



# Lives International<sup>®</sup>

## Raising Standards

### Thermal Validation & Mapping Solutions



## Lives International **XpertLog<sup>®</sup> / XpertVal64**

Real Time Wireless Data Loggers  
Standard Wireless Data Loggers


64 Channel Data Acquisition System

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**Evolution through Revolution – drives innovation at Lives International.**

Lives International was founded in 1999 to fill the innovation void of thermal validation and mapping equipment in the pharmaceutical and biotech industry. Using innovative thinking and state-of-the-art technology are innate and reasons why Lives International is a global in this field in the life sciences industry.

We changed the way that validation and mapping users perform day-to-day work by anticipating the technological impact of the newest generation of state-of-the-art hardware and software in thermal validation.

Leading the trend in materials used for the manufacturing of data loggers began early. Lives International was one of the first global sensor manufacturers to use PEEK (polyetheretherketone) to develop data loggers that are more flexible, do not require the use of a dock (such as our real-time wireless data loggers), and make thermal validation much easier for users.

Lives International has introduced real-time transmission wireless data loggers for use in lyophilizers, autoclaves and more applications pioneering the field of thermal validation and mapping. The use of real time wireless data loggers versus thermocouples has helped users reduce validation time and increase profits.

The revolutionary next generation thermocouple system XpertVal64 is the latest example of our industry-leading innovation. Read more for details.

## Our strengths

### Reliable Thermal Validation Systems for Pharma & Biotech

- All loggers use 4-wire PTs: Highest class measurement accuracy for wireless loggers ( $\pm 0.1^{\circ}\text{C}$ ) on the entire measurement range
- Robust logger body and sensor design
- FDA CFR 21 Part 11 compliant software
- ISO 17025 Calibrations
- Covers all Life Sciences applications
- Custom product development based on customers feedback
- Customized and made-to-order logger body, temperature sensor shape, and accessories optimized for application
- Rentals of most items we sell
- Reliable and fast response After Sales Service
- Customized products based on specific customer applications

## Real-time wireless data logger XpertLog® GMP RF (P. 5)



- Real-time data logger with excellent wireless communication features (up to 121 m) that allows remote setting and display of data during measurement
- Data is transmitted real time from the inside of the Autoclaves and Freeze Dryers to the laptop
- Operating temperature range: -90°C to +140°C
- Parameters: temperature/humidity/pressure/CO<sub>2</sub>/Vacuum

## Standard wireless data logger XpertLog® GMP (P. 12)



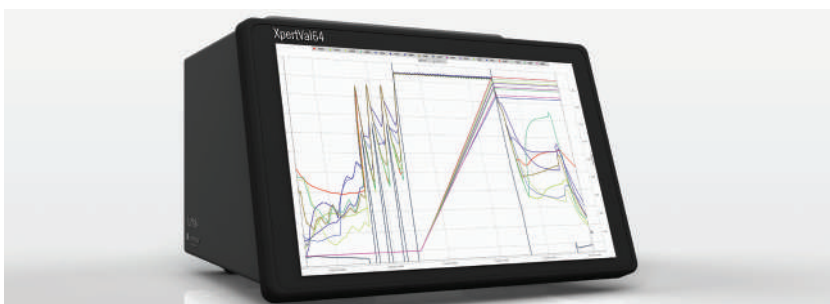
- Standard data loggers dedicated to all Pharma applications between -90°C to +140°C
- Logger body operating temperature range: -90°C to +140°C
- Logger sensor operating temperature range: -200°C to +200°C
- Parameters: temperature/humidity/pressure
- Small, light, easy to use

## Standard wireless data logger XpertLog® GDP (P. 14)



- Standard data loggers dedicated to GDP applications
- Temperature measurement range: -40°C to +85°C
- Parameters: temperature/humidity
- Small, light, easy to use

## 64 Channel Data Acquisition System XpertVal64 (P. 15)



- Thermocouple based system dedicated to all applications in Pharma & Biotech
- 64 Channels
- Can read thermocouples, PT100, Pressure, CO<sub>2</sub>, 4-20 mA, 0-10V
- Large touch screen 10.1"
- Acquisition interval 1 sec for 64 channels simultaneously
- User friendly interface

# Validation/Mapping measurement system category list

## Smart Connectors - XSens (P. 16)



- Robust design, click into sockets - prevents accidental sensor disconnection
- Each TC has a Unique ID - individually traceable
- Coefficients stored in each connector
- Compatible with XpertVal64 and XpertMon

## Dedicated Software XpertLog® (P. 17)



- Dedicated validation/mapping software developed specifically for the pharmaceutical and biotech industries
- FDA CFR 21 Part 11 compliant
- XpertLog® Software can control all Lives Systems
- Active directory integrated

## Secondary Reference Probe XpertRTD+ (P. 18)



- Display interface between reference thermometer and Lives International System
- Display unit selectable: °C, °F, °K, Ω
- USB / Wireless signal transfer to XpertLog® System
- Can connect a Smart Probe to the display

## GPS Tracking Device XperTrack (P. 19)



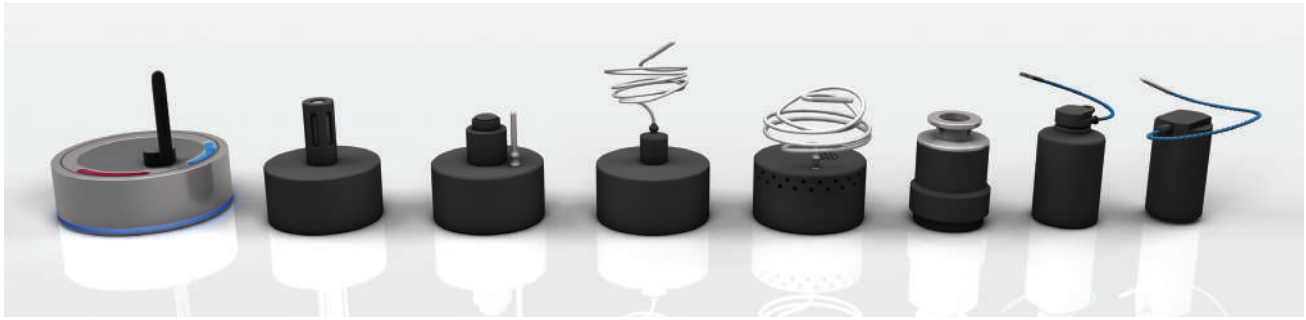
- Web based control of your cold chain shipments
- Collects and stores temperature, position, light exposure and shocks data in the internal memory
- Alarms are triggered when your products exceed the allowed temperature, light exposure and shocks during shipment

## Continuous Monitoring System XpertMon (P. 20)



- Unlimited number of sensors
- Historical data is stored in the cloud / locally
- Alarms sent by message / event to dedicated users
- Automatic report generation on request for the user defined interval
- Secured authentication prevents unauthorized access to the system
- Multiple access levels



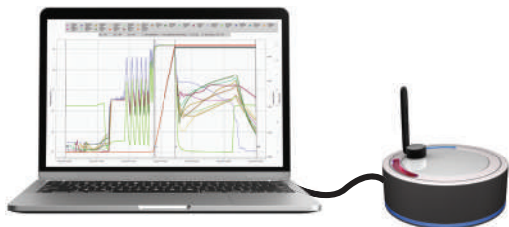


## Applications

- Autoclave
- Sterilization tunnel
- Freeze Dryer
- Refrigerator
- SIP
- Stability chamber
- Freezers
- Warehouse

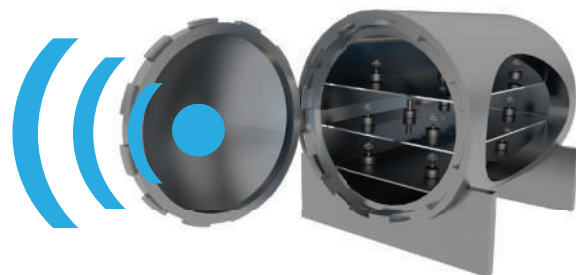
## Main features

- Wireless Real time data view during studies
- Remote activation & Wireless data download
- Wide Wireless communication range with proprietary technology: up to 121m line of sight
- Wide RF communication temperature range
- No risk of data loss: data is simultaneously stored in the internal memory & sent real-time wirelessly to the software
- Material: PEEK, thermally inert, does not create hot or cold spot during studies
- Internal memory: 32.000 / 262.000 (LM = Large Memory) data points
- Automated Reporting when using XpertLog® - FDA CFR Part 11 compliant software
- Custom wire/sensor length
- Sensor operating range:
  - With Teflon cable: -200 °C to +200 °C
  - With Kapton cable: -200 °C to +350 °C (Dry environment)



FDA 21 CFR Part 11  
Compliant software

Access Point  
connected to the laptop  
via USB



Wireless data transmission

Autoclave with loggers inside

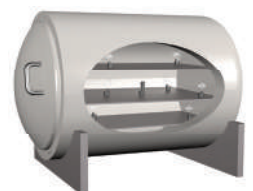
## Validation/Mapping flow using real-time data loggers

1. Install the GMP RF data logger on the equipment to be validated
2. Connect the access point (data transmitter/receiver) to the dedicated XpertLog® software
3. Remotely activate GMP RF data loggers from XpertLog® software
4. Set measurement conditions (start time, stop time, measurement interval, data transfer interval) in XpertLog® software
5. Generate automated reports in XpertLog® software (see page 17 for details)

### What is remote activation?

Real time data loggers can be programmed remotely regardless of the number of the loggers to activate to start a test whilst they are already inside the equipment to be validated.

No need to collect the loggers to download and reprogram - can be done remotely.



# Real-Time Wireless Temperature Data Logger

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Order reference: GMP-RF-F-30H

Temperature Range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	37 x 63 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

# Real-Time Wireless Temperature Data Logger with 5 Sensors

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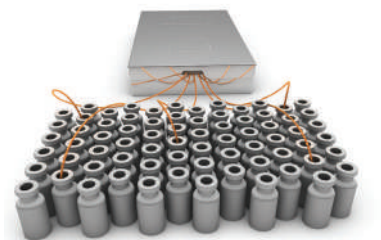


Order reference: GMP-RF-5F-LM

Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	262.000 data points / 52.400 data points per channel
Dimensions:	65 x 55 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

# Real-Time Wireless Temperature Data Logger for Tunnel Sterilizer

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Order reference: GMP-RF-5F-HT

Temperature range:	-40°C to 350°C
Duration at high temperature:	20 minutes at +350°C 25 minutes at +325°C 30 minutes at +300°C
Accuracy:	±0.1°C @ -40°C to +140°C ±0.4°C @ +141°C to +350°C
Memory capacity:	262.000 data points / 52.400 data points per channel
Dimensions:	368 x 215 x 50 mm (L x W x H)
Material:	PEEK 1000 - FDA compliant and SS
Battery lifetime:	Up to 6 months, based on usage
Application:	Sterilization Tunnel

# ALUS Compatible Real-Time Wireless Temperature Data Logger

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Order reference: GMP-RF-F-10R

Temperature Range:	-60°C to +85°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	25 x 46 mm (D x H)
Battery lifetime:	Up to 1 month, based on usage
Application:	Freeze dryer (product temperature measurement inside a vial)
	Compliant with ALUS

# LyoTrain 10R - ALUS Compatible Real-Time Wireless Data Logger

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Order reference: GMP-RF-LTset10RA

Temperature Range:	-60°C to +85°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	25 x 46 mm (D x H)
Battery lifetime:	Up to 1 month, based on usage
Application:	Freeze dryer (product temperature measurement inside a vial)
	Compliant with ALUS

# LyoTrain 30H - ALUS Compatible Real-Time Wireless Data Logger

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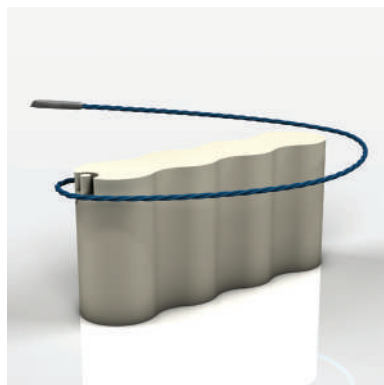


Order reference: GMP-RF-LTset30H

Temperature Range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	37 x 63 mm (D x H)
Battery lifetime:	Up to 6 month, based on usage
Application:	Freeze dryer (product temperature measurement inside a vial)
	Compliant with ALUS

# ALUS Compatible Real-Time Wireless Temperature Data Logger

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Order reference: GMP-RF-F-2R4V

Temperature Range:	-50°C to +85°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	72 x 18 x 33 mm (L x W x H)
Battery lifetime:	Up to 4 months, based on usage
Application:	Freeze dryer (product temperature measurement inside a vial)
	Compliant with ALUS

# Vial-Shaped Real-Time Wireless Temperature Data Logger for ALUS

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Order reference: GMP-RF-F-MTR70ml

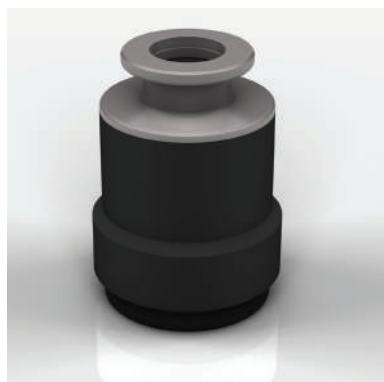
Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	46 x 75 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Freeze dryer

70 ml vial shaped real time temperature logger, compatible with 150, 250 and 500 ml fake vials

# Real-Time Wireless Vacuum and Temperature Data Logger

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**IN DEVELOPMENT**



Order reference: GMP-RF-TV

Temperature Range:	-60°C to +85°C
Sensor type:	Vacuum: resistive diaphragm + Pirani
Accuracy:	1333 to 100 mbar: 0.5% of reading 99.9 to 10 mbar: 1% of reading 9.99 to 10 <sup>-4</sup> mbar: 5% of reading 9.99 x 10 <sup>-5</sup> to 10 <sup>-5</sup> mbar: 25% of reading
Memory capacity:	16.000 data points vacuum 16.000 data points temperature
Dimensions:	45 x 62 mm (D x H)
Power supply:	External power supply to the USB port
Application:	Lyophilizers



## Real-Time Wireless Temperature & Humidity Data Logger

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Order reference: GMP-RF-TH-F

Temperature range:	-40°C to +100°C
Accuracy:	±0.1°C
Humidity range:	0 to 100% RH non condensing ±2.0 RH, 0-75% @20°C to +45°C
Memory capacity:	16.000 data points humidity 16.000 data points temperature
Dimensions:	65 x 62 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Stability chamber, warehouse, etc.  *Rigid temperature sensor also available

## Real-Time Wireless Temperature & Pressure Data Logger

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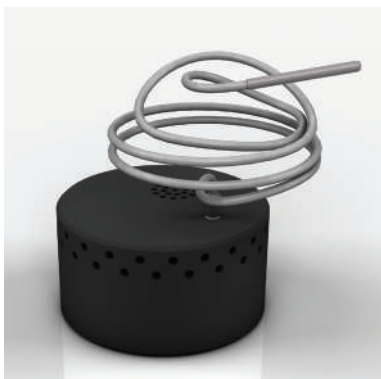


Order reference: GMP-RF-TP-F

Temperature range:	-40°C to +140°C
Accuracy:	±0.1°C
Pressure accuracy:	0.01 ~5 Bar
Accuracy:	±10 mbar ≤ 3 BarA @ 130°C ±15 mbar ≤ 3 BarA @ 130°C
Memory capacity:	16.000 data points temperature 16.000 data points pressure
Dimensions:	65 x 51 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, etc.  *Rigid temperature sensor also available

## Real-Time Wireless Temperature & CO<sub>2</sub> Data Logger

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Order reference: GMP-RF-TCO2-F

Temperature range:	0°C to +50°C
Accuracy:	±0.1°C
CO <sub>2</sub> accuracy:	0-20% CO <sub>2</sub> ±0.5% CO <sub>2</sub> @ 0-10% CO <sub>2</sub>
Memory capacity:	16.000 data points temperature 16.000 data points CO <sub>2</sub>
Dimensions:	65 x 52 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Incubator, etc.

## Real-Time Wireless Temperature Data Logger

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Order reference: GMP-RF-F

Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 / 262.000 data points temperature with LM option
Dimensions:	65 x 55 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

## Real-Time Wireless Temperature Data Logger for Blast Freezer

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Order reference: GMP-RF-F-2R22V

Temperature range:	
Short term:	-120°C (30 mins)
Operating range:	-90°C to +85°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points temperature
Dimensions:	100 x 64 x 33 mm (W x D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Blast freezer

## Real-Time Wireless Temperature Data Logger with 5 Sensors & Large Memory

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Order reference: GMP-RF-5F-LM-EB

Temperature range:	-90°C to +140°C, real time at -90°C
Accuracy:	±0.1°C
Memory capacity:	262.000 data points temperature
Dimensions:	65 x 52 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage External Battery Pack to allow RF communication down to -90°C
Application:	Ultra Freezer, Autoclave, etc.

## Superfast Real-Time Wireless Data Logger with THIN Sensor

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Order reference: GMP-RF-F-THIN-FR

Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Acquisition rate:	100 ms to 24 h
Memory capacity:	32.000 / 262.000 data points temperature with LM option
Dimensions:	65 x 55 mm (D x H)
Sensor Dimensions:	2,5 x 10 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

## Real-Time Wireless Temperature Data Logger Low Profile

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Order reference: GMP-RF-F-LP

Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	65 x 38 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

## Real-Time Wireless Temperature Data Logger for BactAlert®

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Order reference: GMP-RF-F-Bio

Temperature range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	34 x 102 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	BactAlert(R)



## Applications

- Autoclave
- Freeze Dryer
- Freeze Refrigerator
- SIP
- Stability chamber
- Incubator
- Freezers
- Warehouse

## Main features

- Standard wireless data logger to retrieve data after test cycles
- Small, light, easy to use
- Docking station: 4/8/12/20 loggers
- Material: PEEK, thermally inert, does not create hot or cold spot during studies
- Automated Reporting when using XpertLog<sup>®</sup> - FDA CFR Part 11 compliant software
- Internal memory for safe data storage during radio frequency data transmission

## Validation/Mapping flow using standard data loggers

1. Connect the docking station (data reader) to the dedicated XpertLog<sup>®</sup> software
2. Place the GMP data loggers in the docking station
3. Set measurement conditions (start time, stop time, measurement interval) in XpertLog<sup>®</sup> software
4. Install the GMP data logger in the equipment to be validated, the measurement will automatically start/stop at the defined time.
5. After completing the measurement, insert the GMP data loggers in the docking station and read the data.
6. Generate automated reports in XpertLog<sup>®</sup> software (see page 17 for details)



## Wireless Temperature Data Logger

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Order reference: GMP-F

Temperature Range:	-90°C to +140°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	40 x 50 mm (D x H)
Battery lifetime:	Up to 12 months, based on usage
Application:	Autoclave, freeze dryer, SIP, freezers: Ultra-low freezers: -80°C LN2 freezers: -196°C (sensors only)

## Wireless Temperature & Humidity Data Logger

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Order reference: GMP-F-TH

Temperature Range:	-40°C to +100°C
Accuracy:	±0.1°C
Humidity accuracy:	0-100% RH non condensing ±2.0 RH, 0-75% @ 20-45°C
Memory capacity:	16.000 data points humidity 16.000 data points temperature
Dimensions:	40 x 60 mm (D x H)
Battery lifetime:	Up to 12 months, based on usage
Application:	Stability chamber, warehouse, etc.

## Wireless Temperature & Pressure Data Logger

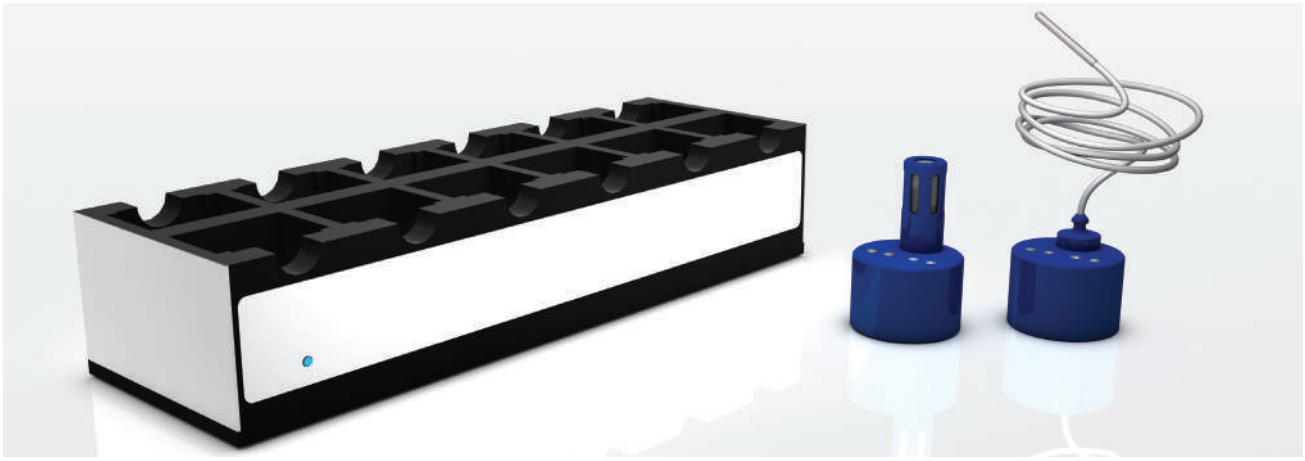
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Order reference: GMP-F-TP

Temperature range:	-40°C to +140°C
Accuracy:	±0.1°C
Pressure accuracy:	0.01 ~5 Bar
Accuracy:	±10 mbar ≤ 3 BarA @ 130°C ±15 mbar ≤ 3 BarA @ 130°C
Memory capacity:	16.000 data points temperature 16.000 data points pressure
Dimensions:	40 x 69 mm (D x H)
Battery lifetime:	Up to 6 months, based on usage
Application:	Autoclave, etc.





## Applications

- Refrigerator
- SIP
- Constant temperature and humidity chamber
- Incubator

## Main features

- Standard wireless data logger to retrieve data after test cycles
- Small, light, easy to use
- Material: POM-C, FDA Compliant
- Docking station: 4/8/12/20 loggers
- Automated reporting with FDA CFR Part 11 compliant software
- Internal memory for safe data storage

## Wireless Temperature Data Logger for Mapping



Order reference: GDP-F

Temperature Range:	-40°C to +85°C
Accuracy:	±0.1°C
Memory capacity:	32.000 data points
Dimensions:	40 x 50 mm (D x H)
Battery lifetime:	Up to 12 months, based on usage
Application:	Freezer, refrigerator, etc.

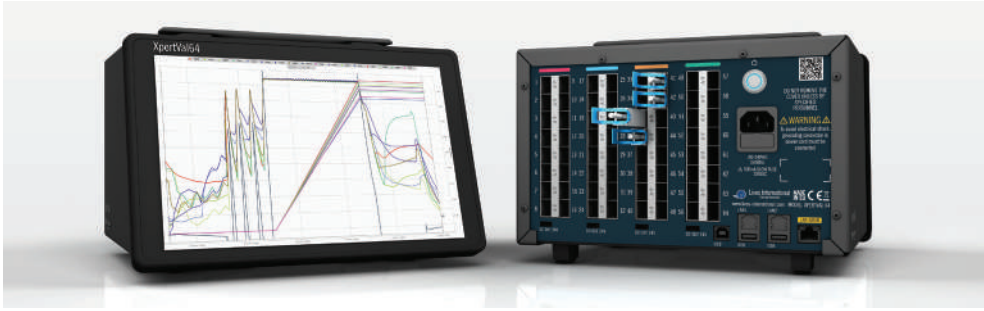
## Wireless Temperature & Humidity Data Logger for Mapping



Order reference: GDP-TH

Temperature Range:	-40°C to +100°C
Accuracy:	±0.1°C
Humidity accuracy:	15-95% RH non condensing ±2.0 RH, 0-75% @ 20°C
Memory capacity:	16.000 data points humidity 16.000 data points temperature
Dimensions:	40 x 60 mm (D x H)
Battery lifetime:	Up to 12 months, based on usage
Application:	Stability chamber, warehouse, etc.

64 Channels system for thermal mapping and validation with multiple types of sensor (PT100, TC, Pressure, Humidity)



## Applications

- Autoclave
- Dry heat sterilizer
- Sterilization Tunnel
- Freeze dryer
- Refrigerator
- SIP
- Freezer
- Warehouse
- Incubator

## Main features

- No annual calibration needed
- Wi-Fi compatible, can be remotely controlled over Wi-Fi
- Connect 64 Smart Connectors and allow measurement every 1s for all the channels
- Standalone / Controlled by XpertLog® Software
- Cloud/local based data storage

Sensors:

Dedicated connector for each type of sensors

Channels:

Most common sensor types: PT100, TC's, Humidity, Pressure, CO<sub>2</sub>

Measuring range:

64 channels - Cold junction compensation on each connector for thermocouples

Accuracy:

-200 to +1200°C

Memory capacity:

0.05°C

Internal memory: 16 GB ; 4 GB data useful memory  
 - transfer data from XpertVal64 logger to XpertLog® Software directly via XpertLog® or via USB stick  
 - data protected through encryption in a proprietary format

Sampling rate:

1s to 24h for 64 channels

Display:

Touch screen, 10.1"

Software:

FDA 21 CFR Part 11 compliant ; data integrity integrated

Universal input:

4-20 mA / 0-10V

Communication:

- 1 x USB to PC
- 2 x USB to equipment
- 1 x LAN to PC (with Power Over Ethernet)
- 2 x LAN to equipment
- 1 x Wi-Fi

Battery:

Internal rechargeable battery ; 8 hours running time

Main power:

100V to 240V @ 50/60Hz

Closed loop calibration:

Can be performed directly from the touch screen or via XpertLog® software

Reference probes:

Direct connection to XpertVal64 via USB port

Compatible Reference probes:

Lives XpertRTD, Fluke 1502A, Smart probe IRTD

Compatible Dry blocks:

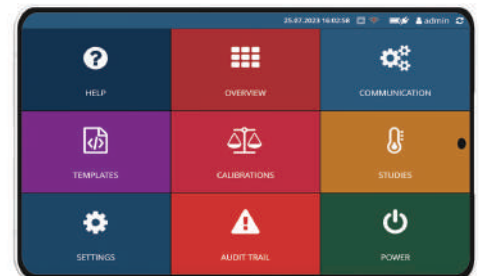
Ametek, Fluke, Sika, Isotech, Kaye

Calibration:

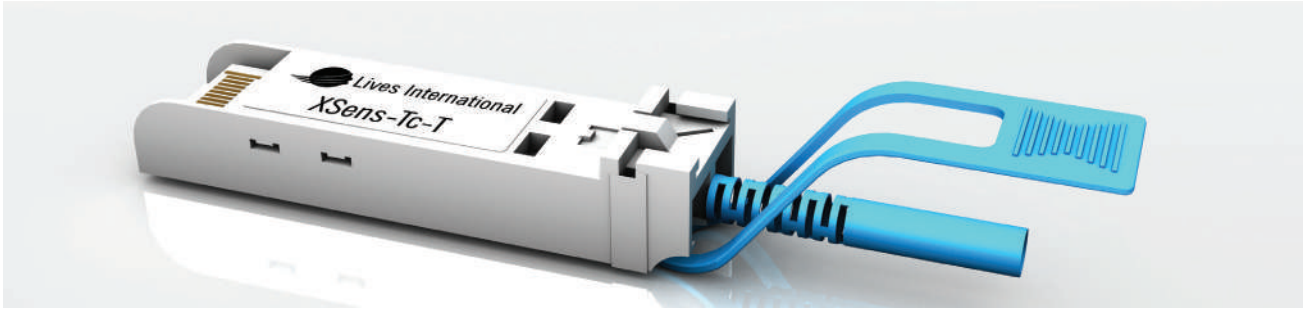
Sensor Calibration: NIST / COFRAC

User: closed loop calibration with or without XpertLog® Software

Can be used standalone, can be operated from XpertLog® software, can be operated from mobile devices



Proprietary rugged industrial connectors compatible with RTDs, thermocouples, and transducers, supporting both 0-10V and 4-20 mA signals



## Compliant sensors

- PT100 RTD
- Thermocouples: Type K, T, J, etc.
- Pressure
- RH
- Humidity
- CO<sub>2</sub>
- 0-10V
- 4-20 mA

## Main features

- Robust design, click into sockets - prevents accidental sensor disconnection
- Each TC has a Unique ID - individually traceable
- Coefficients stored in each connector
- Compatible with XpertVal64 and XpertMon

## Models Available

Different sensor types and length available as well

### XSens-F-PT-FC-2m

- Temperature sensor PT-100 4 wires
- ITS-90 calibration coefficients stored in each connector
- Accuracy  $\pm 0.1^{\circ}\text{C}$
- Temperature Range:  $-200^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$
- Sensor length: 2m



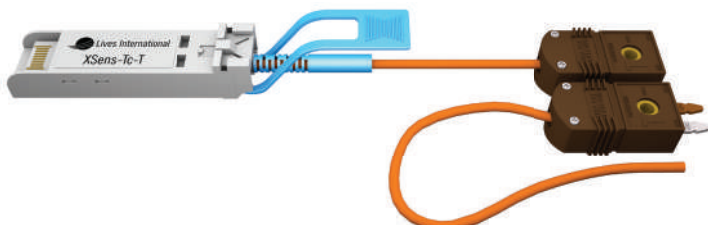
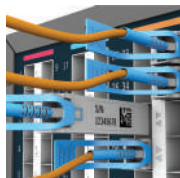
### XSens-TC-T-TEF-10m

- Type T
- 24 gauge
- Teflon coated
- Length: 10 m (32 feet)



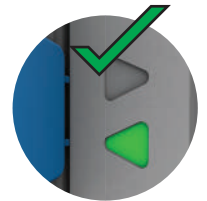
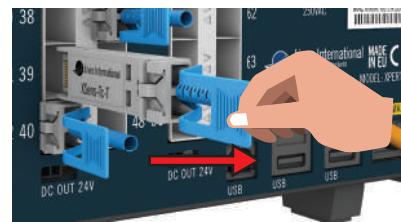
### X-Sens-TC-J-KAP-10m

- Type J
- 24 gauge
- Kapton coated
- Length: 10 m (32 feet)



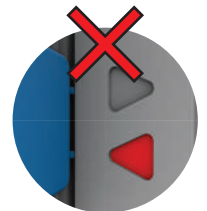
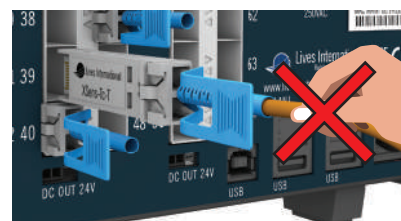
## How to Connect & Disconnect Xpert Sensors

DO

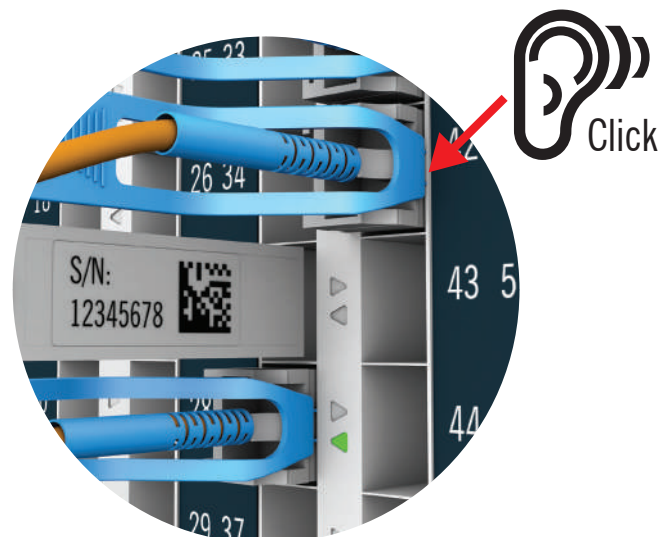


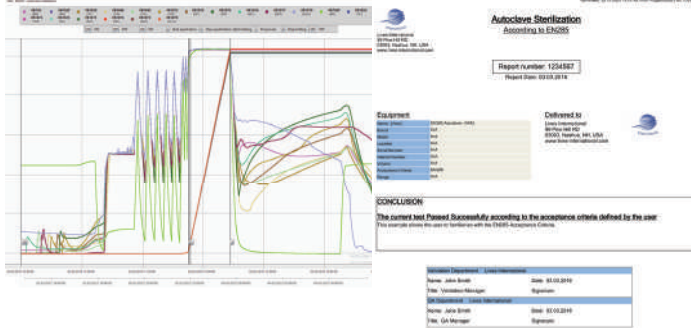
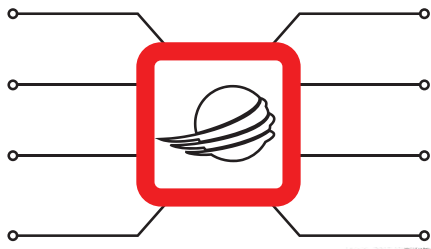
Green LED = OK

DON'T



No Green LED?  
Wait a few seconds. If it doesn't turn Green, call Lives for service





## Connect All Your Equipment To One Software

- Dedicated validation/mapping software developed specifically for the pharmaceutical and biotech industries
- FDA CFR 21 Part 11 compliant: user privilege settings, password management, audit trails, electronic signatures,
- XpertLog® software can control all Lives International Systems *\*XpertLogAll License is required\**
- The full version of the software is a site license, can be installed unlimited times within the same site
- Centralized database, active directory integrated

### Features:

- Create reliable reports automatically to save time in report generation
- No risks of calculation error - automatic pass/fail assessment
- Flexible acceptance criteria setting for any equipment

### USB communication with:

- Access Point
- Docking Station
- Temperature blocks/Oil baths
- Reference probes

### 4 access levels:

- Administrator
- User
- Reporter
- Reviewer

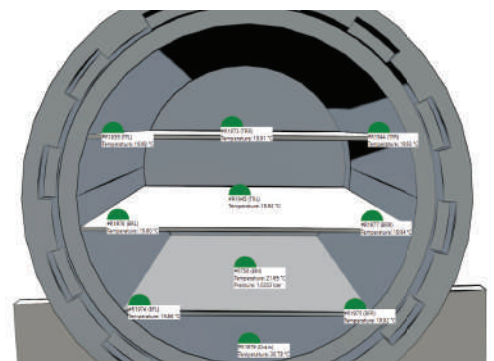
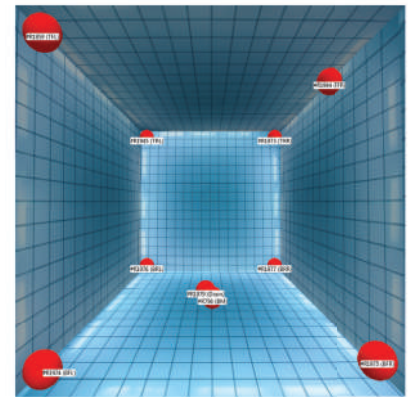
### Closed loop calibration:

- fully automated calibration controlled by the software

### Use of templates to create final reports:

- Pass/fail report
- Raw data report
- Trends
- F Values
- Statistics
- 2D report
- 3D report
- Calibration / verification report

Order reference: XpertLog



### Summary results

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(7802b660-cf18-452f-b302-067149ac20bb)  
Generated: 23.10.2023 13:51:48, from: Xlog28062023 on \LIVES

Acceptance criteria condition	Result	Pass condition	Status	Comment
Minimum temperature	121.02 °C	>= 121.00 °C	Pass	Min #R1944 (TFR) 03.03.2016 11:53:02
Minimum temperature	121.22 °C	>= 121.00 °C	Pass	Max #R1945 (TRL) 03.03.2016 11:53:02
Max temp difference - all scans during hold time	0.31 °C	<= 2.00 °C	Pass	03.03.2016 12:13:36
<b>8.2.1.2.4</b>				
Holding time	00:20:34	>= 00:15:00	Pass	Start:03.03.2016 11:53:02 Stop:03.03.2016 12:13:36

**TEST PASSED - All acceptance criteria conditions defined by the user have been fulfilled.**





## Lives Reference Probe with Digital Display Unit

- Display interface between reference thermometer and Lives International system
- Display unit selectable: °C, °F, °K, Ω
- USB / Wireless signal transfer to XpertLog® System
- Can connect a Smart Probe to the display
- ISO 17025 calibration available

Temperature range:	-196°C to +420°C
Accuracy:	±0.025°C
Wi-Fi:	2.4GHz
Connectors:	1 x USB B Port 1 x RJ12 port 1 x DIN 6 port
Weight:	425 g

## Dry Blocks & Oil Baths

The XpertLog® software is compatible with calibration equipment from various manufacturers such as Ametek, Fluke, KAMBIC, Sika, Isotech, Kaye and more. When using compatible calibration equipment, the automated calibration is enabled.

## Compatible models (partial)



**JOFRA RTC-159**  
Temperature range: -100° ~ +155°C  
Stability: ±0.03°C



**JOFRA RTC-156**  
Temperature range: -30° ~ +155°C  
Stability: ±0.005°C



**KAMBIC OB-7/22/50/200/2**  
Temperature range: -90° ~ +300°C  
Resolution: 0.01°C  
Uniformity: < ± 0.007 @ 100 °C  
Power: 230 V 50/60 Hz (± 10%)



**FLUKE 7380**  
Temperature range: -80° ~ +100°C  
Stability: ±0.5°C

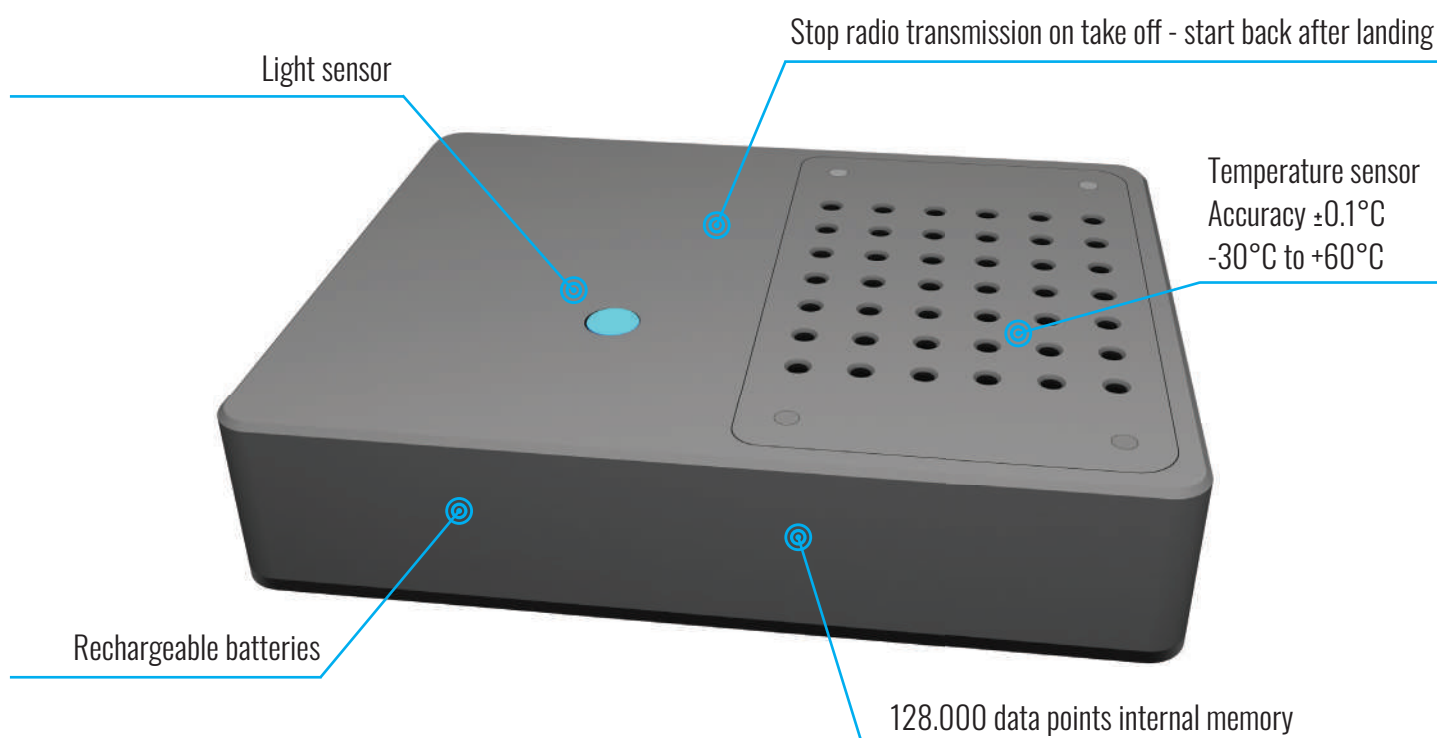




## Real Time GPS Tracker

- Web based control of your cold chain shipments
- Prevents drug shortage by monitoring the temperature and environmental conditions
- Allows the control of shipments integrity
- Collects and stores temperature, position, light exposure and shocks data in the internal memory
- Alarms are triggered when your products exceed the allowed temperature, light exposure and shocks during shipment
- Geo-fencing (user definable)
- Instantaneously detect if your shipment has been tampered during transportation

Temperature range:	-30°C to +60°C
Accuracy:	±0.1°C
Memory capacity:	128.000 data points
Data sampling rate:	temperature/position 30 sec to 24 hours - user configurable shocks instantaneous on event
Data update rate:	20 min to 24 hours - user configurable
Power:	2 x Lithium rechargeable batteries user replaceable





## Continuous Monitoring System

- Unlimited number of sensors
- Mounting: warehouses, equipment, clean rooms, etc.
- Historical data is stored in the cloud / locally
- Alarms sent by message / event to dedicated users
- Secured authentication prevents unauthorized access to the system
- Report generation on request for the user defined interval
- Multiple users with different access levels and privileges
- Data can be accessed remotely from any device with access to the server

Temperature range:

Back haul:

Gateway Battery lifetime:

Display Battery lifetime:

Dimensions:

Gateway weight:

Display weight:

-30°C to +55°C

Wi-Fi, LTE, and Ethernet

Up to 5 hours of autonomous work on battery

(Battery + Solar kit optional)

Minimum 2 years

220 x 220 x 104 mm (L x W x H)

~5.05 kg including the mounting kit

0.3 kg



# R&D & Innovation - Expertise

At Lives International, R&D is the spark of innovation, and expertise is our compass. Together, they drive us to explore the unknown and lead the way in pioneering progress.



- In-house R&D, matching pharma requirements using state of the art technology
- 20+ Years developing solutions to meet the needs of the pharma and biotech Industry

Highly skilled personnel available for continuous support

- ISO Accreditations: 17025, 9001, 14001, 45001

## Service Level Agreement

**In order to keep the data logger running at peak performance while keeping maintenance costs down, we offer three types of maintenance agreements:**

- We cover everything from battery replacement to regular calibration with an annual order
- We offer a plan that includes logger repair/replacement
- Reduces the time and effort involved in purchasing, avoids delays between receiving calibration / repair quotes and generating a P.O.

**Maintenance contract plan for real-time temperature loggers**

## Service Level Agreement Table

Service Level Agreement	Subscription
<b>Basic includes:</b> <ul style="list-style-type: none"> <li>• Battery, O-ring and grease replacement</li> <li>• Calibration</li> <li>• Functional testing</li> </ul>	<b>Basic</b>
<b>Premium includes Basic Plus</b> <ul style="list-style-type: none"> <li>• Repair of sensor or electronics board in case of damage</li> </ul>	<b>Premium</b>
<b>Elite includes Premium Plus</b> <ul style="list-style-type: none"> <li>• Replacement with new logger in case of total damage</li> </ul>	<b>Elite</b>

## Feed through for sensor insertion



Easy insertion of thermocouples (up to 20) inside the autoclave. Used by attaching to the port of the equipment.

## Smart Gasket & Clamp for SIP



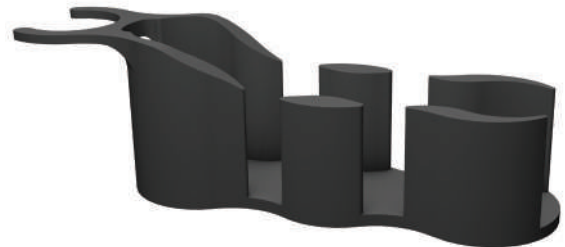
Accessory set for inserting and fixing the temperature sensor into the pipe. Use perforated gaskets & clamps, jigs to fix the sensor in the air.

## LyoPuck



Used to measure freeze dryers' shelves temperature during a mapping. Eliminates the influence of outside factors while transmitting the temperature from the shelves to the sensor.

## 2R4V Adapter



Size-adjusting adapter for 2R4V logger to make it compatible with ALUS.

We also customize and custom-design validation accessories to suit your application. Please feel free to contact us.

## Bracket



Mounting bracket for different applications.

## Fedegari Adapter



Adapter for Fedegari autoclave to feed through.

## Activation Point



Used to activate the Real Time Wireless Data Loggers.

## Humidity Calibration Cap



Cap to protect humidity sensor during calibration.

We also customize and custom-design validation accessories to suit your application. Please feel free to contact us.



## Access Point



Allows you to remotely connect to the wireless data loggers.

## Range Extender



Allows you to increase the coverage area of the access point.

## Pliers



Allows you to open up the Data Loggers for battery replacement.

## Pressure Transducer



EN285 compliant triclamp pressure transducer to connect on the autoclave during validations.

We also customize and custom-design validation accessories to suit your application. Please feel free to contact us.

## Shelf for Logger Calibration



Custom solution for Data Loggers calibration to make the logger sensors reach the bottom of the insert more easily.

## Vial Cap



Vial cap with wire holders for 30 ml Vials, for PT 100 wire diameter 1.5 mm without stainless steel tip for product temperature measurement during freeze drying cycle.

## Y Adapter



Stainless steel Y DN50 adapter connects one port to the autoclave, one port to a feed through and one port to the pressure transducer.

## Autoclave Drain Probe



Customizable autoclave drain probe holder (centers your probe or thermocouple in the center of the drain).

We also customize and custom-design validation accessories to suit your application. Please feel free to contact us.

## 30H Logger Holder



GMP RF 30H PT Wire Holder.

## Logger Holder



Magnetic logger holder useful for placing the data loggers on the metal shelves of a warehouse.

## Battery kit



Complete package for maintaining data loggers. Includes O-rings, silicone grease and batteries.

## Stainless Steel Basket



Stainless steel oil bath basket for Data Loggers.

We also customize and custom-design validation accessories to suit your application. Please feel free to contact us.



# Lives International®

Raising Standards  
Thermal Validation & Mapping Solutions



WORLDWIDE  
LOCATIONS



## USA

140 S Main Street Suite C,  
Manchester, PA 17345



## CANADA

7240 Waterly, Suite 209  
Montreal QC H2R 2Y8



## CHINA

15 Changyi Road Shanghai 2  
200439



## IRELAND

1st floor Penrose One Building  
Penrose Dock Cork



## UK

235-237 Vauxhall Bridge Road  
SW1V 1EJ London



## ITALY

Via Pietro Calvi, n.3, 20129  
Milano - MI



## JAPAN

310, DAIWA Daikanyama Bldg,  
8-7, Daikanyamacho, Shibuya,  
Tokyo



## FRANCE

3 rue Jules Guesde 92300  
Levallois Perret



## ROMANIA

37 Bela Bartok Dumbravita  
307160, Jud. Timis



## GERMANY

15 Carl-Legien-Str. Gebäude B,  
63073 Offenbach-Waldhof



## DENMARK

c/o C4 Videncenter  
Krakasvej 17  
3400 Hillerød



CERTIFIED  
PERFORMANCE



STAY UP TO DATE  
WITH US



Lives International



Lives International



Lives International

GET IN TOUCH  
WITH US



+1 (603) 294-3076



info@lives-international.com



www.lives-international.com



## Quality

In-house manufacturing  
And minimum outsourcing

## Global Presence

3 Calibration laboratories  
ISO 17025 certification  
Direct Sales & Distributors

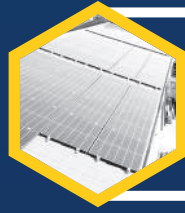


## Customization

Custom solutions for your  
Specific application

## Reliability

Specifically designed for  
Efficiency and accuracy



## Sustainability

Using green energy, less metal,  
recycling batteries & components  
We make our planet a better world

## Expertise

20+ Years developing solutions  
to meet the needs of the  
Pharma and Biotech industry



## R&D & Innovation

In-house R&D, matching Pharma  
requirements using  
state of the art technology

## After Sales Support

Highly skilled personnel available  
for continuous support

