

# UMB AC40

## Industrial Modular UPS

from 10 to 320 kW

AC UPS

Borri Modular AC Uninterruptible Power System UMB AC40 is designed and developed to withstand harsh industrial environment and operating conditions of industrial applications with state-of-the-art technology, providing reliable and customized system solutions. The modular design ensures a very high reliability and a very low mean time to repair (MTTR) making the Borri UMB AC40 UPS system with the highest possible availability.

The Borri Modular UPS provides scalability and very high operating efficiency, even at partial loads, the real running costs are minimized without the need to compromise on power quality. Each UMB AC40 modular UPS module is a highly efficient double conversion, serial on-line UPS (VFI-SS-111).

With decades of experience in industrial power solutions, Borri offers complete AC modular UPS systems with highly reliable, robust quality and flexible, longest design life.



## Industrial Power

### Applications

- Power Generation.
- Power Utility.
- Oil & Gas.
- Transportation.
- Water Desalination.
- Marine.
- Chemical Industries.
- Other Heavy Industries.

### Main features

- No single point of failure.
- UPS power range up to 320 kW.
- Single cabinet up to 200 kW.
- High efficiency in double conversion.
- Single, N+1 and N+N configurations.
- Hot Swappable Power Modules for very low MTTR.
- Scalability for future power growth.
- High power density.
- Low Current Harmonics (THDi).

### UMB AC40 technical data

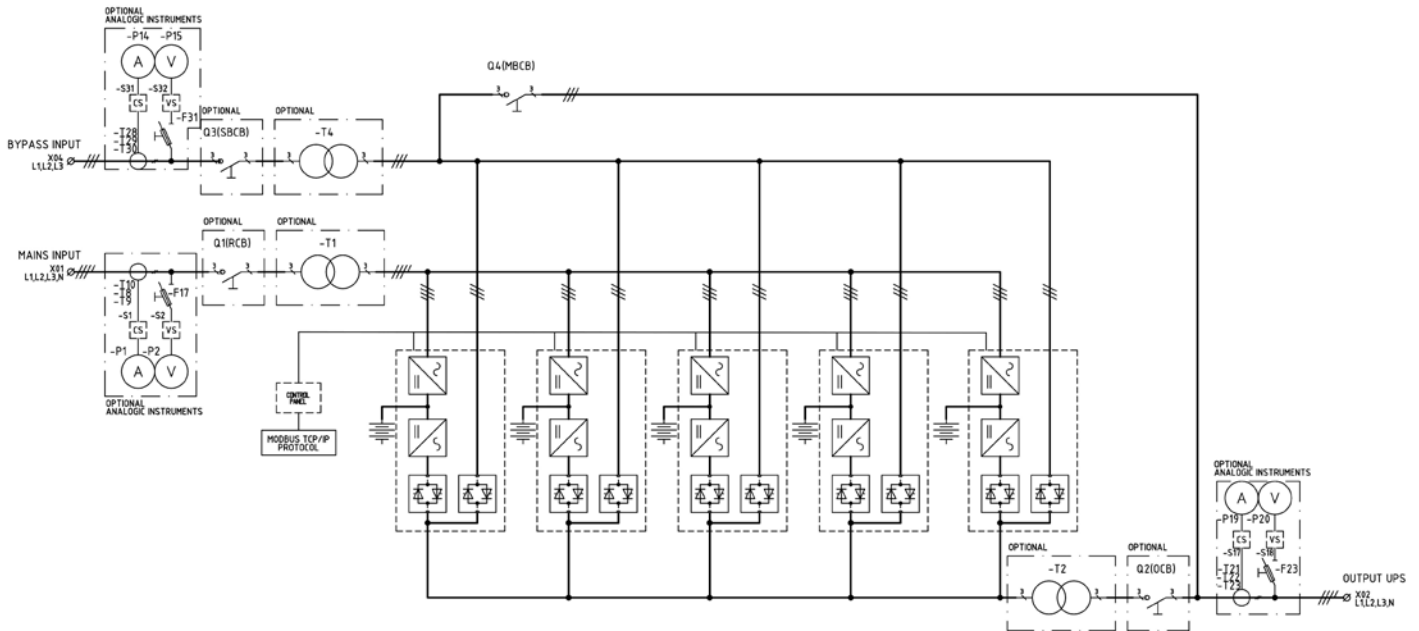
General	1-phase output			3-phase output		
UPS power (kW)	10 - 160			20 - 320		
Module nominal power (kW)	10 (LV)	20		20 (LV)	40	
<b>Input</b>						
Input voltage	380 / 400 / 415 Vac 3-phase with neutral -20%, +15%					
Power factor	0,99					
Input THDi	<3%					
Bypass input voltage	110 (LV) or 230 Vac 1-phase ±20%			208 (LV) or 400 Vac 3-phase ±20%		
<b>Battery</b>						
Nominal voltage	400 V (220 V and 720 V available on request)					
Battery technologies	Maintenance-free Lead Acid or Ni-Cd. Vented Lead Acid, Ni-Cd as optional					
<b>Output</b>						
Nominal voltage	110 (LV) or 230 Vac 1-phase ±1%			208 (LV) or 400 Vac 3-phase ±1%		
Frequency	50/60 Hz					
Voltage regulation	±1% static; dynamic: IEC/EN 62040-3 Class1					
Overload capacity	Inverter: 125% for 10 min; 150% for 60 sec; 180% for 200 ms. Bypass: 150% continuous, 1000% for 1 cycle					
Harmonic Distortion THDv	<2% linear load; <5% non-linear load					
<b>System</b>						
Dimensions	Height is 2100 mm, width and depth vary with rating (see table below)					
Ratings (kW)	60	100	160	120	200	320
WxD (mm)	800x1000		1600x1000	800x1000		1600x1000
Weight (Kg)	340	480	800	360	500	820
Cooling	Forced ventilation					
Colour	RAL 7035					
Protection degree (IEC 60529)	IP 20 (optional up to IP 54)					
Efficiency (AC/AC*)	Up to 94% depending on the model and voltage					
<b>Environmental</b>						
Operating temperature	0°C to +40°C (derated up to 55°C)/ Storage: 10°C to +70°C					
Altitude	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m					
Audible noise at 1 meter (dBA)	57 to 65 per module (depending on power)					
<b>User Interface</b>						
Front panel	Cabinet graphic display, mimic LED panel and keyboard, local EPO					
Connectivity	Included: RS232 card, USB; terminal block for battery breaker auxiliary contact. Optional: input terminal block (remote emergency power off, external maintenance bypass circuit breaker aux. cont., diesel mode aux. cont.); SNMP adapter (Ethernet), Web interface (Ethernet), from ModBus-RTU to PROFIBUS DP adapter; SPDT contact relay board; remote system monitoring panel; UPS managing and server shutdown software					
<b>Standards</b>						
Quality assurance, environment, health and safety: ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007; Safety: IEC EN 62040-1; EMC: IEC EN 62040-2; Environmental aspects: IEC EN 62040-4; Test and performance: IEC EN 62040-3 VFI-SS-111; Protection degree: IEC 60529; Marking: CE						

\*according to IEC/EN 62040-3

## Standard features

- Proven microprocessor control.
- Large LCD and LED display with mimic panel and history.
- Wide selection of alarms, indications and measurements.
- Communication ports and potential free contacts.
- Advanced Battery Management.
- Operates with Nickel-cadmium (vented / gas recombination) and Lead acid batteries (vented / gas recombination).
- Other AC input voltages.
- RS-232 / RS-485 / Ethernet Port / SNMP / WEB Interface.
- Remote control software.

## UMB AC40 schematic



## Options

Borri's engineer can help you to design the best solution for your application with a wide range of options, some of which are:



### System

- Parallel redundant N+N, N+1 system configuration.
- Special mains input voltages up to 690 VAC and frequency 60 Hz.
- Tropicalized control electronics boards.
- Input/Output/Bypass isolation transformer.
- Rectifier input CB or fuse or switch.
- Battery CB or fuse box.
- Load CB, fuse or switch.
- Bypass input CB or fuse or switch.
- AC distribution.
- Battery cabinet.

### Alarms and measurement

- Analogue meters.
- Additional LED alarm indicators.
- Additional relay cards 2 x 8 free contacts.
- Low battery electrolyte level alarm.
- Temperature dependent battery charging with temp. probe.
- Temperature alarm.

- Battery circuit failure alarm.
- Ground fault alarm.
- High rate interlock.

### Control options

- Communication:
  - TCP / IP interface
  - Protocol converters Profibus DP
  - J-bus DNP3
  - IEC 61850
  - Monitoring and management software.

### Mechanical

- Protection up to IP 54.
- Vermin proof.
- Top cable entry.
- Interior cabinet light.
- AC 1-phase socket.
- Cabinet heater.
- Special colour.
- Protection plates.
- Special cable marking (both ends).
- Air filters at air inlet.

## Batteries

Borri has over 80 years of experience in designing and supplying AC and DC UPS systems with batteries.

With our vast experience in battery technologies and our close technical and commercial relationships with the world largest manufacturers of Nickel Cadmium, Lead Acid and Lithium ion Industrial batteries we are able to offer expert advice on the specifying, selection, operation and testing of batteries to best suite your application and needs.

## Service

Customer's expectation defines Borri's priority from the early analysis of the project requirements to a worldwide commissioning and service.

Many thousands of systems have been successfully installed and maintained globally; with continuous support from a highly trained team of expert, certified technicians and engineers.

From the professional set-up of Borri's training centre or on site, the training and service team provide support and tailored training at Borri or at your site. You can be assured of Borri support to the highest standards no matter where in the world you are.

- Planning, installation, commissioning.
- Maintenance and Service.
- Analytical testing.
- Battery tests.
- Spare parts.
- Training.

## Who we are

Borri Group is a global provider of power electronics systems and solutions for harsh industrial and demanding commercial and ICT secure power requirements merging over eighty years of experience in developing, manufacturing and supplying uninterruptible power systems and solutions.

The Research and Development Team's expertise combines AC and DC power technologies spanning the worlds of both conventional and renewable energy, to provide innovative solutions for tomorrows problems.

The company is comprised of three business units: Industrial Power, Critical Power and Renewable Power, headquartered in Bibbiena, Italy. Borri's latest products, based on Green Conversion operation, guarantee the best PUE for green data centres: proof of the ongoing company commitment to innovation.

Thanks to its highly skilled custom engineers Borri controls in-house the entire process: from feed studies to design, production and after-sales service guaranteeing state-of-the-art solutions.

Based in Italy with over 20,000 m<sup>2</sup> production area and a large high power test field, Borri can depend on its more than 80 years of experience and multidisciplinary research and development to serve our customers best.

