ATV320U22N4C

Schneider Electric · Altivar Machine ATV320

Compact-format three-phase variable speed drive, 2.2 kW motor power, with integrated EMC filter, IP20.

Hardware

Motor power: 2.2 kW (3 HP) at 380...500 V three-phase supply
Drive format: compact format, with category C2 integrated EMC filter
Integrated EMC filter: Yes (category C2)
Maximum shielded motor cable length: 10 m (IEC/EN 61800-3 Category C2) / 20 m (Category C3) at 4 kHz switching frequency per catalog p.12
Switching frequency: 2 to 16 kHz programmable; factory setting 4 kHz (power derating above 4 kHz)
Output frequency: 0.1 to 599 Hz
Control modes: Asynchronous motor — U/F ratio (2-point, 5-point, energy-saving, quadratic), flux vector control without sensor (standard and energy-saving); Synchronous PM motor — vector control without sensor per catalog p.4
Overload capacity: 150% of nominal current for 60 s maximum
Overload torque: up to 200% Tn over-torque and 170% Tn braking torque for open-loop motor control (per catalog p.4)
Braking: Dynamic braking resistor connection (external resistor required for U04-U15); internal braking transistor for U22 and above
Minimum external brake resistor: 54 Ω minimum per installation manual NVE41289 p.96

I/O Specifications

Analog inputs: 3 inputs: 1 bipolar differential ±10 V + 1 voltage 0...10 V + 1 current 0-20 mA (with PTC probe input support per catalog p.4)
Digital inputs: 6 inputs: 4 configurable 24 V DC sink/source + 1 PTC probe input + 1 pulse input (up to 20 kHz, per catalog p.4)
Digital output: 1 configurable 24 V DC sink/source (max 100 mA per catalog p.4)
Analog outputs: 1 output, configurable 0...10 V or 0/4-20 mA, resolution 10 bits
Relay outputs: 2 outputs: 1 NO/NC contact + 1 NO contact (3 A at 250 VAC resistive load)
Pulse output: 1 output configurable as pulse train output (PO) 24 V, max 32 kHz, 0.1 A
Safety function inputs: 1 STO input + 4 configurable inputs for safety functions (STO up to SIL3/PLe, plus SS1, SLS, SMS, GDL per catalog p.4)

Communication

Built-in ports: 1 RJ45 port compatible with CANopen and Modbus Serial line
Protocols: CANopen and Modbus Serial line (built-in per catalog p.4)
Communication expansion: 1 slot for optional communication modules: Modbus TCP/EtherNet/IP, PROFIBUS DP V1, DeviceNet, EtherCAT, POWERLINK, PROFINET
Cybersecurity certification: Not published by manufacturer (no Achilles/product-level cybersecurity statement in catalog April 2020 or installation manual NVE41289)
Optional accessories: graphic display terminal VW3A1111/VW3A1101, remote display terminal, UL Type 1 conformity kits, DIN rail mounting plates, GV2 circuit breaker mounting bracket, 90-degree control module adapter, external braking resistors per catalog p.14

Electrical

Supply voltage: 380...500 V three-phase (-15%/+10%), 50/60 Hz
Maximum input current: 8.7 A maximum at 380 V; 6.6 A maximum at 500 V
Apparent power: 5.7 kVA at 500 V maximum
SCCR (prospective line short-circuit current): 5 kA maximum per catalog table
Nominal continuous output current In: 5.5 A maximum at rated switching frequency (4 kHz)

Rating structure: single-rated output (one In per model; no separate Normal Duty/Heavy Duty split per catalog p.4)
Maximum transient output current: 8.25 A maximum for 60 s (150% of In)
Power dissipation: 74 W at In, rated switching frequency

Environmental

Certifications: UL 508C, UL61800-5-1, CSA 22.2 N274, EN/IEC 61800-3 (category C2/C3), EN/IEC 61800-5-1, IEC 61800-5-2 up to SIL3, IEC 61508 SIL3, IEC 13849-1 PLe, IEC 60721-3-3 (class 3C3/3S2), RCM, EAC, KC per catalog p.5
Altitude derating: up to 1000 m no derating; 1000-3000 m, derate nominal current by 1% per additional 100 m per installation manual NVE41289 p.27
Operating temperature: -10 to +50 °C without derating (up to 60 °C with derating per catalog derating curve)
Storage temperature: -25...+70 °C per installation manual NVE41289 p.27 (family-level ambient conditions)
Relative humidity: 5...95% without dripping water and without condensation per installation manual NVE41289 p.27
Protection rating: IP20

Physical

Dimensions (H×W×D): 184 x 140 x 158 mm (converted from original W×H×D; catalog dimensions table)
Weight: 2.100 kg (4.630 lb) per catalog table
Terminal tightening torque: 1.4 N·m per installation manual NVE41289 p.93-95 (Frame 3)
Recommended minimum wire cross-section: 2.5 to 6 mm² per installation manual NVE41289 p.93-95 (Frame 3)
Installation clearance: 100 mm minimum around drive (vertical mounting ±10°) per installation manual NVE41289 p.60

Lifecycle

Current: Altivar Machine ATV320, active product line; official Schneider Electric catalog active (Catalog April 2020).
(Last verified: 2026-10)