



## 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 phasesat 200...240 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Motor power hp                     | 50 hp 3 phasesat 200...240 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [Us] rated supply voltage          | 200...240 V (- 15...10 %)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Phase                              | 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Line current                       | 127 Afor 240 V 3 phases 37 kW / 50 hp<br>141 Afor 200 V 3 phases 37 kW / 50 hp                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| EMC filter                         | Without EMC filter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Assembly style                     | With heat sink                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Apparent power                     | 52.8 kVAfor 240 V 3 phases 37 kW / 50 hp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Prospective line Isc               | 22 kA 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum transient current          | 172.8 Afor 60 s 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Nominal switching frequency        | 12 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Switching frequency                | 1...16 kHz adjustable<br>12...16 kHz with derating factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Asynchronous motor control profile | Voltage/frequency ratio, 2 points<br>Voltage/frequency ratio, 5 points<br>Flux vector control without sensor, standard<br>Voltage/frequency ratio - Energy Saving, quadratic U/f                                                                                                                                                                                                                                                                                                                                                                          |
| Synchronous motor control profile  | Vector control without sensor, standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Communication port protocol        | CANopen<br>Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Type of polarization               | No impedance Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Option card                        | APOGEE FLN communication card<br>BACnet communication card<br>CC-Link communication card<br>Controller inside programmable card<br>DeviceNet communication card<br>Ethernet/IP communication card<br>Fipio communication card<br>I/O extension card<br>Interbus-S communication card<br>LonWorks communication card<br>METASYS N2 communication card<br>Modbus Plus communication card<br>Modbus TCP communication card<br>Modbus/Uni-Telway communication card<br>Multi-pump card<br>Profibus DP communication card<br>Profibus DP V1 communication card |

## Complementary

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| Product destination       | Asynchronous motors<br>Synchronous motors         |
| Supply voltage limits     | 170...264 V                                       |
| Supply frequency          | 50...60 Hz (- 5...5 %)                            |
| Network frequency         | 47.5...63 Hz                                      |
| Continuous output current | 144 Aat 12 kHz, 230 V 3 phases                    |
| Output frequency          | 0.1...599 Hz                                      |
| Speed range               | 1...100 in open-loop mode, without speed feedback |

|                           |                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed accuracy            | +/- 10 % of nominal slip 0.2 Tn to Tn torque variation without speed feedback                                                                                                                                                                                                                                                         |
| Torque accuracy           | +/- 15 % in open-loop mode, without speed feedback                                                                                                                                                                                                                                                                                    |
| Transient overtorque      | 130 % of nominal motor torque, +/- 10 %for 60 s                                                                                                                                                                                                                                                                                       |
| Braking torque            | 30 % without braking resistor<br>≤ 125 % with braking resistor                                                                                                                                                                                                                                                                        |
| Regulation loop           | Frequency PI regulator                                                                                                                                                                                                                                                                                                                |
| Motor slip compensation   | Adjustable<br>Automatic whatever the load<br>Can be suppressed<br>Not available in voltage/frequency ratio (2 or 5 points)                                                                                                                                                                                                            |
| Local signalling          | 1 LED red presence of drive voltage                                                                                                                                                                                                                                                                                                   |
| Output voltage            | ≤ power supply voltage                                                                                                                                                                                                                                                                                                                |
| Isolation                 | Between power and control terminals                                                                                                                                                                                                                                                                                                   |
| Type of cable             | With an IP21 or an IP31 kit: 3-strand IEC cableat 104 °F (40 °C), copper 70 °C PVC<br>Without mounting kit: 1-strand IEC cableat 113 °F (45 °C), copper 70 °C PVC<br>Without mounting kit: 1-strand IEC cableat 113 °F (45 °C), copper 90 °C XLPE/EPR<br>With UL Type 1 kit: 3-strand UL 508 cableat 104 °F (40 °C), copper 75 °C PVC |
| Electrical connection     | AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR terminal 2.5 mm² / AWG 14<br>L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB terminal 150 mm² / 300 kcmil                                                                                                                                                     |
| Tightening torque         | L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB 362.83 lbf.in (41 N.m) / 360 lb.in<br>AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR 5.31 lbf.in (0.6 N.m)                                                                                                                                                   |
| Supply                    | Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, ≤ 10 mAfor overload and short-circuit protection<br>Internal supply 24 V DC (21...27 V), ≤ 200 mAfor 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, input voltage 24 V max, resolution 11 bits + sign<br>AI2 software-configurable current 0...20 mA, impedance 242 Ohm, resolution 11 bits<br>AI2 software-configurable voltage 0...10 V DC, input voltage 24 V max, impedance 30000 Ohm, resolution 11 bits                         |
| Sampling duration         | Analog input AI1-/AI1+ 2 ms, +/- 0.5 ms<br>Analog input AI2 2 ms, +/- 0.5 ms<br>Analog output AO1 2 ms, +/- 0.5 ms<br>Discrete input LI1...LI5 2 ms, +/- 0.5 ms<br>Discrete input LI6 (if configured as logic input) 2 ms, +/- 0.5 ms                                                                                                 |
| Accuracy                  | AI1-/AI1+ +/- 0.6 % for a temperature variation 60 °C<br>AI2 +/- 0.6 % for a temperature variation 60 °C<br>AO1 +/- 1 % for a temperature variation 60 °C                                                                                                                                                                             |
| Linearity error           | AI1-/AI1+ +/- 0.15 % of maximum value<br>AI2 +/- 0.15 % of maximum value<br>AO1 +/- 0.2 %                                                                                                                                                                                                                                             |
| Analogue output number    | 1                                                                                                                                                                                                                                                                                                                                     |
| Analogue output type      | AO1 software-configurable current, analogue output range 0...20 mA, impedance 500 Ohm, resolution 10 bits<br>AO1 software-configurable logic output 10 V, ≤ 20 mA<br>AO1 software-configurable voltage, analogue output range 0...10 V DC, impedance 470 Ohm, resolution 10 bits                                                      |
| Discrete output number    | 2                                                                                                                                                                                                                                                                                                                                     |
| Discrete output type      | (R1A, R1B, R1C) configurable relay logic NO/NC, electrical durability 100000 cycles<br>(R2A, R2B) configurable relay logic NO, electrical durability 100000 cycles                                                                                                                                                                    |
| Response time             | ≤ 100 ms in STO (Safe Torque Off)<br>R1A, R1B, R1C ≤ 7 ms, tolerance +/- 0.5 ms<br>R2A, R2B ≤ 7 ms, tolerance +/- 0.5 ms                                                                                                                                                                                                              |
| Minimum switching current | Configurable relay logic 3 mAat 24 V DC                                                                                                                                                                                                                                                                                               |
| Maximum switching current | R1, R2 on resistive load, 5 A at 30 V DC, cos phi = 1, 0 ms<br>R1, R2 on inductive load, 2 A at 30 V DC, cos phi = 0.4, 7 ms<br>R1, R2 on resistive load, 5 A at 250 V AC, cos phi = 1, 0 ms<br>R1, R2 on inductive load, 2 A at 250 V AC, cos phi = 0.4, 7 ms                                                                        |
| Discrete input number     | 7                                                                                                                                                                                                                                                                                                                                     |
| Discrete input type       | (LI1...LI5) programmable, 24 V DC, voltage limits ≤ 30 V, with level 1 PLC, impedance 3500 Ohm<br>(LI6) switch-configurable, 24 V DC, voltage limits ≤ 30 V, with level 1 PLC, impedance 3500 Ohm<br>(LI6) switch-configurable PTC probe, 0...6, impedance 1500 Ohm                                                                   |

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | (PWR) safety input, 24 V DC, voltage limits ≤ 30 V, impedance 1500 Ohm                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Discrete input logic                | LI1...LI5 positive logic (source), < 5 V (state 0), > 11 V (state 1)<br>LI1...LI5 negative logic (sink), > 16 V (state 0), < 10 V (state 1)<br>LI6 (if configured as logic input) negative logic (sink), > 16 V (state 0), < 10 V (state 1)<br>LI6 (if configured as logic input) positive logic (source), < 5 V (state 0), > 11 V (state 1)                                                                                                                                                                     |
| Acceleration and deceleration ramps | Automatic adaptation of ramp if braking capacity exceeded, by using resistor<br>Linear adjustable separately from 0.01 to 9000 s<br>S, U or customized                                                                                                                                                                                                                                                                                                                                                           |
| Braking to standstill               | By DC injection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Protection type                     | Drive against exceeding limit speed<br>Drive against input phase loss<br>Drive break on the control circuit<br>Drive input phase breaks<br>Drive line supply overvoltage<br>Drive line supply undervoltage<br>Drive overcurrent between output phases and earth<br>Drive overheating protection<br>Drive overvoltages on the DC bus<br>Drive power removal<br>Drive short-circuit between motor phases<br>Drive thermal protection<br>Motor motor phase break<br>Motor power removal<br>Motor thermal protection |
| Insulation resistance               | > 1 mOhm at 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 Modbus on front face<br>1 RJ45 Modbus on terminal<br>Male SUB-D 9 on RJ45 CANopen                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Physical interface                  | 2-wire RS 485 Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Transmission frame                  | RTU Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Transmission rate                   | 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps CANopen<br>4800 bps, 9600 bps, 19200 bps, 38.4 Kbps Modbus on terminal<br>9600 bps, 19200 bps Modbus on front face                                                                                                                                                                                                                                                                                                                                        |
| 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...247 Modbus<br>1...127 CANopen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Method of access                    | Slave CANopen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Marking                             | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Operating position                  | Vertical +/- 10 degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product weight                      | 81.57 lb(US) (37 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Width                               | 12.6 in (320 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Height                              | 21.65 in (550 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Depth                               | 10.47 in (266 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Environment

|                               |                                                                                                                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| noise level                   | 64 dB conforming to 86/188/EEC                                                                                                                                                           |
| dielectric strength           | 2830 V DC between earth and power terminals<br>4230 V DC between control and power terminals                                                                                             |
| electromagnetic compatibility | Conforming to IEC 61000-4-2 level 3<br>Conforming to IEC 61000-4-11<br>Conforming to IEC 61000-4-6 level 3<br>Conforming to IEC 61000-4-3 level 3<br>Conforming to IEC 61000-4-4 level 4 |
| standards                     | IEC 60721-3-3 class 3C1<br>IEC 60721-3-3 class 3S2<br>UL Type 1                                                                                                                          |
| product certifications        | CSA<br>C-Tick<br>DNV<br>GOST<br>NOM 117<br>UL                                                                                                                                            |
| pollution degree              | 3 conforming to EN/IEC 61800-5-1<br>3 conforming to UL 840                                                                                                                               |

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP degree of protection               | IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529<br>IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1<br>IP21 conforming to EN/IEC 60529<br>IP21 conforming to EN/IEC 61800-5-1<br>IP41 on upper part conforming to EN/IEC 60529<br>IP41 on upper part conforming to EN/IEC 61800-5-1<br>IP54 on lower part conforming to EN/IEC 60529<br>IP54 on lower part conforming to EN/IEC 61800-5-1 |
| vibration resistance                  | 1.5 mm peak to peak (f = 3...13 Hz) conforming to EN/IEC 60068-2-6<br>1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6                                                                                                                                                                                                                                                                                                                              |
| shock resistance                      | 15 gn 11 ms conforming to EN/IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                              |
| relative humidity                     | 5...95 % without condensation conforming to IEC 60068-2-3<br>5...95 % without dripping water conforming to IEC 60068-2-3                                                                                                                                                                                                                                                                                                                                 |
| ambient air temperature for operation | 14...122 °F (-10...50 °C) without derating<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 derating<br>3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m                                                                                                                                                                                                                                                                                                                                      |

## Offer Sustainability

|                                                                       |                                                                       |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Green Premium product                                                 | Green Premium product                                                 |
| Compliant - since 0946 - Schneider Electric declaration of conformity | Compliant - since 0946 - Schneider Electric declaration of conformity |
| Reference not containing SVHC above the threshold                     | Reference not containing SVHC above the threshold                     |
| Available                                                             | Available                                                             |
| Available                                                             | Available                                                             |

## Contractual warranty

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

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9