Loggicar C

Transport temperature and humidity logger.

OPERATING MANUAL v4.3

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1. Introduction.

LOGGICAR-C was designed for the purposes of monitoring parameters, such as temperature and humidity of products transported in refrigerated trucks – according to the *Commission Regulation (EC) No. 37/2005.*

Reading this manual will increase your satisfaction with the reliable operation, low cost and safe use of the product.

2. Operation description.

The logger has 4 measurement channels to connect temperature or temperature and humidity sensors and 4 digital channels to connect door opening sensors. The device provides full control over the refrigerated truck.

The logger is equipped with a report printer in order to print out a delivery report for the customer or control authorities.

The memory of the logger (non-volatile) enables storing ca. 32000 measurements. When the memory is full, older results are deleted to make space for newer ones (overwriting).

The contents of the memory can be downloaded and archived using the Loggisoft LC software (optional).

Breakdown of memory capacity depending on logging frequency is included in par. 3 TECHNICAL SPECIFICATIONS below.

The built-in OLED screen provides for easy operation and local display of measurements.

The software of the logger enables setting alert thresholds (lower/upper threshold) – if these values are exceeded, the display will blink and the event will be shown on the printed report.

Printing paper is the only operational cost generated by the logger.

3. Technical specifications.

Overall dimensions	105 x 75 x 45 mm	
Weight	0.5 kg	
Protection rating	IP 21	
Power supply*	12-24 V	From the lighter port
Battery power supply	7.4V; 1500mAh	Li-Ion battery
Battery life	24 hours	Without printing
Logger memory**	98000 samples	
Logging frequency	1-180 min.	
Printer	thermal	
Printing paper	Fi=30 mm L=56 mm	
Measurement channels	4	For temperature and humidity sensors
Digital channels	4	For door opening sensors

** - In the case of connecting the logger directly to the car battery, an internal power supply unit, cat. no. C228 made by MIKSTER is required.*

*** - Example of memory capacity depending on logging (sampling) frequency.*

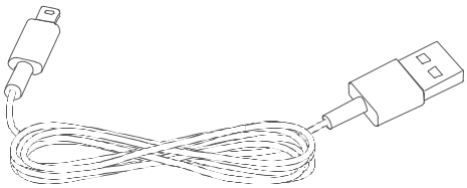
Breakdown of logged data, depending on sampling frequency.

Sampling frequency	Logging days
5 min	340
10 min	680
15 min	1020
30 min	2041

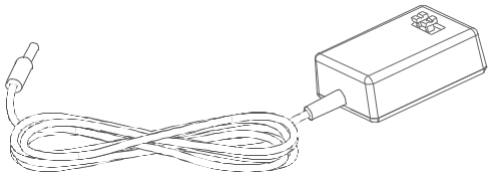
4. Loggicar – C package contents.

Loggicar-C logger.

USB/mini USB cable: For PC connection
to download recorded data (using the LOGGISOFT LC software).

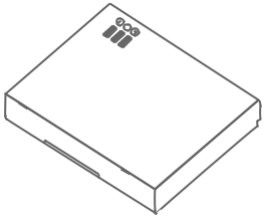


LCE-01 sensors connection cable: For connecting sensors to the logger.

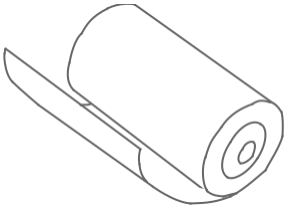


LLC-01 car charger: Input voltage - 12V-24V DC, output voltage - 9V DC

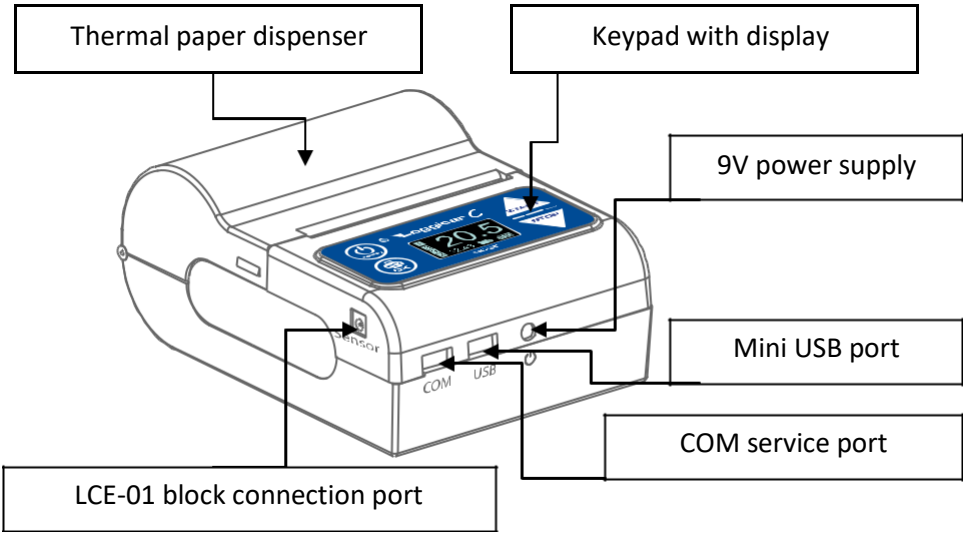
Battery: Li-ion 7.4V / 1500mAh.



Thermal paper: width 56mm, diameter 30 mm.



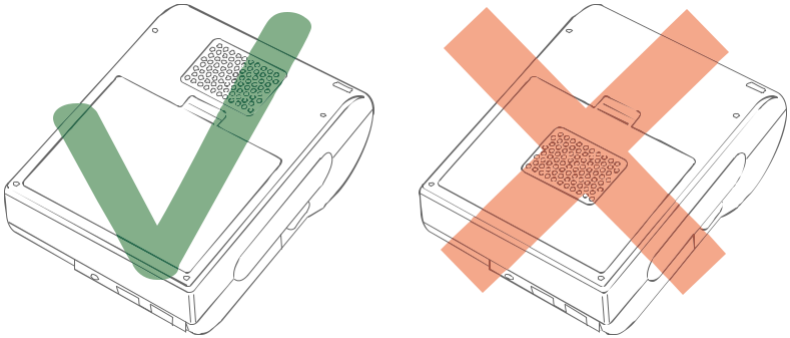
5. Logger construction.



6. Logger installation

The Loggicar – C logger is a mobile device, therefore a specific mounting point is not specified. The user should install the logger in such a way as to enable safe operation of the vehicle and the logger during driving and parking. An industrial hook-and-loop fastener is provided with the logger. The fastener does not guarantee stable and permanent installation of the device on the vehicle, it only prevent movement. The strength holding down the logger depends on the cleanness of the surface, its type and installation accuracy. If the logger does not seem appropriately fixed, it should be installed in a different place. The logger can be installed in car holders for mobile devices.

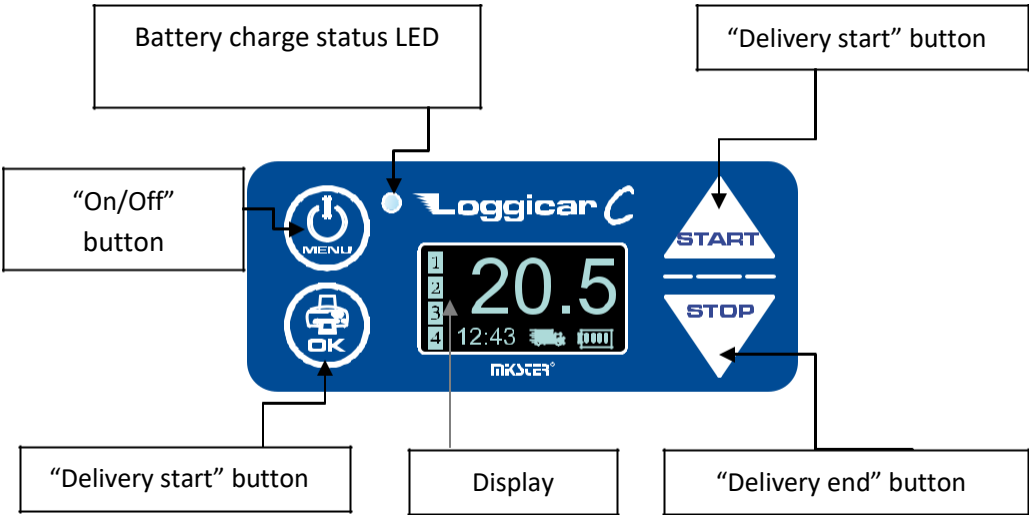
Recommended location for the industrial fastener



NOTE!

The hook-and-loop fastener should not be stuck on the battery cover – this may result in the cover falling off and unwanted movement of the logger.

7. Keypad with display



Note!

The buttons have the following additional functions.

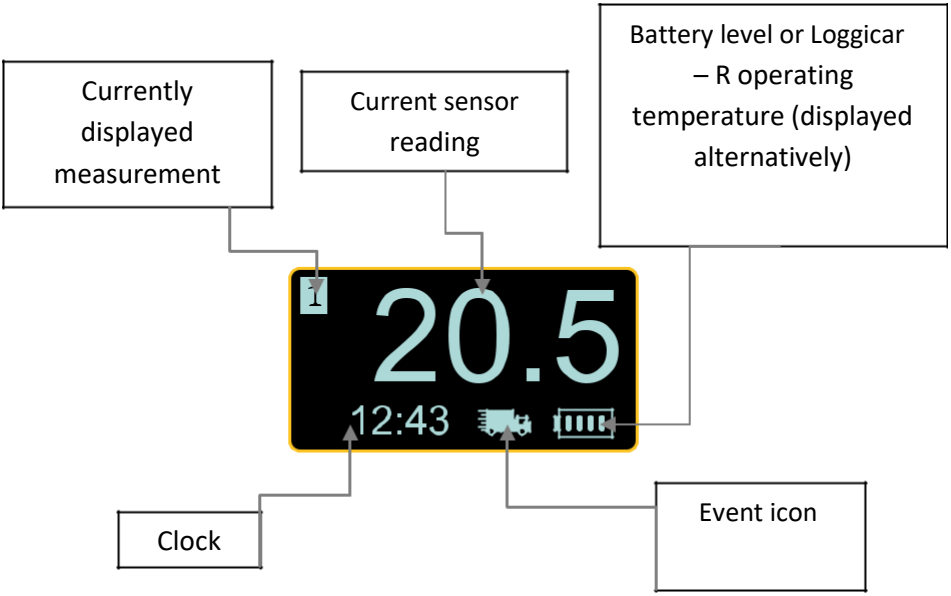
- Open system menu, back to previous function

- confirm selection

- increase the value, move the cursor “up”

- decrease the value, move the cursor “down”

8. Display.

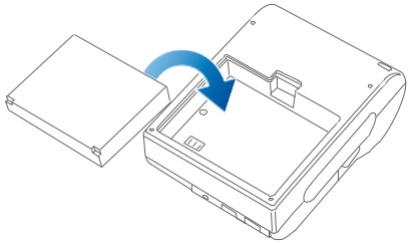


Even icons:

Icon	Description
	Out of paper
	Delivery
	Alarm
	Battery status

9. First installation.

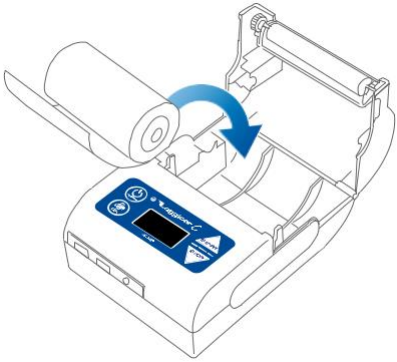
- Insert the battery into the logger



Note!

First charging is recommended to last until the green LED lights up on the device keypad. The red LED informs you that the battery is charging. In order to maintain the best battery life, do not completely discharge the battery.

- Insert the thermal paper into the dispenser.

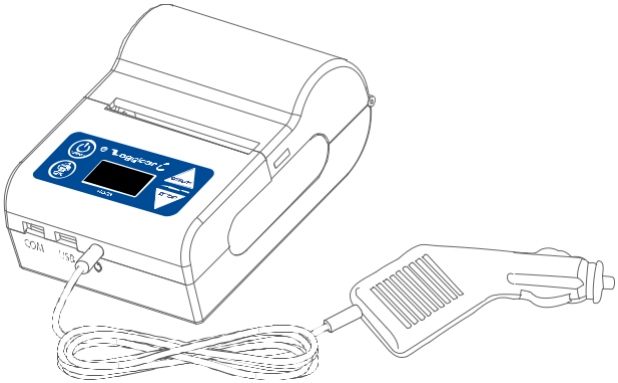


Note!

Thermal paper can only be printed on one side. If the print is not visible, turn the paper roll around.

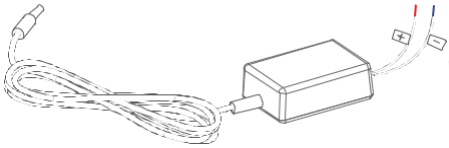
- Connect the logger to power supply

The LCC-01 car charger connected to the car lighter port is typically use for power supply.

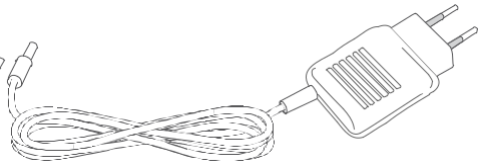


There is an option to use the vehicle electrical wiring for power supply by using the **LCPS-01** power supply unit

or the **LCWPS-01** wall plug charger.



LCPS-01 power supply unit



LCWPS-01 wall plug charger

The LCPS-01 and the LCC-02 charger can be purchased separately.

Switch on the logger by pressing

.

After the display lights up, set up the logger by selecting basic system parameters, such as language, date and time.

Follow the instructions and drawings below.

Use the

buttons to select system language.

Confirm by pressing

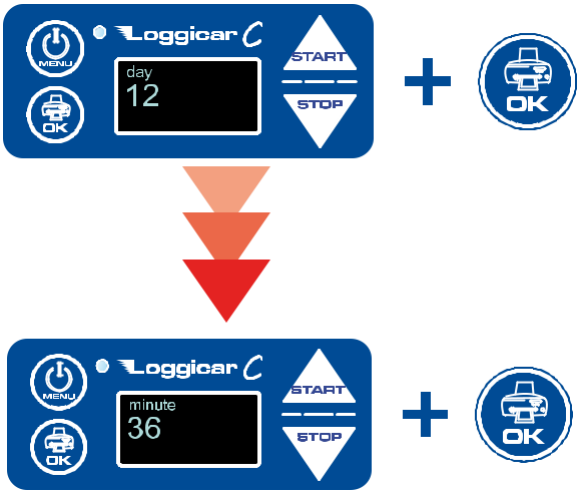
.

Use the

buttons to set the day, month, year, hour and minute of the system clock.

Confirm each selection by pressing

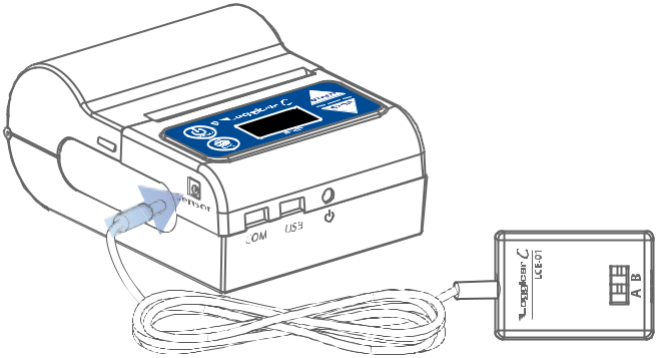
.



Note!
After these settings, the logger is ready for connecting the sensors.

10. Connecting the measurement sensors.

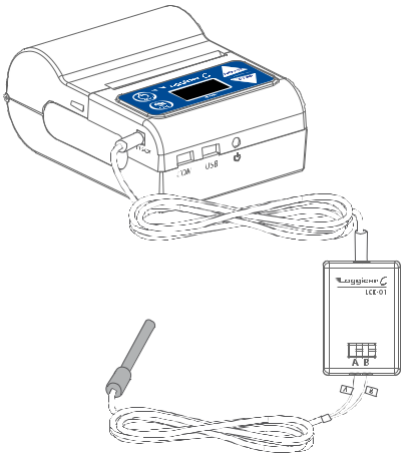
Connect the temperature sensor cable to the port in the logger enclosure.



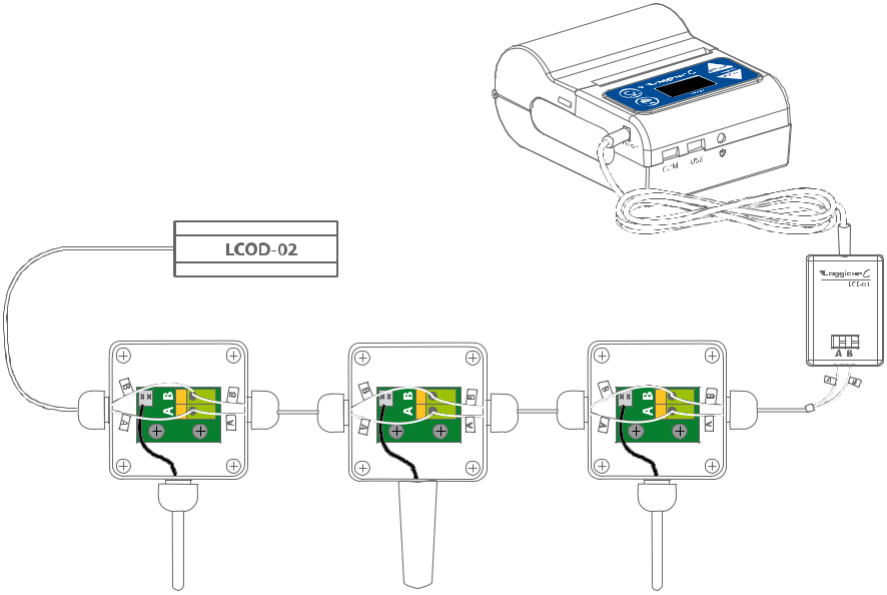
Make the following connections, depending on the type of the sensors.

Note!
Connect leads marked with A to the port with a similar A marking – connect the B lead in a similar fashion.

LCT-01 sensor connection method.



LCT (H)-02 sensors connection method.



Note!

In order for the device to recognise the sensors, add the sensors to the list of logged in sensors – see par. 11.

Installation notes.

The measurement element of the sensors should be installed in the cargo section of the vehicle in such a way as to limit the unwanted effects of the external factors on the accuracy of the measurement. In case of a one sensor layout, install the sensor in the 2/3 of the length of the cargo section, from the driver's cab. In the case of a two sensor layout, install the sensors in the 1/3 and 2/3 of the cargo section.

Suggested mounting height form the floor: 1.5 m.

Allow at least 50 cm distance from the internal light source.

11. Adding (logging in) sensors Loggicar C

In case only one temperature or temperature and humidity sensor is connected to the device, the logger automatically adds the sensor to the list.

In case more sensors are connected to the logger, add sensors manually by following the procedure and drawings below.

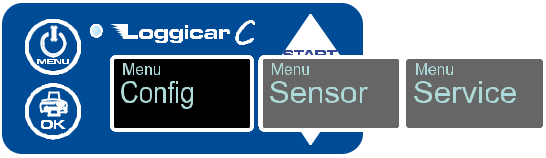
Selection:

Press

.

Use the

buttons to select the SENSOR menu.

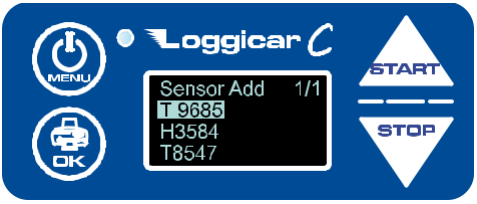


Confirm by pressing

.

Use the

buttons to select the number of the sensor to be logged in.



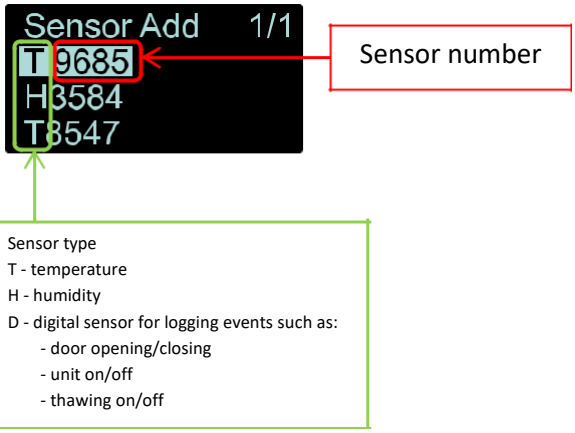
Confirm by pressing

.

Note!

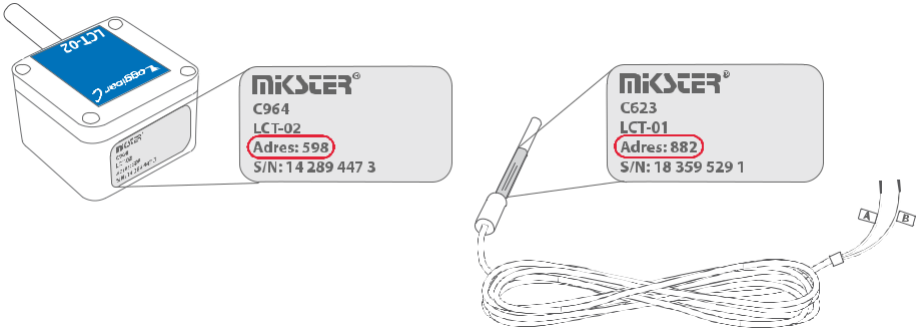
If you cannot find the number of the sensor you wish to log in on the list, check the connection of the sensors – see par. 10.

Description of sensor markings.



Note!

Sensor number is provided on its enclosure.



After following this procedure, the sensor is ready for use.

12. Logger setting (configuration).

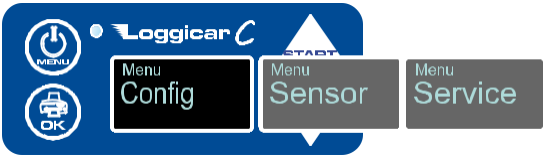
12.1 Date and time

Selection: Press

.

Use the

buttons to select the SETTINGS menu.



Confirm by pressing

.

Use the

buttons to select the TIME menu.

Confirm by pressing

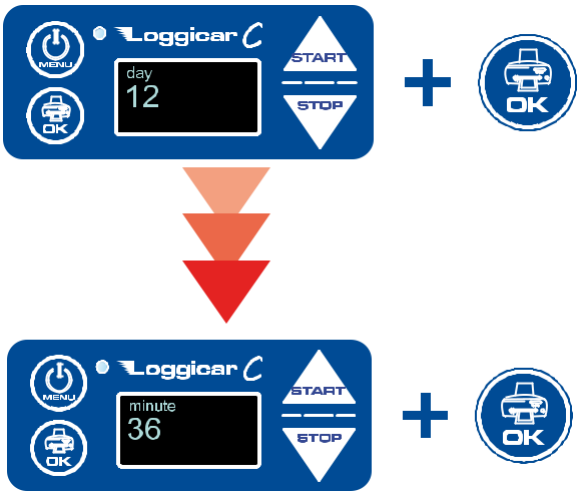
.

Use the

buttons to set the day, month, year, hour and minute of the system clock.

Confirm each selection by pressing

.



12.2 Logging frequency (SAMPLE)

Data logging in the device is carried out by regular storing of measured values in the non-volatile memory.

The period between each of the measurements is called the sampling frequency – SAMPLE.

In practice, the sampling frequency depends on the transport time and is usually in the range of 5–60 minutes.

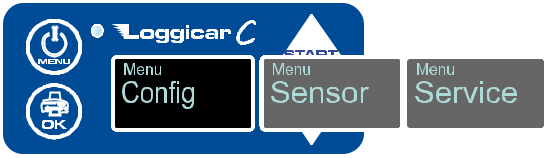
Selection:

Press

.

Use the

buttons to select the SETTINGS menu.



Confirm by pressing .

Use the buttons to select SAMPLE.

Confirm by pressing .

Use the buttons to set the sampling frequency.

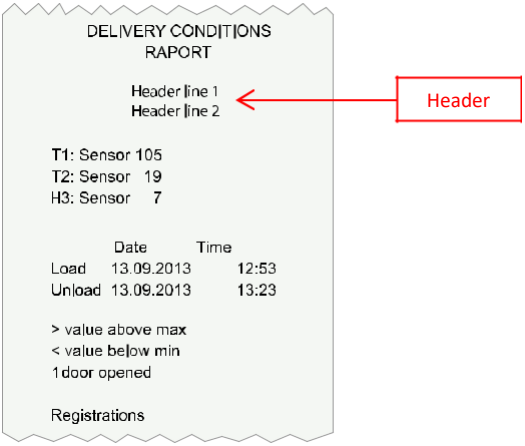
Confirm by pressing .

12.3 Header

The header is the text on top of the printout, usually containing information about the user, such as company name and vehicle registration number. The maximum length of the header is two lines of 32 characters each.

Note!

Due to the size of the display, the text is entered in four lines of 16 characters.

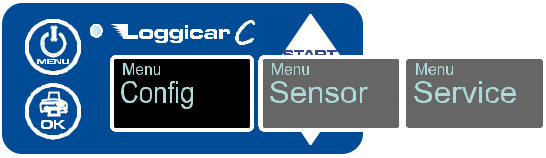


Selection:

Press

Use the

buttons to select the SETTINGS menu.



Confirm by pressing

.

Use the

buttons to select HEADER.

Confirm by pressing

.

Use the

buttons to enter the header text.

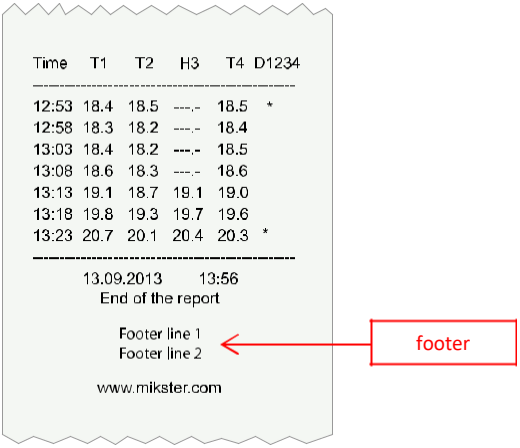
Confirm each letter by pressing

.

IMPORTANT: After entering the whole header text, press and hold for 2 seconds. The header will be stored in the memory.

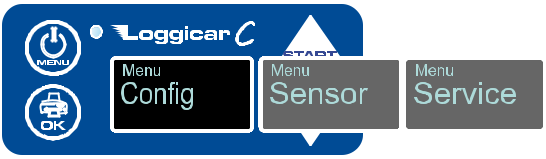
12.4 Footer

The footer is the text at the end on the printout. The maximum length of the header is two lines of 16 characters each.



Selection: Press

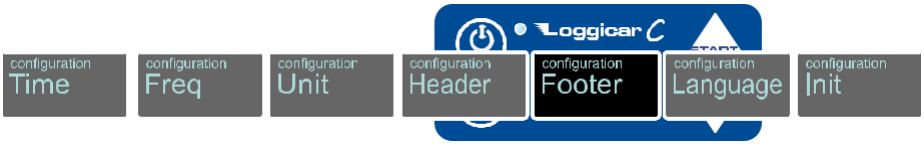
Use the buttons to select the SETTINGS menu.



Confirm by pressing .

Use the

buttons to select HEADER.



Confirm by pressing

.

Use the

buttons to enter the footer text.

Confirm each letter by pressing

.

IMPORTANT: After entering the whole footer text, press

and hold for 2 seconds. The footer will be stored in the memory.

12.5 System language

The LOGGICAR-C logger has several menu languages. The user can select the system language setting.

Note!
The logger is set to the default language – English. The number of languages may be different, depending on the firmware version.

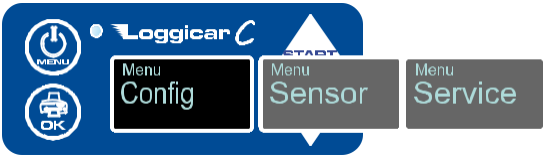
Selection:

Press

.

Use the

buttons to select the SETTINGS menu.



Confirm by pressing

.

Use the

buttons to select the LANGUAGE menu.

Confirm by pressing

.

Use the

buttons to select the system language.

Confirm by pressing .

12.6 Initialization

NOTE!

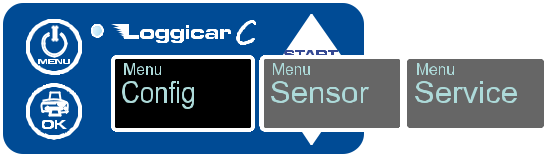
The initialization of the logger deletes all recorded data and sets all configuration values to default. Starting the initialization procedure is protected by code (default code: 02010).

It is recommended to change the code to prevent unauthorised users from deleting data from the logger. Initialization does not reset the system clock.

Selection:

Press .

Use the buttons to select the SETTINGS menu.



Confirm by pressing .

Use the

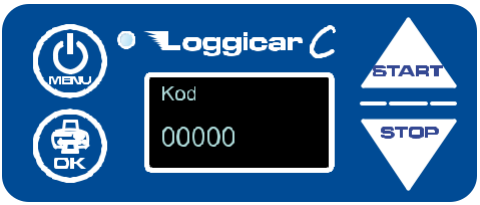
buttons to select INITIALIZATION.

Confirm by pressing

.

Use the

buttons to enter the security code.



Confirm each of the numbers by pressing

.

After entering the code, press

and hold for 2 seconds.

If the security code is correct, the memory of the logger will be irreversibly wiped and default settings will be restored.

13. Sensor configuration.

13.1 Adding (logging in) sensors

See paragraph 11.

13.2 Deleting sensors

This function enables the user to delete a sensor from the logged in sensors list.

Selection:

Press

.

Use the

buttons to select the SENSOR menu.

Confirm by pressing

.

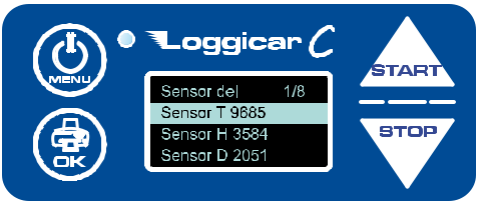
Use the

buttons to select DELETE.

Confirm by pressing

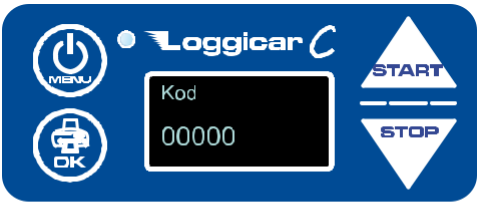
.

Use the buttons to select the number of the sensor to be deleted (logged out).



Confirm by pressing .

Use the buttons to enter the security code.



Confirm each of the numbers by pressing .

After entering the code, press and hold for 2 seconds.

If the security code is correct, the sensor will be deleted from the list. Default code: 01234.

13.3 Logged in sensors list

This function displays the list of logged in sensors.

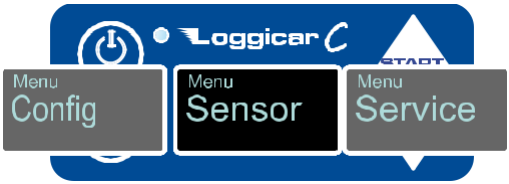
Selection:

Press

.

Use the

buttons to select the SENSOR menu.



Confirm by pressing

.

Use the

buttons to select LIST.

Confirm by pressing

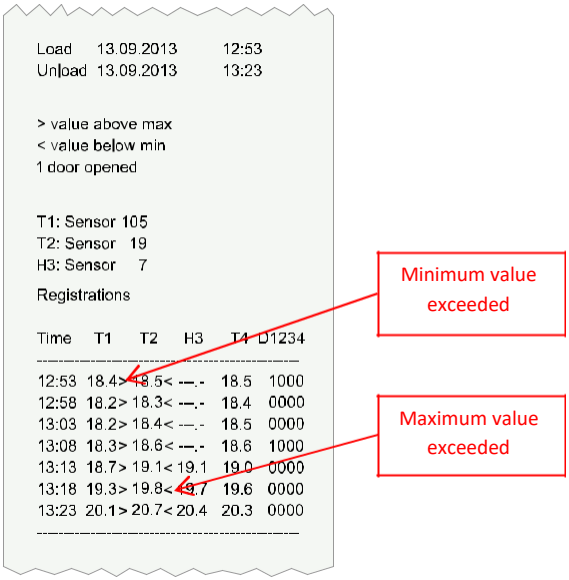
.Use the

buttons to display the list of logged in sensors.

13.4 Setting alarm thresholds

A minimum and maximum value can be set for each of the logged in sensors. Exceeding the value will result in flashing of the display (alarm). Newer logger models also emit an acoustic signal.

Exceeding the threshold values is logged in the memory and marked on the printout.



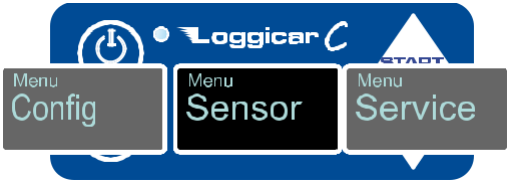
Selection:

Press

.

Use the

buttons to select the SENSOR menu.



Confirm by pressing

.

Use the

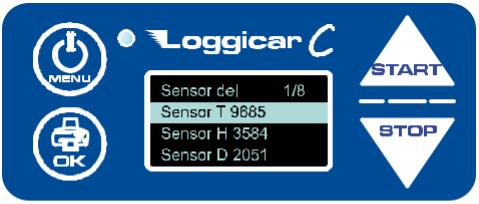
buttons to select ALARM.

Confirm by pressing

.

Use the

buttons to select the sensor for which the alarm should be defined.

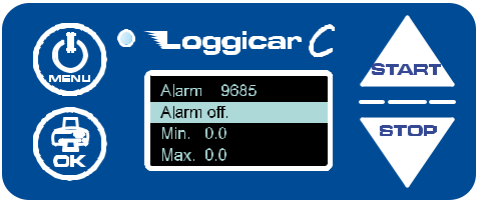


Confirm by pressing

.

Use the

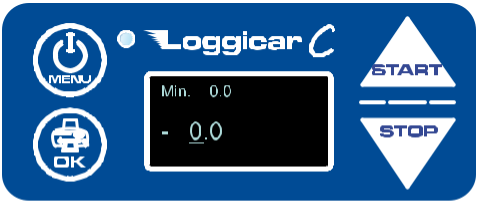
buttons to select the parameter. On/off, maximum alarm value, minimum alarm value.



Confirm by pressing .

Note! When editing the On/off field, each pressing of the button will switch the alarm on or off.

When editing the Min and Max fields, the parameter setting screen is displayed.



Use the buttons to enter the parameter value.

Confirm each of the numbers by pressing .

After entering the value, press and hold for 2 seconds.

Note!

In order to enter the minus sign, set the cursor in the first position from the left and press ***.***

13.5 Sensor labels (Sensor name)

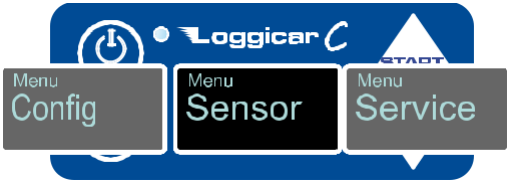
In order to make the identification of the logged in sensors easier, there is a possibility of naming the sensors with 16-character labels.

Selection:

Press

Use the

buttons to select the SENSOR menu.

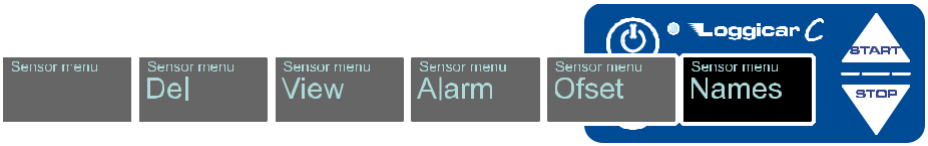


Confirm by pressing

.

Use the

buttons to select NAME

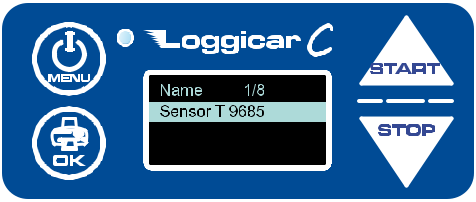


Confirm by pressing

.

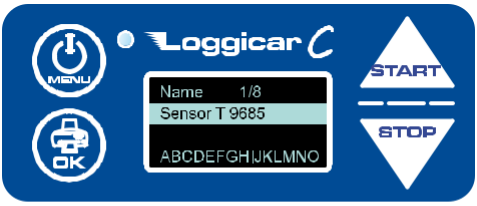
Use the

buttons to select the sensor for which the name should be defined.



Confirm by pressing .

Use the buttons to enter the name.



Confirm each letter by pressing .

After entering the name, press and hold for 2 seconds. The name will be stored in the memory.

14. Printouts

One of the basic features of the LOGGICAR-C logger is printing out reports with recorded data.

The user can select the following types of reports:

- delivery report

- “date to date” period report

- device configuration report

14.1 Latest delivery report

Printing out the report from the last delivery is a quick form of reporting during of after the delivery.

The procedure of starting ad ending the deliveries is described in paragraph 10.

If the delivery is completed, the report will include all data from the loading to the completion of delivery.

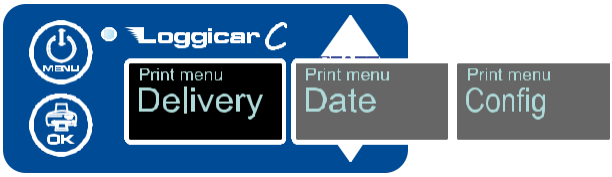
If the printout is required during the delivery, it will include the data from the loading to the current time.

Selection:

Press

Use the

buttons to select the DELIVERIES menu.



Confirm by pressing

.

Use the

buttons to select LATEST

Confirm by pressing

.

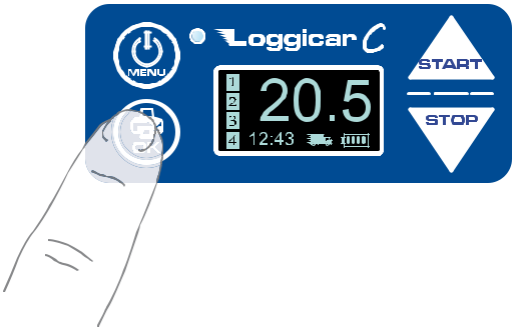
If there are any deliveries stored in the memory of the device, the report will be printed.

14.2 Delivery report from list

Printing the report from the list of deliveries enables the user to select any delivery recorded in the memory of the logger.

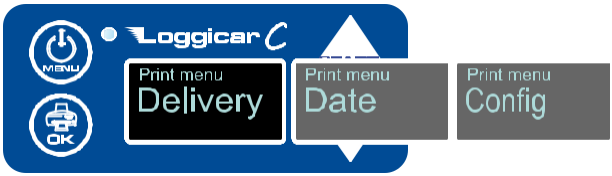
Selection:

Press



Use the

buttons to select the DELIVERIES menu.



Confirm by pressing

.

Use the

buttons to select LIST.

Confirm by pressing

.

Use the

buttons to select the delivery start date from the list.

Confirm by pressing

.

14.3 “Date to date” period report

Note! The LOGGICAR-C logger records data from the moment of logging in the sensors, regardless of starting the delivery.

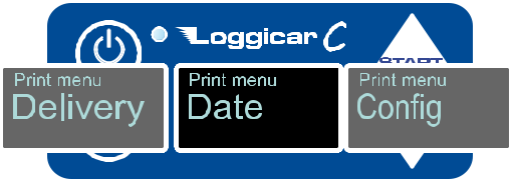
The DATE printing option prints out a date to date report.

Selection:

Press

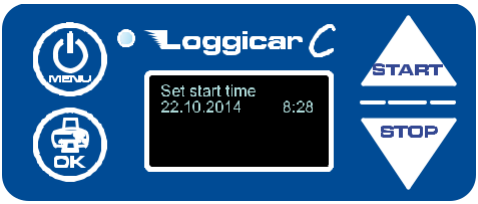
Use the

buttons to select the DATE menu.



Confirm by pressing .

Use the buttons to enter the start date and time for the report.



Confirm each of the numbers by pressing .

Confirm further by pressing and holding for 2 minutes.

Do the same for the end date and time.

If the logger recorded any deliveries in the given period, it will print out the report.

14.4 Settings report

The Settings report option enables the user to print out the configuration of the logger.

Selection:

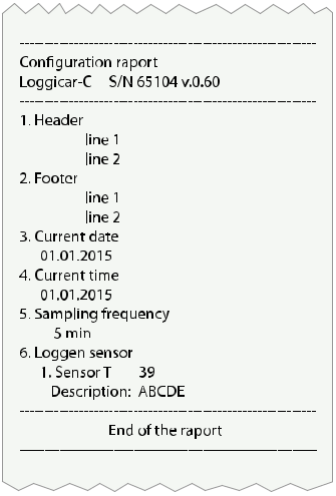
Press

Use the

buttons to select the SETTINGS menu.

Confirm by pressing

.



15. Delivery logging

The “delivery” means the transport process from loading to unloading.

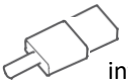
In order to mark the start of delivery, press

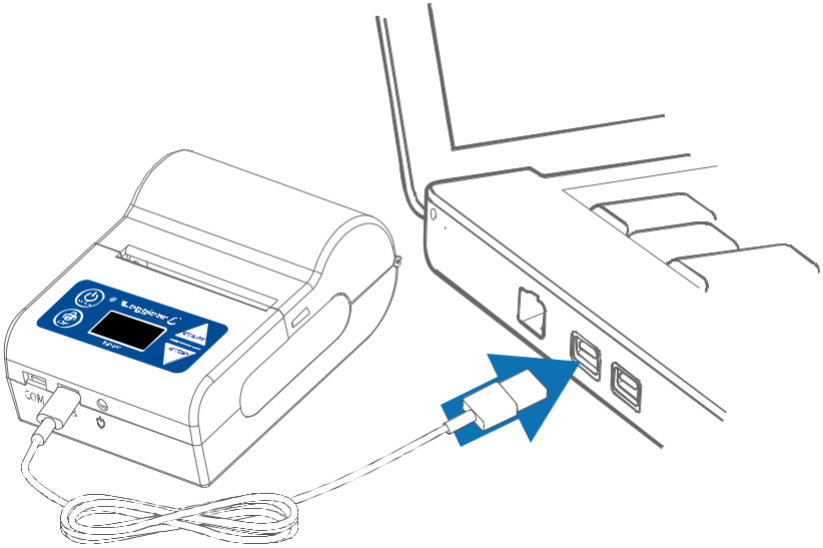
.

In order to mark the end of delivery, press .

If the logger is in the delivery mode, the following icon will be shown on the display.

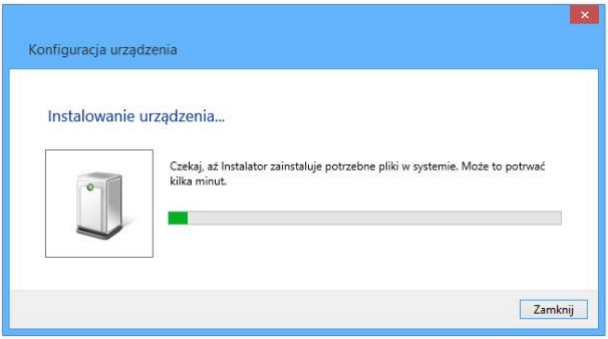
16. Connecting the Loggicar-C logger to a computer

In order to connect the logger to a computer, use a USB/mini USB cable. Insert the USB plug  into a free USB port of a PC computer and insert the miniUSB plug to the USB port in the logger.



Switch on the Loggicar-C logger after connecting the cable.

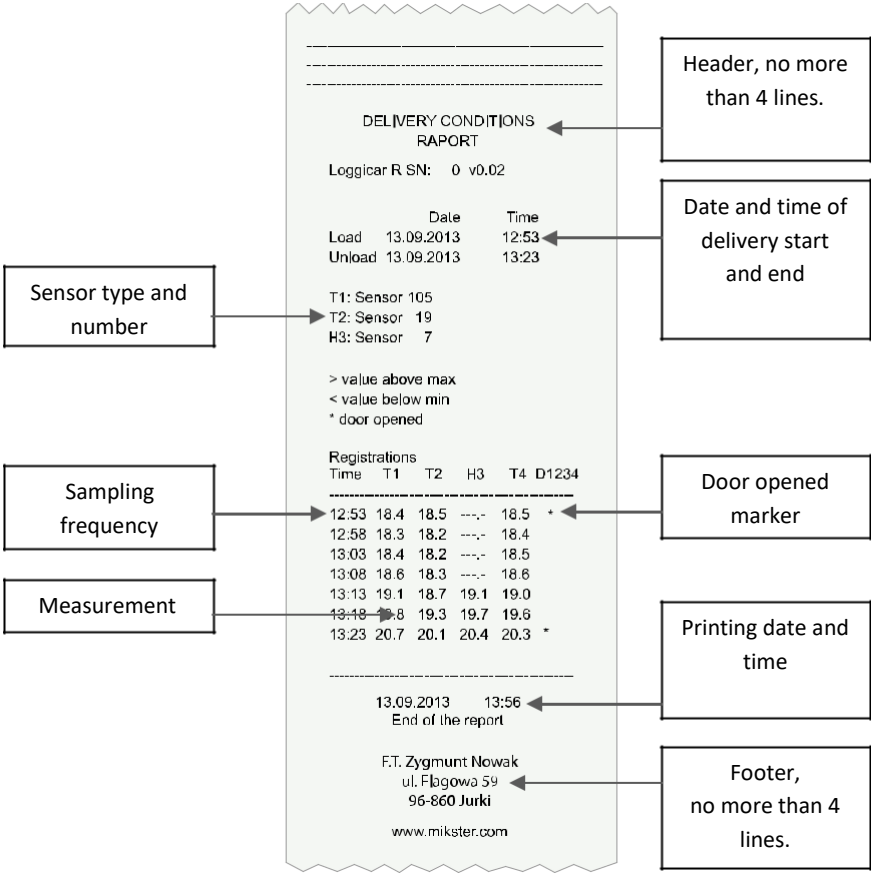
The computer will install drivers required for correct operation of the logger.



If the computer cannot find the drivers, download it from www.mikster.pl, section: software tools.

17. Printout description

Printout:



Deliveries: The delivery menu enables the user To print the last delivery or select it from the list (previous deliveries).

Date: There is also a possibility to print by date – input the start and end time and select a delivery completed within the time frame.

18. Reservations and notes

- The LOGGICAR logger is a professional device and should be used according to its intended purpose

- do not use a device with visible mechanical damage, such as broken enclosure, damaged wire insulation, broken ports, etc.

19. Copyrights

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20. EC Declaration of Conformity

EC Declaration of Conformity

nr **09/14**

The undersigned, representing the manufacturer stated below

Manufacturer	MIKSTER Sp. z o.o.
Address	ul. .Wojkowicka 21, 41-250 Czeladź POLAND

or the representative mentioned below, designated in the Community (or EEA) (if necessary), authorised by the manufacturer

Authorised representative	
Address	

hereby declares that the product

product identification:

Loggicar-C

complies with the provisions of the following EC directive(s) (as amended and supplemented)

Directive (document) number	title
89/336/EWG **91/263/EWG** changes **92/31/EWG** **93/68/EWG**	Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Members States relating to electromagnetic comatibility

and that norms and/or technical documentation listed on the reverse side have been applied.
The two last digits of the year when the CE mark was affixed _
(if the conformity with the low voltage directive 73/23/EEC is declared):

Place Czeladź

date 05.11.2014

WICEPREZES ZARZĄDU
Zbigniew Ponitka
signature

(name and function of the signor authorised to represent the manufacturer or of the authorised representative)

EC Declaration of Conformity

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Norms and/or technical documentation or their parts applied to the product which this declaration of conformity applies to:

- harmonised norms

No	Norm number	Title
1.	PN-92 / E-08106	Degrees of protection provided by enclosures (IP code)
2.	PN-EN 50082-2:1997	Electromagnetic compatibility (EMC). General requirements for the resistance to disturbances. Industrial environment
3.	PN-EN 61000-4-5:1999	Electromagnetic compatibility (EMC). Testing and measurement techniques. Surge immunity test. Basic EMC publication
4.	PN-EN 61000-4-4: 1999	Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrical fast transient/burst immunity test. Basic EMC publication
5.	PN-EN 61000-4-2: 1999	Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrostatic discharge immunity test. Basic EMC publication
6.	EN 61000-4-11: 1997	Electromagnetic compatibility (EMC) Testing and measurement techniques. Immunity tests against voltage dips, short interruptions and voltage variations
7.	PN-EN 61000-4-8:1998	Electromagnetic compatibility (EMC). Testing and measurement techniques. Power frequency magnetic field immunity test.
8.	PN-EN 12830:2002	Temperature recorders for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream. Tests, performance, suitability

- other norms and/or technical documentation

No	Title
9.	Instructions manual

- Other technical solutions, details that have been included in the technical documentation

.....

.....

- Other documents or information required under the relevant EC directive(s):

.....

Verification certificate

Calibration certificate. - made upon order

(1)Complete if you refer to parts or chapters of a norm or technical documentation.