Roll Force Measurement System

FEATURES

- Prevent mill overloading
- Increase roll life
- Control product quality
- Replace expensive/complex load cell systems
- Zero tracking with manual override
- Local and remote indication
- Easy retrofit for existing mills
- Direct replacement for Model 56000 systems

DESCRIPTION

Rolling mill separation forces are measured accurately and conveniently with the Nobel/BLH RFS-3 system.

Extensometers on the mill posts provide an electrical signal proportional to the mill separation force. Four AST 3P units read extensometer signals from both sides of the mill and amplify them. All four amplifiers are connected to a Modbus interface that allows them to exchange data. Sum (total), difference (work-drive), work total, and drive total values can be displayed on any unit. Analog signal outputs for each value are available on the rear panel rack terminals.

Separate relay outputs are provided for "Metal in the Mill" and "Mill Overload" conditions.

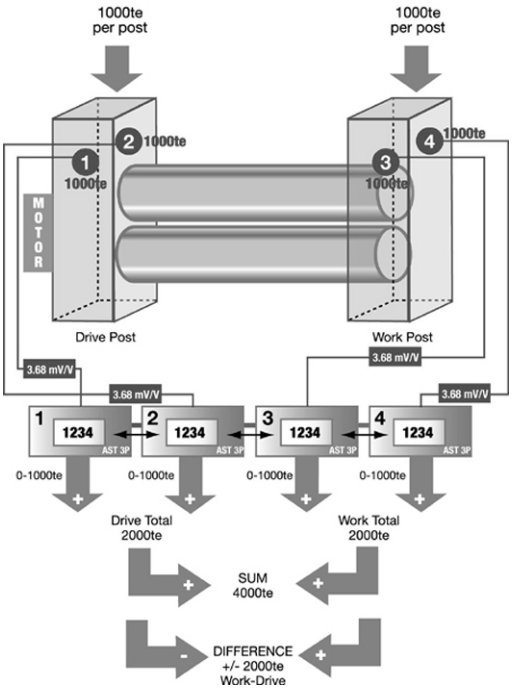
"Deltacom" interface software (supplied at no charge) provides PC access and storage capability. All outputs and settings for each AST 3P can be viewed, uploaded for storage, and subsequently downloaded into a replacement unit, if necessary.

For system component information, please refer to the Vshay Nobel AST 3P and BLH Extensometer data sheets.

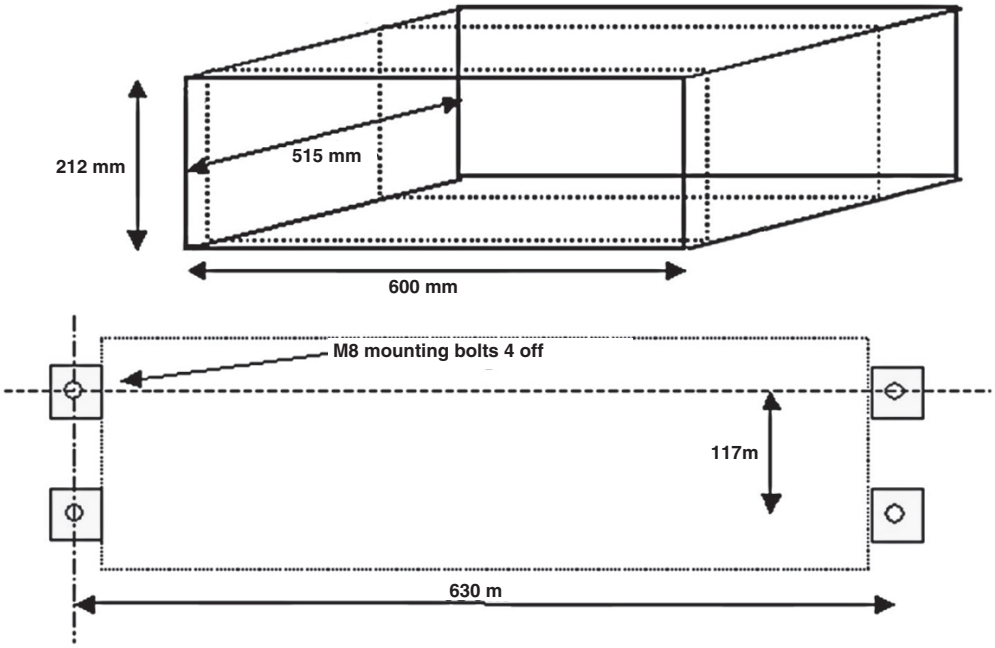
APPLICATIONS

- Rolling mills
- Overload safety systems

CONFIGURATION



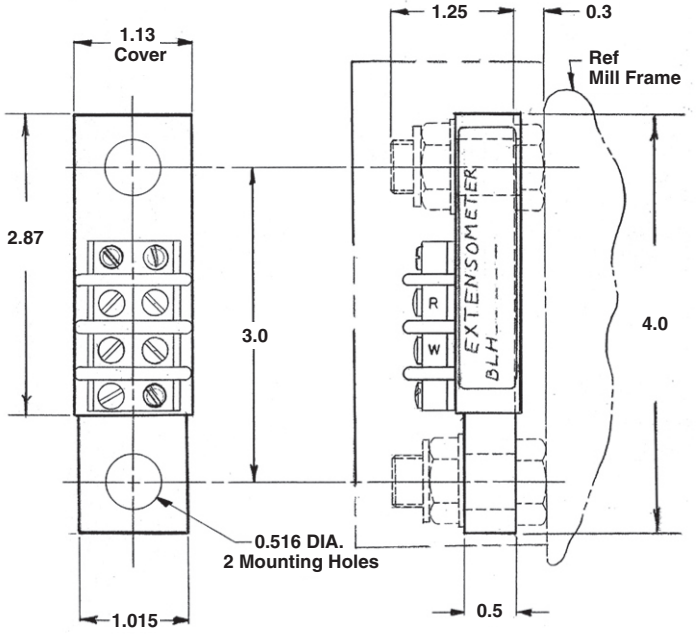
OUTLINE DIMENSIONS - RFS-3 ENCLOSURE



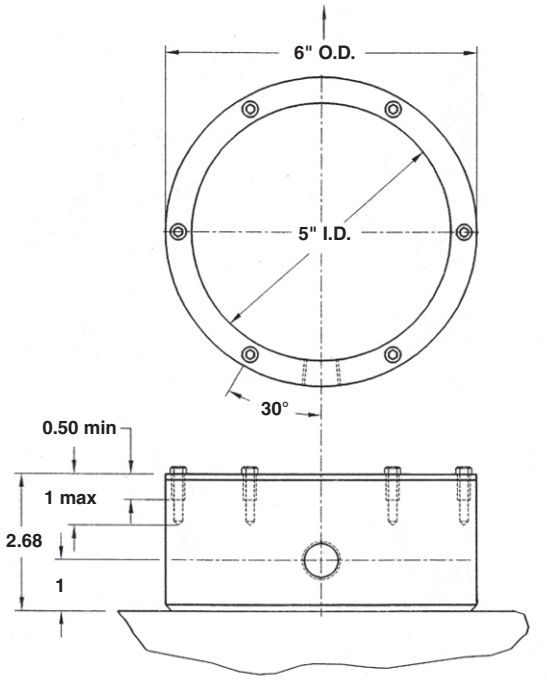
SPECIFICATIONS - RFS-3

Power requirements:	100-240Vac 50/60Hz
Input signals:	0-10mV/V
Output signals:	
Work side force	0-10V, 0-20mA or 0-20mA
Drive side force	0-10V, 0-20mA or 0-20mA
Total force (Sum)	0-10V or 0-20mA
Force balance (Difference)	±0-10V
Relay contacts:	Metal in mill, overload (all 1A, 30V)
Response time:	<100ms
Input controls:	Re-zero, zero track
Communication:	Digital outputs of Drive side and Work side forces RS 485 levels, Modbus protocol. All settings available to view with Nobel's "Deltacom" software which is supplied with the system.
Operating temperature range:	+32 to +122°F (0 to +50°C)
Dimensions:	Approx. 600 x 500 x 220mm (23.62 x 19.68 x 8.66 in.)
Weight:	Approx. 15kg (33lb)

OUTLINE DIMENSIONS - EXTENSOMETER



Extensometer Outline



Cover Outline

SPECIFICATIONS EXTENSOMETER

Accuracy[1]:	<±0.85% of F.S.O.
Nonlinearity:	<±0.25% of F.S.O.
Hysteresis:	<±0.40% of F.S.O.
Repeatability:	±0.5% of F.S.O.
Calibrated output:	8mV/V ± 0.5% = 66.6μm/m (microstrain)
Overload capability	
Zero[2]:	300% of F.S.O. (24mV/V)
Maximum:	550% of F.S.O. (44mV/V)
Strain bridge	
Input resistance:	500Ω ± 100Ω
Output resistance:	350Ω ± 50Ω
Insulation resistance:	5000MΩ
Excitation:	10V DC

Thermal effects (24°C to 65°C)	
Zero[3]:	±0.055%/°C of F.S.O.
Rated output:	±0.011%/°C of reading.
Operating temperature range:	-17°C to 121°C

Notes:

1. Accuracy is the Root Sum of the squares of nonlinearity, hysteresis, repeatability and span.
2. Cancelled by the instrument Zero Adjust capability.
3. The autozero capability of the instrument cancels any thermal zero shift.

Disclaimer

All product specifications and data are subject to change without notice.

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