Product data sheet
Characteristics

ATV71LD17N4Z
variable speed drive ATVLift - 7.5 kW 10Hp - 480 V - EMC filter - with heat sink

Main

Range of product	Altivar Lift
Product or component type	Variable speed drive
Device short name	ATV71
Product destination	Asynchronous motors Synchronous motors
Product specific application	Lift
Assembly style	With heat sink
Variant	With integrated 7-segment display terminal
EMC filter	Integrated
Network number of phases	3 phases
[Us] rated supply voltage	380...480 V (- 15...10 %)
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz (- 5...5 %)
Network frequency	47.5...63 Hz
Motor power kW	3 phases
Motor power hp	3 phases
Line current	27 A for 380 V, 3 phases / 7.5 kW / 10 hp 22.2 A for 480 V, 3 phases / 7.5 kW / 10 hp

Complementary

Apparent power	17.8 kVA for 380 V, 3 phases / 7.5 kW / 10 hp
Prospective line Isc	<= 22 kA, 3 phases
Nominal output current	17.6 A at 4 kHz, 380 V 3 phases / 7.5 kW / 10 hp 14 A at 4 kHz, 460 V 3 phases / 7.5 kW / 10 hp
Maximum transient current	23.9 A for 2 s 3 phases / 7.5 kW / 10 hp
Speed drive output frequency	0...599 Hz
Braking resistance	>= 12 Ohm
Nominal switching frequency	8 kHz

Switching frequency	1...16 kHz adjustable
Speed range	1...100 asynchronous motor in open-loop mode, without speed feedback 1...50 synchronous motor in open-loop mode, without speed feedback 1...1000 asynchronous motor in closed-loop mode with encoder feedback
Speed accuracy	+/- 0.01 % of nominal speed for 0.2 Tn to Tn torque variation, in closed-loop mode with encoder feedback +/- 10 % of nominal slip for 0.2 Tn to Tn torque variation, without speed feedback
Torque accuracy	+/- 15 % in open-loop mode, without speed feedback +/- 5 % in closed-loop mode with encoder feedback
Transient overtorque	170 %, +/- 10 % for 60 s 220 %, +/- 10 % for 2 s
Braking torque	<= 150 % with braking or hoist resistor 30 % without braking resistor
Asynchronous motor control profile	Voltage/Frequency ratio, 2 points Voltage/Frequency ratio, 5 points Flux vector control without sensor, standard Voltage/Frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor, ENA (energy Adaptation) system Flux vector control without sensor, 2 points Flux vector control with sensor, standard
Synchronous motor control profile	Vector control without sensor, standard Vector control with sensor, standard
Regulation loop	Adjustable PI regulator
Motor slip compensation	Adjustable Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) Suppressable
Local signalling	1 LED - red - drive voltage
Output voltage	<= power supply voltage
Insulation	Electrical between power and control
Type of cable for external connection	IEC cable without mounting kit : 1 wire(s) - 45 °C, copper 90 °C / XLPE/EPR IEC cable without mounting kit : 1 wire(s) - 45 °C, copper 70 °C / PVC IEC cable with an IP21 or an IP31 kit : 3 wire(s) - 40 °C, copper 70 °C / PVC UL 508 cable with a NEMA Type1 kit : 3 wire(s) - 40 °C, copper 75 °C / PVC
Electrical connection	Terminal 2.5 mm² / AWG 14 (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) Terminal 6 mm² / AWG 8 (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Tightening torque	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) 3 N.m - 26.5 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) at 10.5 V DC +/- 5 % - <= 10 A with overload and short-circuit protection Internal supply at 24 V DC (21...27 V) - <= 200 A with overload and short-circuit protection
Analogue input number	2
Analogue input type	Software-configurable current : (AI2) 0...20 mA - 242 Ohm - resolution: 11 bits Software-configurable voltage : (AI2) 0...10 V DC - 24 V max - 30000 Ohm - resolution: 11 bits Bipolar differential voltage : (AI1-/AI1+) +/- 10 V DC - 24 V max - resolution: 11 bits + sign
Sampling duration	2 ms +/- 0.5 ms (LI6) if configured as logic input - discrete input(s) 2 ms +/- 0.5 ms (LI1...LI5) - discrete input(s) 2 ms +/- 0.5 ms (AI1-/AI1+) - analog input(s) 2 ms +/- 0.5 ms (AI2) - analog input(s)
Response time	<= 100 ms in STO (Safe Torque Off) 7 ms +/- 0.5 ms (R1A, R1B, R1C) - discrete output(s) 7 ms +/- 0.5 ms (R2A, R2B) - discrete output(s) 2 ms +/- 0.5 ms (AO1) - analog output(s)
Accuracy	+/- 1 % (AO1) for a temperature variation 60 °C +/- 0.6 % (AI1-/AI1+) for a temperature variation 60 °C +/- 0.6 % (AI2) for a temperature variation 60 °C
Linearity error	+/- 0.15 % of maximum value (AI1-/AI1+, AI2) +/- 0.2 % (AO1)
Analogue output number	1
Analogue output type	Software-configurable current : (AO1) 0...20 mA - 500 Ohm - resolution: 10 bits Software-configurable voltage : (AO1) 0...10 V DC - 470 Ohm - resolution: 10 bits Software-configurable logic output : (AO1) 10 V - <= 20 A
Discrete output number	2
Discrete output type	Configurable relay logic : (R1A, R1B, R1C) NO/NC - 100000 cycles

	Configurable relay logic : (R2A, R2B) NO - 100000 cycles
Minimum switching current	3 mA at 24 V DC (configurable relay logic)
Maximum switching current	5 A at 250 V AC on resistive load - cos phi = 1 - L/R = 0 ms (R1, R2) 5 A at 30 V DC on resistive load - cos phi = 1 - L/R = 0 ms (R1, R2) 2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1, R2) 2 A at 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1, R2)
Discrete input number	7
Discrete input type	Switch-configurable PTC probe (LI6) - 0...6 probes - 1500 Ohm Programmable (LI1...LI5) 24 V DC, with level 1 PLC - 3500 Ohm Switch-configurable (LI6) 24 V DC, with level 1 PLC - 3500 Ohm Safety input (PWR) 24 V DC - 1500 Ohm
Discrete input logic	Negative logic (LI6) if configured as logic input, > 16 V (state 0), < 10 V (state 1) Positive logic (LI6) if configured as logic input, < 5 V (state 0), > 11 V (state 1) Positive logic (LI1...LI5), < 5 V (state 0), > 11 V (state 1) Negative logic (LI1...LI5), > 16 V (state 0), < 10 V (state 1) Positive logic (PWR), < 2 V (state 0), > 17 V (state 1)
Acceleration and deceleration ramps	Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 9000 s S, U or customized
Protection type	Overheating protection for drive Thermal protection for drive Short-circuit between motor phases for drive Overcurrent between output phases and earth for drive Overvoltages on the DC bus for drive Break on the control circuit for drive Against exceeding limit speed for drive Line supply undervoltage for drive Line supply overvoltage for drive Against input phase loss for drive Thermal protection for motor Motor phase break for motor Input phase breaks for drive Power removal for motor
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Frequency resolution	0.1 Hz for display unit 0.024/50 Hz for analog input
Communication port protocol	CANopen Modbus
Connector type	1 RJ45 for Modbus on front face 1 RJ45 for Modbus on terminal Male SUB-D 9 on RJ45 for CANopen
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTU for Modbus
Transmission rate	20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps for Modbus on terminal 9600 bps, 19200 bps for Modbus on front face
Data format	8 bits, 1 stop, even parity for Modbus on front face 8 bits, odd even or no configurable parity for Modbus on terminal
Type of polarization	No impedance for Modbus
Number of addresses	1...247 addresses for Modbus 1...127 addresses for CANopen
Method of access	Slave for CANopen
Control options	Controller inside programmable card I/O extension card Interface card for encoder Overhead crane card Communication card for Profibus DP Communication card for Modbus TCP Communication card for Fipio Communication card for Modbus/Uni-Telway Communication card for Modbus Plus Communication card for Ethernet/IP Communication card for DeviceNet Communication card for Profibus DP V1 Communication card for Interbus-S

	Communication card for CC-Link
Operating position	Vertical +/- 10 degree

Environment

Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 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 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6
Pollution degree	2 conforming to EN/IEC 61800-5-1
IP degree of protection	IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529 IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 60529 IP21 conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 60529 IP41 on upper part conforming to EN/IEC 61800-5-1 IP54 on lower part conforming to EN/IEC 60529 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 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn for 11 ms conforming to EN/IEC 60068-2-27
Noise level	55.6 dB conforming to 86/188/EEC
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3 5...95 % without dripping water conforming to IEC 60068-2-3
Ambient air temperature for operation	-10...50 °C without derating
Ambient air temperature for storage	-25...70 °C
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m
Standards	EN 55011 class A group 2 EN 61800-3 environments 1 category C3 EN 61800-3 environments 2 category C3 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 60721-3-3 class 3C1 IEC 60721-3-3 class 3S2 UL Type 1
Product certifications	CSA C-Tick GOST NOM 117 UL
Marking	CE

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1038 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACh	Reference contains SVHC above the threshold - Go to CaP for more details Go to CaP for more details
Product environmental profile	Available
Product end of life instructions	Available

Contractual warranty

Warranty period	18 months