



ELECTRON MACHINE  
CORPORATION

# MDS E-SCAN MONITOR DIVERT SYSTEM



THE SAFE AND RUGGED CHOICE  
FOR BLACK LIQUOR RECOVERY BOILERS



# ELECTRON MACHINE CORPORATION MDS E-SCAN MONITOR DIVERT SYSTEM

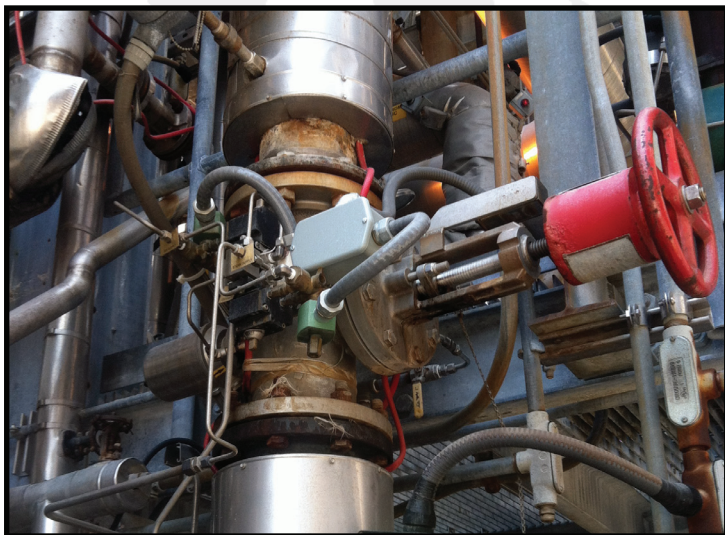
## *APPLICATION*

**Electron Machine Corporation MDS E-Scan is essential for safe operation of black liquor recovery boilers.**

Electron Machine Corporation developed the first black liquor refractometers and became the safety standard used for the original Black Liquor Recovery Boiler Advisory Committee (BLRBAC) Recommended Good Practice Safe Firing of Black Liquor in Recovery Boilers.

Today, the MDS E-Scan is the industry standard for rugged safety while Electron Machine Corporation continues our active involvement with BLRBAC in the continued work toward improving the safety of recovery boilers.

Our experience and active involvement within this industry allows us to produce the most rugged, most reliable, and the easiest to service system for this critical Black Liquor safety measurement.



## *DESIGN*

**The Electron Machine Corporation MDS E-Scan meets and exceeds all BLRBAC recommendations.**

The MDS E-Scan includes two independent hybrid-digital refractometers installed in the main black liquor line with Isolation Valve Adapters. A separate control unit monitors operation, contains alarms and applies proper divert logic to maintain safe conditions.

With an extremely durable Sapphire prism as the foundation, the hybrid-digital design provides digital accuracy with rugged components in the sensing head. This combination produces the essential dependability required for years of service in harsh Black Liquor installations.

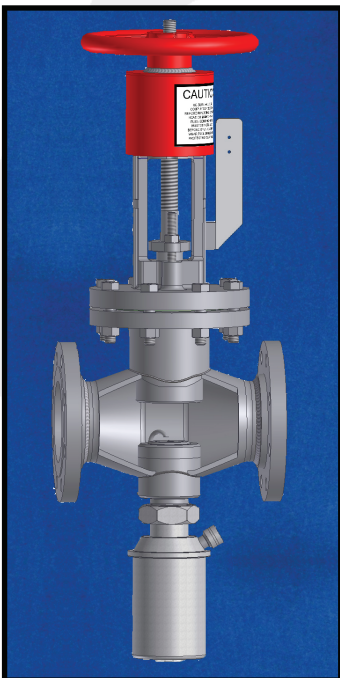


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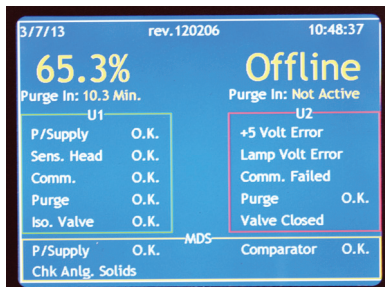
## ISOLATION VALVE ADAPTER

**BLRBAC recommendations state that sensing heads be removable for service without the use of bypass valves.**

Electron Machine Corporation's Isolation Valve Adapter allows the safe servicing of the sensing heads without process flow shut down or liquor piping valve off as mandated by BLRBAC. This proprietary design has proven to be safe and reliable even after many years of service with heavy black liquor.



- \* Straight forward and simple operation
- \* No tools or special devices needed
- \* Metal-to-metal isolation with no O-ring seals to leak or fail
- \* Years of service with min. maintenance
- \* System monitoring ensures sensing heads are in operation
- \* Factory rebuildable



## SAFE

- \* BLRBAC compliant
- \* Proven Isolation Valve Adapter
- \* Automatic logic functions
- \* Alarm and warning datalogging
- \* Divert trending
- \* Intelligent purging
- \* Password protection
- \* Separate power supplies



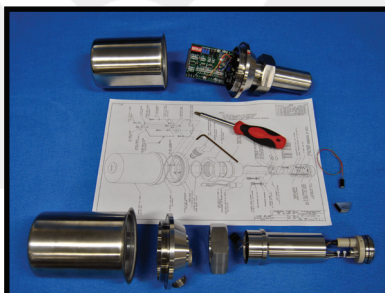
## RUGGED

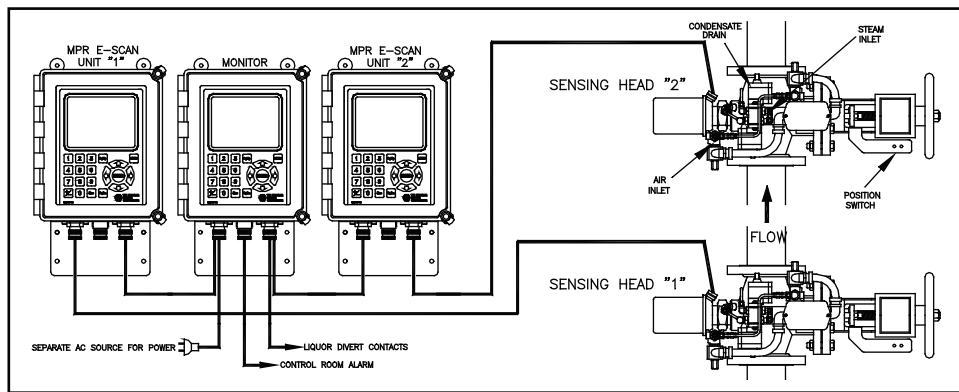
- \* All Stainless-Steel CNC machined Sensing Head
- \* Sapphire Prism
- \* Hybrid-digital design
- \* Predictive maintenance ability
- \* In-house manufactured in USA



## SERVICE

- \* Field-repairable equipment
- \* No special tools required
- \* Easy installation
- \* Simple customer connections
- \* Fast factory repair & service
- \* Next-day parts availability
- \* 24-hour phone assistance





PROCESS TEMPERATURE	Up to 150°C (300°F) without air purge
AMBIENT TEMPERATURE	Sensing Head: up to 52°C (125°F) without air purge Console: up to 50°C (120°F) without vortex cooled console
DISPLAY	Color TFT-LCD with LED backlighting 640 X 480 Pixel, daylight-readable
INTERCONNECTING CABLE	6M (20FT) standard 300M (1,000FT) maximum
SENSING HEAD WETTED MATERIALS	2205 Duplex S/S, Sapphire, PEEK®, VITON®
STANDARD OUTPUTS	(2) 4-20mA measurement (13) output relays (divert, error, warning) (2 ea. for iso. valve pos., low meas., low/low meas., cond. drain, and purge)
POWER	120Vac, 60Hz

**OPTIONS:**

**S/S CONSOLE**

- \* NEMA 4X
- \* Vortex-cooler or fan ventilation



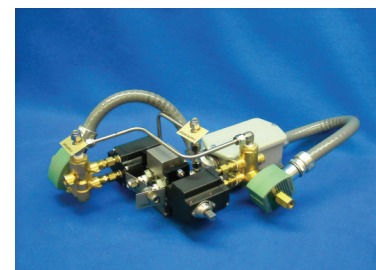
**REMOTE STATUS PANEL**

- \* Displays current measurement and temperature with 2-hour trend graph
- \* Provides remote control of divert and error/reset functions



**PRISM PURGE PAK**

- \* Provides Condensate Drain and Purge Relays
- \* Easily mounted onto Isolation Valve Adapter
- \* Clearly labeled connections



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