

ONLINE MONITORING OF WATER IN ORGANIC LIQUIDS

The measurement of water in organic liquids is a common non-dispersive infrared (NDIR) application. Water has strong fundamental absorption bands in the infrared (IR) and weaker overtone bands in the near-infrared (NIR) region. A low parts-per-million (ppm) water measurement, such as 0 to 100 ppm in ethylene dichloride, is made in the fundamental IR region. Higher ppm measurements, such as 0 to 2000 ppm and zero to high percent water, are made in the NIR region.

The online measurement of water is critical for many chemical processes. The measurement of water in organic liquids provides online verification of product quality. The measurement of trace levels of water is required for chlorinated organic streams to protect the reactors from corrosion. Water measurements are susceptible to changes in sample temperature, so any change in temperature should be taken into consideration.

EQUIPMENT

The IPS-4 NDIR is an optical filter spectrophotometer that features an integrated sample conditioning system, which simplifies installation and allows for easy maintenance of the analyzer. The IPS-4 NDIR is easy to use, can be installed in wash-down conditions and harsh environments, and features a temperature compensation algorithm to compensate for changes in sample temperature.

The use of multiple optical filters in the IPS-4 NDIR enables the measurement of multiple components and provides reference wavelengths that ensure reliable optical system performance. Unlike traditional dual-beam infrared analyzers, this single-beam device does not require reflective cells and the use of measuring and reference filters minimizes any source variation or signal loss errors to enable a very robust process measurement.

Water in organic liquids - typical applications

Process	Measurement range
Gasoline blending	0 to 5% in ethanol
Ethylene glycol	0 to 2000 ppm in ethylene glycol
Vinyl chloride monomer	0 to 100 ppm in ethylene dichloride
Acetic acid production	0 to 1500 ppm in acetic acid
Nylon	0 to 400 ppm in dimethyl acetamide
Polycarbonate	0 to 1% in phenol
Solvent recycle	0 to 2% in acetone

IPS-4 NDIR SPECTROPHOTOMETER

Key benefits

- Robust multi-wave/single-beam technique
- Analog and digital connectivity – Modbus, Ethernet and web browser-based interface
- IP65/NEMA 4 enclosure houses all components – designed for outdoor installation; no exposed components
- Fully integrated sample conditioning; no need for site integration
- Integrated sample temperature compensation algorithm to minimize water measurement errors



SALES, SERVICE & MANUFACTURING

USA - Pennsylvania

150 Freeport Road
Pittsburgh PA 15238
Tel: +1 412 828 9040
Fax: +1 412 826 0399

USA - Delaware

455 Corporate Blvd.
Newark DE 19702
Tel: +1 302 456 4400
Fax: +1 302 456 4444

Canada - Alberta

2876 Sunridge Way NE
Calgary AB T1Y 7H9
Tel: +1 403 235 8400
Fax: +1 403 248 3550

WORLDWIDE SALES AND SERVICE LOCATIONS

USA

Tel: +1 713 466 4900
Fax: +1 713 849 1924

Brazil

Tel: +55 19 2107 4100

France

Tel: +33 1 30 68 89 20
Fax: +33 1 30 68 89 99

Germany

Tel: +49 2159 9136 0
Fax: +49 2159 9136 39

India

Tel: +91 80 6782 3200
Fax: +91 80 6780 3232

Singapore

Tel: +65 6484 2388
Fax: +65 6481 6588

China

Beijing
Tel: +86 10 8526 2111
Fax: +86 10 8526 2141
Chengdu
Tel: +86 28 8675 8111
Fax: +86 28 8675 8141
Shanghai
Tel: +86 21 5868 5111
Fax: +86 21 5866 0969



© 2019, by AMETEK, Inc. All rights reserved. Printed in the U.S.A. A-0303 Rev 7 (0219)
One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.



To find out more or request a quote visit our website

ametekpi.com