

Altivar 61/71

Migration from ATV78 -> ATV61/71

Migration Manual

12/2009



This manual is intended to guide you through the process of replacing an Altivar 78 drive with an Altivar 61 or Altivar 71 drive.

Scope of application:

Constant torque applications:

- Replacing an Altivar 78 across the range: 525 → 690 V three-phase up to 630 kW

Variable torque applications:

- Replacing an Altivar 78 across the range: 525 → 690 V three-phase up to 800 kW

Using this manual you will be able to select the most appropriate Altivar 61 or Altivar 71 drive for your application, as well as various options and accessories, based on the existing hardware configuration used on your Altivar 78.

You will notice that Altivar 61 and Altivar 71 drives integrate additional functionalities in terms of number of I/O and application functions.

This manual also contains practical mounting, installation, and wiring recommendations.

To obtain maximum benefit from your Altivar 61 or Altivar 71 drive, you will need to refer to the Installation and Programming manuals supplied with each drive.

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Migrating from ATV 78 → ATV 61/71

■ 1 Identifying the existing ATV 78

- Make an inventory of your Altivar 78 installation

■ 2 Selecting the ATV 61 or ATV 71

- Determine the Altivar 61 or Altivar 71 catalog number
- Choose the various options required

**Steps 3 and 4
must be
performed with
the power off**

■ 3 Mounting

- Mount the drive in accordance with the instructions in this document
- Install any internal and external options

■ 4 Wiring

- Connect the motor, ensuring that its connections correspond to the voltage
- Connect the control section
- Connect the speed reference
- Connect the line supply, after making sure that the power is off

■ 5 Configuration

- Drive



Determining catalog numbers

Determining the type of use for the ATV 78: Standard or high torque?

- Standard torque corresponds to the ATV 71 drive (constant torque) or to the ATV 61 drive (variable torque) depending on the application.
- High torque corresponds to the ATV 71 drive (constant torque).

The following tables show the possible ATV 78/ATV 61 or ATV 78/ATV 71 combinations according to the torque required.

Choice of Altivar 61 or Altivar 71

Standard constant torque applications

| ATV 78 | | | | | ATV 71 | | |
|---|-------|-------|-----------|-------|--------------------------|----------------------|-------------------------------|
| Motor power according to supply voltage | | | | | ATV78.(F) catalog number | ATV71 catalog number | Line choke catalog number (1) |
| kW | Hp | kW | I nominal | I max | | | |
| 525 V | 600 V | 690 V | A | A | | | |
| 2.3 | 3 | 3 | 4.5 | 6.4 | U22Y | ATV71H U30Y | VW3A4551 |
| 3 | 3 | 4 | 5.5 | 9 | U30Y | ATV71H U40Y | VW3A4551 |
| 4.2 | 5 | 5.5 | 7.5 | 11 | U40Y | ATV71H U55Y | VW3A4552 |
| 5.7 | 7.5 | 7.5 | 10 | 15 | U55Y | ATV71H U75Y | VW3A4552 |
| 8.4 | 11 | 11 | 13 | 20 | U75Y | ATV71H D11Y | VW3A4553 |
| 11.4 | 15 | 15 | 18 | 27 | D11Y | ATV71H D15Y | VW3A4553 |
| 14.1 | 20 | 18.5 | 22 | 36 | D15Y | ATV71H D18Y | VW3A4554 |
| 16.7 | 25 | 22 | 27 | 44 | D18Y | ATV71H D22Y | VW3A4554 |
| 22.8 | 30 | 30 | 34 | 54 | D22Y | ATV71H D30Y | VW3A4555 |
| 28.5 | 40 | 37.5 | 41 | 68 | D30Y | ATV71H D37Y | VW3A4555 |
| 34 | 50 | 45 | 52 | 82 | D37Y | ATV71H D45Y | VW3A4555 |
| 42 | 60 | 55 | 62 | 104 | D45Y | ATV71H D55Y | VW3A4556 |
| 57 | 75 | 75 | 80 | 124 | D55Y | ATV71H D75Y | VW3A4556 |
| 68 | 100 | 90 | 100 | 160 | D75Y | ATV71H D90Y | VW3A4556 |
| 84 | 125 | 110 | 125 | 200 | D90Y | ATV71H C11Y | VW3A4570 |
| 100 | 150 | 132 | 144 | 250 | C11Y | ATV71H C13Y | VW3A4571 |
| 122 | 150 | 160 | 170 | 288 | C13Y | ATV71H C16Y | VW3A4571 |
| 152 | 200 | 200 | 208 | 340 | C16Y | ATV71H C20Y | VW3A4560 |
| 190 | 250 | 250 | 261 | 370 | C20Y | ATV71H C25Y | VW3A4572 |
| 240 | 300 | 315 | 325 | 440 | C25Y | ATV71H C31Y | VW3A4572 |
| 270 | 400 | 355 | 385 | 620 | C31Y | ATV71H C40Y | 2 x VW3A4568 |
| 342 | 450 | 450 | 460 | 770 | C35Y | ATV71H C50Y | 2 x VW3A4572 |
| 380 | 500 | 500 | 502 | 920 | C45Y | ATV71H C50Y | 2 x VW3A4572 |
| 426 | 600 | 560 | 590 | 1004 | C50Y | ATV71H C63Y | 2 x VW3A4572 |

(1)]Line chokes must be ordered separately.

These are optional on ATV71H U30Y to D90Y drives. On ATV71H C11Y to C63Y drives, however, they are compulsory, unless a special transformer is used (such as a 12-pulse type).

Determining catalog numbers

High constant torque applications

| ATV 78 | | | | | ATV 71 | | |
|---|-------------|-------------|----------------|------------|--------------------------|----------------------|-------------------------------|
| Motor power according to supply voltage | | | | | ATV78.(F) catalog number | ATV71 catalog number | Line choke catalog number (1) |
| kW 525 V | Hp 600 V | kW 690 V | I nominal A | I max A | | | |
| 1.7 | 2 | 2.2 | 3.2 | 6.7 | U22Y | ATV71H U22Y | VW3A4551 |
| 2.3 | 3 | 3 | 4.5 | 9 | U30Y | ATV71H U30Y | VW3A4551 |
| 3 | 3 | 4 | 5.5 | 11 | U40Y | ATV71H U40Y | VW3A4551 |
| 4.2 | 5 | 5.5 | 7.5 | 15 | U55Y | ATV71H U55Y | VW3A4552 |
| 5.7 | 7.5 | 7.5 | 10 | 20 | U75Y | ATV71H U75Y | VW3A4552 |
| 8 | 11 | 11 | 13.5 | 27 | D11Y | ATV71H D11Y | VW3A4553 |
| 11 | 15 | 15 | 18 | 36 | D15Y | ATV71H D15Y | VW3A4553 |
| 14 | 20 | 18.5 | 22 | 44 | D18Y | ATV71H D18Y | VW3A4554 |
| 17 | 25 | 22 | 27 | 54 | D22Y | ATV71H D22Y | VW3A4554 |
| 23 | 30 | 30 | 34 | 68 | D30Y | ATV71H D30Y | VW3A4555 |
| 29 | 40 | 37 | 41 | 82 | D37Y | ATV71H D37Y | VW3A4555 |
| 34 | 50 | 45 | 52 | 104 | D45Y | ATV71H D45Y | VW3A4555 |
| 42 | 60 | 55 | 62 | 124 | D55Y | ATV71H D55Y | VW3A4556 |
| 57 | 75 | 75 | 80 | 160 | D75Y | ATV71H D75Y | VW3A4556 |
| 68 | 100 | 90 | 100 | 200 | D90Y | ATV71H D90Y | VW3A4556 |
| 84 | 125 | 110 | 125 | 250 | C11Y | ATV71H C11Y | VW3A4570 |
| 100 | 150 | 132 | 144 | 288 | C13Y | ATV71H C13Y | VW3A4571 |
| 122 | 150 | 160 | 170 | 340 | C16Y | ATV71H C16Y | VW3A4571 |
| 152 | 200 | 200 | 208 | 370 | C20Y | ATV71H C20Y | VW3A4560 |
| 190 | 250 | 250 | 261 | 440 | C25Y | ATV71H C25Y | VW3A4572 |
| 240 | 300 | 315 | 325 | 620 | C31Y | ATV71H C31Y | VW3A4572 |
| 270 | 400 | 355 | 385 | 770 | C35Y | ATV71H C40Y | 2 x VW3A4568 |
| 342 | 450 | 450 | 460 | 920 | C45Y | ATV71H C50Y | 2 x VW3A4572 |
| 380 | 500 | 500 | 502 | 1004 | C50Y | ATV71H C50Y | 2 x VW3A4572 |
| 426 | 600 | 560 | 590 | 1180 | C56Y | ATV71H C63Y | 2 x VW3A4572 |

(1) Line chokes must be ordered separately.

These are optional on ATV71H U22Y to D90Y drives. On ATV71H C11Y to C63Y drives, however, they are compulsory, unless a special transformer is used (such as a 12-pulse type).

Determining catalog numbers

Standard variable torque applications

The Altivar 61 is designed for pumping and ventilation applications where the torque varies with the speed.

| | | | | | | | |
|------|-----|------|-----|------|------|-------------|--------------|
| 11.4 | 15 | 15 | 18 | 27 | D11Y | ATV61H D15Y | VW3A4553 |
| 14.1 | 20 | 18.5 | 22 | 36 | D15Y | ATV61H D18Y | VW3A4553 |
| 16.7 | 25 | 22 | 27 | 44 | D18Y | ATV61H D22Y | VW3A4554 |
| 22.8 | 30 | 30 | 34 | 54 | D22Y | ATV61H D30Y | VW3A4554 |
| 28.5 | 40 | 37.5 | 41 | 68 | D30Y | ATV61H D37Y | VW3A4555 |
| 34 | 50 | 45 | 52 | 82 | D37Y | ATV61H D45Y | VW3A4555 |
| 42 | 60 | 55 | 62 | 104 | D45Y | ATV61H D55Y | VW3A4555 |
| 57 | 75 | 75 | 80 | 124 | D55Y | ATV61H D75Y | VW3A4556 |
| 68 | 100 | 90 | 100 | 160 | D75Y | ATV61H D90Y | VW3A4556 |
| 84 | 125 | 110 | 125 | 200 | D90Y | ATV61H C11Y | VW3A4570 |
| 100 | 150 | 132 | 144 | 250 | C11Y | ATV61H C13Y | VW3A4570 |
| 122 | 150 | 160 | 170 | 288 | C13Y | ATV61H C16Y | VW3A4571 |
| 152 | 200 | 200 | 208 | 340 | C16Y | ATV61H C20Y | VW3A4571 |
| 190 | 250 | 250 | 261 | 370 | C20Y | ATV61H C25Y | VW3A4560 |
| 240 | 300 | 315 | 325 | 440 | C25Y | ATV61H C31Y | VW3A4572 |
| 270 | 400 | 355 | 385 | 620 | C31Y | ATV61H C40Y | VW3A4572 |
| 342 | 450 | 450 | 460 | 770 | C35Y | ATV61H C50Y | 2 x VW3A4568 |
| 380 | 500 | 500 | 502 | 920 | C45Y | ATV61H C50Y | 2 x VW3A4568 |
| 426 | 600 | 560 | 590 | 1004 | C50Y | ATV61H C63Y | 2 x VW3A4572 |
| 479 | 650 | 630 | 650 | 1180 | C56Y | ATV61H C63Y | 2 x VW3A4572 |
| 540 | 800 | 710 | 650 | 1300 | C63Y | ATV61H C80Y | 2 x VW3A4572 |
| 609 | 800 | 800 | 820 | 1500 | C71Y | ATV61H C80Y | 2 x VW3A4572 |
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(1) Line chokes must be ordered separately.
These are optional on ATV61H U22Y to C11Y drives. On ATV61H C13Y to C80Y drives, however, they are compulsory, unless a special transformer is used (such as a 12-pulse type).

Determining catalog numbers

Selecting the power circuit options

Line chokes

Altivar 78 drives were supplied with line chokes across all ratings.

On the Altivar 71 or Altivar 61, line chokes are optional up to 90 kW (120 HP). Above this rating, however, they are compulsory, unless a special transformer, such as a 12-pulse type, is used. Line chokes must be ordered separately (see the equivalence tables on pages [5](#) to [7](#)).

Mounting accessories

Altivar 78 drives U22Y to C16Y offer IP21 degree of protection and are NEMA type 1. Altivar 61 and Altivar 71 have a different degree of protection depending on which access panel is used (please refer to the catalog), specifically IP20 or IP00 from below depending on the rating.

- If IP21 protection is required, add an IP21/IP31 mounting kit.
- If NEMA type 1 is required, add a NEMA type 1 mounting kit.

IP21/IP31 mounting kit

Information required: Altivar 61 or Altivar 71 catalog number

Catalog number selection guide:

| ATV 61H drive | ATV 71H drive | IP21 kit | IP31 kit |
|--|--|------------|------------|
| U30Y, U40Y, U55Y, U75Y, D11Y, D15Y, D18Y, D22Y, D30Y, D37Y | U22Y, U30Y, U40Y, U55Y, U75Y, D11Y, D15Y, D18Y, D22Y, D30Y | VW3 A9 106 | - |
| D45Y, D55Y, D75Y, D90Y | D37Y, D45Y, D55Y, D75Y, D90Y | VW3 A9 108 | - |
| C11Y, C13Y, C16Y, C20Y | C11Y, C13Y, C16Y | - | VW3 A9 111 |
| C25Y, C31Y, C40Y | C20Y, C25Y, C31Y | - | VW3 A9 113 |
| C50Y, C63Y, C80Y | C40Y, C50Y, C63Y | - | VW3 A9 116 |

NEMA type 1 mounting kit

Information required: Altivar 61 or Altivar 71 catalog number

Catalog number selection guide:

| ATV 61H drive | ATV 71H drive | NEMA kit |
|--|--|------------|
| U30Y, U40Y, U55Y, U75Y, D11Y, D15Y, D18Y, D22Y, D30Y, D37Y | U22Y, U30Y, U40Y, U55Y, U75Y, D11Y, D15Y, D18Y, D22Y, D30Y | VW3 A9 206 |
| D45Y, D55Y, D75Y, D90Y | D37Y, D45Y, D55Y, D75Y, D90Y | VW3 A9 208 |
| C11Y, C13Y, C16Y, C20Y | C11Y, C13Y, C16Y | VW3 A9 211 |
| C25Y, C31Y, C40Y | C20Y, C25Y, C31Y | VW3 A9 213 |

Determining catalog numbers

Control circuit option: Remote display terminal

Remote connection of the Altivar 61 or Altivar 71 graphic display terminal on the enclosure door

IP54 version Remote mounting kit : **VW3 A1 102**
3-meter cable : **VW3 A1 104 R30**

IP65 version Remote mounting kit : **VW3 A1 102**
IP65 door : **VW3 A1 103**
3-meter cable : **VW3 A1 104 R30**

Female/female RJ45 adapter : **VW3 A1 105**

This should be used in the above two instances.

Note: Order an Altivar 61 or Altivar 71 with graphic display terminal (without a Z at the end of the catalog number).

Other cable lengths are available:

Cable 1 m **VW3 A1 104 R10**
5 m **VW3 A1 104 R50**
10 m **VW3 A1 104 R100**

Note: The graphic display terminal catalog number is VW3 A1 101.

Determining catalog numbers

Choice of I/O extension cards

| Drive or extension card catalog number | Logic inputs | Analog inputs | Logic outputs | Relay outputs | Analog outputs | Inputs for PTC probes | Inputs for PT100 probes | Encoder inputs |
|--|--------------|---------------|---------------|---------------|----------------|-----------------------|-------------------------|----------------|
| ATV 78 | 6 | 2 | 1 | 2 | 1 | | | |
| VW3A78203 | | | | 2 | | 1 | | |
| VW3A78204 | | | | | | | | 3 |
| VW3A78205 | | | | | | | | 3 |
| VW3A78206 | 6 | 2 | 1 | | 1 | | | |
| VW3A78207 | | | | | | | | 2 |
| VW3A78208 | | | | | | | 3 | |
| VW3A78209 | 5 | | | 1 | | | | |
| VW3A78210 | | 1 | | | 2 | | | |
| VW3A78211 | | | | 3 | | | | |
| ATV 61/71 | 6 | 2 | | 2 | 1 | 1 | | |
| VW3A3201 | 4 | | 2 | 1 | | 1 | | |
| VW3A3202 | 4 | 2 | 2 | 1 | 2 | 1 | | |
| VW3A340● | | | | | | | | 1 |

For more information, please refer to the catalog.

Drive setup

Mounting: Standard torque applications

Comparison of dimensions

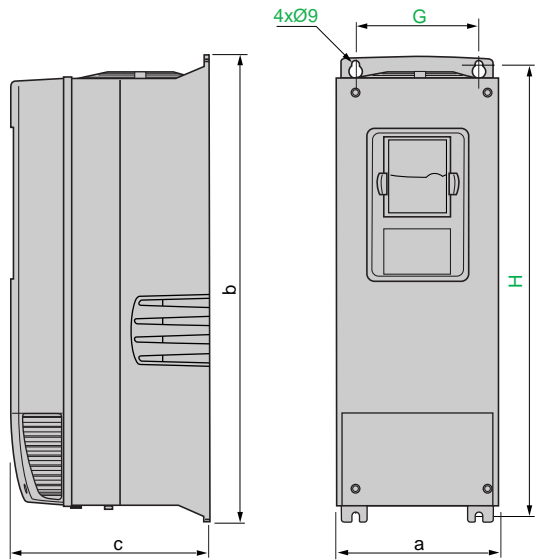
| | Width (mm) | Height (mm) | Depth (mm) |
|--------------------|------------|-------------|------------|
| ATV78 HU22Y | 195 | 558 | 237 |
| ATV71 HU22Y | 240 | 420 | 236 |
| ATV61 HU30Y | 240 | 420 | 236 |
| ATV78 HU30Y | 195 | 558 | 237 |
| ATV71 HU30Y | 240 | 420 | 236 |
| ATV61 HU40Y | 240 | 420 | 236 |
| ATV78 HU40Y | 195 | 558 | 237 |
| ATV61 HU40Y | 240 | 420 | 236 |
| ATV61 HU55Y | 240 | 420 | 236 |
| ATV78 HU55Y | 195 | 558 | 237 |
| ATV71 HU55Y | 240 | 420 | 236 |
| ATV61 HU75Y | 240 | 420 | 236 |
| ATV78 HU75Y | 195 | 558 | 237 |
| ATV71 HU75Y | 240 | 420 | 236 |
| ATV61 HD11Y | 240 | 420 | 236 |
| ATV78 HD11Y | 195 | 558 | 237 |
| ATV71 HD11Y | 240 | 420 | 236 |
| ATV61 HD15Y | 240 | 420 | 236 |
| ATV78 HD15Y | 195 | 558 | 237 |
| ATV71 HD15Y | 240 | 420 | 236 |
| ATV61 HD18Y | 240 | 420 | 236 |
| ATV78 HD18Y | 195 | 558 | 237 |
| ATV71 HD18Y | 240 | 420 | 236 |
| ATV61 HD22Y | 240 | 420 | 236 |
| ATV78 HD22Y | 195 | 558 | 237 |
| ATV71 HD22Y | 240 | 420 | 236 |
| ATV61 HD30Y | 240 | 420 | 236 |
| ATV78 HD30Y | 237 | 630 | 257 |
| ATV71 HD37Y | 320 | 630 | 290 |
| ATV61 HD37Y | 320 | 630 | 290 |

To determine the correspondence between standard and constant torque

Drive setup

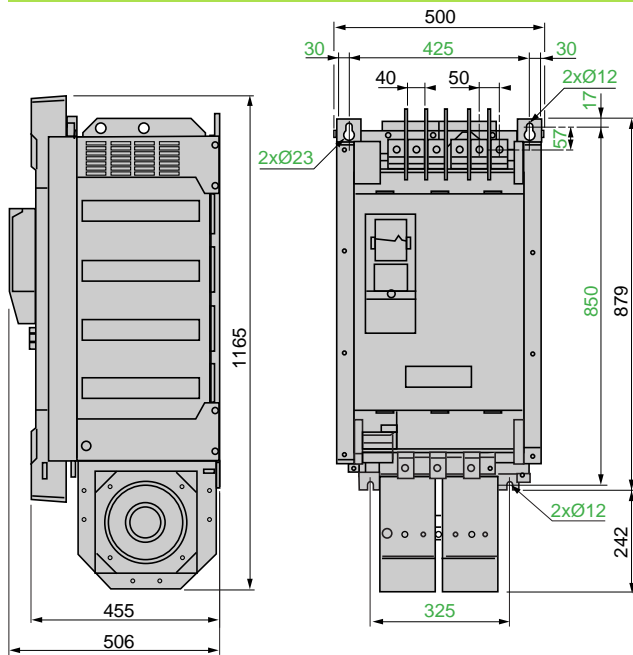
Comparison of dimensions

ATV 78●(F)U22Y to ATV 78●(F)C16Y (line choke supplied pre-installed)

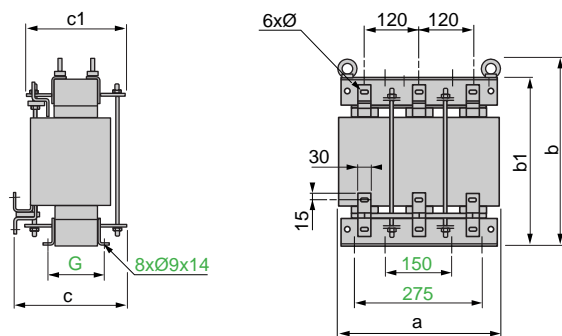


| ATV 78●, ATV 78●F | a | b | c | G | H |
|-------------------|-----|------|-----|-----|------|
| U22Y...D22Y | 195 | 558 | 237 | 148 | 541 |
| D30Y...D37Y | 237 | 630 | 257 | 190 | 614 |
| D45Y...D75Y | 289 | 755 | 344 | 255 | 732 |
| D90Y...C16Y | 480 | 1150 | 362 | 400 | 1120 |

ATV 780(F)C20Y to ATV 780(F)C31Y (line choke supplied with drive but not pre-installed)



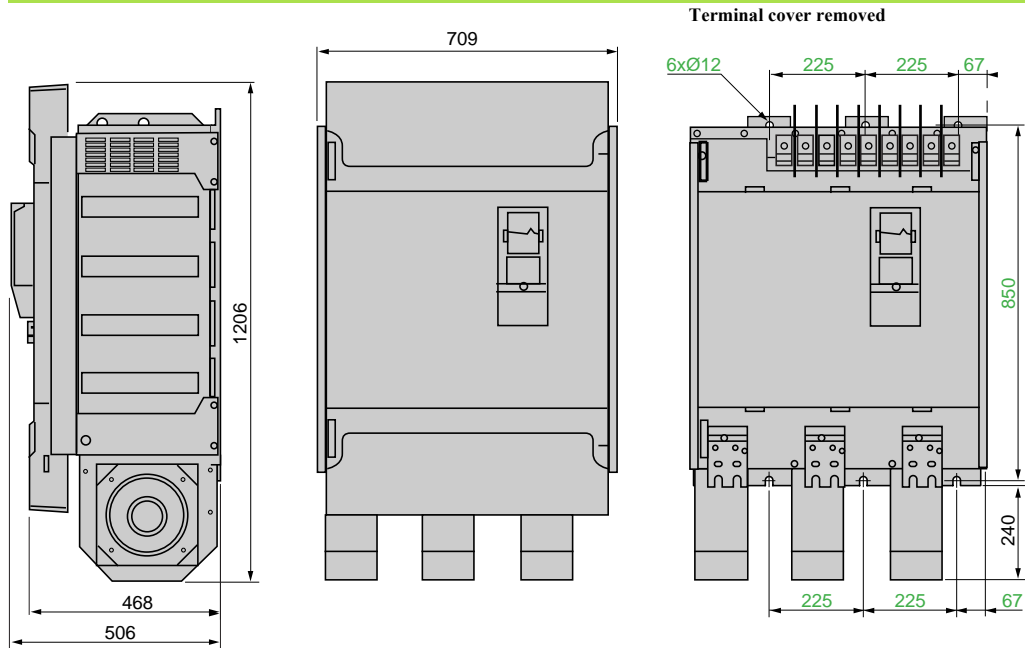
Line choke



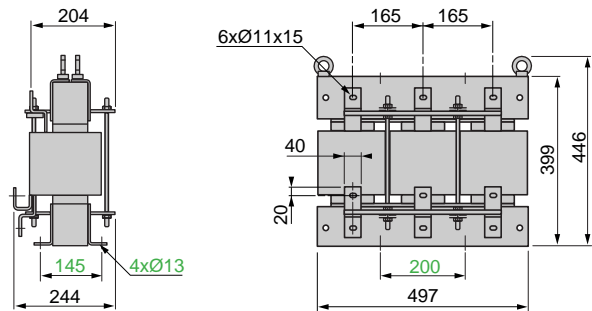
| For ATV 78 drives | a | b | b1 | c | c1 | G | Ø |
|----------------------------------|-----|-----|-----|-----|-----|-----|-------|
| 0C20Y, 0FC20Y | 354 | 357 | 319 | 230 | 206 | 108 | 9x14 |
| 0C25Y...0C31Y 0FC25Y...0FC31Y | 350 | 421 | 383 | 262 | 238 | 140 | 11x15 |

Drive setup

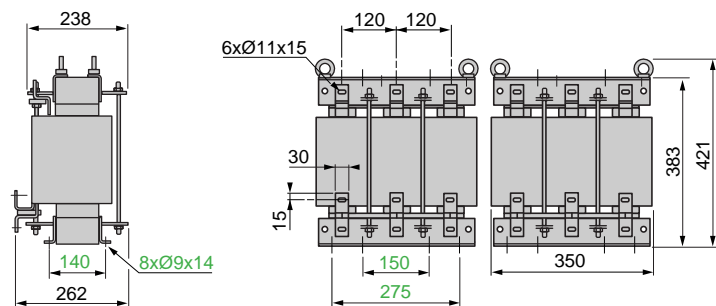
Variable speed drives (continued) ATV 780(F)C35Y to ATV 780(F)C50Y (line choke supplied with drive but not pre-installed)



Line choke for ATV 780(F)C35Y and ATV 780(F)C45Y drives



Line choke for ATV 780(F)C50Y drives (1)

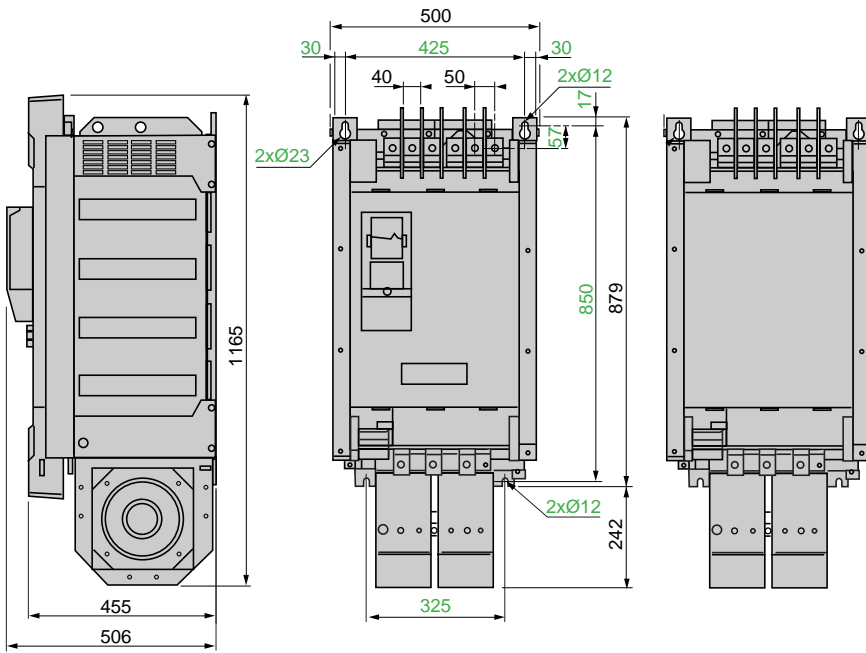


(1) Two line chokes are supplied with the drive.

Drive setup

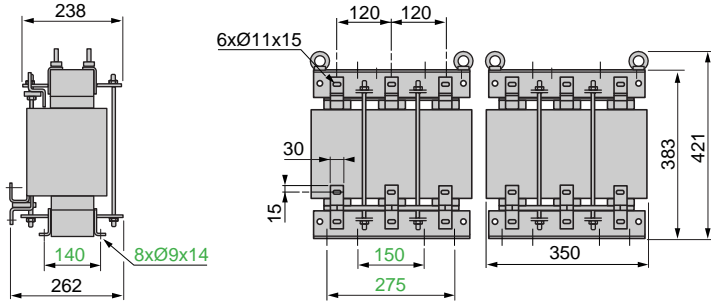
Variable speed drives (continued)

ATV 780(F)C56Y to ATV 780(F)C71Y (1) (line choke supplied with drive but not pre-installed)



(1) Two power units and one control unit are supplied with the drive.

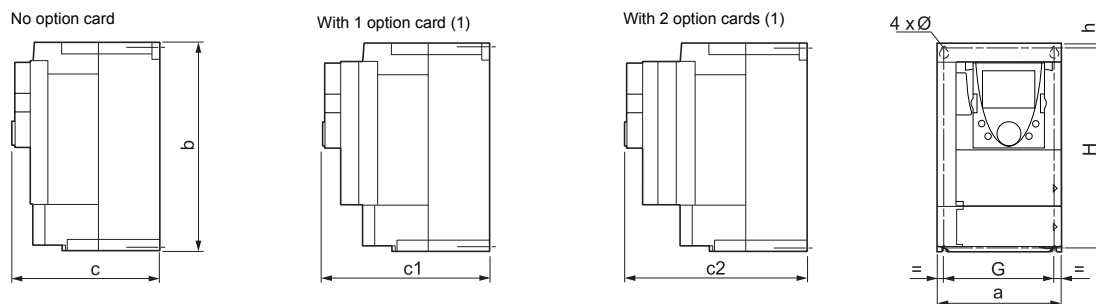
Line choke (1)



(1) Two line chokes are supplied with the drive.

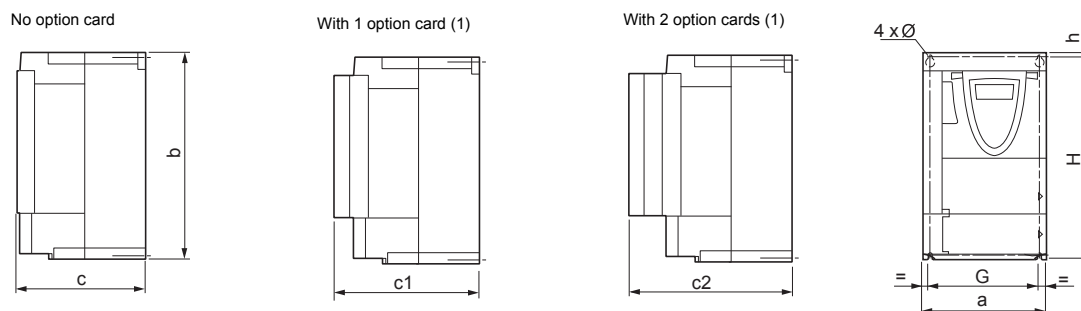
Drive setup

ATV 61/ATV 71 with graphic display terminal



| ATV61H/ATV71H | a | b | c | c1 | c2 | G | H | h | Ø | For screws | Weight |
|---|----------------|----------------|----------------|----------------|----------------|----------------|------------------|--------------|-------------|------------|---------------|
| | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | | kg (lb.) |
| ATV61H U30Y to D30Y, ATV71H U22Y to D30Y | 240 (9.45) | 420 (16.54) | 236 (9.29) | 259 (10.20) | 282 (11.10) | 206 (8.11) | 403 (15.87) | 11 (0.45) | 6 (0.24) | M5 | 30 (66.14) |
| ATV61H D37Y to D90Y, ATV71H D37Y to D90Y | 320 (12.60) | 630 (24.80) | 290 (11.42) | 313 (12.32) | 334 (13.15) | 280 (11.02) | 604.5 (23.80) | 15 (0.59) | 9 (0.35) | M8 | 45 (99.21) |

ATV 61/ATV 71 without graphic display terminal



For a drive without a graphic display terminal, dimensions c, c1 and c2 in the table above are reduced by 26 mm (1.01 in.). The other dimensions are unchanged.

(1) For the addition of I/O extension cards, communication cards, or the "Controller Inside" programmable card.

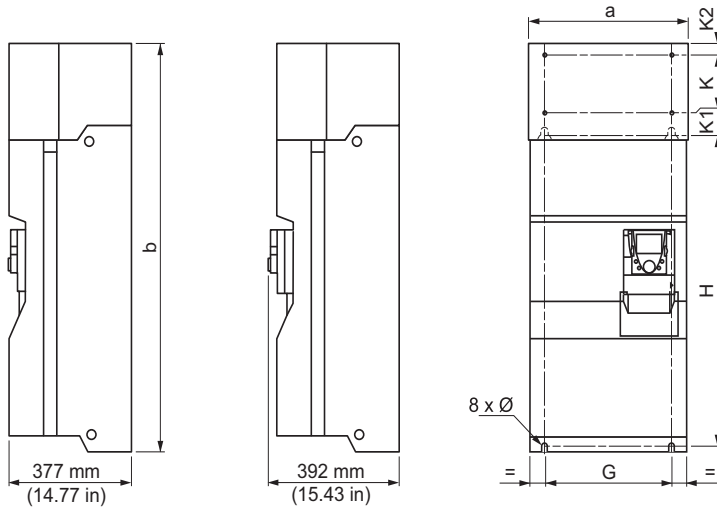
Drive setup

ATV 61/ATV 71

With 0 or 1 option card (1)

With 2 option cards (1)

ATV61H C11Y to C80Y,
ATV71H C11Y to C63Y

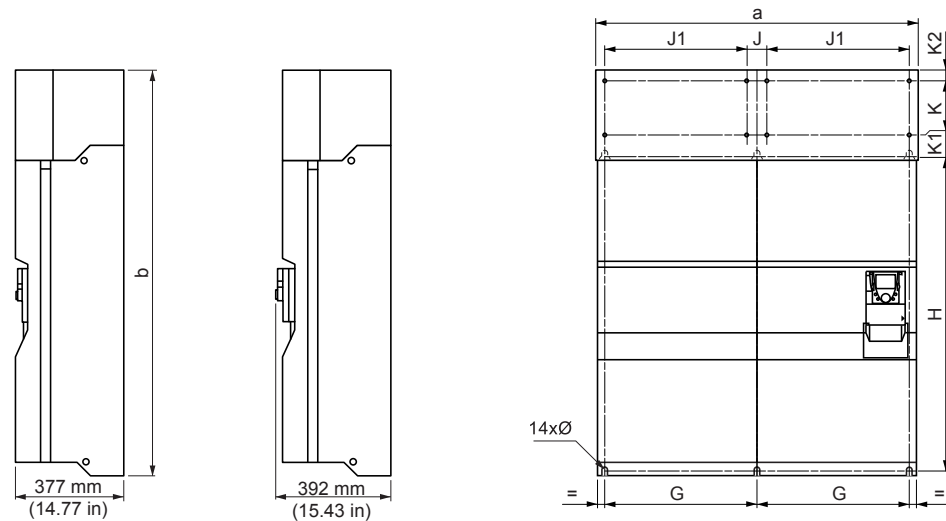


| ATV61H/ATV71H | a | b | G | H | K | K1 | K2 | Ø | For screws | Weight |
|---|----------------|-----------------|----------------|----------------|---------------|--------------|--------------|----------------|------------|--------------|
| | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | | kg (lb.) |
| ATV61H C11Y to C20Y, ATV71H C11Y to C16Y | 340 (13.39) | 1190 (46.62) | 285 (11.22) | 920 (36.22) | 150 (5.91) | 75 (2.95) | 30 (1.18) | 11.5 (0.45) | M10 | 110 (242) |
| ATV61H C25Y to C40Y, ATV71H C20Y to C31Y | 595 (23.43) | 1190 (46.62) | 540 (21.26) | 920 (36.22) | 150 (5.91) | 75 (2.95) | 30 (1.18) | 11.5 (0.45) | M10 | 190 (418) |

With 0 or 1 option card (1)

With 2 option cards (1)

ATV61H C50Y to C80Y,
ATV71H C40Y to C63Y



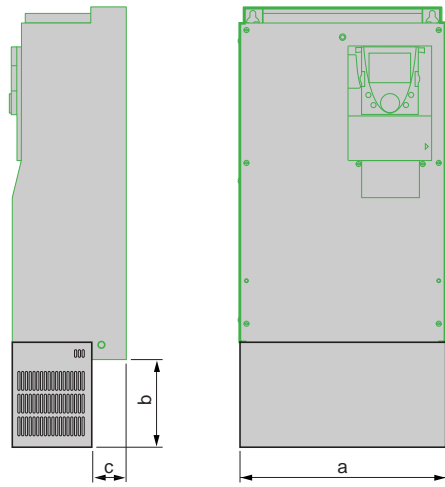
| ATV61H/ATV71H | a | b | G | J | J1 | H | K | K1 | K2 | Ø | For screws | Weight |
|---|-----------------|-----------------|------------------|--------------|----------------|-----------------|---------------|--------------|--------------|----------------|------------|--------------|
| | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | mm (in.) | | kg (lb.) |
| ATV61H C50Y to C80Y, ATV71H C40Y to C63Y | 1120 (44.09) | 1390 (54.72) | 532.5 (20.96) | 70 (2.76) | 495 (19.49) | 1120 (44.09) | 150 (5.91) | 75 (2.95) | 30 (1.18) | 11.5 (0.45) | M10 | 400 (880) |

(1) For the addition of I/O extension cards, communication cards, or the "Controller Inside" programmable card.

Drive setup

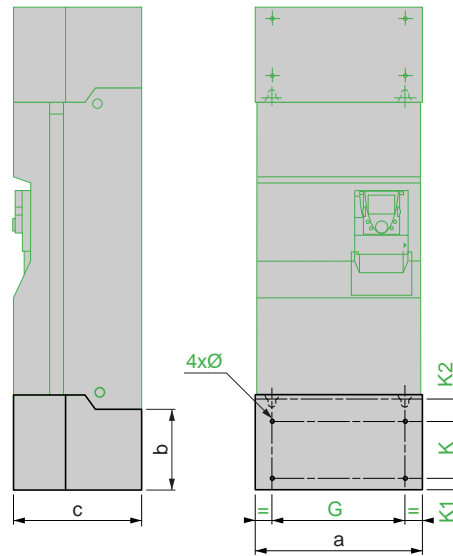
ATV 61/ATV 71 - IP 21 or IP 31 conformity kits (VW3 A9 1●●), UL Type 1 conformity kits (VW3 A9 2●●)

VW3 A9 106, 108, 206, 208



| VW3 | a | b | c |
|--------|-----|------|-----|
| A9 106 | 240 | 75 | 102 |
| A9 108 | 320 | 163 | 102 |
| A9 206 | 240 | 59.9 | 102 |
| A9 208 | 320 | 136 | 102 |

VW3 A9 111, 112, 211, 212



| VW3 | a | b | c | G | K | K1 | K2 | Ø |
|--------|-----|-----|-----|-----|-----|----|----|------|
| A9 111 | 345 | 315 | 377 | 285 | 250 | 65 | 75 | 11.5 |
| A9 112 | 445 | 375 | 377 | 350 | 250 | 65 | 75 | 11.5 |
| A9 211 | 345 | 315 | 377 | 285 | 250 | 65 | 75 | 11.5 |
| A9 212 | 445 | 375 | 377 | 350 | 250 | 65 | 75 | 11.5 |

Drive setup

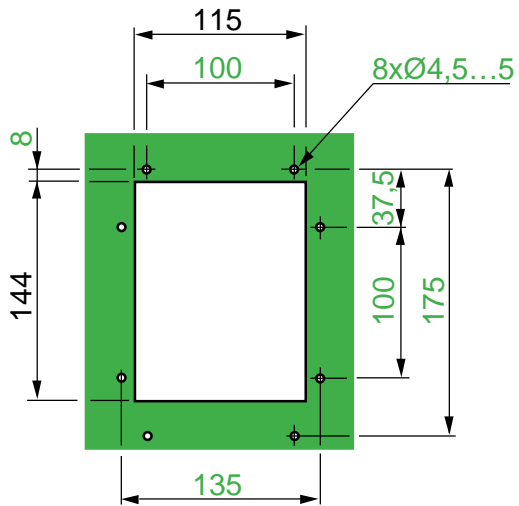
Remote display terminal

Used to connect the programming terminal remotely on the front of the enclosure.

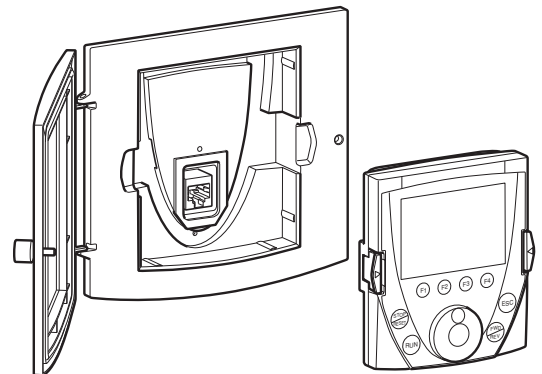
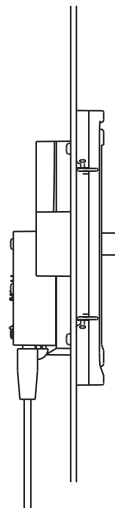
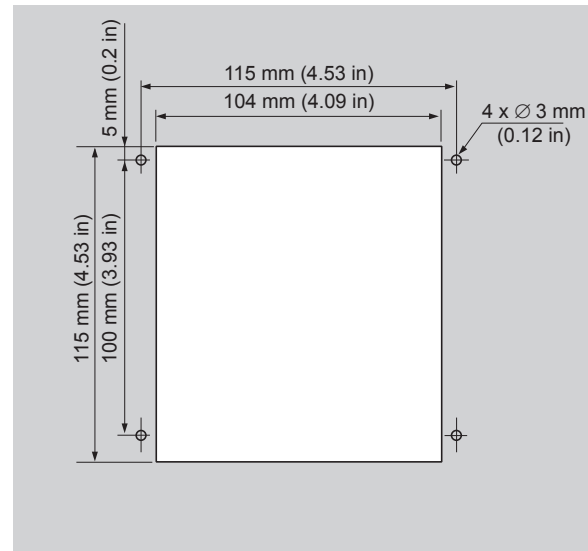
Mounting:

As the dimensions are not the same, the drill holes must be modified.

ATV 78



ATV 71



Drive setup

Power section wiring

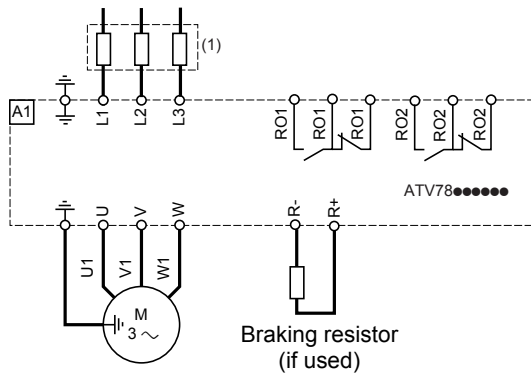
The layout and type of power terminals have changed.

Ring terminals must be used rather than ferrules for the ground terminals, although for the power terminals the ferrules used previously can be retained if they are in good condition (a flattened ferrule will not make a good connection).

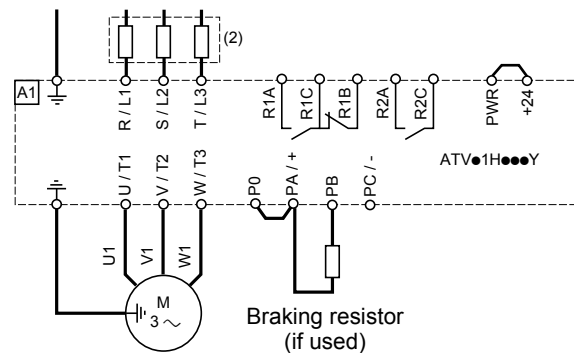
Table of correspondence for power terminals

| | ATV 78 | ATV 61/ATV 71 |
|------------------|--------|---------------|
| Power supply | L1 | R/L1 |
| | L2 | S/L2 |
| | L3 | T/L3 |
| DC bus | B+ | PO |
| | B- | PC/- |
| Braking resistor | R+ | PA/+ |
| | R- | PB |
| Motor output | U | U/T1 |
| | V | V/T2 |
| | W | W/T3 |

Connecting the Altivar 78



Connecting the Altivar 61 or Altivar 71



- (1) Line choke, installed and wired separately for ATV780C20Y rating and above
- (2) Line choke to be mounted and wired separately

Disconnecting the RFI filter if using an IT system

IT system: Isolated or impedance grounded neutral

Use a permanent insulation monitor compatible with non-linear loads, such as a Merlin Gerin type XM200 or equivalent.

Altivar 61 and 71 drives feature built-in RFI filters. When using Altivar 61 and 71 drives on an IT system, the link between these filters and ground must be removed. Please refer to the Installation Manual on the CD-ROM supplied with the drive.

Corner grounded system: System with one phase connected to ground

ATV61H...Y and ATV71H...Y drives must not be connected to a corner grounded system.

Arrangement and characteristics of ATV 61 and ATV 71 power terminals

Please refer to the Installation Manual on the CD-ROM supplied with the drive.

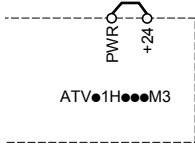
Drive setup

Control section wiring and I/O characteristics

Caution: Check the I/O assignments.

In order to ensure that the Altivar 61 or 71 functions correctly, the following rules must be adhered to:

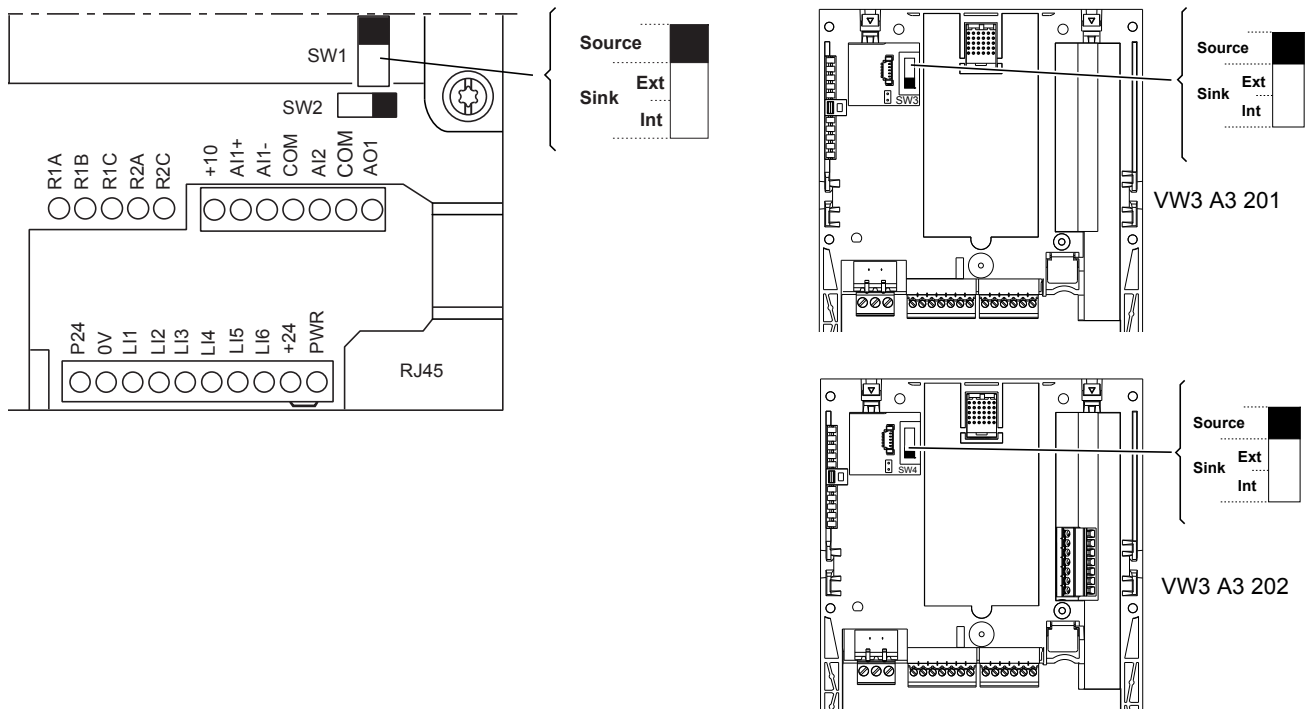
- Check that the strap is present between +24 and PWR.



- The PTC probes connected to an ATV 61 or ATV 71 correspond to the market standard. Check that the trip thresholds are suitable for the temperature levels supported by the motor.

| | ATV 78 value (kOhms) | ATV 61/ATV 71 value (kOhms) |
|---------------------|----------------------|-----------------------------|
| Probe short-circuit | - | < 0.05 |
| Reset | - | 1.8 |
| Overheating | 4.7 | 3 |
| Probe break | - | > 100 |

- Check that switch SW1 on the Altivar 61 or 71 and switches SW3 and SW4 on the option cards correspond with the position of jumpers CMA and CMB (group of jumpers (X3) on the base card) on the Altivar 78 and that the connections comply with the recommendations on the next page.



Drive setup

Control section and option card logic input wiring

Examples of correspondence of various jumper positions to ensure equivalent operation:

ATV 78 **ATV 61 or ATV 71 correspondence**

With + 24 V internal power supply

- Switch SW1 set to "Source" position

ATV 78 **ATV 61 or ATV 71 correspondence**

With external + 24 V power supply. Positive logic

- Switch SW1 set to "Source" position

ATV 78 **ATV 61 or ATV 71 correspondence**

With external + 24 V power supply. Negative logic

- Switch SW1 set to "Sink Ext" position



WARNING

Unintended equipment operation

When switch SW1 is set to "Sink Int" or "Sink Ext", the common must never be connected to ground or the protective ground, as there is then a risk of unintended equipment operation on the first insulation fault.

Failure to follow this instruction can result in death or serious injury.

Wiring other I/O

Please refer to the catalog, the Installation Manual and the Programming Manual on the CD-ROM supplied with the drive.

