

# Electric Vehicle Charger Connection Units

EV-3-32M EV-3-32R  
EV-1-20 EV-1-32 EV-1-63

## Installation Manual

V1.51 Jul 2019



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### **PRODUCT ADVISORY NOTICE**

**This product must be installed by a competent person in accordance with the IEE Wiring Regulations, BS7671 (18<sup>th</sup> Edition or later) and current Building Regulations.**

**Ensure the electrical supply is disconnected before installation or removing the cover of the unit.**

## Product Description

The **matt:e** Electric Vehicle Charger Connection Units (EVCCU) are designed for use in commercial applications where 3 phase PME supplies are feeding Electric Vehicle Chargers.

This manual covers the EV-3-32M, EV-3-32R, EV-1-32, EV-1-20 & EV-1-63

The units are not intended for any purpose other than that defined within this document.

## **WARNINGS**

Please read and observe the following notices carefully. These warnings must be observed when installing and operating the Electric Vehicle Charger Connection Units.

**All relevant supplies must be isolated or disconnected before commencing any work. This product must be installed by a competent person in accordance with the IEE Wiring Regulations, BS7671 (18<sup>th</sup> Edition or later) and any relevant Building Regulations and/or Installation Regulations.**



Electrical  
hazard

**Once installed, the unit has a Live Mains Supply (400v or higher) within the enclosure. The cover must not be removed until the supply to the unit has been isolated or disconnected.**

## Safety Advice

**The unit must be installed in a dry ventilated location; it must never be covered or have restricted ventilation.**

**The EV-3-32 and EV-1-32 units are rated for a maximum 32A.**

**The EV-1-20 unit is rated for a maximum 20A.**

**The EV-1-63 unit is rated for a maximum 63A.**

For any information not contained within this document, please contact our technical support team on 01543 227290 or [info@matt-e.co.uk](mailto:info@matt-e.co.uk).

## Introduction

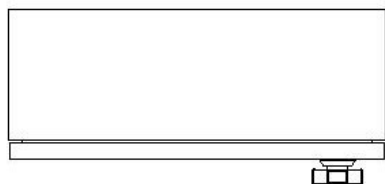
The **matt:e** range Electric Vehicle Charger Connection Units are fitted with O-PEN technology designed to protect Electric Vehicle Charging equipment when installed onto 3 phase PME infrastructures .

The unit incorporates a 5 pole isolator with built-in shunt trip. On detection of fault conditions the O-PEN electronic circuit activates the shunt trip mechanism which disconnects all poles including CPC. The isolator is manually resettable in line with BS: 7671. The **matt:e** O-PEN technology does not require earth rods or measuring electrodes to function correctly.

The unit is designed to be installed between the distribution board and the Electric Vehicle Charger.

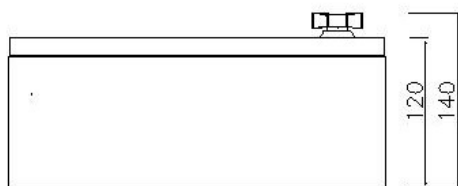
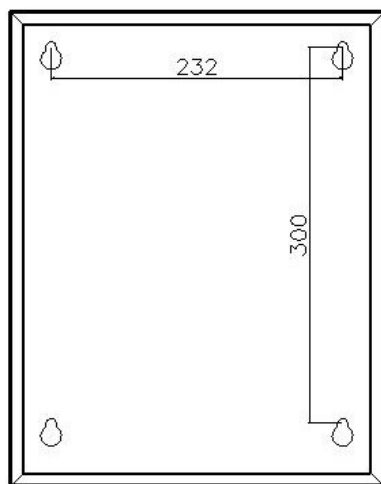
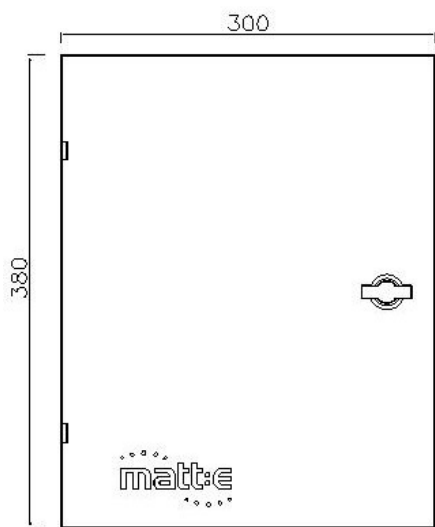
**The installation location should be clean, dry and well ventilated.**

Please refer to the diagram below for the dimensions and mounting arrangements of the unit.



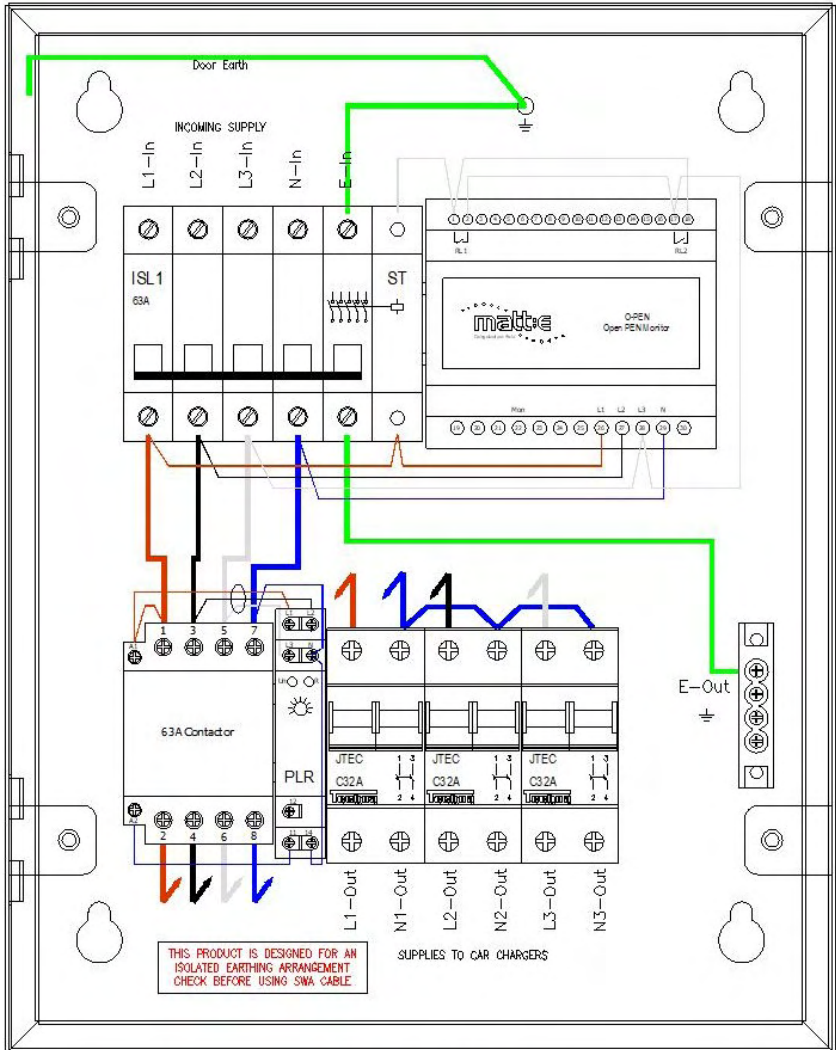
Dimensions & mounting details  
for all models

EV-3-32M    EV-3-32R  
EV-1-20    EV-1-32    EV-1-63

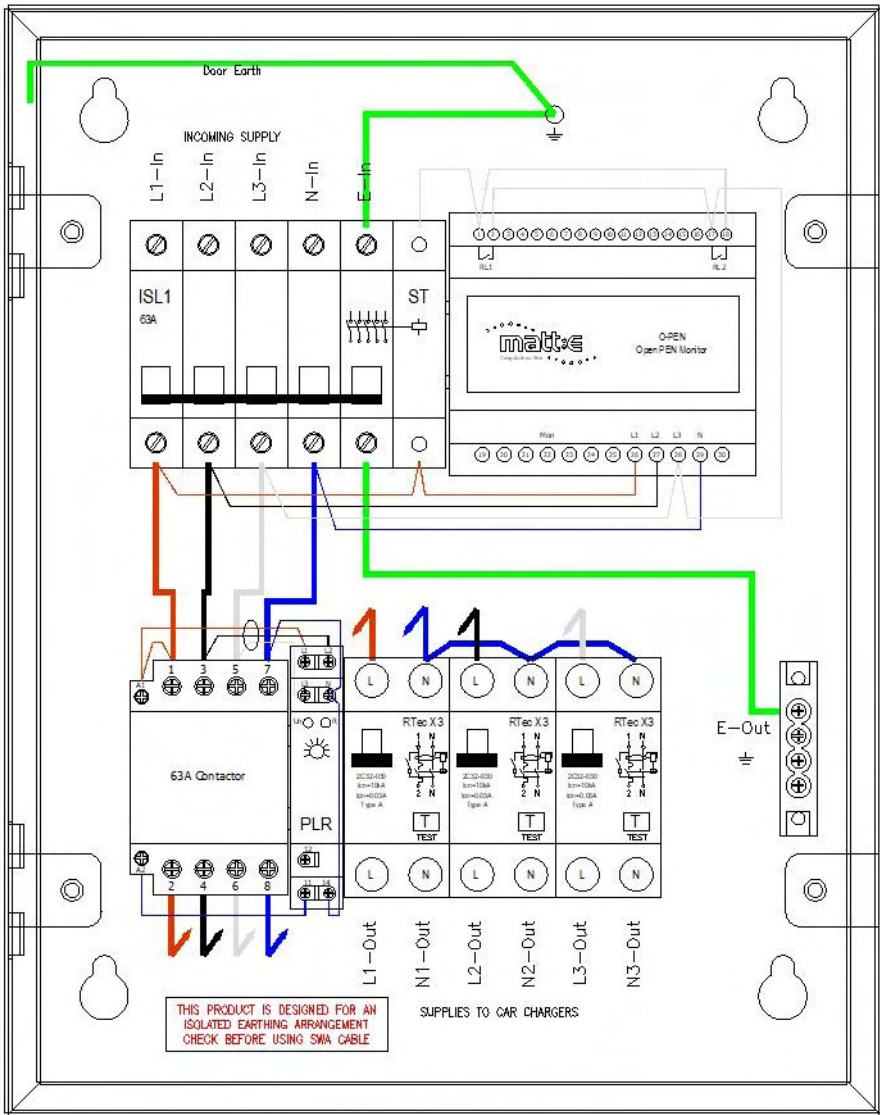


## Electrical Connections

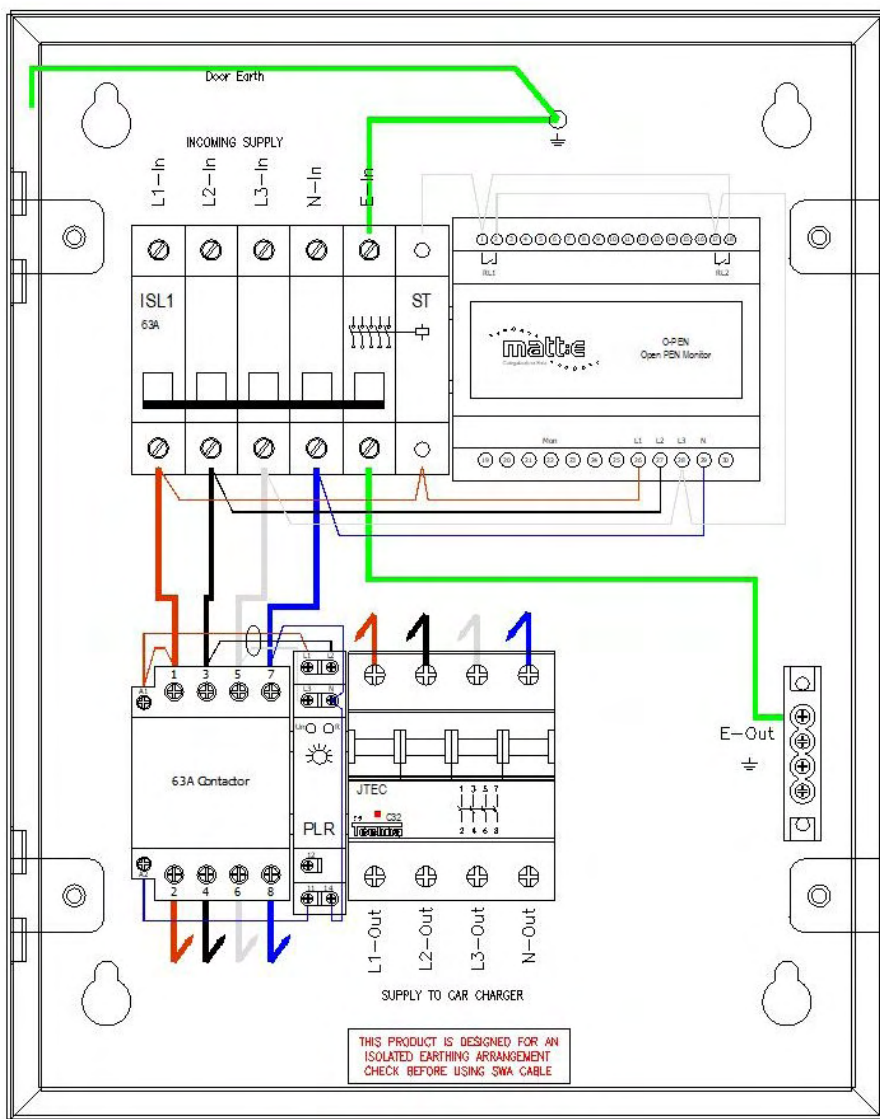
The user wiring connections are indicated in the diagrams below.



EV-3-32M

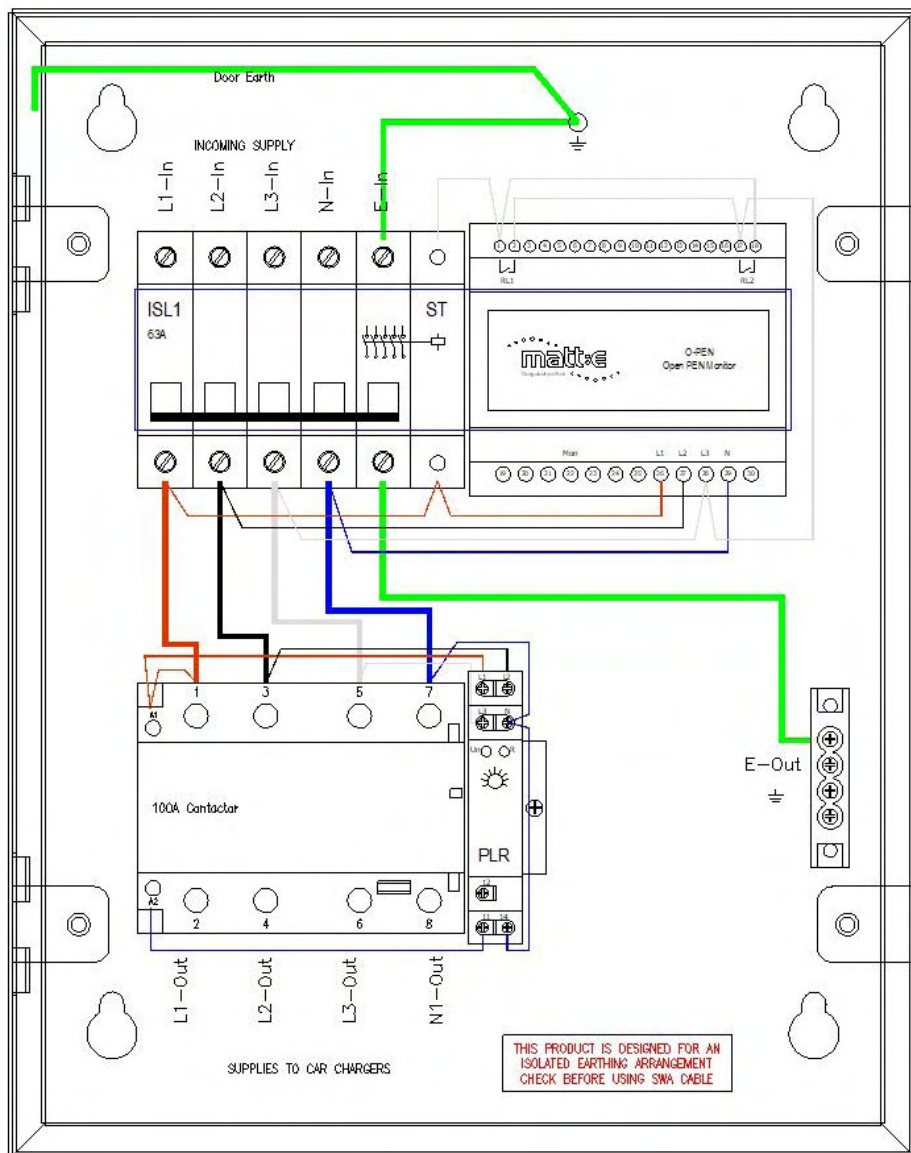


## EV-3-32R



## EV-1-32 / EV-1-20





EV-1-63

Connect the incoming cable from the distribution board directly to the 5 pole isolator.

Connect the outgoing cable(s) to the MCB's, RCBO's or contactor depending on the unit being installed. The outgoing earth should be connected to the isolated earth bar



**THIS PRODUCT IS DESIGNED FOR AN ISOLATED EARTHING ARRANGEMENT. CHECK BEFORE USING SWA CABLE**

**On completion of installation the tightness of all electrical connections should be checked before energising the unit. See specifications for tightening torques.**

### Operating Instructions

With the incoming isolator closed the unit will monitor the incoming supply. Approximately 1 second after closing the incoming isolator the contactor will energise and connect the load to the incoming supply. This delay is to establish the earth connection before applying power to the load

In the event the O-PEN unit detects a fault condition on the neutral of the monitored supply for a period of 4 seconds the isolator shunt trip will be activated which will open the isolator disconnecting all phases, neutral and CPC from the load.

Specifications

<b>Description</b>	<b>Electric Vehicle Charger Connection Unit</b>
<b>Input (Volts)</b>	Nominal input voltage 400v, 50Hz, 3 Phase AC
<b>Max Load</b>	EV-x-32x 32A   EV-1-20 20A   EV-1-63 63A
<b>Dimensions</b>	380mm x 300mm x 120mm
<b>Weight</b>	Approximately 7 kg
<b>Operating Temp</b>	-5°C to +40°C
<b>Enclosure</b>	Mild Steel Powder Coated
<b>Power Consumption</b>	20A/32A units – 13VA   63A unit – 15VA
<b>Ingress Protection</b>	IP4X
<b>Document Revision</b>	V1.51 Jul 2019

<b>Terminal Capacities</b>	<u>Min</u>	<u>Max</u>
Incoming Isolator cable size & tightening torque	2.5 mm <sup>2</sup> 1.5Nm	25.0mm <sup>2</sup> 2Nm
Outgoing MCB cable size & tightening torque	2.5 mm <sup>2</sup> 1.5Nm	25.0mm <sup>2</sup> 2Nm
Outgoing RCBO cable size & tightening torque	2.5 mm <sup>2</sup> 1.5Nm	25.0mm <sup>2</sup> 2Nm
Outgoing Contactor cable size & tightening torque	1.5-4,0 mm <sup>2</sup> 1.5Nm	6,0-25.0mm <sup>2</sup> 3,5Nm

Warranty

The EVCCU is guaranteed for a period of 2 years from the date of manufacture.

This warranty is limited to the replacement of faulty components only.

t: 01543 227290 e: info@matt-e.co.uk w: [www.matt-e.co.uk](http://www.matt-e.co.uk)  
 matt:e Ltd, Unit 5, Common Barn Farm, Tamworth Road, Lichfield WS14 9PX

**EU Declaration of Conformity (DoC)**

Ref : EVCC-32/63-2019

**We**

Company name: matt:e Ltd  
Postal address: Unit 5 Common Barn Farm Tamworth Road  
City: Lichfield  
Postcode: WS14 9PX  
Telephone number: 01543-227290  
E-Mail address: info@matt-e.co.uk

**Declare that this DoC is issued under the sole responsibility of the manufacturer.**

Apparatus model/Product: EV-3-32 EV-1-20 EV-1-32 EV-1-63  
Type: EVCC

**Object of the declaration**

Electric Vehicle Charger Connection units	EV-3-32M EV-3-32R EV-1-20 EV-1-32 EV-1-63
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**The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:**

Low Voltage Directive (2014/35/EU)

**The following harmonised standards and technical specifications have been applied:**

EN60255-1 2010 Emissions standard for Measuring Relays and Protection Equipment  
EN55011 Class A 2011 + A1:2017 Emissions Standard for ISM Equipment  
EN60255-26 2013 Immunity standard for Measuring Relays and Protection Equipment,  
EN61000-4-2 2009 ESD Requirements  
EN61000-4-3 2006 + A1 + A2 Radiated Susceptibility  
EN61000-4-4 2012 Electrical Fast Transient Burst Requirement  
EN61000-4-5 2006 Surges Requirements  
EN61000-4-6 2009 Conducted Susceptibility  
EN61000-4-11 2004 Voltage Dips and Interruptions  
EN61439-2 2011 Low-voltage switchgear and controlgear assemblies.  
EN60947-3 Low-voltage switchgear and controlgear  
EN61095 Electromechanical contactors  
EN61009-1 Residual current operated circuit-breakers with integral overcurrent

**Signed for and on behalf of: matt:e Ltd**

**Place of issue**  
Lichfield, England

**Date**  
3 July 2019

J Charlton, Director

