

ATV71HD22N4

Frekv.pretvarač promj.brzine ATV71–22 kW–30
KS–480 V–filtrar EMC–graf.priklj



Osnovno

Serijska proizvodnja	Altivar 71
Vrsta proizvoda ili dijela	Frekventni pretvarač
Specifična namjena proizvoda	Kompleksno, visoko energetske mašine
Naziv komponente	ATV71
Snaga motora kW	22 kW, 3 faze pri 380...480 V
Snaga motora hp	30 hp, 3 faze pri 380...480 V
Maksimalna dužina kabela motora	100 m Ekranizirani kabel 200 m Neekranizirani kabel
"[Us] nazivni napon napajanja"	380...480 V - 15...10 %
Broj mrežnih faza	3 faze
Linjska struja	42 A 480 V 3 faze 22 kW / 30 hp 50 A 380 V 3 faze 22 kW / 30 hp
EMC filter	Integriran
Način sastavljanja	Sa radiatorom
Prividna snaga	32,9 kVA 380 V 3 faze 22 kW / 30 hp
Prospective line Isc	22 kA 3 faze
Nazivna izlazna struja	40 A 4 kHz 460 V 3 faze 22 kW / 30 hp 48 A 4 kHz 380 V 3 faze 22 kW / 30 hp
Maksimalna tranzijentna struja	72 A 60 s 3 faze 22 kW / 30 hp 79,2 A 2 s 3 faze 22 kW / 30 hp
Izlazna frekvencija	0,1...599 Hz
Nazivna frekvencija sklapanja	4 kHz
Frekvencija sklapanja	1...16 kHz podesivo 4...16 kHz s faktorom umanjenja nazivne vrijednosti
Profil upravljanja asinkronim motorom	ENA (Energy adaptation) sustav za neuravnotežene terete Upravljanje vektorom ulančenog magnetskog toka (FVC) sa strujnim senzorom Omjer napon/frekvencija (2 ili 5 točaka) Sensorless flux vector control (SFVC) (voltage or current vector)
Vrsta polarizacije	Nema impedancije za Modbus

Dodatno

Namjena proizvoda	Asinkroni motori Sinkroni motor
"limiti napona napajanja"	323...528 V
"frekvencija napajanja"	50...60 Hz - 5...5 %
Ograničena frekvencija napajanja	47.5...63 Hz
Opseg brzine	1...100 za asinkroni motor u radu s otvorenom petljom, bez povratne veze po brzini 1...1000 za asinkroni motor u načinu rada sa zatvorenom petljom s povratnom vezom enkodera 1...50 za sinkroni motor u radu s otvorenom petljom, bez povratne veze po brzini
Točnost brzine	+/- 0,01 % od nazivne brzine u načinu rada sa zatvorenom petljom s povratnom vezom enkodera 0.2 Tn to Tn +/- 10 % nazivno klizanje bez povratne veze po brzini 0.2 Tn to Tn
Točnos okretnog momenta	+/- 15 % u radu s otvorenom petljom, bez povratne veze po brzini +/- 5 % u načinu rada sa zatvorenom petljom s povratnom vezom enkodera

Tranzijentni okretni nadmoment	170 % +/- 10 % 60 s svakih 10 minuta 220 % +/- 10 % 2 s
Okretni moment kočenja	<= 150 % s kočnim ili dizaličnim otpornikom 30 % bez kočnog otpornika
Kontrolni profil sinkronog motora	Upravljanje vektorom bez povratne brzine
Petlja regulacije	Podesivi PI regulator
Kompenzacija klizanja motora	Nije dostupno u napon/frekvencija omjeru (2 i 5 točkama) Automatski bez obzira na teret Mogućnost potiskivanja Podesivo
Dijagnostika	Za napon pogona 1 LED (crvena)
Izlazni napon	<= napon napajanja
Izolacija	Električki između napajanja i upravljanja
"tip kabela"	Sa NEMA tip 1 priborom 3 kabel UL508 40 °C, bakar 75 °C / PVC Sa IP21 ili sa IP31 priborom 3 IEC kabel 40 °C, bakar 70 °C / PVC Bez montažnog pribora 1 IEC kabel 45 °C, bakar 70 °C / PVC Bez montažnog pribora 1 IEC kabel 45 °C, bakar 90 °C / XLPE/EPR
Električni priključak	Stezaljka, kapacitet stezanja: 2.5 mm ² , AWG 14 (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) Stezaljka, kapacitet stezanja: 50 mm ² , AWG 1/0 (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Okretni moment zatezanja	0,6 N.M AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) 12 N.m, 102.2 lb.in L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Napajanje	Unutarnje napajanje za referetni potencijometar (1 do 10 kOhm): 10.5 V DC +/- 5 % , <10 mA, tip zaštite: zaštita od preopterećenja i kratkog spoja Unutranje napajanje: 24 V DC (21...27 V), <200 mA, tip zaštite: zaštita od preopterećenja i kratkog spoja
Broj analognih ulaza	2
Vrsta analognog ulaza	AI1-/AI1+ naponski, bipolarni diferencijalni: +/- 10 V DC 24 V max, rezolucija 11bitova + predznak AI2 softverski podesiva struja: 0...20 mA, impedancija: 242 Ohm, rezolucija 11 bitova AI2 softverski podesiv napon: 0...10 V DC 24 V max, impedancija: 30000 Ohm, rezolucija 11 bitova
"trajanje uzorkovanja"	2 Ms +/- 0.5 ms AI1-/AI1+) - analogno 2 Ms +/- 0.5 ms AI2) - analogno 2 Ms +/- 0.5 ms LI1...LI5) - diskretno 2 ms +/- 0.5 ms LI6)ako je konfiguriran kao logički ulaz - diskretno
Vrijeme odziva	<=100 ms u STO (sigurnosni isključni moment) AO1 2 ms +/- 0.5 ms analogno R1A, R1B, R1C 7 ms +/- 0.5 ms diskretno R2A, R2B 7 ms +/- 0.5 ms diskretno
"točnost"	+/- 0.6 % AI1-/AI1+) za temperaturne varijacije od 60 °C +/- 0.6 % AI2) za temperaturne varijacije od 60 °C +/- 1 % AO1) za temperaturne varijacije od 60 °C
Greška linearnosti	+/- 0.15 % of maksimalne vrijednosti AI1-/AI1+, AI2) +/- 0.2 % AO1)
Broj analognih izlaza	1
Tip analognog izlaza	AO1 logički, softversko-konfigurabilni 10 V 20 mA AO1 softverski podesiva struja 0...20 mA 500 Ohm 10 bitova AO1 softverski podesivi napon 0...10 V DC 470 Ohm 10 bitova
Broj diskretnih izlaza	2
Tip diskretnog izlaza	Konfigurabilna relejna logika R1A, R1B, R1C) NO/NC - 100000 ciklus/a Konfigurabilna relejna logika R2A, R2B) NO - 100000 ciklus/a
Minimalna struja isklapanja	3 mA kod 24 V DC konfigurabilna relejna logika
Maksimalna struja sklapanja	R1, R2 2 A 250 V AC Induktivan, cos phi = 0,4 R1, R2 2 A 30 V DC Induktivan, cos phi = 0,4 R1, R2 5 A 250 V AC Ohmski, cos phi = 1 R1, R2 5 A 30 V DC Ohmski, cos phi = 1
Broj diskretnog ulaza	7
Logika diskretnog ulaza	LI1...LI5 programibilan 24 V DC Level 1 PLC 3500 Ohm LI6 sklopno podesiv 24 V DC Level 1 PLC 3500 Ohm LI6 sklopno podesiva PTC sonda 0...6 1500 Ohm PWR sigurnosni ulaz 24 V DC 1500 Ohm ISO 13849-1 level d
Logika diskretnog ulaza	Negativna logika (odvod) LI1...LI5), > 16 V, < 10 V Pozitivna logika (izvor) LI1...LI5), < 5 V, > 11 V Negativna logika (odvod) LI6)ako je konfiguriran kao logički ulaz, > 16 V, < 10 V Pozitivna logika (izvor) LI6)ako je konfiguriran kao logički ulaz, < 5 V, > 11 V

Vremeska karakteristika zaleta i zaustavljanja	Automatska prilagodba rampe ako je premašena prekidna moć, pomoću otpornika Linearna odvojeno podesiva od 0.01 do 9000 s S, U ili prilagođena karakteristika
Kočenje do zaustavljanja	Injekcija istosmjerne struje
Vrsta zaštite	Protiv prelaženja ograničenja brzine: pogon Protiv gubitka ulazne faze: pogon Prekidanje na upravljačkom krugu: pogon Prekidanje ulazne faze: pogon Prenapon linije napajanja: pogon Podnapon linije napajanja: pogon Nastruja između izlaznih faza i zemlje: pogon Zaštita od pregrijavanja: pogon Prenaponi na DC sabirnici: pogon Kratki spoj između faza motora: pogon Termalna zaštita: pogon Prekid faze motora: Za motore Odstranjivanje napajanja: Za motore Termalna zaštita: Za motore
Otpor izolacije	> 1 mOhm 500 V DC prema masi u trajanju od 1 minute
Rezolucija frekvencije	Analogni ulaz: 0.024/50 Hz Prikazna jedinica: 0,1 Hz
Protokol komunikacijskog priključka	CANopen Modbus
Tip priključka	1 RJ45 (na prednjoj strani) za Modbus 1 RJ45 (na stezaljci) za Modbus Muški SUB-D 9 na RJ45 za CANopen
Fizička smetnja	2 žični RS485 za Modbus
Okvir prijenosa	RTU za Modbus
Stopa prijenosa	4800 bps, 9600 bps, 19200 bps, 38.4 Kbps za Modbus na stezaljci 9600 bps, 19200 bps za Modbus na prednjoj strani 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps za CANopen
Promat datuma	8 bitova, 1 stop bit, parni paritet Modbus na prednjoj strani 8 bitova, neparni ili nekonfigurabilni paritet Modbus na stezaljci
Broj adresa	1...127 za CANopen 1...247 za Modbus
Metoda pristupa	Slave CANopen
Označavanje	CE
Pozicija rada	Vertikalno +/- 10 stupnja
Visina	420 mm
Dubina	236 mm
Širina	230 mm
Neto masa proizvoda	21 kg
Funkcionalnost	Puni
Specifična primjena	Ostale primjene
Opcijska kartica	Komunikacijska kartica za CC-Link Kontrola unutar programibilne kartice Komunikacijska kartica za DeviceNet Komunikacijska kartica za Ethernet IP Komunikacijska kartica za Fipio I/O ekstenzijska kartica Komunikacijska kartica za Interbus-S Sučelje kartice za enkoder Komunikacijska kartica za Modbus Plus Komunikacijska kartica za Modbus TCP Komunikacijska kartica za Modbus/Uni-Telway Kabel za dizalicu Komunikacijska kartica za Profibus DP Komunikacijska kartica za Profibus DP V1

Okolina

Nivo šuma	59,9 dB u sukladnosti sa 86/188/EEC
Dielektrična snaga	3535 V DC između stezaljke uzemljenja i stezaljki glavnih kruga 5092 V DC između upravljačkih stezaljki i stezaljki napajanja
Elektromagnetska kompatibilnost	1,2/50 µs - 8/20 µs test imunosti na strujni udar Razina 3 u sukladnosti sa IEC 61000-4-5 Test imunosti na provedene radio frekvencije Razina 3 u sukladnosti sa IEC 61000-4-6 Test imunosti na električni brzi tranzijent/nalet Nivo 4 u sukladnosti sa IEC 61000-4-4 Test imunosti na elektrostatsko pražnjenje Razina 3 u sukladnosti sa IEC 61000-4-2 Test imunosti na izračena radio-frekvencijska elektromagnetska polja Razina 3 u sukladnosti sa IEC 61000-4-3 Test imunosti na padove napona i prekide u sukladnosti sa IEC 61000-4-11
Standardi	EN/IEC 61800-5-1 EN 61800-3 environments 1 category C3 EN 61800-3 environments 2 category C3 UL tip 1 IEC 60721-3-3 class 3C1 EN 55011 class A group 2 EN/IEC 61800-3 IEC 60721-3-3 class 3S2
Certifikati proizvoda	UL[RETURN]NOM 117[RETURN]CSA[RETURN]GOST[RETURN]C-Tick
Stupanj onečišćenja	2 u sukladnosti sa EN/IEC 61800-5-1 3 u sukladnosti sa UL 840
IP stupanj zaštite	IP20
Otpornost na vibracije	1 gn (f= 13...200 Hz) u sukladnosti sa EN/IEC 60068-2-6 1.5 mm peak to peak (f= 3...13 Hz) u sukladnosti sa EN/IEC 60068-2-6
Otpornost na udarce	15 gn za 11 ms u sukladnosti sa EN/IEC 60068-2-27
Relativna vlažnost	5...95 % Bez kondenzacije u sukladnosti sa IEC 60068-2-3 5...95 % bez kapljica vode u sukladnosti sa IEC 60068-2-3
Okolna temperatura zraka potrebna za rad	-10...50 °C (Bez umanjenja nazivnih vrijednosti)
Okolišna temperatura zraka pri skladištenju	-25...70 °C
Radna visina	<= 1000 m Bez umanjenja nazivnih vrijednosti 1000...3000 m S umanjanjem nazivne vrijednosti struje od 1 % na 100 m

Broj pakirnih jedinica

Mjerna jedinica Paketa 1	PCE
Broj Jedinica u Paketu 1	1
Paket 1 Visina	38 cm
Paket 1 Širina	40 cm
Paket 1 Dužina	54 cm
Paket 1 Težina	19,5 kg

Održivost ponude

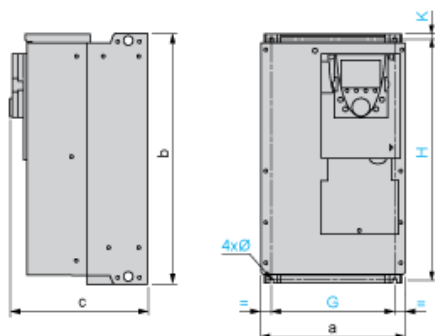
Status održive ponude	Proizvod Green Premium
Direktiva EU RoHS	Proaktivna sukladnost (proizvod izvan zakonskog okvira direktive EU RoHS) Izjava EU RoHS
Bez žive	Da
Propis RoHS za Kinu	Izjava RoHS Za Kinu
Informacije o RoHS izuzeću	Da
Profil cirkularnosti	Informacije O Kraju Vijeka Trajanja
WEEE	Proizvod se na tržištima EU mora odlagati u skladu sa specifičnim propisima o prikupljanju otpada; nikako se ne smije odlagati s komunalnim otpadom.

Ugovorno jamstvo

Jamstvo	18 months
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UL Type 1/IP 20 Drives

Dimensions without Option Card



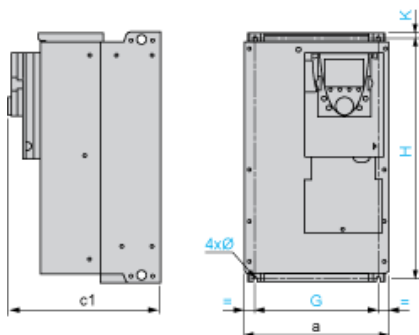
Dimensions in mm

a	b	c	G	H	K	Ø
240	420	236	206	403	11	6

Dimensions in in.

a	b	c	G	H	K	Ø
9.44	16.54	9.29	8.11	15.87	0.45	0.23

Dimensions with 1 Option Card (1)



Dimensions in mm

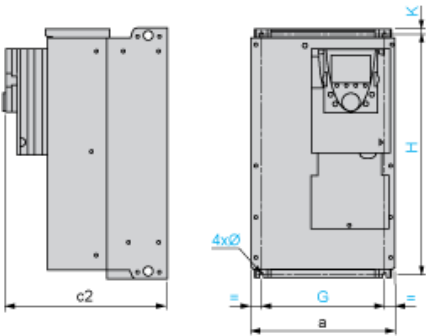
a	c1	G	H	K	Ø
240	259	206	403	11	6

Dimensions in in.

a	c1	G	H	K	Ø
9.44	10.20	8.11	15.87	0.45	0.23

(1) Option cards: I/O extension cards, communication cards or "Controller Inside" programmable card.

Dimensions with 2 Option Cards (1)



Dimensions in mm

a	c2	G	H	K	Ø
240	282	206	403	11	6

Dimensions in in.

a	c2	G	H	K	Ø
9.44	11.10	8.11	15.87	0.45	0.23

(1) Option cards: I/O extension cards, communication cards or "Controller Inside" programmable card.

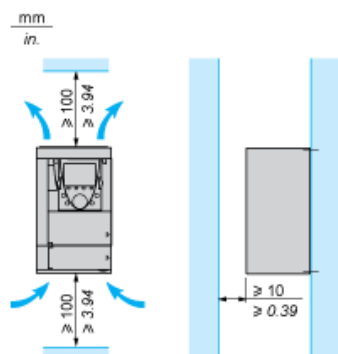
Mounting Recommendations

Depending on the conditions in which the drive is to be used, its installation will require certain precautions and the use of appropriate accessories.

Install the unit vertically:

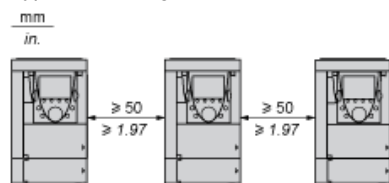
- Avoid placing it close to heating elements
- Leave sufficient free space to ensure that the air required for cooling purposes can circulate from the bottom to the top of the unit.

Clearance

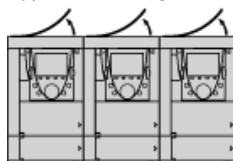


Mounting Types

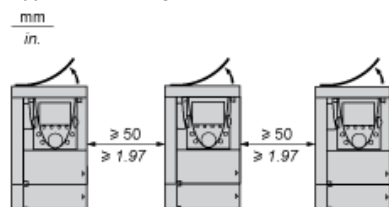
Type A Mounting



Type B Mounting



Type C Mounting



By removing the protective blanking cover from the top of the drive, the degree of protection for the drive becomes IP 20.

The protective blanking cover may vary according to the drive model (refer to the user guide).

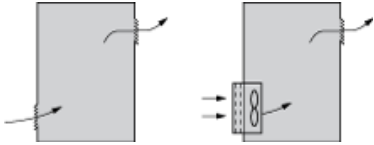
The protective blanking cover must be removed from ATV 71P...N4Z drives when they are mounted in a dust and damp proof enclosure.

Specific Recommendations for Mounting the Drive in an Enclosure

Ventilation

To ensure proper air circulation in the drive:

- Fit ventilation grilles.
- Ensure that there is sufficient ventilation. If there is not, install a forced ventilation unit with a filter. The openings and/or fans must provide a flow rate at least equal to that of the drive fans (refer to the product characteristics).



- Use special filters with IP 54 protection.
- Remove the blanking cover from the top of the drive.

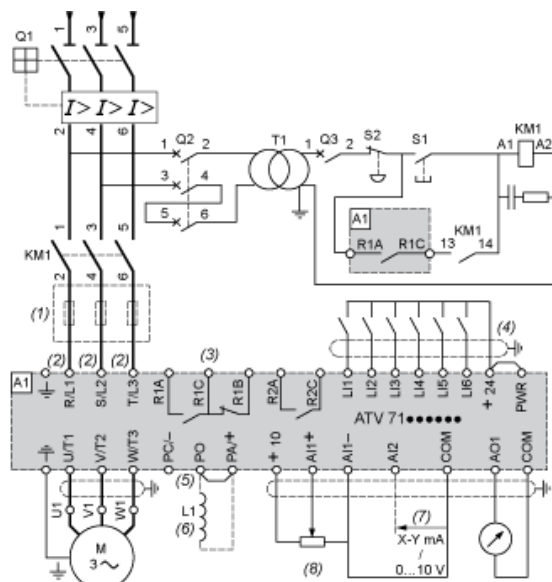
Dust and Damp Proof Metal Enclosure (IP 54)

The drive must be mounted in a dust and damp proof enclosure in certain environmental conditions: dust, corrosive gases, high humidity with risk of condensation and dripping water, splashing liquid, etc.

This enables the drive to be used in an enclosure where the maximum internal temperature reaches 50°C.

Wiring Diagram Conforming to Standards EN 954-1 Category 1, IEC/EN 61508 Capacity SIL1, in Stopping Category 0 According to IEC/EN 60204-1

Three-Phase Power Supply with Upstream Breaking via Contactor

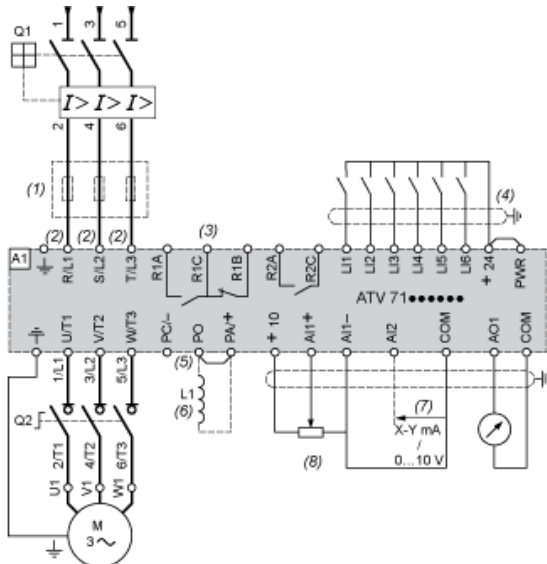


- A1 ATV71 drive
- KM1 Contactor
- L1 DC choke
- Q1 Circuit-breaker
- Q2 GV2 L rated at twice the nominal primary current of T1
- Q3 GB2CB05
- S1, XB4 B or XB5 A pushbuttons
- S2
- T1 100 VA transformer 220 V secondary
- (1) Line choke (three-phase); mandatory for ATV71HC11Y...HC63Y drives (except when a special transformer is used (12-pulse)).
- (2) For ATV71HC40N4 drives combined with a 400 kW motor, ATV71HC50N4 and ATV71HC40Y...HC63Y, refer to the power terminal connections diagram.
- (3) Fault relay contacts. Used for remote signalling of the drive status.
- (4) Connection of the common for the logic inputs depends on the positioning of the SW1 switch. The above diagram shows the internal power supply switched to the "source" position (for other connection types, refer to the user guide).
- (5) There is no PO terminal on ATV71HC11Y...HC63Y drives.
- (6) Optional DC choke for ATV71H...M3, ATV71HD11M3X...HD45M3X, ATV71•075N4...•D75N4 and ATV71P...N4Z drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it.
- (7) Software-configurable current (0...20 mA) or voltage (0...10 V) analog input.
- (8) Reference potentiometer.

All terminals are located at the bottom of the drive. Fit interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Wiring Diagram Conforming to Standards EN 954-1 Category 1, IEC/EN 61508 Capacity SIL1, in Stopping Category 0 According to IEC/EN 60204-1

Three-Phase Power Supply with Downstream Breaking via Switch Disconnecter



A1 ATV71 drive

L1 DC choke

Q1 Circuit-breaker

Q2 Switch disconnecter (Vario)

(1) Line choke (three-phase), mandatory for ATV71HC11Y...HC63Y drives (except when a special transformer is used (12-pulse)).

(2) For ATV71HC40N4 drives combined with a 400 kW motor, ATV71HC50N4 and ATV71HC40Y...HC63Y, refer to the power terminal connections diagram.

(3) Fault relay contacts. Used for remote signalling of the drive status.

(4) Connection of the common for the logic inputs depends on the positioning of the SW1 switch. The above diagram shows the internal power supply switched to the "source" position (for other connection types, refer to the user guide).

(5) There is no PO terminal on ATV71HC11Y...HC63Y drives.

(6) Optional DC choke for ATV71H...M3, ATV71HD11M3X...HD45M3X, ATV71•075N4...•D75N4 and ATV71P...N4Z drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it.

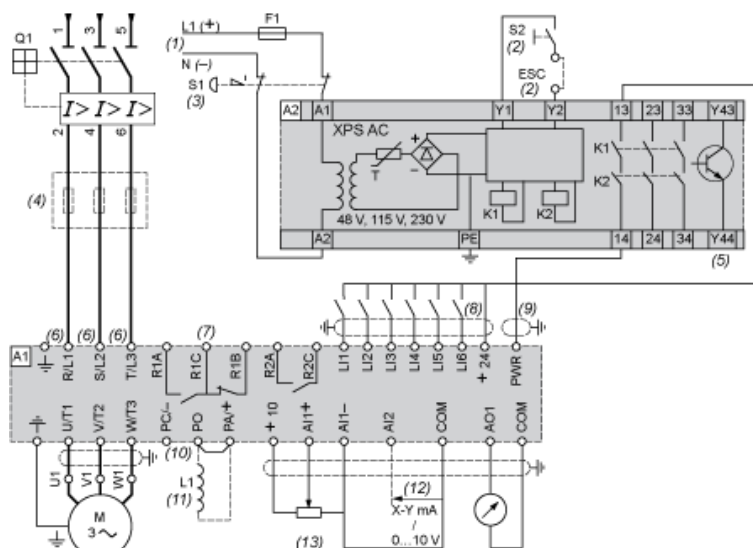
(7) Software-configurable current (0...20 mA) or voltage (0...10 V) analog input.

(8) Reference potentiometer.

All terminals are located at the bottom of the drive. Fit interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Wiring Diagram Conforming to Standards EN 954-1 Category 3, IEC/EN 61508 Capacity SIL2, in Stopping Category 0 According to IEC/EN 60204-1

Three-Phase Power Supply, Low Inertia Machine, Vertical Movement

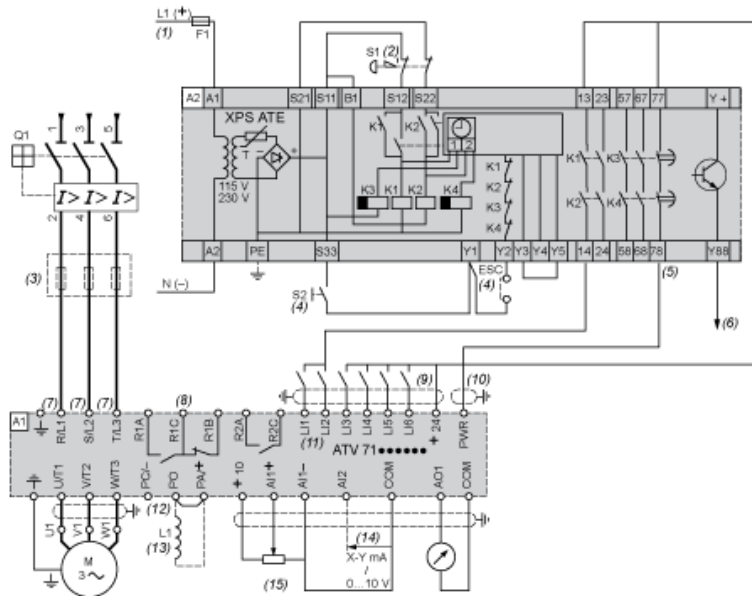


- A1 ATV71 drive
- A2 Preventa XPS AC safety module for monitoring emergency stops and switches. One safety module can manage the "Power Removal" function for several drives on the same machine. In this case, each drive must connect its PWR terminal to its + 24 V via the safety contacts on the XPS AC module. These contacts are independent for each drive.
- F1 Fuse
- L1 DC choke
- Q1 Circuit-breaker
- S1 Emergency stop button with 2 contacts
- S2 XB4 B or XB5 A pushbutton
- (1) Power supply: 24 Vdc or Vac, 48 Vac, 115 Vac, 230 Vac.
- (2) S2: resets XPS AC module on power-up or after an emergency stop. ESC can be used to set external starting conditions.
- (3) Requests freewheel stopping of the movement and activates the "Power Removal" safety function.
- (4) Line choke (three-phase), mandatory for and ATV71HC11Y...HC63Y drives (except when a special transformer is used (12-pulse)).
- (5) The logic output can be used to signal that the machine is in a safe stop state.
- (6) For ATV71HC40N4 drives combined with a 400 kW motor, ATV71HC50N4 and ATV71HC40Y...HC63Y, refer to the power terminal connections diagram.
- (7) Fault relay contacts. Used for remote signalling of the drive status.
- (8) Connection of the common for the logic inputs depends on the positioning of the SW1 switch. The above diagram shows the internal power supply switched to the "source" position (for other connection types, refer to the user guide).
- (9) Standardized coaxial cable, type RG174/U according to MIL-C17 or KX3B according to NF C 93-550, external diameter 2.54 mm / 0.09 in., maximum length 15 m / 49.21 ft. The cable shielding must be earthed.
- (10) There is no PO terminal on ATV71HC11Y...HC63Y drives.
- (11) Optional DC choke for ATV71H...M3, ATV71HD11M3X...HD45M3X, ATV71•075N4...•D75N4 and ATV71P...N4Z drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it.
- (12) Software-configurable current (0...20 mA) or voltage (0...10 V) analog input.
- (13) Reference potentiometer.

All terminals are located at the bottom of the drive. Fit interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Wiring Diagram Conforming to Standards EN 954-1 Category 3, IEC/EN 61508 Capacity SIL2, in Stopping Category 1 According to IEC/EN 60204-1

Three-Phase Power Supply, High Inertia Machine

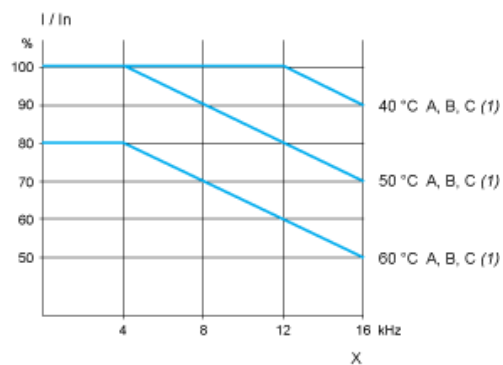


- A1 ATV71 drive
- A2 Preventa XPS ATE safety module for monitoring emergency stops and switches. One safety module can manage the "Power Removal"
- (5) safety function for several drives on the same machine. In this case the time delay must be adjusted on the drive controlling the motor that requires the longest stopping time. In addition, each drive must connect its PWR terminal to its + 24 V via the safety contacts on the XPS ATE module. These contacts are independent for each drive.
- F1 Fuse
- L1 DC choke
- Q1 Circuit-breaker
- S1 Emergency stop button with 2 N/C contacts
- S2 Run button
- (1) Power supply: 24 Vdc or Vac, 115 Vac, 230 Vac.
- (2) Requests controlled stopping of the movement and activates the "Power Removal" safety function.
- (3) Line choke (three-phase), mandatory for ATV71HC11Y...HC63Y drives (except when a special transformer is used (12-pulse)).
- (4) S2: resets XPS ATE module on power-up or after an emergency stop. ESC can be used to set external starting conditions.
- (5) For stopping times requiring more than 30 seconds in category 1, use a Preventa XPS AV safety module which can provide a maximum time delay of 300 seconds.
- (6) The logic output can be used to signal that the machine is in a safe state.
- (7) For ATV71HC40N4 drives combined with a 400 kW motor, ATV71HC50N4 and ATV71HC40Y...HC63Y, refer to the power terminal connections diagram.
- (8) Fault relay contacts. Used for remote signalling of the drive status.
- (9) Connection of the common for the logic inputs depends on the positioning of the SW1 switch. The above diagram shows the internal power supply switched to the "source" position (for other connection types, refer to the user guide).
- (10) Standardized coaxial cable, type RG174/U according to MIL-C17 or KX3B according to NF C 93-550, external diameter 2.54 mm/0.09 in., maximum length 15 m/49.21 ft. The cable shielding must be earthed.
- (11) Logic inputs LI1 and LI2 must be assigned to the direction of rotation: LI1 in the forward direction and LI2 in the reverse direction.
- (12) There is no PO terminal on ATV71HC11Y...HC63Y drives.
- (13) Optional DC choke for ATV71H...M3, ATV71HD11M3X...HD45M3X, ATV71•075N4...•D75N4 and ATV71P...N4Z drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it.
- (14) Software-configurable current (0...20 mA) or voltage (0...10 V) analog input.
- (15) Reference potentiometer.

All terminals are located at the bottom of the drive. Fit interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Derating Curves

The derating curves for the drive nominal current (I_n) depend on the temperature, the switching frequency and the mounting type. For intermediate temperatures (e.g. 55°C), interpolate between 2 curves.



X Switching frequency

(1) Mounting type

Above 50°C, the drive should be fitted with a control card fan kit.