



POWERED BY SPECIALISTS

Specifying central safety power supply systems

To aid the evacuation of a building – essential services

Continuing Professional Development Seminar

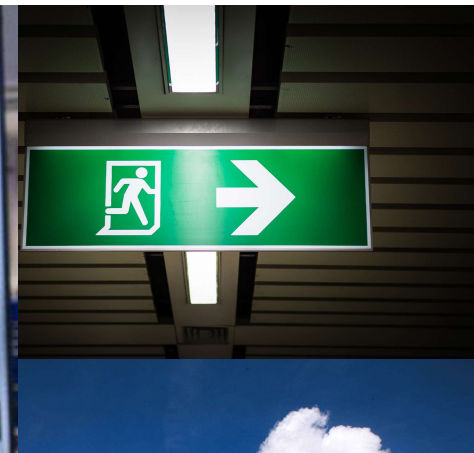
John Sams, Power Control

Matt Crunden, Legrand Electric



POWER DISTRIBUTION PowerControl

THE GLOBAL SPECIALIST IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES



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One company | Six specialist business units

Cable Management | Digital Infrastructures | Energy Controls | Legrand Care | Power Distribution | User Interface



Legrand Power Partner

- Handling all Legrand UPS/CSPSS sales in the UK
- Dedicated account managers from initial enquiry through to after care
- 24/7 technical support
- Deliver the correct technical and commercial solutions for your business
- Full project management
- Hands-on partner support programme
- Product training



POWER DISTRIBUTION

THE GLOBAL SPECIALIST IN ELECTRICAL
AND DIGITAL BUILDING INFRASTRUCTURES





Power Distribution

From Electrak powertrack, desk modules and lighting control, to Zucchini cast resin transformers and busbars, Legrand's power distribution business unit provides market leading solutions to the increasing demands of today's buildings.

- Electrak powertrack, floor boxes and grommets
- Electrak workstation desk modules
- Lightrak KNX lighting control system
- Zucchini lighting busbar
- Zucchini medium and high power busbar systems
- Zucchini cast resin transformers
- Legrand Uninterruptible Power Supplies (UPS)



THE GLOBAL SPECIALIST IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES

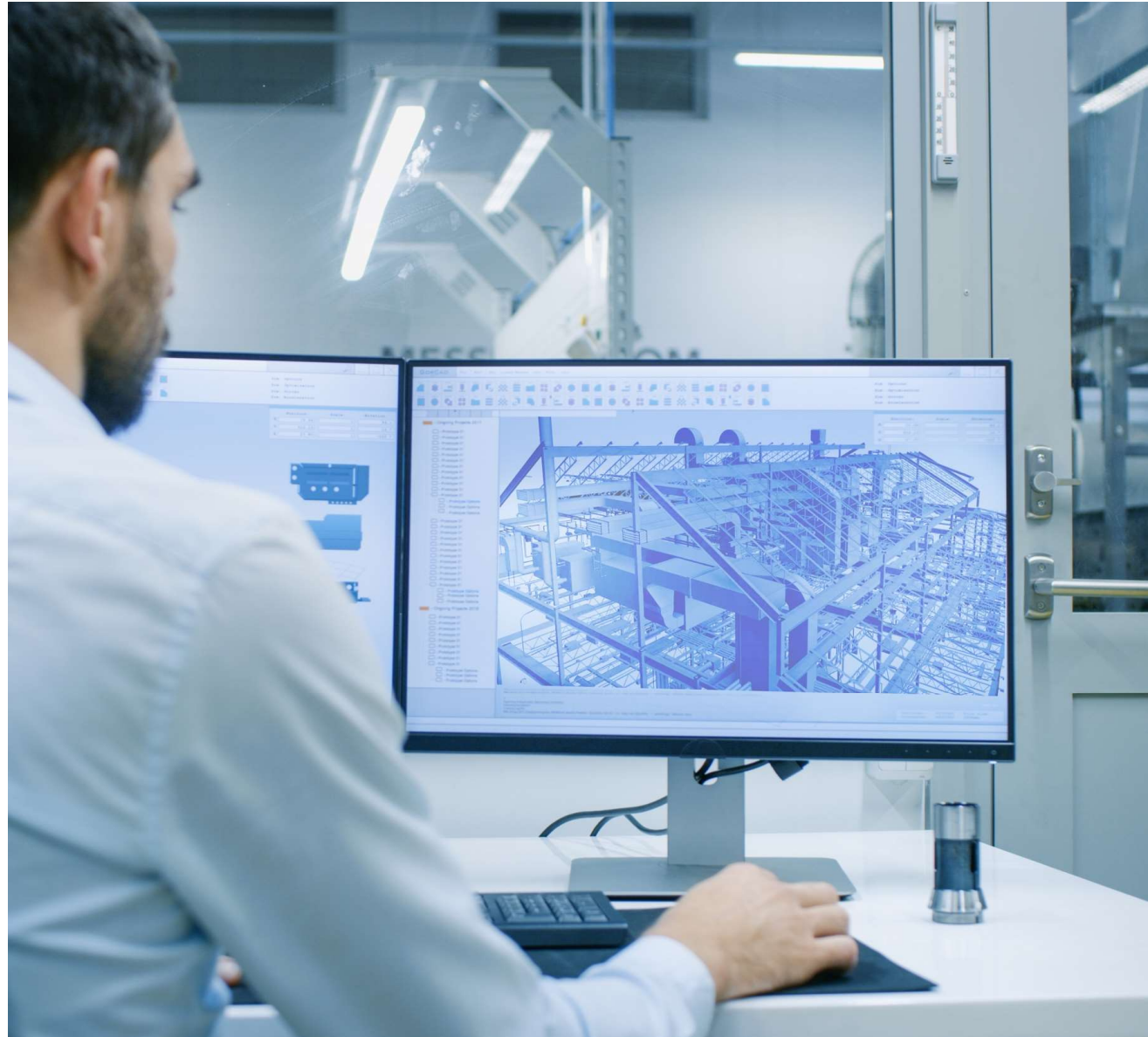




BIM & 3D specification

As part of our ongoing commitment to customer support, a number of Legrand's cable management, Electrak and CP Electronics ranges are now available as BIM objects and are integrated into several key 3D modelling systems.

bimstore.co.uk*



Learning Objectives

Why, how and where to use 'central safety power supply systems'

- Introduction to 'central safety power supply systems'
- BS EN 50171:2021 and related standards
- Design considerations
 - Environmental factors
- How to specify

Agenda of today's CPD seminar

1. **Explaining BS EN 50171:2021**
 - **Why is it important**
 - **'Green' issues**
2. Technologies
 - Modular
 - Monolithic
3. Where to use them
4. Links to other standards
 - BS 8519:2020, BS 9999:2017, BS 7671:2018, BS5266-1:2016 etc
5. Integrated systems
 - Linking with other Legrand systems / products / services
6. Regulations and standards
7. Summary
8. Further learning
9. Q&A

Summary of Standards – Emergency Lighting (CIBSE Lighting Reference guide's)

<p>PRODUCT STANDARDS</p>	<p><i>BS EN 50171:2021 Central safety power supply systems.</i> Specifies central safety power supply systems for luminaires for emergency lighting</p>	<p><i>BS EN 60598-2-22:2014 Luminaires for emergency lighting.</i> Specifies self-contained and centrally powered luminaires for use in emergency lighting systems</p>	<p><i>BS EN 62034:2012 Automatic test systems for battery powered emergency escape lighting.</i> Specifies a test system for battery powered emergency lighting</p>
<p>SYSTEM STANDARDS</p>	<p><i>BS EN 1838:2013 Lighting applications – Emergency Lighting</i> Specifies the illumination to be provided by emergency lighting (including illuminance, duration and colour)</p>		<p><i>BS EN 50172:2004 (BS 5265:2004) Emergency escape-lighting systems</i> Specifies the minimum provision and testing of emergency lighting for different premises</p>
<p>BASE GUIDANCE DOCUMENT</p>	<p><i>BS 5266-1:2016 Emergency Lighting – Part 1: Code of practice for the emergency lighting of premises.</i> Gives general recommendations and guidance on the provision and operation of emergency lighting in most premises other than dwellings</p>		

1. Explaining BS EN 50171:2021

Overview of the Standard

BS EN 50171:2021 specifies the **general requirements for central safety power supply systems** for an independent energy supply to **essential safety equipment**. This standard covers systems **permanently connected to AC supply voltages** not exceeding 1000 V and that use **batteries as the alternative power source**.

The central safety power supplies are intended to **energize emergency escape lighting in the case of failure of the normal supply**, and may be suitable for energizing other essential safety equipment, for example:

- Electrical circuits of automatic fire extinguishing installations
- Paging systems and signaling safety installations
- Smoke extraction equipment
- Carbon monoxide warning systems
- Specific safety installations related to specific buildings, eg. high-risk areas

1. Explaining BS EN 50171:2021

Why is it important?

Specifically written for manufacturers

(to be used in conjunction with BS8519:2020 by specifiers of CSPSS)

- To regulate ensuring the correct equipment is used and specified
- Suited to life safety application
- Defining critical aspects of the CSPSS
- Defining the whole system including batteries

1. Explaining BS EN 50171:2021

UPS / CSPSS – market factors

- Market moving away from fossil fuels
 - Government Clean Air policy will only further restrict use of diesel particularly in city centres
- High efficiency loads, unity power factor, soft start all make the CSPSS a viable solution for most applications
- Sprinkler systems needs high volume and pressure of water to operate correctly
 - questions remain whether supplies in high density areas can meet the demand
- Misting systems (with soft start inverter drives)
- Essential services loads moving to high efficiency type solutions
- LED luminaires for emergency and escape lighting
- Firefighting lifts, evacuation lifts, dampers, extractor fans all incorporated high efficiency soft start inverter drives
- PAVA, BMS, security controls, CCTV

1. Explaining BS EN 50171:2021

Differentiating between UPS & CSPSS...

These key points are additional requirements for a CSPSS

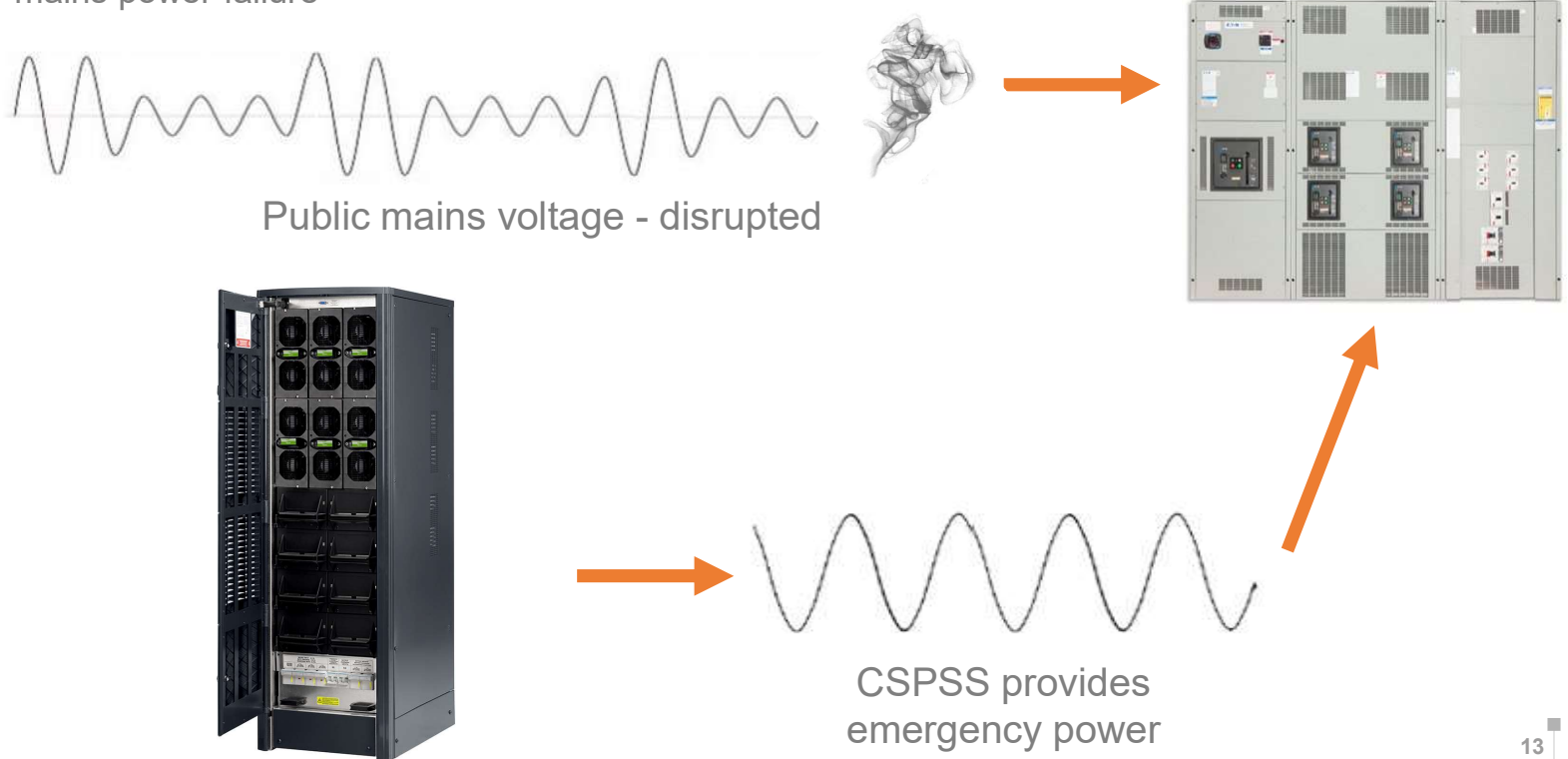
- 6.2.3 Battery recharge to 80% within 12 hours
- 6.2.5 Automatic temperature compensation
- 6.5.3 inverters should be capable of permanently handling 120% of the load requirement
- 6.5.8 The inverter shall be capable of clearing any associated final circuit or distribution circuit fused without shutting down or rupturing its own output fuse
- 6.7.1 Alarm monitoring card
- 6.12 Batteries NiCad or VRLA (Valve Regulated Lead Acid) (lithium not mentioned in the standard)
- 6.12.2 life expectancy of 10years +
- Most commonly VRLA to IEC 60896 / BS 6290 Part 4 is used

- Batteries sized for 1 to 3 hours (BS 5266-1:2016 '6.12')

1. Explaining BS EN 50171:2021

What is a CSPSS?

A CSPSS provides emergency power for the essential services panel in the event of a mains power failure



1. Explaining BS EN 50171:2021

What does a CSPSS do?

A CSPSS is used for emergency lighting loads where central control and testing is desirable

- Maintained or non-maintained systems
- Luminaires can be centrally controlled
- UPS used as a CSPSS must meet BS EN 50171



1. Explaining BS EN 50171:2021

‘Green’ Issues

European Code of Conduct for Uninterruptible Power Supplies or Systems

- Code of Conduct states that energy losses caused by UPSs are not to be neglected by EU energy and environmental policies
- It's important that the electrical efficiency of UPSs are maximized
- Legrand are listed as participants in this Code of Conduct on the European Energy Efficiency Platform (E3P) website

What are UPS energy losses?

- Efficiency losses $P_{in}/P_{out} \times 100 = \text{Efficiency}\%$
- PF, harmonics
- Size correctly for the load (oversize = more losses)
- On line, Off line
- Line interactive

**A CSPSS can still
fall under this code**

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2. **Technologies**
 - **Modular**
 - **Conventional**
3. Where to use them
4. Links to other standards
 - BS 8519:2020, BS 9999:2017, BS 7671:2018, BS5266-1:2016 etc
5. Integrated systems
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6. Regulations and standards
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2. Technologies

Modular

Advantages Of Hot Swap Modular Solutions

- Ratings can be easily Increased without loss of UPS Function
- Lowest MTTR 30minutes with modules on site
- N+1, N+2 in a single footprint
- Hot (no loss of UPS function) during servicing



2. Technologies

Conventional

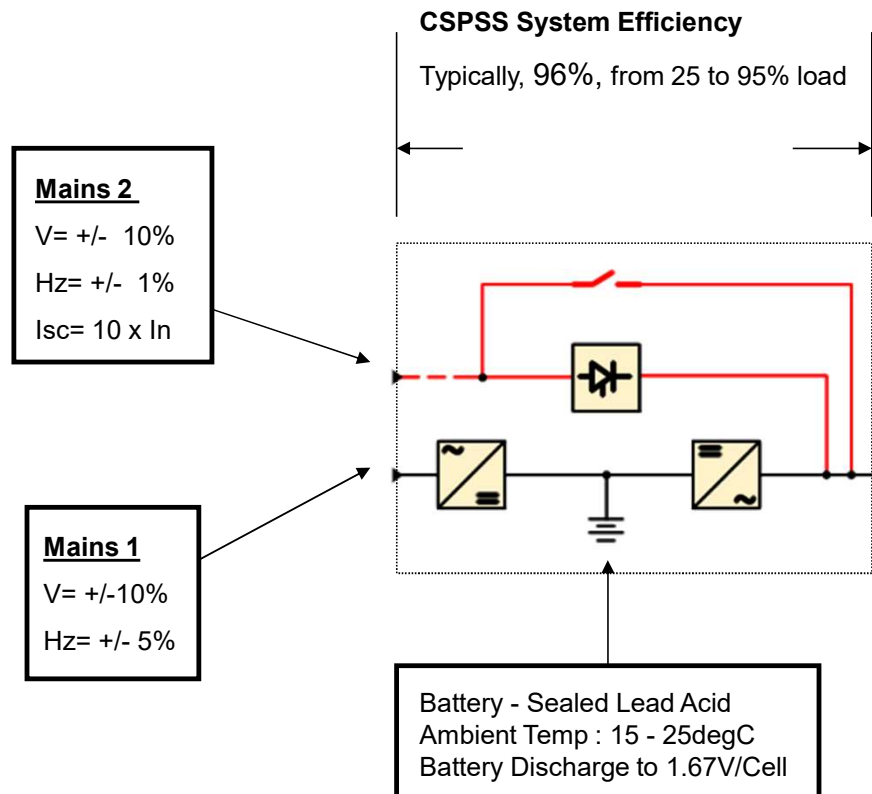
Monolithic, Standalone CSPSS units

- Often lowest cost
- Highest efficiency
- Options of integral transformer
- Smaller footprint traditional
- N+1, N+2, N+N system



2. Technologies

CSPSS Characteristics



Output requirements

- What is your nominal load and power factor?
- How long do you require autonomy 1hr / 2hr / 3hr?
- Do you require redundancy?
- What is the minimum fault clearing requirements for your downstream protection devices?

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3. Where to use them

- Data Centre
 - Typically office areas / essential services
- Factory
 - Safety, process, control
- Warehouse
 - Emergency lighting
- Private Sector
 - Computer systems, IT, data
- Public Building
 - Emergency lighting, public safety, CCTV
- Hospital
 - Essential services



3. CSPSS Environment



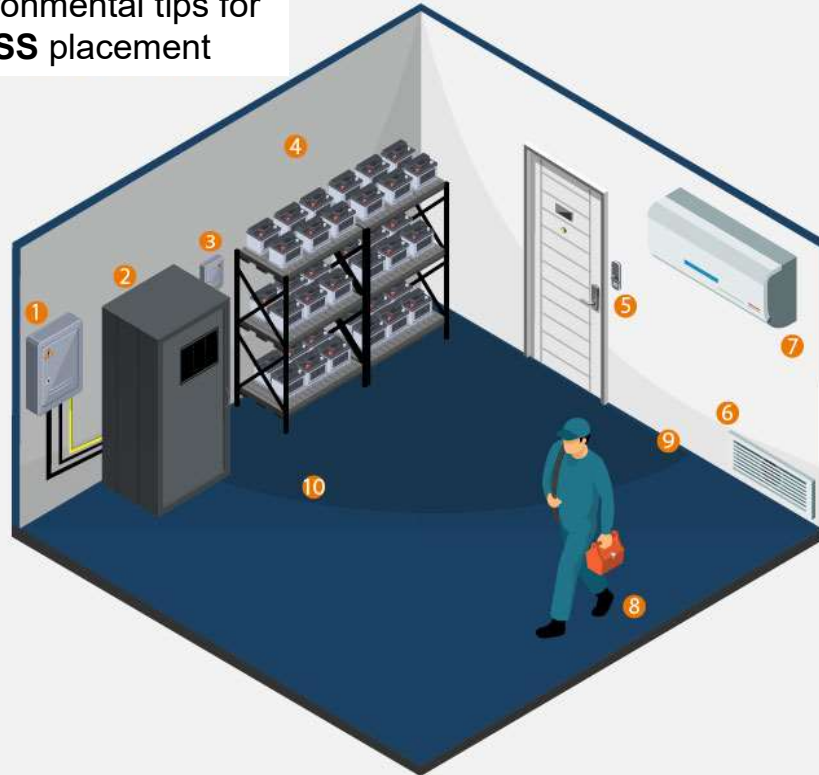
- Ensure that ventilation and air conditioning is sufficient for the system
- Keep the ambient temperature to 20-25°C
- Carry out a battery discharge test every 6-12 months
- Ensure electrical protection of the supplies to the CSPSS are in accordance with BS999 and the manufacturers recommendation
- Provide adequate clearance around the CSPSS
- Keep the surrounding area clean and dust free
- Seal floors, walls, etc.
- Keep the CSPSS and its batteries regularly serviced and maintained
- In its own fire protected room (BS5266)



3. CSPSS Environment



Environmental tips for CSPSS placement



- 1 Bypass panel on the wall - To the left of the CPSS and at eye level for accessibility.
- 2 CPS system - Adequate clearance around UPS for ventilation and maintenance. Overhead trunking or underfloor trunking for cables.
- 3 DC isolator - Between CPSS and batteries. Local and accessible battery isolation required
- 4 No external windows in the room. If external windows present, a window covering is necessary to prevent solar gain
- 5 Access control - To secure the room from unauthorized personnel.
- 6 Ventilation - To allow airflow into and out of the room, reducing humidity.
- 7 Air conditioning unit - To control the room temperature, keeping it between 20°C & 25°C to ensure optimum battery performance and life.
- 8 Competent personnel only - Allow only competent personnel to perform maintenance and servicing of the equipment.
- 9 Seal walls and floors as necessary to prevent the creation of dust that could be drawn into the CPSS.
- 10 Keep the CPSS, batteries and environment around the equipment clean at all times.

3. CSPSS Environment



- Permit smoking or naked lights in the vicinity of batteries
- Allow unauthorised access to CSPSS and batteries
- Use the CSPSS or battery rooms for storage
- Position water pipes or sprinkler systems above the CSPSS, otherwise fit adequate drip trays
- Allow building alterations or electrical works to be carried out while the CSPSS equipment is energised
- Store or use corrosive materials in the vicinity of the CSPSS

3. Where to use them

Project Example 1

Station Emergency Lighting

Solution:

Legrand Trimod MCS Hotswap Modular N+1

- With 12 x 6.7Kva/Kw Power Modules to 60Kva/Kw N+1
- Sht. CCT. 208A 200Millisecs (4 x 52A) from Battery
- With External Bypass Switch
- Battery Open Rack Dual String (20Deg C
- 2 String Isolators

Output requirements

- What is your nominal load and power factor?
21.68Kw Mixed Lighting Loads
- How long do you require autonomy 1hr / 2hr / 3hr?
1hr
- Do you require redundancy?
N+1
- What is the minimum fault clearing requirements for your downstream protection devices?
168A

3. Where to use them

Project Example 2

Fire-fighting (life safety) lifts – BS EN 50171
Cat. 3 in BS 8519; 17 Person

Solution:

Borri ECS 125Kva

- Sht Cct 490A (on Battery)
- With External Bypass Switch
- Batteries VRLA in Open Rack 20Deg. C
- Needs approx 403A as a minimum to trip open, so a 125 kVA ECS would be needed (this unit is capable of supplying 490A short circuit current from inverter)

Output requirements

- What is your nominal load and power factor?
**6 Operation of 1 minute at 25Kw!
+ 1Kw internal losses**
- How long do you require autonomy 1hr / 2hr / 3hr?
3hr
- Do you require redundancy?
No
- What is the minimum fault clearing requirements for your downstream protection devices?
63A MCB Type C

3. Where to use them

Project Example 3

Stadium Lighting

Solution:

INGENIO ECS 125kVA
Sht Cct Current 490 from battery

- With External Bypass Switch
- NiCad minimum maintenance valve regulated
20 year design life

Output requirements

- What is your nominal load and power factor?
30Kva + 25% for future growth
- How long do you require autonomy 1hr / 2hr / 3hr?
3hr
- Do you require redundancy?
No
- What is the minimum fault clearing requirements for your downstream protection devices?
403A 20 year life

3. Where to use them

Service & Maintenance

- Maintenance and servicing for emergency power solutions including UPS & CSPSS
- Extensive spares stock centrally at Sheffield and distributed around the UK
- We cover all major UPS & CSPSS brands
- We have a nationwide team of factory trained engineers
- Tailor made maintenance contracts available
- 24/7 cover for Critical Systems



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4. Links to other Standards

BS 9999:2017 Fire safety in the design, management and use of buildings.

BS 9999 is designed as a **coordinated package covering the four main areas that influence fire safety measures:**

- Fire safety management
- The provisions of means of escape
- The structural protection of escape facilities and the structural stability of the building in the event of a fire
- The provision of access and facilities for fire-fighting

The **primary objective of the standard** is to ensure that a **reasonable standard of life safety** can be achieved in the **event of fire** in the building

The revised standard provides **good practice guidelines to safeguard the lives of building occupants and fire-fighters**. BS 9999 provides recommendations and guidance on the provision of **measures to control or mitigate the effects of fire**

NOTE 37.2.3.1: The electrical power supply to life safety and fire protection equipment should be separate from all other circuits in the building so that the failure of other equipment does not render the installation inoperative

4. Links to other Standards

BS 8519:2020 Selection and installation of fire-resistant power and control cable systems for life safety, firefighting and other critical applications.

- Effective 25th June 2020
- Replaces BS 8519:2010
- References BS 9999
- **Inclusion of...systems for life safety**

BS 8519:2020 contributes to UN Sustainable Development **Goal 9** on industry, innovation and infrastructure because it helps underpin resilient infrastructure; and **Goal 11** on inclusive, safe, resilient and sustainable human settlements because it supports life safety

What's new?

- Added: recognition of other critical systems, other than life safety or fire-fighting applications
- Added: information on uninterruptable power supplies, UPS (Clause 6)
- Added: Annex A on selection and specification of uninterruptable power supplies (UPS)

4. Links to other Standards

BS 7671:2018 IET Wiring Regulations

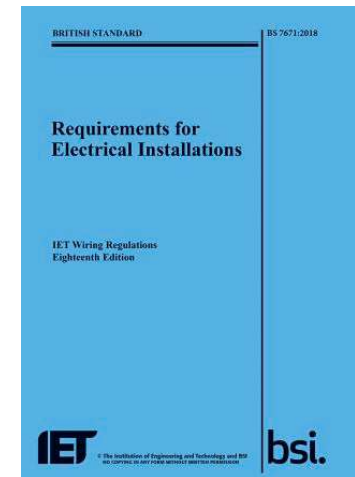
Chapter 56 – Safety Services

Clause 560.6 Electrical Sources for Safety Services

Regulation 560.6.12 Uninterruptible power supply sources (UPS)

Where an uninterruptible power supply is used, it **shall**:

- i. be able to operate distribution circuit protective devices, and
- ii. be able to start the safety devices when it is operating in the emergency condition from the inverter supplied by the battery, and
- iii. **comply with the requirements of Regulation 560.6.10**, and
- iv. comply with BS EN 62040-1 and BS EN 62040-3, as applicable.

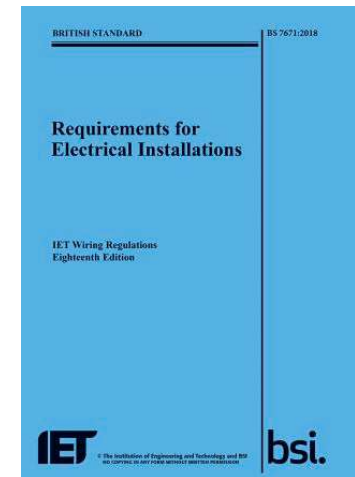


4. Links to other Standards

BS 7671:2018 IET Wiring Regulations

Where an uninterruptible power supply is used, it **shall**:

- iii. comply with the requirements of Regulation 560.6.10, and



560.6.10 Central power supply sources

Batteries **shall** be of vented or valve-regulated maintenance-free type and **shall** be of heavy duty industrial design, for example cells complying with BS EN 60623 or the appropriate part of the BS EN 60896 series.

NOTE: The minimum design life of the batteries at 20°C should be 5 years.

4. Links to other Standards

BS 5266-1:2016 Emergency lighting. Code of practice for the emergency lighting of premises

EMERGENCY LIGHTING

- **Specifies that central power-supply systems feeding emergency lighting**
- Service life for nickel cadmium batteries is mentioned as being four years
 - This would indicate that additional proof of the self-contained luminaire's or battery pack's ability to produce the required emergency lumens would be needed after four years
 - This proof might consist of an illumination survey at the 1hr/3hr marks of the annual duration test
- Where occupiers of a building append their own non-illuminated emergency signage, this must also be illuminated by the emergency lighting system under BS 5266



4. Links to other Standards

BS EN IEC 62040-1:2019 Uninterruptible power systems (UPS). Safety requirements

Provides information relating to:

- General test conditions
- Design requirements
- Wiring
- Connections and supply
- Physical and electrical requirements

Applies to movable, stationary, fixed or built-in **UPS** for use in low-voltage distribution systems and that are intended to be installed in an area accessible by an **ordinary person** or in a restricted access area as applicable.

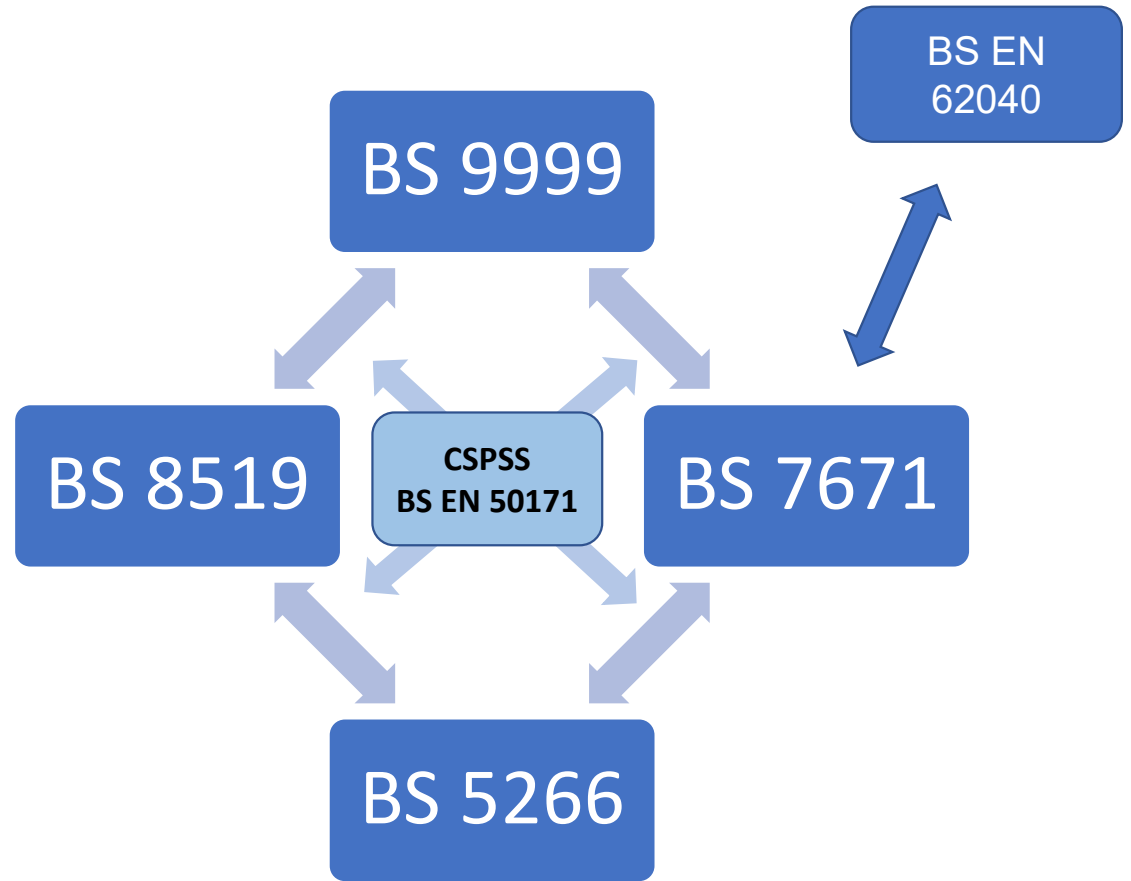
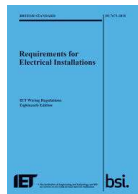
It applies to pluggable and to permanently connected **UPS**, whether consisting of a system of interconnected units or of independent units, subject to installing, operating and maintaining the **UPS** in the manner prescribed by the manufacturer.

NOTE: CSPSS systems must in addition comply to BS EN 50171

4. Links to other Standards



Category	Standard Title	Key Information	Relevant Sections	Activity
A	BS 5839-1:2002	Part 1: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
B1	BS 5839-2:2002	Part 2: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
B2	BS 5839-3:2002	Part 3: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
C	BS 5839-4:2002	Part 4: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
D	BS 5839-5:2002	Part 5: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
E	BS 5839-6:2002	Part 6: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation
F	BS 5839-7:2002	Part 7: Code of Practice for the selection, installation, maintenance and testing of fire detection and alarm systems	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Fire alarm system design and installation



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5. Integrated systems

Links to other Legrand systems / products / services

Legrand offers free CPD accredited seminars for architects, designers, product specifiers, facilities managers, electrical consulting engineers and electrical contractors. Our dedicated team has a wealth of industry experience in covering the specialisms held within Legrand's key product areas.

Our CPDs are assessed and independently certified by the Construction CPD Certification Service. Seminars can be carried out at our Birmingham office, delivered virtually or delivered at your premises anywhere within the UK and Ireland.



**FIRE STOPPING: BREAKING THE
CYCLE OF NON-COMPLIANCE**



**SOLUTIONS FOR ENERGY
EFFICIENCY IN BUILDINGS**



**CREATING A CABLE PATHWAY
THROUGH A BUILDING**



DALI AND APPLICATIONS

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6. Regulations and standards

BS EN 50171:2021 - Central safety power supply systems – BSI British Standards ([bsigroup.com](https://www.bsigroup.com))

BS 5266-1:2016 Emergency lighting. Code of practice for the emergency lighting of premises ([bsigroup.com](https://www.bsigroup.com))

BS 8519:2020 - Selection and installation of fire-resistant power and control cable systems for life safety and fire-fighting applications. Code of practice – BSI British Standards ([bsigroup.com](https://www.bsigroup.com))

BS 7671:2018 Requirements for Electrical Installations. IET Wiring Regulations | BSI ([bsigroup.com](https://www.bsigroup.com))

BS EN IEC 62485-1:2018 - Safety requirements for secondary batteries and battery installations. General safety information ([bsigroup.com](https://www.bsigroup.com))

BS EN 50172:2004 (under review) - Emergency escape lighting systems – BSI British Standards ([bsigroup.com](https://www.bsigroup.com))

BS EN 62034:2012 - Automatic test systems for battery powered emergency escape lighting ([bsigroup.com](https://www.bsigroup.com))

Agenda of today's CPD seminar

1. Explaining BS EN 50171:2021
 - Why is it important
 - 'Green' issues
2. Technologies
 - Modular
 - Conventional
3. Where to use them
4. Links to other standards
 - BS 8519:2020, BS 9999:2017, BS 7671:2018, BS5266-1:2016 etc
5. Integrated systems
 - Linking with other Legrand systems / products / services
6. Regulations and standards
- 7. Summary**
8. Further learning
9. Q&A

7. Summary

We have discussed:

- Introduction to ‘central safety power supply systems’
- BS EN 50171:2021 and related standards
- Design considerations
 - Environmental factors
- How to specify

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8. Further study

Sources of information

Legrand

- Legrand website – www.legrand.co.uk

Power Control

- Power Control website – www.powercontrol.co.uk

CIBSE

- CIBSE website – www.cibse.org

Lighting Industry Association

- LIA website - www.thelia.org.uk

Regulations and standards

- Building regulation documents – www.planningportal.gov.uk
- British Standards Institute – www.bsi-global.co.uk



PowerControl



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**Do you have
any questions?**





Thank you
for your time

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