# Product datasheet

Specifications



## Altivar 61 drive 350hp 400/480 3ph

ATV61HC22N4

Discontinued on: 31 Dec 2020

To be end-of-service on: 31 Dec 2028

**EAN Code: 3389118086418**

Discontinued

## Main

| | |
|---|---|
| **Range of product** | Altivar 61 |
| **Product or component type** | Variable speed drive |
| **Product specific application** | Pumping and ventilation machine |
| **Component name** | ATV61 |
| **Motor power kW** | 200 kW, 3 phases at 380...480 V<br>220 kW, 3 phases at 380...480 V |
| **Motor power hp** | 300 hp, 3 phases at 380...480 V<br>350 hp, 3 phases at 380...480 V |
| **power supply voltage** | 380...480 V - 15...10 % |
| **supply number of phases** | 3 phases |
| **Line current** | 331 A for 480 V 3 phases 200 kW / 300 hp<br>357 A for 380 V 3 phases 200 kW / 300 hp<br>383 A for 480 V 3 phases 220 kW / 350 hp<br>396 A for 380 V 3 phases 220 kW / 350 hp |
| **EMC filter** | Level 3 EMC filter |
| **Assembly style** | With heat sink |
| **Apparent power** | 235 kVA at 380 V 3 phases 200 kW / 300 hp<br>260.6 kVA at 380 V 3 phases 220 kW / 350 hp |
| **maximum prospective line Isc** | 50 kA for 3 phases |
| **Maximum transient current** | 512.4 A for 60 s, 3 phases |
| **Nominal switching frequency** | 2.5 kHz |
| **Switching frequency** | 2...8 kHz adjustable<br>2.5...8 kHz with derating factor |
| **asynchronous motor control** | Voltage/frequency ratio, 2 points<br>Flux vector control without sensor, standard<br>Voltage/frequency ratio - Energy Saving, quadratic U/f<br>Voltage/frequency ratio, 5 points |
| **Synchronous motor control profile** | Vector control without sensor, standard |
| **Communication port protocol** | CANopen<br>Modbus |
| **Type of polarization** | No impedance for Modbus |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

| | |
|---|---|
| **Option card** | Communication card for APOGEE FLN<br>Communication card for BACnet<br>Communication card for CC-Link<br>Controller inside programmable card<br>Communication card for DeviceNet<br>Communication card for EtherNet/IP<br>Communication card for Fipio<br>I/O extension card<br>Communication card for Interbus-S<br>Communication card for LonWorks<br>Communication card for METASYS N2<br>Communication card for Modbus Plus<br>Communication card for Modbus TCP<br>Communication card for Modbus/Uni-Telway<br>Multi-pump card<br>Communication card for Profibus DP<br>Communication card for Profibus DP V1 |

## Complementary

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|---|---|
| **Product destination** | Asynchronous motors<br>Synchronous motors |
| **power supply voltage limits** | 323…528 V |
| **power supply frequency** | 50...60 Hz - 5...5 % |
| **power supply frequency limits** | 47.5...63 Hz |
| **Continuous output current** | 427 A at 2.5 kHz, 380 V - 3 phases<br>427 A at 2.5 kHz, 460 V - 3 phases |
| **Output frequency** | 0.1…500 Hz |
| **Speed range** | 1…100 in open-loop mode, without speed feedback |
| **Speed accuracy** | +/- 10 % of nominal slip 0.2 Tn to Tn without speed feedback |
| **Torque accuracy** | +/- 15 % in open-loop mode, without speed feedback |
| **Transient overtorque** | 130 % of nominal motor torque +/- 10 % for 60 s |
| **Braking torque** | <= 125 % with braking resistor<br>30 % without braking resistor |
| **Regulation loop** | Frequency PI regulator |
| **Motor slip compensation** | Automatic whatever the load<br>Can be suppressed<br>Not available in voltage/frequency ratio (2 or 5 points)<br>Adjustable |
| **diagnostic** | 1 LED (red) for drive voltage |
| **Output voltage** | <= power supply voltage |
| **electrical isolation** | Between power and control terminals |
| **type of cable for mounting in an enclosure** | With an IP21 or an IP31 kit: 3 wire(s)IEC cable at 40 °C, copper 70 °C / PVC<br>With UL Type 1 kit: 3 wire(s)UL 508 cable at 40 °C, copper 75 °C / PVC<br>Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 70 °C / PVC<br>Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 90 °C / XLPE/EPR |
| **Electrical connection** | Terminal 2.5 mm² / 14 AWG (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR)<br>Terminal 120 mm² / 250 kcmil (PA, PB)<br>Terminal 2 x 150 mm² / 2 x 350 kcmil (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3)<br>Terminal 2 x 150 mm² / 2 x 350 kcmil (PC/-, PO, PA/+) |
| **Tightening torque** | 0.6 N.m (AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR)<br>41 N.m, 360 lb.in (PC/-, PO, PA/+)<br>24 N.m, 212 lb.in (PA, PB)<br>41 N.m, 360 lb.in (L1/R, L2/S, L3/T, U/T1, V/T2, W/T3) |
| **Supply** | Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC, +/- 5 %, <10 mA with overload and short-circuit protection<br>Internal supply: 24 V DC (21…27 V), <200 mA with overload and short-circuit protection<br>External supply: 24 V DC (19…30 V) |

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|---|---|
| **Analogue input number** | 2 |
| **Analogue input type** | AI1-/AI1+ bipolar differential voltage: +/- 10 V DC 24 V max, resolution 11 bits + sign<br>AI2 software-configurable current: 0...20 mA, impedance: 242 Ohm, resolution 11 bits<br>AI2 software-configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 11 bits |
| **sampling time** | 2 ms +/- 0.5 ms (AI1-/AI1+) - analog input<br>2 ms +/- 0.5 ms (AI2) - analog input<br>2 ms +/- 0.5 ms (AO1) - analog output<br>2 ms +/- 0.5 ms (LI1...LI5) - discrete input<br>2 ms +/- 0.5 ms (LI6)if configured as logic input - discrete input |
| **absolute accuracy precision** | +/- 0.6 % (AI1-/AI1+) for a temperature variation 60 °C<br>+/- 0.6 % (AI2) for a temperature variation 60 °C<br>+/- 1 % (AO1) for a temperature variation 60 °C |
| **Linearity error** | +/- 0.15 % of maximum value (AI1-/AI1+)<br>+/- 0.15 % of maximum value (AI2)<br>+/- 0.2 % (AO1) |
| **Analogue output number** | 1 |
| **Analogue output type** | AO1 software-configurable current, analogue output range 0...20 mA, impedance: 500 Ohm, resolution 10 bits<br>AO1 software-configurable voltage, analogue output range 0...10 V DC, impedance: 470 Ohm, resolution 10 bits<br>AO1 software-configurable logic output 10 V, 20 mA |
| **Discrete output number** | 2 |
| **Discrete output type** | Configurable relay logic: (R1A, R1B, R1C) NO/NC - 100000 cycles<br>Configurable relay logic: (R2A, R2B) NO - 100000 cycles |
| **maximum response time** | <= 100 ms in STO (Safe Torque Off)<br>R1A, R1B, R1C <= 7 ms, tolerance +/- 0.5 ms<br>R2A, R2B <= 7 ms, tolerance +/- 0.5 ms |
| **Minimum switching current** | 3 mA at 24 V DC for configurable relay logic |
| **Maximum switching current** | R1, R2: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms<br>R1, R2: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms<br>R1, R2: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms<br>R1, R2: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms |
| **Discrete input number** | 7 |
| **Discrete input type** | Programmable (LI1...LI5)24 V DC (<= 30 V), with level 1 PLC - 3500 Ohm<br>Switch-configurable (LI6)24 V DC (<= 30 V), with level 1 PLC - 3500 Ohm<br>Switch-configurable PTC probe (LI6)0…6 probes - 1500 Ohm<br>Safety input (PWR)24 V DC (<= 30 V) - 1500 Ohm |
| **Discrete input logic** | Negative logic (sink) (LI1...LI5), > 16 V (state 0), < 10 V (state 1)<br>Positive logic (source) (LI1...LI5), < 5 V (state 0), > 11 V (state 1)<br>Negative logic (sink) (LI6)if configured as logic input, > 16 V (state 0), < 10 V (state 1)<br>Positive logic (source) (LI6)if configured as logic input, < 5 V (state 0), > 11 V (state 1) |
| **Acceleration and deceleration ramps** | Automatic adaptation of ramp if braking capacity exceeded, by using resistor<br>S, U or customized<br>Linear adjustable separately from 0.01 to 9000 s |
| **Braking to standstill** | By DC injection |
| **Protection type** | Against exceeding limit speed: drive<br>Against input phase loss: drive<br>Break on the control circuit: drive<br>Input phase breaks: drive<br>Line supply overvoltage: drive<br>Line supply undervoltage: drive<br>Overcurrent between output phases and earth: drive<br>Overheating protection: drive<br>Overvoltages on the DC bus: drive<br>Power removal: drive<br>Short-circuit between motor phases: drive<br>Thermal protection: drive<br>Motor phase break: motor<br>Power removal: motor<br>Thermal protection: motor |

| | |
|---|---|
| **Insulation resistance** | > 1 mOhm 500 V DC for 1 minute to earth |
| **Frequency resolution** | Analog input: 0.024/50 Hz<br>Display unit: 0.1 Hz |
| **Connector type** | 1 RJ45 (on front face) for Modbus<br>1 RJ45 (on terminal) for Modbus<br>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<br>9600 bps, 19200 bps for Modbus on front face<br>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<br>8 bits, odd even or no configurable parity for Modbus on terminal |
| **Number of addresses** | 1…127 for CANopen<br>1…247 for Modbus |
| **Method of access** | Slave CANopen |
| **Marking** | CE |
| **Operating position** | Vertical +/- 10 degree |
| **Net weight** | 110 kg |
| **Width** | 440 mm |
| **Height** | 1190 mm |
| **Depth** | 377 mm |

## Environment

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|---|---|
| **Noise level** | 66 dB conforming to 86/188/EEC |
| **Dielectric strength** | 3535 V DC between earth and power terminals<br>5092 V DC between control and power terminals |
| **Electromagnetic compatibility** | Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3<br>Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 |
| **Standards** | IEC 61800-3<br>IEC 60721-3-3 class 3C2<br>IEC 61800-3 environments 2 category C3<br>EN 55011 class A group 2<br>IEC 61800-3 environments 1 category C3<br>UL Type 1<br>IEC 61800-5-1 |
| **Product certifications** | GOST<br>CSA<br>UL<br>NOM 117<br>C-Tick<br>DNV |
| **Pollution degree** | 3 conforming to IEC 61800-5-1<br>3 conforming to UL 840 |
| **degree of proctection** | IP41 on upper part conforming to IEC 60529<br>IP41 on upper part conforming to IEC 61800-5-1<br>IP54 on lower part conforming to IEC 60529<br>IP54 on lower part conforming to IEC 61800-5-1<br>IP00 conforming to IEC 60529<br>IP00 conforming to IEC 61800-5-1<br>IP30 on side parts conforming to IEC 60529<br>IP30 on side parts conforming to IEC 61800-5-1<br>IP30 on the front panel conforming to IEC 60529<br>IP30 on the front panel conforming to IEC 61800-5-1 |

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|---|---|
| **Vibration resistance** | 0.6 gn (f= 10…200 Hz) conforming to IEC 60068-2-6<br>1.5 mm peak to peak (f= 3…10 Hz) conforming to IEC 60068-2-6 |
| **Shock resistance** | 4 gn for 11 ms conforming to IEC 60068-2-27 |
| **Relative humidity** | 5…95 % without condensation conforming to IEC 60068-2-3<br>5…95 % without dripping water conforming to IEC 60068-2-3 |
| **Ambient air temperature for operation** | -10…45 °C (without derating)<br>45…60 °C (with derating factor) |
| **Ambient air temperature for storage** | -25…70 °C |
| **Operating altitude** | <= 1000 m without derating<br>1000...3000 m with current derating 1 % per 100 m |

## Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 38.5 cm |
| **Package 1 Width** | 128.5 cm |
| **Package 1 Length** | 47.6 cm |
| **Package 1 Weight** | 154.0 kg |

## Logistical informations

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|---|---|
| **Country of origin** | FR |

## Contractual warranty

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|---|---|
| **Warranty (in months)** | 18 |

## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

### Environmental footprint

| | |
|---|---|
| Environmental Disclosure | Product Environmental Profile |

## Use Better

### Materials and Substances

| | |
|---|---|
| EU RoHS Directive | Compliant |

## Use Again

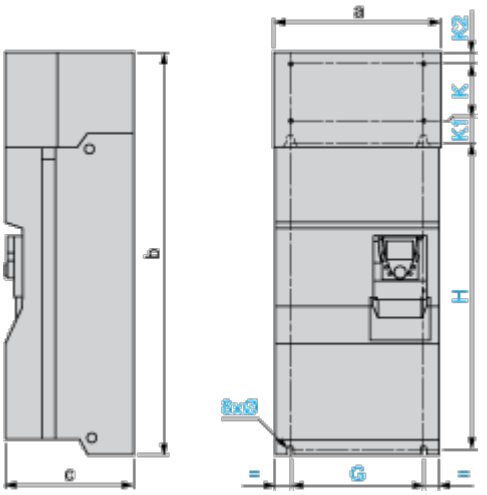
### Repack and remanufacture

| | |
|---|---|
| WEEE Label | 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

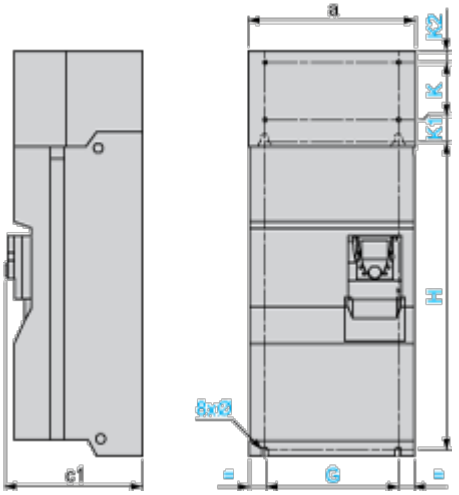
| a | b | c | G | H | K | K1 | K2 | Ø |
|---|---|---|---|---|---|---|---|---|
| 440 | 1190 | 377 | 350 | 920 | 150 | 75 | 30 | 11.5 |

Dimensions in in.

| a | b | c | G | H | K | K1 | K2 | Ø |
|---|---|---|---|---|---|---|---|---|
| 17.32 | 46.85 | 14.84 | 13.78 | 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

| a | c1 | G | H | K | K1 | K2 | Ø |
|---|---|---|---|---|---|---|---|
| 440 | 392 | 350 | 920 | 150 | 75 | 30 | 11.5 |

Dimensions in in.

| a | c1 | G | H | K | K1 | K2 | Ø |
|---|---|---|---|---|---|---|---|
| 17.32 | 15.43 | 13.78 | 36.22 | 5.90 | 2.95 | 1.18 | 0.45 |

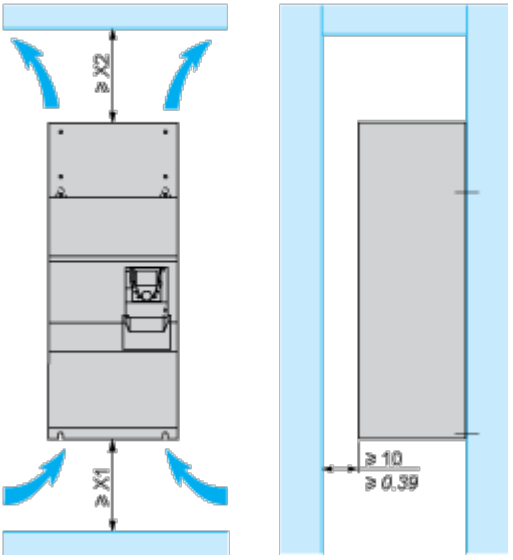
(1) Option cards: I/O extension cards, communication cards or "Controller Inside" programmable card.

Mounting and Clearance

## Mounting Recommendations

### Clearance

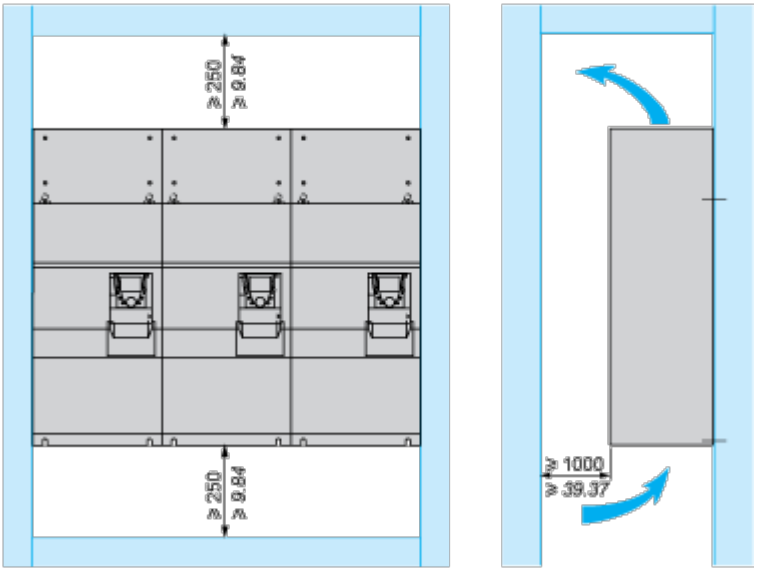
mm
in.




| X1 in mm | X2 in mm | X1 in in. | X2 in in. |
|---|---|---|---|
| 150 | 150 | 5.91 | 5.91 |

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

mm
in.

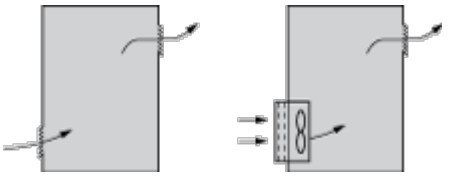


## Specific Recommendations for Mounting the Drive in an Enclosure

### 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.

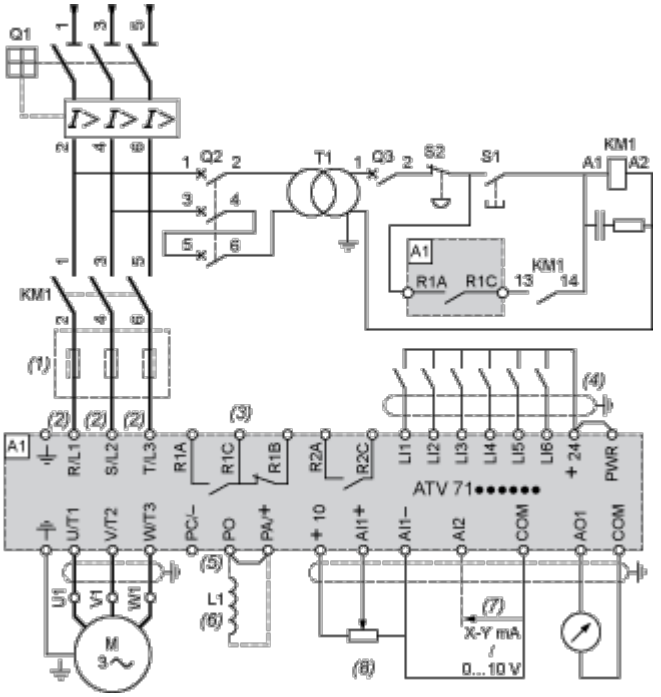
### Dust and Damp Proof Metal Enclosure (IP 54)

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 ATV61 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 ATV61HC11Y…HC80Y drives (except when a special transformer is used (12-pulse)).

(2) For ATV61HC50N4, ATV61HC63N4 and ATV61HC50Y…HC80Y drives, 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 ATV61HC11Y…HC80Y drives.

(6) Optional DC choke for ATV61H•••M3, ATV61HD11M3X…HD45M3X and ATV61H075N4…HD75N4 drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV61HD55M3X…HD90M3X, ATV61HD90N4…HC63N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it. For ATV61W•••N4 and ATV61W•••N4C drives, the DC choke is integrated.

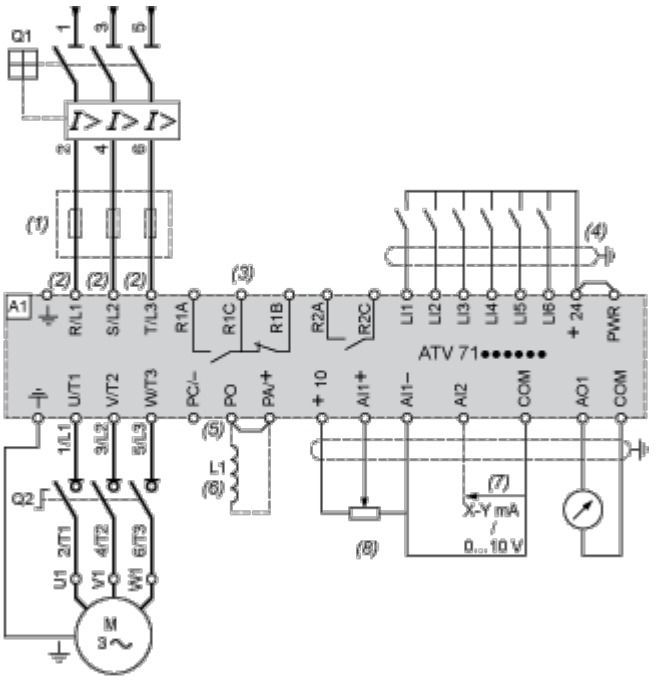
(7) Software-configurable current (0…20 mA) or voltage (0…10 V) analog input.

(8) Reference potentiometer.

NOTE: 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 Disconnector




A1 ATV61 drive

L1 DC choke

Q1 Circuit-breaker

Q2 Switch disconnector (Vario)

(1) Line choke (three-phase), mandatory for ATV61HC11Y…HC80Y drives (except when a special transformer is used (12-pulse)).

(2) For ATV61HC50N4, ATV61HC63N4 and ATV61HC50Y…HC80Y drives, 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 ATV61HC11Y…HC80Y drives.

(6) Optional DC choke for ATV61H•••M3, ATV61HD11M3X…HD45M3X and ATV61H075N4…HD75N4 drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV61HD55M3X…HD90M3X, ATV61HD90N4…HC63N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it. For ATV61W•••N4 and ATV61W•••N4C drives, the DC choke is integrated.

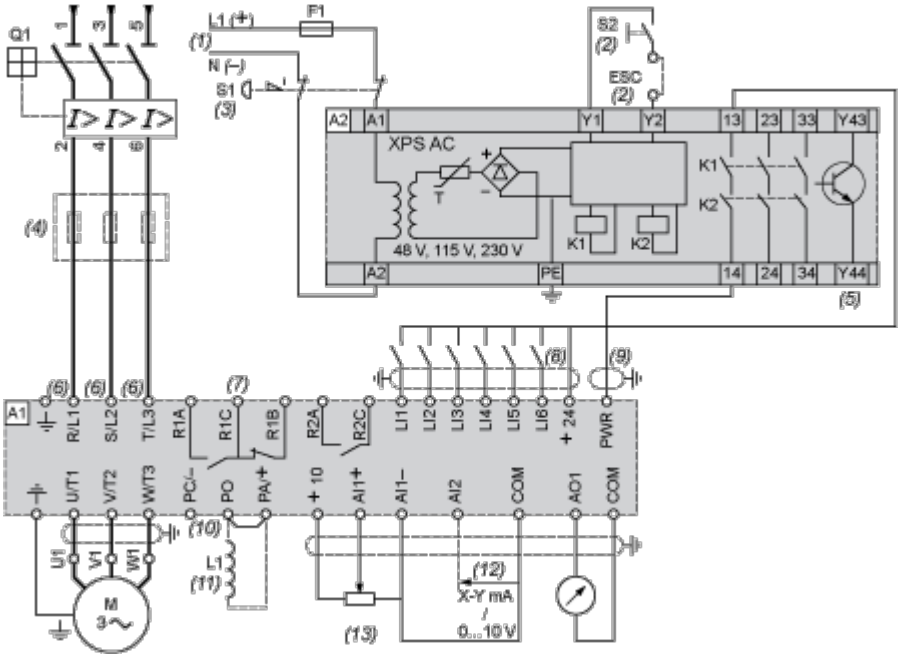
(7) Software-configurable current (0…20 mA) or voltage (0…10 V) analog input.

(8) Reference potentiometer.

NOTE: 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 ATV61 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, 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 ATV61HC11Y…HC80Y 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 ATV61HC50N4, ATV61HC63N4 and ATV61HC50Y…HC80Y drives, 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 ATV61HC11Y…HC80Y drives.

(11) Optional DC choke for ATV61H•••M3, ATV61HD11M3X…HD45M3X and ATV61H075N4…HD75N4 drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV61HD55M3X…HD90M3X, ATV61HD90N4…

HC63N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it. For ATV61W•••N4 and ATV61W•••N4C drives, the DC choke is integrated.

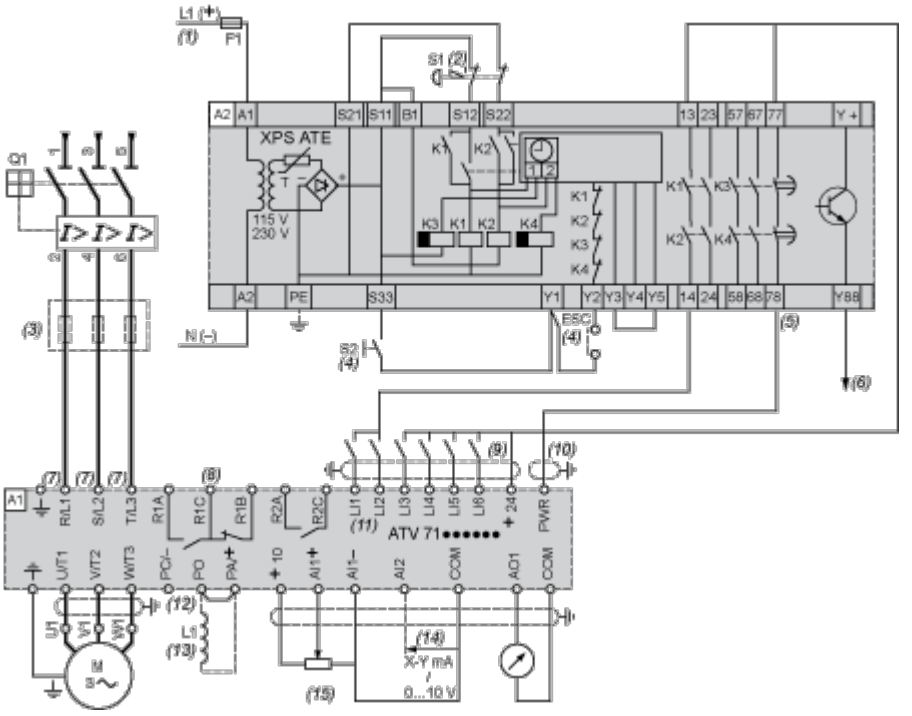
(12) Software-configurable current (0…20 mA) or voltage (0…10 V) analog input.

(13) Reference potentiometer.

NOTE: 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 ATV61 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 contacts

S2 XB4 B or XB5 A pushbutton

(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 ATV61HC11Y…HC80Y 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) The logic output can be used to signal that the machine is in a safe state.

(6) 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.

(7) For ATV61HC50N4, ATV61HC63N4 and ATV61HC50Y…HC80Y drives, 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 ATV61HC11Y…HC80Y drives.

(13) Optional DC choke for ATV61H•••M3, ATV61HD11M3X…HD45M3X and ATV61H075N4…HD75N4 drives. Connected in place of the strap between the PO and PA/+ terminals. For ATV61HD55M3X…HD90M3X, ATV61HD90N4…HC63N4 drives, the choke is supplied with the drive; the customer is responsible for connecting it. For ATV61W•••N4 and ATV61W•••N4C drives, the DC choke is integrated.

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

(15) Reference potentiometer.

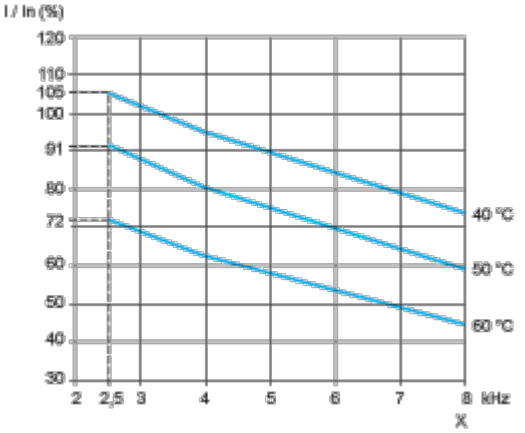
NOTE: All terminals are located at the bottom of the drive. Fit interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

## Performance Curves

### Derating Curves

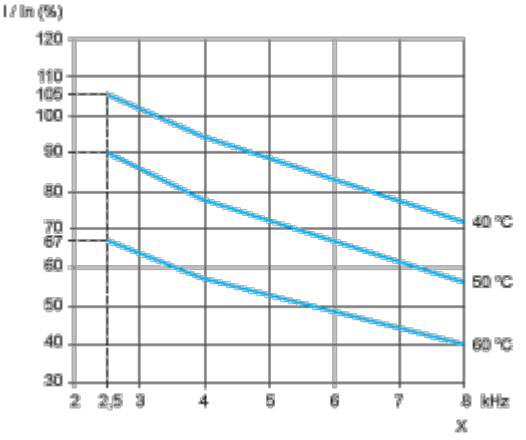
The derating curves for the drive nominal current (In) depend on the temperature and the switching frequency. For intermediate temperatures (e.g. 55°C), interpolate between 2 curves.

**Drive combined with a 200 kW motor**




X Switching frequency

**Drive combined with a 220 kW motor**




X Switching frequency