

Catalog for partners

We care about  
warmth and safety  
in your homes



# Smart heating control

**terneo** 3 years  
warranty

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**terneo**  
smart heating control

**ZUBR**  
voltage monitoring relay

# Smart heating on your smartphone wherever you are



## Mobile application terneo with Geofencing

Get instant access to your home temperature, heating schedule and energy consumption reports in kWh and money. It is convenient to use my.terneo.ua computer application to work with statistics.



## Control your comfort with Hey Google

Install Google Assistant on your smartphone to control by your voice. If the Google Assistant does not understand the language of your country, speak to it in English. We implant the latest technologies into terneo devices for your convenience!



## Integration into Smart Home system

We understand importance and relevance of Smart Home automation systems and have prepared tools for integration into your systems. We support the MQTT protocol and http API.



Okay, Google! Make the temperature 3 degrees warmer.



**Nataliia Pogorela**

Business Development Manager

Modern control from a smartphone is the main thing that distinguishes our smart thermostats.

Today we can no longer imagine our lives without convenient mobile banking, Uber or Glovo! Then why not control the heating floor from a smartphone?!



# Create comfort for the whole family — share access to others and give them rights: view or control

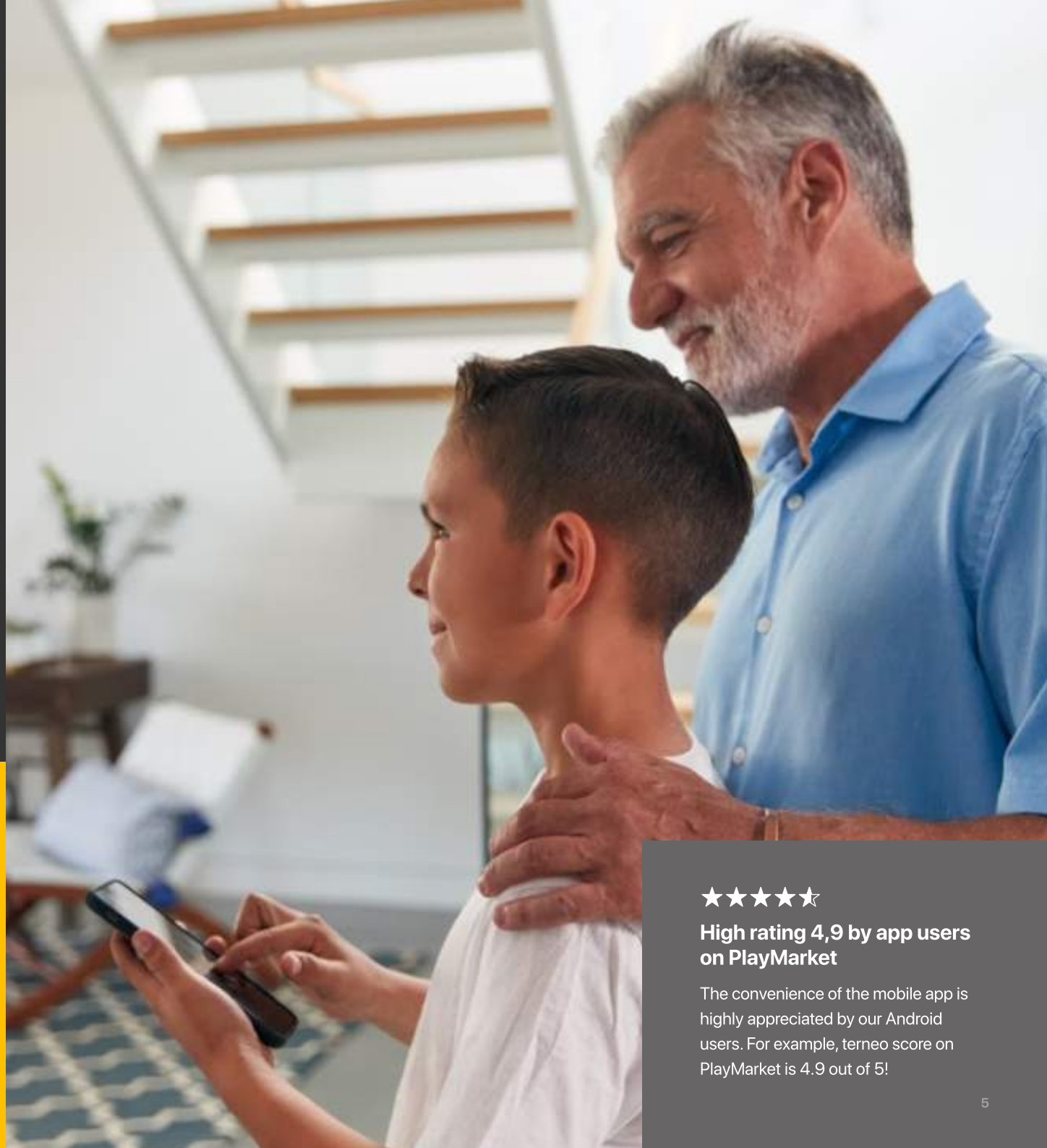
App is available in 7 languages

- 🇬🇧 English
- 🇩🇪 German
- 🇨🇪 Czech
- 🇷🇴 Romanian
- 🇵🇱 Polish
- 🇺🇦 Ukrainian
- 🇷🇺 Russian



terneo sx

● White ● Milk white

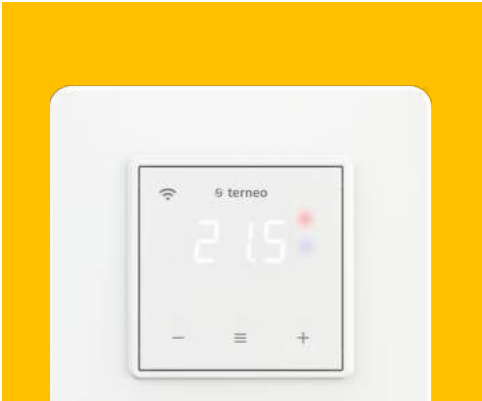


★★★★★

**High rating 4,9 by app users on PlayMarket**

The convenience of the mobile app is highly appreciated by our Android users. For example, terneo score on PlayMarket is 4.9 out of 5!

# Smart thermostats



### terneo sx

Reasonable consumption

#### Heating based on:

Heating cable, infrared film, water floor heating

#### Temperature maintenance:

By floor temperature 5...45 °C

#### Power

3 000 VA



### terneo bx

Reasonable consumption

#### Heating based on:

Heating cable, infrared film, water floor heating

#### Temperature maintenance:

By floor temperature 5...45 °C

#### Power

7 000 VA



### terneo rzx

Reasonable consumption

#### Heating based on:

Infrared panels, convectors and other heaters

#### Temperature maintenance:

By floor temperature 5...35 °C

#### Power

3 000 VA

## Functional:

### Wi-Fi control with Geofencing

Via mobile applications for iOS, Android, desktop application my.terneo.ua, Google Assistant voice assistant.

### Schedule

16 periods of temperature for each day.

### Graphs of energy consumption in kWh

View data for any period of time. For example, the heating season.

### Expenses in money

Choose a currency and enter your rate for calculating money consumption. terneo also supports multiple tariffs. It is convenient.

### Group control

If you have several thermostats, they are easy to control as one. Combine them into a group, such as Home, and create a single schedule. See expenses in money by group: for example, separately at Home and separately at the Country house.

### Share access

Share access and give rights to other users: view or control.

### «Preheating» function

terneo will pass self-training and will be able to turn on the preheating so that the desired temperature has already been reached by the beginning of each temperature period.

### «Departure» mode

You can set a return date and terneo will heat the room just before your arrival.

### Possibility to continue operation in case of sensor damage

The sensor is the main indicator of the heating system. This emergency mode will ensure the operation of the heating floor without a sensor before the repair is done.

### Button lock

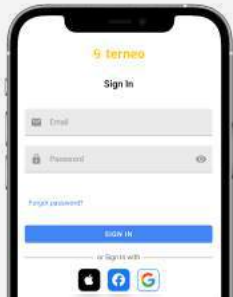
### Thermal protection

### Screen temperature correction

### Copy settings to another day or thermostat



# Your life with terneo



## Connect in 5 minutes

Download free App terneo in App Store or Google Play. Put the thermostat in Access Point mode. In the application click «Add a thermostat». Choose the created Wi-Fi network by the thermostat and enter your Wi-Fi password.



## Turn on self-learning

Activate the preheating function and terneo will calculate the time for which the heating should be switched on in advance! Thus, by the beginning of each schedule period, the desired temperature will have been reached.



## Add all your terneo to the mobile app and group by location

If you have several thermostats, you can quickly control them as one. For example, you go to the country house and with one click you can turn on the heating on all the thermostats in the Country house group, and then turn it off.



## Using cost charts in kWh and money to optimize your schedule

You can optimize your schedule by analyzing the dynamics of electricity consumption for the month or heating season. There is a support for multiple tariffs.



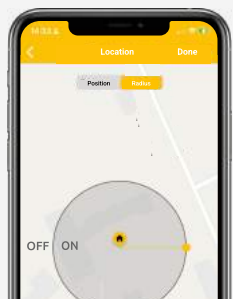
## Set a comfortable schedule

Create up to 16 temperature periods per day. This is a record number among analogs! Create a schedule for Monday, and if necessary, copy it to other weekdays. You can also copy the week timetable from one thermostat to another.



## Contribute for the good of the planet — replace the ordinary thermostat with a smart one

terneo thermostats are compatible with analog (R10) and digital (D18) sensors of most manufacturers. Remote control, expenses schedules, and the ability of terneo to self-learning provide greater heating savings and superior comfort.



## Turn on Geofencing for automatically saving when nobody at home


Thanks to Geofencing, the heating will only work when one of the users is at home. For example, if you had to leave urgently, then terneo will turn off the heating while you are not at home. Isn't that awesome?




Scan the QR code and download the booklet

Get acquainted with the possibilities of Smart Wi-Fi terneo thermostats

# Programmable thermostat with 2 sensors



**terneo pro**

 Reasonable consumption

**Purpose:**

Underfloor heating based on heating cable, infrared film, water floor heating, electric heaters or air coolers.

**Temperature maintenance:**

By floor temperature 5...60 °C /  
By air temperature 5...35 °C

**Power**

3 000 VA

## Functional:

**Schedule: 3 periods for weekdays and 1 for weekends**

Three periods of comfortable temperature on weekdays and one on weekends, economical temperature will be maintained between them.

**Energy statistics in kWh**

Enter the power connected to the thermostat in the settings. terneo collects system uptime data and converts it to kWh. Statistics is available for day, week, month, total.

**Settings wizard**

When you turn it on for the first time, terneo pro guides you step by step through the basic thermostat settings and saves you time.

**«Preheating» function**

terneo will pass self-training and will be able to turn on the preheating so that the desired temperature has already been reached by the beginning of each temperature period.

**Holidays**

Activate feature Holidays, if you are going to spend the national holidays at home. We have developed an editable template for Moldova, Romania, Poland, Germany, Czech Republic.

**«Departure» mode**

You can set a return date and terneo will heat the room just before your arrival.

**«Open window» function**

terneo is able to recognize when a window is open in the room after a sharp drop in temperature and turn off heating for 30 minutes, avoiding excessive electricity consumption during ventilation.

**Thermal protection**

If the temperature inside the housing increases to 85 °C, the thermostat will automatically stop working. This gives extra safety during operation.

**Possibility to continue work in case of sensor damage**

The sensor is the main indicator of the heating system. This emergency mode will ensure the operation of the heated floor without a sensor before the repair is done.

**Screen temperature correction**

If you want to adjust the indications, for example, by 1 °C.

**Copy settings to another thermostat**

**2 modes: heating and cooling**

**Button lock**

# Comfort on your individual schedule

## Save up to 50% on underfloor heating costs

Savings are achieved due to the fact that the heating floor heats only when needed. You can view the consumed electricity in the statistics section, compare costs by weeks, months or for any period. To calculate for a certain period, first reset the previous statistics.

## Intuitive interface in 5 languages

Our customers note that the terneo pro interface is user-friendly. Unlike many analogs, the menu is accompanied by textual explanations, not just icons. Available languages: English, Ukrainian, German, Russian and Czech.



terneo pro



White



Milk white



2 sensors: floor and air

## Discover the world in comfort

In order for the little researcher to be comfortable crawling barefoot on the tile so that he does not catch a cold — turn on the terneo pro mode «Control of air temperature with floor restrictions».

The thermostat will maintain the air temperature without allowing the floor to overheat or overcool.

# Voltage monitoring relay in socket

## Purpose:

Designed to protect household appliances (TV, refrigerators, video and audio equipment, etc.) from dangerous voltage deviations.

Socket relays are a great solution, if it is not possible to install a relay on the DIN rail in the switchboard or you want to set a longer delay for compressor equipment, such as a refrigerator.



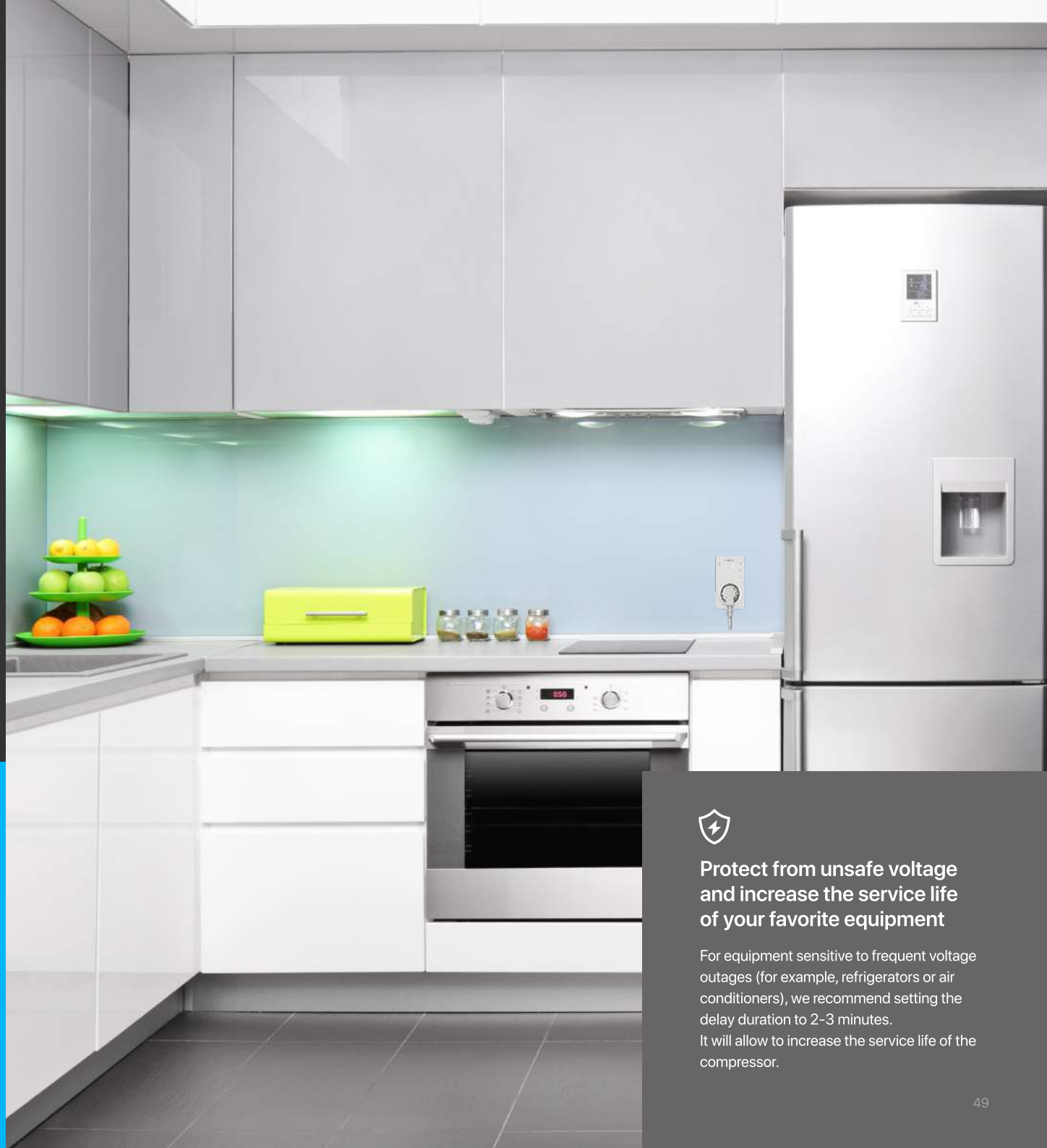
ZUBR SR1



White indication



Red indication



**Protect from unsafe voltage and increase the service life of your favorite equipment**

For equipment sensitive to frequent voltage outages (for example, refrigerators or air conditioners), we recommend setting the delay duration to 2-3 minutes. It will allow to increase the service life of the compressor.



# terneo supports your favorite floor temperature

## Timer to turn on heating

If you are going to leave, set the Timer for up to 4 days and terneo will heat the room until your return. It is a simple tool for saving without losing basic comfort.

## Load operating time counter

The cost of underfloor heating can be calculated by multiplying the operating time of underfloor heating under the load on the floor capacity and tariff. Agree, this is a very interesting information.



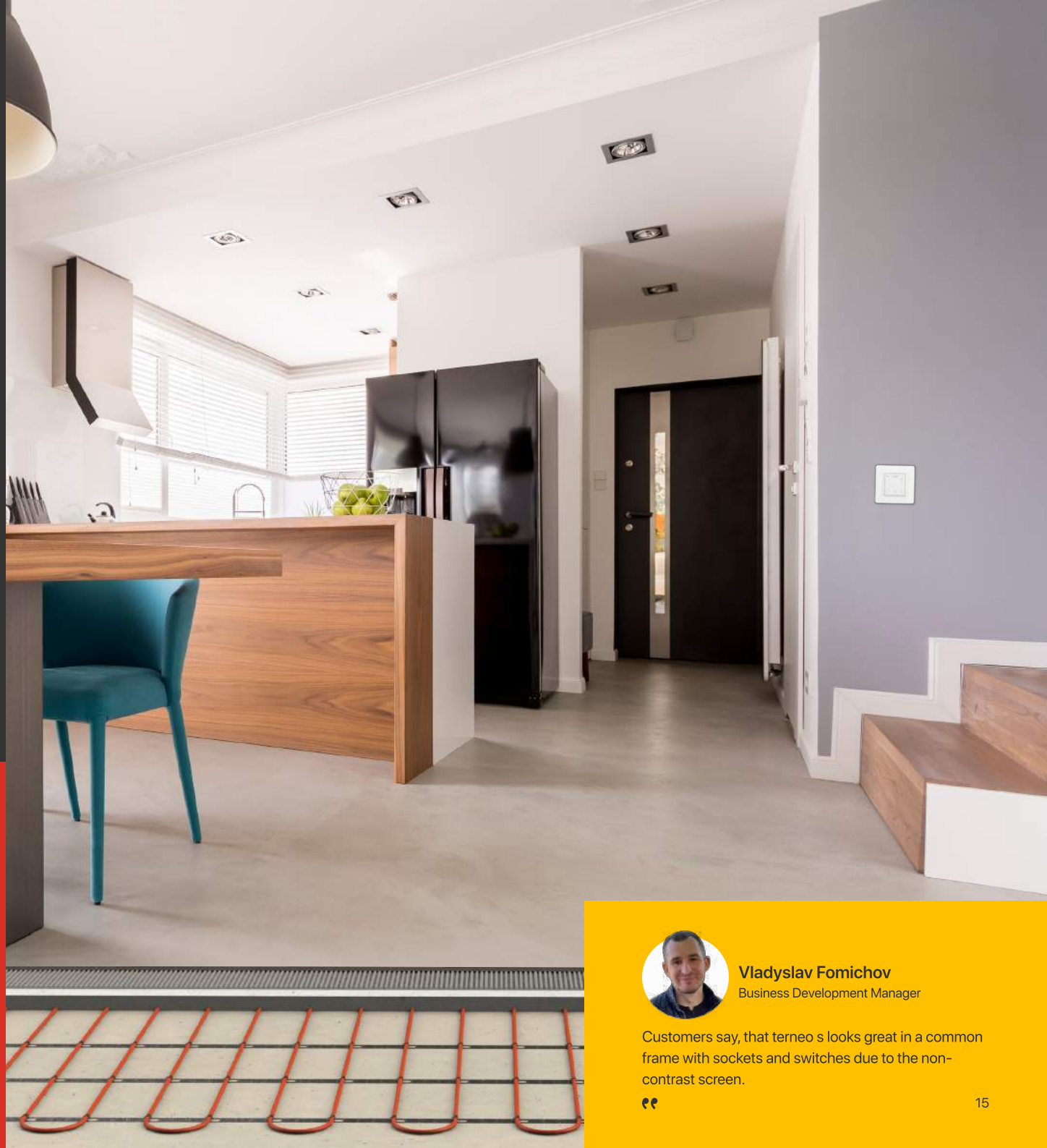
terneo s



White



Milk white



**Vladyslav Fomichov**  
Business Development Manager

Customers say, that terneo s looks great in a common frame with sockets and switches due to the non-contrast screen.



# Thermostats for underfloor heating



terneo sx, bx

terneo pro

terneo s

terneo k2

terneo b

terneo mex

terneo rtp

Floor temperature maintenance	5...45 °C	floor — 5...60 °C air — 5...35 °C	5...40 °C	-9...+99 °C	5...40 °C	10...40 °C	10...40 °C
Power	sx — 3 000 VA bx — 7 000 VA	3 000 VA	3 000 VA	2 × 3 000 VA	7 000 VA	3 000 VA	3 000 VA
Wi-Fi control with Geofencing	✓	✗	✗	✗	✗	✗	✗
Weekly schedule	✓	✓	✗	✗	✗	✗	✗
Energy statistics in kWh	✓	✓	✗	✗	✗	✗	✗
Expenses in money	✓	✗	✗	✗	✗	✗	✗
«Departure», «Preheating» functions	✓	✓	✗	✗	✗	✗	✗
Group control	✓	✗	✗	✗	✗	✗	✗
Button lock	✓	✓	✓	✗	✗	✗	✗
Thermal protection	✓	✓	✓	✓	✓	✗	✗
Possibility to continue work in case of sensor damage	✓	✓	✓	✗	✓	✗	✗
Screen temperature correction	✓	✓	✓	✗	✓	✗	✗
Timer to turn on heating up to 4 days	✓	✓	✓	✗	✓	✗	✗
Load operating time counter	✓	✓	✓	✗	✓	✗	✗
Two modes: heating and cooling	✓	✓	✗	✓	✗	✗	✗
Controls water floor heating with servo-type drives: NC — normal close, NO — normal open	NC NO	NC	NC	NC NO	NC NO	NC	NC

# Control heating by air temperature

## Timer to turn on heating

If you are going to leave, set the Timer for up to 4 days and terneo will heat the room until your return. It is a simple tool for saving without losing basic comfort.

## Load operating time counter

The cost of underfloor heating can be calculated by multiplying the operating time of underfloor heating under the load on the floor capacity and tariff.



terneo srz



White  
indication



Red  
indication



## Compact thermostat with brightness adjustment

Decrease the brightness of the indication in standby mode, so that the light does not distract you from the indication and does not attract undue attention. For example, in the bedroom for quality sleep, lack of light is especially important.



# Thermostats for infrared panels and convectors



terneo rzx



terneo pro



terneo srz



terneo rz



terneo rol

<b>Air temperature maintenance</b> Default / additional settings	5...35 °C	5...35 °C	0...30 °C / -30...+110 °C	0...30 °C / -25...+105 °C	0...35 °C
<b>Power</b>	3 000 VA	3 000 VA	3 000 VA	3 000 VA	3 000 VA
<b>Wi-Fi control with Geofencing</b>	✓	✗	✗	✗	✗
<b>Weekly schedule</b>	✓	✓	✗	✗	✗
<b>Energy statistics in kWh</b>	✓	✓	✗	✗	✗
<b>Expenses in money</b>	✓	✗	✗	✗	✗
<b>«Departure», «Preheating» functions</b>	✓	✓	✗	✗	✗
<b>«Open window» function</b>	✗	✓	✗	✗	✗
<b>Group control</b>	✓	✗	✗	✗	✗
<b>Button lock</b>	✓	✓	✓	✓	✗
<b>Thermal protection</b>	✓	✓	✓	✓	✓
<b>Screen temperature correction</b>	✓	✓	✓	✓	✗
<b>Timer to turn on heating up to 4 days</b>	✓	✓	✓	✓	✗
<b>Load operating time counter</b>	✓	✓	✓	✓	✗
<b>Two modes: heating and cooling</b>	✓	✓	✓	✓	✗
<b>Standby brightness adjustment</b>	✓	✓	✓	✗	✗
<b>Hysteresis</b> Default / additional settings	1 °C / 0,5...10 °C	1 °C	1 °C / 0,1...25 °C	1 °C / 0,5...25 °C	1 °C



# Wide limits of regulation and hysteresis

## Purpose:

Maintaining a constant temperature in piping systems. Ensuring stable operation of high-power electric boilers. Modernization of an old electric boiler. Heating of the sewage system. Heating of greenhouses.



### terneo rk

Temperature maintenance:  
-55...+125 °C

Hysteresis:  
0,5-25 °C

Current:  
32 A

## Functional:

Thermal protection	✓
Possibility to continue work in case of sensor damage	✓
Screen temperature correction If you want to adjust the indications, for example, by 1 °C.	✓
Timer to turn on heating up to 4 days	✓
Load operating time counter	✓



**Nataliia Pogorela**  
Business Development Manager

This is a universal «soldier» among terneo thermostats! **Temperature adjustment is possible from -55 to +125 °C, hysteresis 0,5 ... 25 °C and maximum power 32 A.** Therefore, the scope of the rk thermostat is limited only by your imagination!



# For electric boilers with feed and return control

## Purpose:

Ideal for upgrading old boiler models and automating their operation. It does not allow the heat carrier to overheat! It protects the boiler from overheating, and the user from burns.



### terneo BeeRT

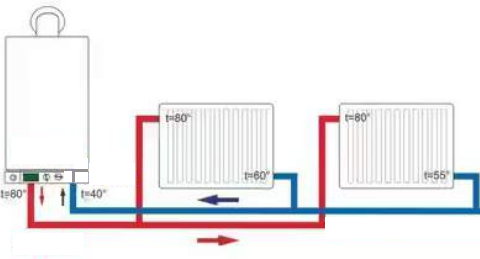
Temperature maintenance:  
5...85 °C

Hysteresis:  
1-30 °C

Current:  
2x16 A

## Functional:

Thermal protection	✓
Convenient installation and high sensitivity of sensors in heat shrink	✓
Circulation pump control	✓
External programmer connectivity	✓



Hot water out Cold water in



**terneo BeeRT controls the operation of the boiler by 4 parameters:**

1. Temperature of cold water in
2. Temperature of hot water out
3. Temp-re difference of hot water out
4. Temp-re difference of cold water in

# Effective snow and ice cleaning

## It is used to clear snow and ice:

Porch, sidewalk and roof of the house.

Open production areas, where there are loading platforms in the open air. Usage in large supermarkets, railway platforms and other places.



**terneo sneg**  
**OSA precipitation sensor**



### Perfect result

Timely melting improves the safety of people and vehicles and reduces damage to buildings or property during cold and off-season periods.



### Economy

The thermostat makes a decision on the inclusion of snowmelt not only on the basis of air temperature, but also when precipitation is detected.



### 2 sensors: air and precipitation

# Thermostats for snow melting systems



terneo sn



terneo sneg

Reasonable consumption

Temperature limits	upper — 0...+10 °C lower — -20...-1 °C	upper — 0...+10 °C lower — -20...-1 °C
Power	7000 VA	3000 VA
Button lock Protection of settings from children and in public places.		
Thermal protection		
Possibility to continue work in case of sensor damage The sensor is the main indicator of the heating system. This emergency mode will ensure the operation of the heating floor without a sensor before the repair is done.		
Screen temperature correction If you want to adjust the indications, for example, by 1 °C.		
Load operating time counter You can calculate the energy consumption for a certain period! To start a new period, you need to reset the counter to zero!		
Forced heating It is convenient, for example, if dry precipitation has fallen during severe frost, and you want to remove them. Or you need to check the health of the system during commissioning.		
Precipitation detection The system will only turn on when needed! After the temperature falls within the desired limits, the thermostat begins to check for precipitation. And if snow or ice is detected, it gives a signal to turn on the heating cable.		

Thanks to two sensors, heating is carried out exactly when it is really needed, allowing you to use electricity efficiently.



Lyudmila Zueva  
Business Development Manager

# Thermostats for ventilation and two-channel thermostat



terneo xd

**Purpose:** for ventilation control, refrigerators, freezers, air conditioners.



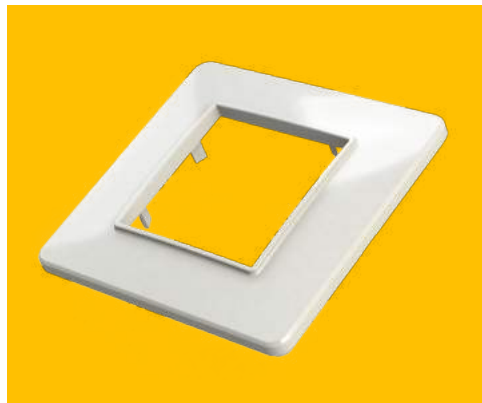
terneo k2

**Purpose:** to control two different heating or cooling systems, for example, you can use a thermostat along with heating and cooling equipment.

Temperature maintenance	−55...+125 °C	−9...+99 °C
Power	3000 VA	2x3000 VA
Hysteresis is the difference between the on and off temperatures	0,5-25 °C	1-30 °C
Thermal protection	✓	✓
<b>Possibility to continue work in case of sensor damage</b> The sensor is the main indicator of the heating system. This emergency mode will ensure the operation of the heated floor without a sensor before the repair is done.	✓	✗
<b>Screen temperature correction</b> If you want to adjust the indications, for example, by 1 °C.	✓	✗
<b>Timer to turn on heating up to 4 days</b> If you are going to leave, set the Timer for up to 4 days and terneo will heat the room until your return. Or, for example, on weekdays, going to work, turn on the timer for 8 hours. It is a simple tool for saving without losing basic comfort.	✓	✗
<b>Load operating time counter</b> You can calculate the energy consumption for a certain period! To start a new period, you need to reset the counter to zero!	✓	✗
Two modes: heating and cooling	✓	✓



# Installation elements



## Original terneo frame

Dimensions:  
85 x 80 mm

Colors:  
 White  Milk white


## Purpose:

All terneo thermostats with concealed installation are supplied with our original frames. The terneo frame is designed in the style of minimalism and fits perfectly into any interior.



## terneo adapter

Dimensions:  
85 x 81 x 28,5 mm

Colors:  
 White

## Purpose:

For on-surface installation of terneo thermostat, when:

- You do not want to destroy the wall and perform quite complex work on laying a channel for wiring in the wall.
- The repair in the room has already been done and you do not want to spoil the wallpaper or other wall decoration.
- In private houses and cottages, where many types of walls and heaters do not allow «to sink in» electrical wiring because of fire safety.

Compatible furniture with terneo

## terneo is compatible with all **Schneider-Electric** frames of Unica and Unica new series

In interior design, it is important to choose high-quality accessories of a certain color range, and our terneo is compatible with more than 100 types of Schneider-Electric frames.

## Studio



Cover frame:

Schneider Electric Unica new • 2 gangs • anthracite



Cover frame:

Schneider Electric Unica new • 3 gangs • white

# Voltage monitoring relay for professionals



## Content:

Multifunctional voltage monitoring relay	34
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## Purpose

ZUBR voltage monitoring relay professionally protects household and industrial appliances from dangerous fluctuations of voltage, current and power in the network. After normalization of the network parameters, the relay will automatically supply power to loading.



## Professional load switch-off model

This model allows you not to turn off the equipment in case of voltage deviations that are safe in size and duration. This reduces the number of emergency shutdowns with short-term and insignificant voltage output outside the established limits.



## True RMS

TrueRMS reduces the effect of network interference on the accuracy of voltage measurement when the voltage shape is different from the sinusoid. Thanks to this algorithm, the relay will turn off the load before the voltage surge negatively affects the connected devices.



## Overheating protection

If the temperature inside the housing exceeds the norm, an emergency shutdown will occur until the temperature drops below 60 °C. If the protection works more than 5 times during the day, the relay will be blocked, until you switch it on manually.

# Voltage monitoring relay with current and power control

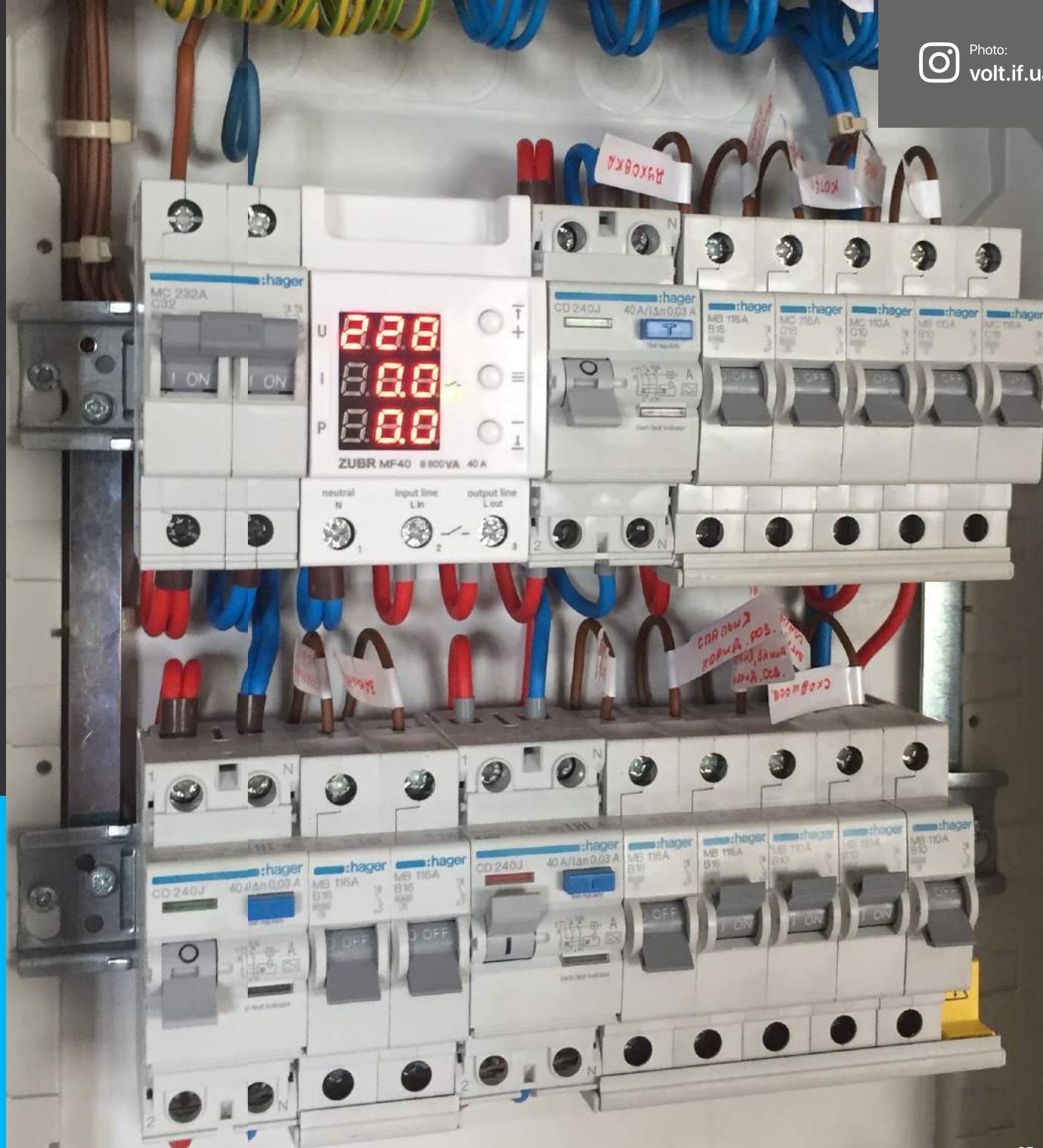
## Purpose:

ZUBR MF multifunctional relay is designed to protect the single phase electric network from unacceptable voltage deviations, as well as exceeding current consumption and active power.

With it, you can limit the active power consumption of connected equipment. The relay operates on the cutoff principle: if the set values are exceeded, it turns off the load. It is additionally equipped with thermal protection.



ZUBR MF





# Compact voltage monitoring relay with maximum functions

## Purpose:

ZUBR D2 voltage monitoring relay is designed to protect equipment from excessive voltage fluctuations. In case of emergency, the device switches off the load. Relays are used in single-phase alternating current networks (230 V). It is additionally equipped with thermal protection.



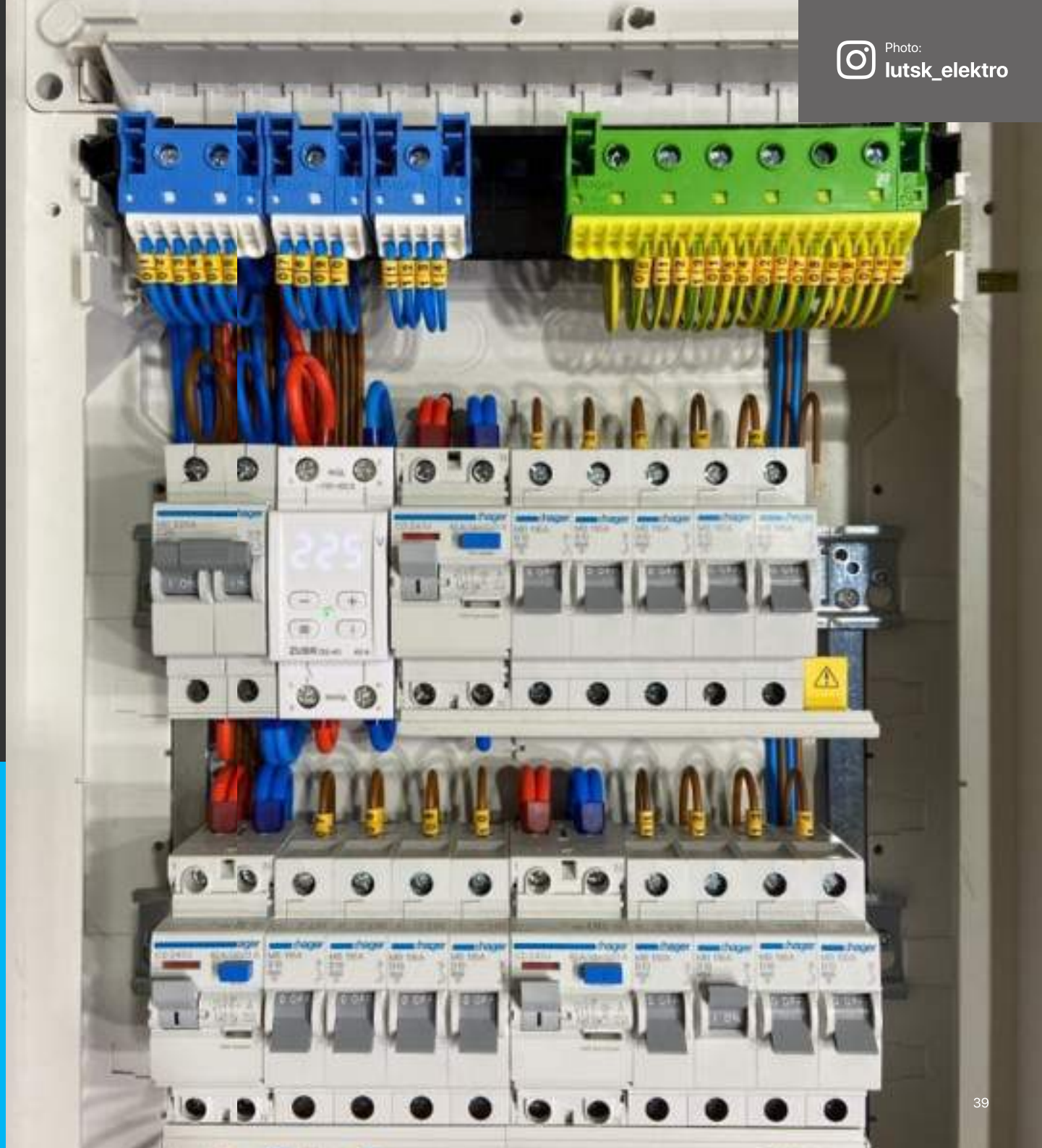
ZUBR D2



White indication



Red indication





# Multifunctional relays

## with maximum functions

### Purpose:

To protect single-phase electrical equipment from high and low voltage, open circuit, and limits current or power consumption. In case of voltage deviations, ZUBR will turn off the load, and in case of excessive current or power, the load will be disconnected after a specified delay time.



### ZUBR MF2 red NEW

Rated load current:  
40, 50, 63 A

Housing width:  
2 modules

Protection:  
3 parameters: voltage, current  
and full power



### ZUBR CV2 red NEW

Rated load current:  
40, 50, 63 A

Housing width:  
2 modules

Protection:  
2 parameters: voltage and  
current or full power

ZUBR MF2 and ZUBR CV2 have the same functionality, except that MF2 provides protection in three parameters and ZUBR CV2 in two.

### Functional:

#### Voltage protection

Protects the equipment from high and low voltage, as well as from zero break. When an emergency occurs, the voltage relay turns off the load, and when normalized, turns it back on. Load switch-off time at voltage reduction: not more than 0,04 sec (<120 V), 0,1-10,0 sec (>120 V).

#### Current and power protection

It can be used to limit the full power consumption of the connected equipment. ZUBR CV2 can only protect one of two parameters: either current or full power.

#### Alarm log for 100 values

A very useful feature. You will be aware of all cases when the ZUBR worked due to voltage, current or full power exceeding the established limits.

#### Switch-on and -off load delay

Adjustable time before switching on the load after an accident. It is used to protect compressor equipment, such as refrigerators to increase the service life. If the current limit is exceeded, the relay turns off the power after the set time.

#### Professional load switch-off model

You can activate a professional switch-off time delay model to reduce the number of outages of modern equipment that works stably under certain power voltage deviations. Thus, the use of ProModel allows you not to turn off the equipment in case of voltage deviations that are safe in size and duration.

#### Protection from frequent operations in case of unstable network

Limits the number of repeated relay operations in a row to eliminate their detrimental effect on protected equipment. Without such protection, equipment sensitive to frequent operations, such as a refrigerator or air conditioner, can fail.

#### High accuracy of voltage measurements with TrueRMS

TrueRMS reduces the effect of network interference on the accuracy of voltage measurement when the voltage shape is different from the sinusoid. Thanks to this algorithm, the relay will turn off the load before the voltage surge negatively affects the connected devices.

#### Adjustable hysteresis by voltage

Hysteresis makes it possible to optimize the number of trips, making sure that the voltage has become more stable and less than the established limit.

#### Overheating protection

The temperature sensor inside the case ensures safety and turns off the load if the temperature inside the case exceeds 80 °C.

#### Correction of screen indications

# Why do professionals prefer ZUBR D2?

## High reliability and durability

Using a switching power supply increases the life of devices. Absence of metal film capacitors, which eventually lose their properties (their capacity) as a result of dielectric degradation.

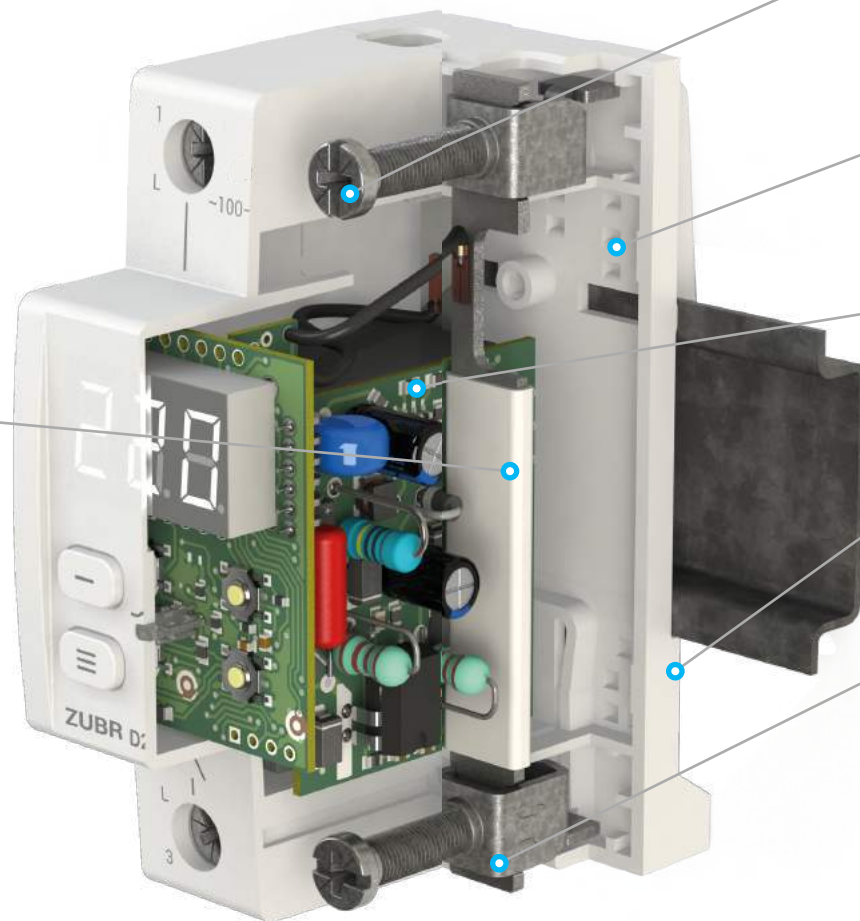
### Decreased energy consumption.

The use of a switching power supply reduces its own energy consumption.

The solid power section eliminates possible heating at the connection points.

## Professional electricians value us for quality and functionality

Watch detailed review of ZUBR D2 and its installation in the switchboard for the apartment in the video on YouTube — [elektrik-sam.info](http://elektrik-sam.info)



## Well-designed construction of the case

- **Easy standardized connection:** no need to use when connecting the neutral terminal. Convenient connection of phase and zero input — to upper terminals, output — to lower.

- **Special ventilation holes** for removing heat from the device.

## Enhanced safety

- **Internal temperature sensor.** If the temperature inside the case exceeds 80 °C, the relay will switch off the voltage, until the temperature turns to normal.

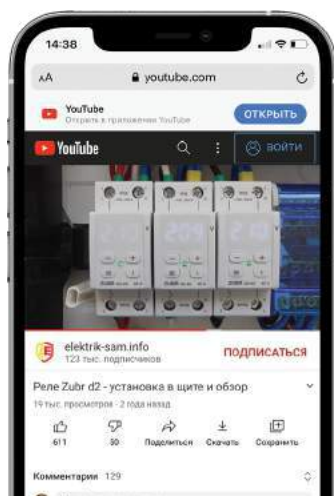
- **The case which does not support combustion** from self-extinguishing European polycarbonate with addition of flame retardants, which interfere with combustion.

- **Powerful crimp terminals**

## Design and usability settings

Screen brightness adjustment

Abbreviations for the names of menu items decoded. Press the «i» button to see the full name of the menu section on the screen.







**Anna Nizeika**  
Commercial Director

+60 % — D2 sales growth, compared to the previous year. This is the fastest growth among ZUBR relays. If D2 were stocks, I would invest in them! 🤖🤖🤖



# Functional of single-phase DIN rail voltage monitoring relays

	<div>  </div> <div>MF</div>	<div>  </div> <div>CV2</div>	<div>  </div> <div>D2</div>	<div>  </div> <div>Dt</div>
Rated load current	25, 32, 40, 50, 63 A	40, 50, 63 A	40, 50, 63 A	25, 32, 40, 50, 63 A
Housing width	3 modules	2 modules	2 modules	3 modules
Voltage protection	✓	✓	✓	✓
Current and power protection	Current and active power	Current and full power	✗	✗
Alarm log <div>A very useful feature. You will be aware of all cases when the ZUBR worked due to voltage, current or power exceeding the established limits.</div>	1 value	100 values	100 values	50 values
Switch-on load delay <div>Adjustable time before switching on the load after an accident. It is used to protect compressor equipment, such as refrigerators to increase the service life.</div>	✓	✓	✓	✓
Professional load switch-off model <div>You can activate a professional switch-off time delay model to reduce the number of outages of modern equipment that works stably under certain power voltage deviations.</div>	✓	✓	✓	✓
Protection from frequent operations in case of unstable network <div>Limits the number of repeated relay operations in a row to eliminate their detrimental effect on protected equipment sensitive to frequent operations, such as a refrigerator or air conditioner, can fail.</div>	✓	✓	✓	✗
High accuracy of voltage measurements with TrueRMS <div>The total number of outages will be reduced! But in all cases thanks to this algorithm, ZUBR will turn off the load before the voltage surge negatively affects the connected devices.</div>	✓	✓	✓	✓
Adjustable hysteresis by voltage <div>Hysteresis makes it possible to optimize the number of trips, making sure that the voltage has become more stable and less than the established limit.</div>	✗	✓	✓	✗
Overheating protection <div>The temperature sensor inside the case ensures safety and turns off the load if the temperature inside up to 80 °C.</div>	✓	✓	✓	✓
Correction of screen indications	✓	✓	✓	✓

# Voltage monitoring relay with two operating modes: single-phase and three-phase load

## Purpose:

To protect domestic and industrial electrical equipment from dangerous voltage deviations.

It can work as three single-phase relays in one case with independent settings and as a three-phase relay with a contactor.

## Financially more profitable solution, than buying three separate voltage relays

You get more features and an economical size compared to 3 separate 3-module relays that take up 9 modules.



**ZUBR D6 red**



Occupies only 6 modules.



Photo:  
buzz\_electric\_kyiv



# Three-phase voltage monitoring relay

## Purpose:

To protect industrial and domestic three-phase electrical equipment (including three-phase electric motors) from exceeding the permissible voltage limits, asymmetry (skew), adhesion and phase rotation.

ZUBR D6 can work as three single-phase relays in one case with independent settings and as a three-phase relay with a contactor. This model is designed primarily as a cost-effective alternative to three separate single-phase voltage relays.



### ZUBR D6

Rated load current:  
40, 50, 63 A

Housing width:  
2 modules

Modes:

- The single phase load (asynchronous)
- The three-phase load (synchronous)



### ZUBR 3F

⚠ Used with contactor

Rated load current:  
5 A

Housing width:  
3 modules

Modes:

- The three-phase load (synchronous)



D6 3F

## Functional:

<b>Voltage protection</b> Protects the equipment from high and low voltage, as well as from zero break. When an emergency occurs, the voltage relay turns off the load, and when normalized, turns it back on.	✓	✓
<b>Can work as three single-phase relays in one case with independent settings</b>	✓	✗
<b>Alarm log</b> A very useful feature. You will be aware of all cases when the ZUBR worked due to voltage, current or power exceeding the established limits.	99 values	100 values
<b>Switch-on load delay</b> Adjustable time before switching on the load after an accident. It is used to protect compressor equipment to increase the service life.	✓	✓
<b>Professional load switch-off model</b> You can activate a professional switch-off time delay model to reduce the number of outages of modern equipment that works stably under certain power voltage deviations.	✓	✓
<b>Protection from frequent operations</b> Limits the number of repeated relay operations in a row to eliminate their detrimental effect on protected equipment.	✓	✗
<b>High accuracy of voltage measurements with TrueRMS</b> Thanks to this algorithm, the relay will turn off the load before the voltage surge negatively affects the connected devices.	✓	✓
<b>Adjustable hysteresis by voltage</b> Hysteresis makes it possible to optimize the number of trips, making sure that the voltage has become more stable and less than the established limit.	✓	✓
<b>Overheating protection</b> The temperature sensor inside the case ensures safety and turns off the load if the temperature inside the case exceeds 80 °C.	✓	✗
<b>Correction of screen indications</b>	✓	✓

# Comparative characteristics of socket voltage monitoring relays



	SR1	R1
Rated load current	16 A	16 A
Overall dimensions	106 x 60 x 76 mm	124 x 57 x 83 mm
Alarm log	1 value	50 values
Switch-on load delay Adjustable time before switching on the load after an accident. It is used to protect compressor equipment, such as refrigerators to increase the service life.	✓	✓
Thermal protection	✓	✓
True RMS	✓	✓
Professional load switch-off model	✓	✓
Correction of screen indications	✓	✓
Button block	✓	✓
Screen brightness adjustment	✓	✗
Switching power supply	✓	✗



**Vladyslav Fomichov**  
Business Development Manager

If you are not an electrician or there is no place in the switchboard, or the repair works have been already done, **you can protect expensive equipment by purchasing a voltage relay in socket.**



# Voltmeter-ampereometers

## Purpose:

Designed for domestic or industrial use, to improve the electrical panel and for visual indication of network parameters. For example, you can install it in an apartment where there is already a voltage monitoring relay, but without indication. These devices are indicators, they do not protect, only measure and show.



V1



V3



VA-1 red

Number of phases	1	3	1
Housing width	3 modules	3 modules	2 modules
Measurement of voltage , V	✓	✓	✓
Measurement of current, A	✗	✗	✓
Measurement of reactive power, kVAr	✗	✗	✓
Measurement of active power, kW	✗	✗	✓
Measurement of full power, kVA	✗	✗	✓
cos φ measurement	✗	✗	✓
Network deviation log	✗	✗	✓
Storage of min and max voltage	✓	✓	✗
Correction of screen indications	voltage	voltage	voltage and current
Control of phase alternation	✗	✓	✗
Screen brightness adjustment	✗	✗	✓

# 580 000

Devices are produced annually for domestic and industrial use.

**Kyiv, Ukraine**  
location of the manufacturer

**Since 2003**  
producing devices

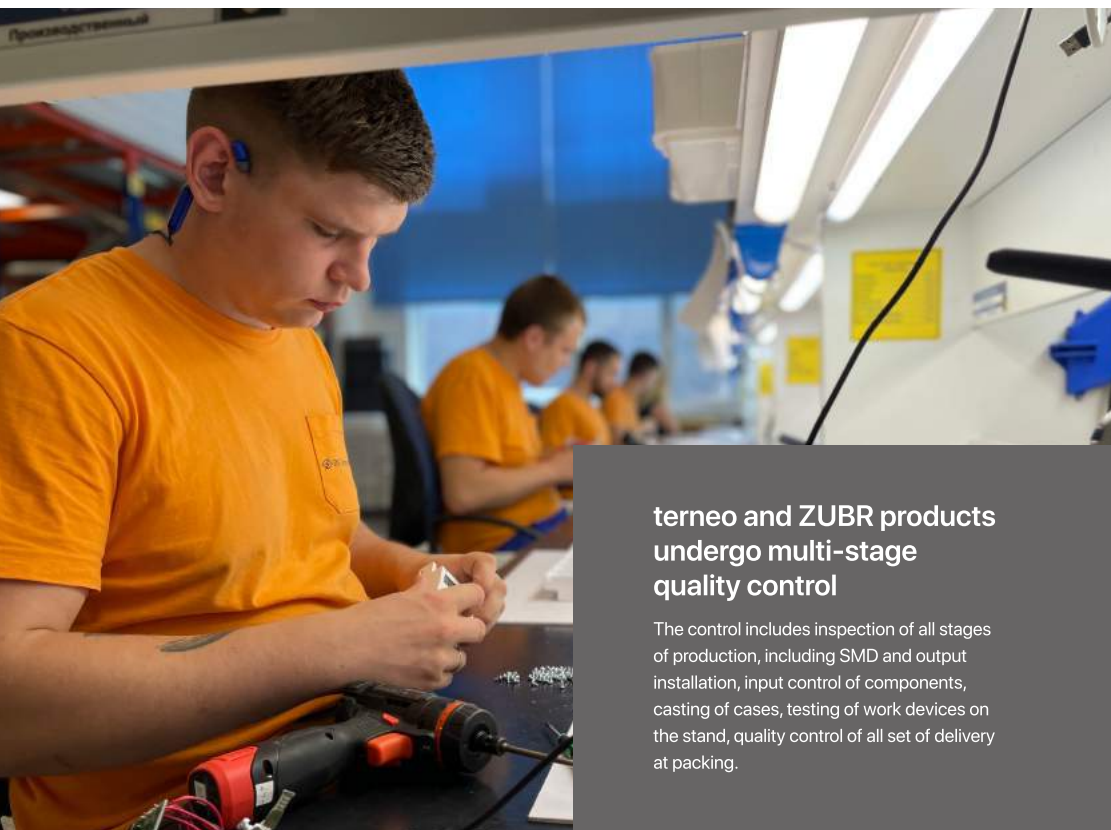
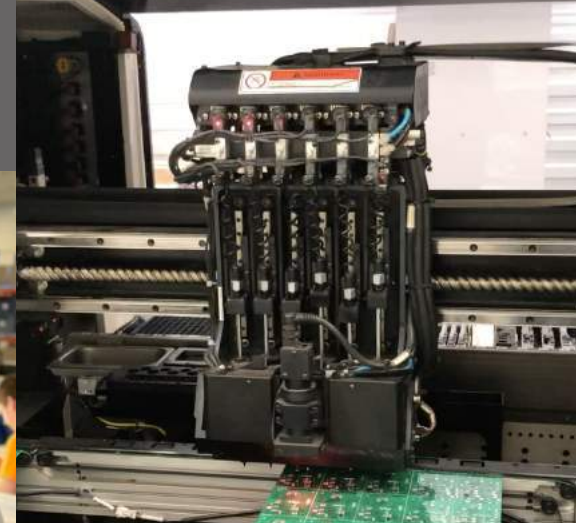
**1500 m<sup>2</sup> plant in Kyiv**

Since 2003 the area has grown from 200 m<sup>2</sup> to 1500 m<sup>2</sup>.



**Own SMD board assembly line**

The installer takes all the necessary elements one by one and quickly and meticulously places them on the solder paste.



**terneo and ZUBR products undergo multi-stage quality control**

The control includes inspection of all stages of production, including SMD and output installation, input control of components, casting of cases, testing of work devices on the stand, quality control of all set of delivery at packing.



**Own injection molding machine for casting cases**

This gives us independence from third-party contractors, the ability to fully control the quality of products, supply of materials and quality of production.



## Robots for high-quality soldering

The robotization of production increases the accuracy of technological processes and minimizes the influence of the human factor.



## Laser application on housings

## Each device is tested according to an individual program

To guarantee quality protection, the relay passes the test at normal and non-normal voltage.



# You can always ask us any question in a convenient way for you

## Contacts

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More information about our products and plant on social networks



[www.ds-electronics.company](http://www.ds-electronics.company)

Full description of functions and technical characteristics, instructions for installation and operation you will find in the card of each product on our website.

The manufacturer reserves the right to change the specifications of the devices without additional messages. In order to avoid confusion when purchasing the devices, follow the installation and operation manual and information from the sellers.