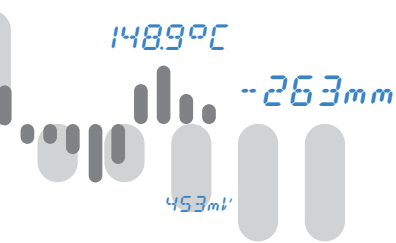
USER GUIDE



OMR 700

PAPERLESS RECORDER

orbit merret

Outstanding Measurement Value

SAFETY INSTRUCTIONS

Please read carefully the enclosed safety instructions and observe them!

Installation, all operational interventions, maintenance and service must be performed by a qualified personnel and in accordance with the attached information and safety regulations. The manufacturer is not liable for damage caused by improper installation, configuration, maintenance, and service.

The recorder must be installed according to the respective application. Incorrect installation can cause a malfunction, which can result in damage or accident.

The recorder uses dangerous voltages that can cause a fatal accident. Before you start solving problems (e.g. in case of failure or disassembly), the device must be disconnected from the power supply. For safety information the EN 61 010-1 + A2 standard must be observed.

When removing or inserting a card, observe the safety instructions and follow the recommended procedure. During any intervention the recorder must be disconnected from the power supply.

Do not attempt to repair or modify the device. A defective recorder must be sent for repair to the manufacturer.

These devices should be safeguarded by isolated or common fuses (breakers)!

The recorder is not designed for installation in potentially explosive surroundings (Ex). Use it only outside potentially explosive surroundings.

TECHNICAL DATA

Paperless recorders of the OMR 700 series conform to the Europen regulations 2014/30/EU and 2014/30/EU.
They are up to the following European and Czech standards:
EN 61010-1, Electrical safety
EN 61326-1, Electronic measuring, control and laboratory devices - Requirements for EMC „Industrial use“
Seismic capacity:
IEC 980: 1993, art. 6

The recorders are applicable for unlimited use in agricultural and industrial areas

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2.1 DESCRIPTION

Paperless recorder OMR 700

This recorder is intended for technologies and workings, where it is needed to display and/or record a number of electrical and nonelectrical values at one place. Universality, versatility and in particular good value for money predestine the recorder to fulfil most of your demanding needs including the IP64 front panel cover.

Our paperless recorder has been developed with versatility and intuitive control in mind. Thanks to its modularity the user can insert input or output cards into any of the 8 existing slots. Maximal configuration of the recorder thus allows to measure and record up to 96 inputs. In order to increase reliability, the recorder has two systems - primary and backup.

Always on board are digital control iputs and outputs, serial line

RS 485, Ethernet 10/100, USB connector as well as a 512 MB internal memory to record the measured data.

Projection

Color 5,7“ TFT display with fine resolution dominates the device. The display is multi-touch and it therefore allows an ease of use.

Control

The recorder is controlled by both the touch screen and the push buttons with adjustable functions, positioned underneath a sliding front door. Two LEDs indicate run/error and the state of data recording.

Setting

All functions and settings can be performed directly on the instrument´s display in a clear graphical menu.

Data recording

The OMR 700 can record measured data from any of its active inputs, nodes and mathematical functions.Data are stored in the internal 512 MB memory with compression that allows up to four-fold increase in its physical memory without slowing down. Data can also be stored on an external SD card or USB flash drive. In case of a limited number of measuring inputs, measurement data can be stored with a period of up to 1 ms.

The records can be either in BIN or „CVS“ format. However, the latter is much more demanding on memory.

Recording speed according to number of channels / memory space

Recording speed	16 inputs	48 inputs	80 inputs	96 inputs
1 ms	2 hours	x	x	x
10 ms	20 hours	7,5 hours	x	x
1 s	2,5 months	1 months	16 days	13 days
1 min	13 years	5 years	2,5 years	2,2 years
10 min	132 years	52 years	26 years	22 years

Modules

The development of the device has been performed with an increased emphasis on technical solutions and universality. Card design not only allows their use in any position of the recorder, but also their additional insertion into vacant slots. Thus, if new requirements to increase the number or Typee of inputs and outputs occur in the course of using the recorder, just order yesther card and insert it into a vacant slot. In this way the instrument can „grow“ in compliance with your requirements.

All analogue modules are fully isolated from the internal bus, and some cards have galvanic isolation even between individual channels.

Basic version of the recorder includes power supply module and communication module with Ethernet 10/100, RS 485 (MODBUS), five digital inputs and two digital outputs.

The files on the DVD

Manuals	
Recorder_Manual_2.0.2_en	User Manual - EN
Manual_OMR700_2018_2v0_en	User Guide - EN
Software	
Recorder	PC Programme for Remote Viewing of Measurements in Real Time
OMRViewer	Recorded Data Viewer for OMR700

and current data sheets

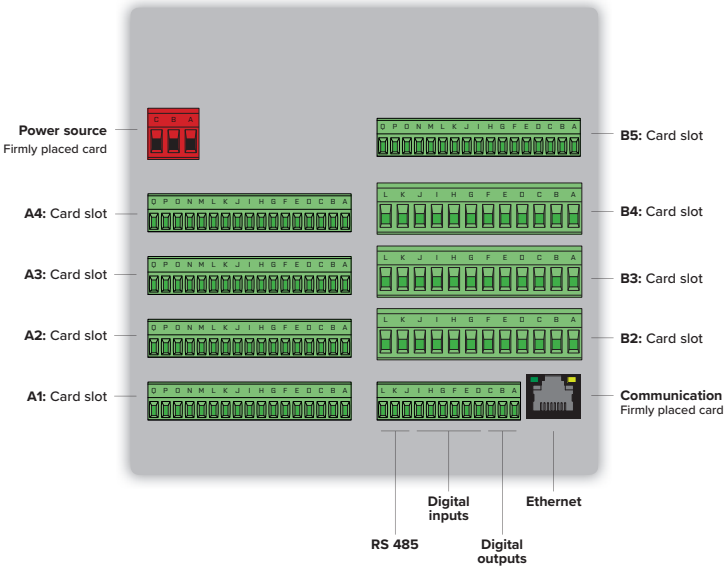
3. CONNECTION OF THE INSTRUMENT

Supply lines of the instrument should not be situated in proximity of the incoming low-voltage signals.

Contactors, motors with larger input power and other power elements should not be situated close to the recorder.

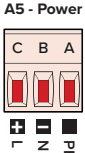
Supply lines to the instrument input (measured quantity) should be situated at a sufficient distance from all power lines and appliances. If this can not be secured, it is necessary to use shielded leads with connection to the ground (terminal E).

The devices are tested according to the standards for use in industrial area, yet we recommend to abide by the above principles.

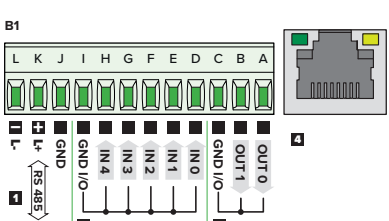


Slots A are designated for fast analogue cards.
Slot B5 is designated for cards DO.1/2.
There are no rectrictions for placements of other cards.

A5 - Power supply



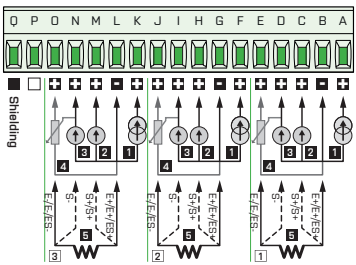
B1



1 RS 485 - Modbus
2 Outputs - 24 VDC
3 Inputs- 24 VDC
4 Ethernet - Modbus TCP

IN.1 3x Universal input

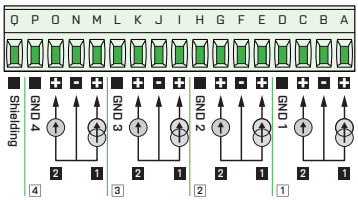
IN.01



1 **PM:** 0...5/20 mA/4...20 mA
2 **PM:** ±2 V/±5 V/±10 V/±40 V
3 **DC:** ±60/±150/±300/±1 200 mV
T/C: J/K/T/E/B/S/R/N/L
4 **DU:** Lin. potentiometer (> 500 Ω)
5 **OHM:** 0...0,1/0,3/1/3/10/30 kΩ
RTD: Pt 50/100/500/1 000
Cu: Cu 50/100
Ni: Ni 1 000/10 000

IN.2 4x PM input U-I

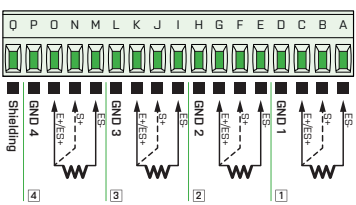
IN.02



1 **DC - I:** ±5/±20 mA, 0...20/4...20 mA
2 **DC - U:** ±2/±5/±10/±40 V, 0...2/5/10/40 V

IN.3 4x RTD input

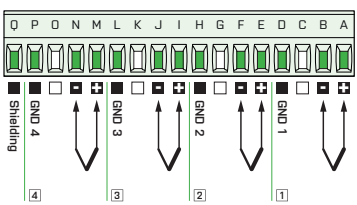
IN.03



OHM: 0...0,1/0,3/1/3/10/30 kΩ
RTD: Pt 50/100/500/1 000
Cu: Cu 50/100
Ni: Ni 1 000/10 000

IN.4 4x T/C nput

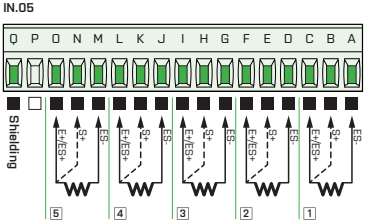
IN.04



T/C: J/K/T/E/B/S/R/N/L

IN.5 5x RTD input

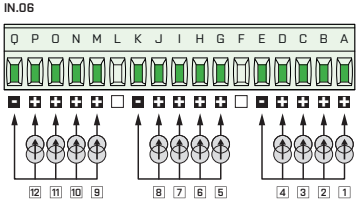
IN.05



OHM: 0...0,1/0,3/1/3/10/30 kΩ
RTD: Pt 50/100/500/1 000
Cu: Cu 50/100
Ni: Ni 1 000/10 000

IN.6 12x DC input, current

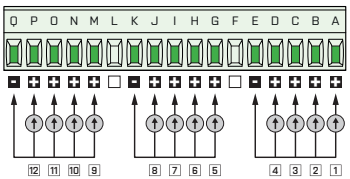
IN.06



DC - I: 0...5 mA/0...20 mA/4...20 mA/±5/±20 mA/

IN.7 12x DC input, voltage

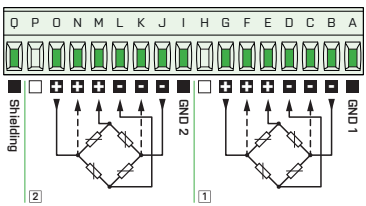
IN.07



DC - U: 0...2 V/0...5 V/0...10 V/0...40 V/±2/±5/±10/40 V

IN.8 2x input for strain gauges

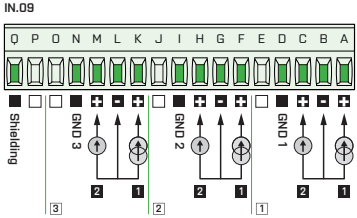
IN.08



DMS: 1...16 mV/V

IN.9 3x PM input U-I

IN.09

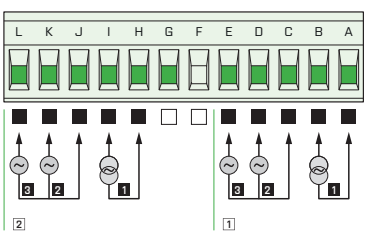


1 **DC - I:** 0...20 mA/4...20 mA/±20 mA

2 **DC - U:** 0...5 V/0...10 V/±5 V/±10 V

IN.10 2x AC/PWR input

IN.10



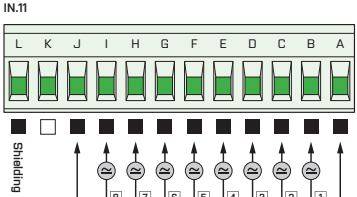
1 **AC - I:** 0...60/150/300 mV
0...1/2,5/5 A

2 **AC - U1:** 0...10/250 V

3 **AC - U2:** 0...120/450 V

IN.11 8x Digital input

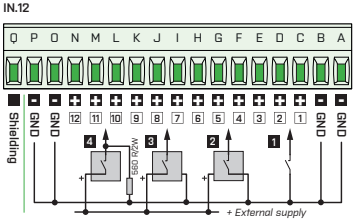
IN.11



AC/DC: 12...250 V AC/DC

IN.12 12x Pulse input

IN.12



1 contact

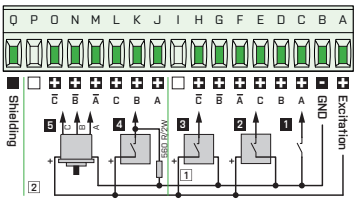
2 2-wire sensors, **NPN** NO

3 3-wire sensors, **PNP** NO

4 3-wire sensors, **PNP** NO

IN.13 2x Fast pulse input

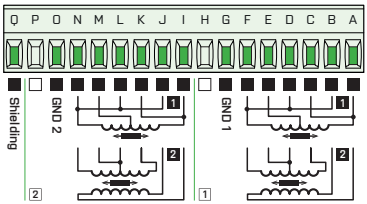
IN.13



1 contact
2 2-wire sensors, **NPN** NO
3 3-wire sensors, **PNP** NO
4 3-wire sensors, **PNP** NO
5 IRC sensors, line/NPN/PNP

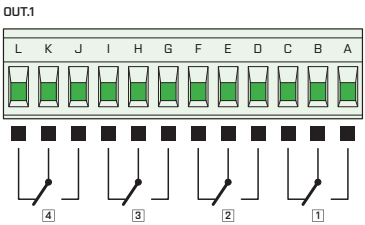
IN.14 2x input for LVDT sensors

IN.14

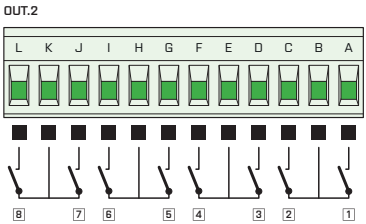


1 3-wire LVDT sensors
2 5-wire LVDT sensors

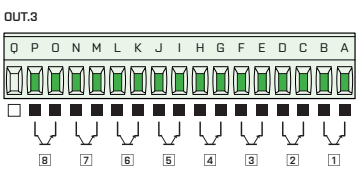
OUT.1 4x Relay, switch-over contact



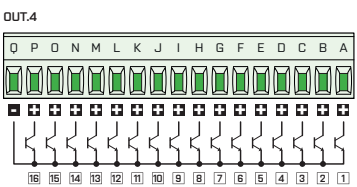
OUT.2 8x Relay, switch-on contact



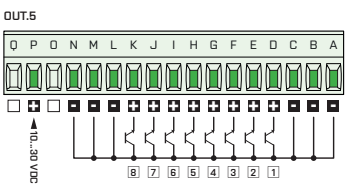
OUT.3 8x OC, NPN



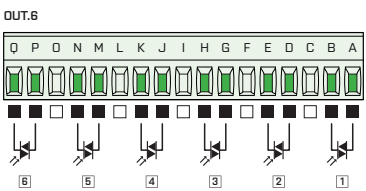
OUT.4 16x OC, NPN



OUT.5 8x OC, PNP

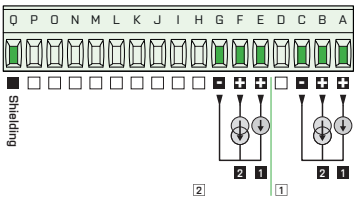


OUT.6 6x SSR



AO.1 2x Analogue output

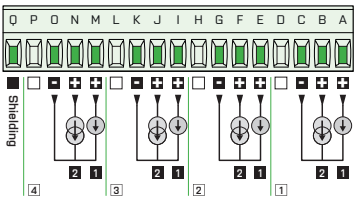
AO.01



1 Analog output - voltage
2 Analog output - current

AO.2 4x Analogue output

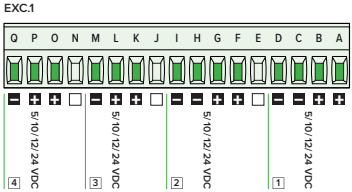
AO.02



1 Analog output - voltage
2 Analog output - current

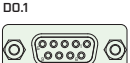
EXC.1 4x Excitation

EXC.1



DO.1 1x PROFIBUS

DO.1

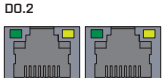


Pin asignment

3 **B:** RxD/TxD-P data reception/transmission, positive
4 **CNTR:** signal for repeater control
5 **DGND:** reference potential for data and +5 V
6 **VP:** +5 V
8 **A:** RxD/TxD-N data reception/transmission, negative

DO.2 1x PROFINET

DO.2



Port 1 Port 2

Control bar

Front panel, IP 64 cover

5,7“ TFT display

with a capacity touchpanel

USB

USB connector for Flash drive

Stylus

Com

MicroUSB for connection to PC

Rst

Reset button

SD Card

Slot for SD card

Button „2“

button function can be set in menu

Stat

OK

Error

Opening the lid

The lid can be opened by pressing the two blue tabs toward each other and lowering the lid

Button „1“

button function can be set in menu

Rec

active data recording

!

Toensurethe I P64 cover oftheinstrunt it is necessary to arRange for proper panel mounting and proper click of the front lid. Proper snap of the front lid.

Elements under the hinged lid

If necessary, a seal can be fitted to the hinged lid as a mechanical security against possible accidental opening.
Your SD card or USB Flash drive will remain safely stored.

LED signalling

Signalling during device start up

Stat		Rec		Display	Meaning
○	off	○	off	inactive	Device is not powered
☀	bliká rychle	○	off	inactive	Normal state
●	on	○	off	inactive	Undervoltage, processor not running
☀	bliká rychle	○	off	inactive	Undervoltage, processor running

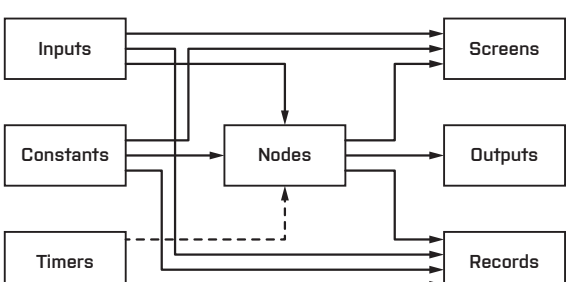
Signalling while device is running

Stat		Rec		Display	Meaning
☀	flashes	○	off	active	Normal state
☀	flashes	○	off	active	General error
-	-	●	flashes	active	Recording in progress
☀	flashes	○	off	inactive	Short term power outage
●	on	○	off	inactive	Long term power outage

BASIC BUILDING BLOCKS
OMR 700

Functionality of the paperless recorder OMR700 is based on the following parts

- **Inputs and outputs**
  - come from the IO cards (fixed B1 or expanding A1 - A4, B2 - B5). They themselves contain conversions
- **Nodes**
  - mathematical or other calculations with the goal of providing requested adjustments of the measured signals or preparation of the output values
- **Screens**
  - graphical representation of the measured or calculated values on the recorder display
- **Records**
  - what, where, how often, in what format, and other parameters of measured or calculated data for recording
- **Timers**
  - provide periodic execution of linked blocks with a given period
- **Constants**
  - spontaneously unchangeable named values for calculations



Block chart of the recorder OMR 700

From the block chart it is apparent that the central point of the recorder is created by **Nodes**. They process the measured inputs, constants, other nodes, and using the preset calculations they calculate a new value. The calculation is kept in time by the timer. The calculated values of the nodes can be displayed on the screen and recorded on the media. The outputs can also be equipped by them. An important feature of the nodes is the fact that they can have a history (they remember previous values). This is an optional configuration offering the advantage of displaying the value of the node with its history (running chart).

Timers have an optional setting period. The client can set the period within the Rangeof 1ms up to 40 days (by 1ms, while the dialog limits the settings to the order of ms, s, minutes, hours, and days). There are N timers in the recorder (8 at the moment) so that it is necessary to choose a proper setting for each timer to cover the needs of the entire recorder. The timers control calculations of the nodes and recording on the media, while the internal mechanism guarantees that the nodes are calculated first and only then the new values are recorded on the media.

Inputs and Outputs provide rate, which is different for each Typee of the card and even for each register on the card. The IO cards are in fact designed as intelligent ones = they conduct their operations in order to relieve the main processor. They are organized into a set of registers. Some of the registers are configurable (e.g. those of input Range), some are designated for measured values under different phases of processing. A Typeical input card provides several values for each input – direct input value of the converter (converter bits), value converted into electrical value (e.g. mA), and the resulting converted value (e.g. in case of weight, the strain gauge input card recalculates the voltage of the strain gauge into weight by a preset formula - Range, tare). Similarly, it is possible to control also the outputs. For example: You set the requested turns of a ventilator and the card will itself, according to the preset parameters, recalculate the measured value into voltage and set it on its output.

Constants are designated for easy and well-arRanged changes of the settings, e.g. of the required values, filtration parameters... On one place the value can be changed, used for calculations, displayed and recorded.

Screens are used for displaying the measured values. There are N screens and each of them can occupy up to M different elements like running chart, bar chart, nummber indicator, finger measuring indicator... You set the element Typee, size, location, number of displayed values, color, Range... So you can build very diverse screens. The redraw period is set in such a manner that it enables a smooth and fast enough drawing, which, at the same time, relieves the main processor. Some elements (as e.g. the running chart) display, besides the current values, also their previous ones. By these elements it is therefore advantageous if the displayed node has a history that is used for filling up the chart when switching over to the screen.

Records serve for recording values on the media. To each record you can assign a name, frequency, file format, number of records in the file, where you want to record, and, of course, what you want to record. All records can be viewed in the record browser. They can also be downloaded to a PC and displayed there

5.2 CONTROL BAR

In the upper part of the display there is a dark blue Control Bar. It shows the main control elements.

Switch screens

Previous screen

Next screen

Logged in users

Nobody logged in
Press icon to log in

User
Press icon to log out

Operator and higher
Press icon to enter menu

Recorder status

OK
Device is OK

Warning
Device is out of pre-defined values

Error
Device is out of pre-defined values
Its functionality may be compromised

Critical error
Device is out of pre-defined values
Its functionality is compromised

Recording status

Recording inactive

Recording in progress
No errors detected

Recording in progress
Medium > 80% full

Recording in progress
Medium > 90% full

Name of current screen

Click item to open menu from defined screen

Datum a čas

Current Date and Time

State of the memory media

Overwiev of the memory media

When the storage is full at 80% or higher, the icon colour changes to yellow, when the storage exceeds 90% of its capacity, the icon colour changes to red. If the recording is in progress and there is no error condition, the icon colour is green. If the recording is not turned on, the icon colour is white. The logged-in user will click on the icon to access the media overview.

State of the recorder

The recorder always operates in one of its four states (further details in the chapter Errors and warnings).

„**OK**“ - device has not detected any function problem

„**Warning**“ - device outside the specified values, but without consequences on its functioning. This state can be caused for instance by an undervoltage greater than 10%, by filling the memory in excess of 80%, and by many other causes. If the device returns within the specified values, „Warning“ state will disappear and the log record will be carried out.

„**Error**“ - device outside the specified values, but with possible consequences on its functioning. This state can be caused for instance by an undervoltage greater than 20%, by filling the memory in excess of 90%, and by many other causes. At the „Error“ state an error window is displayed, through which you can view the errors. If the device returns within the specified values, „Error“ state will disappear and the logrecord will be carried out.

„**Critical error**“ - device outside the specified values with consequences on its functioning. This state can be caused for instance by an undervoltage greater than 50% or by filling the memory up to 100 % so that it is not possible to make records. At the „Critical error“ state an error window is displayed, through which you can view the errors. If the device returns within the specified values, both „Critical error“ and the error window remain displayed until a confirmation (acknowledgment) of the „Critical error“ is done. After confirmation the log record will be carried out.

!

Date and time of each error is recorded in the log

User login or entry into the menu

The appearance of the bar without a logged-in user. Control buttons are disabled and therefore you can not change the screen, enter the menu or view errors, logs and capacity utilization of the memory media.
It is not possible to switch screens in the default setting.

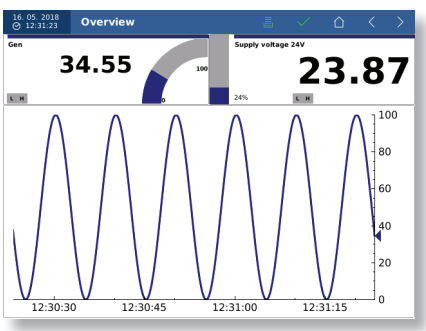
User with access rights „User“ has the right of switching over screens, viewing errors, logs and memory media.

User with access rights „Advanced user“ and beyond has, in addition, access to the menu.

Switching the previous or the next screen

Switching over to yesther screen. If you have defined only one screen, the screen remains unchanged

Switching over to the previous screen. If you have defined only one screen, the screen remains unchanged.

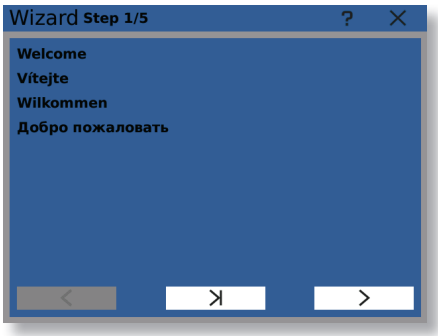


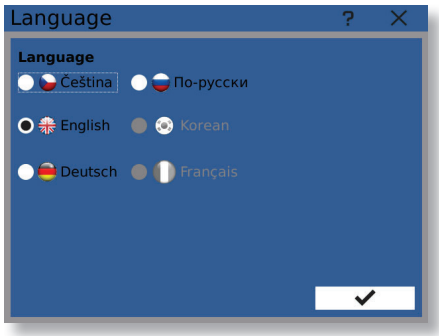
Fast screen selection

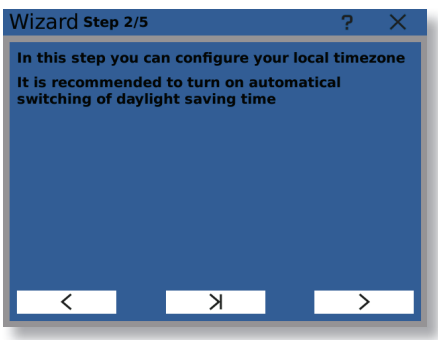

1489°C
-263mm
453mi

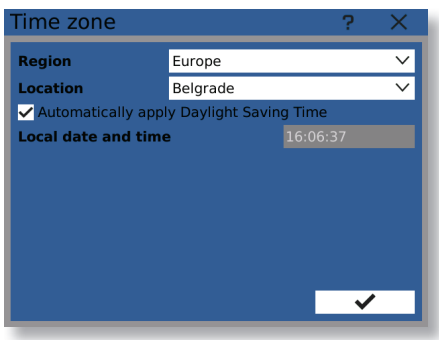
5.3 FIRST START

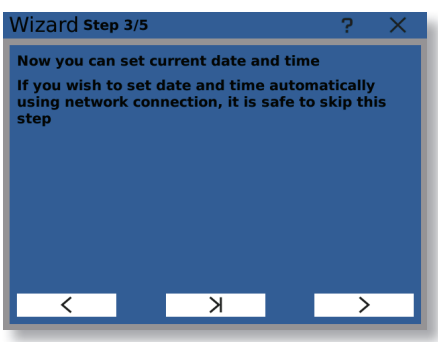
When you turn on the device for the first time, the „Guide“ will help you with the basic settings so that the unit is ready for further work.

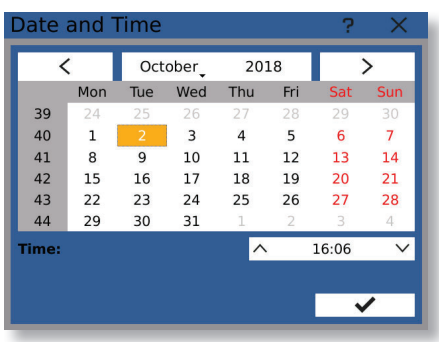


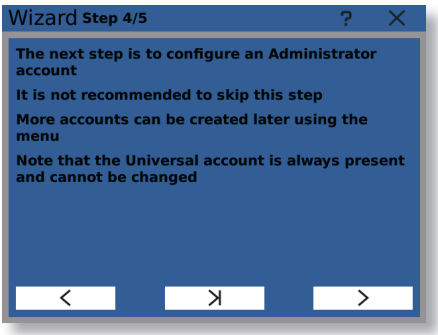


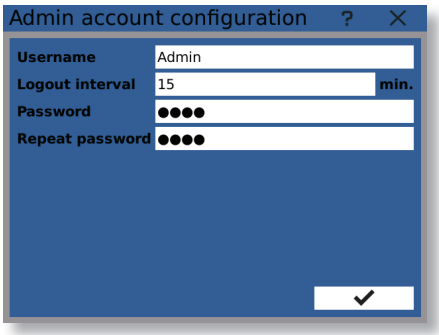


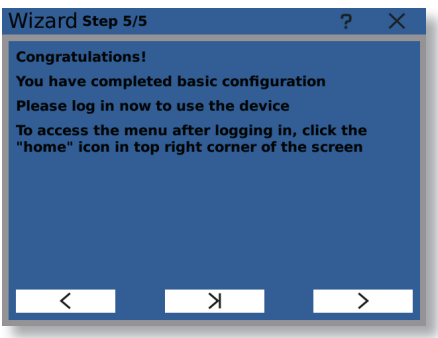












For detailed device settings as well as practical examples please refer to the **User Guide**.

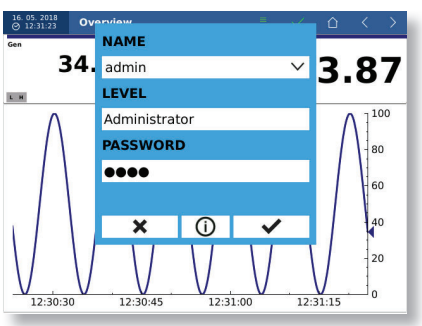
Login dialogue

Logging-in, logging-out and access to menu is possible using the „user“ button. The user button‘s icon changes depending on whether any user is logged-in and what are his user rights.

Clicking on the button while no user is logged in opens a login dialog.

The dialogue consists of three lines and two buttons

Name	from the list of created user names kindly select the one, under which you want to log-in
Level	level of access rights of the selected user
Password	after a click on the line a keyboard appears. Then enter the password to log-in
✔	button „**Confirm**“ confirms the login. If the password is OK, the dialogue disappears and the icon in the control bar will change. If the password is incorrect, an error window will appear. You can close it and start the login dialogue again.
✖	button „**Cancel**“ will close the login dialogue



Login dialogue


1489°C
-263mm

6. TECHNICAL DATA

PROJECTION

Display	5,7“ color TFT display with capacitive touch screen
Brightness	adjustable - in menu

INSTRUMENT FUNCTIONS

TC	25 ppm/°C
Accuracy	depending on the measuring card used
Measuring rate	depending on the measuring card used
Accur. of the CJC	±1,5°C
Digital inputs	5x - optional functions (24 VDC)
Digital outputs	2x (open colle.) - optional functions (24 VDC)
Acoustic signal.	sound module for acoustic signalization with 1,5 W loud speaker
Value recording:	into instrument memory (512 MB) with compression USB FLASH with FAT32 up to 32 GB SD card with support of FAT32 up to 32 GB
RTC	15 ppm/°C, time-date-value channel/display/node
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % of r.h.

COMMUNICATION

Protocols	MODBUS RTU
Data format	8 bits + without parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, secure communication, TCP/IP Modbus
Wi-Fi	optional module with standard or industrial temperature Range

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0,4, I_{STP}< 75 A/2 ms 80...250 V AC/DC, ±10 %, PF ≥ 0,4, I_{STP}< 45 A/2 ms isolated *Power supply is protected by a fuse inside the instrument!*
Consumption	< 30 VA/< 30 W

MECHANIC PROPERTIES

Material	Noryl GFN2 SE1, non-flammable UL 94 V-I
Dimensions	150 x 150 x 80 mm
Depth beh. panel	85 mm
Panel cut-out	138 x 138 mm
Lid securing	the front lid can be sealed

OPERATING CONDITIONS

Connection	connector terminal board, conductor cross-section < 1,5/2,5 mm²
Stabilisat. period	within 15 minutes after switch-on
Working temp.	-20°...60°C
Storage temp.	-20°...85°C
Cover	IP64 (front panel only)
Execution	safety class I
Overvoltage cat.	EN 61010-1, A2
Dielectr. strength	4 kVAC after 1 min. betw. power supply and input 3,75kVAC after 1 min. betw. p. supply and cards 2,5 kVAC after 1 min. betw. p.supply and card B1
Insulation resist.	for pollutin degree II, measur. category III. instr. power supply > 670 V (ZI), 300 V (DI) input, output > 300 V (ZI), 150 V (DI)
EMC	EN 61326-1
Seismic qualific.	IEC 980: 1993, art. 6

** values apply for resistance load*

IN.1 - 3x UNIVERSAL INPUT

Number of inputs	3		
Galv. separation	yes		
Range	±60 mV	> 10 MΩ	DC
	±150 mV	> 10 MΩ	
	±300 mV	> 10 MΩ	
	±1200 mV	1,25 MΩ	
Range	±5 mA	< 200 mV	PM
	±20 mA	< 200 mV	
	4...20 mA	< 200 mV	
	±2 V	> 10 MΩ	
	±5 V	1,25 MΩ	
	±10 V	1,25 MΩ	
	±40 V	1,25 MΩ	
Range	0...100 Ω		OHM
	0...1 kΩ		
	0...10 kΩ		
	0...30,0 kΩ, (only for 2 or 4-wire connection)		
Connection	2, 3 or 4-wire		
			RTD
Type Pt	EU > 100/500/1 000 Ω, with 3 850 ppm/°C		
Type Ni	Ni 1 000/ Ni 10 000 with 6 180 ppm/°C		
Type Cu	Cu 50/Cu 100 with 4 280 ppm/°C		
Connection	2, 3 or 4-wire		
Range	EU • Pt xxxx		-50°...450°C
	US • Pt 100		-50°...450°C
	RU • Pt 50		-200°...1 100°C
	RU • Pt 100		-200°...450°C
	Cu 100/4 280		-200°...200°C
	Cu 100/4 260		-50°...200°C
	Ni • Ni xxxx		-50°..250°C
Type			T/C
	J ((Fe-CuNi)		-100°...900°C
	K (NiCr-Ni)		-100°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-100°...800°C
	B (PtRh30-PtRh6)		700°...1 820°C
	S (PtRh10-Pt)		100°...1 760°C
	R (Pt13Rh-Pt)		100°...1 760°C
	N (Omegalloy)		-0°...1 300°C
	L (Fe-CuNi)		-100°...900°C
Power supply for lin. potentiometer	2,5 VDC/6 mA, min. resistance is 500 Ω		DU

ACCURACY

TC	25 ppm/°C
Accuracy	±0,15 % of the range
Rate	5...320 measuring/s
Recomm. positions	A1, A2, A3, A4

IN.2 - 4x U-I INPUT

Number of inputs	4	
Galv. separation	yes	
Range	0...5 mA	< 200 mV
	0...20 mA	< 200 mV
	4...20 mA	< 200 mV
	±2 V	> 10 MΩ
	±5 V	1,25 MΩ
	±10 V	1,25 MΩ
	±40 V	1,25 MΩ
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	1000 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.3 - 4x RTD INPUT

Number of inputs	4	
Galv. separation	yes	
Type Pt	EU > 100/500/1 000 Ω, with 3 850 ppm/°C	
Type Ni	Ni 1 000/ Ni 10 000 with 6 180 ppm/°C	
Type Cu	Cu 50/Cu 100 with 4 280 ppm/°C	
Connection	2 or 3-wire	
Range	EU • Pt xxxx	-50°...450°C
	US • Pt 100	-50°...450°C
	RU • Pt 50	-200°...1 100°C
	RU • Pt 100	-200°...450°C
	Cu 100/4 280	-200°...200°C
	Cu 100/4 260	-50°...200°C
	Ni • Ni xxxx	-50°..250°C
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	5...320 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.4 - 4x T/C INPUT

Number of inputs	4	
Galv. separation	yes	
Type	J (Fe-CuNi)	-100°...900°C
	K (NiCr-Ni)	-100°...1 300°C
	T (Cu-CuNi)	-200°...400°C
	E (NiCr-CuNi)	-100°...800°C
	B (PtRh30-PtRh6)	700°...1 820°C
	S (PtRh10-Pt)	100°...1 760°C
	R (Pt13Rh-Pt)	100°...1 760°C
	N (Omegalloy)	-0°...1 300°C
	L (Fe-CuNi)	-100°...900°C
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	5...320 measuring/s	
Recomm. positions	A1, A2, A3, A4	

ZI - Basic insulation, DI - Double insulation

6. TECHNICAL DATA

IN.5 - 5x RTD INPUT

Number of inputs	5	
Galv. separation	no	
Type Pt	EU > 100/500/1 000 Ω, with 3 850 ppm/°C	
Type Ni	Ni 1 000/ Ni 10 000 with 6 180 ppm/°C	
Type Cu	Cu 50/Cu 100 with 4 280 ppm/°C	
Connection	2, 3 or 4-wire	
Range	EU • Pt xxxx	-50°...450°C
	US • Pt 100	-50°...450°C
	RU • Pt 50	-200°...1 100°C
	RU • Pt 100	-200°...450°C
	Cu 100/4 280	-200°...200°C
	Cu 100/4 260	-50°...200°C
	Ni • Ni xxxx	-50°..250°C
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	1 000 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.6 - 12x CURRENT INPUT

Number of inputs	12	
Galv. separation	no	
Range	±5 mA	< 200 mV
	±20 mA	< 200 mV
	4...20 mA	< 200 mV
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	1000 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.7 - 12x VOLTAGE INPUT

Number of inputs	12	
Galv. separation	no	
Range	±2 V	> 10 MΩ
	±5 V	1,25 MΩ
	±10 V	1,25 MΩ
	±40 V	1,25 MΩ
TC	25 ppm/°C	
Accuracy	±0,2 % of the range	
Rate	1000 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.8 - 2x INPUT FOR STRAIN GAUGES

Number of inputs	2
Galv. separation	yes
Range	0,5...2 mV/V
	1...4 mV/V
	2...8 mV/V
	4...16 mV/V
Sensor supply	10 VDC, load ≥ 80 Ω
TC	25 ppm/°C
Accuracy	±0,05 % of the range
Rate	1 000 measuring/s
Recomm. positions	A1, A2, A3, A4

IN.9 - 3x PRECISE PM INPUT U-I

Number of inputs	3	
Galv. separation	yes	
Range	±5 mA	< 200 mV
	±20 mA	< 200 mV
	4...20 mA	< 200 mV
	±2 V	> 10 MΩ
	±5 V	1,25 MΩ
	±10 V	1,25 MΩ
	±40 V	1,25 MΩ
TC	25 ppm/°C	
Accuracy	±0,02 % of the range	
Rate	1 000 measuring/s	
Recomm. positions	A1, A2, A3, A4	

IN.11 - 8x ANALOGUE/DIGITAL INPUT

Number of inputs	8
Galv. separation	no
Range	12...250 V AC/DC
TC	25 ppm/°C
Accuracy	±0,5 % of the range
Rate	< 1 000 measuring/s
Recomm. positions	A1, A2, A3, A4

IN.12 - 12x PULSE INPUT

Number of inputs	12
Galv. separation	no
Range	5...30 VDC
Input	PNP/NPN/contact, adjustable comparation levels
Frequency	0,1 Hz...10 kHz
Mode	Counter/Frequency
TC	25 ppm/°C
Accuracy	±0,01 % of the range (Frequency)
Recomm. positions	A1, A2, A3, A4

IN.13 - 2x FAST PULSE INPUT

Number of inputs	2
Galv. separation	yes
Range	5/24 VDC
Input	PNP/NPN/contact, TTL/line adjustable comparation levels
Frequency	0,1 Hz...1 MHz
Mode	UP/DW Counter/Frequency IRC
Sensor supply	5/10/12/24 VDC/200 mA
TC	25 ppm/°C
Accuracy	±0,01 % of the range (Frequency)
Recomm. positions	A1, A2, A3, A4

IN.14 - 2x INPUT FOR LVDT SENSORS

Number of inputs	2
Galv. separation	yes
Input	3/5/6 -wire connection 1/3/5 VAC with frequency 2,5/5/10 kHz
TC	25 ppm/°C
Accuracy	±0,02 % of the range (Kmitočet)
Recomm. positions	A1, A2, A3, A4

EXC.1 - 4x EXCITATION

Number of outputs	4
Galv. separation	yes
Type	digital, menu adjustable
Outputs	5/10/12/24 VDC, max. 3 W or 0,3 A
Recomm. positions	B2, B3, B4, B5

OUT.1 - 4x REAYS

Number of outputs	4
Galv. separation	yes
Type	digital, menu adjustable
Outputs	4x relay, switch-over contact (Form C) (250 VAC/50 VDC, 3 A)*
Contact closure:	< 10 ms
Relay	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300
Recomm. positions	B2, B3, B4, B5

OUT.2 - 8x REAYS

Number of outputs	8
Galv. separation	yes
Type	digital, menu adjustable
Outputs	8x relay, switch-on contact (Form A) (250 VAC/50 VDC, 3 A)*
Contact closure	< 10 ms
Relay	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300
Recomm. positions	B2, B3, B4, B5

OUT.3 - 8x OPEN COLLECTORS, NPN

Number of outputs	8
Galv. separation	no
Type	digital, menu adjustable
Outputs	8x open collector, NPN (30 VDC/100 mA)
Contact closure	< 0,2 ms
Recomm. positions	B2, B3, B4, B5

OUT.4 - 16x OPEN COLLECTROS, NPN

Number of outputs	16 with common end
Galv. separation	no
Type	digital, menu adjustable
Outputs	16x open collector, NPN (30 VDC/100 mA)
Contact closure	< 0,2 ms
Recomm. positions	B2, B3, B4, B5

OUT.5 - 8x OPEN COLLECTORS, PNP

Number of outputs	8
Galv. separation	no
Type	digital, menu adjustable
Outputs	8x open collector, PNP (30 VDC/700 mA)
Contact closure	< 0,2 ms
Recomm. positions	B2, B3, B4, B5

OUT.6 - 6x SSR

Number of outputs	6
Galv. separation	no
Type	digital, menu adjustable
Outputs	6x SSR, (250 VAC/1 A)*
Contact closure	< 0,2 ms
Recomm. positions	B2, B3, B4, B5

AO.1 - 2x ANALOGUE OUTPUTS

Number of outputs	2
Galv. separation	yes
Type	isolated, programmable with a 16 bit D/A transducer, type and range are adjustable
Nonlinearity	0,1 % of the range
TC	15 ppm/°C
Rate	change of value response < 1 ms
Voltage	0...2 V/5 V/10 V/± 10V
Current	0...5/20 mA/4...20 mA - power line compensation up to 600 Ω/12 V
Recomm. positions	B2, B3, B4, B5

AO.2 - 4x ANALOGUE OUTPUTS

Number of outputs	4
Galv. separation	yes
Type	isolated, programmable with a 16 bit D/A transducer, type and range are adjustable
Nonlinearity	0,1 % of the range
TC	15 ppm/°C
Rate	change of value response < 1 ms
Voltage	0...2 V/5 V/10 V/± 10V
Current	0...5/20 mA/4...20 mA - power line compensation up to 600 Ω/12 V
Recomm. positions	B2, B3, B4, B5

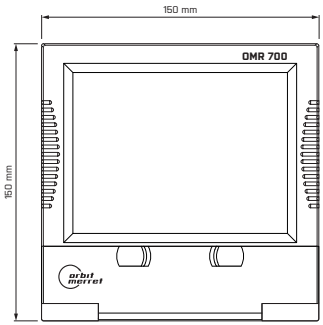
DO.1 - DATA OUTPUT - PROFIBUS

Number of outputs	1
Galv. separation	yes
Protocol	Profibus
Rate	9.6 kBit / s...12 000 kBit / s
Position	B5

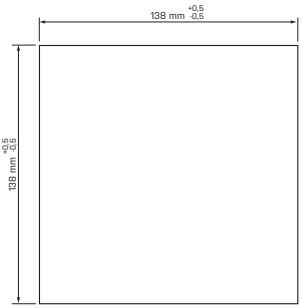
DO.2 - DATA OUTPUT - PROFINET

Number of outputs	1
Galv. separation	yes
Protocol	ProfiNet
Rate	< 12 MBit / s
Position	B5

Front view

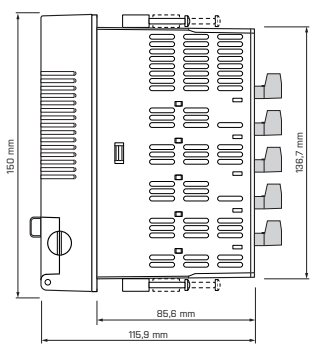


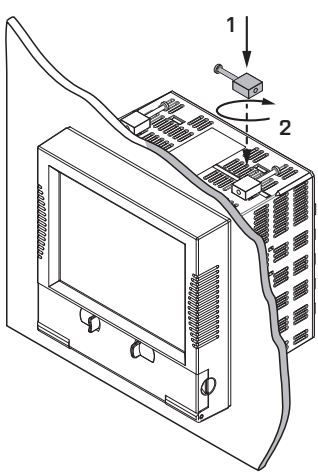
Panel cut



Panel thickness: 0,5...8,6/26,8 mm

Side view





INSTRUMENT ASSEMBLY

- insert the recorder into the panel cut-out
- apply gradually all four mounting bolts with stones into rectangular holes and fix them in a clockwise direction
- tighten the bolts with a Phillips screwdriver

Poduct	**OMR 700**
Type	. . . . .
Manufact. No.	. . . . .
Date of sale	. . . . .

A guarantee period of 60 months from the date of sale to the user applies to this instrument.
Defects occuring during this period due to manufacture error or due to material faults shall be eliminated free of charge.

The guarantee shall apply to quality, function and construction of the instrument, provided that the instrument was connected and used in compliance with the instructions for use.

The guarantee shall not apply to defects caused by:

- mechanic damage
- transportation
- intervention of unqualified person incl. the user
- unavoidable ivent
- other unprofessional interventions

The manufacturer performs guarantee and postguarantee repairs unless provided for otherwise.

Stamp, signature

ES DECLARATION OF CONFORMITY

Company **ORBIT MERRET, spol. s r.o.**
Klánova 81/141, 142 00 Praha 4, Czech Republic, VAT No.: 00551309

Manufacturer **ORBIT MERRET, spol. s r.o.**
Vodňanská 675/30, 198 00 Praha 9, Czech Republic

declares at its explicit responsibility that the product presented hereunder meets all technical requirements, is safe for use when utilised under the terms and conditions determined by ORBIT MERRET, spol.s r.o. and that our company has taken all measures to ensure conformity of all products of the types referred-to hereunder, which are being brought out to the market, with technical documentation and requirements of the respective Czech statutory orders.

Product: Paperless recorder

Type: **OMR 700**

This product has been designed and manufactured in line with the following requirements

Low-voltage electrical equipment (directive no. 2014/35/EU)
Electromagnetic compatibility (directive no. 2014/30/EU)

The product qualities are in conformity with harmonized standards

El. safety: EN 61010-1
EMC: EN 61326-1
Electronic measuring, control and laboratory devices - Requirements for EMC "Industrial use"

EN 50131-1, chap. 14 and chap. 15, EN 50130-4, chap. 7, EN 50130-4, chap. 8, (EN 61000-4-11, ed. 2), EN50130-4,chap.9 (EN 61000-4-2), EN 50130-4, chap. 10, (EN 61000-4-3, ed. 2), EN 50130-4, chap.11 (EN 61000-4-6), EN 50130-4, chap. 12, (EN 61000-4-4, ed. 2), EN 50130-4, chap. 13 (EN 61000-4-5), EN 61000-4-8, EN 61000-4-9, EN 61000-6-1, EN 61000-6-2, EN 55022, chap. 5 and chap. 6 Seismic resistance: IEC 980: 1993, art. 6

Seismic resistance IEC 980: 1993, čl.6

The product is furnished with a CE label issued in 2016

As documentation serve protocols of authorized and accredited organizations

EMC ČMI Testcom, Protocol No. 8551-PT-E0099-16 of 10/05/2016
Seismic resistance VTÚ Vyškov, Protocol No. 194200-52/2014 of 07/04/2014

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