

# ATV61HD45Y

variable speed drive ATV61 - 45kW / 690V -  
50HP / 575V - IP20



Product availability: Non-Stock - Not normally stocked in distribution facility



## Main

|                                   |   |
|-----------------------------------|---|
| Range of product                  | Altivar 61  |
| Product or component type         | Variable speed drive  |
| Product specific application      | Pumping and ventilation machine   |
| Component name                    | ATV61   |
| Motor power kW                    | 37 kW, 3 phase 500 V<br>45 kW, 3 phase 690 V  |
| Maximum Horse Power Rating        | 50 hp, 3 phase 575 V  |
| Power supply voltage              | 500...690 V - 15...10 %   |
| Supply number of phases           | 3 phase   |
| Line current                      | 51 A 600 V 3 phase 37 kW / 50 hp<br>55 A 690 V 3 phase 37 kW / 50 hp<br>62 A 500 V 3 phase 37 kW / 50 hp  |
| EMC filter                        | Level 3 EMC filter  |
| Assembly style                    | With heat sink  |
| Maximum prospective line Isc      | 22 kA 3 phase   |
| Maximum transient current         | 70.8 A 60 s, 3 phase  |
| Nominal switching frequency       | 2.5 kHz   |
| Switching frequency               | 2.5...4.9 kHz adjustable<br>2.5...4.9 kHz with derating factor  |
| Asynchronous motor control        | Voltage/Frequency ratio, 5 points<br>Voltage/Frequency ratio, 2 points<br>Voltage/Frequency ratio - Energy Saving, quadratic U/f<br>Flux vector control without sensor, standard  |
| Synchronous motor control profile | Vector control without sensor, standard   |
| Communication port protocol       | CANopen<br>Modbus   |
| Type of polarization              | No impedance Modbus   |
| Option card                       | Communication card APOGEE FLN<br>Communication card BACnet<br>Communication card CC-Link<br>Controller inside programmable card<br>Communication card DeviceNet<br>Communication card Ethernet/IP<br>Communication card Fipio<br>I/O extension card<br>Communication card Interbus-S<br>Communication card LonWorks<br>Communication card METASYS N2<br>Communication card Modbus Plus<br>Communication card Modbus TCP<br>Communication card Modbus/Uni-Telway<br>Multi-pump card<br>Communication card Profibus DP<br>Communication card Profibus DP V1 |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

## Complementary

|  |   |
|--|---|
| Product destination                        | Asynchronous motors<br>Synchronous motors   |
| Power supply voltage limits                | 425...759 V   |
| Power supply frequency                     | 50...60 Hz - 5...5 %  |
| Power supply frequency limits              | 47.5...63 Hz  |
| Continuous output current                  | 52 A 2.5 kHz, 575 V - 3 phase<br>54 A 2.5 kHz, 690 V - 3 phase<br>59 A 2.5 kHz, 500 V - 3 phase   |
| Output frequency                           | 0.1...500 Hz  |
| Speed range                                | 1...100 in open-loop mode, without speed feedback   |
| Speed accuracy                             | +/- 10 % of nominal slip 0.2 Tn to Tn without speed feedback  |
| Torque accuracy                            | +/- 15 % in open-loop mode, without speed feedback  |
| Transient overtorque                       | 130 % of nominal motor torque +/- 10 % 60 s   |
| Braking torque                             | <= 125 % with braking resistor<br>30 % without braking resistor   |
| Regulation loop                            | Frequency PI regulator  |
| Motor slip compensation                    | Can be suppressed<br>Automatic whatever the load<br>Adjustable<br>Not available in voltage/frequency ratio (2 or 5 points)  |
| Diagnostic                                 | Drive voltage 1 LED red)  |
| Output voltage                             | <= power supply voltage   |
| Electrical isolation                       | Between power and control terminals   |
| Type of cable for mounting in an enclosure | With an IP21 or an IP31 kit 3 IEC cable 104 °F (40 °C), copper 70 °C / PVC<br>With UL Type 1 kit 3 UL 508 cable 104 °F (40 °C), copper 75 °C / PVC<br>Without mounting kit 1 IEC cable 113 °F (45 °C), copper 70 °C / PVC<br>Without mounting kit 1 IEC cable 113 °F (45 °C), copper 90 °C / XLPE/EPR |
| Electrical connection                      | Terminal 2.5 mm <sup>2</sup> / AWG 14 AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR)<br>Terminal 150 mm <sup>2</sup> / 300 kcmil L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)   |
| Tightening torque                          | 5.31 Lbf.in (0.6 N.m) AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR)<br>362.88 lbf.in (41 N.m), 360 lb.in L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)  |
| Supply                                     | Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC, +/- 5 %, <10 mA overload and short-circuit protection<br>Internal supply 24 V DC 21...27 V), <200 mA overload and short-circuit protection<br>External supply 24 V DC 19...30 V)  |
| Analogue input number                      | 2   |
| Analogue input type                        | AI1-/AI1+ bipolar differential voltage +/- 10 V DC 24 V max 11 bits + sign<br>AI2 software-configurable current 0...20 mA 242 Ohm 11 bits<br>AI2 software-configurable voltage 0...10 V DC 24 V max 30000 Ohm 11 bits   |
| Sampling time                              | 2 Ms +/- 0.5 ms AI1-/AI1+) - analog input<br>2 Ms +/- 0.5 ms AI2) - analog input<br>2 Ms +/- 0.5 ms AO1) - analog output<br>2 Ms +/- 0.5 ms LI1...LI5) - discrete input<br>2 ms +/- 0.5 ms LI6)if configured as logic input - discrete input  |
| Absolute accuracy precision                | +/- 0.6 % AI1-/AI1+) for a temperature variation 60 °C<br>+/- 0.6 % AI2) for a temperature variation 60 °C<br>+/- 1 % AO1) for a temperature variation 60 °C  |
| Linearity error                            | +/- 0.15 % of maximum value AI1-/AI1+)<br>+/- 0.15 % of maximum value AI2)<br>+/- 0.2 % AO1)  |
| Analogue output number                     | 1   |
| Analogue output type                       | AO1 software-configurable current 0...20 mA 500 Ohm 10 bits<br>AO1 software-configurable voltage 0...10 V DC 470 Ohm 10 bits<br>AO1 software-configurable logic output 10 V, 20 mA  |
| Discrete output number                     | 2   |
| Discrete output type                       | Configurable relay logic R1A, R1B, R1C) NO/NC - 100000 cycles<br>Configurable relay logic R2A, R2B) NO - 100000 cycles  |

|                                     |  |
|-------------------------------------|--|
| Maximum response time               | <= 100 ms in STO (Safe Torque Off)<br>R1A, R1B, R1C <= 7 ms +/- 0.5 ms<br>R2A, R2B <= 7 ms +/- 0.5 ms  |
| Minimum switching current           | 3 mA 24 V DC configurable relay logic  |
| Maximum switching current           | R1, R2 2 A 250 V AC inductive, cos phi = 0.4 7 ms<br>R1, R2 2 A 30 V DC inductive, cos phi = 0.4 7 ms<br>R1, R2 5 A 250 V AC resistive, cos phi = 1 0 ms<br>R1, R2 5 A 30 V DC resistive, cos phi = 1 0 ms   |
| Discrete input number               | 7  |
| Discrete input type                 | Programmable LI1...LI5) 24 V DC <= 30 V)level 1 PLC - 3500 Ohm<br>Switch-configurable LI6) 24 V DC <= 30 V)level 1 PLC - 3500 Ohm<br>Switch-configurable PTC probe LI6)0...6 - 1500 Ohm<br>Safety input PWR) 24 V DC <= 30 V) - 1500 Ohm   |
| Discrete input logic                | Negative logic (sink) LI1...LI5), > 16 V, < 10 V<br>Positive logic (source) LI1...LI5), < 5 V, > 11 V<br>Negative logic (sink) LI6)if configured as logic input, > 16 V, < 10 V<br>Positive logic (source) LI6)if configured as logic input, < 5 V, > 11 V   |
| Acceleration and deceleration ramps | Automatic adaptation of ramp if braking capacity exceeded, by using resistor S, U or customized<br>Linear adjustable separately from 0.01 to 9000 s  |
| Braking to standstill               | By DC injection  |
| Protection type                     | Against exceeding limit speed drive<br>Against input phase loss drive<br>Break on the control circuit drive<br>Input phase breaks drive<br>Line supply overvoltage drive<br>Line supply undervoltage drive<br>Overcurrent between output phases and earth drive<br>Overheating protection drive<br>Overvoltages on the DC bus drive<br>Power removal drive<br>Short-circuit between motor phases drive<br>Thermal protection drive<br>Motor phase break motor<br>Power removal motor<br>Thermal protection motor |
| Insulation resistance               | > 1 mOhm 500 V DC for 1 minute to earth  |
| Frequency resolution                | Analog input 0.024/50 Hz<br>Display unit 0.1 Hz  |
| Connector type                      | 1 RJ45 on front face)Modbus<br>1 RJ45 on terminal)Modbus<br>Male SUB-D 9 on RJ45CANopen  |
| Physical interface                  | 2-wire RS 485 Modbus   |
| Transmission frame                  | RTU Modbus   |
| Transmission rate                   | 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps Modbus on terminal<br>9600 bps, 19200 bps Modbus on front face<br>20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps CANopen  |
| Data format                         | 8 bits, 1 stop, even parity Modbus on front face<br>8 bits, odd even or no configurable parity Modbus on terminal  |
| Number of addresses                 | 1...127 CANopen<br>1...247 Modbus  |
| Method of access                    | Slave CANopen  |
| Marking                             | CE   |
| Operating position                  | Vertical +/- 10 degree   |
| Net weight                          | 149.91 lb(US) (68 kg)  |
| Width                               | 12.60 in (320 mm)  |
| Height                              | 24.80 in (630 mm)  |
| Depth                               | 11.42 in (290 mm)  |




## Environment

|                                       |  |
|---------------------------------------|--|
| Noise level                           | 63.7 dB 86/188/EEC   |
| Dielectric strength                   | 3110 V DC between earth and power terminals<br>5345 V DC between control and power terminals   |
| Electromagnetic compatibility         | Conducted radio-frequency immunity test level 3 IEC 61000-4-6<br>Electrical fast transient/burst immunity test level 4 IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3<br>Voltage dips and interruptions immunity test IEC 61000-4-11 |
| Standards                             | EN 61800-3 environments 1 category C3<br>EN/IEC 61800-3<br>EN 61800-3 environments 2 category C3<br>EN 55011 class A group 2<br>EN/IEC 61800-5-1<br>IEC 60721-3-3 class 3C2<br>UL Type 1   |
| Product certifications                | GOST<br>NOM 117<br>UL<br>DNV<br>C-Tick<br>CSA  |
| Pollution degree                      | 3 EN/IEC 61800-5-1<br>3 UL 840   |
| Degree of protection                  | IP20 on upper part without blanking plate on cover EN/IEC 60529<br>IP20 on upper part without blanking plate on cover EN/IEC 61800-5-1<br>IP21 EN/IEC 60529<br>IP21 EN/IEC 61800-5-1<br>IP41 on upper part EN/IEC 60529<br>IP41 on upper part EN/IEC 61800-5-1<br>IP54 on lower part EN/IEC 60529<br>IP54 on lower part EN/IEC 61800-5-1                 |
| Vibration resistance                  | 1 gn 13...200 Hz)EN/IEC 60068-2-6<br>1.5 mm peak to peak 3...13 Hz)EN/IEC 60068-2-6  |
| Shock resistance                      | 15 gn 11 ms EN/IEC 60068-2-27  |
| Relative humidity                     | 5...95 % without condensation IEC 60068-2-3<br>5...95 % without dripping water IEC 60068-2-3   |
| Ambient air temperature for operation | 14...122 °F (-10...50 °C) without)<br>122...140 °F (50...60 °C) with derating factor)  |
| Ambient air temperature for storage   | -13...158 °F (-25...70 °C)   |
| Operating altitude                    | <= 3280.84 ft (1000 m) without<br>3280.84...7414.7 ft (1000...2260 m) with current derating 1 % per 100 m  |

## Ordering and shipping details

|                     |                                     |
|---------------------|-------------------------------------|
| Category            | 22137 - ATV61 7.5 THRU 50 HP DRIVES |
| Discount Schedule   | CP4C                                |
| GTIN                | 00785901448624                      |
| Package weight(Lbs) | 67.13 kg (148 lb(US))               |
| Returnability       | No                                  |
| Country of origin   | FR                                  |

## Offer Sustainability

|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds which is known to the State of California to cause Carcinogen & Reproductive harm. For more information go to <a href="http://www.p65warnings.ca.gov">www.p65warnings.ca.gov</a> |
| REACH Regulation           |  <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  <a href="#">EU RoHS Declaration</a>  |
| Mercury free               | Yes   |
| RoHS exemption information |  Yes   |

|                          |  |
|--------------------------|--|
| China RoHS Regulation    | <a href="#">China RoHS Declaration</a>   |
| Environmental Disclosure | <a href="#">Product Environmental Profile</a>  |
| Circularity Profile      | <a href="#">End Of Life Information</a>  |
| WEEE                     | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins. |

### Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|