

PRODUCT DATA SHEET

IPS-4 UV/IR Full Spectrum Analyzer

Combining ultraviolet (UV) and infrared (IR) technologies to measure components of interest in complex streams, continuously and without concerns about cross-interferences

The IPS-4 analyzer utilizes both UV and non-dispersive infrared sensor (NDIR) optical benches to enable unparalleled high-quality process gas analysis. UV analysis is free of cross-interferences from lighter hydrocarbons, carbon dioxide (CO₂) and water (H₂O). IR analysis is a powerful tool in online component concentration measurement, but can be limited in accuracy due to cross-interference in complex streams; many gases exhibit multiple absorptions in the IR. Using the most favorable absorptions in both spectral areas and eliminating cross-sensitivity concerns, the IPS-4 IR/UV enables accurate measurement of up to eight components. Measurements are made simultaneously in the UV using diode array detection and in the IR using single beam multiwavelength technology, plus the readings are cross-correlated.

The UV readings are further verified (optical bench electronic verification) by evaluating detector response to known changes in lamp intensity. The single beam/multiple wavelength IR technology ratios the output signal of desired component to reference, minimizing common mode errors. The combination bench unit offers a very robust process analytical solution utilizing long lifetime optical components. The unit is web-enabled, and a heated oven for sample conditioning components is included as part of the analyzer package, when required.



KEY BENEFITS

- Multiple gas capability
- Analog and digital connectivity
- IP65/NEMA 4X enclosure houses all components
- Fully integrated sample conditioning

APPLICATIONS

- Feed forward analysis in sulfur recovery units
- Recycle gas composition
- Reactor and stripper efficiency

KEY MARKETS

- Sulfur recovery unit gas processing
- Petrochemical
- Refining

PERFORMANCE SPECIFICATIONS

Analyzer range	ppm to 100% depending upon specific application
Linearity (independent)	UV: 1% of full-scale range , IR: typically ±2% full-scale range, Dual Bench (DB): typically ±2% of full-scale range (application dependent)
Measurement accuracy	UV: 1% of full-scale range , IR: typically ±2% full-scale range, Dual Bench (DB): typically ±2% of full-scale range (application dependent)
Repeatability	UV: 1% of full-scale range , IR: typically ±2% full-scale range, Dual Bench (DB): typically ±2% of full-scale range (application dependent)
Stability	0.5% of full-scale range
Zero drift	<1.0% of full-scale range over 24 hours
Response time	<2 seconds photometric response, <30 seconds to T90
Components	Up to eight components can be measured
Inputs	Two non-isolated analog inputs (0-5V, 0/4-20mA) Two optically isolated discrete DC inputs
Outputs	Local display Four isolated outputs (standard: 0/4-20 mA or 0-5V) (Eight isolated outputs optional) Eight dry relay contacts (NO, 100VA, 240 V) RS485 isolated (supports Modbus RTU) RS232 non-isolated Fast Ethernet (IEEE 802.3)
Sample system limits	Sample pressure: Up to 100 barg (1450 psig) for some configurations Oven temperature: Oven heater capable of maintaining 150°C (300°F)
Utility requirements	Electrical: 120 VAC (105 to 132 VAC), 47 to 63 Hz or 240 VAC (209 to 264 VAC), 47 to 63 Hz Power consumption: <700 W with oven heater <300 W without oven heater
Instrument air (for aspirator)	4.8-6.9 barg (70-100 psig)
Environmental requirements	Ambient temperature: -20 to 50°C (-4° to 122°F) Ingress protection: IP65 and Type 4X stainless steel
Enclosure material	304 Stainless Steel (316SS optionally available)
Physical dimensions (W x H x D)	950 x 660 x 300 mm (37.4 x 26 x 11.8 in.) for basic analyzer. Back panel, where supplied: typically 1220 x 1220 mm (48.1 x 48.1 in.) Weight: 80 kg (176 lbs) for base system
Approvals and certifications	Meets various ATEX, CEC, IECEx & NEC hazardous area requirements. Consult AMETEK for specific details

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



© 2018, by AMETEK, Inc. All rights reserved. Printed in the U.S.A. F-0310 Rev 9 (0818)
One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

