



Teknisk informasjon

Produktspekter	Altivar 71
Produkt eller type komponent	Frekvensomformer
Produktspesifikk applikasjon	Complex, high-power machines
Type komponent	ATV71
Motoreffekt kW	75 kW, 3 phases at 200...240 V
Motoreffekt hk	100 hp, 3 phases at 200...240 V
Maximum motor cable length	100 M skjermet kabel 200 m uskjermet kabel
Power supply voltage	200...240 V - 15...10 %
Antall faser i nettverket	3 faser
Nettstrøm	232 A for 240 V 3 phases 75 kW / 100 hp 271 A for 200 V 3 phases 75 kW / 100 hp
EMC filter	Uten EMC filter
Monteringsmåte	Med kjølelegeme
Variant	Forsterket versjon
Tilsynelatende effekt	96.4 kVA at 240 V 3 phases 75 kW / 100 hp
Maks kortslutningsnivå Isc	35 kA for 3 phases
Nominell utgangsstrøm	285 A på 2,5 kHz 230 V 3 faser 75 kW / 100 hp
Maksimale transient strøm	428 A for 60 s 3 faser 75 kW / 100 hp 470 A for 2 s 3 faser 75 kW / 100 hp
Output frequency	0,1...500 Hz
Nominell svitsjefrekvens	2,5 kHz
Switching frequency	2.5...8 kHz adjustable 2.5...8 kHz with derating factor
Motorkontroll metode	Sensorløs fluks vektor kontroll (SFVC) (spenning eller strøm vektor) ENA (Energy tilpasning) system for ubalanserte laster Fluks vektor kontroll (FVC) med sensor (strømvektor) Spennings- / frekvensforhold (2 eller 5 poeng)
Polarisasjonstype	No impedance for Modbus

Komplementær

Produsert i	Synchronous motors Asynkrone motorer
Power supply voltage limits	170...264 V
Power supply frequency	50...60 Hz - 5...5 %
Power supply frequency limits	47.5...63 Hz
Speed range	1...100 for asynchronous motor in open-loop mode, without speed feedback 1...1000 for asynchronous motor in closed-loop mode with encoder feedback 1...50 for synchronous motor in open-loop mode, without speed feedback
Hastighet nøyaktighet	+/- 0.01 % of nominal speed in closed-loop mode with encoder feedback 0.2 Tn to Tn +/- 10 % of nominal slip without speed feedback 0.2 Tn to Tn
Dreiemoment nøyaktighet	+/- 15 % in open-loop mode, without speed feedback +/- 5 % in closed-loop mode with encoder feedback
Forbigående overbelastning (vridmoment)	170 % of nominal motor torque +/- 10 % for 60 s every 10 minutes 220 % of nominal motor torque +/- 10 % for 2 s
Bremsemoment	<= 150 % with braking or hoist resistor 30 % without braking resistor

Synchronous motor control profile	Vector control without speed feedback
Reguleringsløyfe	Justerbar PI regulator
Motor slip kompensasjon	Suppressable Not available in voltage/frequency ratio (2 or 5 points) Justrbar Automatic whatever the load
Diagnostic	1 LED (red) for drive voltage
Utgangsspenning	<= strømforsyningsspenning
Isolasjon	Electrical between power and control
Type of cable for mounting in an enclosure	With a NEMA Type1 kit: 3 wire(s)UL 508 cable at 40 °C, copper 75 °C / PVC With an IP21 or an IP31 kit: 3 wire(s)IEC cable at 40 °C, copper 70 °C / PVC Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 70 °C / PVC Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 90 °C / XLPE/EPR
Elektrisk tilkobling	Terminal, clamping capacity: 2.5 mm ² , AWG 14 (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) Klemme, klem kapasitet: 2 x 100 mm ² (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) Klemme, klem kapasitet: 60 mm ² (PA, PB) Klemme, klem kapasitet: 2 x 150 mm ² (PC/-, PO, PA/+)
Tiltrekningsmoment	0.6 N.M (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) 24 N.M, 212 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 12 N.M, 106 lb.in (PA, PB) 41 N.m, 360 lb.in (PC/-, PO, PA/+)
Supply	Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 mA, protection type: overload and short-circuit protection Internal supply: 24 V DC (21...27 V), <200 mA, protection type: overload and short-circuit protection
Antall analoge innganger	2
Analogue input type	AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign AI2 software-configurable current: 0...20 mA, impedance: 242 Ohm, resolution 11 bits AI2 software-configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 11 bits
Input sampling time	2 Ms +/- 0.5 ms (AI1-/AI1+) - analog input(s) 2 Ms +/- 0.5 ms (AI2) - analog input(s) 2 Ms +/- 0.5 ms (LI1...LI5) - discrete input(s) 2 ms +/- 0.5 ms (LI6)if configured as logic input - discrete input(s)
Responstid	<= 100 ms in STO (Safe Torque Off) AO1 2 ms, tolerance +/- 0.5 ms for analog output(s) R1A, R1B, R1C 7 ms, tolerance +/- 0.5 ms for discrete output(s) R2A, R2B 7 ms, tolerance +/- 0.5 ms for discrete output(s)
Absolute accuracy precision	+/- 0.6 % (AI1-/AI1+) for a temperature variation 60 °C +/- 0.6 % (AI2) for a temperature variation 60 °C +/- 1 % (AO1) for a temperature variation 60 °C
Lineær feil	+/- 0.15 % of maximum value (AI1-/AI1+, AI2) +/- 0.2 % (AO1)
Analog utgangsnummer	1
Analog utgangstype	AO1 software-configurable logic output 10 V 20 mA AO1 software-configurable current 0...20 mA, impedance: 500 Ohm, resolution 10 bits AO1 software-configurable voltage 0...10 V DC, impedance: 470 Ohm, resolution 10 bits
Discrete output number	2
Digitale utganger	Configurable relay logic: (R1A, R1B, R1C) NO/NC - 100000 cycles Configurable relay logic: (R2A, R2B) NO - 100000 cycles
Minimum brytestrøm	3 mA at 24 V DC for configurable relay logic
Maximum svitsjestrøm	R1, R2: 2 A at 250 V AC inductive load, cos phi = 0.4 R1, R2: 2 A at 30 V DC inductive load, cos phi = 0.4 R1, R2: 5 A at 250 V AC resistive load, cos phi = 1 R1, R2: 5 A at 30 V DC resistive load, cos phi = 1
Discrete input number	7
Discrete input type	LI1...LI5: programmable 24 V DC with level 1 PLC, impedance: 3500 Ohm LI6: switch-configurable 24 V DC with level 1 PLC, impedance: 3500 Ohm LI6: switch-configurable PTC probe 0...6, impedance: 1500 Ohm PWR: safety input 24 V DC, impedance: 1500 Ohm conforming to ISO 13849-1 level d

Diskrét inngangs logikk	Negative logic (sink) (LI1...LI5), > 16 V (state 0), < 10 V (state 1) Positive logic (source) (LI1...LI5), < 5 V (state 0), > 11 V (state 1) Negative logic (sink) (LI6)if configured as logic input, > 16 V (state 0), < 10 V (state 1) Positive logic (source) (LI6)if configured as logic input, < 5 V (state 0), > 11 V (state 1)
Akselerasjons- og retardasjonsramper	S, U eller tilpasset Automatisk tilpasning av rampen hvis bremsekapasitet overskrides, ved hjelp av motstand Lineær justerbare separat fra 0,01 til 9000 s
Bremsing til stillstand	Ved DC-bremsing
Beskyttelsestype	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 Motor phase break: motor Power removal: motor Thermal protection: motor
Isolasjonsmotstand	> 1 mOhm 500 V DC for 1 minute to earth
Frekvensoppløsning	Analog input: 0.024/50 Hz Display unit: 0.1 Hz
Kommunikasjonsprotokoll	CANopen Modbus
Type konnektor	1 RJ45 (on front face) for Modbus 1 RJ45 (on terminal) for Modbus Male SUB-D 9 on RJ45 for CANopen
Fysisk interface	2-wire RS 485 for Modbus
Ramme for overføring	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
Datoformat	8 bits, 1 stop, even parity for Modbus on front face 8 bits, odd even or no configurable parity for Modbus on terminal
Antall adresser	1...127 for CANopen 1...247 for Modbus
Tilgangsmetode	Slave CANopen
Merking	CE
Driftsposisjon	Vertikal +/- 10 grader
Høyde	1022 mm
Dybde	377 mm
Bredde	360 mm
Vekt	106 kg
Funksjonskort	Communication card for CC-Link Controller inside programmable card Communication card for DeviceNet Communication card for EtherNet/IP Communication card for Fipio I/O extension card Communication card for Interbus-S Interface card for encoder Communication card for Modbus Plus Communication card for Modbus TCP Communication card for Modbus/Uni-Telway Overhead crane card Communication card for Profibus DP Communication card for Profibus DP V1

Miljø

Noise level	69.5 dB conforming to 86/188/EEC
Dielektrisk styrke	2830 V DC between earth and power terminals 4230 V DC between control and power terminals
Elektromagnetisk kompatibilitet	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 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
Standarder	UL Type 1 IEC 60721-3-3 class 3C2
Produktsertifikater	NOM 117 GOST C-Tick CSA UL
Forurensninggrad	2 i samsvar med EN/IEC 61800-5-1 3 conforming to UL 840
IP-grad	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 IP00 conforming to EN/IEC 60529 IP00 conforming to EN/IEC 61800-5-1 IP30 on side parts conforming to EN/IEC 60529 IP30 on side parts conforming to EN/IEC 61800-5-1 IP30 on the front panel conforming to EN/IEC 60529 IP30 on the front panel conforming to EN/IEC 61800-5-1
Vibrasjonsmotstand	0.6 gn (f= 10...200 Hz) conforming to EN/IEC 60068-2-6 1.5 mm peak to peak (f= 3...10 Hz) conforming to EN/IEC 60068-2-6
Støtmotstand	7 gn for 11 ms conforming to EN/IEC 60068-2-27
Relativ fuktighet	5...95 % without condensation conforming to IEC 60068-2-3 5...95 % without dripping water conforming to IEC 60068-2-3
Omgivelsestemperatur for drift	-10...50 °C (uten lastreduksjon)
Omgivelsestemperatur for lagring	-25...70 °C
Operating altitude	<= 1000 m uten lastreduksjon 1000...3000 m med dagens effektreduksjon 1% per 100 m

Packing Units

Forpakning 1 vekt	122,000 kg
Forpakning 1 høyde	5,300 dm
Forpakning 1 bredde	4,150 dm
Forpakning 1 lengde	12,300 dm

Offer Sustainability

Produktets miljøstatus	Green Premium miljømerket produkt
EU RoHS-direktiv	Proaktivt i samsvar (Produktet inngår ikke i EUs RoHS direktivet) EU RoHS-erklæring
Kvikksølvfri	Ja
Informasjon om RoHS-unntak	Ja
Kinas RoHS-forskrift	Kinas RoHS-Erklæring
Miljøinformasjon	Produktmiljøprofil
WEEE	Innen EU må produktet avhendes i henhold til bestemte regler for avfallshåndtering og aldri kastes som husholdningsavfall.

Garantiperiode

Garanti	18 months
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