Energy Technologies Inc.

Coal & Other Fuels

Model 730 FSEA
Full Stream Elemental Analyzer

The ETI Model 730 is an Online Bulk Material Analyzer utilizing prompt-gamma neutron activation (PGNA) elemental analysis combined with a Dual-Gamma Ash Analyzer producing ash, moisture, sulfur, & heating value measurements.

The FSEA utilizes no-contact non-destructive technology to measure the elemental content of 100% of the material in real time while it is in motion on the conveyor. The device provides analytical data to operators and plant control systems on a minute-by-minute basis.

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, making 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.

Energy Technologies Inc.
1741 Triangle Park Drive
Maryville, TN 37801
USA

Phone: (865) 927-9330
Fax: (865) 927-8017

Email: info@energytechinc.com

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

SERVICES

ETI offers 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

Integrated Ash/Density/Moisture Analyzer

- Density is utilized to further correct elemental measurements.
- Elemental measurements further correct Ash.
- Moisture is used in heating value calculations.
- Accurate analysis is provided no matter the belt loading or variation in belt loading.
- No mechanical drift or periodic recalibration needed.

Moisture Detection

- Moisture is directly measured by integrated single or dual-gamma analyzer.

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
- Remote client software provides data at user workstations.
- Graphical and Tabular 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 controls

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)