

FIELD VALIDATION AND DIAGNOSTIC EQUIPMENT PROGRAM

Accurate and reliable measurement of operating data is critical in evaluating equipment performance and quantifying energy performance improvement at both the equipment and system level. However, plant operation personnel do not always have access to the instruments needed to perform these tasks. They may not know the right tool to use, or cannot yet justify the cost of purchasing the tool.

The U.S. Department of Energy's Better Buildings, Better Plants Program (Better Plants) developed **Field Validation and Diagnostic Equipment Program** to address these issues. The Better Plants program helps industrial organizations set and achieve energy savings goals across all their U.S. operations. To help partners make informed decisions, Better Plants offers diagnostic instrumentation to enable partners to collect energy data.

The Better Plants **Field Validation and Diagnostic Equipment Program** provides partners with short-term access to various instruments to better measure their energy consumption. Historically, this equipment was loaned to Energy Experts for In-Plant Trainings. Now, Better Plants partners are able to access this equipment themselves.

The tools can support specific efforts, such as:

- Implementation measurement and verification
- Energy assessments or treasure hunts
- Collecting additional data to implement In-Plant Training event opportunities
- Commissioning equipment/systems after implementing energy efficiency projects
- Testing a piece of equipment before committing to purchasing

INTERESTED PARTNERS SHOULD CONTACT THEIR TECHNICAL ACCOUNT MANAGER (TAM) OR VISIT [HTTPS://BETTERBUILDINGSSOLUTIONCENTER.ENERGY.GOV/BETTER-PLANTS](https://betterbuildingssolutioncenter.energy.gov/better-plants) TO VIEW AN APPLICATION FORM.



Participants at an In-Plant Training use a strobe tachometer to determine the rotational speed of a combustion air fan motor.

Without data, you're just another person with an opinion.

W. Edwards Deming

Field Validation and Diagnostic Equipment Program Details

- Free of charge, including shipping
- Use equipment for one day, or up to four weeks (standard time of loan is one week of use time)
- Limited technical assistance is available to help with selection and use of the tools.
- Rolling application process: first come, first serve

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Equipment Available to Borrow

Instrument	Application
Anemometer	Measure airflow and help quantify leakage around seals (process heat, building envelope).
Combustion Analyzer	Quantify the amount of excess oxygen in boiler/combustion process exhaust.
Conductivity Meter	Quantify the amount of undissolved solids in boiler blowdown.
Current Transformer	Help quantify an actual change in the electrical consumption of a component or system.
Digital Manometer	When used with pitot tubes, digital manometers can help determine airflow rates in fan systems or ductwork.
Digital Multimeter	Measures voltage, current and resistance.
Digital Thermometer	When combined with a thermocouple this is useful for determining process temperatures.
HOBO Data Logger	When combined with the appropriate transducer (below) the data logger is used to determine trends in non-steady state systems including the current transformer, pressure transducer, and/or temperature/RH sensor.
Infrared Camera	Useful for evaluating structures, door seals, insulation, oven hot spots, etc.
Infrared Thermometer	Can be useful for non-contact temperature measurements for both manufacturing processes and building envelope applications.
Manometer–Hydronic	Used for measuring pressure drop across components in fluid systems.
Pitot Tube	Measures fluid flow velocity by using the difference between the total and static pressures.
Power Logger	Used for logging power in low voltage (<600 V) 1-Phase or 3-Phase electrical components such as pumps, fans, and compressors.
Pressure Transducer	Pressure transducers for compressed air and pumping systems.
Strobe Tachometer	A strobe tachometer is a non-contact method for determining the rotating speed of a shaft (motors, pumps, fans).
Thermocouple	Used to measure temperature for various applications.
Time-of-use Logger	Used for logging starts and stops of equipment with intermittent duty cycles such as sump pumps, vent fans, refrigeration units, etc.
Ultrasonic Flow Meter	Used to measure the flow rate in fluid systems without breaking the pressure boundary.
Ultrasonic Leak Detector	Used to identify leaks in compressed air or steam systems.