

Invio-868 | Invio-915
28 380.0006 | 28 380.0906

e l e r o



EN

Operating instructions

Keep the operating instructions in a safe place!

181004906_EN_1016



Translation from the original German version.

All other documents in different languages are translations of the original version.

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1 General

1.1 Notes on the operating instructions

The content structure is based on the life cycles of the Invio-868/Invio-915 (hereinafter referred to as the "unit" or "product"). The manufacturer reserves the right to make changes to the technical data in these operating instructions at any time. In some cases, this technical data may differ from those of the respective product version; however, the functional information will not undergo significant changes or become invalid. The current version of the technical specifications may be requested from the manufacturer at any time. No claims may be asserted against the manufacturer as a result of the preceding provision. Deviations from textual or visual statements may occur depending on the product's technical development, features and accessories. Deviating information for special versions will be provided by the manufacturer in the sales documentation. Other information shall remain unaffected by these provisions.

1.2 Standards and guidelines

During construction, the fundamental health and safety requirements were applied and provision was made for the appropriate legislation, standards, directives and guidelines. The safety of the product is confirmed by the Declaration of Conformity (see Section 5, EU Declaration of Conformity). All information relating to safety in these installation instructions refers to the laws and regulations that are currently valid in Germany. All information in these installation instructions must be complied with at all times and without limitation. In addition to the safety notices and directions in these operating instructions, the regulations applicable at the place of installation with regard to accident prevention, environmental protection and occupational safety must be observed and adhered to. The regulations and standards for safety assessment can be found in the EC Declaration of Conformity.

1.3 Intended use

The product is intended to be used in the area of home installation technology for the control of electric roller blinds and shutters, awnings and Venetian blinds, as well as certain electric lighting and heating systems. It is a flush-mounted radio transmitter. Other applications must be agreed upon in advance with the manufacturer, **elero** GmbH Antriebstechnik (see Section 8 for the manufacturer's address).

The plant operator shall be solely responsible for any damages arising from the improper use of this product. The manufacturer cannot be held liable for personal or material damages caused by misuse or procedural errors, nor by improper operation or commissioning.

The safe and error-free use and operational reliability of the product are only guaranteed when it is used properly according to the specifications contained in these operating instructions.

1.4 Foreseeable misuse

Any use that deviates from the intended use as stated by the manufacturer, **elero** GmbH is deemed as foreseeable misuse.

1.5 Warranty and liability

The General Terms and Conditions of the manufacturer, **elero** GmbH, apply at all times (see Section 8 for the manufacturer's address). The conditions of sale and delivery are included in the sales documents and presented to the plant operator upon delivery. Any liability claims for personal or material damages are excluded when they can be attributed to one or more of the following causes:

- Improper use of the product
- Improper installation, commissioning or operation of the product
- Structural modifications to the product without the written consent of the manufacturer
- Operation of the product with improperly installed connections, defective safety devices or improperly installed safeguards

- Failure to observe the safety regulations and information presented in these operating instructions
- Exceeding of the technical data

1.6 Customer service provided by the manufacturer

In the event of a fault, the product may only be repaired by the manufacturer. The address for sending the product to Customer Service can be found in Section 8, "Manufacturer's address".

If you did not purchase the product directly from **elero**, please contact the supplier of the product. Please have the serial number to hand when contacting Customer Service. This can be found on the product's type plate.

2 Safety

2.1 General safety instructions

These operating instructions contain all the safety information that must be observed in order to avoid and prevent danger when working with the product in the individual life cycles. Safe use of the product is guaranteed if all the specified safety instructions are complied with.

2.2 Safety principles

This product has been designed in accordance with the latest technological developments and general safety regulations, and is safe to operate. During construction of the product, the fundamental health and safety requirements were applied and provision was made for the appropriate legislation, standards, directives and guidelines. All specifications pertaining to safety relate to the currently valid regulations of the European Union. Plant operators in other countries must ensure that the applicable laws and national regulations are adhered to.

In addition to the safety notices and directions in these operating instructions, the generally applicable regulations with regard to accident prevention and environmental protection must be observed and adhered to.

The product must only be used when in perfect working order, for its intended use, and in compliance with the safety instructions outlined in these operating instructions. This product has been designed for use as described in the section "Intended use". Improper use may pose a danger to the life and limb of the user or of third parties, or may cause damage to the product or other property. Accidents or near-accidents occurring during the use of the product that have led to or could have led to personal injuries and/or damage to the work environment must be reported to the manufacturer directly and without delay.

All the safety information specified in the operating instructions and on the product must be observed. In addition to these safety instructions, the plant operator must ensure that all national and international regulations are complied with, together with any other binding regulations for operational safety, accident prevention and environmental protection in force in the country of use. All work conducted on the product must be carried out by trained and authorised personnel who have received appropriate safety-related instruction.

2.3 General duties of the plant operator

- ❑ The plant operator is obliged to only operate the product in perfect and safe operational condition. In addition to the safety notices and directions in the operating instructions, the operator must ensure that the general safety and accident prevention regulations, the requirements of DIN VDE 0100 and the regulations regarding environmental protection in the country of use are observed and adhered to.
- ❑ The plant operator is responsible for ensuring that all work conducted with the product is carried out by trained and authorised personnel who have received appropriate safety-related instruction.

- ❑ The plant operator responsible for the product or the personnel authorised by said operator hold the ultimate responsibility for ensuring accident-free operation.

2.4 Requirements of the personnel

- ❑ Each person who is tasked to work with the product is required to have read and understood the operating instructions fully before conducting work. The same applies to those who have been trained for working with or who have worked with a similar product.
- ❑ All work conducted with the product must be carried out by trained and authorised personnel who have received appropriate safety-related instruction. Before starting any work activities, the personnel must be familiarised with the dangers associated with the product.
- ❑ Individuals may only carry out work according to their qualifications. The areas of responsibility of the respective personnel must be clearly defined.
- ❑ All personnel tasked to work with the product must be free of physical limitations that temporarily or permanently restrict their attention or judgement (e.g. due to fatigue).
- ❑ Minors and persons under the influence of medication, drugs or alcohol are not permitted to handle the product or be involved in its installation, disassembly or cleaning in any way.

2.5 Safety notices and directions relating to the technical condition

- ❑ The plant operator is obliged to only operate the product in perfect and safe operational condition. The technical condition must comply with the legal requirements at all times.
- ❑ If any risk to people or any operational changes are detected, the product must be taken out of operation immediately and the plant operator must be informed accordingly.

- ❑ No changes, conversions or attachments may be made to the product without the permission of the manufacturer.

2.6 Safety instructions relating to operation

- ❑ The plant operator responsible for the product is obligated to ensure that it is in safe and proper condition prior to initial commissioning.
- ❑ Such checks must also be conducted during operation of the product, at regular intervals determined by the plant operator.

2.7 Safety notices and directions relating to the electrical installation

- ❑ All work on the electrical equipment of the system may only be carried out by authorised electricians according to the applicable rules and regulations of the trade association, in particular the requirements laid out in DIN VDE 0100. Furthermore, the national legal regulations applicable in the respective country of use must be observed.
- ❑ In the event of any defects, such as loose connections or defective or damaged cables to the system, the product must not be put into operation. Furthermore, the national legal regulations applicable in the respective country of use must be observed.
- ❑ Prior to inspection, installation and disassembly work, the system (roller shutter, awning, Venetian blind, roller blind) must be switched to a de-energised state.
- ❑ All electrical connections, safety devices, fuses, etc. must be properly installed, connected and earthed.
- ❑ The power supply provided must be in accordance with the electric circuit diagram (voltage type, voltage level).
- ❑ A miniature circuit breaker (MCB) is sufficient to isolate the system from the power supply (if only one phase and neutral is used).

- ❑ If a stationary (permanently installed) drive is not equipped with a power cable with a plug or another means of disconnecting it from the mains that has a contact opening width at each pole according to the conditions of overvoltage category III (pursuant to IEC 60664-1) for full disconnection, such a disconnection device, must be built into the fixed electrical installation in accordance with facility requirements.
- ❑ The unit only offers protection against being touched with the back of the hand, not against accidental contact.
- ❑ Only operate the programming button **P** using insulated tools (4 kV voltage protection).

3 Product description

3.1 General

The Invio-868/915 is a radio transmitter for the **elero** ProLine and ProLine 2 radio systems. The elero ProLine and ProLine 2 radio systems control home automation systems such as roller shutters, Venetian blinds, awnings, lighting and heating systems.

The installation is intended to be installed in a flush-mounted switch box.

It is controlled by 230 V devices or Venetian blind switches.

It can be used for either the unidirectional **elero** ProLine product range or the bidirectional **elero** ProLine 2 product range.

3.2 Description of the unit

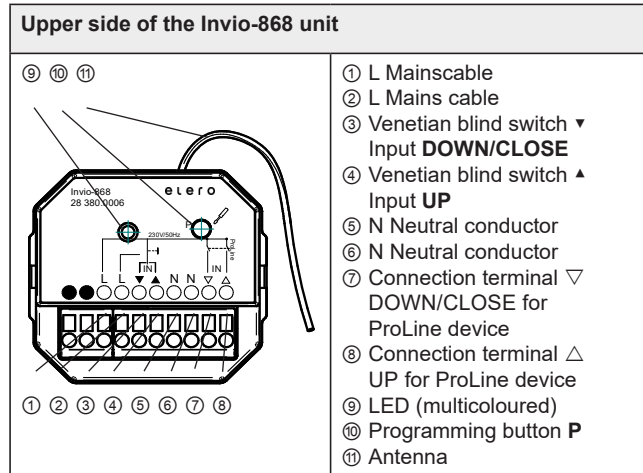


Fig. 1 Upper side of the Invio-868 unit

3.3 Product features

- ❑ Flush-mounted radio transmitter (1-channel) for **elero** ProLine or **elero** ProLine 2 radio systems
- ❑ Connection terminals for Venetian blind switch
- ❑ Routing wired control commands from ProLine control devices to the ProLine or ProLine 2 radio system.
- ❑ Suitable for retrofitted automation of roller shutters, awnings or Venetian blinds
- ❑ Connection terminals for ProLine devices:
This terminal can be used to connect any potential-free device. Connected ProLine devices must be calibrated as “drive control devices” (not as “group control devices”)

3.4 Product versions

The product is available in the 868-MHz version or the 915-MHz version. The exact product specifications can be obtained from the order confirmation.

3.5 Scope of supply

- Invio-868 or Invio-915
- Printed operating instructions

3.6 Technical data

Invio-868/Invio-915 technical data	
Rated voltage [V]	230 to 240 (AC) inputs ③, ④, ⑦, ⑧
Rated frequency [Hz]	50 to 60
Protection class	IP 20
Permitted ambient temperature [°C]	0 to 55
Radio frequency, band [MHz]	868 or 915
Radio range [m]	Up to 100 (open area) approx. 30 (in buildings)
Power consumption [W]	< 0.5 (standby)
Transmission power [mW]	Maximum 10
Protection class	II
Rated impulse voltage [V]	4000
Software class	A

Invio-868/Invio-915 technical data	
Degree of contamination	2
Dimensions (W, H, D) [mm]	57 x 48 x 27
Weight [g]	43
Installation type in switch box	Flush-mounted wall mounting (60 mm Ø, 61 mm deep) or surface-mounted wall mounting
Conformity	CE
Article number (Invio-868) (Invio-915)	28 380.0006 28 380.0906

Fig. 2 Invio-868/Invio-915 technical data

4 Explanation of functions

This section provides basic information on using the product.

4.1 Bidirectional radio system

The **elero** ProLine 2 radio system is a bidirectional radio system. A bidirectional radio system transmits radio signals to a radio receiver and enables feedback from the radio receiver to the transmitter. The radio signal can be sent directly to the target receiver. If this is not possible, the radio signal is routed via other bidirectional participants until it reaches the target receiver. The target receiver executes the command and sends a confirmation back to the transmitter for programming and deletion processes.

In order for bidirectional radio operation to work, all of the components involved must be able to transmit and receive radio signals. If this is not the case, the system will work unidirectionally like the **elero** ProLine.

4.2 Unidirectional radio system

The **elero** ProLine radio system is a unidirectional radio system. A unidirectional radio system transmits radio signals to radio receivers. However, unlike in a bidirectional radio system, the radio receiver cannot send messages back to the transmitter. It is also impossible to transmit radio signals from one radio receiver to another radio receiver using this system.

4.3 Group control

The term “group” refers to several receivers controlled at the same time. The selected group is controlled by a travel command. The transmitter can be programmed into any number of receivers.

4.4 Commissioning

- Before installation in the required installation position, check that the transmitter is functioning properly with the receiver.
- The flush-mounted switch box must be fixed in place in such a way that the drill hole does not touch any electrical lines.
- For details on how to mount the control device, refer to the illustration in Fig. 3 (example with **elero** AstroTec) and the **elero** control device catalogue.

4.5 Connection/Installation

WARNING!



Risk of death due to faulty electrical connection.

Risk of electric shock.

- Installation must be carried out by a professional electrician!
- The unit must be connected by an authorised electrician to power line L and neutral conductor N in a suitable flush-mounted switch box/hollow wall box.
- SELV control cables must be laid separately from the power line L (230 V).

Important:

- Only operate the programming button P using insulated tools (4 kV voltage protection).
- 1. Connect the prepared wiring from the wall installation as shown in the following diagram:

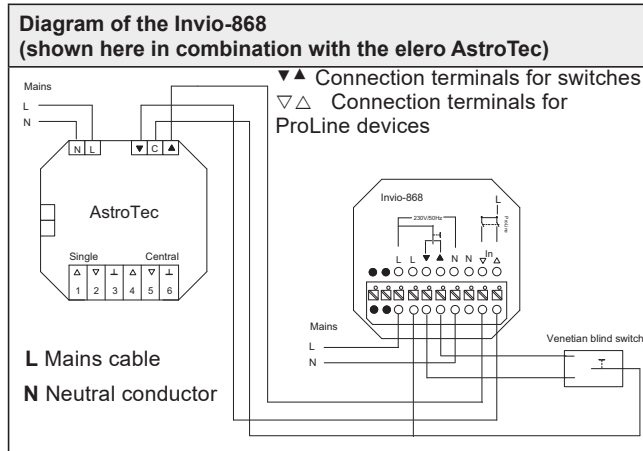


Fig. 3 Connection diagram for the Invio-868 to available **elero** control device components (shown here using the example of the AstroTec)

- 2. Carry out the Invio-868/Invio-915 programming procedure at the receiver (see Section 4.6 “Programming the radio”).
- 3. Place the Invio-868/Invio-915 in the switch box.
- Make sure that the radio antenna is installed as far away from walls and other objects as possible for an optimum signal.
- Do not kink, shorten or extend the antenna.
- Do not allow the antenna to rest on metal surfaces.

- If reception is poor, adjust the antenna.
- Multiple radio systems operating on the same frequency can lead to reception interferences.
- The range of the radio signal may be reduced due to structural conditions.

4.5.1 Connection terminals for Venetian blind switch ▼ ▲

A Venetian blind switch can be connected to the connection terminals ③ and ④ (▼ ▲).

Special note: Pressing the button for less than 250 ms triggers the **STOP** function.

4.5.2 Connection terminals for ProLine devices ▽ △

All potential-free devices can be connected to the connection terminals ⑦ and ⑧ (▽ △). However, only devices in the **elero** ProLine series can use all the signals.

Important:

- The connected ProLine devices must be calibrated as “drive control devices”.
- ProLine safety commands (e.g. from a wind sensor) are not transmitted as safety commands in ProLine 2. Instead, they are transmitted as standard commands and are not subject to any loss monitoring.
- The following command (from a connected ProLine control device or a Venetian blind switch) overrides the existing command for the duration of the command.

4.6 Programming the radio/transmitter/channel

Requirement:

- ❑ The Invio-868/Invio-915 must be installed. In addition to this, a Venetian blind switch or another **elero** ProLine control device must be connected.
1. For previously installed electric receivers, turn the safety fuse off and then back on again after a few seconds. The receiver will now be in programming mode for 5 minutes.
 2. Press the Invio-868/Invio-915 programming button **P** for at least 1 second. To assign movements to the travel keys (**UP** and **DOWN**), press the **DOWN** key on the keyboard or the control device immediately after beginning a descent (within 1 second).
 3. Immediately after beginning an ascent (within 1 second), press the **UP** key on the keyboard or on the control device. Result: The shutter/blind/awning will stop. The Invio-868/Invio-915 is programmed.



Important note for programming the radio:

- ❑ The Invio-868/Invio-915 does not have a separate **STOP** button (unlike the other **elero** transmitters).
- ❑ In order to stop a programming procedure, the programming button **P** must be released at least once. After this, the programming button **P** will work like a **STOP** button.
- ❑ Outside of the programming procedure, the programming button **P** will not act as a **STOP** button (any longer). Instead, it will work just like a conventional programming button **P**.

4.6.1 Intermediate position/ventilation position




Intermediate position for			
	Roller shutters	Awnings	Venetian blinds
			
Pos ▾	Intermediate position	Intermediate position	Intermediate position
Pos ▲	Ventilation position	Fabric tautening	Turning position

Fig. 4 Intermediate positions for roller shutters/awnings/Venetian blinds

Important:

The intermediate position or ventilation/tilting position

- ❑ Can only be programmed and deleted using an **elero** ProLine control device or a (programmed) handheld transmitter
- ❑ Cannot be programmed or deleted using the Invio-868/Invio-915
- ❑ Cannot be programmed or deleted using a Venetian blind switch.

4.6.2 Moving to the intermediate position

Requirement:

- ❑ The Invio-868/Invio-915 must be programmed.
1. On the Venetian blind switch ▼ ▲, press the **DOWN/CLOSE** button twice in quick succession.
 2. The drive travels to the saved intermediate position.

If there is no programmed intermediate position, the blind travels to the lower end position.

4.6.3 Moving to the ventilation/fabric tautening position

(roller shutter/awning)

Requirement:

- The Invio-868/Invio-915 must be programmed.
 - 1. On the Venetian blind switch ▼ ▲ , press the **UP** button twice in quick succession.
 - 2. The shutter/awning travels to the saved ventilation position.
- If there is no programmed ventilation or fabric tautening position, the shutter/awning travels to the lower end position.

4.7 Deleting the transmitter

The programming button **P** must be held down for at least 12 seconds. LED lighting (red, 1 second duration) on the Invio-868/Invio-915 indicates that the deletion process has been completed successfully.

5 EU Declaration of Conformity

elero GmbH hereby declares that the radio system type Invio-868 is in compliance with Directive 2014/53/EU. The complete text of the EU Declaration of Conformity is available at the following Internet address: www.elero.de/downloads

6 Troubleshooting

Fault	Cause	Remedy
Drive running in wrong direction	Incorrect direction programmed.	Delete transmitter and program correctly.

Fig. 5 Troubleshooting for the Invio-868/Invio-915

7 Repair

Please contact your specialist if you have any questions. Please always provide the following information:

- Item number and designation on the type plate
- Type of fault
- Unusual events preceding fault
- Accompanying conditions
- Your own theories regarding the cause of the problem

8 Manufacturer's address / Service

elero GmbH
72660 Beuren
Germany
www.elero.de

If malfunctions have occurred or equipment has been damaged despite proper handling, please contact your contractor or dealer.

9 Disposal/

Notes on environmental protection

The international, national and regional laws and regulations prevailing at the time of disposal of the product must be observed.



Ensure that materials and components are recycled, dismantled and separated properly in addition to observing the environmental and health hazards relating to recycling and disposal.

Groups of materials such as various types of plastics and metals must be separated before recycling/disposal.

Disposal of electrical and electronic components:

The disposal and recycling of electrical and electronic components must be carried out in accordance with the relevant laws and national regulations.



The symbol on the product, the instruction manual or the package indicates the applicable regulations. By carrying out recycling, material conversion or other methods of reusing old units, you are making an important contribution to protecting our environment.

