

# Altivar<sup>TM</sup> 212 Drive

## Selection Guide

Variable speed drives for asynchronous motors  
used in centrifugal pump and fan applications



Make the most of your energy<sup>SM</sup>

**Schneider**  
Electric<sup>TM</sup>

# Altivar 212 Drive Selection

- The Altivar 212 drive is intended for use with three-phase asynchronous motors for variable torque pump and fan applications.
- Select the Altivar 212 drive using the nameplate voltage and full load ampere rating of the motor nameplate and the table below.
- The Altivar 212 drive includes 3 logic inputs, 2 analog inputs, 1 analog output and 2 relay outputs (with 1 NO and 1 NO/NC contacts).
- It includes integrated 4 digit, 7 segment LED display with 7 button keypad, as well as RJ45 Modbus™ port, plus a 4 screw removable terminal block for software selectable BACnet, Modbus, METASYS N2 or APOGEE P1 communication protocols. LonWorks is available in an option card.

## Altivar 212 Drive Selection

| AC Input<br>line voltage          |                            |      |                                 | Enclosure rating            |     |               |                                                                                       |     |                             |     |               |
|-----------------------------------|----------------------------|------|---------------------------------|-----------------------------|-----|---------------|---------------------------------------------------------------------------------------|-----|-----------------------------|-----|---------------|
|                                   | Three-phase<br>motor power |      | Continuous<br>Output<br>current | IP 20<br>Open style product |     |               | Type 1 conduit kit<br>(purchase ATV212 and<br>conduit Kit for Type 1<br>installation) |     | Type 12/IP54                |     |               |
|                                   | HP                         | kW   | A                               | Catalog number              | QTY | Frame<br>size | Catalog number                                                                        | QTY | Catalog number <sup>c</sup> | QTY | Frame<br>size |
| 208/240<br>Vac<br>three-<br>phase | 1                          | 0.75 | 4.6                             | ATV212H075M3X               |     | 1             | VW3A31814                                                                             |     | —                           |     |               |
|                                   | 2                          | 1.5  | 7.5                             | ATV212HU15M3X               |     | 1             | VW3A31814                                                                             |     | —                           |     |               |
|                                   | 3                          | 2.2  | 10.6                            | ATV212HU22M3X               |     | 1             | VW3A31814                                                                             |     | —                           |     |               |
|                                   | 4                          | 3    | 13.7                            | ATV212HU30M3X               |     | 2             | VW3A31815                                                                             |     | —                           |     |               |
|                                   | 5                          | 4    | 18.7                            | ATV212HU40M3X               |     | 2             | VW3A31815                                                                             |     | —                           |     |               |
|                                   | 7.5                        | 5.5  | 24.2                            | ATV212HU55M3X               |     | 3             | VW3A31816                                                                             |     | —                           |     |               |
|                                   | 10                         | 7.5  | 32                              | ATV212HU75M3X               |     | 3             | VW3A31816                                                                             |     | —                           |     |               |
|                                   | 15                         | 11   | 46.2                            | ATV212HD11M3X               |     | 4             | VW3A31817                                                                             |     | —                           |     |               |
|                                   | 20                         | 15   | 61                              | ATV212HD15M3X               |     | 4             | VW3A31817                                                                             |     | —                           |     |               |
|                                   | 25                         | 18.5 | 74.8                            | ATV212HD18M3X               |     | 4             | VW3A31817                                                                             |     | —                           |     |               |
|                                   | 30                         | 22   | 88                              | ATV212HD22M3X               |     | 5             | VW3A9206                                                                              |     | —                           |     |               |
|                                   | 40                         | 30   | 117                             | ATV212HD30M3X               |     | 7             | VW3A9208                                                                              |     | —                           |     |               |
| 380/480<br>Vac<br>three-<br>phase | 1                          | 0.75 | 2.2                             | ATV212H075N4                |     | 1             | VW3A31814                                                                             |     | ATV212W075N4                |     | 1             |
|                                   | 2                          | 1.5  | 3.7                             | ATV212HU15N4                |     | 1             | VW3A31814                                                                             |     | ATV212WU15N4                |     | 1             |
|                                   | 3                          | 2.2  | 5.1                             | ATV212HU22N4                |     | 1             | VW3A31814                                                                             |     | ATV212WU22N4                |     | 1             |
|                                   | 4                          | 3    | 7.2                             | ATV212HU30N4                |     | 2             | VW3A31815                                                                             |     | ATV212WU30N4                |     | 2             |
|                                   | 5                          | 4    | 9.1                             | ATV212HU40N4                |     | 2             | VW3A31815                                                                             |     | ATV212WU40N4                |     | 2             |
|                                   | 7.5                        | 5.5  | 12                              | ATV212HU55N4                |     | 2             | VW3A31815                                                                             |     | ATV212WU55N4                |     | 2             |
|                                   | 10                         | 7.5  | 16                              | ATV212HU75N4                |     | 3             | VW3A31816                                                                             |     | ATV212WU75N4                |     | 2             |
|                                   | 15                         | 11   | 22.5                            | ATV212HD11N4                |     | 3             | VW3A31816                                                                             |     | ATV212WD11N4                |     | 3             |
|                                   | 20                         | 15   | 30.5                            | ATV212HD15N4                |     | 4             | VW3A31817                                                                             |     | ATV212WD15N4                |     | 3             |
|                                   | 25                         | 18.5 | 37                              | ATV212HD18N4                |     | 4             | VW3A31817                                                                             |     | ATV212WD18N4                |     | 4             |
|                                   | 30                         | 22   | 43.5                            | ATV212HD22N4S <sup>c</sup>  |     | 4             | VW3A31817                                                                             |     | —                           |     |               |
|                                   | 30                         | 22   | 43.5                            | ATV212HD22N4                |     | 5             | VW3A9206                                                                              |     | ATV212WD22N4                |     | 5             |
|                                   | 40                         | 30   | 58.5                            | ATV212HD30N4                |     | 5             | VW3A9206                                                                              |     | ATV212WD30N4                |     | 5             |
|                                   | 50                         | 37   | 79                              | ATV212HD37N4                |     | 6             | VW3A9207                                                                              |     | ATV212WD37N4                |     | 6             |
|                                   | 60                         | 45   | 94                              | ATV212HD45N4                |     | 6             | VW3A9207                                                                              |     | ATV212WD45N4                |     | 6             |
|                                   | 75                         | 55   | 116                             | ATV212HD55N4                |     | 7             | VW3A9208                                                                              |     | ATV212WD55N4                |     | 7             |
|                                   | 100                        | 75   | 160                             | ATV212HD75N4                |     | 7             | VW3A9208                                                                              |     | ATV212WD75N4                |     | 7             |



ATV212HU15N4



ATV212W075N4



ATV212HU55M3X



ATV212HD37N4



ATV212HU30M3X



ATV212HD37N4

- These horsepower, kW and continuous ampere ratings apply to default switching frequency and maximum 40° C ambient.
- Refer to the installation manual for derating curves as a function of switching frequency, ambient temperature and mounting conditions.
- IP20 Altivar 212 drives can be installed as UL Type 1 with the optional conduit box when following instruction in the Installation Manual.
- To select an Altivar 212W... drives with Class B EMC filter, add the letter "C" to the end of the standard catalog number.
- <sup>c</sup> Late 3Q 2011 availability.

## Altivar 212 Accessories and Options

| User interface options                                                                                                                                                                                                 | For use with                                                   | Catalog number                                                                                           | QTY |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----|
| Remote LCD display keypad                                                                                                                                                                                              | Altivar 212, 312, 32 , 61, 71                                  | VW3A1101                                                                                                 |     |
| 8 line, 24 characters per line, plain text, 8 keys, rotary wheel, 60°C IP54 rated                                                                                                                                      | —                                                              | —                                                                                                        |     |
| Remote LCD keypad mounting accessories                                                                                                                                                                                 | —                                                              | —                                                                                                        |     |
| IP54 rated kit for remote mounting LCD keypad on enclosure door                                                                                                                                                        | VW3A1101                                                       | VW3A1102                                                                                                 |     |
| Clear plastic door for use with VW3A1102 for IP65 rating and tamper resistance                                                                                                                                         | VW3A1102                                                       | VW3A1103                                                                                                 |     |
| Female/Female right angle RJ45 adaptor, to connect cable and keypad.*<br>(*not required if using VW3A1102)                                                                                                             | VW3A1101                                                       | VW3A1105                                                                                                 |     |
| Remote LCD keypad mounting cables – equipped with two RJ45 connectors                                                                                                                                                  | —                                                              | —                                                                                                        |     |
| 1 meter length                                                                                                                                                                                                         | VW3A1101                                                       | VW3A1104R10                                                                                              |     |
| 3 meter length                                                                                                                                                                                                         | VW3A1101                                                       | VW3A1104R30                                                                                              |     |
| 5 meter length                                                                                                                                                                                                         | VW3A1101                                                       | VW3A1104R50                                                                                              |     |
| 10 meter length                                                                                                                                                                                                        | VW3A1101                                                       | VW3A1104R100                                                                                             |     |
| Multi-loader                                                                                                                                                                                                           | Altivar 12, 212, 312, 32<br>Altistart 22                       | VW3A8121                                                                                                 |     |
| Use to copy configurations between like drives, PC Soft or SoMove PC software                                                                                                                                          | —                                                              | —                                                                                                        |     |
| Software                                                                                                                                                                                                               | For use with                                                   | Catalog number                                                                                           |     |
| PCSoft                                                                                                                                                                                                                 | Altivar 21 and 212                                             | Download at <a href="http://www.schneider-electric.us/go/drives">www.schneider-electric.us/go/drives</a> |     |
| PC software use for: configuring, monitoring and trouble shooting Altivar 212 drives<br>Requires one of two cables (noted below) to connect a PC to the RJ45 Modbus port on the drive                                  | —                                                              | —                                                                                                        |     |
| USB/RS485 cable: equipped with USB connector and RJ45 connector                                                                                                                                                        | Altivar and Altistart                                          | TCSMCNAM3M002P                                                                                           |     |
| RS 232-RS485 converter with SUB-D and RJ45 port, cable with two RJ45 connectors                                                                                                                                        | Altivar 212                                                    | VW3A8106                                                                                                 |     |
| SoMove™ Mobile                                                                                                                                                                                                         | Altivar 212                                                    | Download at <a href="http://www.schneider-electric.us/go/drives">www.schneider-electric.us/go/drives</a> |     |
| Software for compatible mobile phones provides wireless interface similar to the LCD display<br>Requires Modbus to Bluetooth adaptor to connect phone and Altivar 212 drive                                            | —                                                              | —                                                                                                        |     |
| Modbus – Bluetooth adaptor: connects to RJ45 Modbus port on the drive                                                                                                                                                  | Altivar 12, 212, 312,61, 71                                    | VW3A8114                                                                                                 |     |
| Communication option                                                                                                                                                                                                   | For use with                                                   | Catalog number                                                                                           |     |
| LonWorks communication option card                                                                                                                                                                                     | Altivar 212                                                    | VW3A21212                                                                                                |     |
| Provides 4 screw terminal block for connection to LonWorks network<br>Install in place of standard control board that comes mounted in the Altivar 212 drive<br>The I/O count is reduce to 3LI, 1 AI and 1 NO/NC relay | —                                                              | —                                                                                                        |     |
| Mounting kit                                                                                                                                                                                                           | For use with                                                   | Catalog number                                                                                           |     |
| DIN rail mounting kit                                                                                                                                                                                                  | Altivar 212H075M3X...<br>22M3X and Altivar<br>212H075N4...22N4 | VW3A31852                                                                                                |     |
| For installation on to 35mm wide DIN rail                                                                                                                                                                              | —                                                              | —                                                                                                        |     |



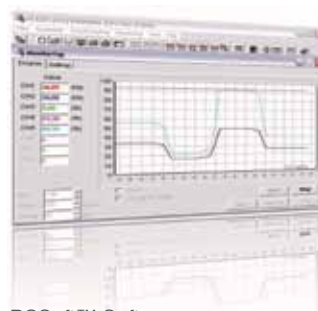
VW3A1101



VW31101, VW31102,  
VW31103, VW3A1104R10



VW3A8121



PCSoft™ Software



SoMove™  
Mobile Software



VW3A21212

# Altivar 212 Drive Technical Characteristics

| Environmental Specifications                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature ratings                                                                   | 0 to + 40°C operational without de-rating, up to 60°C with de-rating (see installation manual for deratings)                                                                                                                                                                                                                                                                                                                                           |
| Altitude ratings                                                                      | Up to 3,300 ft (1,000 meters) without de-rating, de-rate nominal current by 1% for each additional 330 ft (100m) up to 10,000 ft (3,000 m)<br>Limit to 6,600 ft (2,000 m) if supplied by corner grounded distribution system                                                                                                                                                                                                                           |
| Humidity                                                                              | Up to 95% non-condensing , IEC 60068-2-3                                                                                                                                                                                                                                                                                                                                                                                                               |
| Vibration resistance                                                                  | 1.5 mm peak to peak from 3 to 13 Hz conforming to EN/IEC 600068-2-6, 1 gn from 13 to 200 Hz conforming to IEC/EN 60068-2-8                                                                                                                                                                                                                                                                                                                             |
| Shock resistance                                                                      | 15 gn for 11 ms conforming to IEC/EN 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pollution degree                                                                      | 1 HP to 25 HP @ 200/240 V, 1 HP to 5 HP @ 380/480 V: Pollution degree 2 per IEC/EN 61800-5-1, 30 HP to 40 HP @ 200/240 V, 30 HP to 100 HP @ 380/480 V: Pollution degree 3 per IEC/EN 61800-5-1                                                                                                                                                                                                                                                         |
| Degree of protection: ATV212 H range<br>ATV212 W range                                | IP20, Conformal coating per IEC 60721-3-3 classes 3C2 and 3S2, Type 1 with optional conduit kit<br>IP54/Type 12, Conformal coating per IEC 60721-3-3 classes 3C2 and 3S2                                                                                                                                                                                                                                                                               |
| Electrical Specifications                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Input voltage and HP range ATV212 W is available in 380/480 range only                | 200 – 15% to 240 +10%, Three phase input, Three phase output, 1 HP to 40 HP<br>380 – 15% to 480 +10%, Three phase input, Three phase output, 1 HP to 100 HP                                                                                                                                                                                                                                                                                            |
| Input frequency                                                                       | 50 Hz -5% to 60 Hz +5%                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Galvanic isolation                                                                    | Galvanic isolation between power and control (inputs, outputs and power supplies)                                                                                                                                                                                                                                                                                                                                                                      |
| Drive input power section                                                             | Six pulse bridge rectifier                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Drive output power section                                                            | IGBT inverter with pulse width modulated output                                                                                                                                                                                                                                                                                                                                                                                                        |
| Power factor                                                                          | Above 99%                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Efficiency                                                                            | Above 98% at full load                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Switching frequency                                                                   | Selectable from 6 to 16 kHz, 12 kHz nominal rating for 1 HP to 20 HP @ 200/240 V, 380/480 V<br>Selectable: 6 to 16 kHz, 8kHz nominal rating for 30 HP to 40 HP @ 200/240 V, 30 HP to 100 HP @ 380/480 V                                                                                                                                                                                                                                                |
| Acceleration and deceleration ramps                                                   | 0.1 to 3200 seconds in 0.1 seconds increments                                                                                                                                                                                                                                                                                                                                                                                                          |
| Frequency output range                                                                | 0.5 to 200 hertz                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Skip frequencies                                                                      | Three adjustable skip frequency bands                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Speed range                                                                           | 1 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Integrated motor protection                                                           | Class 10 electronic overload protection                                                                                                                                                                                                                                                                                                                                                                                                                |
| Asynchronous motor control profiles                                                   | Sensorless flux vector, 2 point volts/hertz, quadratic volts/hertz, energy savings mode: a optimization motor algorithm that automatically optimizes voltage based on load                                                                                                                                                                                                                                                                             |
| Transient over current                                                                | 110% nominal for 60 seconds, 180% for 2 seconds                                                                                                                                                                                                                                                                                                                                                                                                        |
| Embedded functions                                                                    | Over 50 functions dedicated to pump and fan applications                                                                                                                                                                                                                                                                                                                                                                                               |
| User interface                                                                        | On board: 5 LED indicators for various functions, 4 digit, 7 segment LED display with 7 button keypad for: Run, Stop/Reset, Local/remote, Speed up, speed down, Mode selection and Enter. Quick start menu, fault history, I/O mapping, last-used menus, status monitoring and self diagnostics. Fault messages and status such as: power on time, elapsed time, motor run time, line voltage, motor current, ready to run, running, motor speed, etc. |
| Embedded communication                                                                | Embedded RJ45 port for remote keypad connection, Multi-loader, PC software, or Bluetooth dongle for So Mobile smart phone connection. Embedded 4 screw removable terminal for daisy chain connection for: Modbus, BACnet, Metesys N2, or Apogee P1 communication networks.                                                                                                                                                                             |
| Harmonic abatement                                                                    | Embedded reduced harmonic technology provides <35% THDI at VFD input terminals, which is equivalent to a 3% line reactor or DC choke. See technical paper 8800DB0702 for more information.                                                                                                                                                                                                                                                             |
| EMC compliance: ATV212 H and W N4 range:<br>ATV212 W N4C range:<br>ATV212H M3X range: | Integrated Class 2 EMC filter for radiated and conducted emissions, IEC 61800-3, category C2 and C3<br>Integrated Class 2 EMC filter for radiated and conducted emissions, IEC 61800-3, category C1<br>No integrated EMC filter (use optional filters to reduce emission levels)                                                                                                                                                                       |
| Compliance                                                                            | UL 508C, RoHS, IEC 61800-5-1, IEC/EN61000-3-12 THDI harmonic standard                                                                                                                                                                                                                                                                                                                                                                                  |
| Certifications                                                                        | UL File E116875, CSA 2278406, UL 508C, Plenum rated per UL508C for UL1995 installations, C-Tick, NOM 117, CE marked                                                                                                                                                                                                                                                                                                                                    |

# Altivar 212 Inputs/Outputs Electrical Characteristics

| Default function setting                                 | Function                           | Terminals            | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------|------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| —                                                        | External power supply input        | PLC                  | +24 Vdc input for external power supply for logic inputs Max. permissible voltage: 50 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                          | Internal supply                    | P24                  | Short-circuit and overload protection: 24 Vdc supply (min. 21 Vdc, max. 27 Vdc), maximum current: 200 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                          | Common                             | CC                   | 0 Vdc common (2 terminals)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fault relay                                              | Configurable relay outputs         | FLA<br>FLB<br>FLC    | 1 relay logic output, 1 N/C contact, and 1 N/O contact with common point<br>Minimum switching capacity: 10 mA for 5 Vdc<br>Maximum switching capacity:<br><ul style="list-style-type: none"> <li>On resistive load (<math>\cos \varphi = 1</math>): 5 A for 250 Vac or 30 Vdc</li> <li>On inductive load (<math>\cos \varphi = 0.4</math> and <math>L/R = 7</math> ms): 2 A for 250 Vac or 30 Vdc</li> </ul> Max. response time: 10 ms                                                                                                                                                                                                                                                                                                                                                      |
| Speed attained                                           |                                    | RY<br>RC             | 1 relay logic output, 1 N/O contact<br>Minimum switching capacity: 3 mA for 24 Vdc<br>Maximum switching capacity:<br><ul style="list-style-type: none"> <li>On resistive load (<math>\cos \varphi = 1</math>): 3 A for 250 Vac or 30 Vdc</li> <li>On inductive load (<math>\cos \varphi = 0.4</math> and <math>L/R = 7</math> ms): 2 A for 250 Vac or 30 Vdc</li> </ul> Max. response time: 7 ms $\pm$ 0.5 ms                                                                                                                                                                                                                                                                                                                                                                               |
| F: Run forward<br>R: Preset speed at 15 Hz<br>RES: Reset | Configurable logic inputs          | F<br>R<br>RES        | 3 programmable logic inputs, 24 Vdc, compatible with level 1 PLC, IEC 65A-68 standard<br>Impedance: 4.7 k $\Omega$<br>Maximum voltage: 30 Vdc<br>Max. sampling time: 2 ms $\pm$ 0.5 ms<br>Multiple assignment makes it possible to configure several functions on one input<br>Positive logic (Source): State 0 if $\leq 5$ Vdc or logic input not wired, state 1 if $\geq 11$ Vdc<br>Negative logic (Sink): State 0 if $\geq 16$ Vdc or logic input not wired, state 1 if $\leq 10$ Vdc                                                                                                                                                                                                                                                                                                    |
| Output frequency                                         | Configurable analog output         | FM                   | 1 switch-configurable (SW101) voltage or current analog output:<br><ul style="list-style-type: none"> <li>Voltage analog output 0–10 Vdc, minimum load impedance 7.62 k<math>\Omega</math></li> <li>Current analog output X–Y mA by programming X and Y from 0 to 20 mA, maximum load impedance: 970 <math>\Omega</math></li> </ul> Max. sampling time: 2 ms $\pm$ 0.5 ms<br>Resolution: 10 bits<br>Accuracy: $\pm 1$ % for a temperature variation of 60° C<br>Linearity: $\pm 0.2$ %                                                                                                                                                                                                                                                                                                      |
| —                                                        | Internal supply available          | PP                   | Short-circuit and overload protection: One 10.5 Vdc $\pm$ 5% supply for the reference potentiometer (1 to 10 k $\Omega$ ), maximum current: 10 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Primary speed reference, 0–10 V                          | Configurable analog/logic input    | VIA                  | Switch-configurable voltage or current analog input:<br><ul style="list-style-type: none"> <li>Voltage analog input 0–10 Vdc, impedance 30 k<math>\Omega</math> maximum voltage: 24 Vdc</li> <li>Analog current input X–Y mA by programming X and Y from 0 to 20 mA, with impedance 250 <math>\Omega</math></li> </ul> Max. sampling time: 3.5 ms $\pm$ 0.5 ms<br>Resolution: 10 bits<br>Accuracy: $\pm 0.6$ % for a temperature variation of 60° C<br>Linearity: $\pm 0.15$ % of the maximum value<br>This analog input is also configurable as a logic input<br>Consult the Altivar 212 Programming Manual for more information                                                                                                                                                           |
| Secondary speed reference, 1–10 V                        | Configurable analog input          | VIB                  | Voltage analog input, configurable as an analog input or as a PTC probe input<br>Voltage analog input:<br><ul style="list-style-type: none"> <li>0–10 Vdc, impedance 30 k<math>\Omega</math> max. voltage 24 Vdc</li> <li>Max. sampling time: 22 ms <math>\pm</math> 0.5 ms</li> <li>Resolution: 10 bits</li> <li>Accuracy: <math>\pm 0.6</math> % for a temperature variation of 60 °C</li> <li>Linearity: <math>\pm 0.15</math> % of the maximum value</li> </ul> PTC probe input:<br><ul style="list-style-type: none"> <li>6 probes max. mounted in series</li> <li>Nominal value &lt; 1.5 k<math>\Omega</math></li> <li>Trip resistance 3 k<math>\Omega</math>, reset value 1.8 k<math>\Omega</math></li> <li>Short-circuit detection threshold &lt; 50 <math>\Omega</math></li> </ul> |
| —                                                        | Graphic display terminal or Modbus | RJ45                 | Used to connect graphic display terminal or connect the drive to a Modbus fieldbus<br>Note: for using Modbus on the RJ45, modify parameter F807 (see Modbus manual)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| —                                                        | Fieldbus                           | Open style connector | Refer to communication manual related to the fieldbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

# Altivar 212 Drive

| Integrated Fan and Pump Functionality |                                                                                                                  |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Run command                           | Input to drive by remote contact from the BAS, 24 vdc supplied by VFD                                            |
| Speed command                         | Input to drive from the BAS; typically 4-20mA <sub>dc</sub> or 0-10 V <sub>dc</sub>                              |
| Run status                            | Output contact from drive to the BAS; 1 N.O. contact on drive                                                    |
| Speed feedback                        | Analog output from drive to the BAS; typically 4-20mA <sub>dc</sub> , or assignable to meter values              |
| Fault Output                          | Output contact from drive to the BAS; 1 N.O. & 1 N.C. contact on drive                                           |
| Loss of Speed                         | Configuration to run at last speed or a pre-defined speed on loss of speed command                               |
| Automatic Restart                     | Selectable configuration to automatically restart after cause of fault is cleared                                |
| Skip Frequency Bands                  | Three skip frequency settings with adjustable bandwidth to tune out resonating frequencies in piping or ductwork |
| Local/Remote Control                  | Keypad selectable: local keypad control for Run, Stop and speed control or from remote signal from BAS           |
| Catch on the Fly                      | Configuration to initiate speed and direction search to provide smooth start of windmilling fans                 |
| Damper Control Relay                  | Output on the drive to control damper opening sequence, and wait for feedback to start the motor                 |
| Smoke Purge Override                  | Logic Input on the drive configured to run the motor at configured speed for forced ventilation                  |
| Broken Belt Detection                 | Configuration to detect under load condition and initiate alarm sequence                                         |
| PID Control                           | Set point and feedback inputs for proportional, integral, and derivative control                                 |
| Sleep/Wake-up                         | Configuration in the drive to stop the pump at low or no flow and re-start on demand for flow                    |
| Pump Jam Management                   | Configuration to manage blocked pump impeller                                                                    |
| Motor direction protection            | Configuration to prevent operation in reverse direction                                                          |



## Typical air handling applications:

- HVAC supply and return fans
- Exhaust and ventilation fans
- Cooling tower fans
- Energy recovery wheels



## Typical pumping applications:

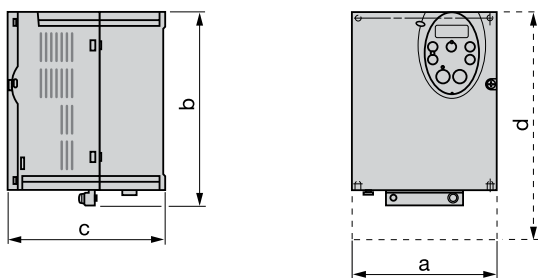
- Cooling tower pumps
- Chilled water and hot water pumps
- Fountain pumps
- Domestic water supply pumps

# Altivar 212 Drive Dimension and Weights

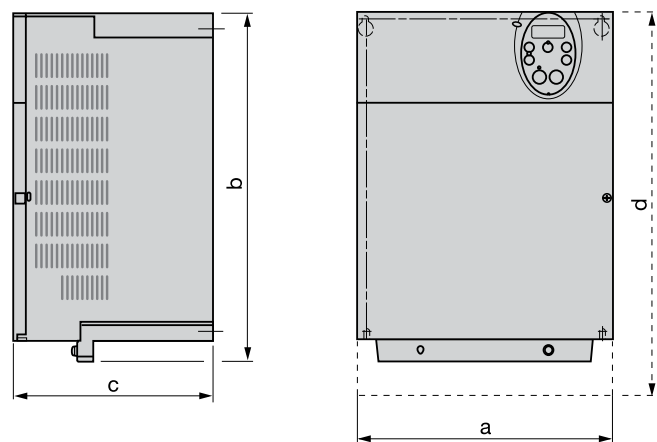
Electronic 2D sales drawings with specifications and 3D CAD models available at [www.schneider-electric.us/go/CAD](http://www.schneider-electric.us/go/CAD)

| IP20 drives |           |       |            |       |           |       |                    |        | UL Type 1                          |       |                                |        |
|-------------|-----------|-------|------------|-------|-----------|-------|--------------------|--------|------------------------------------|-------|--------------------------------|--------|
| Frame size  | a – Width |       | b – Height |       | c – Depth |       | Approximate weight |        | d – Height with Type 1 conduit kit |       | Weight with Type 1 conduit kit |        |
|             | mm        | in.   | mm         | in.   | mm        | in.   | kg.                | lbs.   | mm                                 | in.   | kg.                            | lbs.   |
| 1           | 105       | 4.13  | 143        | 5.63  | 150       | 5.91  | 1.2                | 2.65   | 194.5                              | 7.66  | 2.1                            | 4.65   |
| 2           | 140       | 5.51  | 184        | 7.24  | 150       | 5.91  | 2.4                | 5.29   | 236                                | 9.29  | 3.53                           | 7.79   |
| 3           | 180       | 7.09  | 232        | 9.13  | 170       | 6.69  | 4.7                | 10.36  | 311                                | 12.24 | 6.05                           | 13.36  |
| 4           | 245       | 9.65  | 329.5      | 12.97 | 190       | 7.48  | 7                  | 15.44  | 401                                | 15.79 | 7.23                           | 15.94  |
| 5           | 240       | 9.45  | 420        | 16.54 | 213       | 8.39  | 9                  | 19.85  | 480                                | 18.89 | 10.59                          | 23.35  |
| 6           | 240       | 9.45  | 550        | 21.65 | 244       | 9.61  | 38.1               | 84.01  | 610                                | 24.01 | 39.92                          | 88.01  |
| 7           | 320       | 12.60 | 630        | 24.80 | 289.9     | 11.41 | 55.4               | 122.16 | 833                                | 32.80 | 57.68                          | 127.16 |

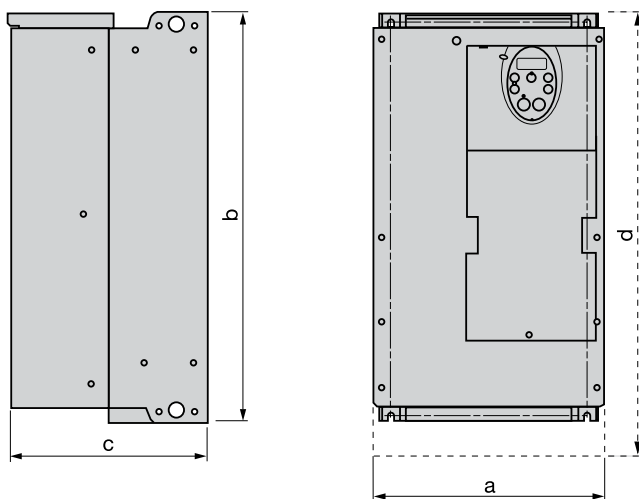
## Frame 1 and 2



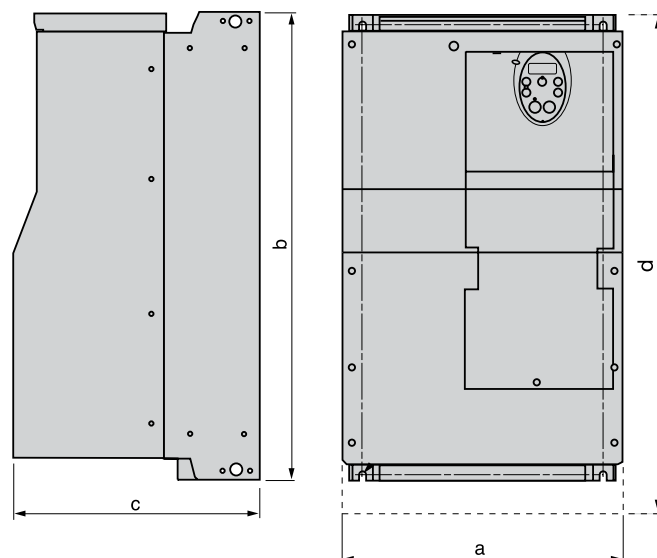
## Frame 3 and 4



## Frame 5 and 6



## Frame 7

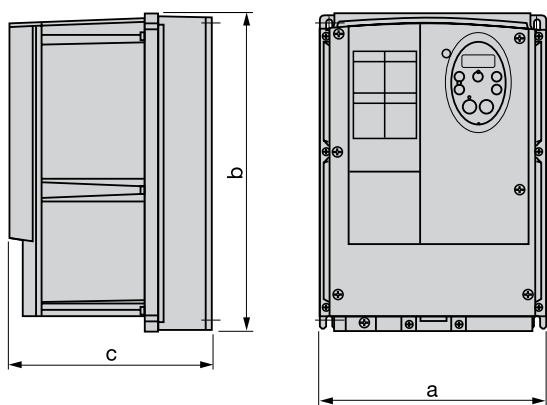


# Altivar 212W Drive Dimension and Weights

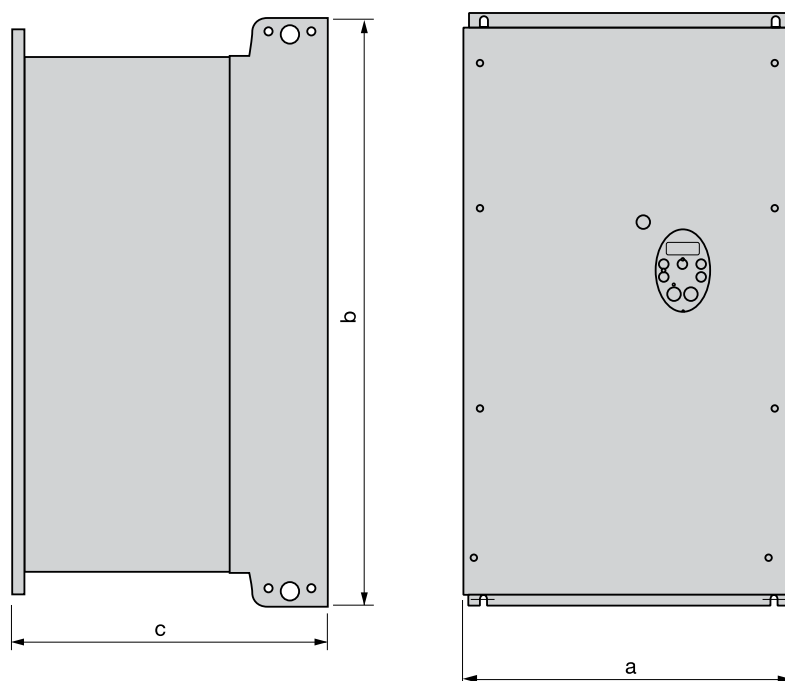
## IP54 drives

| Frame size | a – Width |       | b – Height |       | c – Depth |       | Appr. weight |        |
|------------|-----------|-------|------------|-------|-----------|-------|--------------|--------|
|            | mm        | In.   | mm         | In.   | mm        | In.   | kg.          | lbs.   |
| 1          | 215       | 8.46  | 297        | 11.69 | 192       | 7.56  | 7            | 15.44  |
| 2          | 230       | 9.06  | 340        | 13.39 | 208       | 8.19  | 9.65         | 21.28  |
| 3          | 290       | 11.42 | 560        | 22.05 | 315       | 12.40 | 30.3         | 66.81  |
| 4          | 310       | 12.20 | 665        | 26.18 | 315       | 12.40 | 37.4         | 82.47  |
| 5          | 284       | 11.18 | 720        | 28.35 | 315       | 12.40 | 49.5         | 109.15 |
| 6          | 284       | 11.18 | 880        | 34.65 | 343       | 13.59 | 57.4         | 126.57 |
| 7          | 362       | 14.25 | 1000       | 39.51 | 364       | 14.33 | 61.9         | 136.49 |

## Frame 1 and 2



## Frame 3 to 7



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