Manual

INSYS icom

Industrial Data Communication

INSYS Powerline GP

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1 Preface

This manual allows for the safe and efficient use of the product. The manual is part of the product and must always be stored accessible for installation, commissioning and operating personnel.

1.1 Defects Liability Terms

A usage not according to the intended purpose, an ignorance of this documentation, the use of insufficiently qualified personnel as well as unauthorised modifications exclude the liability of the manufacturer for damages resulting from this. The liability of the manufacturer ceases to exist.

The regulations of our Delivery and Purchasing Conditions are effective. These can be found on our website (www.insys-icom.de/imprint/) under “General Terms and Conditions“.

1.2 Feedback

We are permanently improving our products and the associated technical documentation. Your feedback is very helpful for this. Please tell us what you like in particular on our products and publications and what can be improved from your point of view. We highly appreciate your suggestions and will include them in our work to support you and all our customers. We are looking forward to any of your feedback.

Please send an e-mail to support@insys-tec.de.

We'd like to know your applications. Please send us a few headwords that we know the applications you solve using products of INSYS icom.

1.3 Marking of Warnings and Notes

Symbols and Key Words

Danger!

Risk of severe or fatal injury

One of these symbols in conjunction with the key word Danger indicates an imminent danger. It will cause death or severe injuries if not avoided.

Warning!

Personal injury

This symbol in conjunction with the key word Warning indicates a possibly hazardous situation. It might cause death or severe injuries if not avoided.

Caution!

Slight injury and / or material damage

This symbol in conjunction with the key word Caution indicates a possibly hazardous or harmful situation. It might cause slight or minor injuries or a damage of the product or something in its vicinity if not avoided.

Note

Improvement of the application

This symbol in conjunction with the key word Note indicates hints for the user or very useful information. This information helps with installation, set-up and operation of the product to ensure a fault-free operation.

1.4 Symbols and the Formatting in this Manual

This section describes the definition, formatting and symbols used in this manual. The various symbols are meant to help you read and find the information relevant to you. The following text is structured like a typical operating instruction of this manual.

Bold print: This will tell you what the following steps will result in

After that, there will be a detailed explanation why you could perform the following steps to be able to reach the objective indicated first. You can decide whether the section is relevant for you or not.

⇢ An arrow will indicate prerequisites which must be fulfilled to be able to process the subsequent steps in a meaningful way. You will also learn which software or which equipment you will need.

1. One individual action step: This tells you what you need to do at this point. The steps are numbered for better orientation.

✓ A result which you will receive after performing a step will be marked with a check mark. At this point, you can check if the previous steps were successful.

ⓘ Additional information which you should consider are marked with a circled "i". At this point, we will indicate possible error sources and tell you how to avoid them.

➢ *Alternative results and steps are marked with an arrow. This will tell you how to reach the same results performing different steps, or what you could do if you didn't reach the expected results at this point.*

2 Safety

The Safety section provides an overview about the safety instructions, which must be observed for the operation of the product.

The product is constructed according to the currently valid state-of-the-art technology and reliable in operation. It has been checked and left the factory in flawless condition concerning safety. In order to maintain this condition during the service life, the instructions of the valid publications and certificates must be observed and followed.

It is necessary to adhere to the general safety instructions must when operating the product. The descriptions of processes and operation procedures are provided with precise safety instructions in the respective sections in addition to the general safety instructions.

Moreover, the local accident prevention regulations and general safety regulations for the operating conditions of the device are effective.

An optimum protection of the personnel and the environment from hazards as well as a safe and fault-free operation of the product is only possible if all safety instructions are observed.

2.1 Intended Use

The product may be used for the following purposes:

- Usage and installation in a charging station for electric vehicles
- Usage and installation in an industrial cabinet
- Switching and data transmission functions in machines according to the machine directive 2006/42/EC.
- Usage as data transmission device for a PLC.

The product may **not** be used for the following purposes and used or operated under the following conditions:

- Controlling or switching of machines and systems, which do not comply with the directive 2006/42/EC.
- Usage, controlling, switching and data transmission of machines and systems, which are operated in explosive atmospheres.
- Controlling, switching and data transmission of machines, which may involve risks to life and limb due to their functions or when a breakdown occurs.

2.2 Permissible Technical Limits

The product is only intended for the use within the permissible technical limits specified in the data sheets.

The following permissible limits must be observed:

- The ambient temperature limits must not be fallen below or exceeded.
- The supply voltage range must not be fallen below or exceeded.
- The maximum humidity must not be exceeded and condensate formation must be prevented.
- The maximum switching voltage and the maximum switching current load must not be exceeded.
- The maximum input voltage and the maximum input current must not be exceeded.

2.3 Responsibilities of the Operator

As a matter of principle, the operator must observe the legal regulations, which are valid in his country, concerning operation, functional test, repair and maintenance of electrical devices.

2.4 Qualification of the Personnel

The installation, commissioning and maintenance of the product must only be performed by trained expert personnel, which has been authorised by the plant operator. The expert personnel must have read and understood this documentation and observe the instructions.

Electrical connection and commissioning must only be performed by a person, who is able to work on electrical installations and identify and avoid possible hazards independently, based on professional training, knowledge and experience as well as knowledge of the relevant standards and regulations.

2.5 Instructions for Transport and Storage

The following instructions must be observed:

- Do not expose the product to moisture and other potential hazardous environmental conditions (radiation, gases, etc.) during transport and storage. Pack product accordingly.
- Pack product sufficiently to protect it against shocks during transport and storage, e.g. using air-cushioned packing material.

Check product for possible damages, which might have been caused by improper transport, before installation. Transport damages must be noted down to the shipping documents. All claims or damages must be filed immediately and before installation against the carrier or party responsible for the storage.

2.6 Markings on the Product

The identification plate of the product is either a print or a label on a face of the product. Amongst other things, it can contain the following markings, which are explained in detail here.

Observe manual

This symbol indicates that the manual of the product contains essential safety instructions that must be followed implicitly.

Dispose waste electronic equipment environmentally compatible

This symbol indicates that waste electronic equipment must be disposed separately from residual waste via appropriate collecting points. See also Section Disposal in this manual.

CE marking

By applying a CE marking, the manufacturer confirms that the product complies with the European directives that apply product-specific.

UL marking

By applying a UL marking, the manufacturer confirms that the product complies with the obligatory safety requirements.

Appliance Class II - double insulated

This symbol indicates that the product complies with Appliance Class II

Appliance Class III - protection by extra low voltage

This symbol indicates that the product complies with Appliance Class III

2.7 Environmental Protection

Dispose the product and the packaging according to the relevant environmental protection regulations. The Waste Disposal section in this manual contains notes about disposing the product. Separate the packaging components of cardboard and paper as well as plastic and deliver them to the respective collection systems for recycling.

2.8 Safety Instructions for Electrical Installation

The electrical connection must only be made by authorised expert personnel according to the wiring diagrams.

The notes to the electrical connection in the manual must be observed. Otherwise, the protection category might be affected.

The safe disconnection of circuits, which are hazardous when touched, is only ensured if the connected devices meet the requirements of VDE T.101 (Basic requirements for safe disconnection).

The supply lines are to be routed apart from circuits, which are hazardous when touched, or isolated additionally for a safe disconnection.

An easily accessible isolation device that disconnects all lines must be installed prior to commissioning of the device to be able to isolate it completely from power supply.

2.9 General Safety Instructions

Caution!

Electrostatic discharges may damage the product!

Damage of the product.

Observe the general safety precautions when handling electrostatic-discharge-sensitive parts.

Caution!

Incomplete voltage isolation!

Damage of the product.

To isolate the voltage from the device, disconnect **any** supply circuit with its respective isolation device if a redundant power supply is used.

Caution!

Moisture and liquids from the environment may seep into the interior of the product!

Fire hazard and damage of the product.

The product must not be used in wet or damp environments, or in the direct vicinity of water. Install the product at a dry location, protected from water spray. Disconnect the power supply before you perform any work on a device which may have been in contact with moisture.

Caution!

Short circuits and damage due to improper repairs and modifications as well as opening of maintenance areas.

Fire hazard and damage of the product.

It is not permitted to open the product for repair or modification.

Caution!

Overcurrent of the device supply!

Fire hazard and damage of the product due to overcurrent.

The product must be protected against currents exceeding 1.6 A with a suitable fuse. Use an overcurrent protection device with high interrupting rating (1500 A).

Caution!

Overvoltage and voltage peaks from the mains supply!

Fire hazard and damage of the product due to overvoltage.

Install suitable overvoltage protection.

Caution!

Damage due to chemicals!

Ketones and chlorinated hydrocarbons dissolve the plastic housing and damage the surface of the device.

Never let the device come into contact with ketones (e.g. acetone) or chlorinated hydrocarbons, such as dichloromethane.

3 Device Variants

This manual describes two different variants of the Powerline modem INSYS Powerline GP of INSYS icom. These are:

- INSYS Powerline GP (SLAC)
- INSYS Powerline GP (no SLAC)

Both variants feature an identical hardware and only differ in the software installed in delivery condition. The only difference in the software is that the product INSYS Powerline GP (SLAC) supports the SLAC protocol as per ISO/IEC15118-3 for the communication between charging station and electric vehicle, while the product INSYS Powerline GP (no SLAC) does not provide this functionality and is designed for communication via general two-wire lines.

4 Scope of Delivery

The scope of delivery for the INSYS Powerline GP includes all accessories listed below. Please check if all accessories are included in the box. If a part is missing or damaged, please contact your distributor.

- INSYS Powerline GP

5 Function Overview

5.1 Usage in a charging station for electric vehicles

Charging station (EVSE) and electric vehicle (PEV) communicate using the powerline standard HomePlug GreenPHY™ 1.1 as per ISO/IEC 15118. The requirements for this are described in ISO/IEC 15118-3. The INSYS Powerline GP estabishes the communication connection between the EVSE controller (as per ISO/IEC 15118-2) and the electric vehicle (PEV). The data stream will be modulated to the pilot line of the charging cable for this as per ISO/IEC 15118-3.

The INSYS Powerline GP offers the following functions:

- Communication via powerline standard HomePlug GreenPHY™
- Coupling of the powerline signal to the pilot line
- SLAC protocol as per ISO/IEC 15118-3

5.2 Usage as general data transmission device

The INSYS Powerline GP is used as data transmission device in a two-wire network.

6 Technical Data

6.1 Physical features

All specified data was measured with nominal input voltage, at full load, and an ambient temperature of 25 °C. The limit value tolerances are subject to the usual variations.

Physical Feature	Value
Operating voltage	minimum 10 V DC maximum 60 V DC
Power consumption idle	1.5 W
Power consumption connection	2 W
Weight	160 g
Dimensions (Width x Depth x Height)	45 x 110 x 75 mm
Temperature range	-20 °C – 55 °C
Maximum permissible humidity	95% non-condensing
Protection class	Housing IP40, Terminals IP20

Table 1: Physical Features

6.2 Technological Features

Technological Feature	Description
Compatibility	HomePlug Green PHY™ 1.1
Transmission rates	Up to 10 Mbps on the data line (the actual usable data rate is lower due to the coexistence with HomePlug AV required in the HomePlug specifications)
Pilot signal coupling (SLAC variant)	As per ISO/IEC 15118-3. The coupling circuit and filters against feedback to the charging controller are already integrated in the INSYS Powerline GP. Permissible voltage range for Pilot In and Pilot Out: +/- 15 V AC/DC (SELV/PELV) No galvanic isolation between Pilot In and Pilot Out. Functionally isolated against all other circuits, insulation strength 100 V AC/DC
Data line (no SLAC variant)	Permissible voltage range for data line (Pilot Out): +/- 15 V AC/DC (SELV/PELV) Functionally isolated against all other circuits, insulation strength 100 V AC/DC
Length of data line (no SLAC variant)	Depending on the line quality (refer to note below)
Ethernet interface	10/100 Mbit/s full/half duplex auto sense; automatic detection of "crossover" or "patch" wiring Functionally isolated, insulation strength 1500 V AC as per IEEE802.3

Table 2: Technological Features

ⓘ The maximum length of the data line (Pilot Out) in data transmission applications depends highly on the line quality and cannot be specified therefore.
INSYS will support you with the evaluation of the line quality and verification of the feasibility of a certain application on request.

7 Display and Control Elements

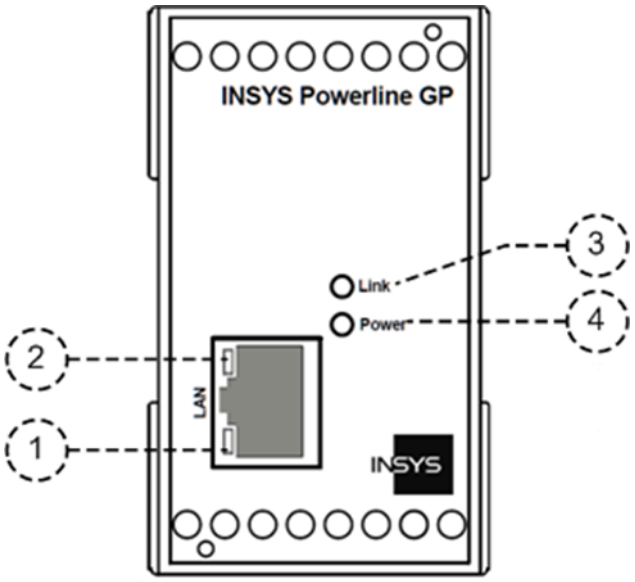


Figure 1: LEDs on the front panel

Position	Description
1	Status LED for Ethernet connection (yellow)
2	Status LED for Ethernet connection (green)
3	Link LED
4	Power LED

Table 3: Description of the LEDs on the front panel

7.1 Meaning of the Display Elements

Description	Display	Meaning
Status LED (yellow)	LED on	100 MBit/s connection
	LED off	No connection or connection with 10 MBit/s
Status LED (green)	LED on	Connected
	LED blinks	Data traffic
	LED off	Not connected
Link LED	LED on	Connected to AVLN (AV Logical Network)
	LED off	Not connected to AVLN
Power LED	LED on	Supply voltage available
	LED off	No supply voltage

Table 4: Meaning of the LED displays

8 Connections

8.1 Front Panel Connections

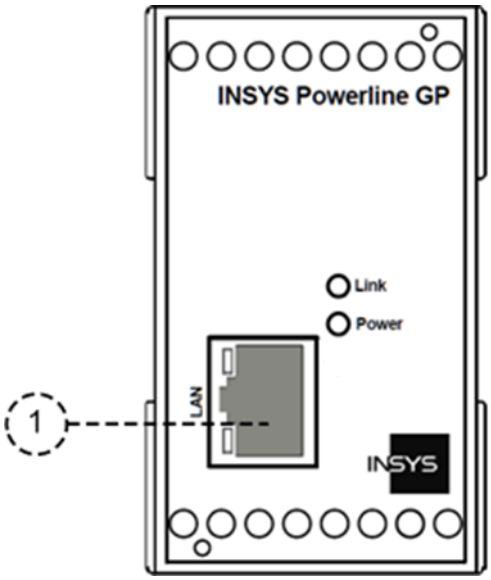


Figure 2: Connections on the front panel of the device

Position	Designation
1	Ethernet connection

Table 5: Connections on the front panel of the device

8.2 Terminal Connections on the Bottom

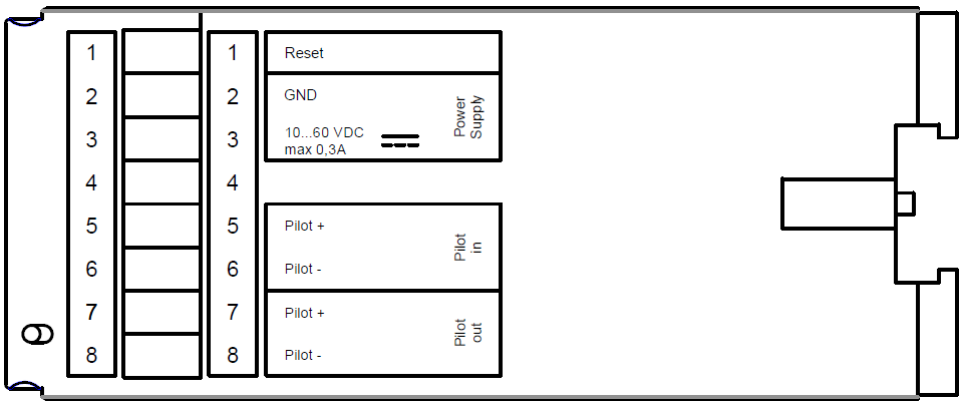


Figure 3: Connections on the bottom of the device

Termi-nal	Designation	Description
1	Reset	Reset input
2	GND	Ground
3	10 ... 60 VDC	Power supply 10 V – 60 V DC
4	-	not connected
5	Pilot In +	Input signal pilot line from pilot source
6	Pilot In –	Input signal pilot line from pilot source
7	Pilot Out +	Output signal pilot line to charging socket Data line
8	Pilot Out –	Output signal pilot line to charging socket Data line

Table 6: Connections on the bottom of the device

ⓘ In order to minimise delays of the powerline signal, the connection between PE and the negative pilot line signal should be made at the charging socket, i.e. at the "Pilot Out" side. The two signals "Pilot In +" and "Pilot In –" should be connected directly to the pilot signal source without PE reference. See Figure 4.

ⓘ The maximum length of the data line (Pilot Out) in data transmission applications depends highly on the line quality and cannot be specified therefore.
INSYS will support you with the evaluation of the line quality and verification of the feasibility of a certain application on request.

ⓘ When used as a data transmission device in a two-wire network, a PE line can also be used for one of the two data lines (Pilot Out).

ⓘ If the data lines (Pilot Out) are routed together with voltages higher than SELV/PELV in a common cable, the respectively applicable regulations for insulating SELV/PELV circuits must be met.

ⓘ In order to reset the device, the Reset input must be connected to GND for at least 100 ms.

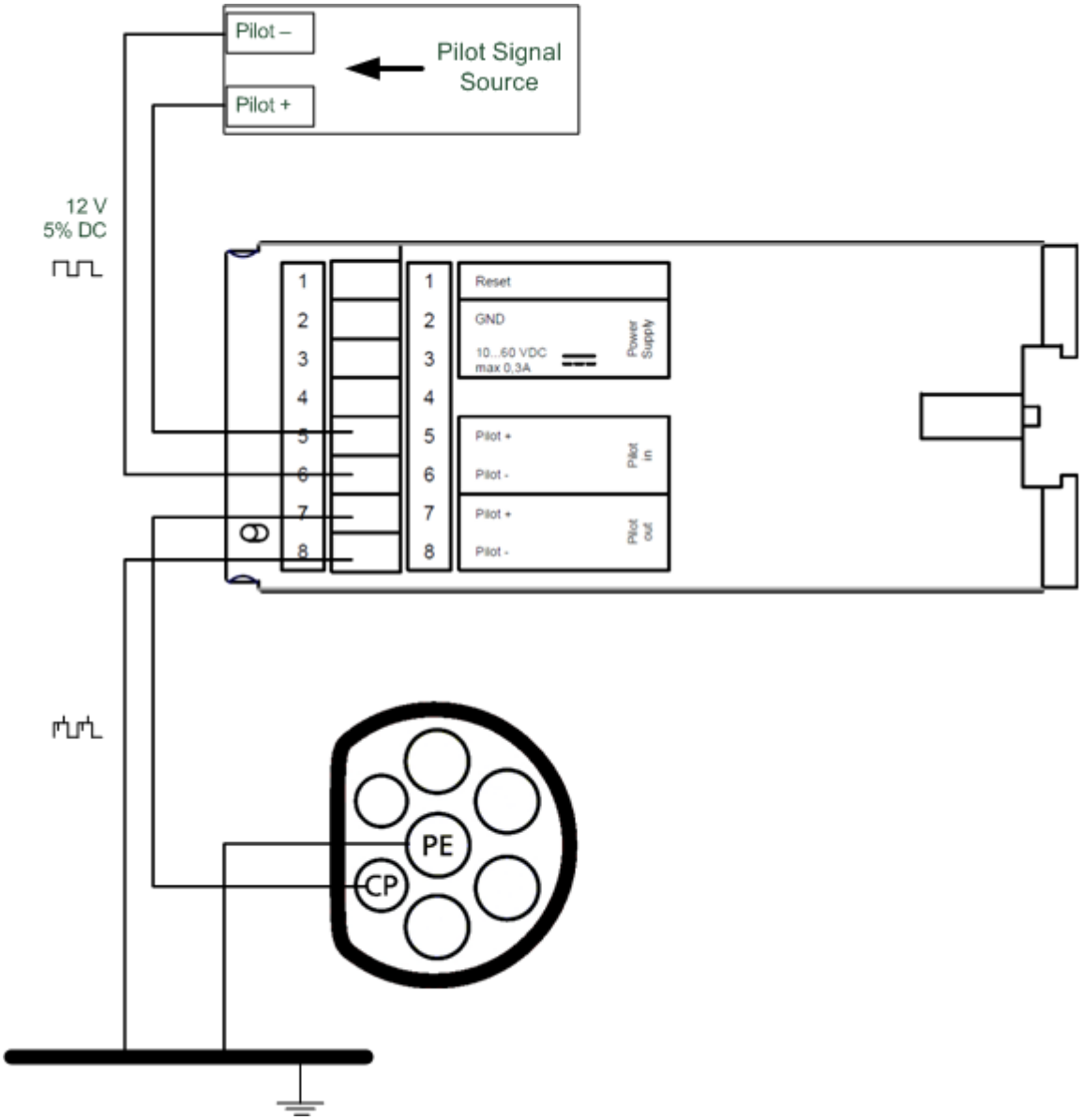


Figure 4: Pilot signal connection – usage in a charging station

ⓘ The lines Pilot+ / Pilot- to the charging socket (CP/PE connections) should be routed close to each other and, if possible, twisted to ensure an optimum transmission of the Powerline signals to the charging socket.

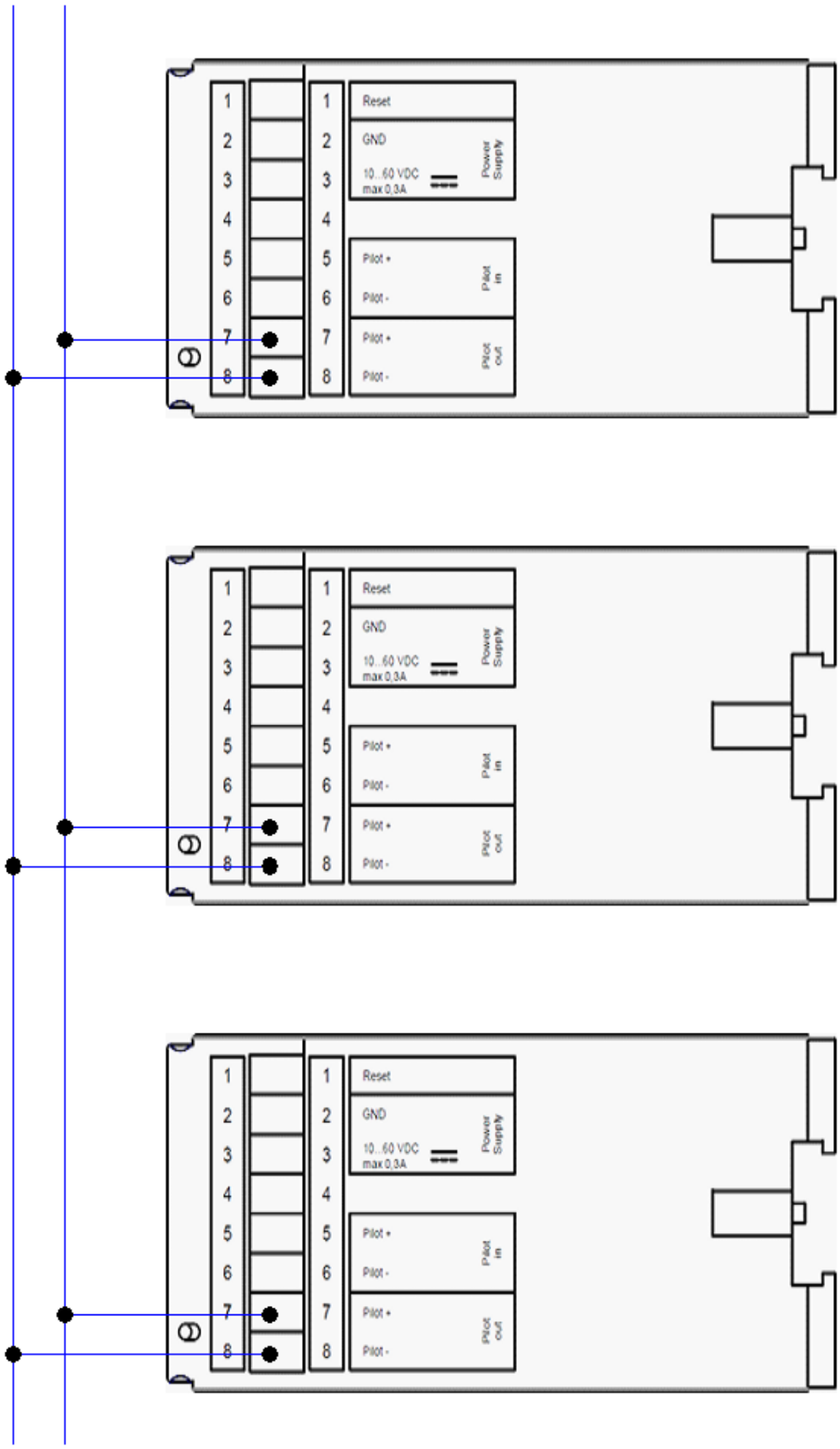


Figure 5: Data line connection – usage as data transmission unit

ⓘ The data signal is insensitive against inverse polarity, i.e. a 1:1 assignment of Pilot+ and Pilot- across all devices is not necessary.

9 Assembly

This chapter describes how to mount the INSYS Powerline GP to a DIN rail, connect the power supply, connect the communication line and uninstall it again. Observe the instructions in the "Safety" section of this manual, in particular the "Safety Instructions for Electrical Installation" for that purpose unconditionally.

Warning!

Moisture and liquids from the environment may seep into the interior of the INSYS Powerline GP!

Fire hazard and damage of the product.

The INSYS Powerline GP must not be used in wet or damp environments, or in the direct vicinity of water. Install the INSYS Powerline GP at a dry location, protected from water spray. Disconnect the power supply before you perform any work on a INSYS Powerline GP which may have been in contact with moisture.

Warning!

Short-cuts and damage due to improper installation!

Fire, breakdown and risk of injury.

The INSYS Powerline GP should be handled with special care like all electronic devices. Only a person, who is able to work on electrical installations and identify and avoid possible hazards independently, based on professional training, knowledge and experience as well as knowledge of the relevant standards and regulations is permitted to install the device according to the generally known engineering rules and the regulations, which are decisive for building telecommunication devices or terminal devices.

Caution!

The device could be destroyed if the wrong power supply is used!

If the INSYS Powerline GP is operated with a power supply that supplies a voltage exceeding the permissible operating voltage of the INSYS Powerline GP, the device will be destroyed.

Make sure that you use the suitable power supply. Refer to the Technical Data section for the proper voltage range of the INSYS Powerline GP.

Caution!

Destruction of the device due to transport damage and improper connection conditions!

If a INSYS Powerline GP with transport damage is used or improper connection conditions are present, the device will be destroyed.

Please check the device for visible transport damage as well as the connection conditions at the site against the requirements of the device before installation. The connection may only be performed using proper tools and must not be performed in energised condition.

Note

Radio interferences in short wave range!

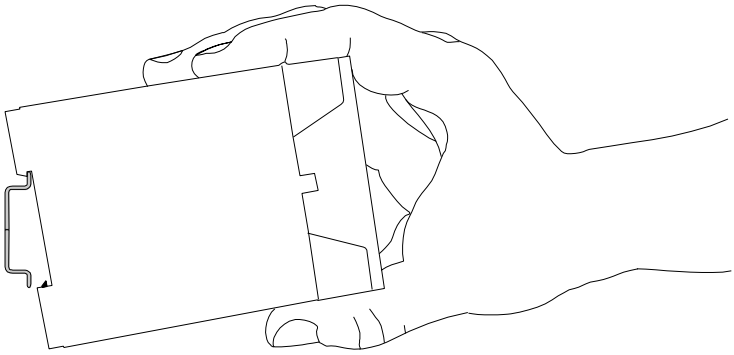
The INSYS Powerline GP may interfere the reception of short wave radio in the direct close range.

The INSYS Powerline GP can cause radio interferences in the living quarters; in this case the operator can be requested to take appropriate measures.

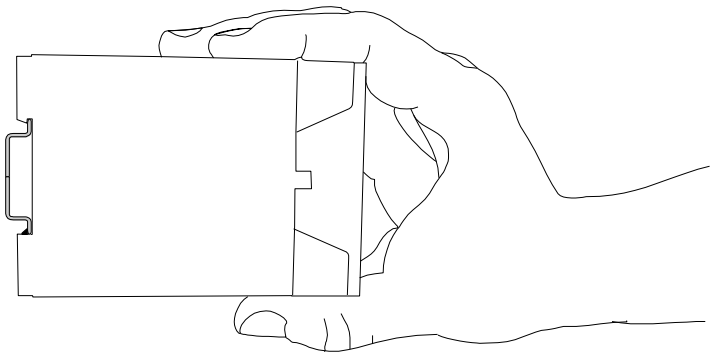
Mounting the device to the DIN rail

How to mount the INSYS Powerline GP to a DIN rail:

1. ***Position the device at the DIN rail as seen in the following diagram. There are two snap-in hooks at the upper and lower edge of the DIN rail groove of INSYS Powerline GP. Hook the upper one into place behind the upper edge of the DIN rail.***



2. ***Lift the INSYS Powerline GP perpendicular to the DIN rail until the two lower, flexible snap-in hooks engage in the DIN rail.***



✓ The INSYS Powerline GP is now readily mounted.

Connecting the power supply

⇢ The device has already been mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Connect the ground lead of the power supply to the terminal "GND".***

2. ***Connect the plus pole of the power supply to the terminal for the power supply.***

✓ The INSYS Powerline GP is connected to the power supply now.

Connecting the pilot line (when used in a charging station)

ⓘ The use of the pilot line for the modulation of the signal according to the standard ISO/IEC 15118-3 is described here.

⇢ The device has already been mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Connect the pilot signal source with the terminals 5 ("Pilot In –") and 6 ("Pilot In +").***

2. ***Connect the charging socket with the terminals 7 ("Pilot Out –") and 8 ("Pilot Out +").***

ⓘ "Pilot Out +" can be connected directly to the "CP" pin of the charging socket and "Pilot Out –" with the PE connection of the charging socket.

✓ The INSYS Powerline GP is connected to the pilot line now.

Disconnecting the pilot line (when used in a charging station)

⇢ The device is mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Disconnect the pilot signal source from the terminals 5 ("Pilot In –") and 6 ("Pilot In +").***

2. ***Disconnect the charging socket from the terminals 7 ("Pilot Out –") and 8 ("Pilot Out +").***

✓ The INSYS Powerline GP is now disconnected from the pilot line.

Connect data line (when used as data transmission device)

ⓘ The use of the pilot line for the modulation of the signal to a tw-wire line is described here.

⇢ The device has already been mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Connect the data line to the terminals 7 ("Pilot Out –") and 8 ("Pilot Out +").***

ⓘ If the availability of conductors is limited, it is possible to use a PE line for one of the two data lines.

✓ The INSYS Powerline GP is connected to the data line now.

Disconnect data line (when used as data transmission device)

⇢ The device is mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Disconnect the data line from the terminals 7 ("Pilot Out –") and 8 ("Pilot Out +").***

   ✓ The INSYS Powerline GP is disconnected from the data line now.

Disconnecting the power supply

⇢ The device is mounted to the DIN rail.

⇢ The power supply is connected and switched off.

1. ***Disconnect the ground lead of the power supply from the terminal "GND".***

2. ***Disconnect the plus pole of the power supply from the terminal for the power supply.***

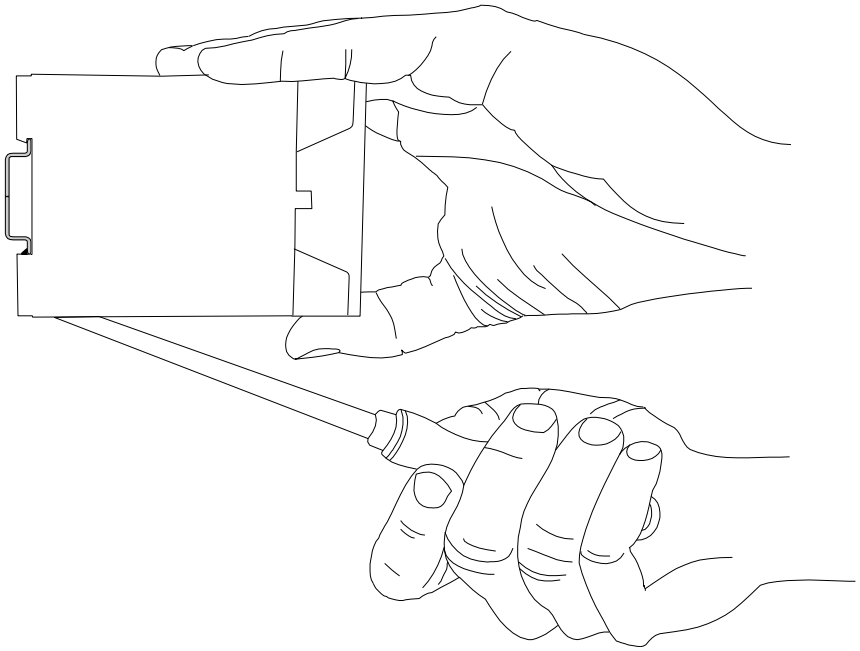
   ✓ The INSYS Powerline GP is disconnected from the power supply.

Uninstalling the device from the DIN rail

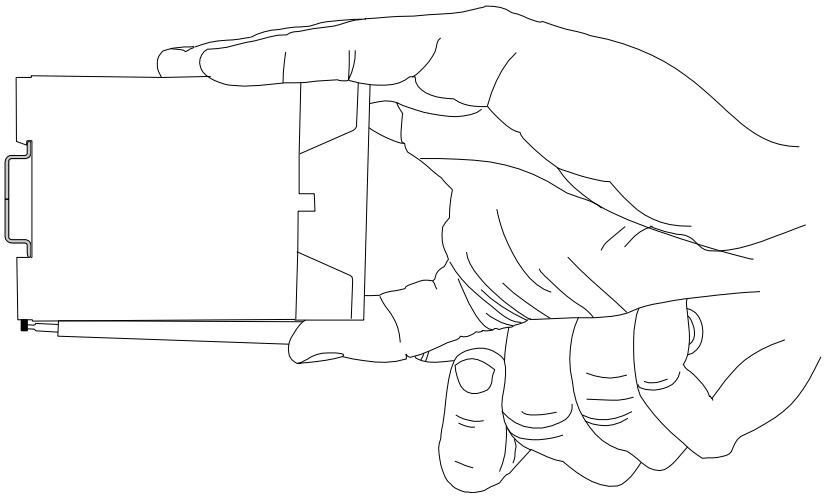
How to uninstall the INSYS Powerline GP from a DIN rail in a switch cabinet:

- ⇢ You will need a flat-blade screwdriver with a 4.5 mm blade.
- ⇢ The power supply of the switch cabinet is switched off and secured against being switched on accidentally.
- ⇢ All cables at the INSYS Powerline GP are disconnected.

1. ***Insert the Philips screwdriver into the groove in the bottom of the INSYS Powerline GP as shown in the following figure.***



2. ***Turn the Philips screwdriver into the direction of the INSYS Powerline GP as shown in the following figure.***



✓ The plastic spring of the snap-in hook is stretched.

3. While you hold the plastic spring apart with the lower snap-in hooks, pull the INSYS Powerline GP away from the DIN rail.

4. Un-hook the INSYS Powerline GP and take it off perpendicularly to the DIN rail.

✓ The INSYS Powerline GP is now removed from the DIN rail.

10 Operation

The operation of the INSYS Powerline GP depends on whether it is used in an E-Mobility application for the communication between vehicle and higher-level control (INSYS Powerline GP with SLAC functionality) or the data transmission in a two-wire network (INSYS Powerline GP without SLAC functionality).

10.1 E-Mobility application

An INSYS Powerline GP with SLAC functionality is necessary for this operating mode.

Here, the INSYS Powerline GP provides for the communication between charging station (EVSE) and electric vehicle (PEV) via the Powerline standard HomePlug GreenPHY™ 1.1 as per ISO/IEC 15118. The data traffic between the higher-level control (Higher Level Entity (HLE) or Host Application) and the electric vehicle (PEV)will be modulated to the pilot line of the charging cable as per ISO/IEC 15118-3 with this.

The device does not have to be configured for this. A higher-level control (HLE) is to be developed such that it assumes the association between PEV and EVSE via the SLAC protocol as per ISO/IEC15118-3. Upon successful association, PEV and EVSE will establish an AVLN (AV Logical Network). The modem INSYS Powerline GP (SLAC) implements the SLAC protocol as per ISO/IEC15118-3 for the charging station side (EVSE).

The INSYS Powerline GP is able to accept commands via the Ethernet interface. Outgoing messages are also sent via the Ethernet interface.

The easiest case for a successful procedure of the SLAC protocol would be as follows:

1. The modem is in delivery condition and connected to a control pilot signal.
2. A PEV is also connected to the control pilot signal and sends SLAC parameter -requests.
3. Send command HC_LISTEN_FOR_SLAC_ASSN.IND from the PC to the modem.

If the SLAC protocol has been executed successfully, this will be indicated by the activation of the Link LED at the front.

An example for the association from a PC is described in this Configuration Guide (https://docs.insys-icom.de/pages/en_pl_config_slac.html). The necessary commands will be sent from a PC to the PEV and its responses can be observed in a network analysis tool (such as Wireshark).

10.2 Data transmission in a two-line network

An INSYS Powerline GP without SLAC functionality is necessary for this operating mode.

Several INSYS Powerline GP form a common network in a two-line network and the devices connected to the Ethernet socket of the INSYS Powerline GP communicate with each other as if they would be connected to a common switch. All INSYS Powerline GP must be configured with the same network management key (NMK) for this.

It is also possible to operate several INSYS Powerline GP networks on one two-wire line. Then, the devices in each network must have the same NMK to form a common network. Networks with different keys on the same line cannot communicate with each other, but be operated side by side.

An INSYS Powerline GP can also be integrated in an existing HomePlug GP or HomePlug AV network.

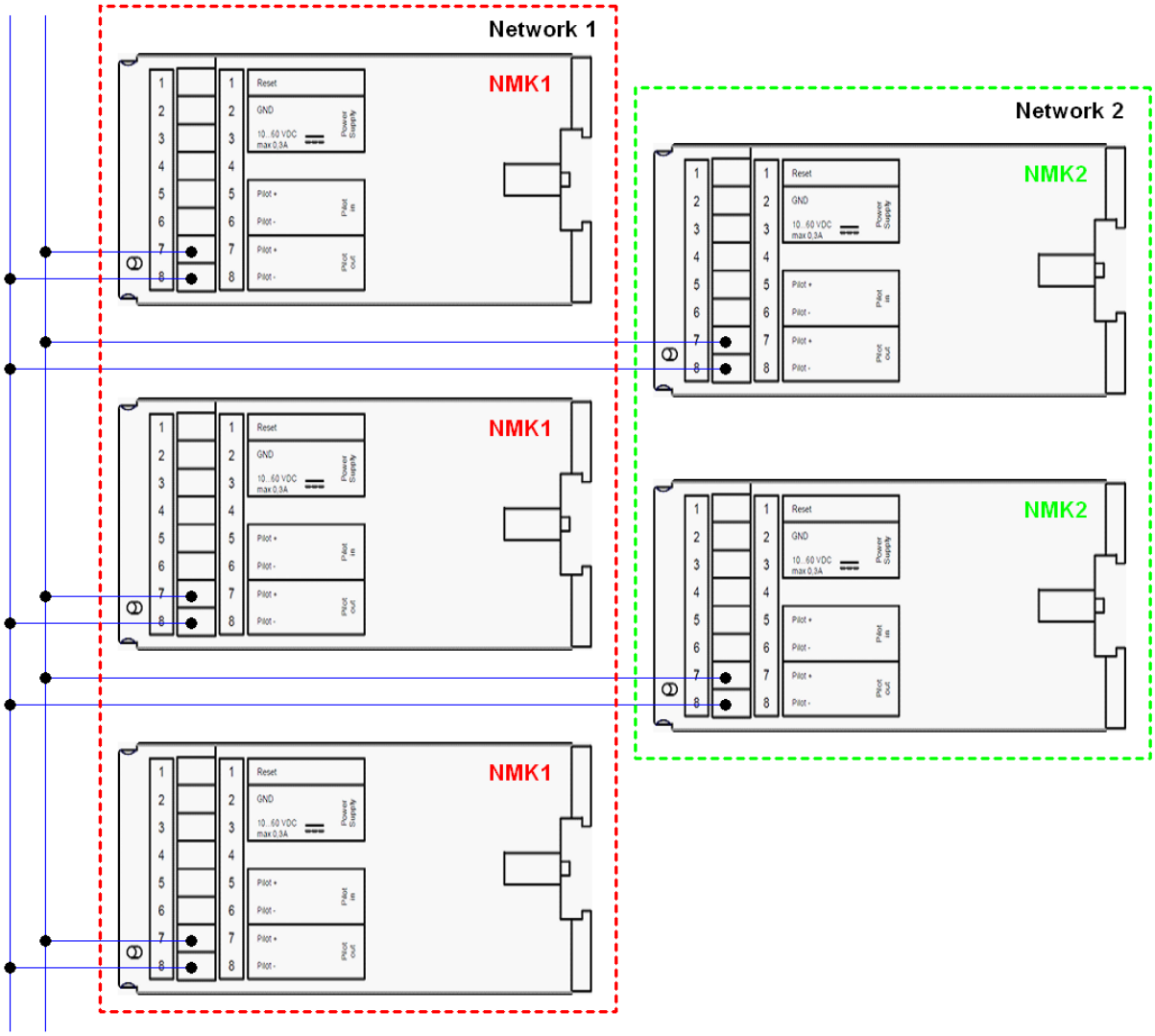


Figure 6: Usage in a two-line network

No configuration is necessary except setting the common network management key (NMK). This process is described in a Configuration Guide (https://docs.insys-icom.de/pages/en_pl_config_modem.html).

11 Maintenance, Troubleshooting and Repair

11.1 Maintenance

The product is maintenance-free and does not require special regular maintenance.

11.2 Troubleshooting

If a failure occurs during the operation of the product, you will find troubleshooting tips on our support page (https://www.insys-icom.com/en/help/). If you need further support, please contact your sales partner or INSYS icom support. You can contact our support department via e-mail under support@insys-icom.de.

11.3 Repair

Information for proceeding in case of repair or complaints are available on our support page (https://www.insys-icom.com/en/help/).

Before dispatching the device:

- Remove any inserted SIM cards.
- Backup the configuration on the device and any other stored data if required.
- Backup any applications running on the device.

Caution!

Short circuits and damage due to improper repairs and modifications as well as opening of products.

Fire hazard and damage of the product.

It is not permitted to open the product for repair or modification.

12 Waste Disposal

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According to the new WEEE guidelines, the repurchasing and recycling of legacy systems for our clients is regulated as follows:

Please send those legacy systems to the following address, carriage prepaid:

Frankenberg-Metalle
Gaertnersleite 8
D-96450 Coburg
Germany

This regulation applies to all devices which were delivered after August 13, 2005.

ⓘ Please consider possible stored passwords or security certificates before disposing the device. It is recommended to block possible existing access rights for the device (e.g. on your VPN server) and reset the device to default settings (if possible), before passing it on or disposing it.

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