# Product data sheet
## Characteristics

# ATV340D18N4E
variable speed drive, Altivar Machine ATV340, 18kW, heavy duty, 400V, 3 phases, Ethernet



## Main

| | |
|---|---|
| Range of product | Altivar Machine ATV340 |
| Product or component type | Variable speed drive |
| Product specific application | Machine |
| Mounting mode | Cabinet mount |
| Variant | Standard version |
| Communication port protocol | EtherNet/IP<br>Modbus TCP<br>Modbus serial |
| Network number of phases | 3 phases |
| Supply frequency | 50...60 Hz +/- 5 % |
| [Us] rated supply voltage | 380...480 V - 15...10 % |
| Nominal output current | 39.0 A |
| Motor power kW | 22 KW for normal duty<br>18.5 KW for heavy duty |
| Motor power hp | 30 Hp for normal duty<br>25 Hp for heavy duty |
| EMC filter | Class C3 EMC filter integrated |
| IP degree of protection | IP20 |

## Complementary

| | |
|---|---|
| Discrete input number | 5 |
| Discrete input type | PTI programmable as pulse input: 0…30 kHz, 24 V DC (30 V)<br>DI1...DI5 safe torque off, 24 V DC (30 V), impedance: 3.5 kOhm programmable |
| Discrete input logic | 16 preset speeds |
| Discrete output number | 2.0 |
| Discrete output type | Programmable output DQ1, DQ2 30 V DC 100 mA |
| Analogue input number | 2 |
| Analogue input type | AI1 software-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 12 bits<br>AI1 software-configurable temperature probe or water level sensor<br>AI1 software-configurable voltage: 0...10 V DC, impedance: 31.5 kOhm, resolution 12 bits<br>AI2 software-configurable voltage: - 10...10 V DC, impedance: 31.5 kOhm, resolution 12 bits |
| Analogue output number | 1 |
| Analogue output type | Software-configurable voltage AQ1: 0...10 V DC impedance 470 Ohm, resolution 10 bits<br>Software-configurable current AQ1: 0...20 mA impedance 500 Ohm, resolution 10 bits |
| Relay output number | 2 |
| Output voltage | <= power supply voltage |
| Relay output type | Relay outputs R1A<br>Relay outputs R1C electrical durability 100000 cycles<br>Relay outputs R2A<br>Relay outputs R2C electrical durability 100000 cycles |

| | |
|---|---|
| Maximum switching current | Relay output R1C on resistive load, cos phi = 1: 3 A at 250 V AC<br>Relay output R1C on resistive load, cos phi = 1: 3 A at 30 V DC<br>Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC<br>Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC<br>Relay output R2C on resistive load, cos phi = 1: 5 A at 250 V AC<br>Relay output R2C on resistive load, cos phi = 1: 5 A at 30 V DC<br>Relay output R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC<br>Relay output R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC |
| Minimum switching current | Relay output R1B: 5 mA at 24 V DC<br>Relay output R2C: 5 mA at 24 V DC |
| Physical interface | 2-wire RS 485 |
| Connector type | 3 RJ45 |
| Method of access | Slave Modbus RTU<br>Slave Modbus TCP |
| Transmission rate | 4.8 kbit/s<br>9.6 kbit/s<br>19.2 kbit/s<br>38.4 kbit/s |
| Transmission frame | RTU |
| Number of addresses | 1…247 |
| Data format | 8 bits, configurable odd, even or no parity |
| Type of polarization | No impedance |
| 4 quadrant operation possible | True |
| Asynchronous motor control profile | Variable torque standard<br>Constant torque standard<br>Optimized torque mode |
| Synchronous motor control profile | Reluctance motor<br>Permanent magnet motor |
| Pollution degree | 2 conforming to IEC 61800-5-1 |
| Maximum output frequency | 0.599 KHz |
| Acceleration and deceleration ramps | S, U or customized<br>Linear adjustable separately from 0.01...9999 s |
| Motor slip compensation | Can be suppressed<br>Adjustable<br>Not available in permanent magnet motor law<br>Automatic whatever the load |
| Switching frequency | 2...16 kHz adjustable<br>4...16 kHz with derating factor |
| Nominal switching frequency | 4 kHz |
| Braking to standstill | By DC injection |
| Brake chopper integrated | True |
| Line current | 43.4 A at 380 V (normal duty)<br>35.0 A at 480 V (normal duty)<br>54.7 A at 380 V (heavy duty)<br>43.4 A at 480 V (heavy duty) |
| Line current | 54.7 A at 380 V without line choke (heavy duty)<br>43.4 A at 480 V without line choke (heavy duty)<br>49.9 A at 380 V with external line choke (normal duty)<br>40.2 A at 480 V with external line choke (normal duty)<br>54.5 A at 480 V with external line choke (heavy duty)<br>43.5 A at 380 V with external line choke (heavy duty) |
| Maximum input current | 54.7 A |
| Maximum output voltage | 480 V |
| Apparent power | 33.4 KVA at 480 V (normal duty)<br>36.1 KVA at 480 V (heavy duty) |
| Maximum transient current | 50.6 A during 60 s (normal duty)<br>59 A during 60 s (heavy duty)<br>62.1 A during 2 s (normal duty)<br>70 A during 2 s (heavy duty) |
| Electrical connection | Screw terminal, clamping capacity: 0.2...2.5 mm² for control<br>Screw terminal, clamping capacity: 10...25 mm² for line side<br>Screw terminal, clamping capacity: 10...25 mm² for DC bus<br>Screw terminal, clamping capacity: 6...25 mm² for motor |
| Prospective line Isc | 22 KA |
| Base load current at high overload | 39.0 A |
| Base load current at low overload | 46.0 A |

| | |
|---|---|
| Power dissipation in W | Natural convection: 21 W at 380 V, switching frequency 4 kHz (heavy duty)<br>Forced convection: 410 W at 380 V, switching frequency 4 kHz (heavy duty)<br>Natural convection: 23 W at 380 V, switching frequency 4 kHz (normal duty)<br>Forced convection: 464 W at 380 V, switching frequency 4 kHz (normal duty) |
| Electrical connection | Control: screw terminal 0.2...2.5 mm²/24 AWG...12 AWG<br>Line side: screw terminal 10...25 mm²/8 AWG...3 AWG<br>DC bus: screw terminal 10...25 mm²/8 AWG...3 AWG<br>Motor: screw terminal 6...25 mm²/8 AWG...3 AWG |
| With safety function Safely Limited Speed (SLS) | True |
| With safety function Safe brake management (SBC/SBT) | True |
| With safety function Safe Operating Stop (SOS) | False |
| With safety function Safe Position (SP) | False |
| With safety function Safe programmable logic | False |
| With safety function Safe Speed Monitor (SSM) | False |
| With safety function Safe Stop 1 (SS1) | True |
| With sft fct Safe Stop 2 (SS2) | False |
| With safety function Safe torque off (STO) | True |
| With safety function Safely Limited Position (SLP) | False |
| With safety function Safe Direction (SDI) | False |
| Protection type | Thermal protection: motor<br>Safe torque off: motor<br>Motor phase loss: motor<br>Thermal protection: drive<br>Safe torque off: drive<br>Overheating: drive<br>Overcurrent: drive<br>Output overcurrent between motor phase and earth: drive<br>Output overcurrent between motor phases: drive<br>Short-circuit between motor phase and earth: drive<br>Short-circuit between motor phases: drive<br>Motor phase loss: drive<br>DC Bus overvoltage: drive<br>Line supply overvoltage: drive<br>Line supply undervoltage: drive<br>Input supply loss: drive<br>Exceeding limit speed: drive<br>Break on the control circuit: drive |
| Width | 180.0 Mm |
| Height | 385.0 Mm |
| Depth | 249.0 Mm |
| Net weight | 10.2 Kg |
| Continuous output current | 46 A at 4 kHz for normal duty<br>39 A at 4 kHz for heavy duty |

## Environment

| | |
|---|---|
| Operating altitude | <= 3000 m with current derating above 1000m |
| Operating position | Vertical +/- 10 degree |
| Product certifications | UL[RETURN]CSA[RETURN]TÜV[RETURN]EAC[RETURN]CTick |
| Marking | CE |
| Standards | IEC 61800-3<br>IEC 61800-5-1<br>IEC 60721-3<br>IEC 61508<br>IEC 13849-1<br>UL 618000-5-1<br>UL 508C |
| Assembly style | With heat sink |
| Electromagnetic compatibility | Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5<br>Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 |
| Environmental class (during operation) | Class 3C3 according to IEC 60721-3-3<br>Class 3S3 according to IEC 60721-3-3 |
| Maximum acceleration under shock impact (during operation) | 70 m/s² at 22 ms |
| Maximum acceleration under vibrational stress (during operation) | 5 m/s² at 9...200 Hz |
| Maximum deflection under vibratory load (during operation) | 1.5 mm at 2...9 Hz |

| | |
|---|---|
| Permitted relative humidity (during operation) | Class 3K5 according to EN 60721-3 |
| Volume of cooling air | 128.0 M3/H |
| Type of cooling | Forced convection |
| Overvoltage category | Class III |
| Regulation loop | Adjustable PID regulator |
| Noise level | 56.7 DB |
| Pollution degree | 2 |
| Ambient air transport temperature | -40…70 °C |
| Ambient air temperature for operation | -15…50 °C without derating (vertical position)<br>50…60 °C with derating factor (vertical position) |
| Ambient air temperature for storage | -40…70 °C |
| Isolation | Between power and control terminals |

## Packing Units

| | |
|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 29.800 Cm |
| Package 1 Width | 54.800 Cm |
| Package 1 Length | 33.700 Cm |
| Package 1 Weight | 11.890 Kg |
| Unit Type of Package 2 | P06 |
| Number of Units in Package 2 | 2 |
| Package 2 Height | 75.000 Cm |
| Package 2 Width | 60.000 Cm |
| Package 2 Length | 80.000 Cm |
| Package 2 Weight | 36.780 Kg |

## Offer Sustainability

| | |
|---|---|
| Recyclability potential, in % | 65 |
| Total lifecycle Carbon footprint | 13 080 kg CO2 eq. |
| Carbon footprint of the manufacturing phase [A1 to A3] | 163.9585958543456 |
| Carbon footprint of the manufacturing phase [A1 to A3] | 164 kg CO2 eq. |
| Carbon footprint of the distribution phase [A4] | 2.3169658682623226 |
| Carbon footprint of the distribution phase [A4] | 2 kg CO2 eq. |
| Carbon footprint of the installation phase [A5] | 1.826447243583426 |
| Carbon footprint of the installation phase [A5] | 2 kg CO2 eq. |
| Carbon footprint of the use phase [B2, B3, B4, B6] | 12889.656348595101 |
| Carbon footprint of the use phase [B2, B3, B4, B6] | 12 890 kg CO2 eq. |
| Mercury free | Yes |
| Sustainable packaging | No |
| Carbon footprint of the end-of-life phase [C1 to C4] | 22.12520262888839 |
| Carbon footprint of the end-of-life phase [C1 to C4] | 22 kg CO2 eq. |
| Total lifecycle Carbon footprint | 13080 |
| Packaging made with recycled cardboard | Yes |
| Packaging without single use plastic | No |
| SCIP Number | B464d3d8-3d68-42fb-96c3-c1eaf1b135e1 |
| REACh Regulation | Reference contains Substances of Very High Concern above the threshold |
| EU RoHS Directive | Compliant By Exemption |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which |
| Product contributes to saved and avoided emissions | Yes |
| End of life manual availability | End Of Life Information |
| Take-back | No |
| WEEE Label | The product must be disposed on European Union markets following specific waste collection and |

## Contractual warranty

| | |
|---|---|
| Warranty (in months) | 18 |

| | |
|---|---|
| Product Life Status : | Commercialised |