



## Kaubanduslik olek

Tootmine lõpetatud: 12 märts 2021

Teeninduse lõpp: 12 märts 2021

ATV71EXC5C16N4 pole välja vahetatud. Lisateabe saamiseks võtke ühendust klienditoega.

! Tootmisest maas

## Main

Range of product	Altivar 71 Plus
Product or component type	Variable speed drive
Device short name	ATV71 Plus
Product destination	Asynchronous motors Synchronous motors
Product specific application	Complex, high-power machines
Assembly style	In floor-standing enclosure compact version
Product composition	A switch and fast-acting semi-conductor fuses An IP65 remote mounting kit for graphic display terminal ATV71HC16N4D drive on heatsink Terminals/bars for motor connection A line choke A wired ready-assembled Sarel Spacial 6000 enclosure
EMC filter	Integrated
Network number of phases	3 phases
Rated supply voltage	380...415 V +/- 10 %
Supply voltage limits	342...457 V
Supply frequency	50...60 Hz +/- 5 %
Network frequency	47.5...63 Hz
Motor power kW	160 kW at 380...415 V
Line current	277 A for 400 V / 160 kW

## Complementary

Apparent power	190 kVA for 400 V / 160 kW
Prospective line I <sub>sc</sub>	100 kA with external fuses
Continuous output current	314 A at 2.5 kHz, 400 V / 160 kW
Maximum transient current	471 A 60 s / 160 kW
Speed drive output frequency	0...500 Hz
Nominal switching frequency	2.5 kHz
Switching frequency	2.5...8 kHz with derating factor 2...8 kHz adjustable
Speed range	1...100 in open-loop mode, without speed feedback
Speed accuracy	+/- 0.01 % of nominal speed in closed-loop mode with encoder feedback 0.2 T <sub>n</sub> to T <sub>n</sub>

	+/- 10 % of nominal slip without speed feedback 0.2 Tn to Tn
Torque accuracy	+/- 15 % in open-loop mode, without speed feedback +/- 5 % in closed-loop mode with encoder feedback
Transient overtorque	170 % of nominal motor torque +/- 10 % 60 s 220 % of nominal motor torque +/- 10 % 2 s
Braking torque	<= 150 % with braking or hoist resistor 30 % without braking resistor
Asynchronous motor control profile	Voltage/frequency ratio - Energy Saving, quadratic U/f Flux vector control with sensor, standard Flux vector control without sensor, standard Flux vector control without sensor, ENA (energy Adaptation) system Voltage/frequency ratio, 5 points Voltage/frequency ratio, 2 points Flux vector control without sensor, 2 points
Synchronous motor control profile	Vector control without sensor, standard Vector control with sensor, standard
Regulation loop	Adjustable PI regulator
Motor slip compensation	Not available in voltage/frequency ratio (2 or 5 points) Adjustable Automatic whatever the load Suppressable
Overvoltage category	Class 3 EN 50178
Local signalling	Operation function, status and configuration - mounted in the front door LCD display unit
Output voltage	<= power supply voltage
Isolation	Electrical between power and control
Type of cable for external connection	IEC cable 40 °C, copper 70 °C / PVC
Electrical connection	Terminal - 2.5 mm <sup>2</sup> / AWG 14 (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) entry from the bottom Terminal M10 - 2 x 150 mm <sup>2</sup> (L1/R, L2/S, L3/T) entry from the bottom Terminal M12 - 2 x 240 mm <sup>2</sup> (U/T1, V/T2, W/T3) entry from the bottom
Motor recommended cable cross section	3 (3 x 50) mm <sup>2</sup>
Short-circuit protection	400 A fuse protection gl - power supply upstream
Supply	External supply: 24 V DC (19...30 V), <1 A Internal supply for reference potentiometer: 10 V DC (10...11 V), <10 mA Internal supply: 24 V DC (21...27 V), <100 mA
Analogue input number	2
Analogue input type	AI2 software-configurable voltage: 0...10 V DC, 24 V max, impedance: 30000 Ohm, sampling time: 1.5...2.5 ms, resolution: 11 bits AI1-/AI1+ bipolar differential voltage +/- 10 V DC, 24 V max 1.5...2.5 ms 11 bits + sign AI2 software-configurable current 0...20 mA/4...20 mA 250 Ohm 1.5...2.5 ms 11 bits
Analogue output number	1
Analogue output type	Software-configurable voltage AO1) 0...10 V DC - 470 Ohm 1.5...2.5 ms 10 bits Software-configurable current AO1) 0...20 mA/4...20 mA - 500 Ohm 1.5...2.5 ms 10 bits
Discrete output number	2
Discrete output type	Configurable relay logic R1A, R1B, R1C)NO/NC - 6.5...7.5 ms - 100000 cycles Configurable relay logic R2A, R2B)NO - 6.5...7.5 ms - 100000 cycles
Minimum switching current	3 mA 24 V DC configurable relay logic)
Maximum switching current	5 A at 250 V AC on resistive load - cos phi = 1 (R1, R2) 5 A at 30 V DC on resistive load - L/R = 0 ms (R1, R2) 2 A at 250 V AC on inductive load - cos phi = 0.4 (R1, R2) 2 A at 30 V DC on inductive load - L/R = 7 ms (R1, R2)
Discrete input number	7
Discrete input type	Programmable LI1...LI5) 24 V DC <= 30 V level 1 PLC 3.5 kOhm 1.5...2.5 ms) Switch-configurable LI6) 24 V DC <= 30 V level 1 PLC 1.5 kOhm 1.5...2.5 ms) Safety input PWR) 24 V DC <= 30 V 1.5 kOhm
Discrete input logic	Positive logic (source) LI1...LI6), 0...5 V, 11...30 V Negative logic (sink) LI1...LI6), 16...30 V, 0...10 V Positive logic (source) PWR), 0...2 V, 17...30 V
Acceleration and deceleration ramps	S, U or customized Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 9000 s
Braking to standstill	By DC injection

Protection type	Against exceeding limit speed: drive Against input phase loss: drive Break on the control circuit drive Input phase breaks drive Line supply overvoltage: drive Line supply undervoltage: drive Overcurrent between output phases and earth: drive Overheating protection drive Overvoltages on the DC bus drive Short-circuit between motor phases drive Thermal protection drive Input phase breaks motor Power removal: motor Thermal protection motor
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Insulation resistance	> 1 mOhm 500 V DC for 1 minute to earth
Frequency resolution	Analog input: 0.024/50 Hz Display unit 0.1 Hz
Communication port protocol	CANopen Modbus
Connector type	1 RJ45 (on front face) for Modbus 1 RJ45 (on terminal) for Modbus Male SUB-D 9 on RJ45 for CANopen
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTU for Modbus
Transmission rate	4800 bps, 9600 bps, 19200 bps, 38.4 Kbps for Modbus on terminal 9600 bps, 19200 bps for Modbus on front face 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen
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 CANopen 1...247 Modbus
Method of access	Slave CANopen
Option card	Communication card for CC-Link Communication card DeviceNet Communication card Ethernet/IP Communication card Fipio Communication card for Interbus-S Communication card for Modbus Plus Communication card for Modbus/Uni-Telway Communication card Profibus DP Communication card for Profibus DP V1 Communication card Modbus TCP/IP Controller inside programmable card Basic I/O extension card Extended I/O extension card Encoder interface cards
Options for enclosure configuration	Safe standstill power circuit PTC relay power circuit Pt100 relay power circuit Insulation monitoring power circuit Design for IT networks power circuit External 230 V supply terminals power circuit Buffer voltage 24 V DC power supply power circuit External 24 V DC supply terminals power circuit Enclosure lighting power circuit Key switch (local/remote) power circuit Motor heating power circuit External motor fan power circuit Voltmeter power circuit Door handle for main switch power circuit Circuit breaker power circuit Line contactor for power circuit Ammeter power circuit Enclosure heating power circuit Motor choke power circuit Cable entry via the top power circuit Enclosure plinth power circuit

Braking unit for power circuit  
 Door handle for circuit breaker power circuit  
 Control terminals control circuit  
 Adaptor for 115 V logic inputs control circuit  
 Relay output C/O control circuit  
 Isolated amplifier control circuit

Operating position	Vertical +/- 10 degree
Colour of enclosure	Light grey (RAL 7035)
Height	2262 mm
Width	600 mm
Depth	642 mm
Net weight	360 kg

## Environment

Electromagnetic compatibility	1.2/50 $\mu$ s - 8/20 $\mu$ s surge immunity test level 3 IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
Pollution degree	3 EN/IEC 61800-5-1
IP degree of protection	IP54
Vibration resistance	0.6 gn 10...200 Hz)EN/IEC 60068-2-6 1.5 mm 3...10 Hz)EN/IEC 60068-2-6 3M3EN/IEC 60721-3-3
Shock resistance	4 gn 11 ms EN/IEC 60068-2-27 3M2 EN/IEC 60721-3-3
Noise level	65 dB 86/188/EEC
Environmental characteristic	Without condensation: 3C2 conforming to IEC 60721-3-3 Without condensation: 3K3 conforming to IEC 60721-3-3 Without condensation: 3S2 conforming to IEC 60721-3-3
Relative humidity	0...95 %
Ambient air temperature for operation	0...40 °C (without derating) 40...50 °C (with current derating of 1.2 % per °C)
Ambient air temperature for storage	-25...70 °C
Volume of cooling air	800 m3/h
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m
Standards	EN 55011 class A group 2 EN/IEC 61800-5-1 EN 61800-3 environments 2 category C3 EN 61800-3 environments 1 category C3 EN/IEC 61800-3
Product certifications	ATEX GOST
Marking	CE

## Packing Units

Pakk 1 kaal	340,000 kg
Pakk 1 kõrgus	21,600 dm
Pakk 1 laius	6,600 dm
Pakk 1 pikkus	6,160 dm

## Contractual warranty

Garantii	18 months
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