





# matt E ARD-1-32-TP-M Three Phase Connection Unit Owner's Manual

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matt E ARD-1-32-TP-M Three Phase Connection Unit



#### **FAQs**

- Q: What is the purpose of the auto reset device in the ARD connection centers?
  - **A:** The auto reset device automatically restores power to the load once any fault has been cleared, ensuring continuous operation without manual intervention.
- Q: What is the warranty period for the ARD-1-32-TP-M unit?
  - A: The unit comes with a warranty of 1 year from the date of purchase, providing coverage for any manufacturing defects or faults.

## PRODUCT ADVISORY NOTICE

This product must be installed by a competent person according to the IET Wiring Regulations, BS7671 (18th 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 are designed for use in commercial applications where 3phase PME supplies are feeding Electric Vehicle Chargers.
- This manual covers the ARD-1-32-TP-3-32-M unit.
- The unit is not intended for any purpose other than that defined within this document.

## **WARNINGS**

• Please read and observe the following notices. 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 per the IET Wiring Regulations, BS7671 (18th Edition or later) and any relevant Building Regulations and/or Installation Regulations.



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**

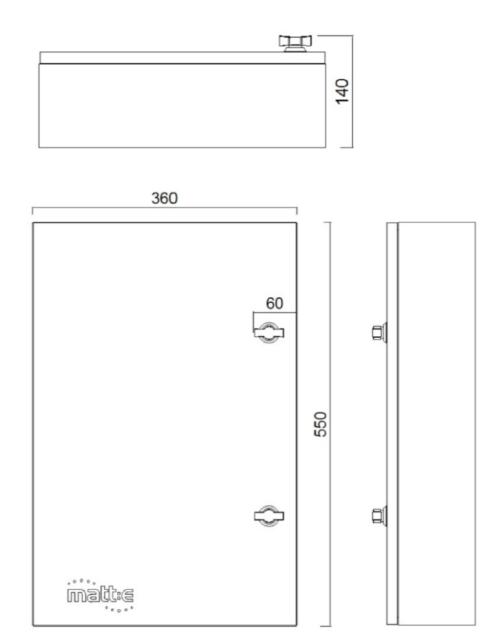
- The unit must be installed in a dry ventilated location; it must never be covered or have restricted ventilation.
- The ARD-1-32-TP-3-32-M units are rated for a maximum of 63A.
- For any information not contained within this document, please contact our technical support team on 01543
   227290 or <a href="mailto:info@matt-e.co.uk">info@matt-e.co.uk</a>.

#### Introduction

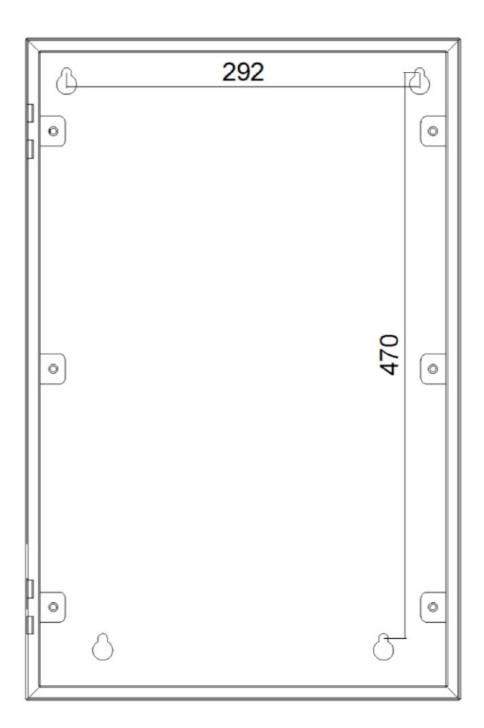
- The matt:e range of Electric Vehicle Charger Connection Units are fitted with O-PEN® technology designed to protect Electric Vehicle
- Charging equipment when installed onto 3-phase PME infrastructures.
- The unit incorporates a 5-pole isolator with a built-in under-voltage release mechanism. On detection of fault
  conditions, the O-PEN® electronic circuit de-energizes the under-voltage release mechanism which
  disconnects all poles of the supply including CPC.
- The 5-pole isolator will automatically reset after a PEN fault but must be manually reset after an overcurrent fault in line with IET Wiring Regulations and code of practice.
- The matt:e O-PEN® technology does not require earth rods or measuring electrodes to function correctly.
- The units are designed to be installed indoors between the distribution board and the Electric Vehicle Charger.

  The unit must be mounted securely to a solid surface with the lid hinges on the left.
- The installation location should be clean, dry, and well-ventilated.
- Please refer to the diagrams on the following pages for the dimensions and mounting arrangement of the unit.

# **Dimensions**



**Fixing Positions** 



# **Electrical Connections**

The user wiring connections are indicated in the image below.



# Installation instructions

- Connect the incoming cable from the distribution board directly to the 4-pole isolator. The CPC should be connected to the terminal block
- Connect the outgoing cable(s) to the MCBs.
- The outgoing CPC should be connected to the green isolated earth bars.



- THIS PRODUCT IS DESIGNED FOR AN ISOLATED EARTHING ARRANGEMENT. CHECK BEFORE USING THE SWA CABLE
- On completion of installation, the tightness of all electrical connections should be checked before energizing the unit.
- See specifications for tightening torques.

# **Operating Instructions**

- With the incoming isolator closed the unit will monitor the incoming supply. If no fault condition is present
  approximately 1 second after closing the incoming isolator the O-PEN monitor will energize the under-voltage
  release mechanism of the 5-pole isolator (indicated by the green LED illuminating). At this point, the 5-pole
  isolator can be closed to connect the load to the incoming supply.
- Alternatively, wait 30 seconds and the isolator will automatically close.
- In the event, the O-PEN unit detects a fault condition on the monitored supply for 4 seconds the internal relays will de-energize and remove the supply to the under-voltage release mechanism of the 5-pole isolator.
- This will cause the 5-pole isolator to open disconnecting all phases, neutral, and CPC from the load.
- Once the fault condition has cleared the O-PEN unit will reset after 3 minutes and the 5-pole isolator will automatically reclose 30 seconds after.

### **Test Function**

Test Switch
O = Test

- A Test Switch is provided to allow the functionality of the units to be checked. With the unit powered and the 5-pole isolator closed rotate the Test Switch anti-clockwise to position O to initiate a test.
- This will disconnect L1 from the O-PEN monitor and create a fault condition. After 0.7 seconds the O-PEN monitor will trip the 5-pole isolator by de-energising the under-voltage release mechanism.
- We recommend the unit be tested on a 6-monthly basis.

# **Specifications**

Description	Electric Vehicle Charger Connection Unit	
Input (Volts)	Nominal input voltage 400v, 50Hz, 3 Phase AC	
Max Load	63A per phase	
Dimensions	550mm x 360mm x 120mm	
Weight	Approximately 10 kg	
Operating Temp	-5°C to +40°C	
Enclosure	Mild Steel Powder Coated	
Power Consumption	12VA	
Ingress Protection	IP4X	
Document Revision	V1.10 Mar 2022	

Terminal Capacities	Min	Max
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

# Warranty

- The ARD-1-32-TP-3-32-M is guaranteed for 1 year from the date of manufacture.
- This warranty is limited to the replacement of faulty components only.

# **EU Declaration of Conformity (DoC)**

• Ref: ARDCC-2022

#### We

• Company name: Matt:e Ltd

• Postal address: Unit 1 Langley Brook Business Park

· City Middleton, Tamworth

• Postcode: B78 2BP

Telephone number: 01543-227290E-mail address: info@matt-e.co.uk

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

• Apparatus model/Product: ARD-1-32-TP-3-32-M

• Type: EVCC

#### The object of the declaration

• Electric Vehicle Charger Connection units ARD-1-32-TP-3-32-M

#### The object of the declaration described above conforms with the relevant Union harmonization legislation:

• Low Voltage Directive (2014/35/EU)

# The following harmonized 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
- EN61439-1&2 2011 Low-voltage switchgear and control gear assemblies.
- EN60947-3 Low-voltage switchgear and control gear
- EN61095 Electromechanical contactors
- EN61009-1 Residual current operated circuit-breakers with integral overcurrent

Signed for and on behalf of: matt:e Ltd

<u>Place of issue</u>

<u>Date</u>

Tamworth, England March 2022

# J Charlon Director

## **Documents / Resources**



matt E ARD-1-32-TP-M Three Phase Connection Unit [pdf] Owner's Manual ARD-1-32-TP-M, ARD-1-32-TP-M Three Phase Connection Unit, Three Phase Connection Unit, Phase Connection Unit, Unit

#### References

- © matt-e.co.uk
- User Manual

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