SIEMENS

Siemens Intelligent Traffic Systems
Technical Action Bulletin

Siemens Technical Action Bulletin No.	STAB20-0118

TITLE	QC45 1st Gen EV Chargers Discolouration

Product	ST900	T400	Cuckoos	QC45 1st Gen EV Charger	ST950	OTU	INSTATION SOFTWARE	OTHER
				▲				

Are Modifications Required?	Recommended
Retrospective Action Required?	Recommended

Priority of the Change	URGENT ASAP	ACTION AT NEXT SITE VISIT	ACTION WITHIN 3 MONTHS	ACTION AT NEXT PI	ACTION ONLY IF PROBLEM ARISES	INFORMATION ONLY
				▲		

Introduction

This bulletin has been issued because a small number of certain first generation QC45 units, supplied by Siemens with Serial numbers prior to S95-00440 and installed prior to December 2015, have started to exhibit a visual discolouration of the insulation around the main transformer neutral wiring (shown in *Figure1*).

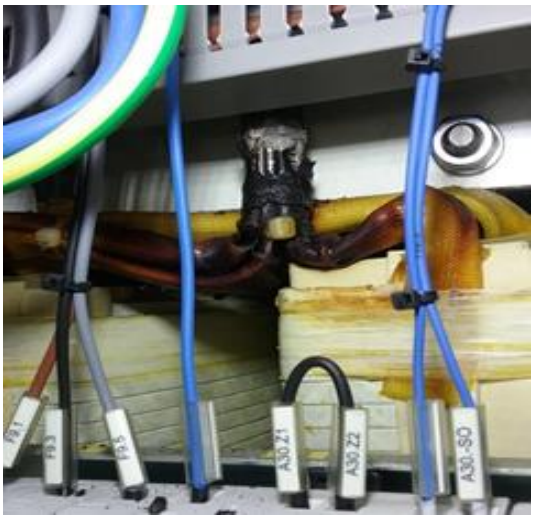

Figure1: Visual Discolouration of the Insulation

This bulletin will explain the reason behind this discolouration, the impact and our recommendations.

Procedure

This discolouration occurs due to heating resulting from the loss of one of the three phases of the power supply, which can be caused by multiple factors of which the most common are:

1) An unreliable, noisy, and/or low voltage 3-phase mains supply causing one of the main fuses to blow
2) A fault on a customer's car causing one of the main fuses to blow

Where such loss occurs the first generation QC45 units are programmed to shut down. However, in cases where the mechanical monitoring built into the fuse has degraded, this can affect the trigger of such shut down which may result in a 2-phase supply running through the 3-phase transformers which is outside the normal specification of the unit. The potential degradation of the fuses is not a design issue, but a limitation of the fuses available at the time these units were manufactured, triggered by external factors. The transformers will continue to perform under the loss of one phase, however additional current is pushed through the neutral connection causing localised heating. More than one missing phase causes other protection mechanisms to shut the QC45 charger down.

The loss of a single phase from the power supply does not affect the vehicle being charged and does not constitute a fire risk or an electrical safety issue. However, the unit may suffer discolouration of the insulation at the neutral point, and prolonged occurrences may lead to heat fatigue of the wiring which could result in the unit becoming beyond economical repair.

An upgrade is now available for the fusing arrangement to add a new type of mechanical monitoring. This will avoid the possibility of the unit running on a two-phase power supply for prolonged periods under the above-mentioned fault condition and will preserve the design life of the unit.

It is our recommendation that the newly available upgrade is undertaken on all first generation QC45 units to preserve the design life of the units. This is a chargeable upgrade and can be offered on the following basis:

a) At the next PI for chargers under maintenance agreements.
b) As a primary visit for customers wishing to take out a new maintenance agreement.
c) As a time-and-materials upgrade with a special visit.

Enquiries and orders can be made to **sales.stc@siemens.com**

Related Documents

None