



## Main

|                                    |   |
|------------------------------------|---|
| Range of product                   | Altivar 312   |
| Product or component type          | Variable speed drive  |
| Product destination                | Asynchronous motors   |
| Product specific application       | Simple machine  |
| Assembly style                     | With heat sink  |
| Component name                     | ATV312  |
| Motor power kW                     | 1.5 kW  |
| Motor power hp                     | 2 hp  |
| [Us] rated supply voltage          | 380...500 V (- 15...10 %)   |
| Supply frequency                   | 50...60 Hz (- 5...5 %)  |
| Phase                              | 3 phases  |
| Line current                       | 4.8 Afor 500 V<br>6.4 Afor 380 V, 5 kA  |
| EMC filter                         | Integrated  |
| Apparent power                     | 4.2 kVA   |
| Maximum transient current          | 6.2 Afor 60 s   |
| Power dissipation in W             | 61 W at nominal load  |
| Speed range                        | 1...50  |
| Asynchronous motor control profile | Factory set : constant torque<br>Sensorless flux vector control with PWM type motor control signal  |
| Electrical connection              | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0 in <sup>2</sup> (2.5 mm <sup>2</sup> ) AWG 14<br>L1, L2, L3, U, V, W, PA, PB, PA+, PC/- terminal 0.01 in <sup>2</sup> (5 mm <sup>2</sup> ) AWG 10          |
| Supply                             | Internal supply for logic inputsat 19...30 V, <= 100 mAfor overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm)at 10...10.8 V, <= 10 mAfor overload and short-circuit protection |
| Communication port protocol        | CANopen<br>Modbus   |
| IP degree of protection            | IP20 on upper part without cover plate<br>IP21 on connection terminals<br>IP31 on upper part<br>IP41 on upper part  |
| Option card                        | CANopen daisy chain communication card<br>DeviceNet communication card<br>Fipio communication card<br>Modbus TCP communication card<br>Profibus DP communication card   |

## Complementary

|                                  |  |
|----------------------------------|--|
| Supply voltage limits            | 323...550 V                              |
| Network frequency                | 47.5...63 Hz                             |
| Prospective line I <sub>sc</sub> | 5 kA                                     |
| Continuous output current        | 4.1 Aat 4 kHz                            |
| Output frequency                 | 0...500 kHz                              |
| Nominal switching frequency      | 4 kHz                                    |
| Switching frequency              | 2...16 kHz adjustable                    |
| Transient overtorque             | 170...200 % of nominal motor torque      |
| Braking torque                   | 100 % with braking resistor continuously |

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150 % without braking resistor  
150 % with braking resistor for 60 s

|                                     |   |
|-------------------------------------|---|
| Regulation loop                     | Frequency PI regulator  |
| Motor slip compensation             | Adjustable<br>Automatic whatever the load<br>Suppressable   |
| Output voltage                      | <= power supply voltage   |
| Tightening torque                   | 5.31 lbf.in (0.6 N.m) AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6<br>10.62 lbf.in (1.2 N.m) L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-   |
| Insulation                          | Electrical between power and control  |
| Analogue input number               | 3   |
| Analogue input type                 | AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance 30000 Ohm<br>AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance 30000 Ohm<br>AI3 configurable current 0...20 mA, impedance 250 Ohm   |
| Sampling duration                   | AI1, AI2, AI3 8 ms analog<br>LI1...LI6 4 ms discrete  |
| Response time                       | AOV, AOC 8 ms analog<br>R1A, R1B, R1C, R2A, R2B 8 ms discrete   |
| Linearity error                     | +/- 0.2 % output  |
| Analogue output number              | 1   |
| Analogue output type                | AOC configurable current 0...20 mA, impedance 800 Ohm, resolution 8 bits<br>AOV configurable voltage 0...10 V, impedance 470 Ohm, resolution 8 bits   |
| Discrete input logic                | (LI1...LI4) logic input not wired, < 13 V (state 1)<br>(LI1...LI6) negative logic (source), > 19 V (state 0)<br>(LI1...LI6) positive logic (source), < 5 V (state 0), > 11 V (state 1)  |
| Discrete output number              | 2   |
| Discrete output type                | (R1A, R1B, R1C) configurable relay logic 1 NO + 1 NC, electrical durability 100000 cycles<br>(R2A, R2B) configurable relay logic NC, electrical durability 100000 cycles  |
| Minimum switching current           | R1-R2 10 mA at 5 V DC   |
| Maximum switching current           | R1-R2 on inductive load, 2 A at 250 V AC, (cos phi = 0.4, and L/R = 7 ms)<br>R1-R2 on inductive load, 2 A at 30 V DC, (cos phi = 0.4, and L/R = 7 ms)<br>R1-R2 on resistive load, 5 A at 250 V AC, (cos phi = 1, and L/R = 0 ms)<br>R1-R2 on resistive load, 5 A at 30 V DC, (cos phi = 1, and L/R = 0 ms)  |
| Discrete input number               | 6   |
| Discrete input type                 | (LI1...LI6) programmable, 24 V 0...100 mA with PLC, impedance 3500 Ohm  |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.1 to 999.9 s<br>S, U or customized  |
| Braking to standstill               | By DC injection   |
| Protection type                     | Input phase breaks drive<br>Line supply overvoltage and undervoltage safety circuits drive<br>Line supply phase loss safety function, for three phases supply drive<br>Motor phase breaks drive<br>Overcurrent between output phases and earth (on power up only) drive<br>Overheating protection drive<br>Short-circuit between motor phases drive<br>Thermal protection motor |
| Insulation resistance               | >= 500 mOhm at 500 V DC for 1 minute  |
| Local signalling                    | 1 LED red drive voltage<br>Four 7-segment display units CANopen bus status  |
| Time constant                       | 5 ms for reference change   |
| Frequency resolution                | Analog input 0.1...100 Hz<br>Display unit 0.1 Hz  |
| Connector type                      | 1 RJ45 Modbus/CANopen   |
| Physical interface                  | RS485 multidrop serial link   |
| Transmission frame                  | RTU   |
| Transmission rate                   | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen<br>4800, 9600 or 19200 bps Modbus  |
| Number of addresses                 | 1...247 Modbus<br>1...127 CANopen   |
| Number of drive                     | 127 CANopen<br>31 Modbus  |
| Marking                             | CE  |
| Operating position                  | Vertical +/- 10 degree  |

|                 |  |
|-----------------|--|
| Outer dimension | 143 x 105 x 150 mm<br>184 x 149 x 157 mm<br>382 x 239 x 170 mm |
| Height          | 5.63 in (143 mm)   |
| Width           | 4.21 in (107 mm)   |
| Depth           | 5.98 in (152 mm)   |
| Product weight  | 3.97 lb(US) (1.8 kg)   |

## Environment

|                                       |   |
|---------------------------------------|---|
| dielectric strength                   | 2410 V DC between earth and power terminals<br>3400 V AC between control and power terminals  |
| electromagnetic compatibility         | Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4<br>Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3<br>Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3<br>1.2/50 $\mu$ s - 8/20 $\mu$ s surge immunity test conforming to IEC 61000-4-5 level 3 |
| standards                             | IEC 61800-3<br>IEC 61800-5-1  |
| product certifications                | CSA<br>C-Tick<br>DNV<br>GOST<br>NOM<br>UL   |
| pollution degree                      | 2   |
| protective treatment                  | TC  |
| vibration resistance                  | 1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6<br>1 gn (f = 13...150 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 storage   | -13...158 °F (-25...70 °C)  |
| ambient air temperature for operation | 14...122 °F (-10...50 °C) without derating with protective cover on top of the drive<br>14...140 °F (-10...60 °C) with derating factor without protective cover on top of the drive   |
| 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 0913 - Schneider Electric declaration of conformity | Compliant - since 0913 - 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 |
|-----------------|-----------|

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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