Specification





variable speed drive ATV71 - 280kW-450HP - 480V - EMC filter-graphic terminal

ATV71HC28N4

! To be discontinued on: 01-Jan-2026

(!) Discontinued

Main

Range Of Product	Altivar 71						
Product Or Component Type	Variable speed drive						
Product Specific Application	Complex, high-power machines						
Component Name	ATV71						
Motor Power Kw	280 kW, 3 phases at 380480 V						
Motor Power Hp	450 hp, 3 phases at 380480 V						
Maximum Motor Cable Length	100 m shielded cable 200 m unshielded cable						
Power Supply Voltage	380480 V - 1510 %						
Network Number Of Phases	3 phases						
Line Current	396 A for 480 V 3 phases 280 kW / 450 hp 494 A for 380 V 3 phases 280 kW / 450 hp						
Emc Filter	Integrated						
Assembly Style	With heat sink						
Variant	Reinforced version						
Apparent Power	325.1 kVA at 380 V 3 phases 280 kW / 450 hp						
Prospective Line Isc	50 kA for 3 phases						
Nominal Output Current	550 A at 2.5 kHz 380 V 3 phases 280 kW / 450 hp 550 A at 2.5 kHz 460 V 3 phases 280 kW / 450 hp						
Maximum Transient Current	825 A for 60 s 3 phases 280 kW / 450 hp 907 A for 2 s 3 phases 280 kW / 450 hp						
Output Frequency	0.1500 Hz						
Nominal Switching Frequency	2.5 kHz						
Switching Frequency	2.58 kHz adjustable 2.58 kHz with derating factor						
Asynchronous Motor Control Profile	Voltage/frequency ratio (2 or 5 points) Flux vector control (FVC) with sensor (current vector) Sensorless flux vector control (SFVC) (voltage or current vector) ENA (Energy adaptation) system for unbalanced loads						
Type Of Polarization	No impedance for Modbus						

Complementary

Product Destination	Asynchronous motors Synchronous motors
Power Supply Voltage Limits	323528 V

Power Supply Frequency					
Davisa Comple Francisco de l'insite	5060 Hz - 55 %				
Power Supply Frequency Limits	47.563 Hz				
Speed Range	1100 for asynchronous motor in open-loop mode, without speed feedback 11000 for asynchronous motor in closed-loop mode with encoder feedback 150 for synchronous motor in open-loop mode, without speed feedback				
Speed Accuracy	+/- 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				
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 % for 60 s every 10 minutes 220 % of nominal motor torque +/- 10 % for 2 s				
Braking Torque	<= 150 % with braking or hoist resistor 30 % without braking resistor				
Synchronous Motor Control Profile	Vector control without speed feedback				
Regulation Loop	Adjustable PI regulator				
Motor Slip Compensation	Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) Adjustable Suppressable				
Diagnostic	1 LED (red) for drive voltage				
Output Voltage	<= power supply voltage				
Insulation	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				
Electrical Connection	Terminal, clamping capacity: 2.5 mm², AWG 14 (Al1-/Al1+, Al2, AO1, R1A, R1B, R1C, R2A, R2B, Ll1Ll6, PWR) Terminal, clamping capacity: 4 x 185 mm² (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) Terminal, clamping capacity: 4 x 185 mm² (PC/-, PA/+)				
	Terminal, clamping capacity. 4 x 165 mm. (PC/-, PA/+)				
Tightening Torque	0.6 N.m (Al1-/Al1+, Al2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+)				
	0.6 N.m (Al1-/Al1+, Al2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3)				
Tightening Torque Supply Analogue Input Number	0.6 N.m (Al1-/Al1+, Al2, AO1, R1A, R1B, R1C, R2A, R2B, Ll1Ll6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-				
Supply Analogue Input Number	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-circuit protection				
Supply Analogue Input Number Analogue Input Type	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-circuit protection 2 AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign AI2 software-configurable current: 020 mA, impedance: 242 Ohm, resolution 11 bits AI2 software-configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm,				
Supply Analogue Input Number Analogue Input Type	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-circuit protection 2 AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign AI2 software-configurable current: 020 mA, impedance: 242 Ohm, resolution 11 bits AI2 software-configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 11 bits 2 ms +/- 0.5 ms (AI1-/AI1+) - analog input(s) 2 ms +/- 0.5 ms (AI2) - analog input(s) 2 ms +/- 0.5 ms (LI1LI5) - discrete input(s)				
Supply Analogue Input Number Analogue Input Type Input Sampling Time	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-circuit protection 2 AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign AI2 software-configurable current: 020 mA, impedance: 242 Ohm, resolution 11 bits AI2 software-configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 11 bits 2 ms +/- 0.5 ms (AI1-/AI1+) - analog input(s) 2 ms +/- 0.5 ms (AI2) - analog input(s) 2 ms +/- 0.5 ms (LI6)if configured as logic input - discrete input(s) <= 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)				
Supply Analogue Input Number Analogue Input Type Input Sampling Time Response Time	0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1LI6, PWR) 41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) 41 N.m, 360 lb.in (PC/-, PA/+) 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 (2127 V), <200 mA, protection type: overload and short-circuit protection 2 AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign AI2 software-configurable current: 020 mA, impedance: 242 Ohm, resolution 11 bits AI2 software-configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 11 bits 2 ms +/- 0.5 ms (AI1-/AI1+) - analog input(s) 2 ms +/- 0.5 ms (AI2) - analog input(s) 2 ms +/- 0.5 ms (LI1LI5) - discrete input(s) 2 ms +/- 0.5 ms (LI6)if configured as logic input - discrete input(s) <= 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) +/- 0.6 % (AI1-/AI1+) for a temperature variation 60 °C +/- 0.6 % (AI2) for a temperature variation 60 °C +/- 0.6 % (AI2) for a temperature variation 60 °C				

AO1 software-configurable logic output 10 V 20 mA AO1 software-configurable current 020 mA, impedance: 500 Ohm, resolution 10 bits AO1 software-configurable voltage 010 V DC, impedance: 470 Ohm, resolution 10							
la ita							
bits							
2							
Configurable relay logic: (R1A, R1B, R1C) NO/NC - 100000 cycles Configurable relay logic: (R2A, R2B) NO - 100000 cycles							
3 mA at 24 V DC for configurable relay logic							
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							
7							
LI1LI5: 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 06, impedance: 1500 Ohm PWR: safety input 24 V DC, impedance: 1500 Ohm conforming to ISO 13849-1 level d							
Negative logic (sink) (Ll1Ll5), > 16 V (state 0), < 10 V (state 1) Positive logic (source) (Ll1Ll5), < 5 V (state 0), > 11 V (state 1) Negative logic (sink) (Ll6)if configured as logic input, > 16 V (state 0), < 10 V (state 1) Positive logic (source) (Ll6)if configured as logic input, < 5 V (state 0), > 11 V (state 1)							
Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 9000 s S, U or customized							
By DC injection							
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							
> 1 mOhm 500 V DC for 1 minute to earth							
Analog input: 0.024/50 Hz Display unit: 0.1 Hz							
Modbus CANopen							
1 RJ45 (on front face) for Modbus 1 RJ45 (on terminal) for Modbus Male SUB-D 9 on RJ45 for CANopen							
2-wire RS 485 for Modbus							
RTU for Modbus							
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							
8 bits, 1 stop, even parity for Modbus on front face 8 bits, odd even or no configurable parity for Modbus on terminal							
4 407 (OAN)							
1127 for CANopen 1247 for Modbus							

Marking	CE
Operating Position	Vertical +/- 10 degree
Height	1190 mm
Depth	377 mm
Width	595 mm
Net Weight	207 kg
Functionality	Full
Specific Application	Other applications
Option Card	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

Environment

Noise Level	77 dB conforming to 86/188/EEC						
Dielectric Strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals						
Electromagnetic Compatibility	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						
Standards	EN/IEC 61800-5-1 IEC 60721-3-3 class 3C2 EN 61800-3 environments 1 category C3 EN/IEC 61800-3 EN 55011 class A group 2 UL Type 1 EN 61800-3 environments 2 category C3						
Product Certifications	NOM 117 C-Tick GOST UL CSA						
Pollution Degree	2 conforming to EN/IEC 61800-5-1 3 conforming to UL 840						
Ip Degree Of Protection	IP20						
Vibration Resistance	0.6 gn (f= 10200 Hz) conforming to EN/IEC 60068-2-6 1.5 mm peak to peak (f= 310 Hz) conforming to EN/IEC 60068-2-6						
Shock Resistance	4 gn for 11 ms conforming to EN/IEC 60068-2-27						
Relative Humidity	595 % without condensation conforming to IEC 60068-2-3 595 % without dripping water conforming to IEC 60068-2-3						
Ambient Air Temperature For Operation	-1050 °C (without derating)						
Ambient Air Temperature For Storage	-2570 °C						

Packing Units

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Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	53.0 cm
Package 1 Width	63.0 cm
Package 1 Length	124.5 cm
Package 1 Weight	200.0 kg
Unit Type Of Package 2	CAR
Number Of Units In Package 2	1
Package 2 Height	53.0 cm
Package 2 Width	64.5 cm
Package 2 Length	125.0 cm
Package 2 Weight	200.0 kg
Unit Type Of Package 3	PAL
Number Of Units In Package 3	1
Package 3 Height	92.0 cm
Package 3 Width	85.0 cm
Package 3 Length	135.0 cm
Package 3 Weight	225.0 kg

Contractual warranty

Warranty 18 months



Green PremiumTM **label** is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

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Guide to assess a product's sustainability >



RoHS/REACh

Well-being performance



Mercury Free



Rohs Exemption Information

Yes

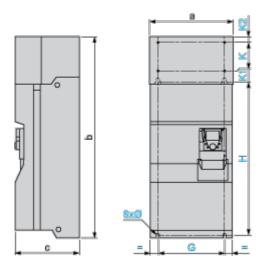
Certifications & Standards

Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)				
	EU RoHS Declaration				
China Rohs Regulation	China RoHS declaration				
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins				

Dimensions Drawings

UL Type 1/IP 20 Drives

Dimensions with or without 1 Option Card (1)



Dimensions in mm

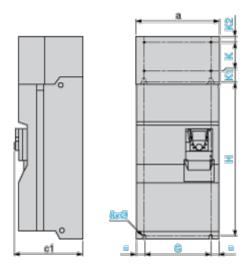
2									
а	b	С	G	Н	K	K1	K2	Ø	
595	1190	377	540	920	150	75	30	11.5	

Dimensions in in.

а	b	С	G	Н	K	K1	K2	Ø
23.43	46.85	14.84	21.26	36.22	5.90	2.95	1.18	0.45

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

Dimensions with 2 Option Cards (1)



Dimensions in mm

а	с1	G	Н	K	K1	K2	Ø
595	392	540	920	150	75	30	11.5

Dimensions in in.

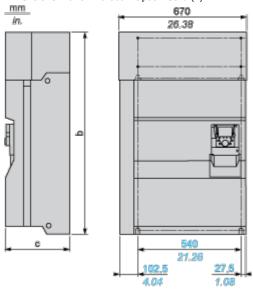
ATV71HC28N4

а	c1	G	Н	K	K1	K2	Ø
23.43	15.43	21.26	36.22	5.90	2.95	1.18	0.45

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

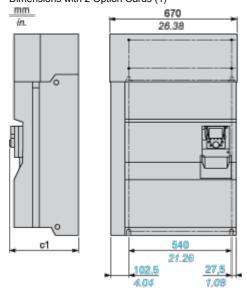
Drive with Braking Unit VW3A7101

Dimensions with or without 1 Option Card (1)



b in mm	c in mm	b in in.	c in in.
1190	377	46.85	14.84

(1) Option cards: I/O extension cards, communication cards or "Controller Inside" programmable card. Dimensions with 2 Option Cards (1)



c1 in mm	c1 in in.	
392	15.43	

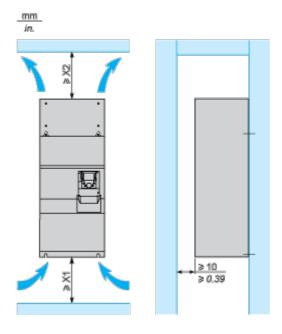
(1) Option cards: I/O extension cards, communication cards or "Controller Inside" programmable card.

ATV71HC28N4

Mounting and Clearance

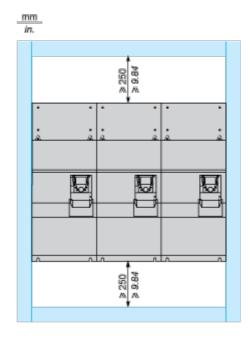
Mounting Recommendations

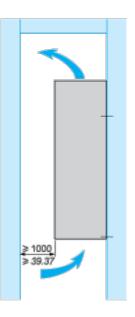
Clearance



X1 in mm	X2 in mm	X1 in in.	X2 in in.
150	200	5.91	7.87

These drives can be mounted side by side, observing the following mounting recommendations:





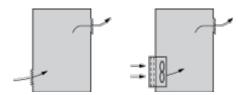
ATV71HC28N4

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)

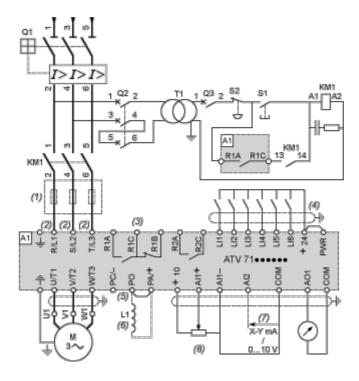
The drive must be mounted in a dust and damp proof enclosure in certain environmental conditions: dust, corrosive gases, high humidity with risk of condensation and dripping water, splashing liquid, etc.

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

Connections and Schema

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

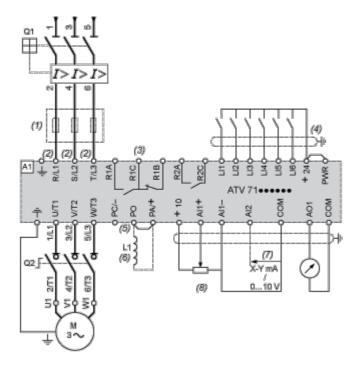
KM1 Contactor

- L1 DC choke
- Q1 Circuit-breaker
- Q2 GV2 L rated at twice the nominal primary current of T1
- Q3 GB2CB05
- S1, S2 XB4 B or XB5 A pushbuttons
- 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.

Product datasheet ATV71HC28N4

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

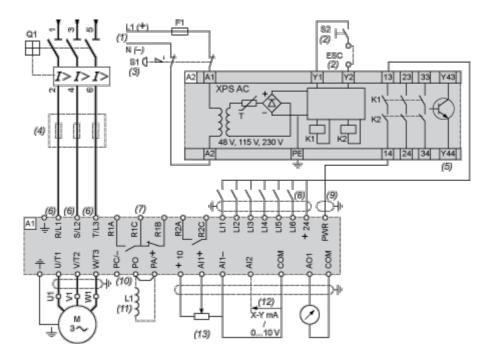
Three-Phase Power Supply with Downstream Breaking via Switch Disconnector



- A1 ATV71 drive
- L1 DC choke
- Q1 Circuit-breaker
- Q2 Switch disconnector (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.

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,

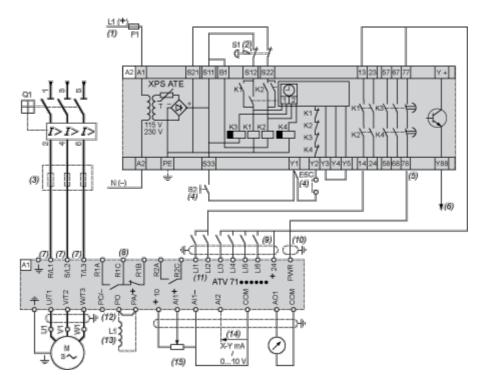
ATV71HC28N4

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.

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 (5) Preventa XPS ATE safety module for monitoring emergency stops and switches. One safety module can manage the "Power Removal" 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

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- (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.

ATV71HC28N4

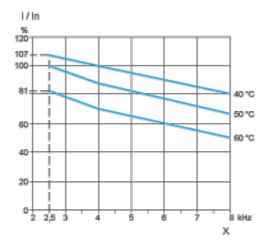
- (9) Connection of the common for the logic inputs depends on the positioning of the SW1 switch. The above diagram shows the internal power supply switched to the "source" position (for other connection types, refer to the user guide).
- (10) Standardized coaxial cable, type RG174/U according to MIL-C17 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.

ATV71HC28N4

Performance Curves

Derating Curves

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



X Switching frequency