

# HVC-300 INVERTER



## CONTROLLED POWER, SEAMLESS INTEGRATION

Engineered for demanding programs, the HVC-300 brings high-voltage motor control that combines sustained output, precise response, and fast integration.

In a compact enclosure with liquid cooling, it delivers 300 kW continuous (340 kW peak), holds 500 A continuously.

Native dual-drive logic powers two independent three-phase motors or a single 3/6-phase machine, cutting boxes and harness length while enabling modular architectures.

Control electronics are designed for real programs: independent CAN-FD buses for clean system partitioning, auxiliary I/O that lets the inverter act as an embedded VCL for pumps, valves, and fans, and Logic Power Latched for safe, predictable shutdowns.

Sensor compatibility is universal—resolver, Hall, sin/cos, digital SSI—so existing feedback hardware can be retained. And the embedded calibration tool (live mapping with basic / standard / expert levels) shortens time-to-tune from prototype to series, allowing real-time refinement of torque and speed behavior.

HVC-300: controlled power you can integrate quickly – built to deliver more, more reliably, for longer.

## FULLY VERSATILE INVERTER NATIVE DUAL-DRIVE, SUSTAINED CURRENT

### DUAL-DRIVE, ONE BOX:

Dual-drive, one box – drives two independent 3-phase motors or a single 3/6-phase machine; replaces two inverters and shortens the harness.

### MORE PHASE CURRENT, MORE TORQUE:

Continuous phase RMS up to 1000 Arms.

### PEAK PHASE CURRENT:

Short-term phase peak up to 1200 Arms for stronger launches and recoveries.

### POWER:

Power that holds – 300 kW continuous, 340 kW peak with 500 A bus continuous and 600 A for 60 s: headroom that stays usable under load.

### THERMAL STABILITY:

Fast install, stable temps, minimal derating on long pulls.

### MOTOR-EDITOR INSIDE:

Live mapping with Basic / Standard / Expert access – tune torque/speed in minutes, from prototype to series.

### UNIVERSAL FEEDBACK:

Resolver, Hall, sin/cos, digital SSI, digital encoder; keep existing sensors and wiring.

### BUILT-IN AUXILIARIES CONTROL:

Built-in auxiliaries control – extra I/O lets the inverter act as an embedded VCL for pumps, valves, and fans.

### FIELD-HARD ENCLOSURE :

Field-hard enclosure – IP65, –40 °C to +85 °C, compact 12 kg form factor (425×350×177 mm).

### FIELD-HARD ENCLOSURE :

Lower total system cost – fewer boxes, shorter harnesses, faster time-to-series, and higher torque delivered per kilogram.





► ELECTRICAL SOLUTIONS & POWERTRAIN: **HVC-300 INVERTER**

### ELECTRICAL SPECIFICATIONS

Nominal voltage	600V
Voltage range	500V to 700V
Continuous power	300 kW (at 600 V)
Peak power	340 kW
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 <sup>2</sup>
Motor phase outputs	6 terminals (U,V,W / X,Y,Z in dual-drive) — recommended cables 35–50 mm <sup>2</sup>
Signal connector	I/O + sensors harness (industrial type, e.g., multi-way AMPSEAL)
Grounding	Dedicated chassis ground point

### ENVIRONMENT AND COMPLIANCE

Ingress protection	IP65
Vibration/shock	Motorsport/industrial-grade design (profiles to be defined per project)
EMC	integrated filters and protections (test reports on request)

### COOLING & THERMAL

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

### INTERFACES, I/O & CONNECTIVITY

Logic supply	8–75 V DC (TBC if variant differs)
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 (PWN 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 VCL
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

### MECHANICS & POWER CONNECTIONS

Overall dimensions	425 × 350 × 177 mm
Weight	12 kg

### REFERENCES

PF1020	HVC-300 INVERTER 600 V
--------	------------------------



MORE INFORMATION ON  
[HTTPS://STORE.XAP.FR](https://store.xap.fr)

**XAP TECHNOLOGY**  
 298, rue des Entrepreneurs -  
 30420 Calvisson - FRANCE  
 Tél : +33 (0)4 66 02 94 94  
 Email: [contact@xap.fr](mailto:contact@xap.fr)