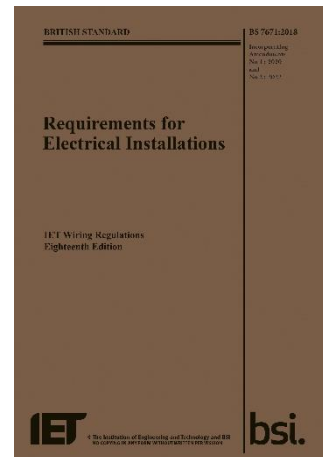




Electrical Regulations Update

BS 7671:2018+A2:2022

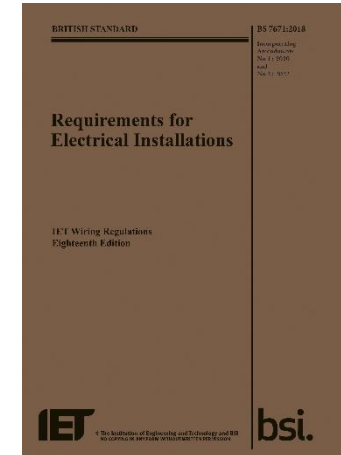


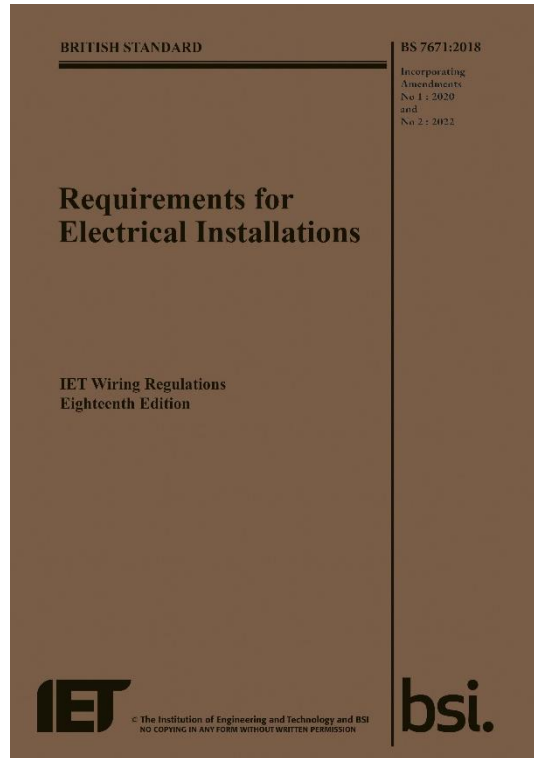




Summary of Changes

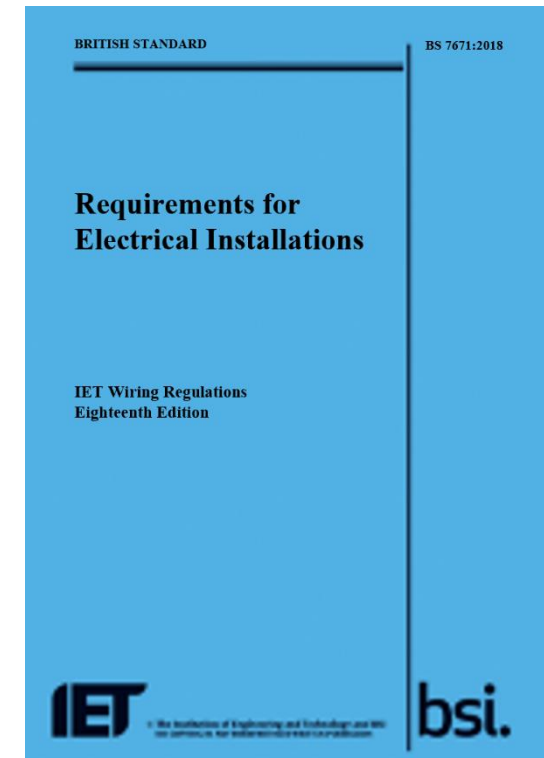
- AFDDs
- SPDs
- RCDs
- Testing and Certification
- Electric Vehicle Charging Installations
- Chapter 82 – Prosumer's Low Voltage Electrical Installations





BS 7671:2018+A2:2022
Issued 28th March 2022

Available for immediate implementation

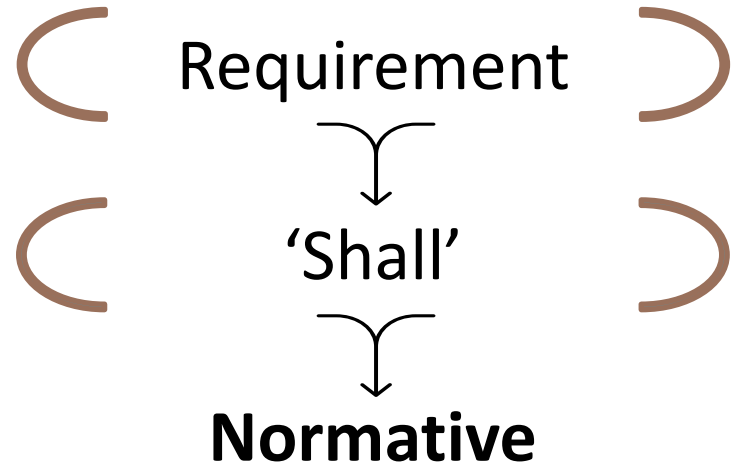


BS 7671:2018+A1:2020
Remains current

Will be withdrawn on 27th September 2022



Guidance on the language used within BS 7671

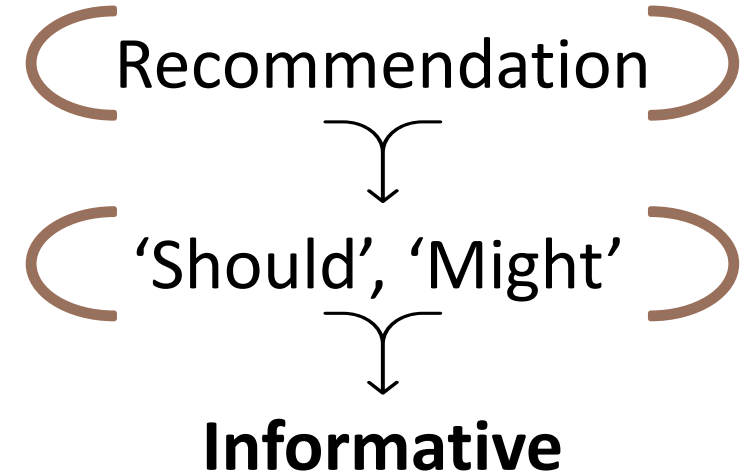


Normative element:

e.g. ...not exceeding 30 mA shall be provided for...

Normative annex:

A 729 (Normative) Additional requirements for closed restricted access areas



Informative element:

e.g. requirements using 'should' 'may' 'can' 'might' 'is'

Informative annex:

A 710 (Informative) Medical locations

Note:

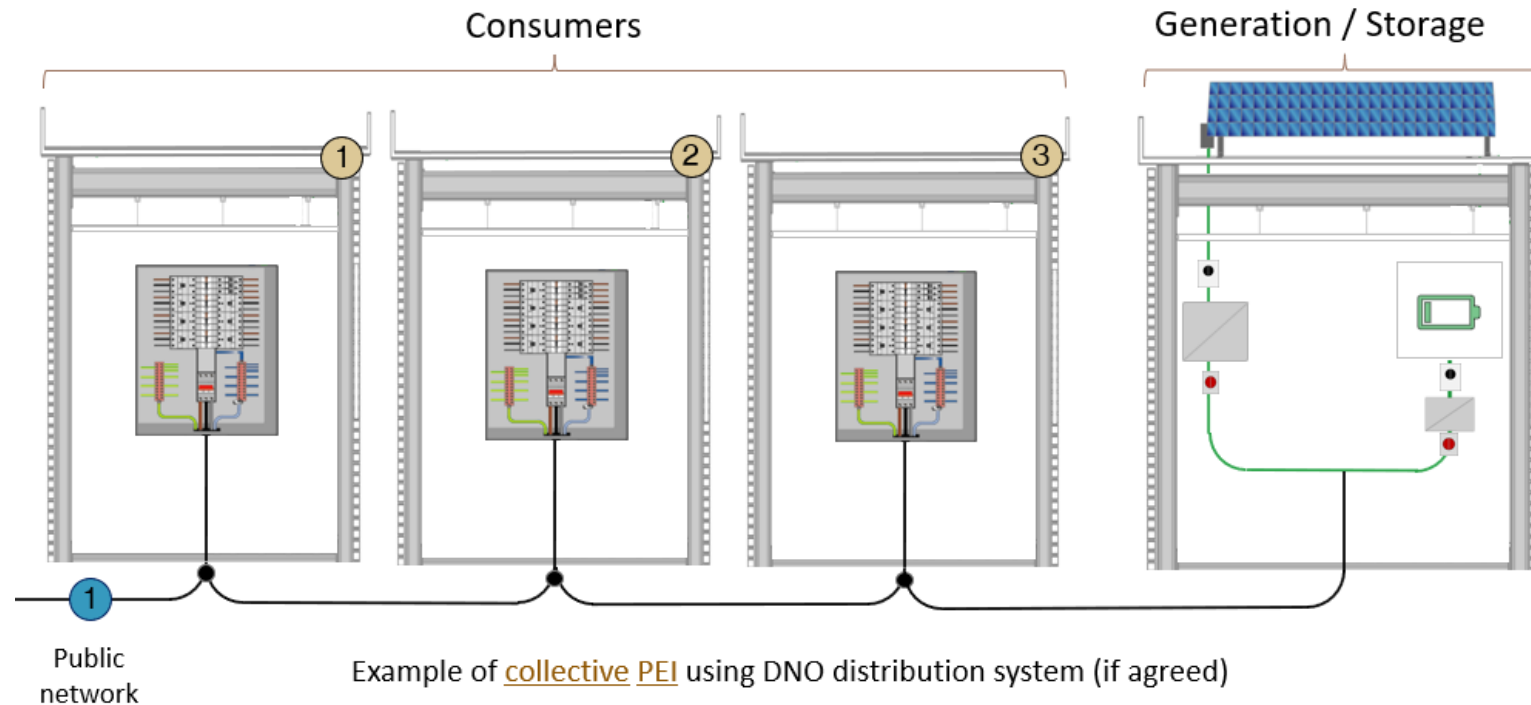
Element containing informative text



110.2 - Exclusions from scope

The Regulations do not apply to the following installations:

- i. Systems for the distribution of electricity to the public





411.3.3 - Additional requirements for socket-outlets and for the supply of mobile equipment for use outdoors

... additional protection by means of an RCD... not exceeding 30 mA shall be provided for:

- i) socket-outlets with a current rating not exceeding 32A in locations where they are liable to be used by persons of capability **BA1, BA3** or children (**BA2, BA3**)
- ii) socket-outlets with a current rating not exceeding 32A in other locations
- iii) Mobile equipment with a rated current not exceeding 32A for use outdoors





411.3.3 - Additional requirements for socket-outlets and for the supply of mobile equipment for use outdoors

From Appendix 5

BA 1

Ordinary

Uninstructed persons

BA 2

Children

Locations intended for presence of children e.g. nurseries, infant schools, etc.

BA 3

Disabled

Persons not in command of all their physical and/or intellectual abilities
(sick persons, old persons)

According to the nature of the disability

Application or requirement to consider

'Utilization' - *Capability of persons*

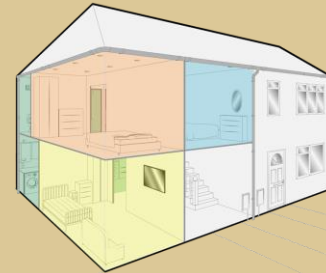




421.1.7 - Protection against fire caused by electrical equipment

Arc fault detection devices (AFDD) conforming to BS EN 62606 shall be provided for single-phase AC final circuits supplying socket-outlets with a rated current not exceeding 32 A in:

- Higher Risk Residential Buildings (HRRB) (over 18 m or 6 storeys)
- Houses in Multiple Occupation (HMO)
- Purpose-built student accommodation
- Care homes



For all other premises, the use of AFDDs conforming to BS EN 62606 is recommended for single-phase AC final circuits supplying socket-outlets not exceeding 32 A.



422.2 - Protected escape routes



422.2

Protected escape route. A route enclosed with specified fire-resisting construction designated for escape to a place of safety in the event of an emergency (See also Escape route).



Escape route. Path to follow for access to a safe area in the event of an emergency. (See also Protected escape route)



443.4.1 - Transient overvoltages due to the effects of indirect lightning strokes

Protection against transient overvoltages shall be provided where the consequence... could result in:

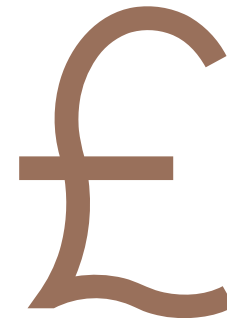
i)
Serious injury to, or loss of, human life



ii)
Failure of a safety service, as defined in Part 2

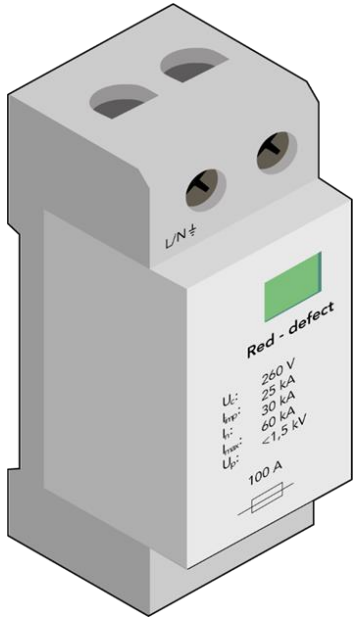


iii)
Significant financial or data loss





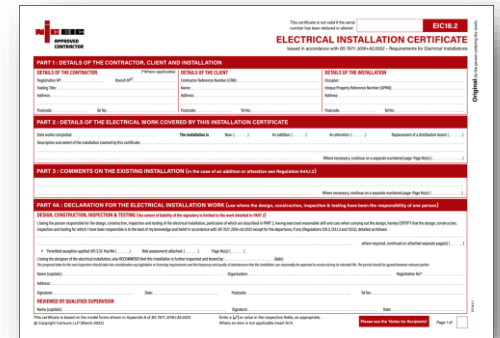
443.4.1 - Transient overvoltages due to the effects of indirect lightning strokes



For all other cases,

Protection against transient overvoltages shall be provided unless the owner of the installation declares it is not required due to any loss or damage being tolerable and they accept the risk of damage to equipment and any consequential loss.

This should be discussed with the client and a record of the conversation made and attached to the electrical installation certificate if the client declines.





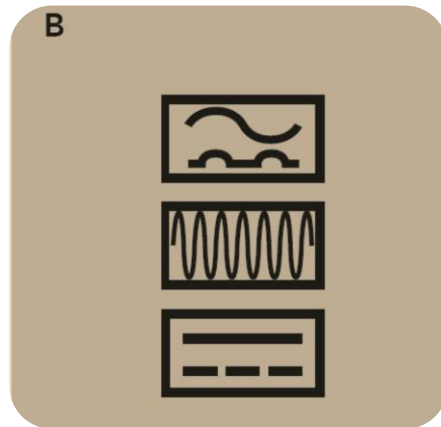
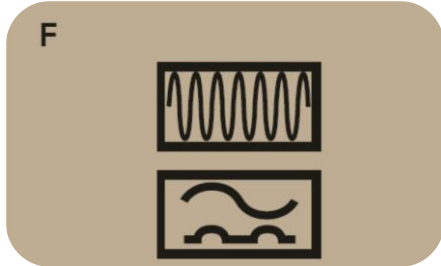
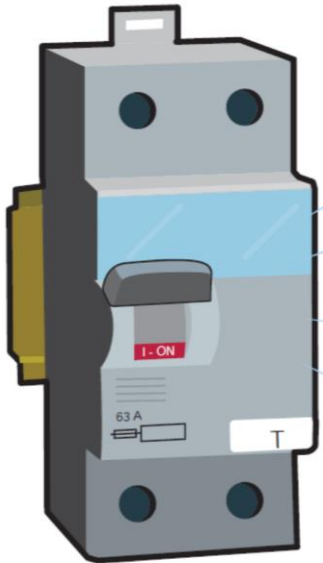
514 - Identification and notices

The requirements of this regulation need not be applied for domestic (household) premises





531.3.3 - Types of RCD

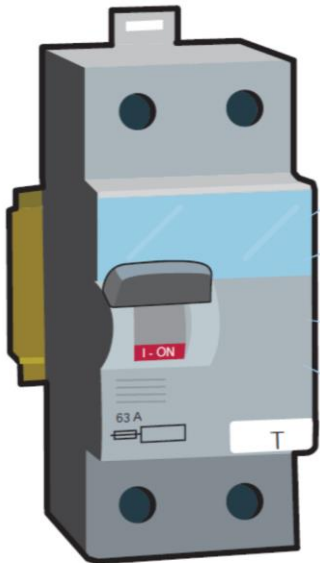


RCD Type AC shall only be used to serve fixed equipment, where it is known that the load current contains no DC components.





643.7.1 - Protection by automatic disconnection of the supply



~~NOTE: See Table 3A in Appendix 3.~~

NOTE: Regardless of RCD Type, effectiveness is deemed to have been verified where an RCD disconnects within the time stated below with an alternating current test at rated residual operating current ($I_{\Delta n}$):

- For general non-delay type, 300 ms maximum
- For delay 'S' type RCD, between 130 ms minimum and 500 ms maximum.





644.1.2 - Additions and/or alterations

The person responsible for the addition or alteration, or a person authorized to act on their behalf, shall record on the Electrical Installation Certificate any other defects observed during the course of the works that may give rise to danger.



ICN18C
ELECTRICAL INSTALLATION CERTIFICATE
Issued in accordance with BS 7671:2018 - Requirements for Electrical Installations

PART 1: DETAILS OF THE CONTRACTOR, CLIENT AND INSTALLATION

DETAILS OF THE CONTRACTOR Registration No: Branch No*:	DETAILS OF THE CLIENT Contractor Reference Number (CRN):	DETAILS OF THE INSTALLATION Occupier:
Trading Title: Address:	Name: Address:	Address:
Postcode: Tel No:	Postcode: Tel No:	Postcode: Tel No:

PART 2: DETAILS OF THE ELECTRICAL WORK COVERED BY THIS INSTALLATION CERTIFICATE

Date work completed:
Description and extent of the installation covered by this certificate:

PART 3: NEXT INSPECTION OF THE ELECTRICAL INSTALLATION

Where, being the designer(s) of the electrical installation as documented in PART 4, RECOMMEND that this installation is further inspected and tested after an interval of not more than: years/months** (state as appropriate)

PART 4: DECLARATION FOR THE ELECTRICAL INSTALLATION WORK (This system may be used where the design, construction, inspection & testing have been the responsibility of one person)

I, being the person responsible for the design, construction, inspection and testing of the electrical installation, particulars of which are described in PART 2, having exercised reasonable skill and care when carrying out the design and additionally where this certificate applies to an addition or alteration, having confirmed that the safety of the existing installation is not impaired, hereby CERTIFY that the design, construction, inspection and testing for which I have been responsible is to the best of my knowledge and belief in accordance with BS 7671:2018, amended to (state) except for the departures, if any, detailed on attached page(s) (.....) (Regulations 120.3, 121.3 and 122.3)

*Permitted exception applied (411.3.3): Yes/No Risk assessment attached: (.....) Page No(s) (.....) **Where selectivity is required, details of the verification appended (BS 44:1) (.....) Page No(s) (.....)

Name (s) (capital): Signature: Date:

REVIEWED BY QUALIFIED SUPERVISOR

Name (s) (capital): Signature: Date:

*Where applicable **The proposed date for the next inspection should take into consideration any applicable or mandatory requirements and the frequency and quality of maintenance that the installation can reasonably be expected to receive during its intended life. The period should be agreed with relevant parties.

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The person responsible for the new work, or a person authorized to act on their behalf, shall record on the Electrical Installation Certificate or the Minor Electrical Installation Works Certificate, any defects found, so far as is reasonably practicable, in the existing installation.



MWC18.2c
MINOR ELECTRICAL INSTALLATION WORKS CERTIFICATE
Issued in accordance with BS 7671:2018-42:2022 - Requirements for Electrical Installations
To be used only for minor work that does not include the provision of a new circuit

PART 1: DETAILS OF THE CONTRACTOR, CLIENT AND INSTALLATION

DETAILS OF THE CONTRACTOR Registration No: Branch No*:	DETAILS OF THE CLIENT Contractor Reference Number (CRN):	DETAILS OF THE INSTALLATION Occupier:
Trading Title: Address:	Name: Address:	Address:
Postcode: Tel No:	Postcode: Tel No:	Postcode: Tel No:

PART 2: DETAILS OF THE MINOR WORKS, SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS

Description of Minor Works:
Date completed: System type and earthing arrangements (e.g. TN-C-S / TN-S / TT): Z_s of Distribution Board / Consumer Unit supplying the final circuit: (.....) Ω

Presence of adequate main protective conductors:
Earthing conductor (.....) Protective bonding conductor(s) to: Water (.....) Gas (.....) Oil (.....) Other (.....) Page No: (.....)

Comments on existing installation (see Reg. 414.12):
Details of any departures from BS 7671:2018, as amended to (state) for the circuit altered or extended (Regulation 120.3, 121.3 & 122.3):
Details of permitted exceptions (Regulation 411.3.3): Where applicable, risk assessment attached: (.....)

PART 3: CIRCUIT DETAILS (Consumer Unit Ref No: Location and type:)

Device	Description and Ref No:	Installation inspection method:	Number of conductors (.....) mm^2 (.....) mm^2
Overcurrent protective device	Type: Rating (A) RCB BS EN: (.....) Type: Rating (A) AFDD BS EN: (.....) Type: Rating (A)	Number of conductors (.....) mm^2 (.....) mm^2	Number of conductors (.....) mm^2 (.....) mm^2
BS EN: (.....)	Type: Rating (A) RCB BS EN: (.....) Type: Rating (A) AFDD BS EN: (.....) Type: Rating (A)	Number of conductors (.....) mm^2 (.....) mm^2	Number of conductors (.....) mm^2 (.....) mm^2

PART 4: TEST RESULTS FOR THE CIRCUIT ALTERED OR EXTENDED**

Continuity	Protective conductor (PC) R_{s1} (.....) Ω or R_{s2} (.....) Ω	
Ring final circuit (RCC) voltage	U _{sc} (.....) V	IR (.....) Ω
Insulation Resistance**	U _{sc} (.....) V	IR (.....) Ω

PART 5: DECLARATION

I CERTIFY that the work covered by this certificate does not impair the safety of the existing installation and that the work has been designed, constructed, inspected and tested in accordance with BS 7671:2018, amended to (state) and that the best of my knowledge and belief, at the time of my inspection, complied with BS 7671:2018-42:2022 except as detailed in PART 2 of this certificate.

Name (s) (capital): Signature: for and on behalf of the Contractor identified in PART 1 of this Certificate
Date:

REVIEWED BY QUALIFIED SUPERVISOR

Name (s) (capital): Signature:
Date:

**Where relevant and practicable

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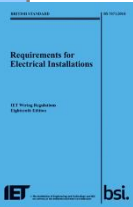




714.411.3.4 - Additional protection

714.411.3.3

Lighting in places such as telephone kiosks, bus shelters, advertising panels and town plans shall be provided with additional protection by an RCD having the characteristics specified in Regulation 415.1.1



Lighting that is accessible to the public shall have additional protection by an RCD having the characteristics specified in Regulation 415.1.1.

Examples include:

- i. gardens, spaces open to the public
- ii. telephone kiosks
- iii. bus shelters
- iv. advertising panels and town plans





722.411.4.1 (i) Deleted by BS 7671:2018+A2:2022

A PME earthing facility shall not be used as the means of earthing for the protective conductor contact of a charge point located outdoors or that might reasonably be expected to be used to charge a vehicle located outdoors unless...



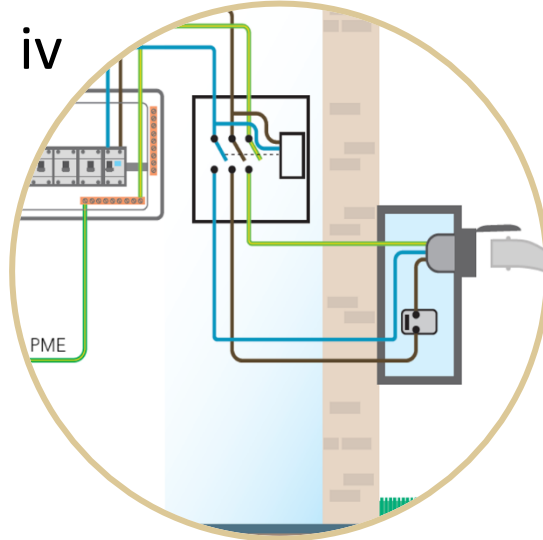
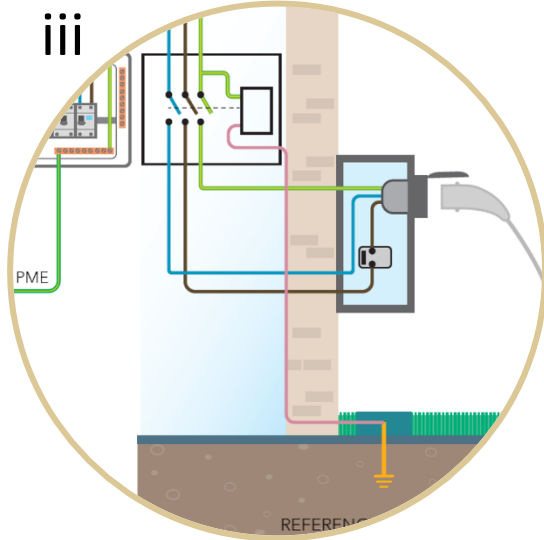
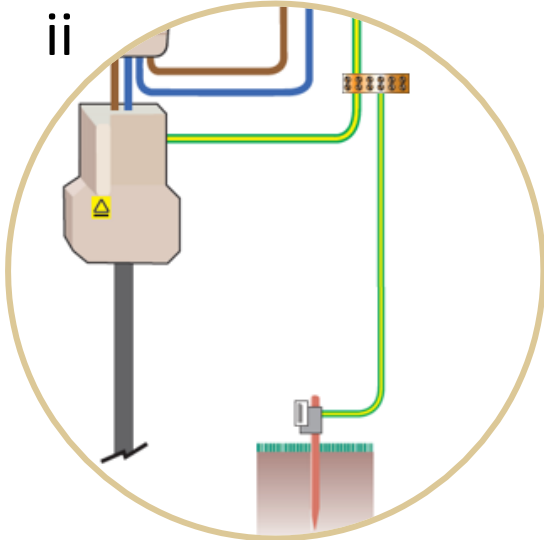
- ~~i. The charging point forms part of a three phase installation that also supplies loads other than for electric vehicle charging and, because of the characteristics of the load of the installation, the maximum voltage between the main earthing terminal of the installation and Earth in the event of an open circuit fault in the PEN conductor of the low voltage network supplying the installation does not exceed 70 V rms.~~





722.411.4.1 - Remaining 'indents'

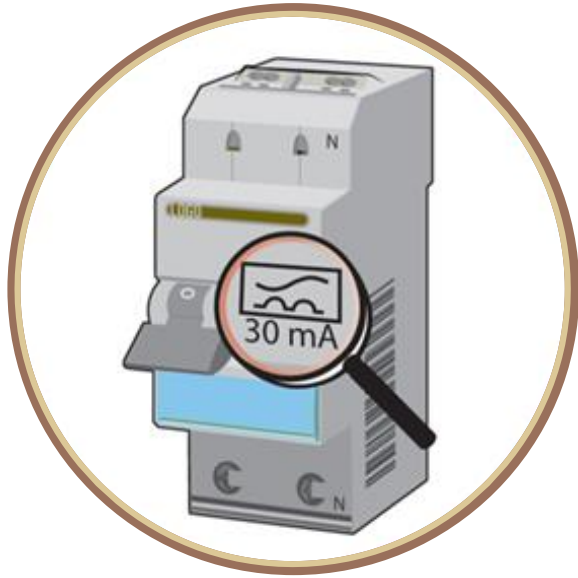
To aid clarity, the remaining indents for this requirement retain their original numbers:



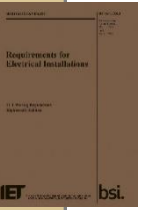
v '...the use of an alternative device...'



722.531.3.101



Unless supplied by... electrical separation... each charging pointshall be protected individually by an RCD of
Type A,
Type F or
Type B and
having a rated residual operating current not exceeding 30 mA.

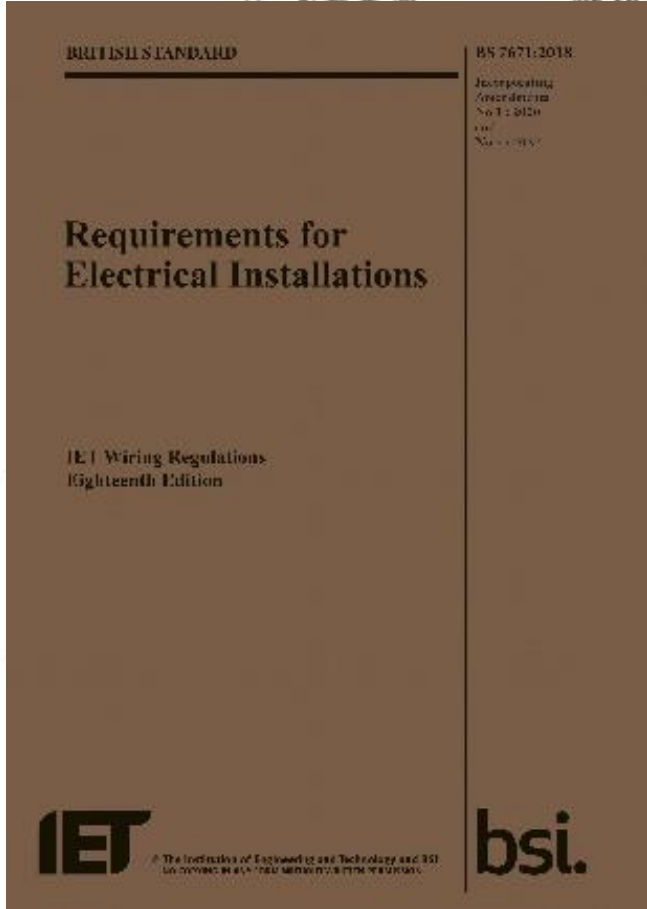
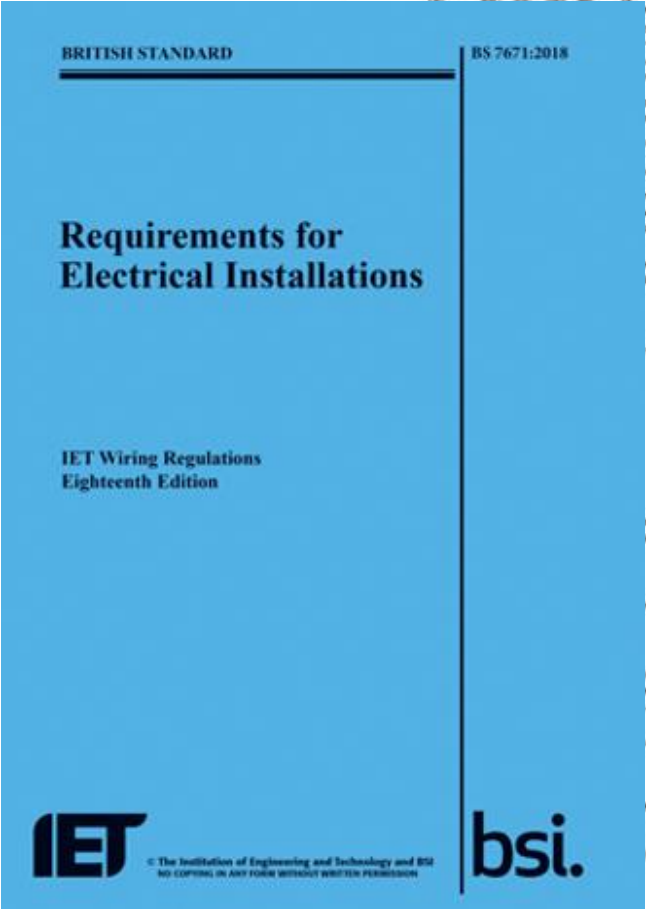


Except where provided by the EV charging equipment, protection against DC fault currents shall be provided by:

- An RCD Type B, or
- An RCD Type A or Type F in conjunction with a residual direct current detecting device (RDC-DD).



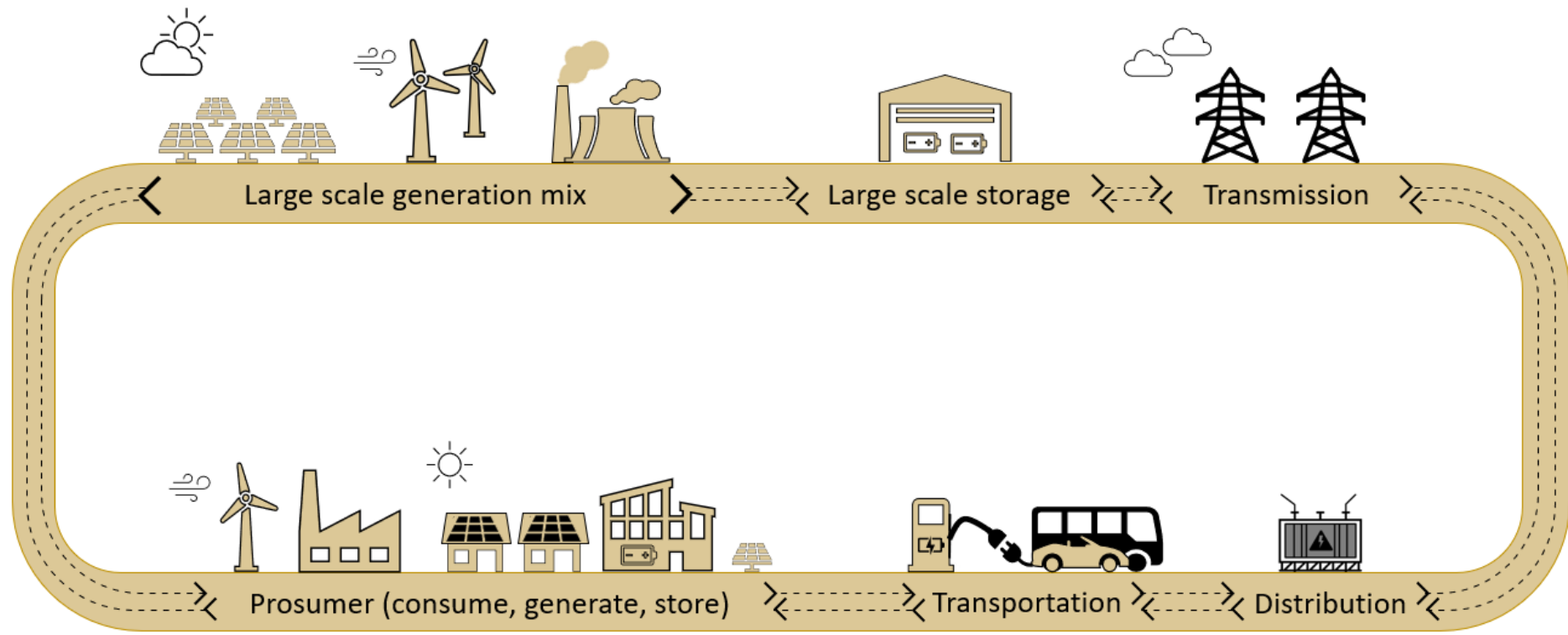
Part 8 - Functional requirements





New landscape - Distributed generation

- De-centralised generation
- Mix of energy sources
- Energy flows across system as required
- Smart grid and interoperability





824 - Operating modes

Local power supplies 1 can supply

- 4 Current using equipment or,
- 2 Local storage units or,
- 3 The public network*

Local storage units 2 can be charged

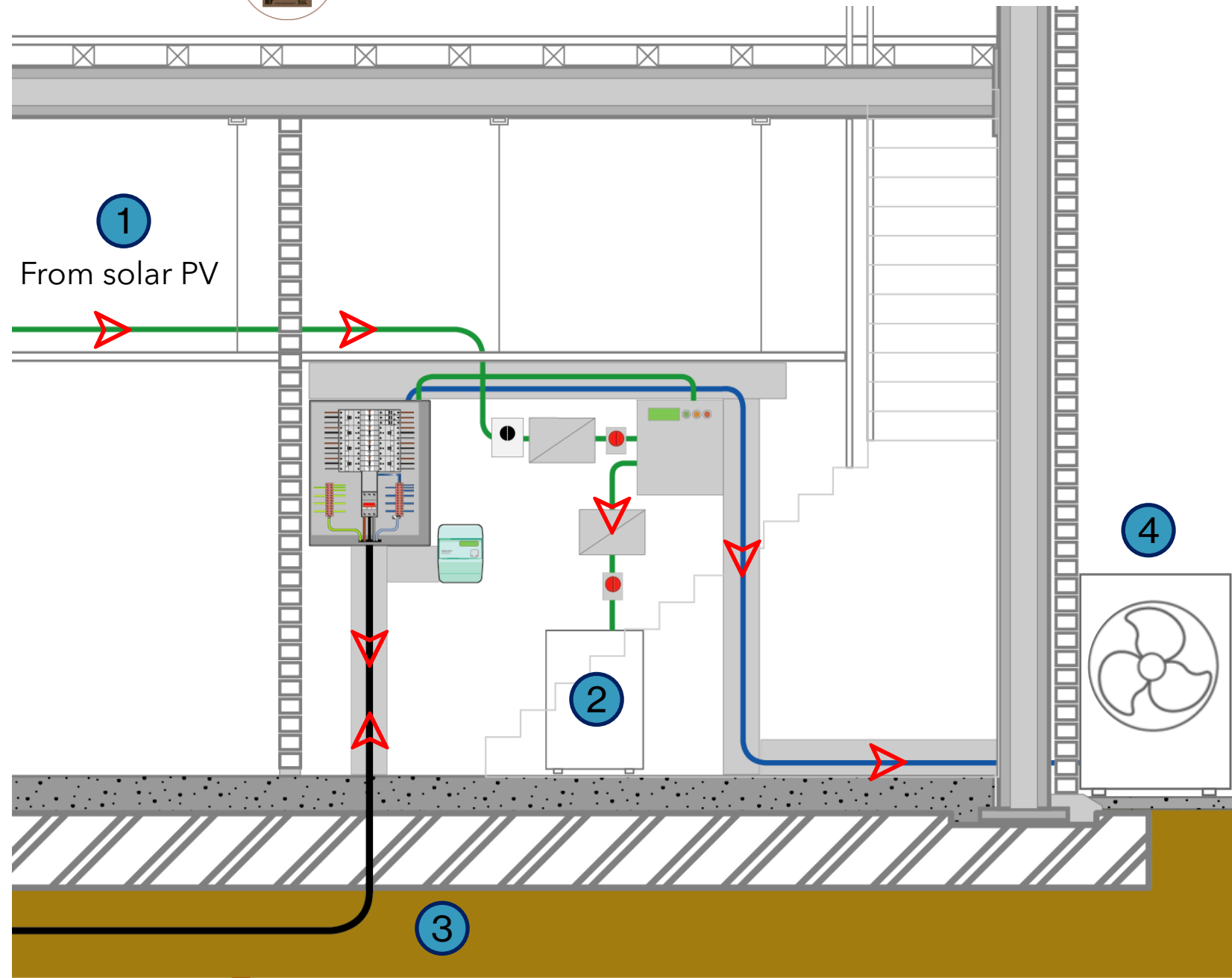
- 1 From a local source or,
- 3 From the public supply

Local storage units 2 can supply

- 4 Current using equipment

* Except in 'island mode'

See **Annex B82** for examples of operating modes.





This certificate is not valid if the serial number has been defaced or altered **ICN18C**
ELECTRICAL INSTALLATION CERTIFICATE
 Issued in accordance with BS 7671: 2018 - Requirements for Electrical Installations

Original (to the person ordering the work)

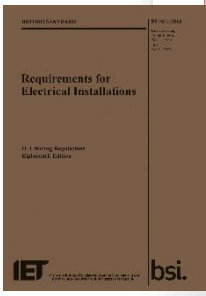


This certificate is not valid if the serial number has been defaced or altered **ICN18C**
ELECTRICAL INSTALLATION CERTIFICATE
 Issued in accordance with BS 7671: 2018 - Requirements for Electrical Installations

8.24 Adequacy of connections, including cpccs, within accessories and at fixed and stationary equipment: (.....)	10. Current-using equipment (permanently connected)
9. Isolation and switching	10.1 Suitability of equipment in terms of IP and fire ratings: (.....)
9.1 Isolators:	10.2 Enclosure not damaged / deteriorated during installation so as to impair safety: (.....)
a) Presence and location of appropriate devices (.....)	10.3 Suitability for the environment and external influences: (.....)
b) Suitable for being covered in the OFF position: (.....)	10.4 Security of fixing: (.....)

PART 7 : SCHEDULE OF ITEMS INSPECTED (enter ✓ or N/A, as applicable)

	Outcome		Outcome		Outcome
1. Condition of consumer's intake equipment (visual inspection only)	(.....)	6. Additional protection	(.....)	12. Location(s) containing a bath or shower	(.....)
2. Parallel or switched alternative sources of supply	(.....)	7. Distribution equipment	(.....)	13. Other special installations or locations	(.....)
3. Protective measure: Automatic disconnection of supply (ADS)	(.....)	8. Circuits (distribution and final)	(.....)	14. Prosumer's low voltage installation(s)	(.....)
4. Basic protection	(.....)	9. Isolation and switching	(.....)	Schedule of Items Inspected by	
5. Protective measures other than ADS	(.....)	10. Current-using equipment (permanently connected)	(.....)	Name (capitals):	
		11. Identification and notices	(.....)	Signature: Date:	



c) The consumer unit / distribution board to which the alternative / additional sources are connected (.....)	7.3 Insulation of live parts not damaged during erection: (.....)	during installation: (.....)
d) All points of isolation of ALL sources of supply (.....)	7.4 Adequacy / security of barriers: (.....)	8.4 Examination of installation of live parts, not damaged during erection: (.....)
3. Automatic disconnection of supply	7.5 Suitability of enclosures for IP and fire ratings: (.....)	8.5 Non-sheathed cables protected by enclosure or conduit, during erection: (.....)
3.1 Presence and adequacy of protective earthing arrangements as follows:	7.6 Enclosures not damaged during installation: (.....)	8.6 Suitability of lightning systems (where applicable): (.....)
a) Distributor's earthing arrangement or installation earth electrode arrangement (.....)	7.8 Presence and operation (functional check) of main switches: (.....)	8.7 Correct temperature rating of cable insulation: (.....)
b) Earthing conductor and connections (.....)	7.9 Components are suitable according to assembly manufacturer's instructions or literature: (.....)	8.8 Adequacy of cables for current-carrying capacity with regard to the type and nature of installation: (.....)
c) Main protective bonding conductors and connections (.....)	7.10 Operation of circuit-breakers and RCDs to prove functionality: (.....)	8.9 Adequacy of protective devices: type and fault current rating for fault protection: (.....)
d) Earthing / bonding labels at all appropriate locations: (.....)	7.11 RCD(s) provided for fault protection, where specified: (.....)	8.10 Adequacy of RCD(s), where specified: (.....)
3.2 Accessibility of protective earthing arrangements	7.12 RCD(s) provided for residual current protection, where specified: (.....)	8.11 Presence and adequacy of residual current protective devices: (.....)
a) Earthing conductor connections (.....)	7.14 Confirmation overvoltage protection (SPDs) provided, where specified: (.....)	8.12 Coordination between conductors and overload protective devices: (.....)
b) All protective bonding connections (.....)		

b) Correct operation verified (functional check) (.....)	Signature:	Date:
ES The pages identified are an essential part of this certificate.		

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The number of boxes has been reduced to 14 items, greatly reducing the time needed to complete an EIC. A list of items that should be inspected (where relevant) is available, but this does not need to be completed.






ELECTRICAL INSTALLATION CERTIFICATE

Issued in accordance with BS 7671: 2018+A2:2022 – Requirements for Electrical Installations

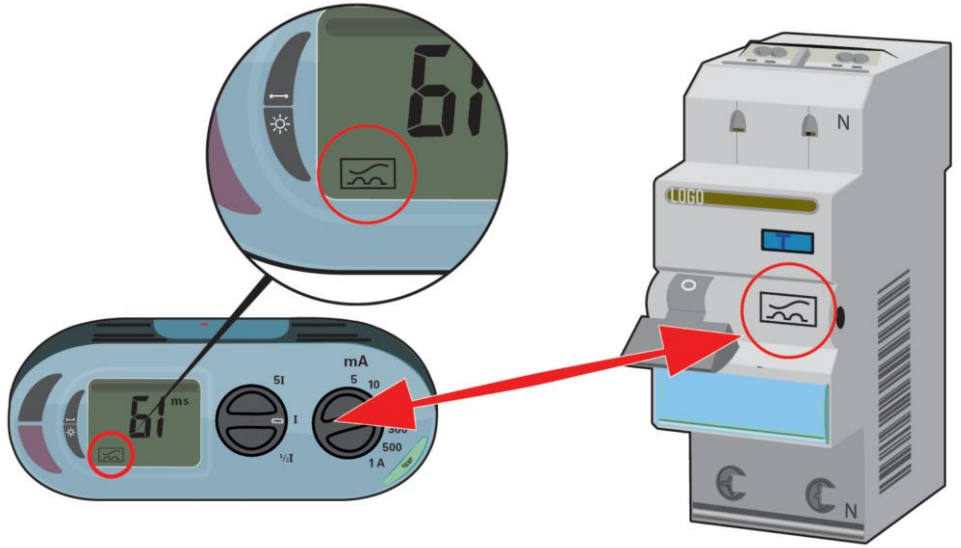
Ordering the work

PART 9A : SCHEDULE OF CIRCUIT DETAILS (GO TO Part 9B 'Schedule of Test Results' to enter test results for the corresponding circuit listed in this part)

Circuit number	Circuit description	Type of wiring (see folder to PART 9B)	Reference Method (BS 7671)

RCD			
BS (EN)	Type	Rating (A)	Operating current, $I_{\Delta n}$ (mA)
			
			
			

Original (to th





Final thoughts