

# Product data sheet

Specifications



## medium voltage variable speed drive ATV1200 - 4.16 kV - 2020 kVA

ATV1200A20204242

### Main

Range Of Product	Altivar 1200
Product Or Component Type	Medium voltage variable speed drive
Device Short Name	ATV1200
Product Destination	Asynchronous motors Synchronous motors
Product Specific Application	Fan, pump, compressor, conveyor
Assembly Style	In floor-standing enclosure with separate air flows

### Complementary

Product Composition	2 x plinth Phase-shifting transformer Medium voltage arrestors Cooling fans Human machine interface 12 x power cells
Emc Filter	Integrated
Network Number Of Phases	3 phases
Input Type	24 pulse diode rectifier bridge
[Us] Rated Supply Voltage	4.16 kV +/- 10 %
Supply Voltage Limits	2970...3630 V
[Uc] Control Circuit Voltage	220 V
Motor Power Kw	1689 kW
Line Current	280 A
Drive Efficiency With Transformer (Including Fan Power)	96 % (standard efficiency) 96.5 % (high efficiency)
Total Losses At 100 % Load Including Fan Power	59 kW (high efficiency) 68 kW (standard efficiency)
Apparent Power	2020 kVA
Prospective Line Isc	31.5 kA for 150 ms
Overload Withstand	1.2 In, standard overload, 60 s 1.5 In, standard overload, 3 s 1.5 In, high overload, 60 s 1.85 In, high overload, 3 s
Continuous Output Current	280 A (standard overload) 224 A (high overload)
Maximum Transient Current	336 A for 60 s
Speed Drive Output Frequency	0.5...120 Hz voltage/frequency ratio (V/f) 0.5...70 Hz vector control with/without speed feedback

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

Nominal Switching Frequency	600 Hz
Speed Range	20...100
Asynchronous Motor Control Profile	Voltage/frequency ratio (V/f) Closed-loop control with encoder Vector control with sensor, optional Sensorless flux vector control
Synchronous Motor Control Profile	Voltage/frequency ratio (V/f) Closed-loop control with encoder
Overvoltage Category	II conforming to EN/IEC 61800-5-1
Output Voltage	<= power supply voltage
Isolation	Electrical between power and control
Electrical Connection	Bar - screw type M10, clamping capacity: 6 x 40 mm² (L1/R, L2/S, L3/T) entry from the bottom or from the top
Supply	External supply for control at 220 V AC, 3 kVA Internal supply for cooling fan at 380 V AC External supply for control at 220 V AC/DC (optional) External supply for cooling fan at 380 V AC (optional)
Analogue Input Number	4
Analogue Input Type	software-configurable current: 0...20 mA/4...20 mA, 24 V max, impedance: 250 Ohm
Analogue Output Number	2 4 (optional)
Analogue Output Type	software-configurable current: 0...20 mA/4...20 mA DC, impedance: 250 Ohm
Discrete Output Number	10 14 (optional)
Discrete Input Number	6 10 (optional)
Acceleration And Deceleration Ramps	Linear from 0...3200 s
Protection Type	Ground fault protection: drive
Dielectric Strength	20 kV AC between earth and power terminals
Communication Port Protocol	Human machine interface: Modbus with 2-wire RS485(1) - SUB-D 9 Human machine interface: Modbus TCP with (1) - RJ45 Human machine interface: EtherNet/IP with (1) - RJ45 Human machine interface: Profibus with (1) - SUB-D 9 Human machine interface: DeviceNet with (1) - SUB-D 9
Operating Position	Vertical +/- 10 degree
Colour Of Enclosure	Grey (RAL 7032)
Width	4360 mm (standard efficiency) 4660 mm (high efficiency)
Depth	1500 mm (standard efficiency) 1700 mm (high efficiency)
Height	2740 mm high efficiency 2740 mm standard efficiency
Net Weight	6300 kg (standard efficiency) 7200 kg (high efficiency)

## Environment

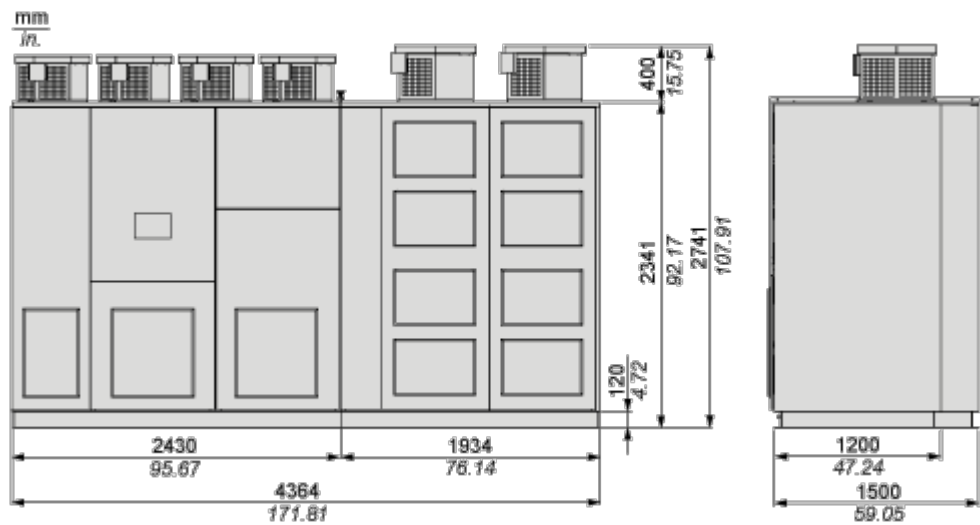
Ip Degree Of Protection	IP31 IP42 IP41
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Standards	EN/IEC 60204-11 EN/IEC 60529 EN/IEC 61800-3 EN/IEC 61800-4 EN/IEC 61800-5-1
Marking	CE
Pollution Degree	2 conforming to EN/IEC 61800-5-1
Noise Level	80 dB
Vibration Resistance	4.9 m/s² (f= 10...50 Hz)
Relative Humidity	0...90 % 0...95 % optional
Ambient Air Temperature For Operation	0...40 °C 40...50 °C (with current derating of 2 % per °C)
Ambient Air Temperature For Storage	-10...60 °C
Volume Of Cooling Air	33200 m³/h (high efficiency) 33200 m³/h (standard efficiency)
Type Of Cooling	Forced convection
Operating Altitude	<= 1000 m without derating 1000...2000 m with current derating 0.6 % per 100 m

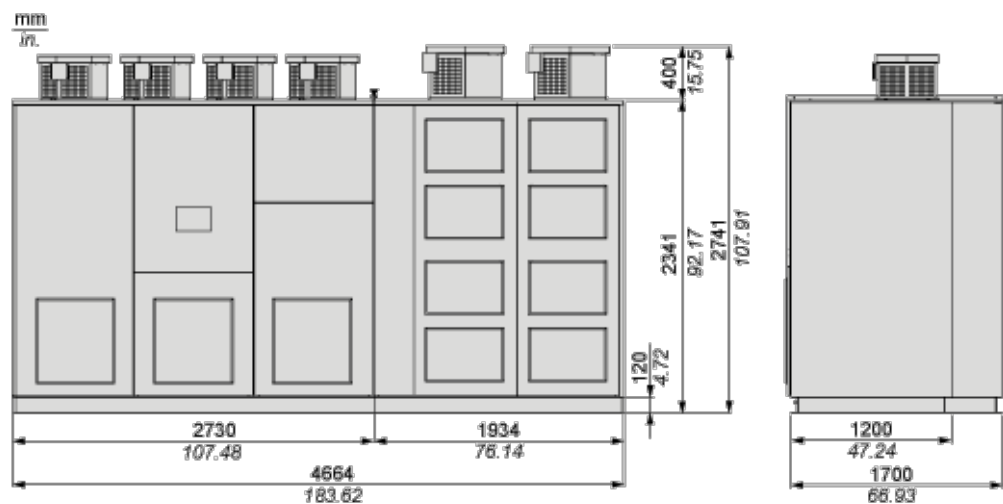
Dimensions Drawings

Dimensions

Standard Efficiency



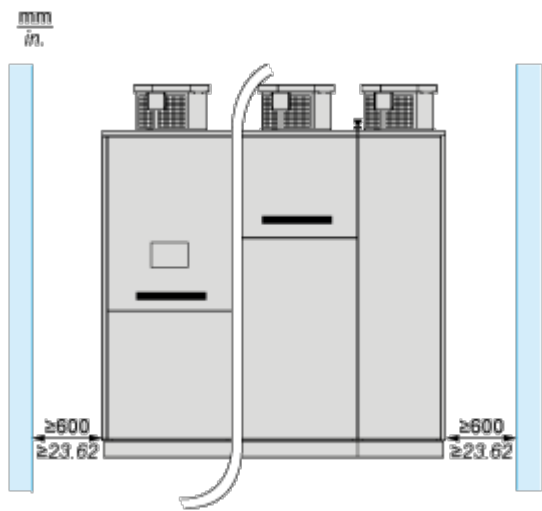
High Efficiency



Mounting and Clearance

Clearance

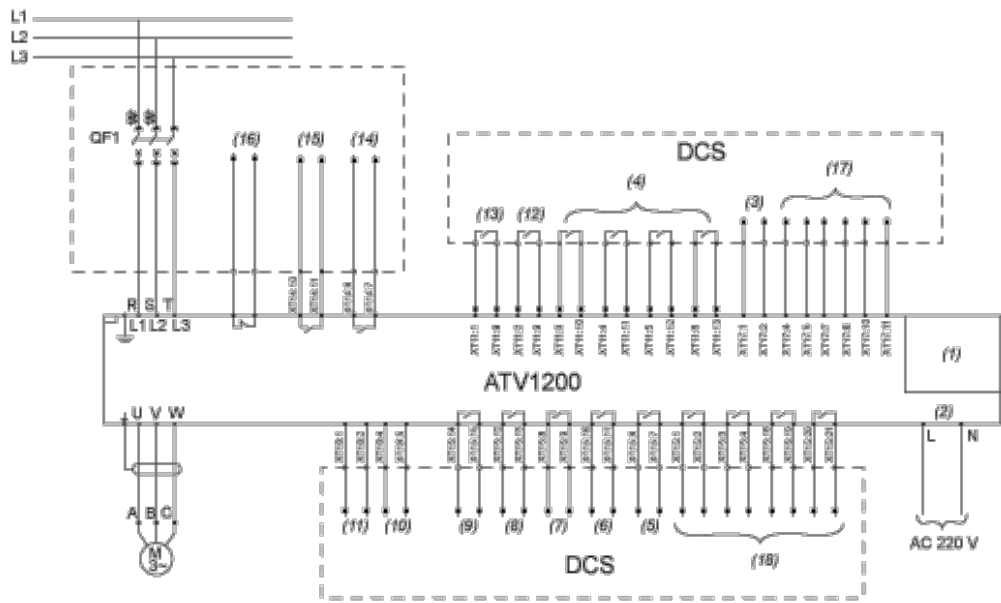
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Connections and Schema

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Standard Wiring Diagram

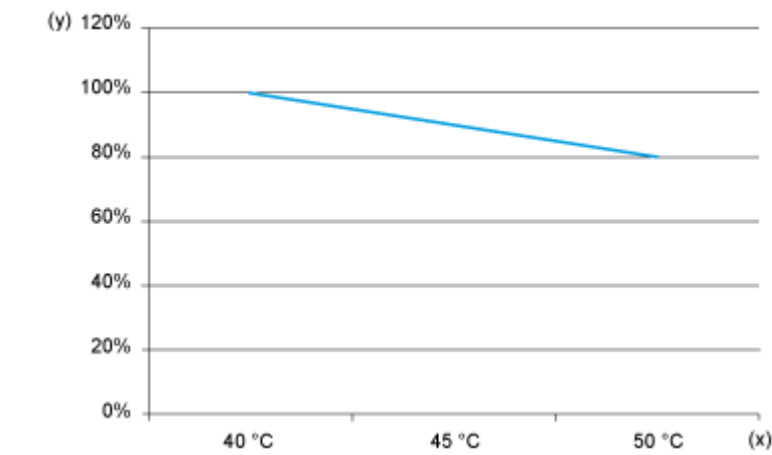


- (1) Integrated power supply
- (2) Control power supply
- (3) 4-20mA speed setpoint
- (4) Input reserved
- (5) VFD is ready
- (6) Local 1 remote control
- (7) VFD running
- (8) Alarming
- (9) Detected fault
- (10) 4-20mA Output current
- (11) 4-20mA Output speed
- (12) Stop
- (13) Start
- (14) Main circuit breaker enable to close
- (15) Trip main circuit breaker
- (16) Undervoltage release module of circuit breaker
- (17) 4-20mA reserved inputs
- (18) Reserved outputs
- (QF1) Main circuit breaker

Performance Curves

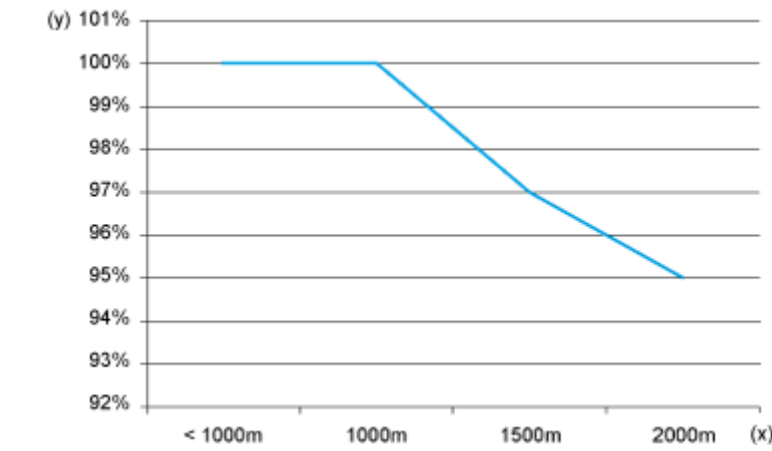
Power Derating of Output Current

Temperature Derating



- (x) Ambient temperature
- (y) Derating

Altitude Derating



- (x) Altitude
- (y) Derating