xylem

Monitoring of Cold Chain and Production

DATA COLLECTION ACCORDING TO GXP AND FDA GUIDELINES

-ebro-
a xylem brand

2020

To ensure your quality

By using the right measuring devices, a high and constant product quality can be guaranteed. This often requires checks in the incoming goods department, during processing, on the finished end product as well as during storage and logistics. Xylem Analytics, offers you the necessary measuring devices that are suitable for use in the GxP environment, as well as software solutions for your diverse applications. You can find a selection of applications and devices here:

Which device is right for you?

	TMX 3x0/4x0	EBI 20 Series
Measurement		
For direct measurement	✓	✓
For monitoring		✓
Cool Chain Control		
Refrigerator temperature control	✓	✓
Warehouse monitoring		✓
Logistics		✓
Mappings		✓
Laboratory		
Clinical Trails	✓	✓
Temperature control in refrigerators	✓	✓
Incubators	✓	✓
Process Control		
Process validation		
Qualification		
Steamsterilization		
H_2O_2 and EtO Sterilization		
Depyrogenation / heat tunnel		

For more information in our catalogues.

Visit us at
www.ebro.com
for many more products!

	EBI 300 Series	EBI 25 Series	EBI 310 Series	EBI 11 Series	EBI 12 Series
	✓		✓		
	✓	✓	✓	✓	✓
	✓	✓	✓		
	✓	✓	✓		
	✓		✓		
	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓
	✓	✓	✓		
	✓	✓	✓		
				✓	✓
			✓	✓	✓
				✓	✓
					✓
					✓

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

Data Logger to measure during manufacturing

EBI 11 Series

Mappings, clinical trails, process validation and qualification and steam sterilization

The EBI 11 offers:

- Small data logger for applications with little space
- 16.5 mm diameter
- Measuring range of -30 °C to +150 °C
- Logger to measure temperature and / or pressure available
- Calibration certificate included
- Stainless steel (V4A) housing
- Sets with interface, software and accessories for various applications are available.
- Winlog.pro software for evaluation
- Waterproof housing (IP68)
- Prepared IQ / OQ documents are available for Winlog.pro software
- FDA 21 CFR part 11 compliant

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

Process data logger

EBI 12 Series

Mappings, clinical trails, process validation and qualification, steam sterilization, H_2O_2 and EtO sterilization and depyrogenation / heat tunnel

The EBI 12 offers:

- Logger to measure temperature, pressure, humidity, conductivity and precise vacuum

- Large selection of different types

- Calibration certificate included

- Stainless steel (V4A) housing

- Sets with interface, software and accessories for various applications are available.

- TÜV certified Winlog.validation software for evaluation

- Waterproof housing (IP68)

- Prepared IQ / OQ documents are included in the Winlog.validation software package

- FDA 21 CFR part 11 compliant

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

Digital Refrigerator Thermometer

TMX 3x0 and 4x0
Min/Max Alarm Thermometer with external probe

For temperature control in refrigerators, laboratory and clinical trails.

The TMX 3x0 / 4x0 offers:

- Observe two temperature zones with one device
- Easy usage
- Reliable control
- Acoustic alarm for active alarm management
- Optical alarm to see how long the problem occurs

Standard Cold Chain Data Logger

EBI 20 Series
Robust Basic Data Logger

For temperature control in refrigerators, warehouse monitoring and logistic control, mappings, laboratory and clinical trails.

The EBI 20 offers:

- Data logger versions for temperature and humidity measurements available

- With external or internal temperature probe

- LED shows if a limit has been exceeded

- Measurement range of -30 °C to +100 °C

- User replaceable battery

- 2 point calibration certificate included

- Interface and Desktop software are necessary

- Winlog.basic software free of charge

- Waterproof housing (IP 67) except for humidity logger

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

PDF - Cold Chain Data Loggers with USB connector

USB Data Logger EBI 3x0 Series
Continuous temperature monitoring sensitive goods

For temperature control in refrigerators, warehouse monitoring and logistic control, mappings, laboratory, clinical trails and for device qualification.

The EBI 3x0 offers:

- USB-A connector enables you to read the logger out on every windows based PC worldwide without the need of an interface
- Automatic PDF generation without software
- Configuration via the website www.ebi300.com or the free desktop software Winlog.basic
- LED shows if a limit has been exceeded
- Measurement range of -30 °C to +70 °C
- Several external penetration probes available
- Digital humidity probes available
- User replaceable battery
- 3 point calibration certificate included
- Waterproof housing (IP 65)

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

Wireless Cold Chain Monitoring System

EBI 25 Series
Automated data collection and processing

For temperature control in refrigerators, warehouse monitoring, climatic chambers and stability spaces, laboratory, incubators, mappings and clinical trails.

The EBI 25 offers:

- Data logger versions for temperature and humidity measurements available

- With external or internal temperature probe

- Measurement range of -200 °C to +199.9 °C

- User replaceable battery

- Alert notification by email

- 2 point calibration certificate included

- Interface and webbased software are necessary

- Winlog.web software

- FDA 21 CFR part 11 compliant

- Waterproof housing (IP 67) except for humidity logger

KompetenzCentrum ebro®

Theory and practice are the key to our successful transfer. Our instructors are all experts in their own fields. The aim is to achieve an in-depth understanding of hardware and software alike.

www.ebro.com/en/training

Founded in 1968, in its more than 50-year history, ebro® has specialized in high-quality measurement technology such as handheld instruments, thermometers and data loggers. Are you looking for devices and software to measure temperatures, humidity, pH, oil qualities, pressure and Brix? Then you have found your partner with ebro®. From measurement to recording to evaluation, we offer you quality products and solutions tailored to your requirements.

EBI 25 Wireless System

MONITORING OF TEMPERATURE, HUMIDITY AND MANY OTHER MEASUREMENTS

GRANDEVER BIOTECHNOLOGY CO., LTD.
大久生物科技股份有限公司
Valuable contribution to the power and science community.
核 心 貢 獻 於 電 機 和 科 學 共 同 體

產品項目
機台開發製作，電路和自動控制配電盤之設計及製作，HMI/PLC 程式設計，系統規劃，SCADA圖控盤控軟體規劃整合設計。關鍵電機元件:INV銘銳牌變頻器、POD人機介面、PLC可程式控制、SERVO 伺服馬達、MS電磁開關、荷重元、SENSOR酸鹼度/導電度/溶氧量/液(氣)體流量/壓力計。

美國原裝進口專業製藥工業ISO Class5 FDA/USP/EPA美國藥典完全無菌等級滅菌清潔產品:異丙醇/變性乙醇。過乙酸過氧化氫酸胞子劑/預稀釋過氧化氫溶液/醛醛滅菌劑/四級胺滅菌劑/異丙醇拭布。液泡式鹼性除于/無泡沫濃縮洗滌劑。檢診手套/口罩/手部酸菌液。

德國無線(有線)溫濕度壓力紀錄器—滅菌確妮&冷鏈倉儲溫濕度繪測監控。精密型/工業型電子天平。多功能(吊隱式)空氣清淨機/除濕機/負離子產生機。初效/中效/高效(HEPA)/化學/耐高溫濾網。慕固檢測。組織染色試劑

11471 台北市內湖區新明路273巷6號1樓
1F., No.6, Ln. 273, Xinming Rd., Neihu Dist., Taipei City 11471, Taiwan (R.O.C.)
服務專線Tel : (02)8792-3722
服務傳真Fax : (02)8792-3761
電子信箱Email : info@grandever-biotech.com.tw
公司網址Website: www.grandever-biotech.com.tw

-ebro-
a xylem brand

Online Monitoring of Temperature, Humidity and Many Other Measurements

The EBI 25 system for wireless monitoring of temperature, humidity and other measurements assures that perishable goods are produced and stored at the right conditions at all times. Other measurements can be integrated using Mod - bus over IP.

Continuous monitoring

of all areas where food, pharmaceutical and medical products are produced and stored.

Avoid loss of goods

with the continuous monitoring of all crucial temperature points – 24 hours on 365 days a year.

Quick intervention before it is too late

with a very wide and flexible alarm management (notification via email or acoustical).

Automatic documentation

through automatic recording, storage, and reporting of the measured data. Problems can easily be traced and audit reports can be generated instantly.

Worldwide access to the measurement data

via internet – at any time, any place and any PC with internet and network access. Security is ensured using a login and password.

Easy handling

saves time, effort and energy.

Applications

Food sector

- Continuous monitoring of cooling equipment, cool rooms and deep-freeze rooms

- Monitoring of room temperatures and humidity values in a store

Pharmaceutical / medical sector

- Continuous monitoring of temperature sensitive goods like blood plasma or medicine

- Temperature and humidity monitoring and other measurements in cooling chambers, clean rooms and incubators

Benefits

Food sector

- Compliance with the HACCP guidelines

- All devices according to DIN EN 12830

- Up to date reports always ready for food inspectors

Pharmaceutical / medical sector

- FDA 21 CFR Part 11 functionality

- Up to date reports generated on-demand for audits and inspections

Technical Data

Type	EBI 25-T	EBI 25-TE	EBI 25-TX	EBI 25-TH
Probes	Internal	External	External for very deep temperatures	Internal: temperature External: humidity
Measurement range: temperature	-30 °C … +60 °C	-40 °C … +85 °C	-200 °C … +199.9 °C	-30 °C … +60 °C
Measurement range: humidity				0% rH … 100% rH
Accuracy: temperature	±0.5 °C (-20 °C … +40 °C) ±0.8 °C for the remaining measurement range	±0.5 °C (-20 °C … +40 °C) ±0.8 °C (-30 °C … -20 °C and +40 °C … +60 °C) ±1.5 °C (-40 °C … -30 °C and +60 °C … +85 °C)	±2.0 °C (-200 °C … -100 °C) ±0.5 °C (-100 °C … -20 °C) ±0.2 °C (-20 °C … +60 °C) ±0.5 °C (+60 °C … +199.9 °C)	±0.5 °C (-20 °C … +40 °C) ±0.8 °C for the remaining measurement range
Accuracy: humidity				±3 %
Resolution: temperature	0.1 °C	0.1 °C	0.1 °C	0.1 °C
Resolution: humidity				0.1% rH
Memory capacity	288 measurements	288 measurements	288 measurements	576 measurements (288 measurements per channel)
Sensor	NTC	NTC	Pt 1000	NTC
Protection class	IP 67	IP 67	IP 67	IP 20

General technical data

Measurement interval	1 min. to 24 hours, adjustable
Radio frequency	868 MHz
Battery	3.6 V lithium (user replaceable)
Battery lifetime	Up to 2 years, depending on transmission rate
Storage temperature	-40 °C … +70 °C

大久生物科技股份有限公司
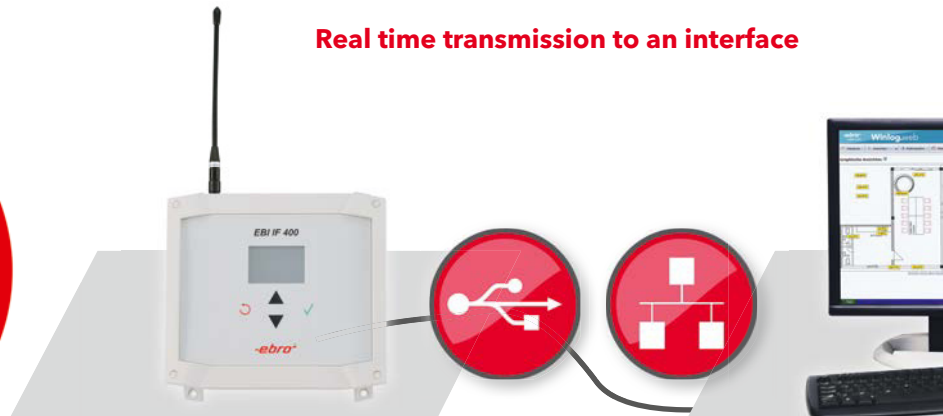GRANDEVER BIOTECHNOLOGY CO., LTD.

Functionality

The innovative EBI 25 system monitors wirelessly, transmits the data in real time to an interface (base station) and from there to the desired server or PC.

Wireless measurement

Real time transmission to an interface

EBI 25 series data loggers

- Precise measurement of temperature and humidity (depends on logger type)
- Very large range of up to 500 m in a free field
- Long battery lifetime
- Easy installation

Embedding of other measurements possible:
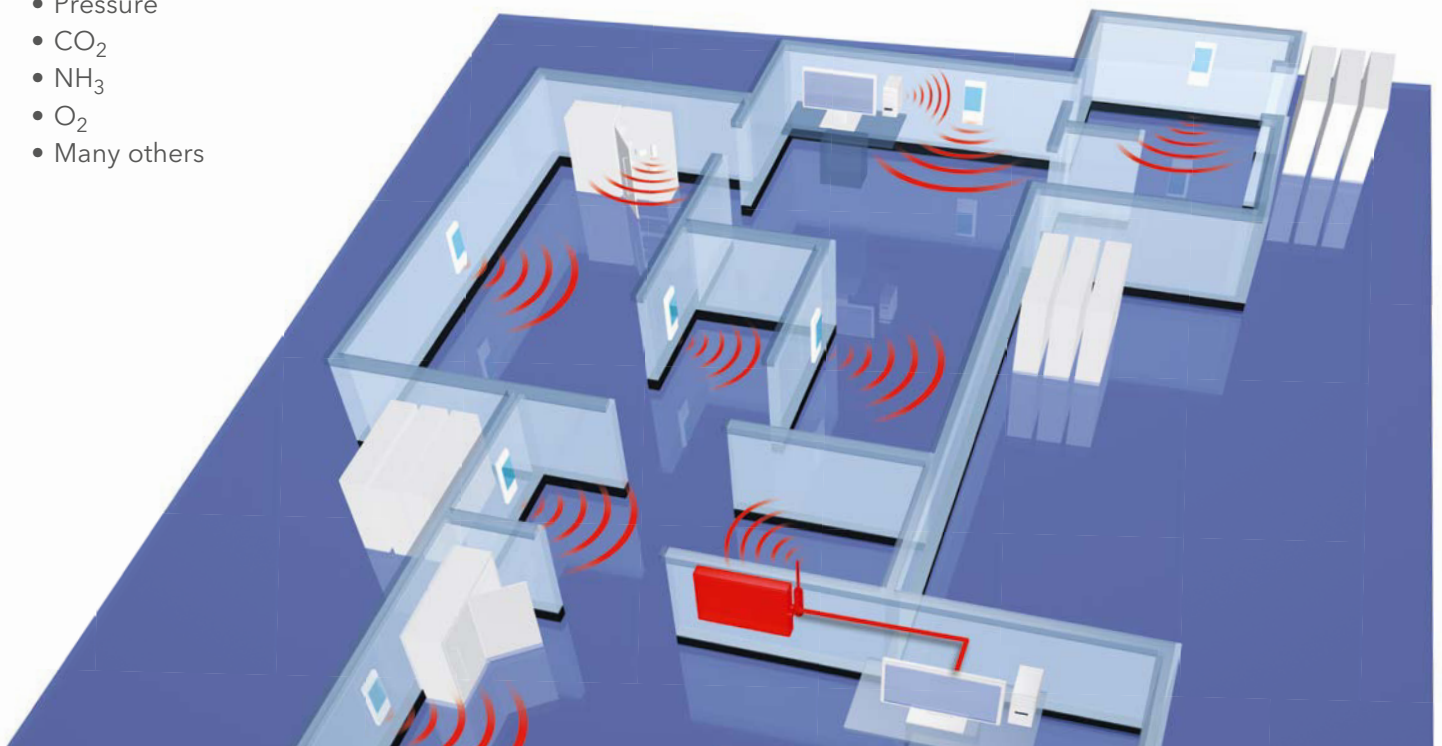- Pressure
- CO_2
- NH_3
- O_2
- Many others

Base station: IF 400 interface

- Collects and stores the data of all connected EBI 25 data loggers
- Connection of up to 50 loggers per interface possible
- Stores up to 576 measurements per logger
- Direct connection of any number of interfaces to a PC or the network
- Audible alarm (with optional alarm box)

USB cable / Ethernet

For more information please contact us:

+49 841 95478-0

As soon as a temperature, humidity or any other measurement has exceeded a user defined limit, an alarm is immediately sent via email.

Evaluation on the PC

Connection for visual or audible alarm.

Winlog.web
SOFTWARE
-ebro-
a xylem brand

Winlog.wave
SOFTWARE
-ebro-
a xylem brand

Work place

Measurement management software: Winlog.web and Winlog.wave

Print

Email distribution

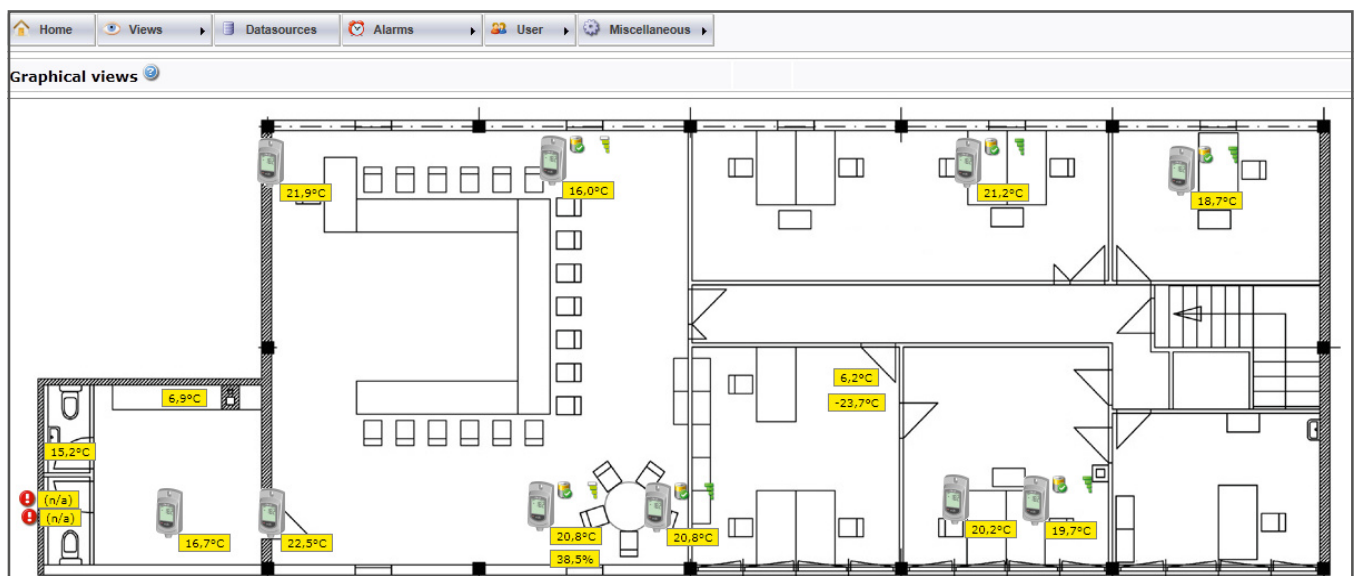## Winlog.wave:

Basic version for local PC usage

- Single PC solution: The basic version for easy measurement data evaluation on a single PC- no network required.
- Flexible alarm management: graphic and email alarm notifications upon user defined conditions
- Connection to the IF 400 via USB
- FDA 21 CFR Part 11 data security functionality

Winlog.web:

Professional version internet and local network based use

- Web based client/server solution: the measurement data can be evaluated on all PCs and smartphones via the internet or connected to the local network
- Very flexible and wide alarm management: alarm notifications upon user defined conditions, alarm notification via email; visual and audible alarm via the graphical user interface
- Connection of the interface IF 400 via USB and Ethernet
- FDA 21 CFR Part 11 data security functionality
- Management of larger data sets
- IQ / OQ documentation available

Quick graphical overview of all measurement points including an image or floor plan view

| Home | Views | ▶ | Datasources | ▶ | Alarms | ▶ | User | ▶ | Miscellaneous | ▶ |

Graphical views

21,9°C   16,0°C   21,2°C   18,7°C
6,9°C   6,2°C   -23,7°C
15,2°C
(n/a)   (n/a)
16,7°C   22,5°C   20,8°C   20,8°C   20,2°C   19,7°C
38,5%

Types of filters

There are two different filters for the EBI 25-TH:

The PTFE-filter AH 100 provides little protection from mechanical strain but seals the probe from dust – protection class IP 60. In dusty environments, unprotected humidity probes, or probes protected by sintered filters, can quickly be covered by dust. This massively affects the humidity measurement, or prohibits it entirely. It won´t happen with the PTFE filter.

The stainless steel sintered filter AH 300 increases the protection class to IP 40. The stainless steel massively increases the mechanical protection, e.g. from crushing the filter. Nothing will happen to your probe! In addition, the stainless steel is highly resistant to corrosion even in high temperature applications.

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

Accessories for the EBI 25 system

AL 250 – Protection Box for EBI 25 TE and TX

EBI 2 AB-2 – Alarmbox to connect to interface IF 400

AL 251 – orange Flash Light and buzzer combination

EBI IF 400 – Interface including antenna

AG 152 – Wall mount for EBI 25

AL 116 – external antenna for the interface EBI IF 400 interface for more power, optional

How to order:

Type	Description	Part No.
EBI 25-T	Wireless temperature logger (with internal sensor)	1340-6200
EBI 25-TE	Wireless temperature logger (with external probe)	1340-6201
EBI 25-TX	Temperature data logger (with probe TPX 25-3)	1340-6204
EBI 25-TX	Temperature data logger (without probe)	1340-0025
TPX 25-3	Pt 1000 probe for EBI 25-TX, 3 m	1341-0025
TPX 25-5	Pt 1000 probe for EBI 25-TX, 5 m	1341-0026
TPX 25-7,5	Pt 1000 probe for EBI 25-TX, 7,5 m	1341-0027
TPX 25-10	Pt 1000 probe for EBI 25-TX, 10 m	1341-0028
EBI 25-TH	Wireless temperature / humidity logger	1340-6202
AH 100	PTFE filter for EBI 25-TH	1340-5627
AH 300	Stainless steel sintered filter for EBI 25-TH	1340-5625
AL 250	Protection Box for EBI 25 TE and TX	1248-0250
EBI 2 AB-2	Alarm box to connect with interface IF 400	1613-1301
AL 251	Orange Flash Light and Buzzer combination	1340-6233
EBI IF 400	Interface incl. antenna	1340-6210
AG 152	Wall mount for EBI 25	1340-6215
AL 116	External Antenna	1340-6211
Winlog.web	Web based Evaliation Software – Server solution	1340-2390

....

-ebro-®

/ebrogmbh   /ebro.ingolstadt

xylem
Let's Solve Water

大久生物科技股份有限公司
GRANDEVER BIOTECHNOLOGY CO., LTD.

xylem

EBI 300/310/330

USB DATA LOGGERS FOR COLD CHAIN MONITORING
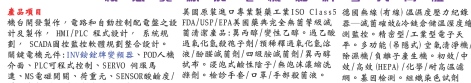
EBI 310

EBI 300

-ebro-
www.ebi300.com
START
STOP
EBI 330
-30...+60°C / -22...+140°F
According EN 12830-S,T,C,D,1
Alarm Limits: -20°C...-18°C
Alarm Delay: 30 Min.
SN 33000001

-ebro-

a xylem brand

Cold Chain Monitoring

The easy to use data loggers with USB connection monitor the temperature and/or humidity during transport and storage of sensitive goods like medicine, food, serums etc.. Measurement reports are created automatically as PDF files when you connect the logger to a PC.

The EBI 300 and EBI 310 USB data loggers are suitable for multi-use, the EBI 330 data loggers are single-use versions which can be ordered preconfigurated and are used especially when returning a more expensive multi-use logger to the sender after a shipment is difficult. Please contact us for more information.

Program | Measure

- Programming of the logger with the help of the free online configurator at **www.ebi300.com** or optional via the software Winlog.basic or Winlog.pro

- Set optional limits and start to record the measurement data

Connect | Readout

- Connection of the logger to any PC via the USB port

- Automatic generation of a PDF report with all important measurement data

Evaluate | Archive

- Store, save or email the PDF report

- Further processing of the measurement data with the software Winlog.basic or Winlog.pro

Benefits

- Direct USB connection

- Automatic PDF report generation

- Programmable at www.ebi300.com no special software for programming and readout required but available

- Indication of alarm status via flashing LED

- Data integrity

- Conforms with FDA 21 CFR Part 11 and ATP

- The data loggers help you to comply with GMP and VO (EG) 37/2005

- Free firmware updates at your place via software

- Excellent value-for-money
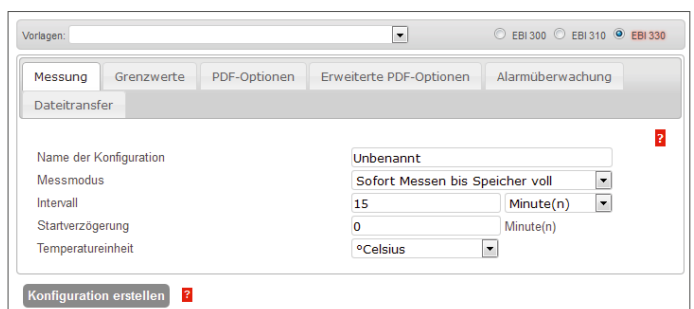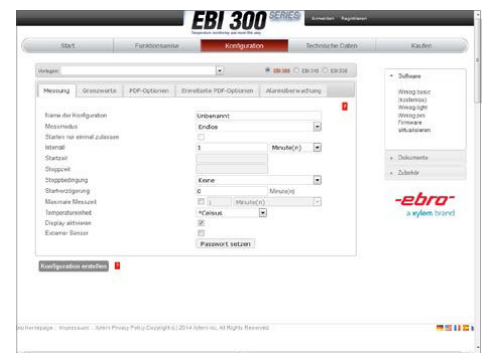
Digital interface

- Digital interface between loggers and external probes (at EBI 300 TE, EBI 300 TH, EBI 310 TE, EBI 310 TH and EBI 310 TX).

- Data logger functions as data collector with optional internal sensor

- Easy exchange of the external probes e.g. for calibration: remove and send probe, connect replacement probe, measure!

- No calibration of the data collector required, if internal probe is not used!

3

Which data logger is right for you?

Every EBI 3x0 USB data logger have the afore mentioned properties. Depending on the application, claim and your purse, there are different requirements for which we have the right devices. The following overview shall help making the decision.

	EBI 330-T30	EBI 300	EBI 300 TE	EBI 300 TH	EBI 310	EBI 310 TE	EBI 310 TX	EBI 310 TH
Applications								
Monitoring of deep temperatures						✓	✓*	
Monitoring of high temperatures						✓	✓*	
Humidity monitoring				✓				✓
Storage monitoring		✓	✓	✓	✓	✓	✓*	✓
Transport monitoring	✓	✓	✓	✓	✓	✓	✓*	✓
Process monitoring			✓	✓		✓	✓*	✓
Usage within dry ice								
Measurement channels								
Internal temperature channel	✓	✓	✓	✓	✓	✓	✓	✓
External temperature channel			1	1		1	2 *	1
Sensor cable			✓			✓	✓*	
High precision (Pt 1000)					✓	✓	✓	✓
Humidity channel				✓				✓
Usage								
Multi-use		✓	✓	✓	✓	✓	✓	✓
Single-use	✓							
Calibration certificate								
Including factory calibration certificate		✓	✓	✓	✓	✓	✓*	✓
Batch calibration certificate available upon request	✓							
Other features								
Display		✓	✓	✓	✓	✓	✓	✓
Very flexible alarms (5 limits and MKT)						✓	✓	✓
High memory capacity (120.000 measurements)						✓	✓	✓

* with connected, exchangeable sensors

EBI 330 Single-Use USB Data Loggers

General technical specifications: valid for both EBI 330 data logger types*

Memory capacity	20,000 measurements
Alarm	2 limits
PDF creation	PDF/A 1b
LED	Yes (red and green)
Resolution	0.1 °C
Storage temperature	-40 °C ... +85 °C (-40 °F ... +185 °F)
Sample rate	1 min. to 24 hours
Measurement modes	• Start with key press • Start immediately until end of memory
Maximum start delay	24 h
Dimensions (L x W x H)	80 x 28 x 12 mm
Housing material	ABS
Protection class	IP 65
Certificate	Batch calibration certificate available on request

* Please find the exact technical data of each EBI 330 data logger type on this page.

EBI 330-T30 Single-Use USB Data Logger
Standard version

Technical Data

Measurement rang / operating temperature	-30 °C … +60 °C (-22 °F … +140 °F)
Accuracy	±0.5 °C (-20 °C … +40 °C / -4 °F … +104 °F) ±0.8 °C for the remaining measurement range
Sensor	NTC
Battery	Lithium button cell (CR2032), 3V
Battery lifetime	100 days

EBI 300 Multi-Use USB Data Loggers

General technical specifications: valid for EBI 300 data logger types*

Memory capacity	40,000 measurements
Alarm	2 limits
PDF creation	PDF
LED	Yes (red)
Storage temperature	-40 °C ... +85 °C (-40 °F ... +185 °F)
Sample rate	1 min … 24 h
Measurement modes	• Endless measurement • Start / Stop • Measurement until end of memory • Start with key press
Display	Value, MIN / MAX, until end of memory, alarm on / off
Maximum start delay	72 h
Housing material	Polycarbonate
Certificate	Factory calibration certificate
Battery	Lithium button cell (CR 2450), 3 V
Battery lifetime	Up to 2 years, depending on applications

* Please find the exact technical data of each EBI 300 data logger type on this double page.

EBI 300 Multi-Use USB Data Logger
Standard version

Technical Data

Measurement range/operating temperature	-30 °C … +70 °C (-22 °F ... +158 °F) By connecting an external probe, the temperature measurement range can be extended.
Accuracy	± 0.5 °C (- 20 °C … +40 °C / - 4 °F ... +104 °F) ±0.8 °C for the remaining measurement range
Sensor	NTC
Resolution	0.1 °C
Dimensions (L x W x H)	80 x 33 x 14 mm
Protection class	IP 65

The device has been certified together with the EB 4401 food inspection case.

Accessories for EBI 300, EBI 300 TE and EBI 300 TH

EBI 300 TE + EBI 300 WM2

EBI 300-WM2 Wall Mount for EBI 300 / 310

EBI 300 WM3   transportation mount for EBI 300/310 made of stainless steel

EBI 300 TE Multi-Use USB Data Logger with external temperature probe
Fast, flexible core temperature measurements

Technical Data

Measurement range external temperature	-35 °C … +70 °C (-31 °F ... +158 °F)
Measurement range internal temperature / operating temperature	-30 °C … +70 °C (-22 °F ... +158 °F)
Accuracy (internal and external)	± 0.5 °C (-20 °C … +40 °C / -4 °F ... +104 °F) ± 0.8 °C for the remaining measurement range
Probe	NTC, Stainless steel, Ø 4mm, L = 50mm, pointed
Cable	PVC, L = 1m, waterproof, oilproof and food safe
Resolution	0.1 °C
Dimensions (L x W x H)	91 x 33 x 14mm
Protection class	IP 65

- Simultaneous measurement of core temperature and ambient temperature
- Internal temperature probe usable additionally

EBI 300 TH Multi-Use USB Data Logger with external humidity and temperature probe
Relative humidity monitoring in storages and during transports

Technical Data

Measurement range temperature / operating temperature	-30 °C … +70 °C (-22 °F ... +158 °F)
Accuracy (internal)	± 0.5 °C (-20 °C … +40 °C / -4 °F ... +104 °F) ± 0.8 °C for the remaining measurement range
Accuracy (external)	± 0.5 °C (-20 °C … +40 °C / -4 °F ... +104 °F) ± 1.0 °C for the remaining measurement range
Probe temperature	0% rH … 100% rH
Measurement range humidity	± 3 % between 10 % rH … 90 % rH (at 25 °C/+77 °F) ± 5 % for the remaining measurement range
Accuracy humidity	± 3 % between 10 %rH … 90 %rH (at 25 °C/+77 °F) ± 5 % for the remaining measurement range
Probe humidity	Capacitive
Resolution temperature	0.1 °C
Resolution humidity	0.1 % rH
Dimensions (L x W x H)	129 x 33 x 14mm
Protection class	IP 20

- Internal temperature probe usable additionally

EBI 310 Multi-Use USB Data Loggers

General technical specifications: valid for all EBI 310 data logger types*

Memory capacity	120,000 measurements
Alarm	5 ranges
PDF creation	PDF/A 1b
LED	Yes (red and yellow)
Storage temperature	-40 °C ... +85 °C (-40 °F ... +185 °F)
Sample rate	1 s … 24 h
Measurement modes	• Endless measurement • Start / Stop • Measurement until end of memory • Start with key press
Display	Value, MIN / MAX, until end of memory, alarm on / off
Maximum start delay	72 h
Housing material	Polycarbonate
Certificate	Factory calibration certificate

* Please find the exact technical data of each EBI 310 data logger type on on the next pages.

EBI 310 Multi-Use USB Data Logger
High precision version

Technical Data

Measurement range/operating temperature	-30 °C … +75 °C (-22 °F ... +167 °F) By connecting an external probe, the temperature measurement range can be extended.
Accuracy	± 0.2 °C (-30 °C … +30 °C / -22 °F ... +86 °F) ±0.5 °C for the remaining measurement range
Sensor	PT 1000
Resolution	0.1 °C
Dimensions (L x W x H)	80 x 33 x 14 mm
Protection class	IP 65
Battery	Lithium button cell (CR 2450), 3 V
Battery lifetime	Up to 2 years, depending on applications

Accessories for the EBI 310, EBI 310 TE, EBI 310 TX and EBI 310 TH

EBI 300-WM2   Wall Mount for EBI 300 / 310

EBI 300 WM3 transportation mount for EBI 300/310 made of stainless steel

EBI 310 TE Multi-Use USB Data Logger with external precision temperature probe
Measurement of high and low temperatures

- Simultaneous measurement of core temperature and ambient temperature
- Internal temperature probe usable additionally

Technical Data

Measurement range external temperature	-200℃ … +250℃ (-328 °F ... +482 °F)
Measurement range internal temperature / operating temperature	-30 °C … +75°C (-22 °F ... +167 °F)
Accuracy (internal)	± 0.2 °C (- 30 °C … + 30 °C / -22 °F ... +86 °F) ± 0.5 °C for the remaining measurement range
Accuracy (external)	± 2.0 °C (- 200 °C … -100 °C / -328 °F ... -148 °F) ± 1.0 °C (- 100 °C … -20 °C / -148 °F ...-4 °F) ± 0.2 °C (- 20 °C … + 60 °C / -4 °F ... +160 °F) ± 0.5 °C (+60 °C … + 250 °C / +160 °F ... +482 °F)
Probe	Pt 1000, Stainless steel, Ø 5mm, L = 50mm, blunt
Cable	PTFE, L = 1m, waterproof, oilproof and food safe
Resolution	0.1 °C
Dimensions (L x W x H)	91 x 33 x 14 mm
Protection class	IP 65
Battery	Lithium button cell (CR 2450), 3V
Battery life time	Up to 2 years, depending on applications

EBI 310 TH Multi-Use USB Data Logger with with external humidity and temperatore probe
Relative humidity monitoring in storages and during transports

Technical Data	
Measurement range temperature / operating temperature	-30 °C … +75°C (-22 °F ... +167 °F)
Accuracy (internal)	± 0.2 °C (- 30 °C … + 30 °C / -22 °F ... +86 °F) ± 0.5 °C for the remaining measurement range
Accuracy (external)	± 0.5 °C (0 °C … + 60 °C / +32 °F ... +140 °F) ± 0.8 °C for the remaining measurement range
Probe temperature	Pt 1000
Measurement range humidity	0 % rH … 100 % rH
Accuracy humidity	± 2 %between 10% rH … 90 %rH (at 25 °C / +77 °F) ± 4 % for the remaining measurement range
Probe humidity	capacitive
Resolution temperature	0.1 °C
Resolution humidity	0.1 % rH
Dimensions (L x W x H)	129 x 33 x 14mm
Protection class	IP 20
Battery	Lithium button cell (CR 2450), 3V
Battery life time	Up to 2 years, depending on applications

- Internal temperature probe usable additionally

EBI 310 TX Multi-Use USB Data Logger with temperature-two-channel-adapter
Temperature monitoring in storages and during transport, process monitoring

exchangeable sensors

Technical Data	
Measurement range external temperature	-200°C … + 400°C (-328 °F ... +752 °F), dependent on probe type
Measurement range internal temperature / operating temperature	-30 °C … +75°C (-22 °F ... +167 °F)
Accuracy (internal)	± 0.2 °C (- 30 °C … + 30 °C / -22 °F ... +86 °F) ± 0.5 °C for the remaining measurement range
Probe	Pt 1000
Resolution	0.1 °C
Dimensions (L x W x H)	111 x 33 x 14mm
Protection class	IP 65
Battery	Lithium button cell (CR 2450), 3V
Battery life time	Up to 2 years, depending on applications

- Up to two exchangeable probes can be connected; not included, see the following page
- Internal temperature probe usable additionally

Exchangeable probes for EBI 310 TX

TPX 310-P1

- Measurement range:
  -200 °C ... +200 °C (-328 °F ... +392 °F)
- Needle: L = 45 mm, Ø = 5 mm, blunt
- Cable: PTFE, L = 3 m

Temperature		Accuracy
-200…-100 °C	-328…-148 °F	1.7 °C
-100…-20 °C	-148…-4 °F	1.2 °C
-20…+60 °C	-4…+140 °F	1.0 °C
+60…+200 °C	+140…+392 °F	1.7 °C

TPX 310-P2

- Measurement range:
  -50 °C ... +180 °C (-58 °F ... +356 °F)
- Needle: L = 130 mm, Ø = 3 mm, blunt
- Cable: PTFE, L = 3 m

Temperature		Accuracy
-50…+60 °C	-58…+140 °F	0.6 °C
+60…+180 °C	+140…+356 °F	0.9 °C

TPX 310-P3

- Measurement range:
  -50 °C ... +180 °C (-58 °F ... +356 °F)
- Needle: L = 130 mm, Ø = 3 mm, blunt
- Cable: PTFE, L = 1 m

Temperature		Accuracy
-50…+60 °C	-58…+140 °F	0.5 °C
+60…+180 °C	+140…+356 °F	0.8 °C

TPX 310-P4

- Measurement range:
  +100 °C ... +400 °C (+212 °F ... +752 °F)
- Needle: L = 50 mm, Ø = 1.5 mm, blunt
- Cable: metal wrapped, L = 3 m, not waterproof

Temperature		Accuracy
+100…+250 °C	+212…+482 °F	1.1 °C
+250…+400 °C	+482…+752 °F	1.4 °C

TPX 310-P5

- Measurement range:
  -50 °C ... +180 °C (-58 °F ... +356 °F)
- Probe: L = 130 mm, Ø = 3 mm, blunt
- Cable: PTFE, L = 5 m

Temperature		Accuracy
-50…-20 °C	-58…-4 °F	0.5 °C
-20…+60 °C	-4…+140 °F	0.6 °C
+60…+180 °C	+140…+356 °F	0.8 °C

TPX 310-P6

- Measurement range:
  -50 °C ... +180 °C (-58 °F ... +356 °F)
- Probe: L = 130 mm, Ø = 3 mm, blunt
- Cable: PTFE, L = 7.5 m

Temperature		Accuracy
-50…+60 °C	-58…+140 °F	0.7 °C
+60…+180 °C	+140…+356 °F	1.0 °C

TPX 310-P7

- Measurement range:
  -50 °C ... +180 °C (-58 °F ... +356 °F)
- Probe: L = 130 mm, Ø = 3 mm, blunt
- Cable: PTFE, L = 10 m

Temperature		Accuracy
-50…+60 °C	-58…+140 °F	0.9 °C
+60…+180 °C	+140…+356 °F	1.1 °C

How to order:

Type	Description	Part No.
EBI 330-T30	Single-use USB data logger, **package unit: 10 pieces**	1340- 6332
EBI 300	Standard USB Data Logger	1340-6330
EBI 300 TE	USB Data logger with external temperature probe	1340-6335
TPC 300	Replacement probe for EBI 300 TE	1341-6331
EBI 300 TH	USB Data logger with external humidity probe	1340-6334
TPH 400	Replacement probe for EBI 300 TH	1341-6336
EBI 310	High Precision USB Data Logger	1340-6331
EBI 310 TE	USB Data logger with external precision temperature probe	1340-6337
TPX 220	Replacement probe for EBI 310 TE	1341-6332
EBI 310 TH	USB Data logger with external humidity probe	1340-6336
TPH 500	Replacement probe for EBI 310 TH	1341-6337
EBI 310 TX	USB Data logger with temperature-two-channel-adapter	1340-6339
TPX 310	Replacement adapter for EBI 310 TX	1341-6335
TPX 310-P1	External sensor for EBI 310 TX	1341-6338
TPX 310-P2	External sensor for EBI 310 TX	1341-6339
TPX 310-P3	External sensor for EBI 310 TX	1341-6340
TPX 310-P4	External sensor for EBI 310 TX	1341-6341
TPX 310-P5	External sensor for EBI 310 TX	1341-6342
TPX 310-P6	External sensor for EBI 310 TX	1341-6343
TPX 310-P7	External sensor for EBI 310 TX	1341-6344
EBI 300-WM2	Wall Mount for EBI 300 / 310	1340- 6341
EBI 300 WM3	Transportation mount for EBI 300/310	1340-6344

-ebro-®

/ebrogmbh   /ebro.ingolstadt

GRANDEVER BIOTECHNOLOGY CO., LTD.
大久生物科技股份有限公司
Valuable contribution to the power and science community.
核 心 貢 獻 於 電 機 和 科 學 共 同 體

產品項目
機台開發製作，電路和自動控制配電盤之設計及製作， HMI/PLC 程式設計， 系統規劃， SCADA圖控監控軟體規劃整合設計。關鍵電機元件:INV銨鉉牌變頻器、POD人機介面、PLC可程式控制、SERVO 伺服馬達、MS電磁開關、荷重元、SENSOR酸鹼度/導電度/溶氧量/液(氣)體流量/壓力計。

美國原裝進口專業製藥工業ISO Class5 FDA/USP/EPA美國藥典完全無菌等級滅菌清潔產品:異丙醇/變性乙醇。過乙酸過氧化氫殺孢子劑/預稀釋過氧化氫溶液/酚醛滅菌劑/四級胺滅菌劑/異丙醇拭布。浸泡式鹼性陰子/無泡沫濃縮洗滌劑。檢診手套/口罩/手部殺菌液。

德國無線(有線)溫濕度壓力紀錄器—滅菌確效&冷鏈倉儲溫濕度繪測監控。精密型/工業型電子天平。多功能(吊隱式)空氣清淨機/除濕機/負離子產生機。初效/中效/高效(HEPA)/化學/耐高溫濾網。基因檢測。組織染色試劑

11471 台北市內湖區新明路273巷6號1樓
1F., No.6, Ln. 273, Xinming Rd., Neihu Dist., Taipei City 11471, Taiwan (R.O.C.)
服務專線Tel ：(02)8792-3722
服務傳真Fax：(02)8792-3761
電子信箱Email : info@grandever-biotech.com.tw
公司網址Website: www.grandever-biotech.com.tw