mesa electronic

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Infrared Measuring System Type: MESA MM 710

KEY FEATURES:

- **Up to 4 constituent measurements simultaneously**
- **High speed measurement**
- **Built in intelligence in the gauge-provides calibrated gauge outputs**
- **Multi Wavelength gauge provides Virtual Full Spectrum (VFS) facility**
- ***Speed*Cal pre-calibration with RH insensitivity**
- **Total rejection of ambient lighting**
- **LAPDOG feature eliminates calibration shifts with lamp change**
- **Dual Detector Referencing for ultimate gauge stability**
- **Segmented Collection Mirror for mega-pass height tolerance**
- **60 mm beam patch for better averaging on large particulate material**
- **Window Contamination Monitor**
- **Extremely simple servicing and NO routine maintenance.**
- **Pre-aligned optics ensure that adjustments are not needed for life**
- **Active Gauge Diagnostics continuously monitors its state of health**
- **Gauge internal temperature monitor**
- **Cast aluminium gauge housing as standard with integral water/air cooling**
- **True connectivity to process: analoque, serial, fieldbus, ethernet**
- **High speed optical gating for discountinuous product streems**

FUNCTION:

The compact, rugged design of the gauge permits use on the production line and in the laboratory. A sensing head can be moved from a conveyor belt to a screw conveyor in a matter of minutes. Add a labstand and a rotary table and you have a laboratory instrument.
Changing from one product to another, e.g. from grass pellets to grain, merely entails entering a number to select a new formula.
A filterwheel selects 10 specific measurement wavelengths from the near infrared spectrum which are then evaluated by the gauge's microprocessor using complex algorithms. The combination of highly complex data reduction algorithms and unique calibration and data logging functions provides both laboratory accuracy and a high degree of tolerance to ambient conditions in the production process. The library of algorithms is constantly updated with information about solutions to specific measurement tasks in the field, providing a reference system for future requirements.
Considerable savings of both time and money are now possible due to the extreme accuracy of the on-line measurements. Processes which were once difficult to control, and then only via secondary parameters, can now be **controlled directly** on-line.
For example, the main process parameter in drying systems is moisture, which used to be measured and controlled via the temperature. Fluctuations in material properties and ambient conditions led to widely diverging production results.

messen - steuern - automatisieren - messen - steuern - automatisieren - messen - steuern - automatisieren

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MESA Electronic GmbH, D-82538 Geretsried-Gelting, Leitenstr. 26, Tel.: 0049 (0)8171 / 7693-0, Fax: 0049 (0)8171 / 7693-33
E-Mail: mesa@mesa-gmbh.com, Homepage: www.mesa-gmbh.com

Technical Specification for the MM 710:

Measurement scope:

Each gauge up to 4 compenents

Measurement range and accuracy (% Absolute):
Moisture 0-90 % (0,1), Fat 0-70 % (0,25),
Protein 0-70 % (0,5) Depends upon application

Measurement wavelengths:
up to 10 with VFS technology

Gauge to product nominal operating distance:
250 mm

Product pass height tolerance:
150-350 mm (+/-100 mm)

Beam patch size:
60 mm circular (10 mm optional)

Ambient light sensitivity:
Fluorescent (40 W à 1000 mm) 0.1 %
Incandescent (240 W à 1000 mm) 0.1 %
(without protection or purge)

Response time:
50 mSec through to 1000 secs linear or exponential

Referencing system:
Dual Detector system with common optical path for internal and external beams

Calibration:
*Speed*Cal pre-calibrations installed.

Warranty:
1 year for all components

Operator Interface

Interface type:
Touch screen LED back lit LCD

Installation:
Either adjacent to a gauge or, as a network device, up to 2700 meters to nearest Gauge/node.

Capability:
Displays up to 4 parameters, from selected from any 10 gauges on the network

Languange support:
English plus one other user selectable

Sample Display Unit:

Interface type:
Backlit LCD alphanumeric device showing up to 4 measurements from the gauge

All specifications subject to change without prior notice.

Power:
Driven from adjacent Operator Interface or GaugePort

Sampling system:
User defined delay period with alarm relay to start sampling. User defined sampling period

Outputs:
Normal display mode. After sampling displays Average and Standard Deviation

Hand Held Interface:
Touch screen LED backlit LCD graphics display, multi lingual. Power and communications derived from GaugePort connection

System Outputs and Communication

Analogue outputs:
4-20 mA up to 4 with one Operator Interface or GaugePort

Serial outputs:
RS232 and Lonworks as standard

DataBus options:
Ethernet TCP/IP, DeviceNet, Modbus, Profibus, other on request.

Alarms:
Hi/Low alarms on each gauge channel, up to 4 from one Operator interface or GaugePort. Isolated relay contact closure, 1 A, 240 V max.

Cabling and Network capability
Gauge to GaugePort or Operator Interface, 10 m standard, 20 m max when supporting a gauge
All other cabling between network components, twisted pair screened cable

Maintenance schedule
No routine maintenance required, Active diagnostics monitoring system and built in window contamination monitor

Electrical and Safety

Power:
Universal 90-260 V for GaugePort/Operator Interface
Gauge and Sample Display Unit supplied 10-24 V DC by GaugePort/Operator Interface

CE compliance:
Low Voltage directive Eurostandard
EN 61010-1, EMC directives EN 50081-1
& EN 50082-2

Environmental

Ambient temperature:
All devices 0-50 degrees Celsius, Gauge to 80 degrees with water-cooling
(standard feature)