



Main

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| Range of product | Altivar 61 Plus-LH |
| Product or component type | Variable speed drive |
| Device short name | ATV61 |
| Product destination | Asynchronous motors Synchronous motors |
| Assembly style | In floor-standing enclosure compact version |
| Kit composition | Clean power filter with integrated EMC filter Control transformer 230 V AC Active infeed converter A wired ready-assembled Schneider Spacial SF enclosure ATV61HC11N4D standard drive IP00 Power supply 24 V DC A switch and fast-acting fuses A line choke An IP65 remote mounting kit for graphic display terminal Terminals/bars for motor connection |
| EMC filter | Integrated |
| Network number of phases | 3 phases |
| Rated supply voltage | 380...415 V (+/- 10 %) |
| Supply voltage limits | 342...457 V |
| Supply frequency | 50...60 Hz (- 5...5 %) |
| Network frequency limits | 47.5...63 Hz |
| Motor power kW | 110 kW, 3 phases at 380...415 V |
| Line current | 177 A at 400 V 3 phases / 110 kW |
| IP degree of protection | IP54 |

Complementary

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| Apparent power | 123 kVA at 400 V, 3 phases 110 kW |
| Prospective line I _{sc} | 100 kA with external fuses 100 kA with option circuit breaker 8.5 kA without external fuses |
| Continuous output current | 215 A, 2.5 kHz at 400 V 3 phases |
| Maximum transient current | 258 A (duration=60 s) at 400 V 3 phases |
| Speed drive output frequency | 0.1...500 Hz |
| Nominal switching frequency | 2.5 kHz |

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| Switching frequency | 2...8 kHz adjustable 2.5...8 kHz with derating factor |
| Speed range | 1...100 in open-loop mode, without speed feedback |
| Speed accuracy | +/- 10 % of nominal slip for 0.2 T _n to T _n torque variation without speed feedback |
| Torque accuracy | +/- 15 % in open-loop mode, without speed feedback |
| Transient overtorque | 120 % of nominal motor torque for 60 s |
| Braking torque | 100 % continuous 120 % for 60 seconds |
| Asynchronous motor control profile | Flux vector control without sensor, standard Voltage/frequency ratio (2 or 5 points) Energy saving ratio |
| Synchronous motor control profile | Vector control without sensor, standard |
| Regulation loop | Adjustable PI regulator |
| Motor slip compensation | Adjustable Can be suppressed Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) |
| Overvoltage category | Class 3 conforming to EN 50178 |
| Local signalling | LCD display unit - operation function, status and configuration - mounted in the front door |
| Output voltage | <= power supply voltage |
| Isolation | Between power and control terminals |
| Type of cable | IEC cable at 40 °C, copper 70 °C / PVC |
| Electrical connection | Terminal - screw type M12, connection capacity: 2 x 185 mm ² , terminal(s): L1/R, L2/S, L3/T, cable entry: entry from the bottom Terminal - screw type M10, connection capacity: 2 x 150 mm ² , terminal(s): U/T1, V/T2, W/T3, cable entry: entry from the bottom Terminal, connection capacity: 2.5 mm ² AWG 14, terminal(s): AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR, cable entry: entry from the bottom |
| Motor recommended cable cross section | 3 x 120 mm ² |
| Short-circuit protection | 250 A 1 fuse (gl fuse) on power supply upstream |
| Supply | Internal supply for reference potentiometer at 10 V DC (10...11 V), <= 10 mA Internal supply at 24 V DC (21...27 V), <= 100 mA External supply at 24 V DC (19...30 V), 1 A, 30 W |
| Analogue input number | 2 |
| Analogue input type | Software-configurable current : (AI2) 0...20 mA/4...20 mA - 250 Ohm - sampling time: 1.5...2.5 ms - resolution: 11 bits Software-configurable voltage : (AI2) 0...10 V DC - 24 V max - 30 kOhm - sampling time: 1.5...2.5 ms - resolution: 11 bits Bipolar differential voltage : (AI1-/AI1+) +/- 10 V DC - 24 V max - sampling time: 1.5...2.5 ms - resolution: 11 bits + sign |
| Analogue output number | 1 |
| Analogue output type | Software-configurable voltage : (AO1) 0...10 V DC - 470 Ohm - sampling time: 1.5...2.5 ms - resolution: 10 bits Software-configurable current : (AO1) 0...20 mA/4...20 mA - 500 Ohm - sampling time: 1.5...2.5 ms - resolution: 10 bits |
| Discrete output number | 1 |
| Discrete output type | Configurable relay logic : (R1A, R1B, R1C) NO/NC - 6.5...7.5 ms - 100000 cycles |
| Minimum switching current | 3 mA at 24 V DC (configurable relay logic) |
| Maximum switching current | 5 A at 250 V AC on resistive load - cos phi = 1 (configurable relay logic) 2 A at 30 V DC on inductive load - L/R = 7 ms (configurable relay logic) 5 A at 30 V DC on resistive load - L/R = 0 ms (configurable relay logic) 2 A at 250 V AC on inductive load - cos phi = 0.4 (configurable relay logic) |
| Discrete input number | 6 |
| Discrete input type | Switch-configurable (LI6) 24 V DC (<= 30 V), with level 1 PLC - 1.5 kOhm - sampling time: 1.5...2.5 ms Safety input (PWR) 24 V DC (<= 30 V) - 1.5 kOhm Programmable (LI1...LI4) 24 V DC (<= 30 V), with level 1 PLC - 3.5 kOhm - sampling time: 1.5...2.5 ms |
| Discrete input logic | Positive logic (source) (LI1...LI6), 0...5 V (state 0), 11...30 V (state 1) Negative logic (sink) (LI1...LI6), 16...30 V (state 0), 0...10 V (state 1) Positive logic (source) (PWR), 0...2 V (state 0), 17...30 V (state 1) |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01 to 9000 s |

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| | S, U or customized |
| Braking to standstill | By regenerative braking with active front end |
| Protection type | Overheating protection for drive Short-circuit between motor phases for drive Overcurrent between output phases and earth for drive Overvoltages on the DC bus for drive Against exceeding limit speed for drive Line supply undervoltage for drive Line supply overvoltage for drive Against input phase loss for drive Thermal protection for motor Motor phase break for motor Power removal for drive |
| Dielectric strength | 3535 V DC between earth and power terminals 5092 V DC between control and power terminals |
| Insulation resistance | > 1 mOhm at 500 V DC for 1 minute to earth |
| Frequency resolution | 0.1 Hz for display unit 0.024/50 Hz for analog input |
| Communication port protocol | Modbus CANopen |
| Connector type | 1 RJ45 for Modbus on front face 1 RJ45 for Modbus on terminal Male SUB-D 9 on RJ45 for CANopen |
| Physical interface | 2-wire RS 485 for Modbus |
| Transmission frame | RTU for Modbus |
| Transmission rate | 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps for Modbus on terminal 9600 bps, 19200 bps for Modbus on front face |
| Data format | 8 bits, 1 stop, even parity for Modbus on front face 8 bits, odd even or no configurable parity for Modbus on terminal |
| Type of polarization | No impedance for Modbus |
| Number of addresses | 1...247 for Modbus 1...127 for CANopen |
| Method of access | Slave for CANopen |
| Function available | Safe standstill for power circuit PTC relay for power circuit Pt100 relay for power circuit Insulation monitoring for power circuit Design for IT networks for power circuit External 230 V supply terminals for power circuit Buffer voltage 24 V DC power supply for power circuit Enclosure lighting for power circuit Key switch (local/remote) for power circuit Motor heating for power circuit External motor fan for power circuit Voltmeter for power circuit Door handle for main switch for power circuit Ammeter for power circuit Enclosure heating for power circuit Motor choke for power circuit Cable entry via the top for power circuit Enclosure plinth for power circuit Relay output C/O for control circuit External 24 V DC supply terminals for power circuit Control terminals for control circuit Adaptor for 115 V logic inputs for control circuit Isolated amplifier for control circuit |
| Option card | Controller inside programmable card Multi-pump card Communication card for Profibus DP Basic I/O extension card Extended I/O extension card Encoder interface cards Communication card for Modbus TCP Communication card for Fipio Communication card for Modbus/Uni-Telway Communication card for Modbus Plus Communication card for Ethernet/IP Communication card for DeviceNet |

Communication card for Profibus DP V1
 Communication card for Interbus-S
 Communication card for CC-Link
 Communication card for LonWorks
 Communication card for METASYS N2
 Communication card for APOGEE FLN
 Communication card for BACnet

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| Operating position | Vertical +/- 10 degree |
| Colour of enclosure | Light grey RAL 7035 |
| Width | 600 mm |
| Height | 2237 mm |
| Depth | 642 mm |
| Product weight | 480 kg |

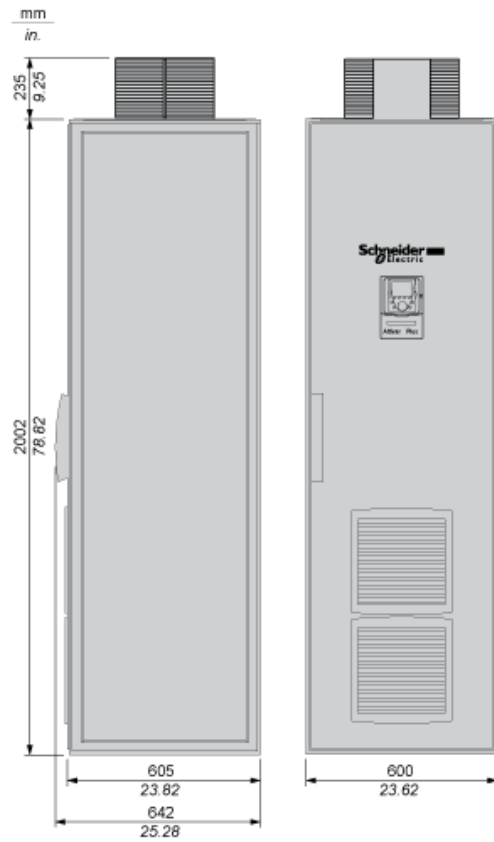
Environment

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| Standards | EN 61800-5-1 EN 61800-3 environments 2 category C3 EN 60204-1 EN 61800-2 |
| Product certifications | ATEX C-Tick GOST |
| Marking | CE |
| Noise level | 76 dB |
| Pollution degree | 3 conforming to EN/IEC 61800-5-1 |
| Vibration resistance | 3M3 conforming to EN/IEC 60721-3-3 1.5 mm peak to peak (f = 3...10 Hz) conforming to EN/IEC 60068-2-6 0.6 gn (f = 10...200 Hz) conforming to EN/IEC 60068-2-6 |
| Shock resistance | 3M2 conforming to EN/IEC 60721-3-3 4 gn for 11 ms conforming to EN/IEC 60068-2-27 |
| Environmental characteristic | 3K3 without condensation conforming to IEC 60721-3-3 |
| Relative humidity | 0...95 % |
| Ambient air temperature for operation | 0...40 °C without derating 40...50 °C with current derating of 1.8 % per °C |
| Ambient air temperature for storage | -25...70 °C |
| Volume of cooling air | 880 m3/h |
| Operating altitude | <= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m |

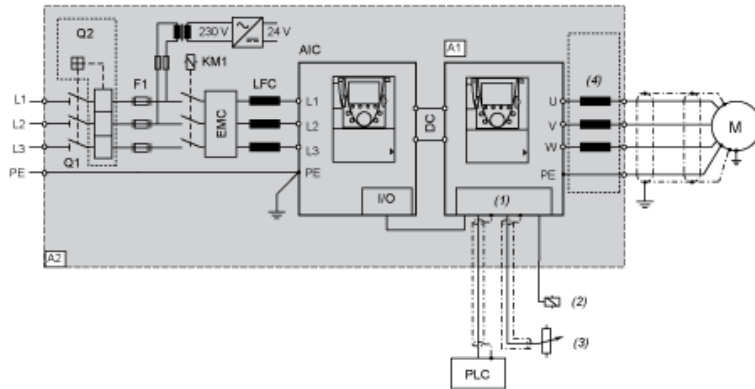
Contractual warranty

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| Warranty period | 18 months |
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Dimensions



Wiring Diagram

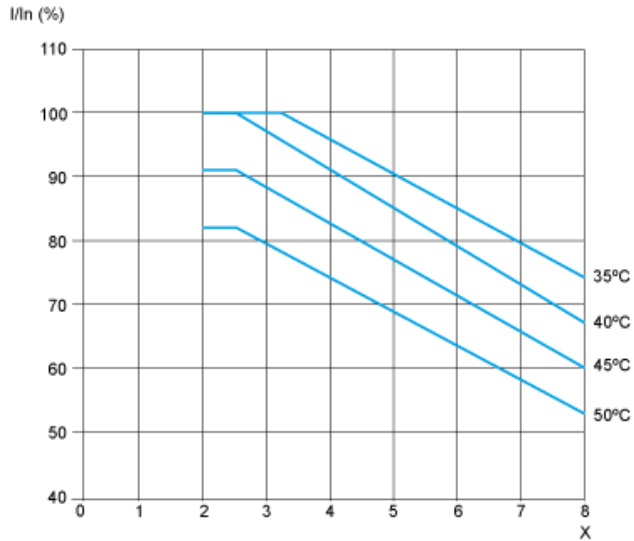


- A1 Drive
- A2 Enclosure
- AIC Active Infeed Converter
- M Motor
- Q1 Main switch built-in as standard
- Q2 Optional circuit breaker
- F1 Main fuses
- KM1 Line contactor
- EMC EMC filter
- LFC Line Filter Choke
- (1) Control
- (2) Relay control
- (3) Reference potentiometer
- (4) Option motor choke

Derating Curves

The derating curves for the drive nominal current (I_n) are dependent on the temperature and switching frequency. For intermediate temperatures, interpolate between 2 curves.

NOTE: The drive will reduce the switching frequency automatically in the event of excessive temperature rise.



X Switching frequency (kHz)

NOTE: The temperatures shown correspond to the temperature of the air entering the enclosure.