

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 (360 kW peak) at 600 V, 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 VCU 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:

Drives two independent 3-phase motors or a single 3/6-phase machine; replaces two inverters and shortens the harness.

CONTINUOUS PHASE CURRENT:

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, 360 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:

Extra I/O lets the inverter act as an embedded VCU for pumps, valves, and fans.

FIELD-HARD ENCLOSURE:

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

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	600 V DC
Voltage range	500 V to 700 V
Continuous power	300 kW (at 600 V)
Peak power	360 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 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

ENVIRONMENT AND COMPLIANCE

Ingress protection	IP65
Vibration/shock	Motorsport/industrial-grade design
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
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

MECHANICS & POWER CONNECTIONS

Overall dimensions	425 × 350 × 177 mm
Weight	12 kg

REFERENCES

PF1020	HVC-300 INVERTER 600 V
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