



**BRETBY
GAMMATECH**

On-line CV Monitor Heat Eye

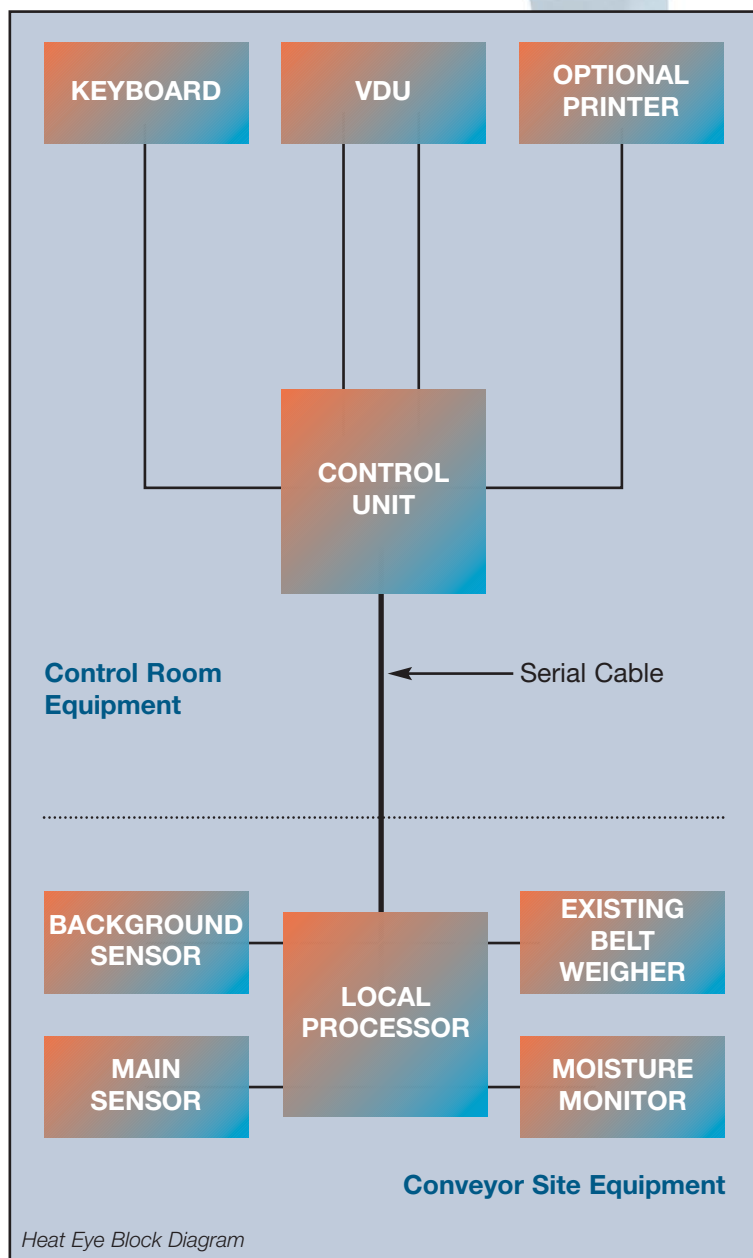


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The Heat Eye is a new instrument providing second-by-second information on the Ash, Moisture and Nett Calorific Value (Nett CV) of conveyed coal.

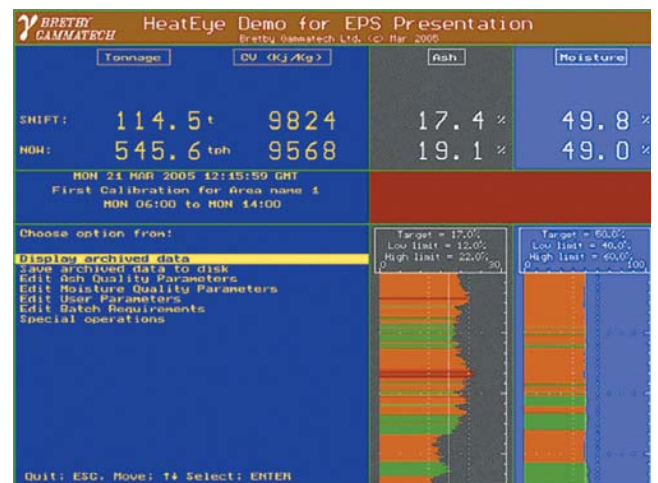
It comprises an Ash Eye (updated NGCQM) fully integrated with a Moisture Monitor (eg Callidan MA-500).

The Heat Eye contains no radioactive sources - it uses Natural Gamma and Microwave Technology.



Principle of operation

The Heat Eye combines the instantaneous ash and moisture measurements to obtain an instantaneous "total inerts" value. This total inerts value is converted into Nett CV by using a calibration based upon the correlation of total inerts with Nett CV previously measured by conventional means.



Heat Eye Block Diagram

Heat Eye Display

Main Features

- Real time graphical and numerical display of instantaneous ash, moisture & nett CV
- Local numerical display of instantaneous ash and moisture
- Simple secure menu driven operation
- User-definable quality parameters
- User configurable shift patterns
- Optional batch operation
- Comprehensive end of shift (and batch) reporting
- User selectable graphical displays of archived trend information with user configurable overlays
- Analogue output of any two measured parameters
- Serial (RS232) output of measured parameters (up to 10km with long line drivers)
- Automatic restart on restoration of power
- Up to eight user nominated coal sources - switching being Automatic or Manual
- Up to four automatically (or manually) activated calibrations

Accuracy

The accuracy of the Heat Eye will depend upon the site and the performance of each component sensor. Accuracy of (1σ) better than 1.0% on final product can be achieved.

Precision

Precision is in the order of 0.5-1.0% (Measured to ISO 15239)

Applications

- Washed coal
- In blending control systems
- Final Product Monitoring
- Monitoring Power Station coals

Benefits

- In blending control systems the good use of the Heat Eye information enables suppliers to produce a more consistent product leading to higher financial proceeds. For example, this can be achieved by adjusting the ash content to counter uncontrolled changes in moisture to provide a product with a consistent Nett CV.
- Furthermore, the Heat Eye information enables a supplier to adjust quickly and effectively the blend characteristics to meet the demands of customers requiring different Nett CV specifications.
- In power station applications the Heat Eye information can be used to ensure the boilers are fed with fuel with a Nett CV falling within specification. This will ensure maximum boiler efficiency. In extreme cases, Low CV material can be diverted from the boilers, thereby reducing downtime and the associated costs.



Callidan MA500 Moisture Monitor

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Site Specifications

Conveyor Speed	No limit (usually 1 – 8 m/sec)
Conveyor Width	No limit (usually 800 – 1400 m)
Tonnage rate	No upper limit*
Bed Depth	No upper limit*

*Mass loadings of <25kg/m should be avoided

Electrical Requirements

240 or 110 VAC, 50/60Hz single phase 5A at both Control Unit and Conveyor site

Environmental Requirements

Operating Temperature	0 to 40°C
Moisture	5 to 95% relative humidity (non-condensing)

System Inputs

Tonnage Rate	0-10V, 0.4-2.0V or 4-20mA
Belt Speed	0-10V, 0.4-2.0V or 4-20mA or <24V pulse per unit of travel Or contact closure if constant speed

System Outputs

- 2 User configurable analogue outputs of any measured or calculated parameter (0.4 – 2.0V)
- 2 further analogue outputs of moisture (4-20mA)
- 2 User configurable High/Low Ash/CV alarms (voltage free contacts)
- 2 further digital outputs for High/Low moisture
- Standard Serial output (RS232)

Shipping Details

Gross weight	1700 kg (approximate, depends upon conveyor dimensions)
Gross Volume	5.5m ³ (approximate, depends upon conveyor dimensions)

Specifications are subject to change without notice

