

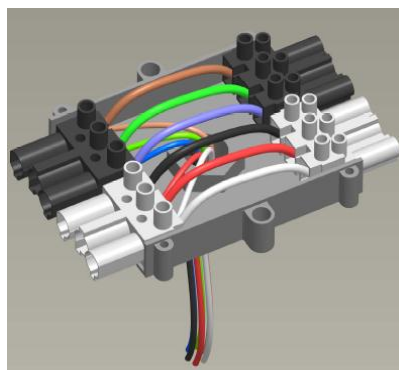
## Management of Multipole Plug/Socket Connections for Mixed Mains Supply and Data Communications

### Background/Issue

With increased demand for controllable luminaires and prefabricated installation wiring systems the use of single multipole plug/socket systems combining the connection of luminaire mains power conductors and communication conductors is becoming more common. Typically these plug/sockets may comprise of 6 poles connecting:

1. Live
2. Earth
3. Neutral
4. Emergency (Unswitched) Live
5. Data/Control Conductor
6. Data/Control Conductor

In the case of 6 pole connections it has been noticed that some manufacturers/installers have utilised the use of two mains (L,E,N type) connectors in tandem to create 6 poles. This introduces the use of a second 'leading earth' (make first/break last) pin for a data/control conductor connection. Whilst this may be acceptable in some cases it cannot be assumed that all data/control conductors are operating from a voltage source providing suitable protection against electric shock.



### Recommendations

In many cases data/control connections must be managed as 'live' conductors and plug/socket pins for these conductors must be of a type, which make after and break before the safety earth conductor. If in doubt as to the electrical characteristics of control conductors being used then the controls equipment provider should be consulted for this information.

*Note: In situations where plugs and sockets separate to the mains supply connection are used for data/control conductors the same safety considerations need to be made.*



# Technical Statement

## LIA TS19

Issue 1 - 10/2012

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Previously issued as LIF TS 39

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### References/Standardisation

Generation of standards for prefabricated wiring systems and the connectors used with them are currently under preparation in the UK under BSI Committee PEL/23/11. In the interim to these standards being available appropriate references to follow regarding requirements for plug/socket connections are:

- i) Luminaire Safety, General Requirements and Tests, EN60598-1, Clause 7.2.1
- ii) Installation Couplers Intended for Permanent Connection in Fixed Installations, prEN61535

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