

# Enabler for Intelligent Charging

## INSYS Powerline GP



### Data transmission between electric vehicle and charging station as per ISO 15118-3

The international standard ISO 15118 defines intelligent charging of electric vehicles, the "smart charging" for AC and DC charging stations. This permits amongst others active charging control, plug & charge authentication, smart grid integration as well as other services.

When smart charging, the charging station (EVSE) communicates with the electric vehicle (PEV) via charging cable using the powerline standard HomePlug Green PHY™ according to ISO15118-3. The data stream will be modulated to the pilot line of the charging cable with this.

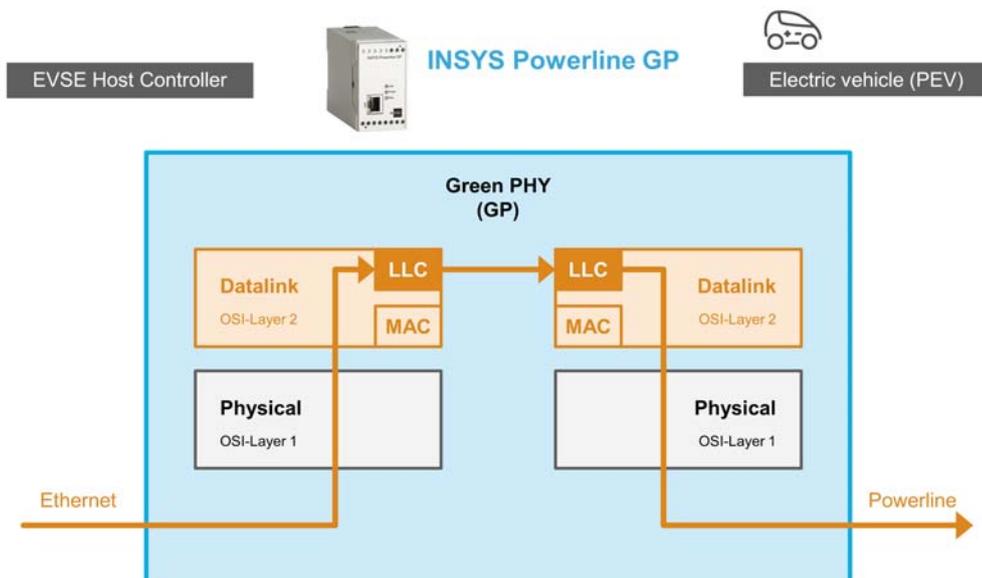
The INSYS Powerline GP establishes the point to point connection between EVSE and PEV so that the EVSE controller can communicate with the PEV via an Ethernet link. The INSYS Powerline GP operates the layers 1 and 2 in the ISO-OSI model:

### Features

- Communication via powerline standard HomePlug Green PHY™
- SLAC according to ISO15118-3
- Compatible with AC and DC charging stations
- Extended temperature range
- Designed for DIN rail mounting

### Application

Communication electric vehicle (PEV) to charging station (EVSE) as per ISO 15118 via Powerline standard HomePlug Green PHY™

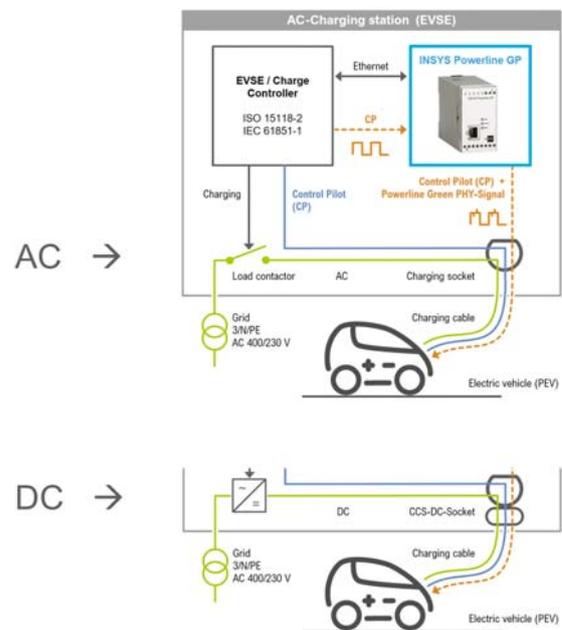


## Technical Data

### INSYS Powerline GP

The integrated SLAC mechanism in the INSYS Powerline GP controls the association process between electric vehicle and INSYS Powerline GP. Tasks critical for timing are taken over by the INSYS Powerline GP. This reduces the real-time requirements for the EVSE controller and thus facilitates the simultaneous control of several charging processes for example.

The detailed requirements for the EVSE controller are defined in ISO 15118-2, inclusive the interaction with INSYS Powerline GP in ISO 15118-3 – see following application example for AC and DC charging:



Interfaces	
LAN	Ethernet 10/100 BT (autosense), MDI/MDI-X
Pilot line	HomePlug Green PHY™: on 12 V pilot signal (IEC 61851-1); up to 10 MBit/s Integrated coupling filter as per ISO 15118-3
Line conductor	Voltage range 0 – 240 V, 50 Hz
Protocol	HomePlug Green PHY™ as per ISO 15118-3
Configuration	Plug & Play with configuration tool
Approvals / Standards	DIN EN 55022 Class B, DIN EN 61000-6-2, DIN EN 60950-1, EMV (2004/108/EG), LV (2006/95/EG) and RoHS (2011/65/EG)
Electrical Features	
Supply voltage	10 ... 60 V DC
Power consumption	Idle: approx. 1.5 W Connection: approx. 2 W
Physical Features	
Dimensions (L x W x H)	110 x 45 x 75 mm
Weight	160 g
Protection class	Housing IP40, Terminals IP20
Operating temperature	-20 °C ... +55 °C
Humidity	0 ... 95% (non-condensing)
Assembly	DIN rail

Product description	Features	Order number
INSYS Powerline GP	Home Plug Green PHY™, mit SLAC	10015995

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