



### 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	Enclosure Phase-shifting transformer Medium voltage arrestors Cooling fans Human machine interface Power cells (18) Plinth (2)
EMC filter	Integrated
Network number of phases	3 phases
Input type	36 pulse diode rectifier bridge
Output type	Transistor (IGBT)
[Us] rated supply voltage	6.3 kV (tolerance: +/- 10 %)
Supply voltage limits	2970...3630 V
Supply frequency	50/60 Hz (tolerance: +/- 5 %)
[Uc] control circuit voltage	220 V
Motor power kW	920 kW
Line current	100 A
Drive efficiency with transformer (including fan power)	>= 96 % (standard efficiency) >= 96.5 % (high efficiency)
Total losses at 100 % load including fan power	<= 37 kW (standard efficiency) <= 32 kW (high efficiency)
Apparent power	1100 kVA
Prospective line I <sub>sc</sub>	31.5 kA for 150 ms
Overload withstand	1.5 I <sub>n</sub> for 3 s (standard overload) 1.85 I <sub>n</sub> for 3 s (high overload) 1.2 I <sub>n</sub> for 60 s (standard overload)

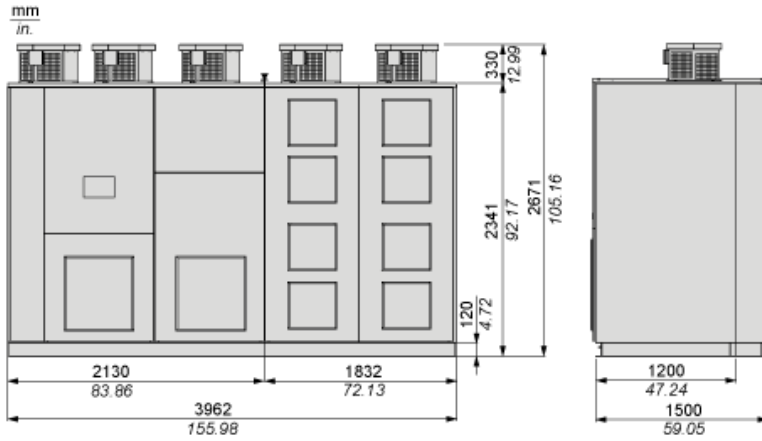
	1.5 In for 60 s (high overload)
Continuous output current	80 A (high overload) 100 A (standard overload)
Maximum transient current	120 A for 60 s
Speed drive output frequency	0.5...70 Hz (vector control with/without speed feedback) 0.5...120 Hz (voltage/frequency ratio (V/f))
Nominal switching frequency	600 Hz
Speed range	20...100
Asynchronous motor control profile	Sensorless flux vector control Voltage/frequency ratio (V/f) Vector control with sensor, optional Closed-loop control with encoder
Synchronous motor control profile	Voltage/frequency ratio (V/f) Closed-loop control with encoder
Overvoltage category	II conforming to EN/IEC 61800-5-1
Display type	LCD display for operation function, status and configuration
Output voltage	<= power supply voltage
Isolation	Electrical between power and control
Electrical connection	Bar - screw type M10, clamping capacity: 6 x 40 mm <sup>2</sup> (L1/R, L2/S, L3/T) entry from the bottom or from the top
Supply	Internal supply for cooling fan at 380 V AC External supply for cooling fan at 380 V AC (optional) External supply for control at 220 V AC, 3 kVA External supply for control at 220 V AC/DC (optional)
Analogue input number	4
Analogue input type	Software-configurable current, 0...20 mA/4...20 mA, 24 V max, input impedance: 250 Ohm
Analogue output number	2 4 (optional)
Analogue output type	Software-configurable voltage, 0...10 V DC Software-configurable current, 0...20 mA/4...20 mA DC, output impedance: 250 Ohm
Discrete output number	14 (optional) 10
Discrete input number	10 (optional) 6
Acceleration and deceleration ramps	Linear from 0...3200 s
Protection type	Overcurrent for drive Overvoltage for drive Undervoltage for drive Controller shutdown for drive Cooling fan stop for drive Overload for drive Over temperature protection for drive Communication failure for drive Phase loss for drive Ground fault protection for drive
Dielectric strength	20 kV AC between earth and power terminals
Frequency resolution	0.01 Hz for output
Communication port protocol	1 DeviceNet (SUB-D 9) human machine interface 1 Modbus TCP (RJ45) human machine interface 1 Profibus (SUB-D 9) human machine interface 1 Modbus (SUB-D 9), RS485, 2-wire human machine interface 1 Ethernet IP (RJ45) human machine interface
Operating position	Vertical +/- 10 degree
Colour of enclosure	Grey (RAL 7032)
Width	3360 mm (standard efficiency) 3660 mm (high efficiency)
Depth	1400 mm (standard efficiency) 1600 mm (high efficiency)
Height	2670 mm (high efficiency) 2520 mm (standard efficiency)
Product weight	5200 kg (high efficiency) 4200 kg (standard efficiency)

## Environment

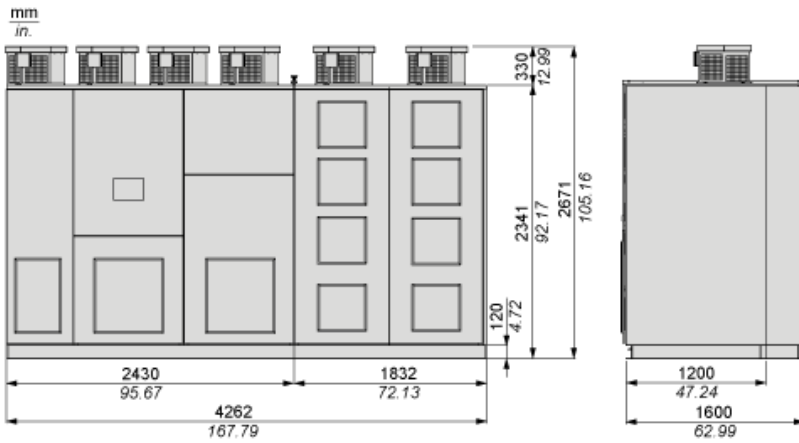
IP degree of protection	IP31 IP41 IP42
Standards	EN/IEC 61800-3 EN/IEC 61800-5-1 EN/IEC 60204-11 EN/IEC 60529 EN/IEC 61800-4 IEEE 519 : 1992
Marking	CE
Pollution degree	2 conforming to EN/IEC 61800-5-1
Noise level	<= 80 dB
Vibration resistance	4.9 m/s <sup>2</sup> (f=10...50 Hz)
Relative humidity	0...90 % 0...95 % (optional)
Ambient air temperature for operation	40...50 °C with current derating of 2 % per °C 0...40 °C
Ambient air temperature for storage	-10...60 °C
Volume of cooling air	19800 m <sup>3</sup> /h (high efficiency) 16500 m <sup>3</sup> /h (standard efficiency)
Type of cooling	Forced convection
Operating altitude	1000...2000 m with current derating 0.6 % per 100 m <= 1000 m without derating

Dimensions

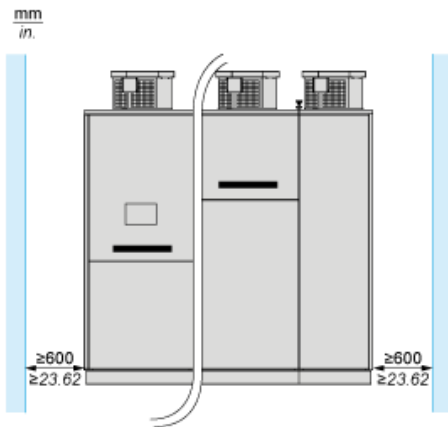
Standard Efficiency



High Efficiency

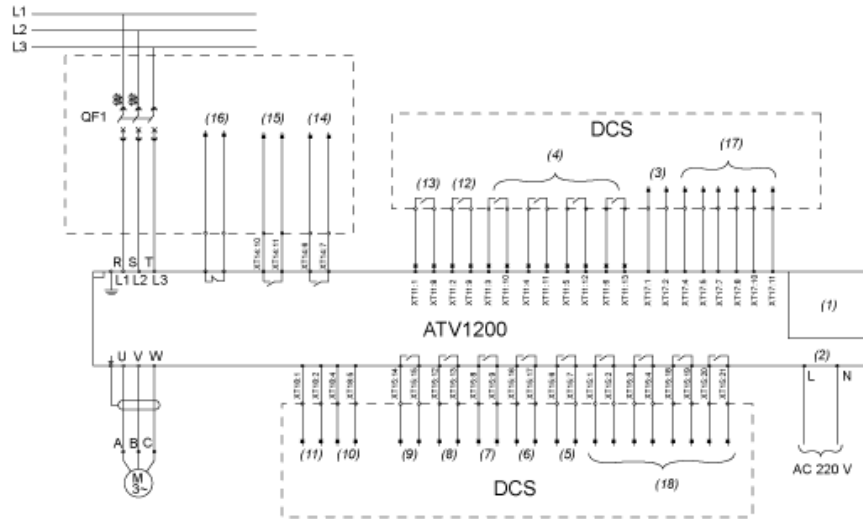


Clearance



Connections and Schema

Standard Wiring Diagram



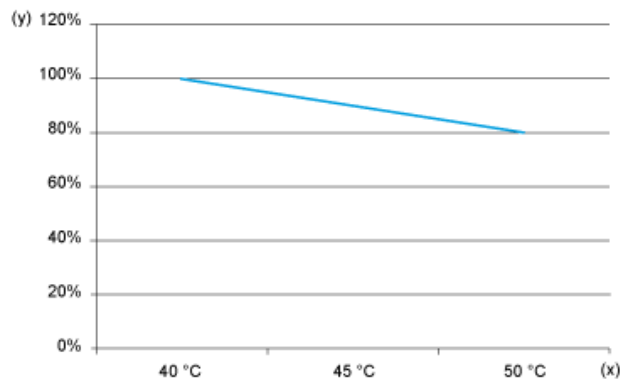
- (1) Integrated power supply
- (2) Control power supply
- (3) 4-20mA speed setpoint
- (4) Input reserved
- (5) VFD is ready
- (6) Local 1 remote control
- (7) VFD running
- (8) Alarming
- (9) Detected fault
- (10) 4-20mA Output current
- (11) 4-20mA Output speed
- (12) Stop
- (13) Start
- (14) Main 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

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Power Derating of Output Current

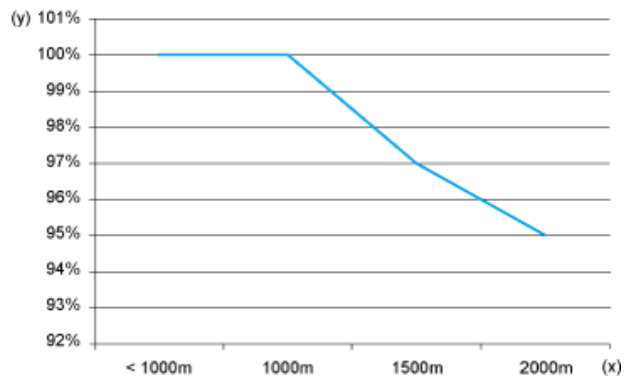
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Temperature Derating



(x) Ambient temperature  
(y) Derating

Altitude Derating



(x) Altitude  
(y) Derating