

# TECHNICAL

## ScottishPowerExpress

Reference no.: 286-09-2020

Title: Insulation Piercing Connectors

Date: September 2020

### Overview

ScottishPower have become aware of Electric Vehicle Charger Installers using Insulation Piercing Connectors (IPC) to supply new circuits. It has also been identified that Installers have made the supply connection whilst working live, ScottishPower deem this approach as dangerous and avoidable and are also investigating the suitability of using such connectors.

The reasons for doing so is where there is no spare "way" in the customer's consumer unit to supply the vehicle charging circuit and where there is no isolator switch fitted to allow the Installer to install a consumer unit for the circuit.

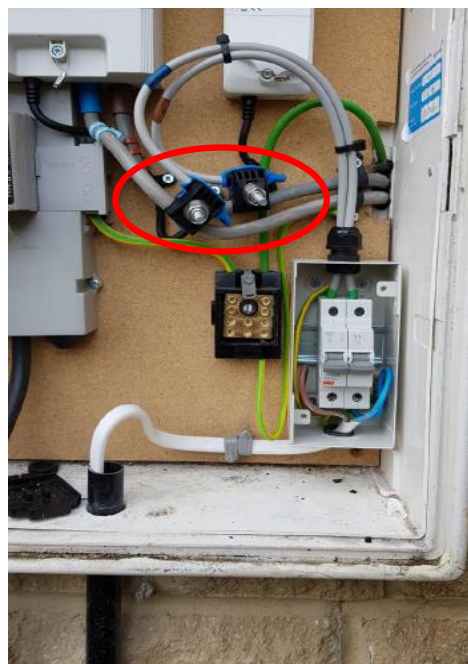


The photo opposite shows IPC Connectors fitted on the customer's consumer unit tails from the load side of the meter. The electric vehicle charging consumer unit has also been installed in the meter box.

The IPC Connector is connected and terminated "LIVE" by tightening a shear nut which tightens, pierces the insulation and makes contact with the conductors.

The following is a the list of some concerns raised by both by ourselves and various parties on the use of these connectors in a metering installation:

- Live Working - working live is **never** a first option (EAW Regs S.14).
- Whilst installing the IPC, the installer will disturb the meter tails and potentially create a loose connection at the meter, this is a foreseeable risk and totally unacceptable.
- Any 'floating' connection is a risk, cables/tails not fixed to the back board with clips/cleats and with minor disturbance may lead to a loose connection, (MOCOPA requirement).
- The IPC could be connected on the ingoing side of the metering equipment resulting in illegal abstraction of electricity.



### Recommendations and Actions:

- Where a meter operative finds an installation with IPC connectors fitted, the operative shall remove the IPC connectors and fit insulated terminal blocks. Ensure all cables/tails are suitably labelled with L & N indicating tape first. This is effectively treating the customer's load tails as "bunched tails" coming out of the meter.
- Replace and re-wire any cables/tails from the meter where necessary and clip to the backboard. Ensure **all** metering equipment terminal screws are correctly terminated onto cables/tails.
- Complete all visual checks and inspection.
- The operative shall, before completing the job task and fitting terminal covers, **re-check** all metering equipment terminations for tightness.
- Carry out all required electrical testing and ensure correct polarity at all metering equipment including newly fitted insulated blocks and correct polarity on the customer's installation.

**Ensure you always carry out any job task safely and in accordance with your company work instructions, installation procedures and manuals.**