

Validation / Monitoring Solutions to Meet your Needs


SOLUTIONS FOR PHARMACEUTICAL & BIOTECHNOLOGY
INDUSTRIES



Wired Process Validation

PRODUCT	APPLICATIONS	FEATURES
 <p>Validator® AVS</p>	<p>Wired Thermal Validation utilizing thermocouples</p> <ul style="list-style-type: none"> • Steam Sterilizers • Autoclaves • Dry Heat Tunnels/Ovens • Freeze Dryers • SIP Steam in Place • CTU Controlled Temp Units • Freezers/Refrigerators • Incubators • Bioreactors 	<ul style="list-style-type: none"> • Stand-alone Validation Console dedicated for validation tasks • Asset Centric Data Management software concept • 21 CFR/Data Integrity compliant • Scan time 1/sec for 48 inputs (EN285/ISO17665) • Accuracy up to 0.1°C (after TC Cal) • Auto Calibration and Verification • Enhanced data handling and redundancy (4-levels) • 6hr battery backup • Extensive calculation/reporting capability (Pass/Fail)

Wireless Process Validation

PRODUCT	APPLICATIONS	FEATURES
 <p>ValProbe®</p>	<p>In Situ Wireless Data Loggers (non-real time)</p> <ul style="list-style-type: none"> • Steam Sterilizers • Autoclaves • Dry Heat Tunnels/Ovens • Freeze Dryers • SIP Steam in Place • CTU Controlled Temp Units • Freezers/Refrigerators • Incubators • Stability Chambers • Bioreactors • Warehouses 	<ul style="list-style-type: none"> • System includes intrinsically safe Loggers, Reader/Programmer, and ValProbe software • Intuitive PC software for programming, reading, and reporting of data • 21 CFR Compliant • Auto Calibration and Verification • Accuracy 0.1°C • Choice of rigid, bendable, and flexible loggers • Single & Dual sensor options • Measurands: Temp, Pressure, and Humidity • 10,000 data sample memory • Scan Rate – 1 sec to 12 hrs. • Logger Range: -85 °C to 140°C and up to 10 BAR absolute • Field replaceable 3.6 V battery • Extensive calculation/reporting capability

Real-Time Wireless Process Validation

PRODUCT



ValProbe® RT

APPLICATIONS

Real-Time In Situ RF Loggers for Validation of Harsh environments:

- Steam Sterilizers
- Autoclaves
- Dry Heat Tunnels/Ovens
- Freeze Dryers
- SIP Steam in Place
- CTU Controlled Temp Units
- Freezers/Refrigerators
- Incubators
- Stability Chambers
- Bioreactors
- Warehouses

FEATURES

- Real-Time RF data under harsh conditions for validation study
- RF-Range up to 150 meters
- Temperature Range -85 to 400°C
- 100,000 samples per sensor
- Scan rate down to 1 second
- ValProbe RT system capacity 25 loggers/50 sensors
- Accuracy up to 0.1°C
- Unmatched battery life
- Choice of rigid, bendable, and flexible loggers
- Single, Dual, 5 channel loggers
- Measurands: Temp, Pressure, and Humidity
- Stand-alone Validation Console dedicated for validation tasks
- Asset Centric Data Management software concept
- 21 CFR/Data Integrity compliant
- Extensive calculation/reporting capability (Pass/Fail)

PRODUCT



RF ValProbe® II

APPLICATIONS

Wireless Real Time (RF) Loggers for Continuous Monitoring or Validation of Controlled Temperature Units

- Stability Chambers
- Cryogenic Vessels
- Freezers/Refrigerators
- Controlled Temp Units
- Incubators
- SIP Steam-in-Place
- Warehouses

FEATURES

- Operating Range of -40°C to 60°C and sensor range of -200°C to 200°C
- RF 2.4GHz – mesh technology
- Range 150 ft / 50 m
- Measurands Temp/Humidity
4 – 20 mA sensors Integrated LCD Display
- Logger power – AC or Battery.
- Battery life ~1-year typical use
- Can be used as sensor hardware for continuous monitoring Labwatch IOT or with Validation software

Temperature Calibration

PRODUCT



IRTD Temperature Standard

APPLICATIONS

The IRTD is a precise secondary standard used for Calibration/ Verification of Kaye products. The IRTD can also be used standalone with windows provided software for calibrations or high accuracy measurements.

FEATURES

- Temp range -196 to 420°C
- Accuracy over range $\pm 0.025^{\circ}\text{C}$
- Resolution 0.001°C
- Traceability to NIST or PTB.
- Ambient temperature range 0 to 60°C (32 to 140°F)

PRODUCT



HTR-420

APPLICATIONS

High Temperature Dry Block Calibrator can be used for temperature calibrations/ verifications of:

- Thermocouples
- RTD's
- ValProbe RT bendable or flexible loggers
- ValProbe bendable or flexible loggers

FEATURES

- Temp range of 30 to 420°C with temp stability of 0.01°C and uniformity of up to 0.1°C
- Easy to use color touch screen
- Calibration of up to 48 T/C's
- Thermocouple fixture for easy handling of up to 48 T/C's
- Fast Heating and Cooling times
- Software support for all existing Kaye products to support Automatic/Manual calibrations
- Addition inserts available for calibrating specialty probes

PRODUCT



**LTR-150 Dry Block/
Liquid Bath**

APPLICATIONS

LTR150 Multi-purpose Temperature Calibrator can be used for temperature calibrations/verifications of:

- Thermocouples
- RTD's
- ValProbe RT bendable or flexible loggers
- ValProbe bendable or flexible loggers
- RF ValProbe probes
- Specialty process probes

FEATURES

- Temp range of -30 to 150°C with temp stability of +/- 0.01°C and uniformity of 0.1°C
- Ability to be used as Dry Block, Liquid Bath & Surface Calibrator
- Easy to use color touch screen
- Calibration of up to 48 T/C's
- Thermocouple fixture for easy handling of up to 48 T/C's
- Optional Liquid micro bath, sensor cage and magnetic stirrer can be used for special probes or loggers
- Fast Heating and Cooling
- Software support for all existing Kaye products to support Automatic/Manual calibrations
- Addition inserts available for calibrating specialty probes

PRODUCT



LTR-90

APPLICATIONS

Kaye LTR-90 Ultra-Cool Dry Well Calibrator can be used for temperature calibrations/verifications of:

- Thermocouples
- RTD's
- ValProbe RT bendable or flexible loggers
- ValProbe bendable or flexible loggers
- RF ValProbe probes
- Specialty process probes

FEATURES

- Temp range -90 to 140 °C
- Stirling cooler technology reaches -90°C in 80 min
- Temp stability of ±0.015 °C
- Axial Uniformity 0.05°C
- Accommodates up to 16 T/C's and 2 IRTD
- Software supports all existing Kaye products for Automatic/Manual calibrations
- Rubber insulator cap to prevent frost buildup
- Weight: 16 kg (35 lbs.)

PRODUCT

**CTR-25**

APPLICATIONS

Portable Liquid Calibration Bath can be used for temperature calibrations/verifications of:

- Thermocouples
- RTD's
- ValProbe RT rigid, bendable or flexible loggers (fully submersed)
- ValProbe rigid, bendable, or flexible loggers (fully submersed)

FEATURES

- Temp range -25°C to 140°C with temp stability of 0.01°C and uniformity of up to 0.02°C
- Compact, portable design for carrying (20kg/44lbs)
- Compressor free unit – using Peltier Technology
- Large 2.5L tank with up to 6" (15.24 cm) depth for use with wide range of sensor types
- Special fixture holds 10 Kaye stainless loggers and one IRTD

PRODUCT

**CTR-40**

APPLICATIONS

Liquid Calibration Bath can be used for temperature calibrations/verifications of:

- Thermocouples
- RTD's
- ValProbe RT rigid, bendable or flexible loggers (fully submersed)
- ValProbe rigid, bendable, or flexible loggers (fully submersed)
- Specialty process sensors

FEATURES

- Temp range -40 to 150 °C
- 110 minute cool down time from 25 to -40°C
- Large capacity for multiple and different size sensors
- Temp Stability $\pm 0.005^\circ\text{C}$
- Temperature resolution 0.01°C
- Supports Automated calibration for all Kaye Products
- Quiet operation

PRODUCT

**CTR-80**

APPLICATIONS

Liquid Calibration Bath can be used for temperature calibrations/verifications of:

- Thermocouples
- RTD's
- ValProbe RT rigid, bendable or flexible loggers (fully submersed)
- ValProbe rigid, bendable, or flexible loggers (fully submersed)
- Specialty process sensors

FEATURES

- 120 minute cool down time from 30 to -80°C
- Large capacity for multiple and different size sensors
- Stability and uniformity of $\pm 0.03^{\circ}\text{C}$
- Indicates temperature to 0.01°C resolution
- Supports Automated calibration for all Kaye Products
- Quiet operation

Validation Accessories

PRODUCT

**Kaye Feedthru**

APPLICATIONS

Kaye Feedthru used for insertion of thermocouples into pressure vessels such as:

- Autoclaves
- Freeze dryers
- Pressure chambers

FEATURES

- Accommodates from 1 to 18 T/C's of any diameter
- No hole plugs required for unused T/C ports
- Accepts labeled T/C's
- High Quality silicone rubber sealing gaskets
- 1.5" tri-clamp connection
- Easily installed with no tools required

PRODUCT

APPLICATIONS

FEATURES



Kaye Autoclave Pressure Transducer

High performance pressure transducer designed for the harsh environment applications such as:

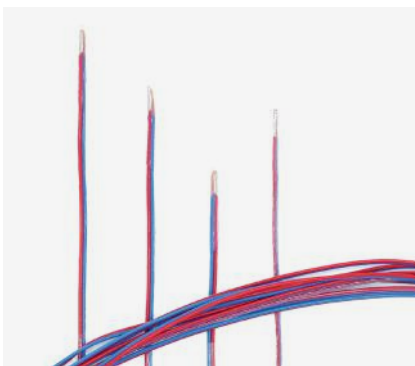
- Steam sterilizers
- Steam-in-Place systems

- Connects to 1.5 triclover flange
- ISO-17025 traceable calibration
- 0 bar to 4 bar (59 psia) absolute
- Media temp -20°C to 140°C
- Wires directly to Validator/AVS
- No ext. power supply required
- Autoclave Temp compensated

PRODUCT

APPLICATIONS

FEATURES



Highest Quality Thermocouple Wire

Kaye Type T thermocouple wire is manufactured with the highest purity and uniformity wire available. Useful for any temperature measurement using -200°C to 400°C.

- Type T thermocouples available:
 - Ultra-Premium Autobond
 - Ultra-Premium Type T Teflon
 - Ultra-Premium Type T Kapton
- Stainless Steel Tips
- Available in 3 or 7 strands
- Available uncut in spools or cut to length with Teflon tips
- Labels available

Calibration/Service Contracts/ Rental/IQ-OQ Execution

PRODUCT



Equipment Rental

APPLICATIONS

Kaye offers a comprehensive range of products for short- and long-term rentals with the latest updates all guaranteed and supported by of specialists in tech support.

FEATURES

- Large inventory of systems
- Systems maintained with up-to-date upgrades
- 'As Found' certificates provide on rental return.
- Backed by expertise only the manufacturer can provide
- Systems reset & data cleared to ensure user confidentiality

PRODUCT



Calibration/Repair Services

APPLICATIONS

Kaye offers ISO 17025-2018 factory calibration and repair service worldwide.

Kaye also offers on-site calibration for Validator AVS/Val 2000 systems

FEATURES

- 5 Direct Service Centers – Europe, China, India and 2 in the USA
- Accredited to DIN ISO 17025:2018 – NVLAP/DAkkS
- Manufacturer provided guarantee/support/warranty

PRODUCT

APPLICATIONS

FEATURES



Kaye offers customizable service contracts covering calibration and/or extended warranties. (Gold/Silver)

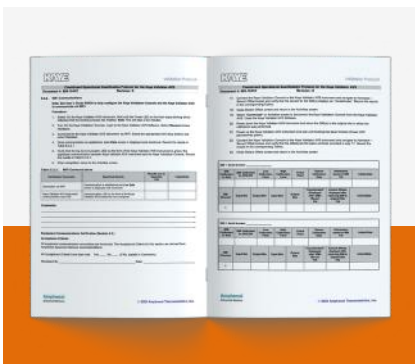
- Annual/semi-annual factory or onsite calibrations
- Extended warranty on products
- Quantity pricing
- Lock in pricing up to 3 years
- Simplified RMA process

Service Contracts

PRODUCT

APPLICATIONS

FEATURES



Kaye offers IQ/OQ Protocols as well as factory or onsite executions.

- Detailed IQ/OQ protocols for all Validation systems.
- Execution services offered on-site or at Kaye factory
- Execution performed by Kaye certified field service team

IQ/OQ Documentation/ Execution

Facility / Stability Monitoring

PRODUCT



Kaye LabWatch® IoT

APPLICATIONS

Labwatch IoT is a web based Centralized monitoring, alarming and reporting system

Where we Monitor:

- Warehouses
- Repositories
- Clean Rooms
- Blood Banks
- Tissue Banks
- Pharmacies
- Cold Storage
- Animal Rooms
- Laboratories

What we Monitor:

- Stability Chambers
- Freezers
- Refrigerators
- Incubators
- Cryogenic Freezers
- LN2 Tanks

FEATURES

- Web based hosted operation eliminates costs and local support of site-based servers
- Secure and redundant data storage using AWS GxP Cloud
- Scalable from 5 – 25,000 sensors
- Wired/wireless hardware
- 21 CFR Part 11 and Data Integrity compliant
- Accessible via standard browser on any platform -desktop or mobile
- Provides historical collection and analysis of data
- Extensive alarm monitoring and notifications via mobile APP, email, SMS
- Complete Audit trail of alarms, event, and user actions
- Intuitive, easy to use software provides extensive capability for viewing, analyzing, and reporting,
- Unlimited number of users can access the facility monitoring system

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