


Validation / Monitoring Solutions to Meet your Needs


SOLUTIONS FOR PHARMACEUTICAL & BIOTECHNOLOGY
INDUSTRIES




Real-Time 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 Temperature 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/ISO 17665) • Accuracy up to 0.1°C (after TC Calibration) • Auto Calibration and Verification • Enhanced data handling and redundancy (4-levels) • 6-hour battery backup • Extensive calculation/reporting capability (Pass/Fail)

Real-Time Wireless Process Validation

PRODUCT	APPLICATIONS	FEATURES
 <p>ValProbe® RT</p>	<p>Real-Time In Situ RF Loggers for Validation of Harsh environments:</p> <ul style="list-style-type: none"> • Steam Sterilizers • Autoclaves • Dry Heat Tunnels/Ovens • Freeze Dryers • SIP (Steam-in-Place) • CTU (Controlled Temperature Units) • Freezers/Refrigerators • Incubators • Stability Chambers • Bioreactors • Warehouses 	<ul style="list-style-type: none"> • Real-Time RF data under harsh conditions for validation study • RF range: up to 150 meters • Temperature range: -85°C to 400°C • 100,000 samples per sensor • Scan rate: down to 1 second • ValProbe RT system capacity: 50 loggers • Accuracy: up to 0.1°C • Unmatched battery life • Choice of rigid, bendable, and flexible loggers • Single, Dual, 5-channel loggers • Measurands: Temperature, 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	APPLICATIONS	FEATURES
 <p>RF ValProbe® II</p>	<p>Wireless Real Time (RF) Loggers for Continuous Monitoring or Validation of Controlled Temperature Units</p> <ul style="list-style-type: none"> • Stability Chambers • Cryogenic Vessels • Freezers/Refrigerators • CTU (Controlled Temperature Units) • Incubators • SIP (Steam-in-Place) • Warehouses 	<ul style="list-style-type: none"> • 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 Temperature/ Humidity • 4 – 20 mA Sensors Integrated LCD Display • Logger Power Battery • Can be used as sensor hardware for continuous monitoring with Labwatch IoT or with Validation software

Cloud-based Monitoring


PRODUCT	APPLICATIONS	FEATURES
 <p>Kaye LabWatch® IoT</p>	<p>Labwatch IoT is a web-based centralized monitoring, alarming, and reporting system.</p> <p>Where we Monitor:</p> <ul style="list-style-type: none"> • Warehouses • Repositories • Clean Rooms • Blood Banks • Tissue Banks • Pharmacies • Cold Storage • Animal Rooms • Laboratories <p>What we Monitor:</p> <ul style="list-style-type: none"> • Stability Chambers • Freezers • Refrigerators • Incubators • Cryogenic Freezers • LN₂ Tanks 	<ul style="list-style-type: none"> • Web-based hosted operation eliminates costs and local support of site-based servers • Secure and redundant data storage using AWS GxP Cloud • 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, events, 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

Temperature Calibration


Traceable Temperature Standard


PRODUCT	APPLICATIONS	FEATURES
 <p>IRT Temperature Standard</p>	<p>The IRTD is a precise secondary standard used for calibration and verification of Kaye products. The IRTD can also be used standalone with Windows-provided software for calibrations or high-accuracy measurements.</p>	<ul style="list-style-type: none"> • Temperature range: -196°C 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°C to 60°C (32°F to 140°F)

Ultra-Low Calibration

PRODUCT	APPLICATIONS	FEATURES
 <p>LN2 Comparator</p>	<p>The Liquid Nitrogen Comparator is an ultra-low temperature calibrator for applications requiring calibrations at -196°C, such as:</p> <ul style="list-style-type: none"> • Ultra-Low Freezers • LN_2 Freezers 	<ul style="list-style-type: none"> • Perfectly designed to support semi-automated thermocouple calibration in combination with Kaye Validators • Stainless steel Dewar for safe operation and longevity • Thermocouple holder makes for easy management of up to 48 thermocouples • IRTD holds securely in the center of the calibration block • Easy-to-use fill port allows for the addition of liquid nitrogen as needed • Overall design of LN_2 Comparator guarantees low evaporation rate and long-lasting stable calibration points for many hours • Foam lid included to reduce LN_2 evaporation between calibrations • All components are delivered in a rugged case with wheels for easy transportation and safe storage

Calibration Dry Well Ovens

PRODUCT	APPLICATIONS	FEATURES
 <p>LTR-90</p>	<p>Kaye LTR-90 Ultra-Cool Dry Well Calibrator can be used for temperature calibrations/verifications of:</p> <ul style="list-style-type: none"> • Thermocouples • RTDs • ValProbe RT bendable or flexible loggers • ValProbe bendable or flexible loggers • RF ValProbe probes • Specialty process probes 	<ul style="list-style-type: none"> • Temperature range: -90°C to 140°C • Stirling cooler technology reaches -90°C in 80 minutes • Temperature stability of $\pm 0.015^\circ\text{C}$ • Axial uniformity: 0.05°C • Accommodates up to 25 thermocouples (T/Cs) and 1 IRTD • Software supports all existing Kaye products for automatic/manual calibrations • Rubber insulator cap to prevent frost buildup • Weight: 16 kg (35 lbs.)

PRODUCT	APPLICATIONS	FEATURES
 <p>LTR-150 Dry Block/ Liquid Bath</p>	<p>LTR150 Multi-purpose Temperature Calibrator can be used for temperature calibrations/verifications of:</p> <ul style="list-style-type: none"> • Thermocouples • RTDs • ValProbe RT bendable or flexible loggers • ValProbe bendable or flexible loggers • RF ValProbe probes • Specialty process probes 	<ul style="list-style-type: none"> • Temperature range of -30°C to 150°C with temperature stability of $\pm 0.01^\circ\text{C}$ and uniformity of 0.1°C • Can be used as a Dry Block, Liquid Bath, and Surface Calibrator • Easy-to-use color touch screen • Calibration of up to 48 thermocouples (T/Cs) • Thermocouple fixture for easy handling of up to 48 T/Cs • 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 facilitate automatic/manual calibrations • Additional inserts available for calibrating specialty probes

PRODUCT

**LTR-200**

APPLICATIONS

The LTR-200 is a multi-purpose temperature calibrator used for applications ranging from -50°C to 200 °C such as:

- Autoclave
- SIP (Steam-in-Place)
- Freezer/Fridge
- Incubators

FEATURES

- Operating range of -50°C to 200°C, with temperature stability of up to 0.01°C and uniformity of up to 0.1°C
- Superb heating and cooling times
- Calibration of up to 24 sensors using the dry block insert, saving hours of time
- Dry block inserts are designed to accommodate thermocouples, IRTD, as well as ValProbe (RT) flexible/bendable probes
- Special TC fixture for easy handling of up to 24 thermocouples
- Software interface compatible with all existing Kaye products, including IRTD, Validator 2000, Validator AVS and ValProbe (RT), enabling automatic/manual calibrations
- User-friendly touchscreen interface
- Universal power supply: 100 – 240 VAC / 50 – 60 Hz
- Additional inserts available for calibrating specialty or process probes

PRODUCT

**HTR-420**

APPLICATIONS

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

- Thermocouples
- RTDs
- ValProbe RT bendable or flexible loggers
- ValProbe bendable or flexible loggers

FEATURES

- Temperature range of 30°C to 420°C with temperature stability of 0.01°C and uniformity of up to 0.1°C
- Easy-to-use color touchscreen
- Calibration of up to 48 thermocouples (T/Cs)
- Thermocouple fixture for easy handling of up to 48 T/Cs
- Fast heating and cooling times
- Software support for all existing Kaye products to facilitate automatic/manual calibrations
- Additional inserts available for calibrating specialty probes

PRODUCT

**CTR-25**

APPLICATIONS

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

- Thermocouples
- RTDs
- ValProbe RT rigid, bendable or flexible loggers (fully submersed)
- ValProbe rigid, bendable, or flexible loggers (fully submersed)

FEATURES

- Temperature range: -25°C to 140°C with temperature stability of 0.01°C and uniformity of up to 0.02°C
- Compact, portable design for easy carrying (20 kg / 44 lbs)
- 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
- RTDs
- ValProbe RT rigid, bendable or flexible loggers (fully submersed)
- ValProbe rigid, bendable, or flexible loggers (fully submersed)
- Specialty process sensors

FEATURES

- Temperature range: -40°C to 150°C
- 110-minute cool down time from 25°C to -40°C
- Large capacity for multiple and different size sensors
- Temperature 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
- RTDs
- 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°C to -80°C
- Large capacity for multiple and different size sensors
- Stability of $\pm 0.006^\circ\text{C}$ at -80°C using ethanol
- Indicates temperature to a 0.01°C resolution
- Supports automated calibration for all Kaye products
- Quiet operation

Humidity Calibration

PRODUCT



HygroCal 100

APPLICATIONS

- Ideal for quickly verifying ValProbe RT Humidity Loggers between 5% RH and 95% RH
- With additional ports, ValProbe Humidity Loggers can also be verified
- Allows to verify different kind of Humidity Sensors with adequate diameters

FEATURES

- Truly portable at 3.2 kg, and completely self-contained
- Intuitive UI makes automating probe verification simple
- Integral battery pack means verification can be done without access to mains power
- Verify up to 8 probes simultaneously
- Automated verification for complete hands-off Logger verification
- Internal calibration correction cycle ensures continued confidence
- Interchangeable ports for verification of ValProbe RH and ValProbe RT RH data loggers
- Download logged verification data direct to USB memory if required

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 thermocouples (T/Cs) of any diameter
- No hole plugs required for unused T/C ports
- Accepts labeled T/Cs
- High-quality silicone rubber sealing gaskets
- 1.5" tri-clamp connection
- Easily installed with no tools required

PRODUCT

APPLICATIONS

FEATURES



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

- Steam sterilizers
- Steam-in-Place systems

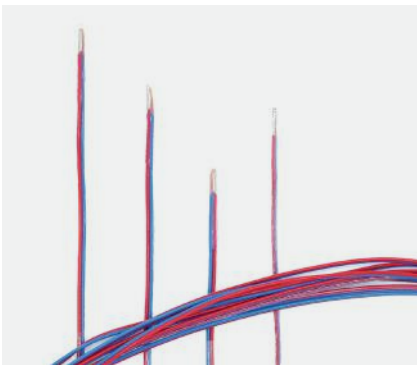
- Connects to 1.5 triclover flange
- ISO-17025 traceable calibration
- 0 bar to 4 bar (59 psia) absolute
- Temperature range: -20°C to 140°C
- Wires directly to Validator/AVS
- No external power supply required
- Autoclave temperature compensated

Kaye Autoclave Pressure Transducer

PRODUCT

APPLICATIONS

FEATURES



Kaye Type T thermocouple wire is manufactured with the highest purity and uniformity available. It is useful for any temperature measurement from -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

Highest Quality Thermocouple Wire

PRODUCT

APPLICATIONS

FEATURES




The ValProbe (RT) Transport/Storage Tray is an accessory designed to simplify the carrying, storage, and management of the Kaye ValProbe (RT) loggers during use. The ValProbe (RT) Transport/Storage Tray can accommodate up to 20 Kaye ValProbe (RT) loggers of any type.

- High-quality, robust design
- Can store up to 20 loggers
- Can be used to securely store the loggers on a shelf
- Good for transportation of loggers after programming
- Made with stainless steel and other materials acceptable for clean room environments, including autoclaves
- Rubber feet provides stability when placed on a table or cart
- Size: 300 mm x 210 mm x 95 mm (approximate)
- Includes a unique serial number for easy identification

Kaye ValProbe Transport/Storage Tray

Besides this, a variety of fixtures, special adapters, labeling, and rugged shipping cases for all Kaye units are available.

Calibration | Service Contracts | Rental | IQ/OQ Execution

PRODUCT	APPLICATIONS	FEATURES
	<p>Kaye offers a comprehensive range of products for short- and long-term rentals with the latest updates, all guaranteed and supported by our specialists in tech support.</p>	<ul style="list-style-type: none"> • Large inventory of systems • Systems maintained with up-to-date upgrades • 'As Found' certificates provided upon rental return • Backed by expertise only the manufacturer can provide • Systems reset and data cleared to ensure user confidentiality

Equipment Rental

PRODUCT	APPLICATIONS	FEATURES
	<p>Kaye offers ISO 17025-2018 factory calibration and repair service worldwide.</p> <p>Kaye also offers on-site calibration for Validator AVS and Validator 2000 systems.</p>	<ul style="list-style-type: none"> • 5 Direct Service Centers – Europe, China, India and 2 in the USA • Accredited to DIN ISO 17025 – DAkkS/NVLAP/CNAS/NABL • Manufacturer-provided guarantee, support, and warranty

Calibration/Repair Services

PRODUCT

APPLICATIONS

FEATURES



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

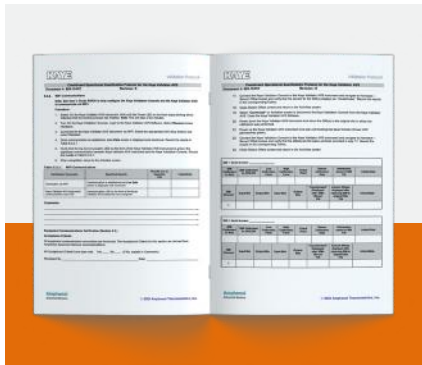
- Annual/semi-annual factory or on-site calibrations
- Extended warranty on products
- Quantity pricing
- Lock in pricing up to 3 years
- Simplified RMA process

Service Agreements

PRODUCT

APPLICATIONS

FEATURES



Kaye offers IQ/OQ protocols as well as factory or on-site 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

Visit our website:

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