



Wireless Data Logger System

FOR THERMAL PROCESS VALIDATION

MEDICAL / CSSD / PHARMACEUTICAL / FOOD

-ebro-
a xylem brand

Flexible Data Logger System

For Thermal Validations

ebro offers a flexible measurement and documentation system for validating many different thermal processes. This reliable system includes easy to use data loggers placed directly in the process and software to evaluate the processes.



EBI 11 mini data logger



EBI 10 wireless data logger

Process Validation With Temperature And Pressure Data Loggers Across Many Applications In:

Medical Sector

- Washer-disinfectors
- Washer-disinfectors for endoscopes
- Bed pan washers
- Steam sterilizers
- Blood banks
- Medicine refrigerators
- Laboratories
- Freezers

Pharmaceutical Industry

- Steam sterilization
- Stability chambers
- Cold storage
- Validation of store houses
- Incubators
- Laboratories
- Freezers

Food Industry

- Retorts
- Pasteurization
- Spiral-cooker / cooler
- Transport facilities
- Freezers
- Refrigerators
- Smoke chambers
- Ovens
- Full water autoclaves



Benefits Of The System

- Full automatic and tamper-proof FDA CFR 21 Part 11 compliant validations
- Broad range of wireless data loggers for all applications
- Highly flexible temperature wire probes (individually replaceable sensors)
- High accuracy PT 1000 temperature sensors
- High accuracy of up to $\pm 0.1^{\circ}\text{C}$
- TÜV Industrial Services certified system
- 2-year warranty



The Entire System Conforms With The Following Standards

- FDA 21 CFR Part 11
- EN 17025
- ISO 15883
- ISO 17665
- EN 285 / EN 13060
- EN 12830
- GAMP 5
- DIN 58929



Source: Film "Reprocessing of Medical Devices" a film by the Central Service Supply Department (CSSD) of the Diakonia Clinic in Schwäbisch-Hall, Germany

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The Perfect Solution For Your Applications

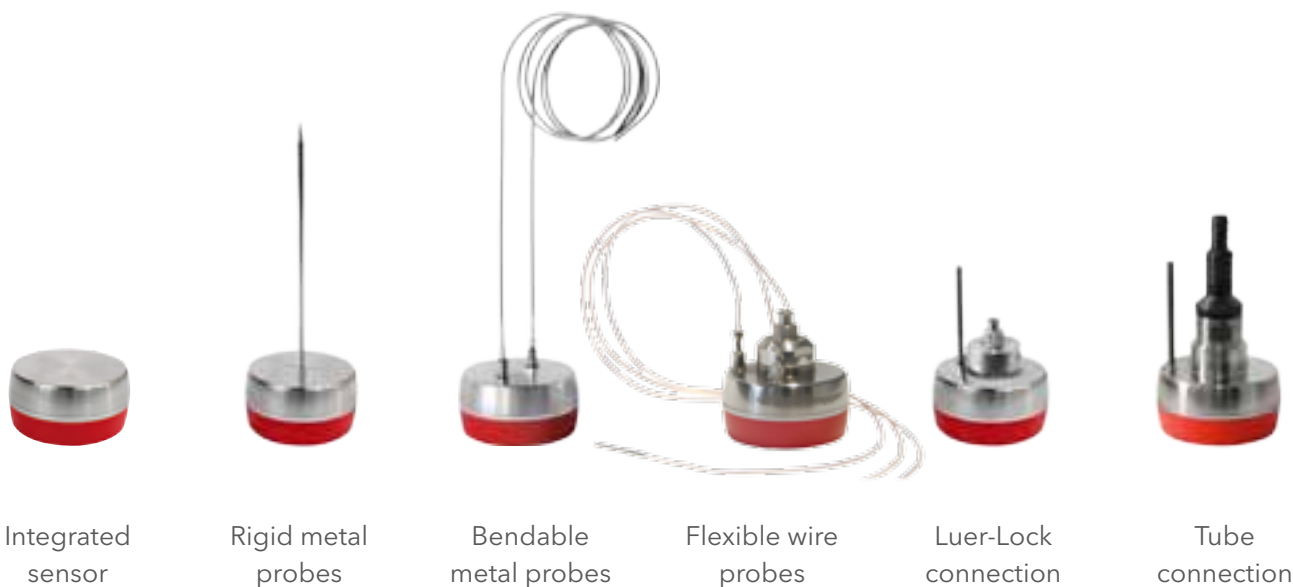
To fit each of your specific processes, ebro offers a wide variety of EBI 10 temperature and pressure data loggers in many different configurations. For example you have the choice of internal sensors, rigid metal probes, bendable metal probes, fully flexible cable probes, Luer-Lock or tube connection.

EBI 10 Wireless Data Loggers

- ✓ Very flexible wire probes
- ✓ Fast temperature sensors
- ✓ Wireless transmission possible in certain applications

Technical Data

Temperature measurement range	
Temperature data loggers	-85 °C ... +400 °C (depending on logger type)
Temperature-pressure data loggers	0 °C ... +150 °C
Temperature accuracy	±0.1 °C (0 °C to +140 °C)
Pressure measurement range	1 mbar ... 4000 mbar
Pressure accuracy	±10 mbar
Dimensions (Ø x h)	48 mm x 14 mm (without probes)



Integrated sensor

Rigid metal probes

Bendable metal probes

Flexible wire probes

Luer-Lock connection

Tube connection

Talk to us and we will help you select the logger that fits your application perfectly:

+49 841 95478-0



The Perfect Solution For Tight Spaces

For temperature and pressure measurements in tight spaces, ebro offers the EBI 11 mini data loggers. Many configurations are available to suit your application, including internal sensor, rigid metal probe, bendable metal probe, Luer-Lock connection or threaded connection versions.

EBI 11 Mini Data Loggers

- ✓ Designed for tight spaces, e.g. in small steam sterilizers, bottles, cans or bags
- ✓ Pressure measurement up to 10 bar

Technical Data

Temperature measurement range	0 °C ... +150 °C
Temperature accuracy	±0.1 °C
Pressure measurement range	1 mbar ... 10000 mbar
Pressure accuracy	±15 mbar (0 mbar ... 4000 mbar)
Dimensions (Ø x h)	16,5 mm x 24 mm (without probe)



Integrated (pressure) sensor



Rigid metal probe



Bendable metal probe



Luer-Lock connection



M5 thread connection

Accessories and Sets

For EBI 10

SL 3100 Complete Validation Set

With the ebro SL 3100 data logger set, you are fully prepared to validate your steam sterilizer processes according to ISO 17665 as well as your processes in washer-disinfectors and washer-disinfectors for endoscopes according to ISO 15883.

The SL 3100 set consists of:

- 5 temperature data loggers
- 1 temperature / pressure data logger
- IF 200 4-port Interface with USB connection and antenna
- Winlog.validation software



EBI TIB Thermal Isolation Box For Data Logger Protection

For measurement temperatures between +150 °C and +400 °C, the EBI TIB thermal isolation box is required.

The EBI-TIB will protect the logger for a period of time depending on the process temperature.

Please contact us for more information.



SI 3200 Interface Set

- IF 200 4-port Interface with USB connection and antenna: colored LEDs signaling programming and read out of the data loggers
- Winlog.validation software



AL 103 Battery Exchange Set

Contains 3 O-rings with grease, battery, changing tools, cross slot screw driver, screw and instruction manual

AL 104 Battery Set

Contains 3 batteries and 3 O-rings with grease



For EBI 11

SI 3300 Interface Set

- IF 300 4-port interface with USB connection: colored LEDs signaling programming and read out of the data loggers
- Winlog.validation software



AL 114 Can / Bag Adapter Set

For placing the EBI 11 data loggers in cans or bags



AL 115 Bottle Adapter Set

For placing the EBI 11 data loggers in bottles



AL 113 Battery Exchange Set

Suitable for 3 battery exchanges; Contains 6 batteries, 3 O-rings and changing tools

Please ask us about additional sets or have a look at our full catalogue for more information!



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Functional Principle

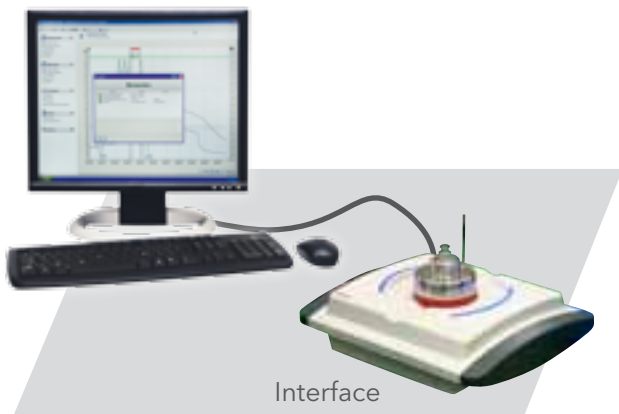
Programming The Data Loggers With Winlog.validation Software.

During start up, you can create a simple, reusable, custom template containing all parameters (sampling rate, measurement type, limits, etc) for the specific validation being performed.

After that, just place the loggers into the interface (read out device) and follow the instructions of the software. The loggers will be programmed and then are ready for the use in the process.

Measurement During The Process

Place the EBI 10 wireless data logger, e.g. in a washer-disinfector for endoscopes:





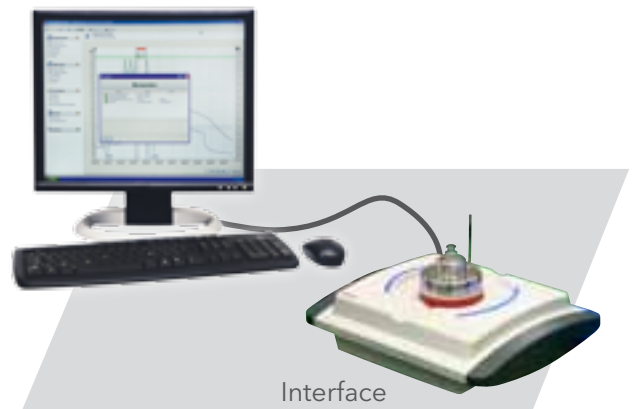
Place the EBI 11 mini data logger, e.g. in a food autoclave:

Automatic Data Evaluation

When the measurement is complete, place the loggers in the interface for readout. The software will automatically provide a clear "pass" / "fail" result of your validation report.



Validation		Wiring	
Passed			
Item	Result	Item	Result
1. Temperature	OK	2. Pressure	OK
3. Time	OK	4. Humidity	OK
5. pH	OK	6. Conductivity	OK
7. Dissolved Oxygen	OK	8. Turbidity	OK
9. Total Solids	OK	10. Total Phosphorus	OK
11. Total Nitrogen	OK	12. Total Ammonia Nitrogen	OK
13. Nitrate Nitrogen	OK	14. Nitrite Nitrogen	OK
15. Ammonia Nitrogen	OK	16. Total Phosphorus	OK
17. Total Nitrogen	OK	18. Total Ammonia Nitrogen	OK
19. Nitrate Nitrogen	OK	20. Nitrite Nitrogen	OK
21. Ammonia Nitrogen	OK	22. Total Phosphorus	OK
23. Total Nitrogen	OK	24. Total Ammonia Nitrogen	OK
25. Nitrate Nitrogen	OK	26. Nitrite Nitrogen	OK
27. Ammonia Nitrogen	OK	28. Total Phosphorus	OK
29. Total Nitrogen	OK	30. Total Ammonia Nitrogen	OK
31. Nitrate Nitrogen	OK	32. Nitrite Nitrogen	OK
33. Ammonia Nitrogen	OK	34. Total Phosphorus	OK
35. Total Nitrogen	OK	36. Total Ammonia Nitrogen	OK
37. Nitrate Nitrogen	OK	38. Nitrite Nitrogen	OK
39. Ammonia Nitrogen	OK	40. Total Phosphorus	OK
41. Total Nitrogen	OK	42. Total Ammonia Nitrogen	OK
43. Nitrate Nitrogen	OK	44. Nitrite Nitrogen	OK
45. Ammonia Nitrogen	OK	46. Total Phosphorus	OK
47. Total Nitrogen	OK	48. Total Ammonia Nitrogen	OK
49. Nitrate Nitrogen	OK	50. Nitrite Nitrogen	OK
51. Ammonia Nitrogen	OK	52. Total Phosphorus	OK
53. Total Nitrogen	OK	54. Total Ammonia Nitrogen	OK
55. Nitrate Nitrogen	OK	56. Nitrite Nitrogen	OK
57. Ammonia Nitrogen	OK	58. Total Phosphorus	OK
59. Total Nitrogen	OK	60. Total Ammonia Nitrogen	OK
61. Nitrate Nitrogen	OK	62. Nitrite Nitrogen	OK
63. Ammonia Nitrogen	OK	64. Total Phosphorus	OK
65. Total Nitrogen	OK	66. Total Ammonia Nitrogen	OK
67. Nitrate Nitrogen	OK	68. Nitrite Nitrogen	OK
69. Ammonia Nitrogen	OK	70. Total Phosphorus	OK
71. Total Nitrogen	OK	72. Total Ammonia Nitrogen	OK
73. Nitrate Nitrogen	OK	74. Nitrite Nitrogen	OK
75. Ammonia Nitrogen	OK	76. Total Phosphorus	OK
77. Total Nitrogen	OK	78. Total Ammonia Nitrogen	OK
79. Nitrate Nitrogen	OK	80. Nitrite Nitrogen	OK
81. Ammonia Nitrogen	OK	82. Total Phosphorus	OK
83. Total Nitrogen	OK	84. Total Ammonia Nitrogen	OK
85. Nitrate Nitrogen	OK	86. Nitrite Nitrogen	OK
87. Ammonia Nitrogen	OK	88. Total Phosphorus	OK
89. Total Nitrogen	OK	90. Total Ammonia Nitrogen	OK
91. Nitrate Nitrogen	OK	92. Nitrite Nitrogen	OK
93. Ammonia Nitrogen	OK	94. Total Phosphorus	OK
95. Total Nitrogen	OK	96. Total Ammonia Nitrogen	OK
97. Nitrate Nitrogen	OK	98. Nitrite Nitrogen	OK
99. Ammonia Nitrogen	OK	100. Total Phosphorus	OK



Flexible Report Generation

Whether you need a short process report or a table report with all measurement data - ebro's Winlog software makes it simple.

Detailed result overview



Table report

This screenshot shows a detailed table report with multiple columns of measurement data. The table is organized into sections for 'Parameters' and 'Measurements', providing a granular view of the system's performance over time.

Process parameters, e.g. theoretical steam temperature calculation

This screenshot displays process parameters and calculations, including theoretical steam temperature. It features a 'Parameters' section with various input and output values, and a 'Calculations' section showing the results of these inputs.

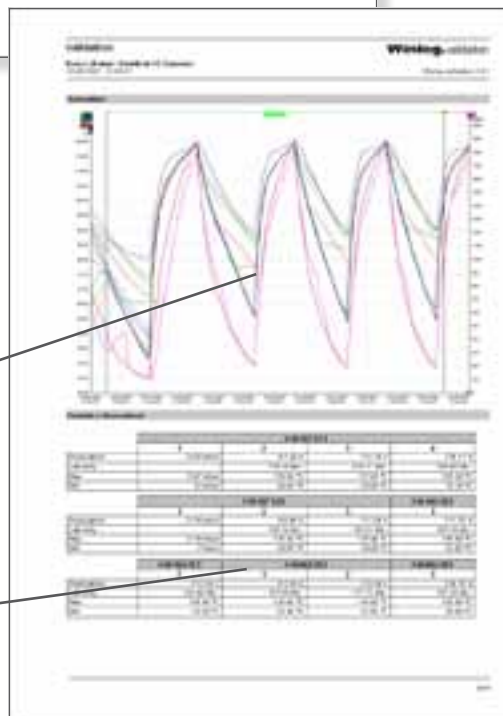
Lethality report

This screenshot shows a lethality report with detailed measurement data. It includes a 'Parameters' section and a 'Measurements' section, providing a detailed view of the system's performance during a specific process.

Equipment used

This screenshot displays a list of equipment used in the process. It includes a 'Parameters' section and a 'Measurements' section, providing a detailed view of the system's performance during a specific process.

Graphical



Statistical data



Winlog.validation Software



ZERTIFIKAT • CERTIFICATE • CERTIFICADO • CERTIFIKAT	
CERTIFICATE No. Z2 12 08 10638 037	
Holder of Certificate:	ebro Electronic GmbH Parngasse, 10 80331 Ingolstadt GERMANY
Production Facility(ies):	10036
Certification Mark:	
Product:	Application Software
Model(s):	Data logger systems: Winlog.validation, Winlog.med in combination with data logger EBI-10, EBI-11, EBI-15
Parameters:	Data logger system to read and process data used in the branches medicine and pharmacy
Tested according to:	TUV SUD Product Service testing principles based on: • DIN EN ISO 9001-110:2008 (Quality) • DIN ISO/IEC 29001:2008 (Functionality) • FDA 21 CFR Part 11
<small>The product was tested on a voluntary basis and complies with the essential requirements. The certificate mark shown above can be affixed on the product. It is not permitted to alter the certificate mark in any way. In addition the certification holder must not transfer the certificate to third parties. (See also notes covered)</small>	
Test report no.:	026/110002285-000
Valid until:	2013-03-18
Date: 2013-08-01	(S. Eimroth)
Page 1 of 1	
<small>TUV SUD Product Service GmbH - Zertifikatsstelle - Rosenstraße 66 - 80331 München - Germany</small>	

Winlog.validation is an easy to use tool for data logger programming, data evaluation and results storage in accordance with the current validation norms.

The software will automatically create a clear "pass"/"fail" evaluation of your validation results. In addition, it offers the flexibility of many different possibilities for clear data presentation and creating reports according to your requirements.

Security According To FDA 21 CFR Part 11

The Winlog.validation software conforms with FDA 21 CFR Part 11.



Our Services For You

At ebro service is more than just a word - ebro offers solution according to customer wishes.

Service And Calibrations

ebro offers a calibration service for temperature, pressure and relative humidity by our accredited DAkKS laboratory

Training

Validation and software trainings on request

IQ/OQ Documentation According To GAMP

System IQ/OQ documentation according to GAMP guidelines is available. On request, we can send you a technician who performs the system IQ/OQ with you on-site.



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