

Composition Monitoring in Chemical Processes with a New Diode Array Spectrophotometer

AMETEK Process Instruments has developed the new on-line IPS-4 Diode Array Spectrophotometer that provides continuous composition monitoring of chemical processes with a reliable, easy-to-use analyzer. The integrated photometer system (IPS-4) features a folded path optical design. The light source, dispersive grating and diode array detector are located in the analyzer enclosure. The sample cell and sample handling components are located in the sample cell enclosure. This configuration conserves valuable space when the analyzer is mounted in an analyzer shelter.

On-Line Composition Monitoring

Continuous monitoring of key components in chemical processes is required to provide maximum product yield and on-line verification of product quality.

The AMETEK Solution

The IPS-4 Diode Array is a cost-effective UV, VIS, NIR analyzer that is designed for single component and multiple component applications. Full spectrum analysis provides the capability to perform multiple component applications and the ability to compensate for interfering components. The major advantage of the IPS-4 design is the rapid scan time of the diode array. Typically, the full spectrum is scanned in less than one second. This fast optical response allows for rapid remedial action when off-spec product is detected. The IPS-4 analyzer can be used in a wide variety of gas phase or vapor phase chemical composition monitoring applications.



AMETEK IPS-4 Features

- Fast optical response time of diode array
- Modular integrated photometer system for UV, VIS and NIR applications
- No moving parts in the optical bench provide excellent wavelength stability
- Easy-to-use, multi-language vacuum fluorescent display
- Xenon flash lamp source provides long service life – typically greater than two years
- Auto zero and auto calibration capability
- Optional heated sample cell enclosure available for operation up to 150° C
- MODBUS RTU communications protocol
- Pressure and temperature compensation available
- NEMA 4X indoor/outdoor housing

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IPS-4 Chemical Composition Monitoring Application Examples

- Chlorine measurements in chemical processes
- Aromatics in water
- Benzene, toluene and xylene (BTX) in hydrocarbon solvents
- Color monitoring in refineries
- Product purity validation
- UV absorbance of petroleum products
- Phenol in water
- % transmittance measurements at multiple wavelengths in glycol processes
- On-line quality assurance verification

Process Instruments Expertise

The implementation of the new IPS-4 Diode Array Spectrophotometer includes the full global service, sales and training support of the AMETEK Process Instruments division. AMETEK's applications expertise in chemical processes and handling of toxic and corrosive samples ensure the successful installation of the IPS-4 Diode Array Systems for on-line composition monitoring applications in chemical processes.



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