

MP INVERTER RANGE

INDUSTRIAL BIDIRECTIONAL POWER CONVERSION TECHNOLOGY

PART OF MECC ALTE POWER CONVERSION SYSTEMS



INTRODUCTION

Modern energy storage systems require reliable and efficient power conversion.

The MP Inverter Range provides the power conversion foundation of Mecc Alte Power Conversion Systems, delivering high-performance bidirectional energy transfer for battery energy storage, hybrid power and microgrid applications.

SYSTEM DESCRIPTION

The scaleable Inverter range from Mecc Alte is designed for seamless integration into microgrids and grid-connected energy systems, especially when used in combination with gensets, delivering exceptional flexibility, configurability, and reliability.

When supplied as part of the PCK One or PCS One kit it includes all the essential components needed for efficient energy management and storage: High-performance inverter, AC filter for power quality improvement, AC and DC disconnecting devices, HMI interface for control, monitoring, and integration with other microgrid elements (gensets, PV systems, grid), galvanic isolation transformer for grid coupling.

KEY FEATURES

Total control, tailored performance

Fully managed through Mecc Alte control unit, monitoring every function with precision and reliability. With complete configurability of thresholds, setpoints, and parameters, you have full control of the system, ensuring optimal performance in any application. The dedicated controller will enable the following functions:

- Black start operation
- Power back-up
- Spinning reserve
- Load balancing - Peak shaving
- Load levelling
- Demand management
- Load prioritisation

Scalability & modularity

Available in multiple sizes, from 40 kW to 250 kW, and parallelable up to 2 MW.

Flexibility

- Compatible with various battery voltages and technologies, from 400V to 800V.
- Compatible with all kinds of AC voltages and frequencies (from 208V/400V with neutral to 690V without neutral).
- Highly customisable, with multiple communication protocols and internal programmable logic for adding multiple external features.

Reliability

Sturdy industrial design, ensuring high reliability and durability in demanding conditions.

Safety

Features a supervision system, multiple integrated safety devices, and a galvanic isolation transformer, ensuring comprehensive protection and "ready-to" compliance with safety standards.

BENEFITS

- Hybrid power applications
- Grid forming & grid following
- Industrial reliability
- Global technical support
- Trusted EU engineering

APPLICATIONS AND BENEFITS

- **Microgrid-ready:** Suitable for both off-line microgrids and grid-connected applications*.
- **Renewable energy integration:** Easily interfaces with PV systems and gensets.
- **Backup power & blackout protection:** Seamlessly creates a microgrid in case of a power outage, isolating the system autonomously with no voltage drops.
- **Peak shaving capability:** Allows to reduce energy costs by using stored power during peak demand and preventing expensive peak charges and blackouts, instantly supplying energy when needed. In microgrid applications, it seamlessly handles load peaks exceeding the capacity of diesel generators or renewable sources by drawing the excess energy from batteries—fully configurable to match your specific operational needs.
- **Designed for OEMs:** Power conversion kit designed for fast development and reduced time-to-market.
- **Expert support & engineering services:** With extensive expertise in power generation and power electronics, we offer comprehensive support to both inverter system engineering and full system integration.

	FRAME							
	MP0	MP1			MP3		MP4	
	AC CHARACTERISTICS							
SIZE	40	50	75	100	150	175	200	250
POWER [KW] ¹	42	50	73	102	153	174	215	255
POWER [KW] ²	39	46	69	97	146	165	204	243
POWER [KW] ³	24	28	42	59	88	100	123	147
CURRENT [A] ⁴	58	70	110	150	220	250	310	370
VOLTAGE [V]	up to 690							
WIRING	3PH+N							
FREQ. [HZ]	50/60							
PF RANGE	4-quadrant, 0 to 1							
OVERLOAD	150%, 30sec							
OPERATION MODES	VSI (Vf), CSI (PQ), Islanding, Black start							
TRANSFORMER TYPE	AN, dry-type							
SHORT CIRCUIT CURRENT	10kA							
	BATTERY CHARACTERISTICS							
VOLTAGE [VDC]	409, 665, 716							
BMS COMM.	CANbus							
MAX. CURRENT [A _{DC}]	71	84	125	176	263	298	368	438
	ENVIRONMENTAL CONDITIONS							
TEMP. RANGE [°C]	-20/50 ⁵							
REL. HUMIDITY [%]	5%-95% non-condensing							
MAX. ALTITUDE [MASL]	4000 ⁶							
	PRODUCT COMPLIANCE							
DRIVE	CEI/EN 61800							
TRANSFORMER	CEI/EN 61558							
SWITCHES	CEI/EN 60947							
	GENERAL SPECIFICATIONS							
COOLING	Air, forced (liquid cooling as option)							
DIMENSIONS WXXHD[MM] ⁷	194x322x253		248x556x300		309x978x315		484x978x315	
WEIGHT	10	25			50		75	

Notes

1. Rated power given for 716V nominal battery voltage.
2. Rated power given for 665V nominal battery voltage.
3. Rated power given for 410V nominal battery voltage.
4. Nominal current of the inverter, at the primary side of the transformer. Output current varies depending on transformer ratio.
5. Derating above 40°C.
6. Derating above 1000m.
7. Dimensions and weight are referred to the inverter drive only. Additional space will be needed for AC filter and transformer installation.