

EXACTUM

Do you trust only your instincts?
Turn on digital.

LOTRIČ | METROLOGY

WE MEASURE. YOU GROW.

AUTOMATICALLY PROTECTS YOUR PROCESSES AND PRODUCTS

Why risk the consequences of unmonitored, inaccurate or incomplete measuring of environmental conditions? The cost of these can easily climb to a few thousand Euros! And why battle with parameter records in several locations and various archives which can take up to 11 % of your time?

Rather use our new and efficient system for automatic control of parameters – EXACTUM.

How does it work?

EXACTUM automatically captures and stores measured values from measuring points equipped with sensors, and in case of excess values, it alerts you to those events. The system is very easy to use.



IQ, OQ, PQ **QUALIFICATIONS** OF THE ENTIRE SYSTEM,
CALIBRATION ACCORDING TO ISO 17025



COMPLIANCE WITH THE GXP, CFR 21 PART 11, EU GMP
ANNEX 11 REQUIREMENTS



ACKNOWLEDGED BY SUPERVISORY INSTITUTIONS

Ensure optimum production processes

Save time and monitor the entire set of parameters affecting your manufacturing processes in an easier way. By using online measurements provided by the EXACTUM Industry system solution, you can monitor the parameters you encounter in your work and ensure good manufacturing practices. Notifications about possible deviations and automatic generation of reports help you streamline your efforts at meeting the strict requirements of quality standards, the Occupational Health and Safety Act and environmental regulations.

Meet the requirements of the standards, such as ISO 22000, HACCP, IFS, BRC Global Standard for Food Safety, NSF etc.



EXACTUM Industry monitors for you:

TEMPERATURE

- in the production process;
- of samples and devices.

TEMPERATURE, RELATIVE HUMIDITY, SPEED AND AIR FLOW, PRESSURE, VOC, CO₂

- in production facilities;
- in measuring rooms;
- in clean rooms.

OTHER CUSTOM PARAMETERS



Ensure optimum work conditions

Save time and monitor the entire set of parameters affecting favourable storage conditions in an easier way. With notifications about possible deviations make sure that from now on you will always act on time thereby contributing to the quality of your products and processes.



EXACTUM Warehouses monitors for you:

TEMPERATURE

- in refrigerators.

TEMPERATURE, RELATIVE HUMIDITY, SPEED AND AIR FLOW, PRESSURE, CO₂

- silos
- galleries
- warehouses

OTHER CUSTOM PARAMETERS

- illumination



Investment in quality

EXACTUM Laboratory for the automatic control of parameters in rooms or in devices ensures efficient and safe execution of procedures, as well as worry-free storage of samples. Automatic recording of measured values in real time, notifications on deviations and automatic generation of reports help you streamline your efforts at meeting the requirements of ISO 9001, ISO/TS 16949, ISO 17020, ISO 17025, ISO13485, ISO 15189 and GLP.



EXACTUM Laboratory monitors for you:

TEMPERATURE, RELATIVE HUMIDITY, PRESSURE, AIR FLOW, CO₂, PH, VOC

OTHER CUSTOM PARAMETERS

- of samples and devices;
 - in laboratories and clean rooms;
 - in measuring rooms.
 - in refrigerators and freezers for storage of samples and reagents;
 - in furnaces, baths and dryers;
 - in autoclaves;
 - in incubators.
- Carbon monoxide



Storage of medicines and vaccines, and well-being

With automatic recording of parameters, you will save the time you use for manual reading of data. By monitoring air quality, you can ensure the comfort of patients, residents, employees and visitors. Reduce the risk of human error and avoid claims. Notifications about deviations, automatic generation of reports and review of past events help you streamline your efforts at setting up an efficient quality control system.



EXACTUM Health Care monitors for you:

TEMPERATURE

- in refrigerators for storage of vaccines and medicines;
- in medical refrigerators for storage of biological samples;
- in sterilisers;
- water for prevention of hospital infections;
- storage of stem cells and blood.

TEMPERATURE, HUMIDITY, SPEED AND AIR FLOW, PRESSURE DIFFERENCE

- in surgery wards;
- in intensive care and therapy departments;
- in hospital laboratories;
- in pharmacies;
- in galenic laboratories;
- in control and analysis rooms;
- in rooms for storage, acceptance and dispensing of medicines and medicinal products;
- in compounding clean rooms.

WELL-BEING IN INDOOR SPACES, OTHER CUSTOM PARAMETERS

- CO₂
- VOC
- illumination



EXACTUM ENABLES



Measurements in real time.



Setting of limit values, alarm delay and alarm recipients.



Text message and/or email notifications.



Access via web browser.



Wireless connection sensors.

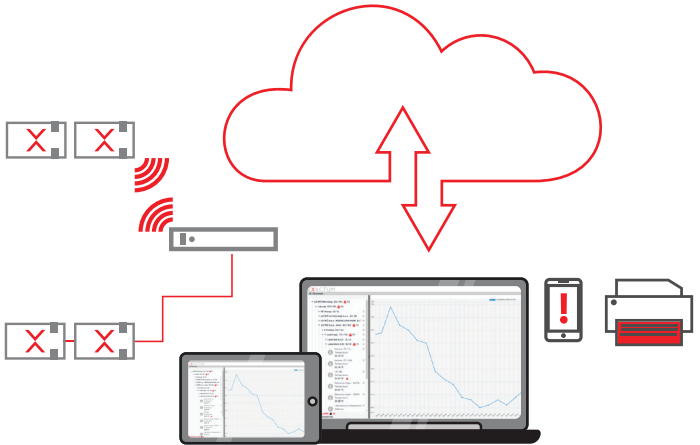


Automatic report exports.



Audit trail.

System operation drawing



To access data, you only need internet access and a smart device, such as, a phone, tablet or laptop. An unlimited number of users can access EXACTUM Cloud, each user with specifically assigned rights to views and personal settings for different locations. Data is protected in accordance with the international standards.

EXACTUM Gateway Cloud



Name	EXACTUM wM-Bus Gateway 6 Cloud
Communication protocol	wM-Bus
Operating conditions	from 15 °C to 25 °C 10 % RH–85 % RH
Application	for indoor use only
Network connection	UTP cable
Power supply	electrical supply
Compliance	EMC

EXACTUM Pt100 Sensor



Name	EXACTUM wM-Bus Pt100 Probe
Communication protocol	wM-Bus
Measurement unit	°C
Measuring range	from -100 °C to 100 °C
Accuracy	up to 0,05 °C
Resolution	0,01 °C
Standard probe cable length	6 m
Power supply	electrical supply

EXACTUM Temperature and Relative Humidity Sensor



Name	EXACTUM wM-Bus T+RH indoor
Communication protocol	wM-Bus
Measurement unit	°C
Measuring range	temperature: from -10 °C to 55 °C relative humidity: from 0 to 100 % RH
Accuracy	up to 0,3 °C up to 2 % RH
Resolution	0,01 °C 0,1 % RH
Power supply	battery
Battery life	up to 10 years

EXACTUM Temperature and Relative Humidity Sensor with Display



Name	EXACTUM wM-Bus T+RH indoor+ Display
Communication protocol	wM-Bus
Measurement unit	°C/RH
Measuring range	temperature: from 0 °C to 50 °C relative humidity: from 0 to 100 % RH
Accuracy	up to 0,2 °C up to 2 % RH
Resolution	0,01 °C 0,1 % RH
Power supply	battery
Battery life	up to 10 years

EXACTUM Outdoor Temperature and Relative Humidity Sensor



Name	EXACTUM wM-Bus T+RH outdoor IP54
Communication protocol	wM-Bus
Measurement unit	°C
Measuring range	from -40 °C to 65 °C from 0 % RH to 100 % RH
Accuracy	up to 0,2 °C up to 2 % RH
Resolution	0,01 °C 0,1 % RH
Power supply	battery
Battery life	up to 14 years
Protection	IP54

EXACTUM Outdoor Temperature Sensor



Name	EXACTUM wM-Bus T outdoor IP66
Communication protocol	wM-Bus
Measurement unit	°C
Measuring range	from -40 °C to 65 °C
Accuracy	up to 0,3 °C
Resolution	0,01 °C
Power supply	battery
Battery life	up to 14 years
Protection	IP66

EXACTUM Well-Being Sensor



Name	EXACTUM wM-Bus CO2+T+RH
Communication protocol	wM-Bus
Measurement unit	ppm/°C/RH
Measuring range	from 0 ppm to 5000 ppm from 0 °C to 55 °C from 0 % RH to 100 % RH
Accuracy	up to 50 ppm up to 0,2 °C up to 2 % RH
Resolution	1 ppm 0,01 °C 0,1 % RH
Power supply	battery
Battery life	up to 16 years

EXACTUM Water Leak Sensor



Name	EXACTUM wM-Bus WATER LEAK
Communication protocol	wM-Bus
Measurement unit	0/1
Standard probe cable length	2 m connecting part + 0.75 m sensor
Power supply	battery
Battery life	up to 14 years

EXACTUM Signal Sensor

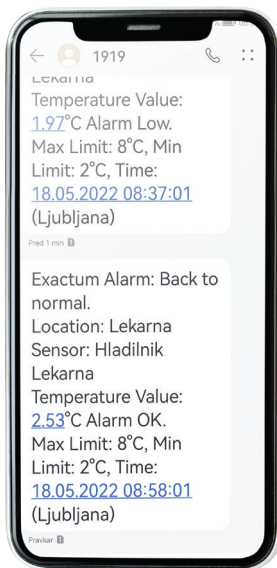


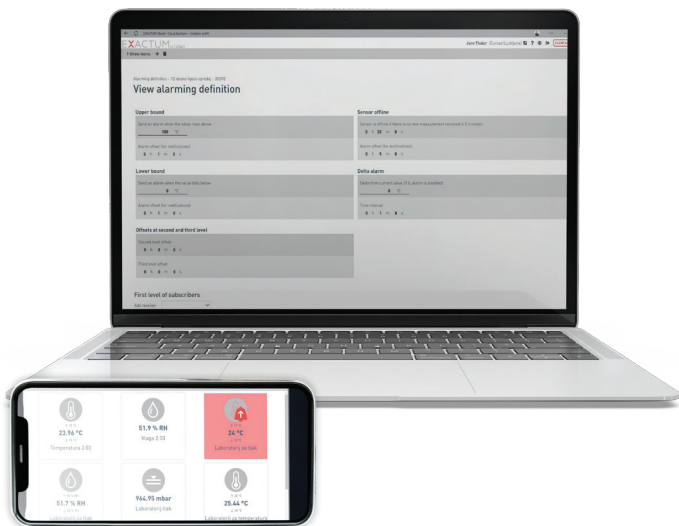
Name	EXACTUM wM-Bus 0/1
Communication protocol	wM-Bus
Measurement unit	0/1
Power supply	battery
Battery life	up to 14 years

For rapid response

Once the measurements exceed the set parameter values, EXACTUM triggers an audible alarm and sends an electronic or text message. This allows you to respond in time and take action quickly.

With additional settings you can determine the importance of the alarm, its delay and the persons responsible.



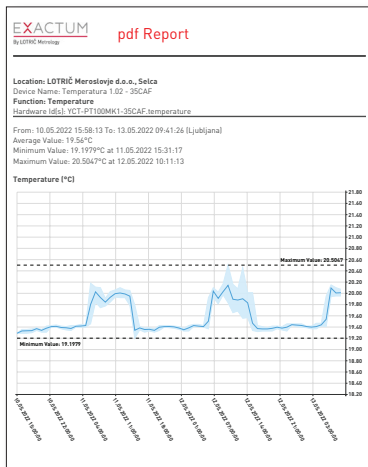


IMMEDIATE WARNING

Manual recording is no longer necessary

Remote control allows you to monitor measurements in real time. The system enables automatic saving, generation of reports, graph drawing, review of measurement and critical event history, which makes manual recording redundant.

All the data captured may be exported to a .pdf or excel form and used for analyses.



WHERE DO WE EXCEED YOUR EXPECTATIONS?



Installation

On the basis of the received information on:

- measurement points,
- adjustable alarm values,
- alarm recipients,

we make sure your system operates as soon as it is installed.



Support

- During installation we also train users.
- Quick remote assistance and on-site assistance.



Adaptability

- Independent organisation of locations, users and their rights.
- Multi-level access and an unlimited number of users.



REFERENCES



»The basic task of the Agency of the Republic of Slovenia for Commodity Reserves is to ensure the supply of food and non-food products that are essential for human life. In order to maintain the quality of stored goods, it is necessary to provide special storage regimes and manage environmental conditions. The EXACTUM® system solution makes this possible. Over 600 sensors provide central control over eight dislocated locations within the Agency, making it the largest system of its kind in Slovenia. In addition to central monitoring, the system enables the administrators of individual locations to have a detailed overview of measurements and set alarms for each location according to their needs.«

Tomi Rumpf, Director
Agency of the Republic of Slovenia for Commodity Reserves

TRY IT YOURSELF

Get a free **Demo EXACTUM Cloud** and check its functionalities by yourself.

The demo package includes a base station, which communicates with sensors wirelessly. You can select up to 5 sensors, according to the intended use (freezer/refrigerator/room).

More on www.lotric.si/en



LOTRIČ Metrology Ltd.
Selca 163
SI-4227 Selca
Slovenia, EU

T: +386 4 517 07 00
E: info@lotric.si
W: www.lotric.si/en