Product data sheet
Characteristics

ATV340D45N4E
variable speed drive, Altivar Machine ATV340, 45kW, 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	Wall mount
Variant	Standard version
Communication port protocol	Modbus TCP Modbus serial EtherNet/IP
Option card	Communication module, PROFINET Communication module, DeviceNet Communication module, CANopen Communication module, EtherCAT
Network number of phases	3 phases
Supply frequency	50...60 Hz +/- 5 %
[Us] rated supply voltage	380...480 V - 15...10 %
Nominal output current	88.0 A
Motor power kW	55 KW for normal duty 45 KW for heavy duty
Motor power hp	75 Hp for normal duty 60 Hp for heavy duty
EMC filter	Class C3 EMC filter integrated
IP degree of protection	IP20
Degree of protection	UL type 1

Complementary

Discrete input number	8
Discrete input type	PTI safe torque off: 0…30 kHz, 24 V DC (30 V) DI1...DI5 programmable as pulse input, 24 V DC (30 V), impedance: 3.5 kOhm programmable
Discrete input logic	16 preset speeds
Discrete output number	1.0
Discrete output type	Programmable output DQ1, DQ2 30 V DC 100 mA
Analogue input number	3
Analogue input type	AI1 software-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 12 bits AI1 software-configurable temperature probe or water level sensor AI1 software-configurable voltage: 0...10 V DC, impedance: 31.5 kOhm, resolution 12 bits AI2 software-configurable voltage: - 10...10 V DC, impedance: 31.5 kOhm, resolution 12 bits
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2: 0...20 mA impedance 500 Ohm, resolution 10 bits
Relay output number	3

Output voltage	<= power supply voltage
Relay output type	Relay outputs R1A Relay outputs R1C electrical durability 100000 cycles Relay outputs R2A 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 Relay output R1C on resistive load, cos phi = 1: 3 A at 30 V DC Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC Relay output R2C on resistive load, cos phi = 1: 5 A at 250 V AC Relay output R2C on resistive load, cos phi = 1: 5 A at 30 V DC Relay output R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC 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 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 Slave Modbus TCP
Transmission rate	4.8 kbit/s 9.6 kbit/s 19.2 kbit/s 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	Constant torque standard Optimized torque mode Variable torque standard
Synchronous motor control profile	Reluctance motor 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 Linear adjustable separately from 0.01...9999 s
Motor slip compensation	Not available in permanent magnet motor law Can be suppressed Adjustable Automatic whatever the load
Switching frequency	1...8 kHz adjustable 2.5...8 kHz with derating factor
Nominal switching frequency	2.5 kHz
Braking to standstill	By DC injection
Brake chopper integrated	True
Line current	97.2 A at 380 V (normal duty) 84.2 A at 480 V (normal duty) 81.4 A at 380 V (heavy duty) 71.8 A at 480 V (heavy duty)
Line current	97.2 A at 380 V with internal line choke (normal duty) 84.2 A at 480 V with internal line choke (normal duty) 81.4 A at 380 V with internal line choke (heavy duty) 71.8 A at 480 V with internal line choke (heavy duty) 81.4 A 71.8 A
Maximum input current	97.2 A
Maximum output voltage	480 V
Apparent power	70 KVA at 480 V (normal duty) 59.7 KVA at 480 V (heavy duty)
Maximum transient current	127.2 A during 60 s (normal duty) 132 A during 60 s (heavy duty) 127.2 A during 2 s (normal duty) 132 A during 2 s (heavy duty)
Electrical connection	Screw terminal, clamping capacity: 0.75...1.5 mm² for control Screw terminal, clamping capacity: 70...120 mm² for line side Screw terminal, clamping capacity: 70...120 mm² for DC bus Screw terminal, clamping capacity: 70...120 mm² for motor

Prospective line Isc	50 KA
Base load current at high overload	88.0 A
Base load current at low overload	106.0 A
Power dissipation in W	Natural convection: 105 W at 380 V, switching frequency 4 kHz (heavy duty) Forced convection: 943 W at 380 V, switching frequency 4 kHz (heavy duty) Natural convection: 115 W at 380 V, switching frequency 4 kHz (normal duty) Forced convection: 917 W at 380 V, switching frequency 4 kHz (normal duty)
Electrical connection	Control: screw terminal 0.75...1.5 mm²/18 AWG...16 AWG Line side: screw terminal 70...120 mm²/1/0 AWG...250 kcmil DC bus: screw terminal 70...120 mm²/1/0 AWG...250 kcmil Motor: screw terminal 70...120 mm²/1/0 AWG...250 kcmil
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 Safe torque off: motor Motor phase loss: motor Thermal protection: drive Safe torque off: drive Overheating: drive Overcurrent: drive Output overcurrent between motor phase and earth: drive Output overcurrent between motor phases: drive Short-circuit between motor phase and earth: drive Short-circuit between motor phases: drive Motor phase loss: drive DC Bus overvoltage: drive Line supply overvoltage: drive Line supply undervoltage: drive Input supply loss: drive Exceeding limit speed: drive Break on the control circuit: drive
Width	271.0 Mm
Height	908.0 Mm
Depth	309.0 Mm
Net weight	56.4 Kg
Continuous output current	106 A at 4 kHz for normal duty 88 A at 4 kHz for heavy duty

Environment

Operating altitude	<= 4800 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 IEC 61800-5-1 IEC 60721-3 IEC 61508 IEC 13849-1 UL 618000-5-1 UL 508C IEC 61000-3-12
Maximum THDI	<48 % full load conforming to IEC 61000-3-12 <48 % 80 % load conforming to IEC 61000-3-12
Assembly style	With heat sink

Electromagnetic compatibility	Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 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 Class 3S3 according to IEC 60721-3-3
Maximum acceleration under shock impact (during operation)	150 m/s² at 11 ms
Maximum acceleration under vibrational stress (during operation)	10 m/s² at 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz
Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volume of cooling air	295.0 M3/H
Type of cooling	Forced convection
Overvoltage category	Class III
Regulation loop	Adjustable PID regulator
Noise level	62.4 DB
Pollution degree	2
Ambient air transport temperature	-40…70 °C
Ambient air temperature for operation	-15…50 °C without derating (vertical position) 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	60.000 Cm
Package 1 Width	112.000 Cm
Package 1 Length	44.000 Cm
Package 1 Weight	57.500 Kg

Offer Sustainability

Recyclability potential, in %	84
Total lifecycle Carbon footprint	16 419 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	492.3586502980998
Carbon footprint of the manufacturing phase [A1 to A3]	492 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	12.257436481864733
Carbon footprint of the distribution phase [A4]	12 kg CO2 eq.
Carbon footprint of the installation phase [A5]	13.925355800769562
Carbon footprint of the installation phase [A5]	14 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	15819.10976879447
Carbon footprint of the use phase [B2, B3, B4, B6]	15 819 kg CO2 eq.
Mercury free	Yes
Sustainable packaging	No
Carbon footprint of the end-of-life phase [C1 to C4]	81.47692006172042
Carbon footprint of the end-of-life phase [C1 to C4]	81 kg CO2 eq.
Environmental Disclosure	Product Environmental Profile
Total lifecycle Carbon footprint	16419
Average percentage of recycled plastic content	1 %
Average percentage of ASI certified metals	92 %
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	No
SCIP Number	B8d5fdde-166b-4332-b5d0-afde1be95439
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 a

Contractual warranty

Warranty (in months)	18

Product Life Status : Commercialised