

Removing the Veil iba: The Eyes of Industry

iba – Measurement Systems for Industry and Energy



iba System is a German Company whose mission is to “bring transparency to the world of industrial production, power generation and energy distribution plants.”



Like a flight recorder, all essential system and process data from various signal sources are continuously recorded.



iba System offers several systems, this presentation focuses on iba PDA, and iba Analyzer, and Portable iba.

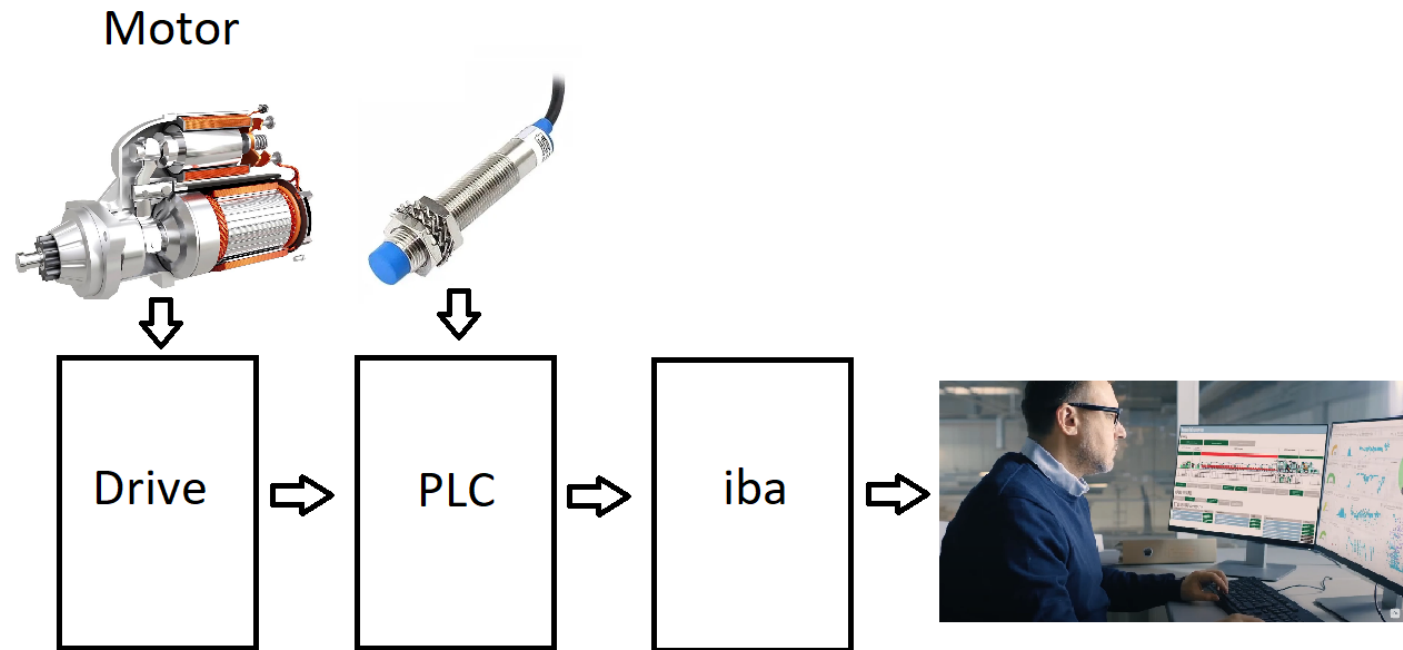


I work for Nucor and have not been paid or asked to promote iba by iba System.

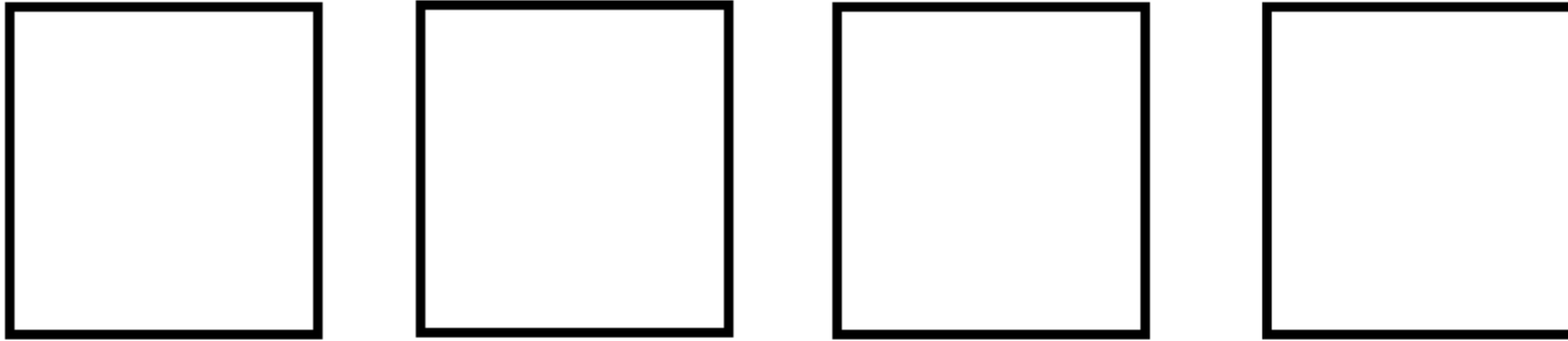
Why is this funny?



How Does IBA Work?

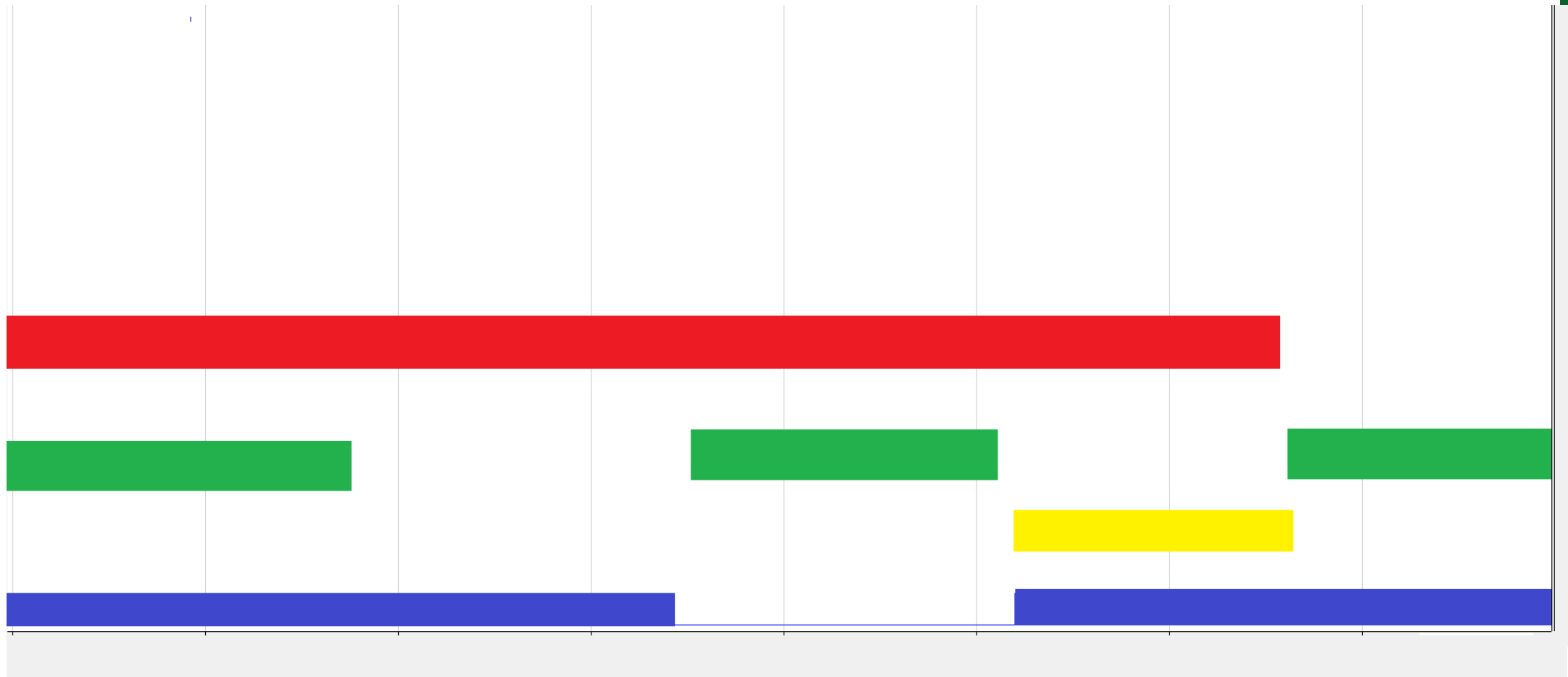


How Good Are Your Eyes?



How many colors did you see? Did all the boxes change color? In what order?

iba Records and Displays What The Human Eye Cannot



What makes iba so valuable?



iba can record data that is invisible to the naked eye



Without recorded evidence, workers tend to rely on what they saw or how they remember an event transpired



If a problem is intermittent or has no obvious failure, troubleshooting often boils down to educated guesses or gut feelings, if not for tools such as iba.



A facility will be elevated to a new level of understanding and effectiveness if iba is installed and properly implemented



Facts are stubborn things: it is hard to ignore or argue what the issue is when there is empirical evidence showing where to look

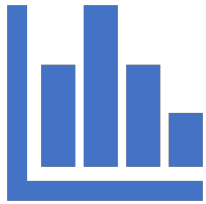
Important Disclaimer: IBA is a tool that requires understanding.

IBA is not plug and play

Everything IBA records must be specified one by one.

The recordings must be labeled in a way that is useful.

Three Modes of iba



Analyzer



PDA Client



Portable

Iba Analyzer



Used to analyze past recordings. Can keep data for future analysis, limited only by data availability.



Files are organized in 15-minute intervals.



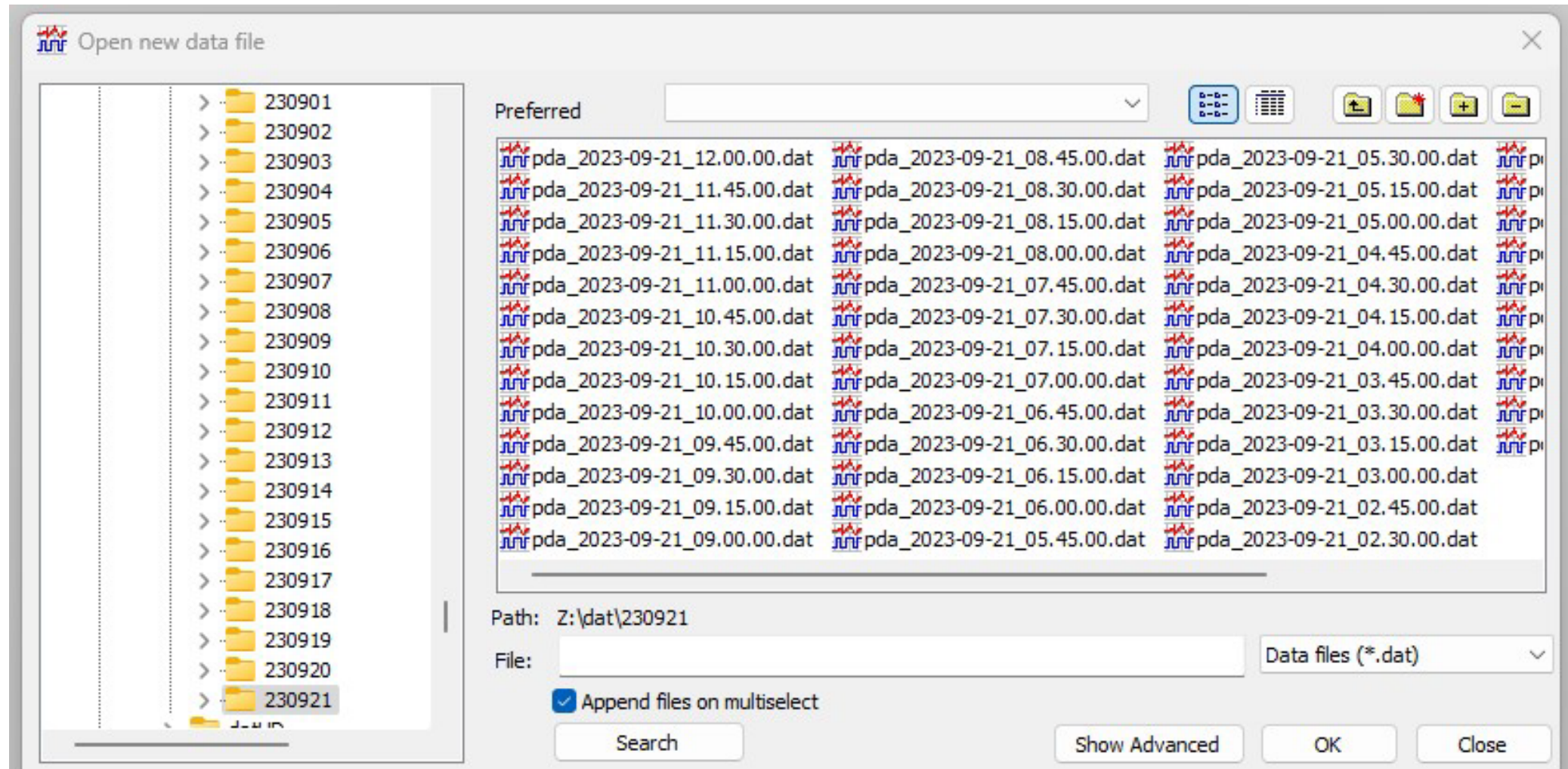
You need to wait for the file to be produced if the event is very recent.



What Happened!?!



Select The File



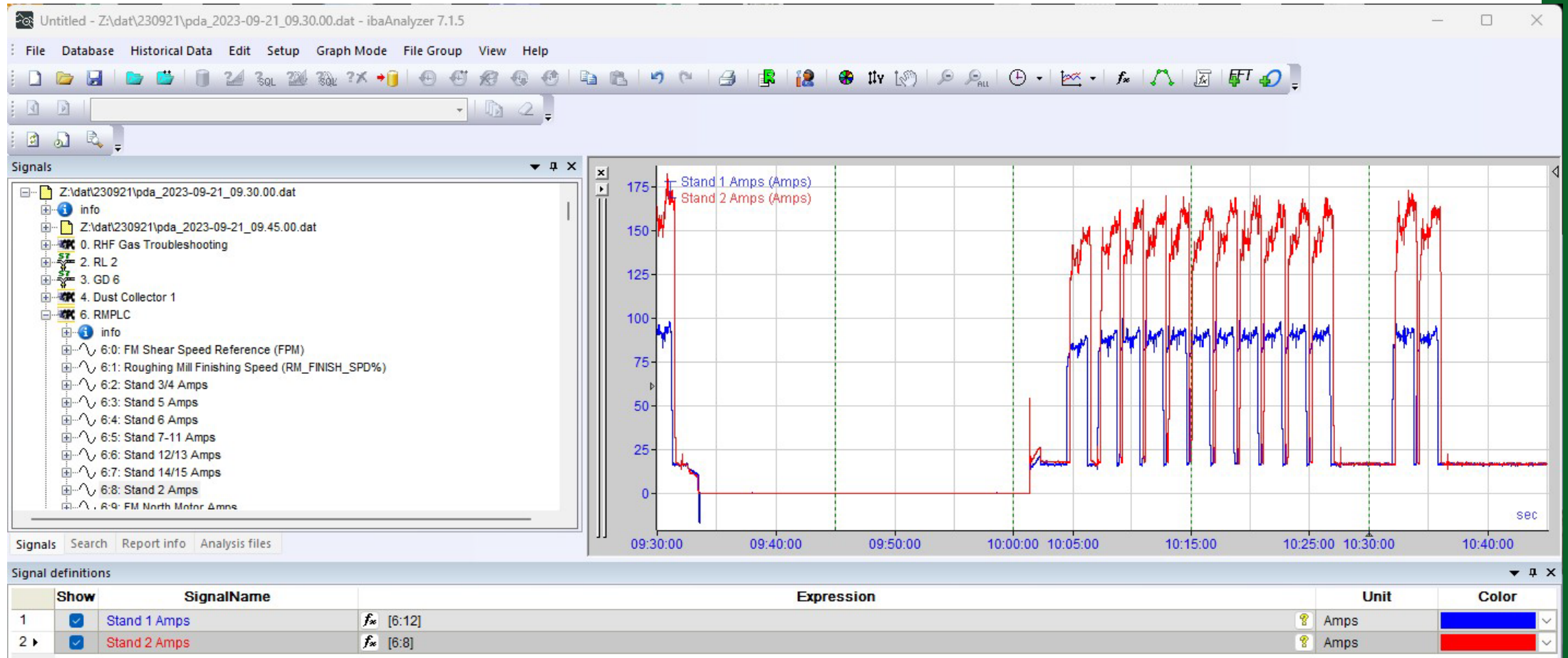
Find Helpful Signals

Signals

- 0. RHF Gas Troubleshooting
- 2. RL 2
- 3. GD 6
- 4. Dust Collector 1
- 6. RMPLC
- 7. CPU31 - Reform Area
- 8. CPU21 - Furnace Handling
- 9. CPU22 - Furnace Combustion
- 10. Water Treatment
- 11. Laser Gauge Raw Data
- 12. RM Shear
- 13. HMDs
- 14. Maint Data Monitoring
- 15. Tach Alarms
- 16. FM EStop Monitoring
- 17. ABB Drives
- 18. RM PLC
- 20. Quality
- 21. Mesh Run Hours
- 22. Compactor
- 23. Hook System IBA
- 24. Pond Tags (Test)
- 27. Billet Info
- 32. Bonus Tracking
- 33. Meshware Tags
- 35. Water Treatment
- 36. Furnace Lock
- 37. Pulpit Extension Rack Signals
- 38. Tach Alarms
- 39. RHF Pilot Emergency Trips
- 40. RM Bearing Temps
- 41. Automax Transfer Testing
- 42. GD 2 Robot
- 46. HSS PLC

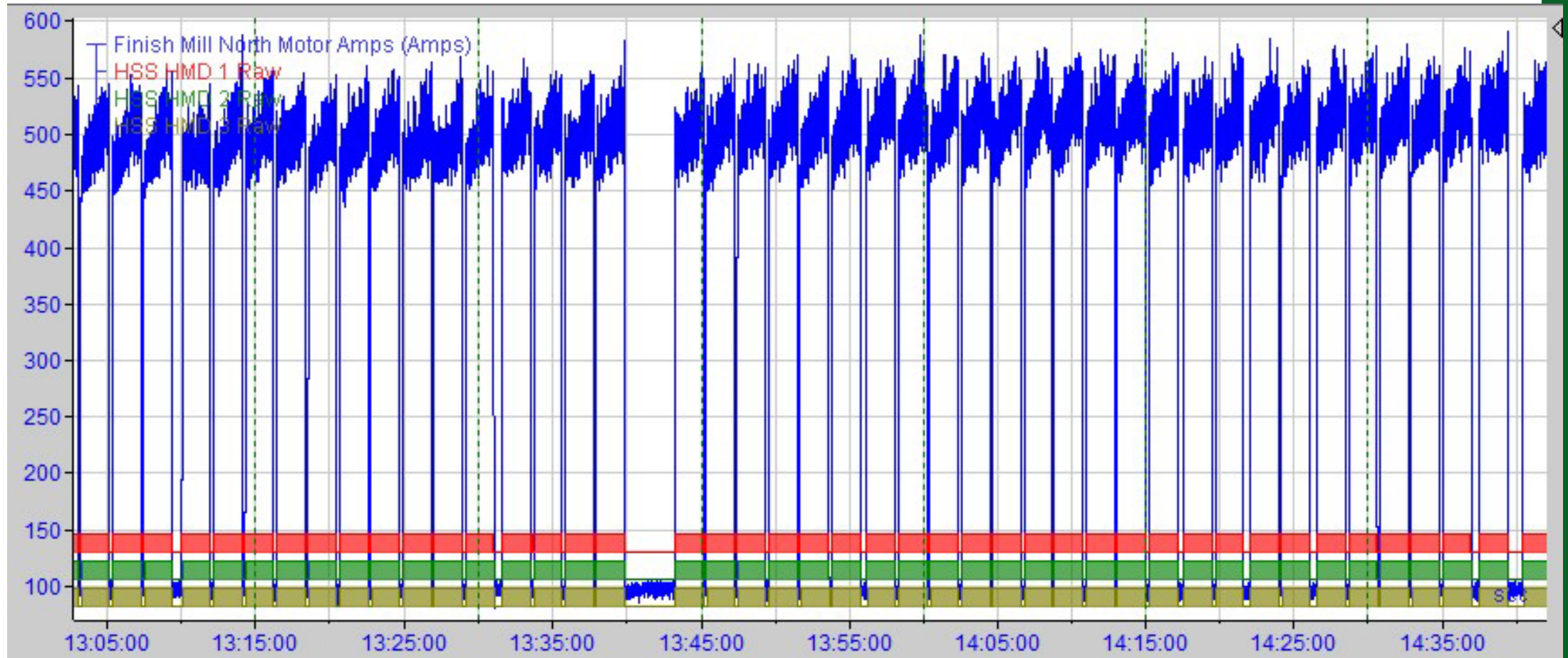
Signals

- 0. RHF Gas Troubleshooting
- 2. RL 2
- 3. GD 6
- 4. Dust Collector 1
- 6. RMPLC
 - info
 - 6:0: FM Shear Speed Reference (FPM)
 - 6:1: Roughing Mill Finishing Speed (RM_FINISH_SPD%)
 - 6:2: Stand 3/4 Amps
 - 6:3: Stand 5 Amps
 - 6:4: Stand 6 Amps
 - 6:5: Stand 7-11 Amps
 - 6:6: Stand 12/13 Amps
 - 6:7: Stand 14/15 Amps
 - 6:8: Stand 2 Amps
 - 6:9: FM North Motor Amps
 - 6:10: FM Center Motor Amps
 - 6:11: FM South Motor Amps
 - 6:12: Stand 1 Amps
 - 6:13: Stand 1 Speed
 - 6:14: Stand 2 Speed
 - 6:15: Stand 3/4 Speed
 - 6:16: Stand 5 Speed
 - 6:17: Stand 6 Speed
 - 6:18: Stand 7-11 Speed
 - 6:19: Stand 12/13 Speed
 - 6:20: Stand 14/15 Speed
 - 6:21: S14/15 Speed Ref (B Loop Ref)
 - 6:22: Number of Delays This Shift
 - 6:24: Uptime Percentage
 - 6:25: Last Shift Uptime Percentage
 - 6:26: Finish Mill Shear Speed Reference (RAW) (FMSREF3%)
 - 6:27: RM Lube Oil Tank Level
 - 6:28: FM Lube Oil Tank Level 1 Scaled

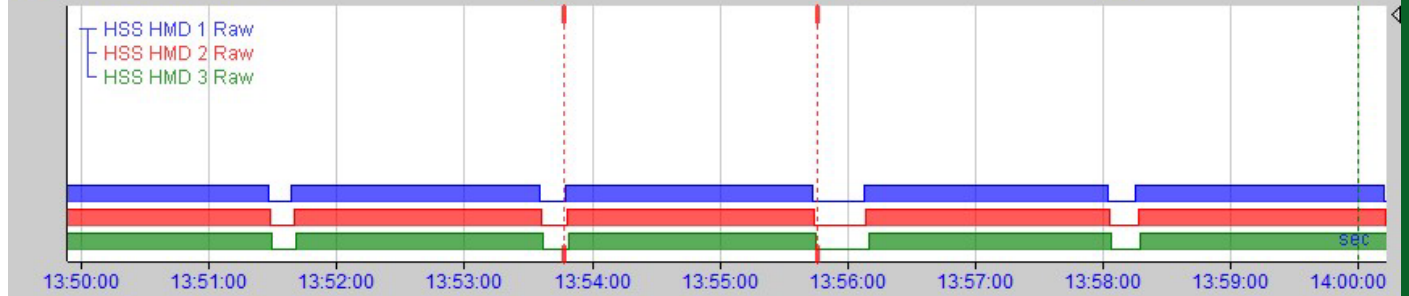
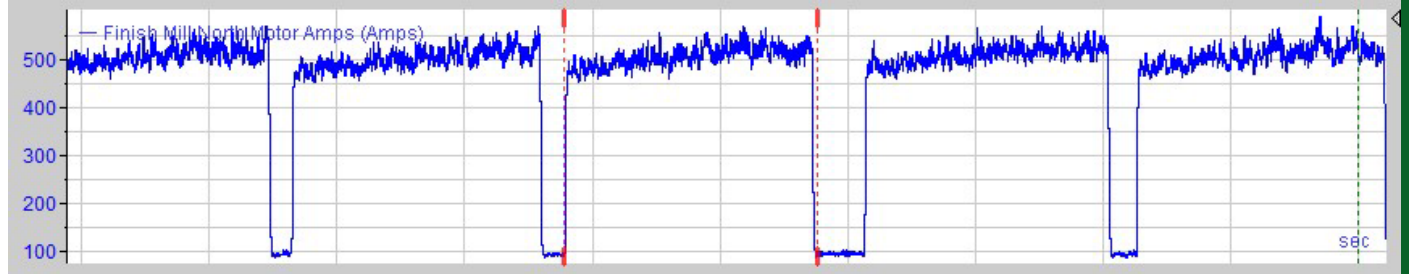
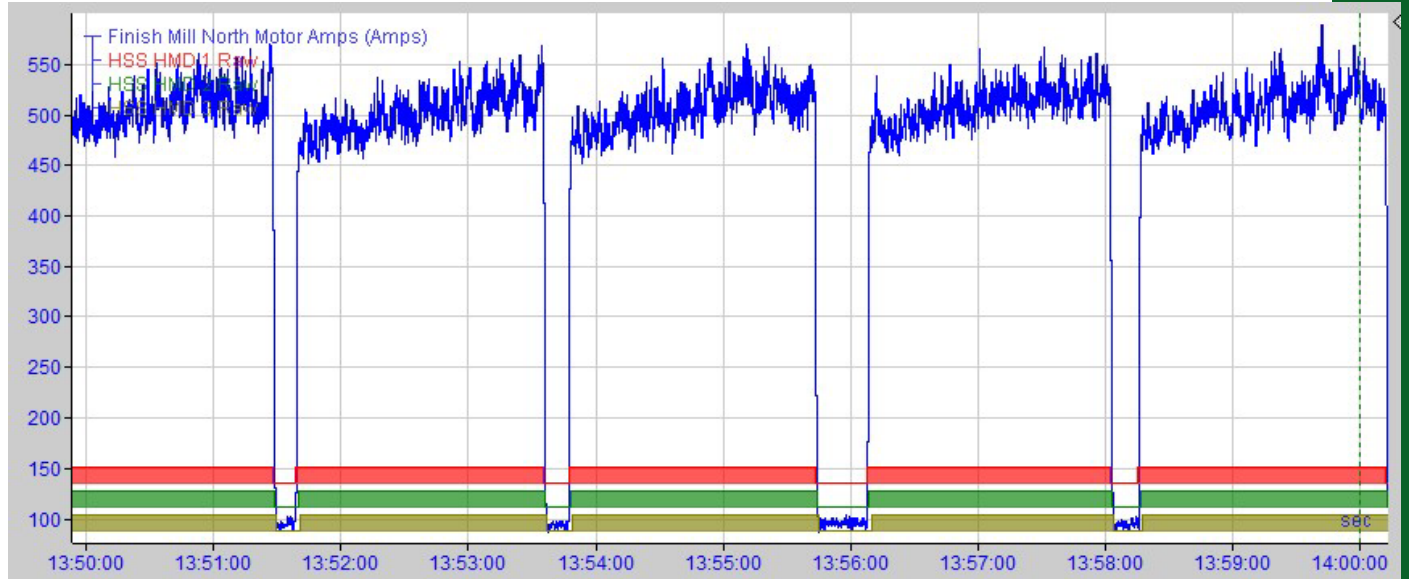


Analyze Information

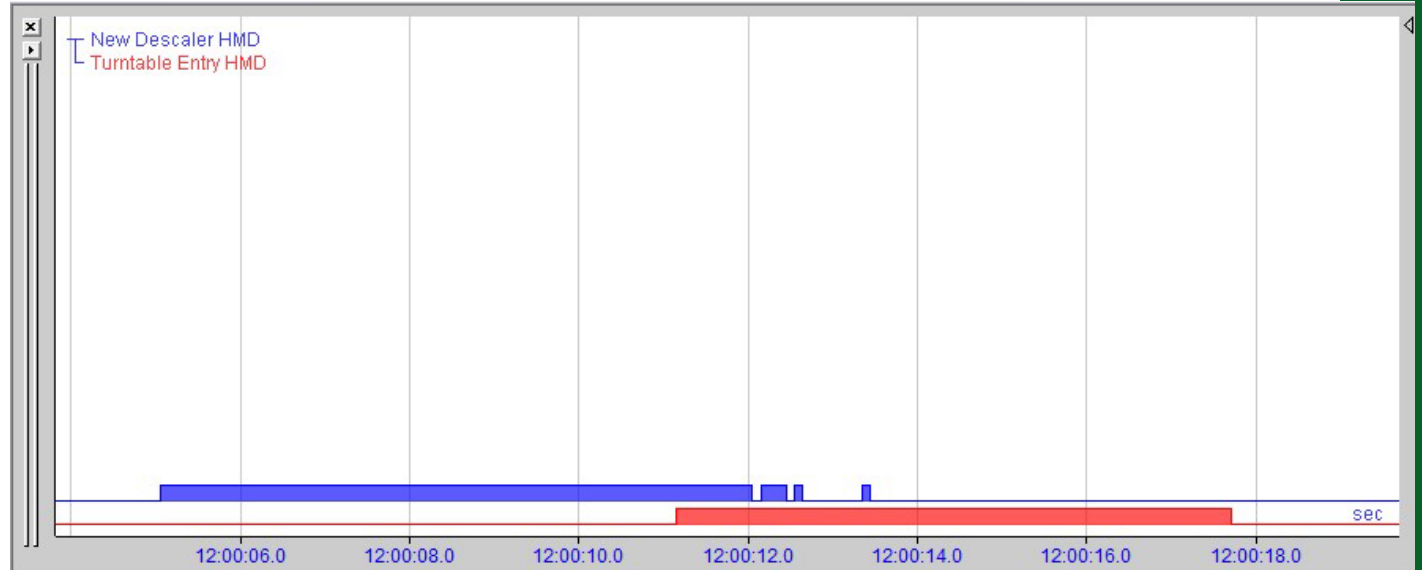
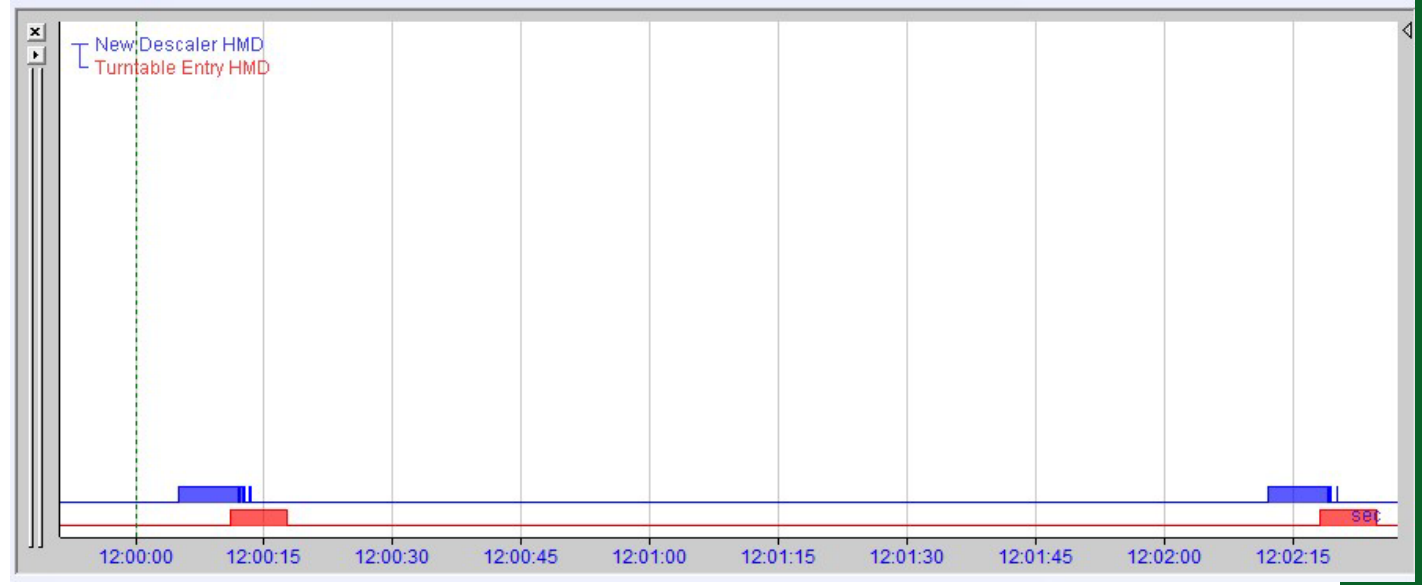
Example of Analog and Digital Together



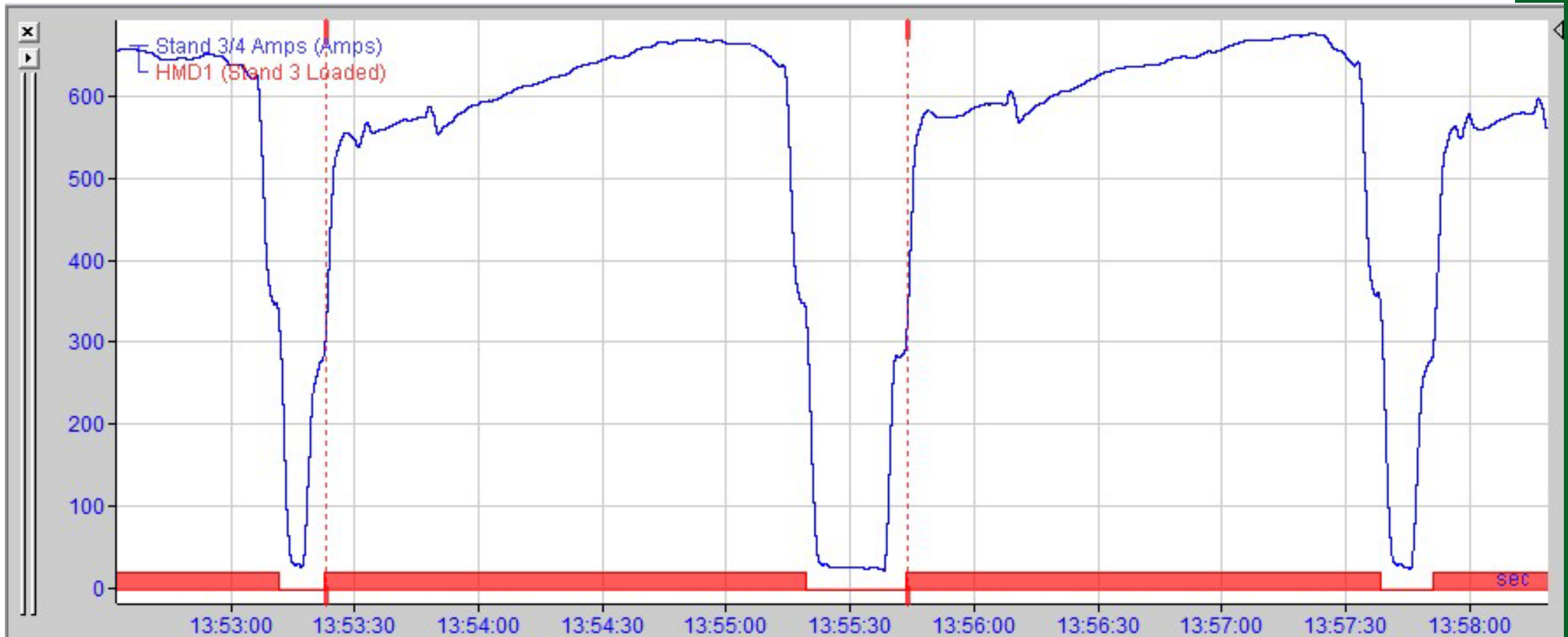
Can Easily
Manipulate
Data



HDM Problems

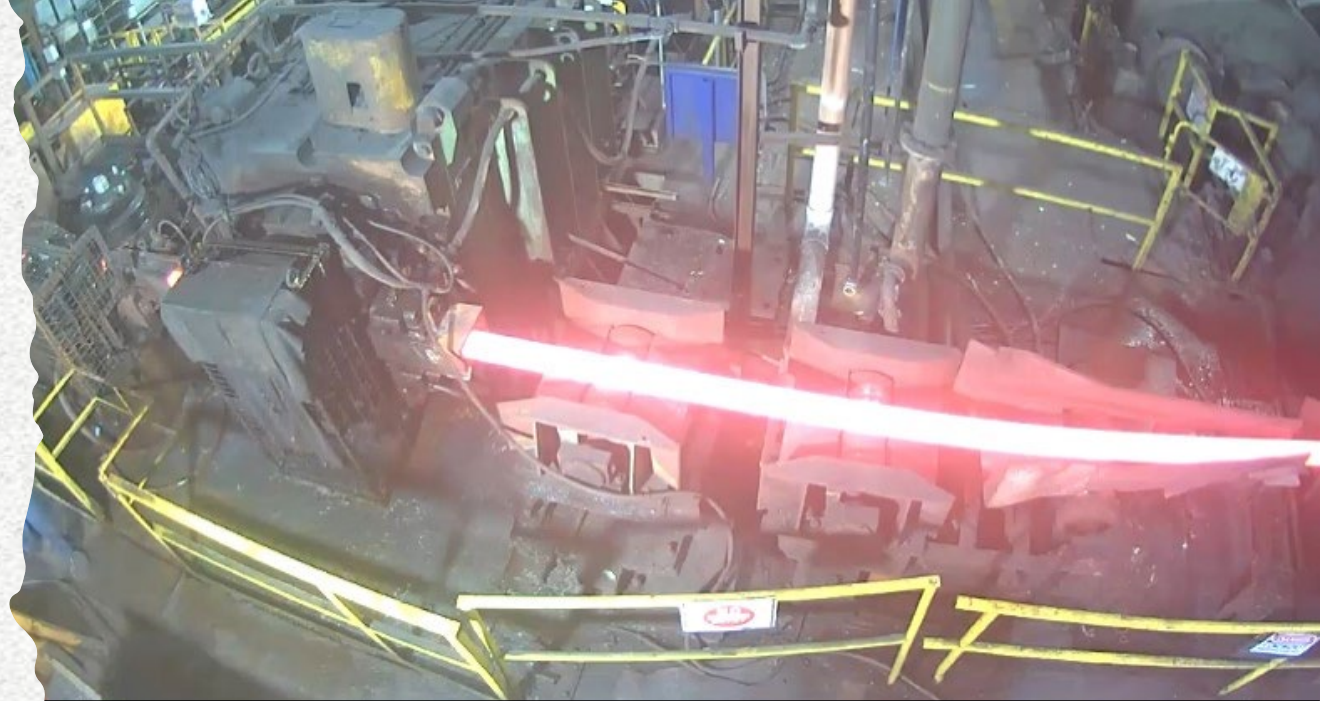


Analysis helped us create reliable alternatives to HMDs



This Takes Forever!

- Intermittent problems can cause countless hours of downtime.
- What if there isn't an obvious cause?
- How do we know this wasn't an operational mistake?



IbaPDA client



Used to track signals in real time.



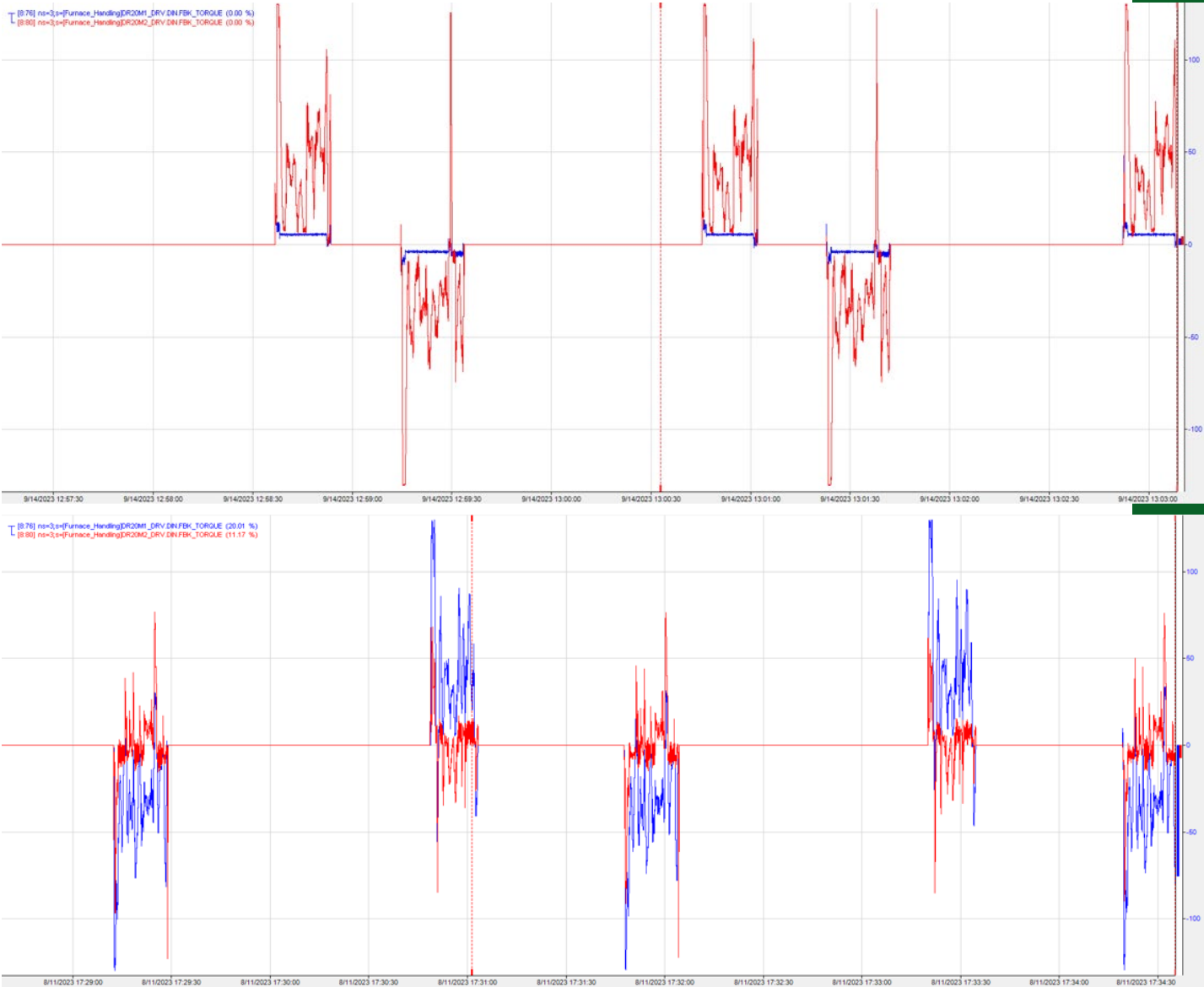
Can look at existing information without delay.



Allows signals to scroll back in time.

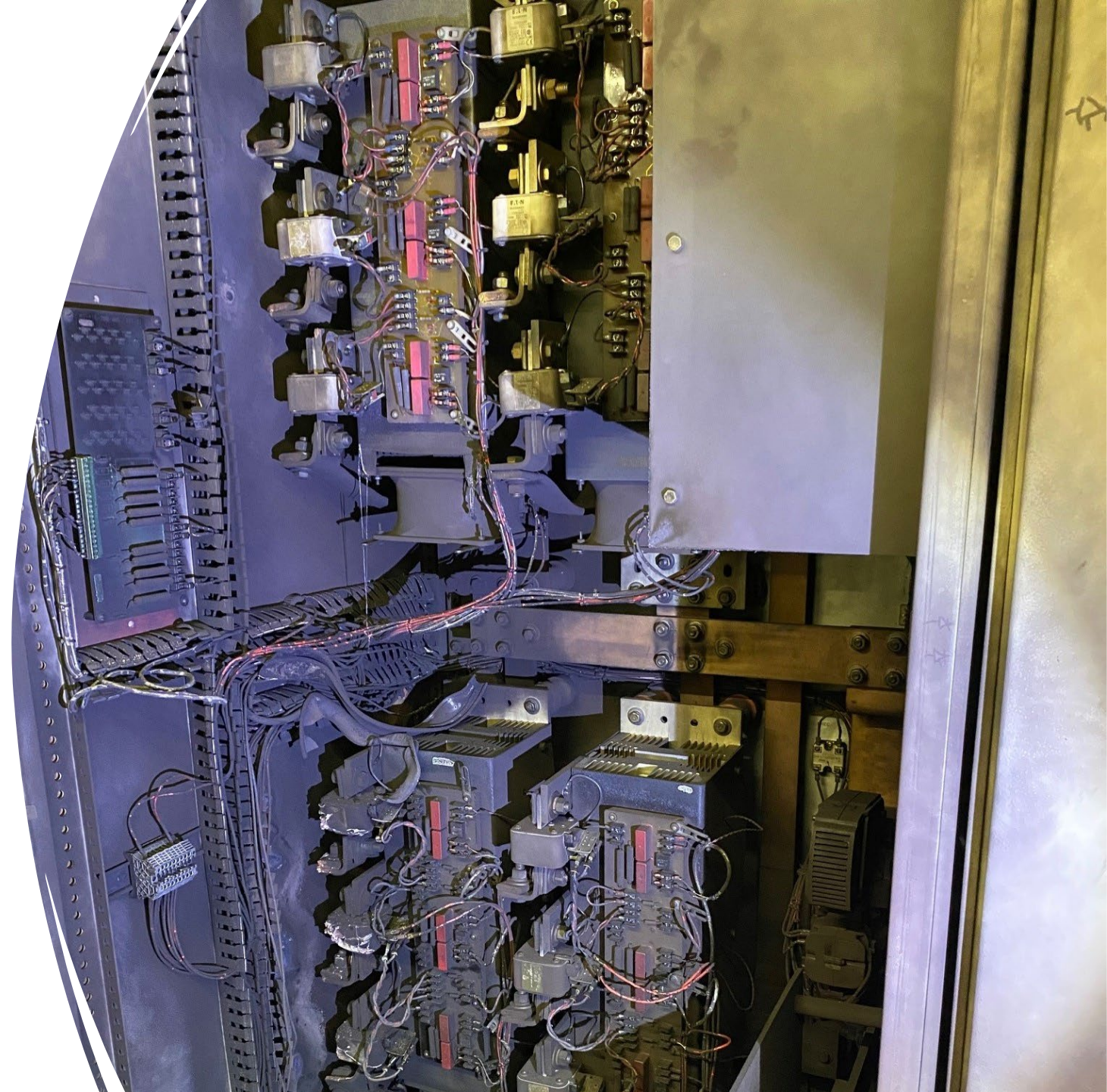


Easy Time Analysis



Real Time Readings

- Commissioning
- Operational improvements
- Troubleshooting



Portable iba



Used to trend hardwired voltage signals.

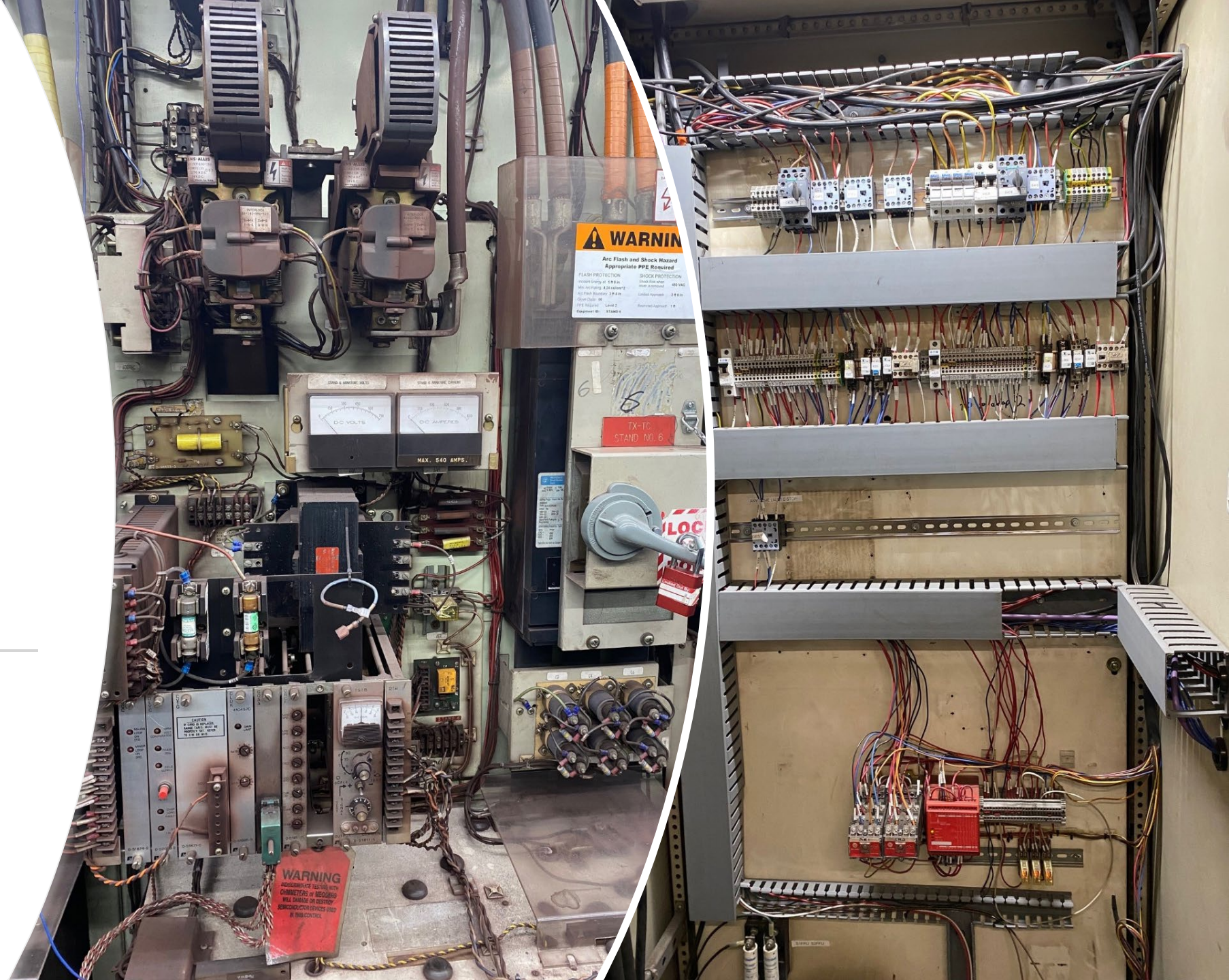


Valuable for systems without PLCs.



Self contained and portable.

Old Hardwired Stuff!!!

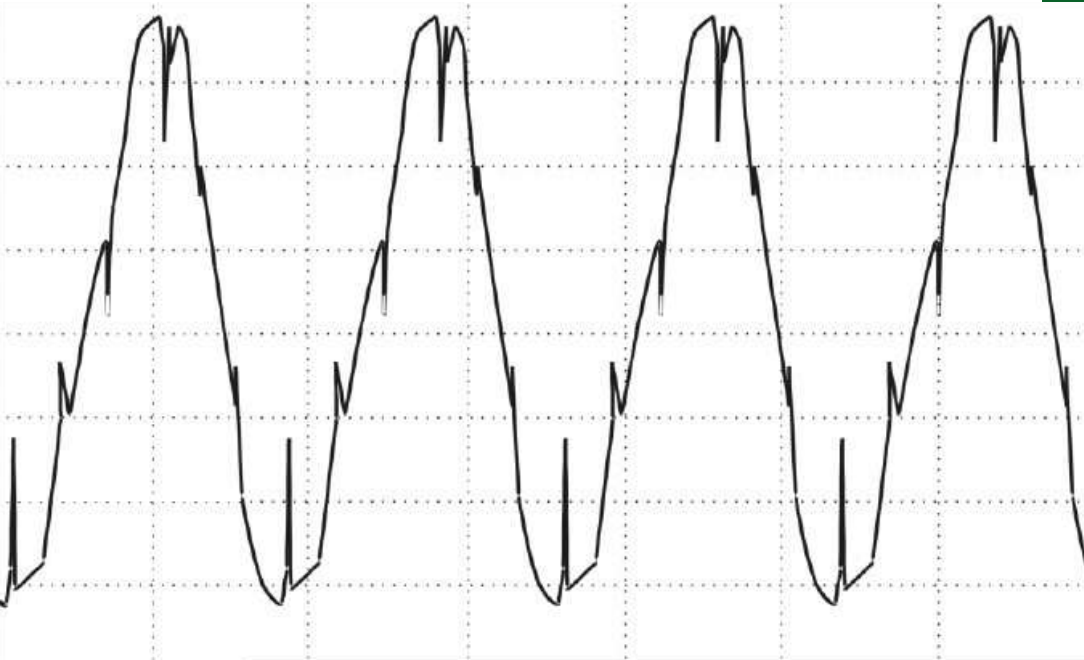
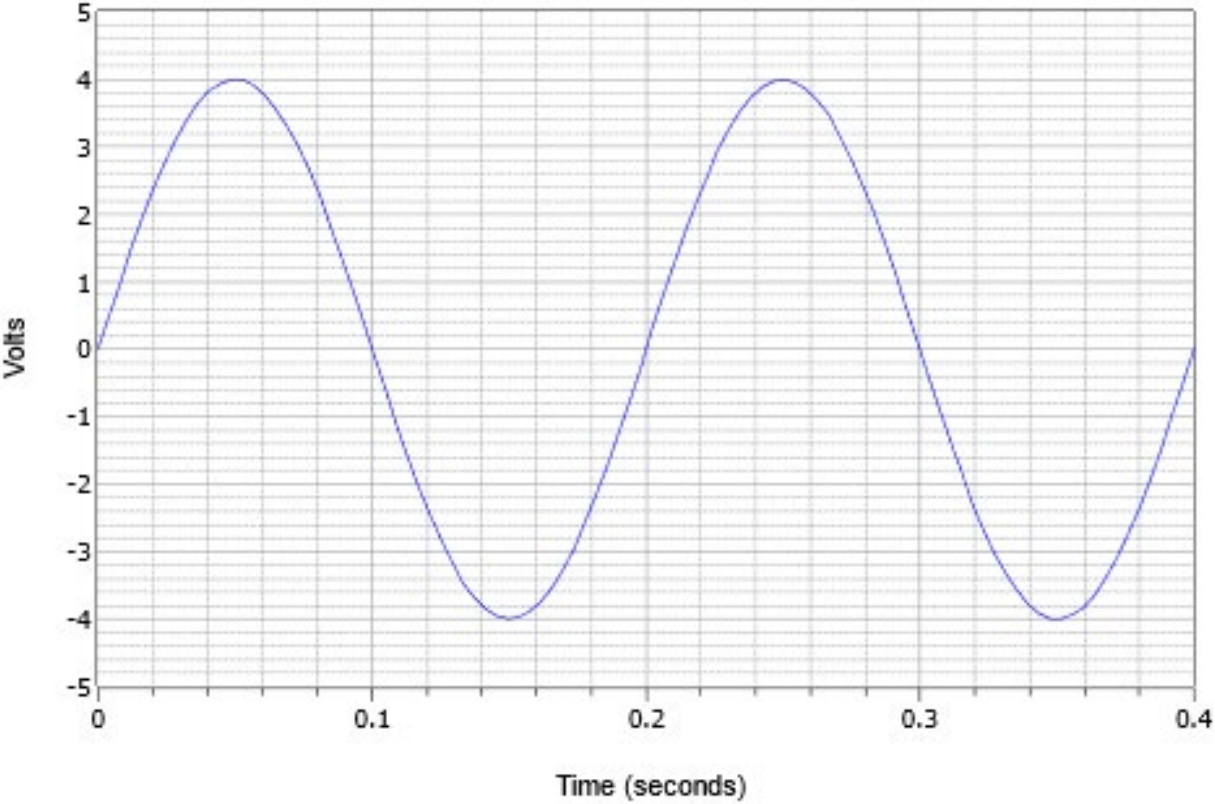


Portable iba



- Processor acts as computer that you can attach a monitor to.
- Has a variety of available cards for both digital and analog inputs.

Visualize Electricity



Conclusions

