Product data sheet
Characteristics

ATV340U40N4
variable speed drive, Altivar Machine ATV340, 4kW, heavy duty, 400V, 3 phases



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	Modbus serial
Option card	Communication module, Profibus DP V1 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	9.3 A
Motor power kW	5.5 KW for normal duty 4 KW for heavy duty
Motor power hp	7 Hp for normal duty 5 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) 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 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	1
Analogue output type	Software-configurable voltage AQ1: 0...10 V DC impedance 470 Ohm, resolution 10 bits 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 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	1 RJ45
Method of access	Slave Modbus RTU
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 Variable torque standard Optimized torque mode
Synchronous motor control profile	Permanent magnet motor Reluctance motor
Pollution degree	2 conforming to IEC 61800-5-1
Maximum output frequency	0.599 KHz
Acceleration and deceleration ramps	Linear adjustable separately from 0.01...9999 s S, U or customized
Motor slip compensation	Automatic whatever the load Not available in permanent magnet motor law Adjustable Can be suppressed
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Nominal switching frequency	4 kHz
Braking to standstill	By DC injection
Brake chopper integrated	True
Line current	11.4 A at 380 V (normal duty) 9.0 A at 480 V (normal duty) 13.4 A at 380 V (heavy duty) 10.6 A at 480 V (heavy duty)
Line current	13.4 A at 380 V without line choke (heavy duty) 10.6 A at 480 V without line choke (heavy duty) 11.4 A at 380 V with external line choke (normal duty) 9 A at 480 V with external line choke (normal duty) 8.5 A at 380 V with external line choke (heavy duty) 6.8 A at 480 V with external line choke (heavy duty)
Maximum input current	13.4 A
Maximum output voltage	480 V
Apparent power	9 KVA at 480 V (normal duty) 8.8 KVA at 480 V (heavy duty)
Maximum transient current	14 A during 60 s (normal duty) 14 A during 60 s (heavy duty) 17.1 A during 2 s (normal duty) 16.7 A during 2 s (heavy duty)
Electrical connection	Screw terminal, clamping capacity: 1.5...4 mm² for line side Screw terminal, clamping capacity: 4...6 mm² for DC bus Screw terminal, clamping capacity: 1.5...4 mm² for motor Screw terminal, clamping capacity: 0.2...2.5 mm² for control
Prospective line Isc	5 KA
Base load current at high overload	9.3 A

Base load current at low overload	12.7 A
Power dissipation in W	Natural convection: 99 W at 380 V, switching frequency 4 kHz (heavy duty) Forced convection: 99 W at 380 V, switching frequency 4 kHz (heavy duty) Natural convection: 130 W at 380 V, switching frequency 4 kHz (normal duty) Forced convection: 130 W at 380 V, switching frequency 4 kHz (normal duty)
Electrical connection	Line side: screw terminal 1.5...4 mm²/14 AWG...12 AWG DC bus: screw terminal 4...6 mm²/12 AWG...10 AWG Motor: screw terminal 1.5...4 mm²/14 AWG...12 AWG Control: screw terminal 0.2...2.5 mm²/24 AWG...12 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 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	85.0 Mm
Height	270.0 Mm
Depth	232.5 Mm
Net weight	2.2 Kg
Continuous output current	12.7 A at 4 kHz for normal duty 9.3 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 IEC 61800-5-1 IEC 60721-3 IEC 61508 IEC 13849-1 UL 618000-5-1 UL 508C
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- 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)	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	19.0 M3/H
Type of cooling	Forced convection
Overvoltage category	Class III
Regulation loop	Adjustable PID regulator
Noise level	49.5 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	11.000 Cm
Package 1 Width	37.000 Cm
Package 1 Length	32.000 Cm
Package 1 Weight	2.950 Kg
Unit Type of Package 2	S06
Number of Units in Package 2	12
Package 2 Height	75.000 Cm
Package 2 Width	60.000 Cm
Package 2 Length	80.000 Cm
Package 2 Weight	47.000 Kg

Offer Sustainability

Recyclability potential, in %	47
Total lifecycle Carbon footprint	3 159 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	79.4271119789322
Carbon footprint of the manufacturing phase [A1 to A3]	79 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	0.5748569647917452
Carbon footprint of the distribution phase [A4]	0.6 kg CO2 eq.
Carbon footprint of the installation phase [A5]	0.7868570107174652
Carbon footprint of the installation phase [A5]	0.8 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	3073.411095932425
Carbon footprint of the use phase [B2, B3, B4, B6]	3 073 kg CO2 eq.
Mercury free	Yes
Sustainable packaging	Yes
Carbon footprint of the end-of-life phase [C1 to C4]	5.126383647345366
Carbon footprint of the end-of-life phase [C1 to C4]	5 kg CO2 eq.
Total lifecycle Carbon footprint	3159
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
SCIP Number	81d6792e-d307-4115-9475-2db3f34c93af
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