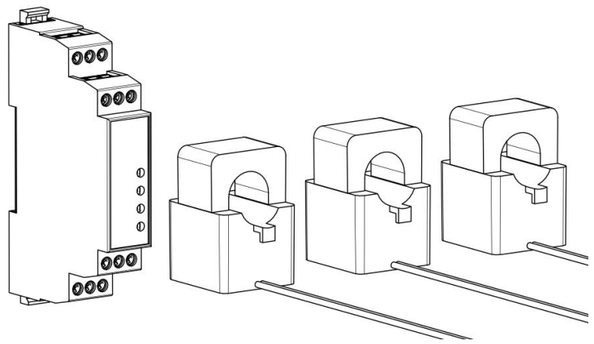
evnex

Installer & Operator Manual

EX POWER SENSOR

V221003



3 phase option shown

Please note

- Read all instructions before installing or using this product.
- This document is current at the time of printing. Please ensure you have the latest version. See www.evnex.com/resources
- Evnex Ltd. reserves the right to make changes to this document or the products described without notice.
- For questions relating to this product, its use or installation, please refer to contact details below:

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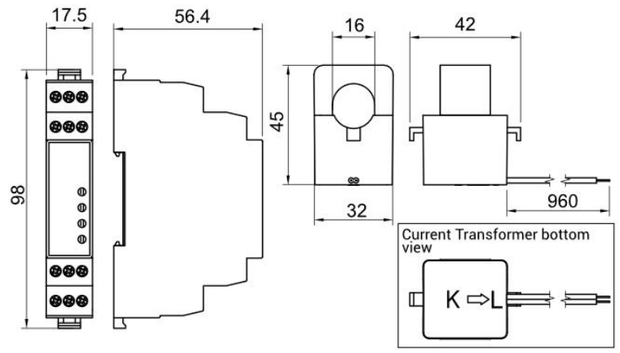
Introduction

Product description

The Evnex EX Power Sensor can be used in conjunction with the E & X Series charging stations and is a cost effective solution for managing charging of solar installations and other load balancing systems

General dimensions



About this document

The following document describes the functionality and installation procedures for the EX Power Sensor

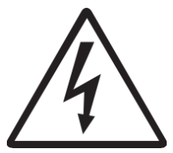
Scope of this document

This document only refers to the EX Power Sensor, please refer to the correct documentation if this does not apply.

Symbols

You will find the following symbols throughout this document. Please pay attention to the recommendations.

CAUTION – Failure to follow these directions may cause minor injury or damage to equipment.



WARNING – ELECTRIC SHOCK HAZARD

Failure to follow these directions may cause serious injury or death.

Safety information

General information

- This unit should only be installed by those who are appropriately qualified and skilled to do so.
- This unit has been designed and tested in accordance with IEC 61326-1, however the installer is responsible for ensuring that all local regulations and standards are complied with.
- This product is to be serviced only by Evnex approved technicians using only Evnex supplied parts
- There are no user serviceable parts inside the EX Power Sensor or current transformers and no maintenance is required
- Do not attempt to repair or modify the product
- It is the installers responsibility to ensure that all wiring is arranged safely and not subject to stress or damage.
- This product should only be used with Evnex charge stations unless specified by Evnex
- Install product in secure distribution box which limits access to unauthorized people and the general public by way of a lock or tool only access
- Install product in protective distribution box which limits exposure to moisture, dust or impact
- Warning labels must not be removed

Risk of electric shock

- Read all instructions before installing or using this product
- If this product is used in a manner not specified by Evnex, the protection provided by the product may be impaired
- If this product appears to be damaged in any way, it should be replaced. Damage includes any signs of cracking or separation of parts, insecure terminal blocks or discolouring caused by heat damage
- Never insert foreign objects inside main enclosure
- This product should not be used by children
- Avoid installing this product in locations that are prone to flooding
- Clipping the current transformers onto phase wires should be done while the mains supply is switched off

Disclaimer

Evnex Limited shall not be liable in any way for damage or injury that occurs when using the product, and all warranties will be void where:

- The installation instructions have not been followed correctly
- The product has been installed by an unqualified person
- The product has been tampered with or modified
- The product has been used for a purpose other than it was designed and intended for

Installation

Always ensure that the main supply is isolated before beginning work in the distribution box or on any high voltage wiring

Installation Notes

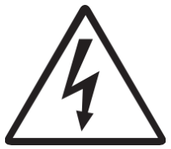
- Installer advised to follow anti-static procedures and to avoid touching exposed EX Power Sensor terminals
- This product must be installed with wiring as per applicable local legislation.
- Product requires an Evnex E & X Series charge station to be installed with wiring as per applicable local legislation.
- Installer to use appropriate installation equipment and protective safety clothing as per local legislation

Mounting notes

- Install product in secure distribution box which limits access to unauthorized people and the general public by way of a lock or tool only access
- Install product in protective distribution box which limits exposure to moisture, dust or impact
- Seal any unused cable gland holes to maintain dust and moisture integrity
- The current transformer signal wires must be routed securely away from all mains circuitry to maintain the reinforced insulation barrier

Install the EX Power Sensor within a suitable distribution box using standard 35mm DIN rail.

Wiring connection

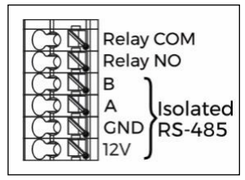


Always ensure that the main supply is isolated before beginning work in the distribution box or on any high voltage wiring

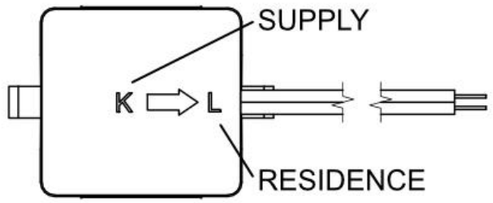
Do not leave the charging station powered on while wiring the EX Power Sensor to the main PCB

Accessory terminal block

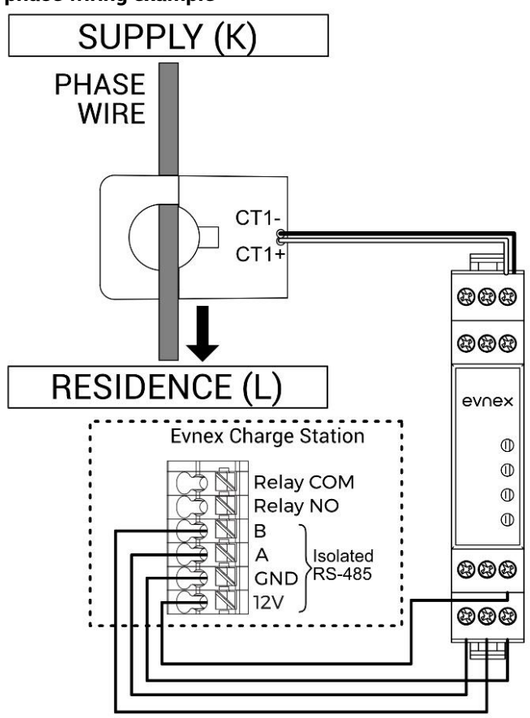
Access to the accessory terminal block inside the Evnex charge station is required as the EX Power Sensor must be hardwired to the terminal block



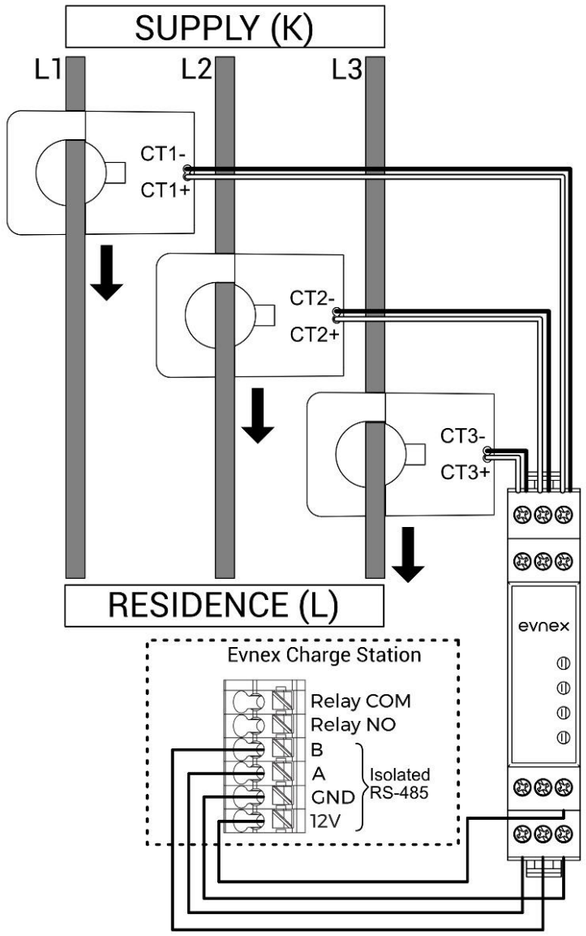
Current transformer orientation (bottom view)



Single phase wiring example

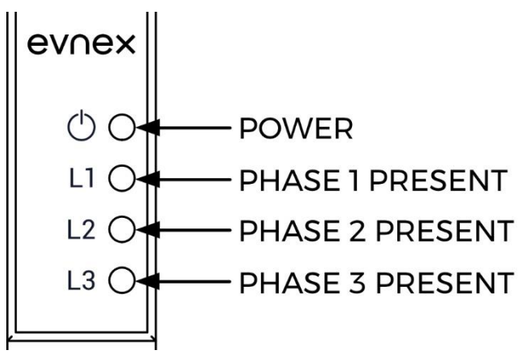


Three phase wiring example



Note that a single phase Evnex E & X Series charge station installed on a three phase system with an EX Power Sensor and one current transformer requires that the current transformer be clipped to the same phase as the charge station is wired to.

Status display



Note that the status display can not be used as a reference for correct wiring. Ensure the current transformers are clipped to the correct corresponding phase wires. Incorrect wiring will cause the status display to show incorrect phase information and the unit will operate incorrectly.

LED modes / fault conditions

Blue LED	L1,L2 or L3 Green LED	Condition
Slow flash (2 per second)		Unit is powered, but there is no communication between the EX Power Sensor and Evnex charge station
On		Communication has been established between the EX Power Sensor and the EVSE via RS485
	On	A current transformer has been connected to CT1 (L1),CT2 (L2) or CT3 (L3) on the EX Power Sensor and there is current flow through the phase wire

Technical information

General

Protection class.....IP20
Protection against mechanical impact.....IK06
Relative humidity rating.....93%
Pollution degree.....II
Installation.....Indoor
External design.....Enclosed assembly

Power supply

EX Power Sensor
Nominal supply voltage.....12VDC
Rated current*.....(max 33mA)

*Note that the actual current draw may be less, as the EX Power Sensor can have one, two or three current transformers connected

Communication and protocols

Evnex E & X Series.....RS485

External Input
Voltage Rating.....5 to 24V
Current Rating.....5mA Max
I/O Isolation.....2.5kV

Environment

Mounting environment.....Indoor IP20
Installation altitude.....≤ 2000m above sea level
Operating temperature range.....-25C° to 65C°

Dimensions

Height.....98mm
Width.....17.5mm
Depth.....56.5mm

CT Specification

Internal Clamp Section.....16mm
Output Lead Wire.....24AWG
Wire Length.....960mm
CT+.....White
CT-.....Black

Dimension of CT

Height.....45mm
Width.....32mm
Depth.....42mm

Regulatory

The product complies with the following standards:

- Low Voltage Directive 2014/35/EU
  - IEC 61010-1
- EMC Directive 2014/30/EU
  - IEC 61326-1
- RoHS Directive 2011/64/EU
  - IEC 63000:2016
- WEEE Directive 2012/19/EU
  - EN 50419:2006

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