

MVC-100 INVERTER



BORN ON THE RACETRACK, READY FOR YOUR ROADMAP.

The MVC-100 turns XAP's motorsport discipline into a dependable high-voltage drive platform for real products.

In one compact, liquid-cooled unit, it delivers 100 kW continuous performance at 200 V and the flexibility to power either one high-torque machine or two independent motors.

It drops into complex programs without friction, works with the main sensor standards, and lets your team fine-tune behavior in minutes thanks to the embedded calibration tool.

The payoff is immediate: smoother launches, consistent torque under load, fewer boxes to manage, and a faster path from prototype to series—across retrofit, premium EV, marine, or industrial builds.

MVC-100: power you can integrate, control you can trust.

DUAL-DRIVE, SINGLE UNIT, ENGINEERED TO PERFORM

TWO DRIVES, ONE UNIT:

Native dual-motor or single 3/6-phase control — fewer boxes, cleaner harness.

POWER THAT LASTS:

100 kW continuous, 120 kW peak at 200 V — confident torque under sustained load.

COMPACT BY DESIGN:

12 kg, liquid-cooled — more room for battery and payload.

DROP-IN FRIENDLY:

Works with resolver, Hall, sin/cos, and digital SSI — keep your existing sensors.

CLEAN ARCHITECTURE:

Two independent CAN-FD buses keep VCU, BMS, and auxiliaries neatly separated.

TUNE ON THE FLY:

Embedded live mapping cuts calibration time from prototype to series.

SMOOTHER DRIVE FEEL:

Refined torque control for crisp launches and stable cruising.

BUILT-IN CONTROLLER:

Extra I/O to run pumps, valves, and fans without an external box.

SAFE BY DESIGN:

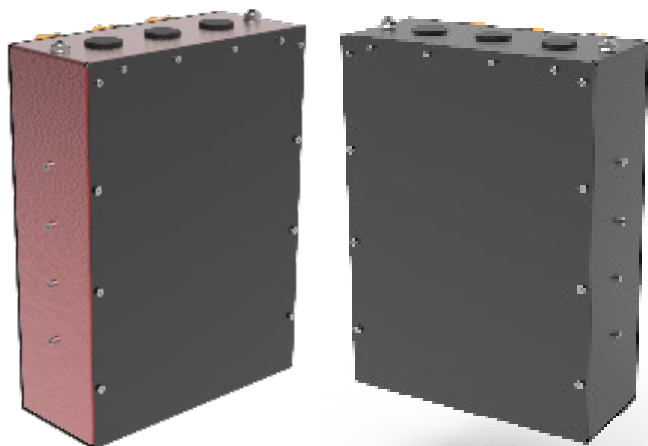
Latched power logic for controlled, repeatable shutdowns.

PROGRAM-READY:

The same hardware scales live-mapping fully developed by XAP Technology.

DUAL MOTOR CONTROL:

6-phase inverter: two 3-phase motors separately driven (50 kW each), one 6-phase machine, or one 3-phase motor (100 kW).





► ELECTRICAL SOLUTIONS & POWERTRAIN: MVC-100

ELECTRICAL SPECIFICATIONS

Nominal voltage	200 V DC
Voltage range	80 V to 300 V DC
Continuous power	100 kW (at 200 V)
Peak power	120 kW (short duration)
Continuous current	500 A DC
Sustained peak current	600 A DC for >1 minute
Power protections	Overcurrent, bus over/undervoltage, over-heating, MOSFET short-circuit, sensor fault detection
Derating	Sustains 600 A for >1 minute without immediate performance drop
DC connections (battery)	High-current terminals (studs/plates) — recommended cables 50–70 mm ²
Motor phase outputs	6 terminals (U,V,W / X,Y,Z in dual-drive) — recommended cables 35–50 mm ²
Signal connector	I/O + sensors harness (AMPSEAL 35-way for signals/command)
Grounding	Dedicated chassis ground point

COOLING & THERMAL

Cooling	Liquid (water)
Ports	Push-fit Ø 10 mm (inlet/outlet)
Operating temperature range	–40 °C to +85 °C

ENVIRONMENT AND COMPLIANCE

Ingress protection	IP65
Vibration/shock	Motorsport/industrial-grade design
EMC	Integrated filters and protections (test reports on request)

INTERFACES, I/O & CONNECTIVITY

Logic supply	8–75 V DC
Bus	2× CAN-FD (independent bit rates) Isolated USB (setup/diagnostics)
Inputs/Outputs	8 analog inputs 5 digital inputs 2 high-side output 5 A (PWM possible)
Supported sensors	Resolver, Hall, sin/cos, digital SSI (digital resolver), digital encoder
Safety function	Logic Power Latched (controlled safe state before shutdown)
Emergency stops/interlocks	Dedicated inputs (HV lock, doors, contactors)
Additional I/O	Logic inputs/outputs for auxiliaries (pumps, valves, fans) — acts as an embedded VCU
Formats/Protocols	Documented CAN frames (DBC), diagnostics & firmware update via USB

MOTOR CONTROL & ALGORITHMS

Drive modes	1 three-phase motor 1 six-phase motor 2 three-phase motors
Supported machine types	Permanent-magnet motors PMSM / BLDC, internal- or external-rotor
Algorithms	Flux Oriented Control (FOC) for high-dynamic torque/speed regulation
Embedded calibration	Live mapping with basic / standard / expert access levels
Efficiency	95%

MECHANICS & POWER CONNECTIONS

Overall dimensions	425 × 350 × 177 mm
Weight	12 kg

REFERENCES

PF0869	MVC100 INVERTER
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