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Future Automation Enclosure Compliance with 18th Edition BS 7671:2018 Changes

In the UK since 2008, there has been a requirement that all electrical installations must adhere to the 17th edition BS 7671 "Requirements for Electrical Installations", written and maintained by Institution of Engineering and Technology.

In 2015, amendment 3 of the 17th edition introduced a number of changes regarding panel access and fire containment. In 2015 we made a number of changes to the design of our electrical enclosures to guarantee that they not only met the minimum amendment 3 requirements, but also exceeded them.

The 18th edition of BS 7671, released at the end of 2018, supersedes all previous editions and the emphasis is now placing even more onus on the building electrical designer for correct planning and risk assessment for the individual building.

The 18th edition introduced a number of changes, so below we have laid out how these changes will affect all Future Automation Electrical Enclosures;

- **Section 411.3.4 - In all domestic (household) properties, luminaries (lighting circuits) must be protected by an RCD (Residual Current Device) not exceeding 30mA**
- **Section 512 - Equipment to be suitable for its intended operational conditions. Switchgear protective devices and other types of equipment shall not be conducted to conductors intended to operate at a temperature exceeding 70degC unless designed to do so**

Future Automation enclosures are designed to house built-in circuit breakers and we have always recommended and supplied RCBOs for individual lighting modules. Where we supply protection devices (e.g. RCBO's), we always use industry leading manufactures such as ABB and Schneider and ensure they adhere to the correct regulations and specifications.

We have recently had re-evaluation tests conducted to IEC-61439-3 by 3rd party UKAS accredited laboratory, this included temperature rise, glow-wire, Ingress protection and corrosion tests. We have also conducted in-house tests inducing 30mA earth leakage on the output side of dimming and switching modules which trips the associated RCBO.

If customers would like individual RCBO's on each output of lighting modules we can cater for that. Contact us with your requirements and we can recommend the best enclosure and configuration.

- **Sections 536.4.3.2, 536.4.5 and 536.4.202 - Requirements for overload protection of RCCB or switch in a Low Voltage assembly**

In terms of our lighting enclosures this is about ensuring the upstream supplying voltage to the enclosure is adequately protected for over current.

This should be a maximum of 63A MCB / fuse (typically 32A) in the consumer or distribution unit. This is to ensure that the RCBO sub-system in the enclosure cannot be overloaded and cause heat or fire in a fault condition. Ensure the cabling from the consumer unit to the enclosure is rated at the supplying MCB/fuse current or greater.

- **Section 422.1.17 - Introduced to recommend installation of AFDD (Arc Fault Detection Devices)**

This is decided on a risk assessment basis. There is a formula within the regulations to help you decide where they are required.

AFDD's detect spark disturbances on broken cables, poor electrical terminations etc. If these are required then our enclosures can cater for these, typically they are the width of 3 traditional circuit breakers so this will need to be specified against the individual configuration.

Future Sound and Vision Ltd. Registered in England. Company Number: 05124376.
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- **Section 511 – Compliance with standards. Every item of equipment will comply with the relevant requirements of an applicable current British or Harmonised European standard or foreign national IEC standard**

All Future Automation enclosures are designed to meet or exceed the following relevant directives and standards:

- Designed and tested to IEC 61439-3
- 2014/35/EU Low Voltage Directive, 2014/30/EU Electromagnetic Compatibility, 2011/65/EU RoHS 2 Directive, 2012/19/EU WEE Directive
- Supplied RCBO's conform to IEC 61009, MCB's conform to IEC 60898, Isolator switch conforms to IEC 60947 / EN 60669-1. We use Tri-Rated wire BS 6231 Class 5.
- Din Terminals conform to EN 50085, Trunking conforms to EN 50085

- **Section 534 - Devices for protection against over-voltage**

This section focuses on the requirements in some buildings for protection against transient voltages (e.g. lightning protection).

Again, the onus is on the building electrical designer to risk asses the need for these. These SPD (Surge Protection Device) are usually upstream of the lighting enclosure within the main consumer or distribution unit.

- **General Information**

Our Enclosures have been designed for purpose but with flexibility to allow customers individual requirements.

We work directly with our electrical parts suppliers and manufactures to ensure all parts have the relevant approvals and correct specification.

We have had our enclosure system tested by a 3rd party UKAS accredited laboratory against IEC-61439-3 a copy of our EC Declaration of conformity is available on request.

Drawings and component specifications available on request.

Factory inspections by appointment welcomed.

If you have any other questions, please contact us by email info@futureautomation.co.uk

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EC - Declaration of Conformity

Future Sound & Vision Trading as Future Automation Ltd.
6-8 Brunel Rd, Bedford, UK MK419TG

Product: Electrical Enclosure range (Including: LCP, CCP, LXN, KNX, C4E, DIN, CEB, DEB, VIT, IWRE, SGSE)

Supplied to the professional trade and to be installed by Qualified persons with Electrotechnical expertise only in conjunction with local building regulations.

This product has been designed and manufactured in accordance with the following Standards and Directives: -

2014/35/EU - Low Voltage Directive (LVD)
2014/30/EU - Electromagnetic compatibility
2002/95/EC - RoHS (Restriction of Hazardous Substances)
2011/65/EU - RoHS 2 Directive
2012/19/EU - WEEE (Waste Electrical and Electronic Equipment Directive)

IEC 61439 - International Standard for Enclosures for Low Voltage Switchgear and Control Assemblies

RCBOs: conform to IEC 61009
MCBs: conform to IEC 60898
Isolator Switches: conform to IEC 60947-3 EN 60669-1
Wire: Tri-rated U.L AWM 1015 (Inc 1028, 1283, 1284), C.S.A Type TEW, B.S. 6231 Class 5 105°C
DIN Terminals: -55 +ll0°C BV, CB, CSA, EAN, ETIM 4,5,6 cUL, IEC 60068-2-6
Trunking: conforms to EN 50085, UL E301798

Signed:..... 

Dated:.....14/01/19.....

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