Energy Technologies Inc.

Model 730 FSEA
Full Stream Elemental Analyzer

The Model 730 Full Stream Elemental Analyzer is a registered nuclear gauging device for measuring ash, moisture, and sulfur weight percent of material, heating value, and ash elemental weight percent of material. The measuring portion of the device, which consists of a source and detector enclosures, is mounted such that a conveyor belt passes through the enclosure. The detectors are connected to an electronics enclosure housing an industrial computer which processes the detector signals and displays them to the operator. Ash elements measured include Al_2O_3, CaO, Fe_2O_3, K_2O, MgO, MnO_2, Na_2O, SiO_2, SO_3, and TiO_2 on a weight percent of material basis. Arsenic and mercury are available as add-on modules. All measurements are made every minute to make it useful in on-line process and control applications.

- Sorting

  Real-time measurement of material ash weight percent and a virtually unlimited flow capacity make the FSEA a valuable sorting instrument. Run of mine material – especially within seams of highly variable composition - can be efficiently sorted into specific market products, thereby reducing good product waste and improving profit margins.

- Blending

  Use of the FSEA as the control element in either feed-forward or feed-back control topologies makes the FSEA a valuable tool for material blending. Electronic control signals from the FSEA can be used to adjust feed rates from various material sources thereby improving blend quality and efficiency.

- Process Control

  Use of the FSEA on the output of a prep plant allows for closed-loop feedback to control heavy media density in the material circuit. Use of the FSEA on a plant bunker feed belt allows for boiler operation adjustments to reduce boiler fouling and slagging and can lead to improvements in long-term heat rate.

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For more information on any of our products or services please visit us on the web at www.energytechinc.com.

SERVICES

ETI offers an flexible service contracts for all analyzer customers. Coverage includes radiation safety surveys, leak testing, calibration of all electronics and nucleonics, cleaning, and routine software/hardware maintenance

Technical Support
Installation and Setup
Maintenance
Application Support
Hardware Support
Guaranteed Warranty

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Design Features

Rugged Belt Mounted Analyzer
- Assembly is dustproof and waterproof
- Modular Design minimizes installation time and cost

Source Holder/Detector
- Gamma and Neutron sources are housed in a protective shield
- Gamma rays are collimated into a fan beam to maximize material interrogation zone (approximately 160 times that of other units)

Auto-Standardization
- Automatic software compensation for electronic drift, source decay, and temperature variations.
- Ensures system precision and accuracy

Detector Temperature Control
- Eliminates drift due to ambient temperature variations
- Ensures system precision and accuracy

Advanced Data Acquisition and Control
- Intuitive and easy to use operator interface
- Graphical Displays
- Automatic Report Generation
- Manual and Automatic control of process control devices (sort gate, feeder, etc.)
- Analog outputs for connection to other process equipment
- Digital outputs for alarm or sort control

Technical Specifications

Performance	
Accuracy	0.3-1.0 wt. % (typ) for washed or raw materials
Response Time	60 seconds (typ)
Operational Material	
Material Top Size	24-60 in (600-1525 mm) (typ), inclination same as belt limitation
Material Depth	4-16 in (100-406 mm) depending on material density
System Inputs	
Belt Running	A pair of voltage free contacts indicating that the belt is running
System Outputs	
Analog	Eight (8) isolated 0-20mA or 4-20 mA analog outputs
Digital	Four (4) 24 VDC digital outputs Four (4) 24 VDC digital inputs
Environmental Conditions	
Operating Temperature	Analyzer: -22˚-122˚F (-30-50˚C) Enclosure: 40˚-120˚F (5-40˚C)
Humidity	Analyzer: 0-100% Enclosure: 0-90%, non-condensing
Environment	Class II, Div.1 group F (G optionally available). All units are protected against dust and moisture (NEMA 4).
Electrical Requirements	
Power Requirement	120/240 VAC, 50/60 Hz, 3 KVA
Radiation Levels	
Surface	1.0 mREM/hr maximum radiation dose rate at all points on the surface of the equipment except in the direct beam.
Vicinity	Less than 0.1 mREM/hr maximum radiation rate at all points outside 3 ft. of the source housing.
Shipping Weight	
Weight	14,300 lbs (6,500 kg)