mm Weight: 28kg
Access dimensions	Length: 875mm Depth: 800mm Height: 750mm
Options	<ul style="list-style-type: none"><li>• Configuration for CSA local approval</li><li>• Steam-traced sample cell</li><li>• Sample cell in special materials</li><li>• Addition of a separate local indicator</li><li>• Metric Adaptor Kit</li></ul>



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