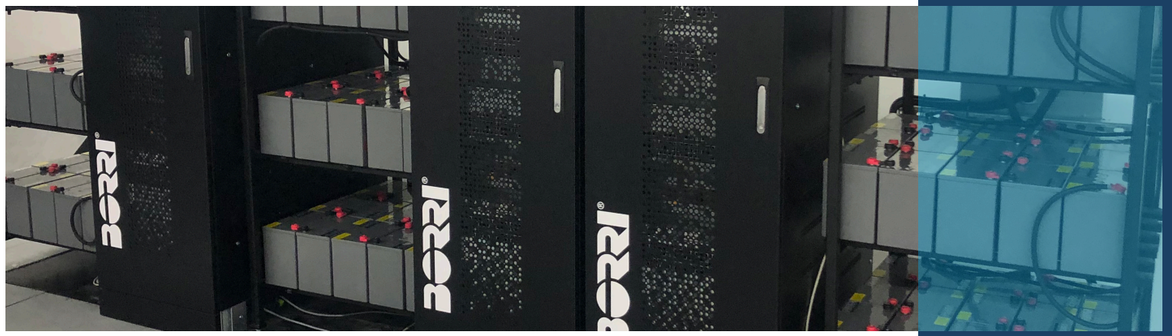
CENTRAL POWER SUPPLY SYSTEMS

PRODUCT GUIDE

PowerControl

CENTRAL POWER SUPPLY SYSTEMS (CPSS)

Central Power Supply Systems are backup power supplies manufactured explicitly to cope with significantly greater overload protection and enhanced features for life safety systems such as emergency lighting, smoke extraction, fire suppression and evacuation lifts.



Whilst sharing some similarities in the sense that both systems provide a backup source of power when the mains power fails, understanding the principle differences between Uninterruptible Power Supplies (UPS) and Central Power Supply Systems (CPSS) is critical to ensure adherence to regulation such as **BS 5266-1, EN 60598-1** and **EN 50171.**

EN 50171 Regulation

This regulation sets out a requirement for a minimum of 120% permanent overload capacity, 10 year battery design life, automatic circuit breakers for static bypass and rectifiers and that the charging current must have a 10 hour capacity level and polarity reversal protection.

BS 5266-1 Regulation

This regulation covers the speed at which power must be restored to any life safety system. A CPSS must be able to provide and recover 80% autonomy within 12 hours in the event of a mains failure.

BS 5266-1 Regulation

This regulation stipulates that the CPSS must be housed within a metal enclosure that has an IP rating of at least IP20.

ENVIRONMENTAL

Understanding the physical environment in which a CPSS solution will be operating is key to ensuring optimum performance. It is important to ascertain height and weight limitations, ventilation restrictions and examine physical space.

It is also essential that the CPSS chosen can cope with the total electrical load that will be used not just now but in the future. Planning for future growth will help achieve greater TCO (total cost of ownership) values. We recommend that an additional 20-25% capacity is included to account for any surges in power and allow for future growth.

5 STEP APPROACH

REVIEW
Review critical business and technical drivers and define design requirements

ADVISE
Technical surveys completed by industry specialists

PLAN
Bespoke proposals and designs tailored to each client

DEPLOY
Turnkey project managed deployment services

MAINTAIN
Tailored operation & maintenance programmes for ongoing support

CPSS TOPOLOGIES

TOPOLOGIES

CPSS are available as either static or modular units. Both systems include batteries, a battery charger, control circuitry, alarms and instruments and are designed to support the same applications; life safety systems. How to choose the most suitable topology depends on the existing infrastructure, budget and the likelihood of future expansion.

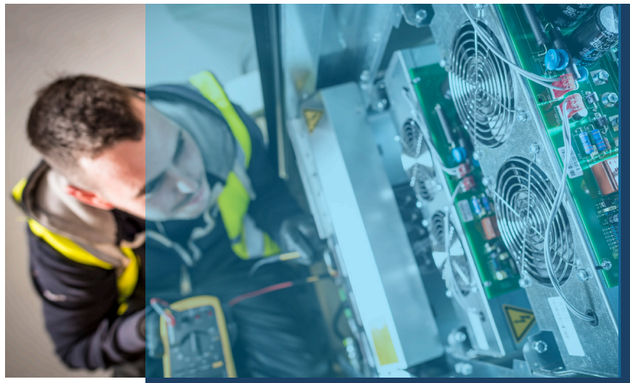
Static CPSS are a cheaper alternative for those not expecting a significant infrastructure growth in the near future.

Modular CPSS architecture are more suitable for those who require additional flexibility. They are ideal for facilities that are expecting future expansion. Modular CBS also provides the flexibility to have N+X redundancy within the cabinet whereas to achieve the same redundancy in the static alternative, more than one unit is required.

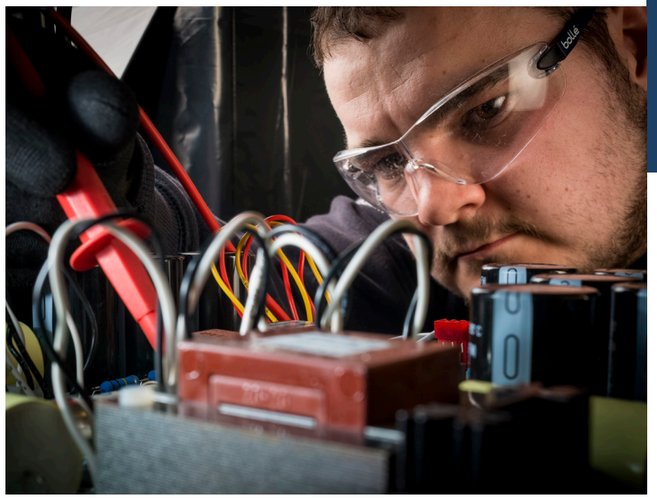
OUR SERVICES

Power control ltd has almost 30 years of experience in delivering emergency power solutions for essential safety equipment and life safety systems.

Working with some of the world's leading manufacturers, our Central Power System (CPSS) portfolio spans from 3kVA through to 960kVA. Front line intelligence coupled with leading edge technologies enables us to supply ultimate power resilience and efficiency for the needs of today and the future.



An unparalleled understanding of the sophisticated intricacies that make up power protection frameworks have positioned Power Control as not just a leading CPSS specialist but as an expert in planning, design and commissioning of complex power protection solutions. It is a core provider of batteries, bypass switches, ancillaries and tailored design solutions.



Offering monolithic and modular CPSS solutions, the technologies from Power Control have been expertly selected to ensure the right solutions are designed and delivered for users' power protection requirements. We have installed and commissioned a multitude of UPS systems across a wide spectrum of markets, including medical, public sector, data centre and retail

MAINTENANCE SUPPORT

Power Control provides maintenance support for over 3500 sites in the UK. With flexible service packages available for all business sizes, our offering also integrates maintenance for other associated server room infrastructure equipment including CPSS and batteries, electrical installation testing,, generator servicing, fire suppression equipment and door entry systems.

Our team of experienced engineers and technical specialists are on call 24/7 to provide immediate initial diagnosis of faults and offer step by step phone assistance. They are also positioned across the country and are fully equipped to undertake emergency reactive maintenance if required.

CPSS TYPES

RESILIENCE SHOULD ALWAYS BE THE TOP PRIORITY WHEN IT COMES TO SELECTING THE CORRECT CPSS. VAST IMPROVEMENTS IN TECHNOLOGY HAVE ALSO ALLOWED EVEN THE MOST RELIABLE CPSS SYSTEMS TO ACHIEVE SIGNIFICANT OPERATING EFFICIENCY LEVELS.

MONOLITHIC CPSS

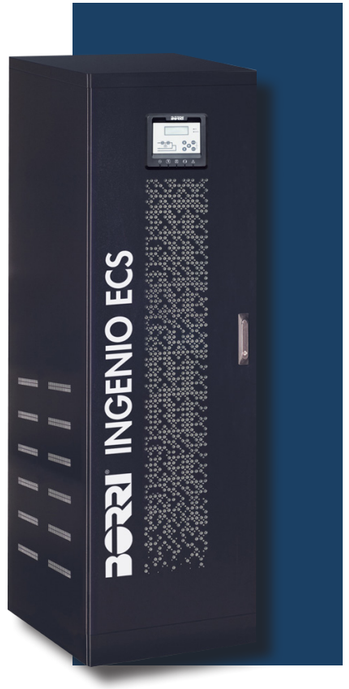
DEFINITION:	Fixed capacity CPSS, which can be increased when additional CPSS units are connected in parallel.
TECHNOLOGY:	Green conversion technology. Separate rectifier and bypass. Transformer free design.

Three phase monolithic CPSS are ideally suited to sites where a fixed requirement is known, or when scaling is pre-planned. It is important to note that the initial switchgear capacity should be future proofed to allow for easy installation and additional units to be connected in parallel. Monolithic CPSS units are not of modular construction but can be utilised in this way to achieve an overall modular build.

Redundancy and resilience is also provided by connecting additional units in parallel, this does offer complete redundancy opposed to modular redundancy. These type of CPSS are scalable rather than modular.

The monolithic CPSS are designed in compliance with EN50171 standards all feature:

- 120% permanent overload capability
- 10-year design life batteries as standard
- Battery polarity reversal protection
- IP20 metal enclosure as per EN60598-1
- Backfeed and short circuit protection
- 80% autonomy within 12 hours
- Deep discharge protection
- Acid proof battery cabinets and racks



MODULAR CPSS

Modular CPPS systems are ideal for sites where the load will increase or redundancy is required

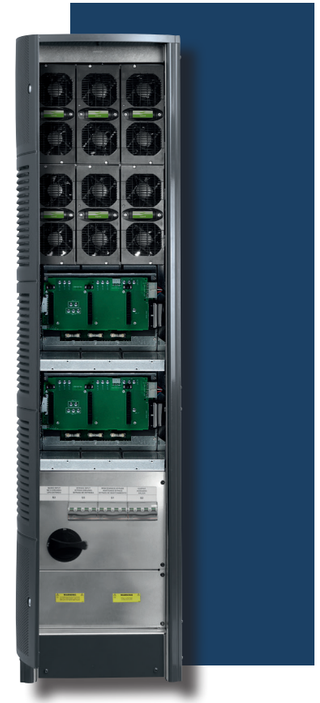
DEFINITION:	Modular construction, scalable power capacity in module size increments up to a fixed overall frame capacity.
TECHNOLOGY:	Typically offering vertical scalability and use transformer free topology. High efficiency IGBT rectifier and 3-level inverter, with increasing efficiencies at lower loads.

Modular CPSS power capacity can grow as demand grows or be reduced as requirements alter. This not only delivers flexibility advantages but also ensures peak efficiency is always achieved.

In addition, the modular approach offers redundancy, a smaller footprint, greater usability, easy manageability, inherently greater availability, and scalability throughout its operational life.

The modular CPSS are designed in compliance with EN50171 standards all feature:

- 120% permanent overload capability
- 10-year design life batteries as standard
- Battery polarity reversal protection
- IP21 metal enclosure as per EN60598-1
- Backfeed and short circuit protection
- Deep discharge protection
- Acid proof battery cabinets and racks
- N+X autonomy

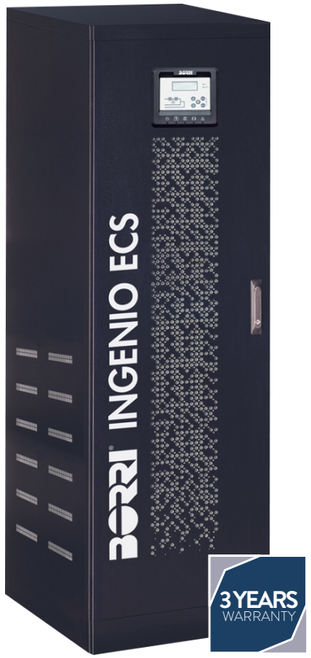


BORRI INGENIO ECS 30-160kVA

ONLINE DOUBLE CONVERSION SLIMLINE DESIGN CPSS SYSTEM

SUITABLE FOR:
Emergency lighting applications, fire and life safety systems (Complies with EN 50171)

RATING	30kVA	40kVA	60kVA	80kVA	100kVA	125kVA	160kVA
DIMENSIONS W X D X H (mm)	465W x 650D x 1230H		560W x 940D x 1500H		560W x 940D x 1800H		
WEIGHT (Kg)	120	140	190	215	320	360	380
INPUT							
VOLTAGE	400VAC						
VOLTAGE TOLERANCE / RANGE	-20% / +15%						
FREQUENCY	50/60Hz						
FREQUENCY TOLERANCE / RANGE	45-65Hz						
OUTPUT							
POWER FACTOR	1						
WAVEFORM	Sine wave						
VOLTAGE	380/400/415VAC						
FREQUENCY	50-60Hz (Sync with mains ±2Hz)						
EFFICIENCY	>96% (Eco mode / changeover mode)						
BATTERY							
DC VOLTAGE	720VDC or 744VDC						
BATTERY CONFIGURATION	External 360 to 372 cells, VRLA (other options)						
BATTERY CHARGER	80% Autonomy in 12hr						
MECHANICAL							
OUTPUT CONNECTION	Hardwired 4w		Hardwired 4w (rectifier), 4w (bypass)				
ENVIRONMENTAL							
OPERATING TEMPERATURE TOLERANCE	0-40°C / VRLA Batteries 20-25°C						
STORAGE TEMPERATURE TOLERANCE	-10 - +70°C						
RELATIVE HUMIDITY	<95% (non-condensing)						
OPERATING ALTITUDE TOLERANCE	<1000m						
PROTECTION RATING	IP20						
FEATURES							
COMMUNICATION	USB, RS232 and Modbus						
OPTIONAL COMMS	SNMP / VFC						
PARALLEL	Up to 6 (others on request)						
OPTIONS & FUNCTIONS	EPO, Expandable Battery, Mimic LCD and keyboard, Temperature compensated charging						
CERTIFICATION							
CERTIFICATIONS	EN 62040-1, EN 62040-2, EN 62040-3, EN 50171						

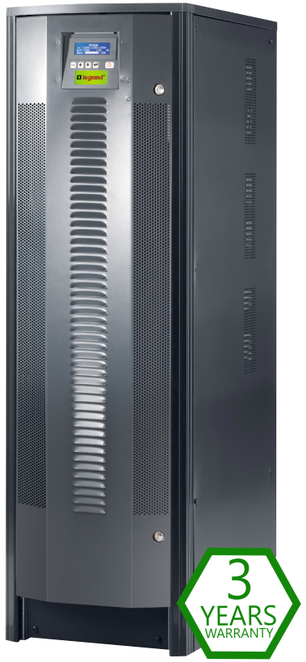


legrand® TRIMOD MCS 3- 80kVA

ONLINE DOUBLE CONVERSION, VFI THREE PHASE MODULAR CPSS

SUITABLE FOR:
Emergency lighting applications, fire and life safety systems (Complies with EN 50171)

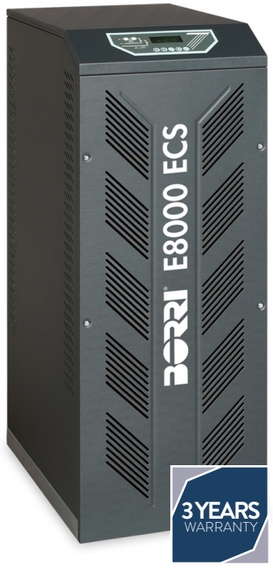
MAXIMUM CAPACITY	3kVA	5kVA	6.7kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA
DIMENSIONS W X D X H (mm)	414W x 628D x 1370H (or 1650H)									
INPUT										
VOLTAGE	220,230,240 1F+N+PE			380, 400, 415 3PH+N+PE (or 220, 230, 240 1PH)				380, 400, 415 3PH+N+PE		
FREQUENCY	45-65 Hz (43,0 ÷ 68.4 Hz)									
VOLTAGE TOLERANCE / RANGE	230V +15%/-20%			400V +15%/-20% - 230V +15%/-20%				400V +15%/-20%		
OUTPUT										
POWER FACTOR	1									
VOLTAGE	220,230,240 1F+N+PE			380, 400, 415 3PH+N+PE (or 220, 230, 240 1PH)				380, 400, 415 3PH+N+PE		
EFFICIENCY	Up to 96% (99% in ECO mode)									
FREQUENCY	50/60 Hz selectable by the user ±2 % (standard), ±14 % (extended)									
WAVEFORM	Sinusoidal									
BATTERY										
BATTERY MODULE	Plug and play									
AUTONOMY	1h (settable as needed)									
BATTERY CHARGER	80% autonomy in 12h - Smart Charge technology. 3-stage advanced cycle									
MECHANICAL										
OUTPUT CONNECTION	3P + N + PE Connectors on omega bar									
ENVIRONMENTAL										
OPERATING TEMPERATURE TOLERANCE/HUMIDITY	0 - 40°C / 0 - 95% non condensing									
STORAGE TEMPERATURE	from -20°C to +50°C (excluding batteries)									
PROTECTION RATING	IP21									
FEATURES										
COMMUNICATION	2 serial port RS232, 1 logic level port, 5 outputs with dry contacts, 1 optional interface slot									
CERTIFICATION										
CERTIFICATIONS	EN 62040-1, EN 62040-2, EN 62040-3, EN 50171									



BORRI E8031 ECS 10-20kVA

ONLINE DOUBLE CONVERSION SLIMLINE DESIGN CPSS SYSTEM

SUITABLE FOR:
Emergency lighting applications, fire and life safety application (Complies with EN 50171)

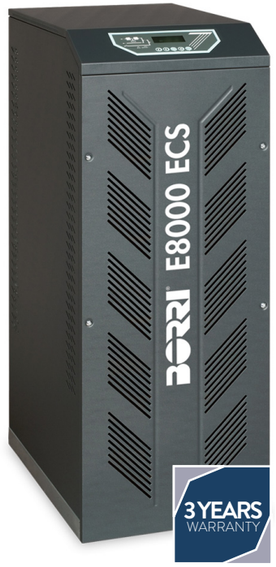


RATING	10kVA	15kVA	20kVA
DIMENSIONS W X D X H (mm)	450W x 650D x 1200H		
WEIGHT (Kg)	100		110
INPUT			
VOLTAGE	400VAC		
VOLTAGE TOLERANCE / RANGE	-20% / +15%		
FREQUENCY	50/60Hz		
FREQUENCY TOLERANCE / RANGE	45-65Hz		
OUTPUT			
POWER FACTOR	0.9		
WAVEFORM	Sine wave		
VOLTAGE	220VAC / 230VAC / 240VAC		
FREQUENCY	50-60Hz (Sync with mains ±2Hz)		
EFFICIENCY	>96% (Eco mode)		
BATTERY			
DC VOLTAGE	720VDC or 744VDC		
CHARGER CAPACITY	6A	10A	10A
MECHANICAL			
OUTPUT CONNECTION	Hardwired		
ENVIRONMENTAL			
OPERATING TEMPERATURE TOLERANCE	CPSS 0-40°C / VRLA Batteries 20-25°C		
STORAGE TEMPERATURE TOLERANCE	-10 - +70°C		
RELATIVE HUMIDITY	<95% (non-condensing)		
OPERATING ALTITUDE TOLERANCE	<1000m		
FEATURES			
COMMUNICATION	USB, RS232 and Modbus		
OPTIONAL COMMS	SNMP / VFC		
PARALLEL	Up to 6 (others on request)		
OPTIONS & FUNCTIONS	EPO, Expandable Battery, Mimic LCD and keyboard, Temperature compensated charging		

BORRI E8033 ECS 10-20kVA

ONLINE DOUBLE CONVERSION SLIMLINE DESIGN CPSS SYSTEM

SUITABLE FOR:
Emergency lighting applications, fire and life safety application (Complies with EN 50171)



RATING	10kVA	15kVA	20kVA	30kVA	40kVA	50kVA
DIMENSIONS W X D X H (mm)	450W x 650D x 1200H					
WEIGHT (Kg)	100	110		140		170
INPUT						
VOLTAGE	400VAC					
VOLTAGE TOLERANCE / RANGE	-20% / +15%					
FREQUENCY	50/60Hz					
FREQUENCY TOLERANCE / RANGE	45-65Hz					
OUTPUT						
POWER FACTOR	0.9					
WAVEFORM	Sine wave					
VOLTAGE	380VAC / 400VAC / 415VAC					
FREQUENCY	50-60Hz (Sync with mains ±2Hz)					
EFFICIENCY	>98% (Eco mode)					
BATTERY						
DC VOLTAGE	720VDC or 744VDC					
CHARGER CAPACITY	6A	10A	10A	15A	15A	25A
MECHANICAL						
OUTPUT CONNECTION	Hardwired					
ENVIRONMENTAL						
OPERATING TEMPERATURE TOLER-	CPSS 0-40°C / VRLA Batteries 20-25°C					
STORAGE TEMPERATURE TOLERANCE	-10 - +70°C					
RELATIVE HUMIDITY	<95% (non-condensing)					
OPERATING ALTITUDE TOLERANCE	<1000m					
FEATURES						
COMMUNICATION	USB, RS232 and Modbus					
OPTIONAL COMMS	SNMP / VFC					
PARALLEL	Up to 6 (others on request)					
OPTIONS & FUNCTIONS	EPO, Expandable Battery, Mimic LCD and keyboard, Temperature compensated charging					

WORKING WITH POWER CONTROL

Drawing on its nearly three decades of critical power expertise, Power Control has become an integral partner for all aspects of power infrastructure.

An unparalleled understanding of the sophisticated intricacies that make up power protection frameworks have positioned Power Control as not just a leading CPSS specialist but as an expert in planing, design, commissioning of complex bypass switches, UPS, generators and other ancillaries.

The company's strong partner and manufacturer network enables it to deliver efficient, sustainable and effective solutions for businesses of all sizes.

PowerControl

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