### Product data sheet Characteristics

### ATV12HU15M2 variable speed drive ATV12 - 1.5kW - 2hp -200..240V - 1ph - with heat sink

Green Premium"

Product availability:	Stock -	Normally stocked in distribution facility	
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Range of product	Altivar 12
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific applica- tion	Simple machine
Assembly style	With heat sink
Component name	ATV12
Quantity per set	Set of 1
EMC filter	Integrated
Built-in fan	With
Phase	1 phase
[Us] rated supply volt- age	200240 V - 1510 %
Motor power kW	1.5 kW
Motor power hp	2 hp
Communication port protocol	Modbus
Line current	17.8 A 200 V 14.9 A 240 V
Speed range	120
Transient overtorque	150170 % of nominal motor torque depending on drive rating and type of motor
Asynchronous motor control profile	Sensorless flux vector control Voltage/Frequency ratio (V/f) Quadratic voltage/frequency ratio
IP degree of protection	IP20 without blanking plate on upper part
Noise level	45 dB

#### Complementary

50/60 Hz +/- 5 %	
1 RJ45 Modbus on front face	
2-wire RS 485 Modbus	
RTU Modbus	
4800 bit/s 9600 bit/s 19200 bit/s 38400 bit/s	
1247 Modbus	
Read holding registers (03) 29 words Write single register (06) 29 words Write multiple registers (16) 27 words Read/Write multiple registers (23) 4/4 words Read device identification (43)	
<= 1 kA	
7.5 A 4 kHz	
11.2 A 60 s	
0.5400 Hz	
4 kHz	
	1 RJ45 Modbus on front face         2-wire RS 485 Modbus         RTU Modbus         4800 bit/s         9600 bit/s         19200 bit/s         38400 bit/s         1247 Modbus         Read holding registers (03) 29 words         Write single register (06) 29 words         Write multiple registers (16) 27 words         Read/Write multiple registers (23) 4/4 words         Read device identification (43)         <= 1 kA



Braking torque       Up to 70 % of nominal motor torque without braking resistor         Motor slip compensation       Adjustable Preset in factory         Output voltage       200240 V 3 phases         Electrical connection       Terminal 5.5 mm² AWG 10 L1, L2, L3, U, V, W, PA, PC         Tightening torque       10.62 lbf. in (1.2 N.m)         Insulation       Electrical between power and control         Supply       Internal supply for reference potentiometer 5 V DC 4.755.25 V 10 mA overload and short-circuit protection Internal supply for logic inputs 24 V DC 20.428.8 V 100 mA overload and short- circuit protection         Analogue input number       1         Analogue input number       1         Analogue input type       Configurable voltage Al1 010 V 30 KOhm Configurable voltage Al1 05 V 30 kOhm         Discrete input number       4         Discrete input number       4         Discrete input type       Programmable L11L14 24 V 1830 V         Discrete input togic       Negative logic (sink) > 16 V < 10 V 3.5 KOhm         Positive logic (source)       05 V > 11 V         Sampling duration       20 ms 4-1 ms logic input         Analogue output number       1         Analogue output number       1         Analogue output type       Software-configurable voltage AO1 010 V 470 Ohm 8 bits         Discr	Switching frequency	216 kHz adjustable 416 kHz with derating factor
Motor silp compensation         Adjustable Prease in factory           Output voltage         200240 V 3 phases           Electrical connection         Terminal 5.5 mm² AVIG 10.1.1, 2, 1, 3, U, V, W, P, PC           Tipthening torcy for thermal supply for reference petitoinester 5 V DC 4.75525 V 10 mA overload and short-circuit protection           Supply         Internal supply for polic inputs 24 V DC 20.428.8 V 100 mA overload and short- circuit protection           Analogue input number         1           Analogue input number         1           Analogue input number         4           Discrete input togic         Programmable Li1LL4 24 V 1830 V           Discrete input togic         Programmable Li1LL4 24 V 1830 V           Discrete input togic         Programmable Li1LL4 24 V 1830 V           Discrete input togic         Programmable Li1LL4 24 V 1830 V           Discrete input togic         Programmable Li1L14 24 V 1830 V           Discrete input togic         Programmable Li1L14 24 V 1830 V           Sampling duration         20 ms + 1. ms logic input           10         Santware-configurable voltage and 010 V 470 Ohm 8 bits           Santague output number         1           Analogue output towner         2           Discrete input togic         Software-configurable voltage and polic relative sosin there- poli	Braking torque	<b>v</b>
Preserie in factoryOption Voltage200.:240 V 3 phasesElectrical connectionTerminal 5.5 mm² AWG 10 L1, L2, L3, U, V, W, PA, PCTiphtoning torque10.82 bL5 mi f.2 N mInsulationElectrical between power and controlSupplyInternal supply for reference potentiometer 5 V DC 4.75525 V 10 mA overload and short-cricit protectionAnalogue input number1Analogue input number1Analogue input number4Discrete input number4Discrete input number4Discrete input number4Discrete input number4Discrete input number4Analogue input number4Discrete input number10.5 V 30 kOhm Configurable voltage AII 05 V 30 kOhm Configurable unrent AII 020 m 3250 OhmDiscrete input number4Analogue output typeProgrammable L1L14 24 V 1830 VDiscrete input number1Analogue output typeSoftware configurable voltage AOI 010 V 470 Ohm 8 bitsDiscrete input number1Analogue output typeSoftware configurable voltage AOI 010 V 470 Ohm 8 bitsDiscrete output number2Discrete output number2Analogue output typeSoftware configurable voltage AOI 010 V 470 Ohm 8 bitsDiscrete output number2Analogue output typeSoftware configurable voltage AOI 010 V 470 Ohm 8 bitsDiscrete output number2Analogue output typeConfigurable voltage AOI 010 V 470 Ohm 8 bitsDiscrete output number		
Electrical connection         Terminal 5.5 mm* AWG 10 L1, L2, L3, U, V, W, PA, PC           Tightening torque         10.62 bLfn (1.2 N m)           Insulation         Electrical between power and control           Supply         Internal supply for reference potentiometer 5 V DC 4.75525 V 10 mA overload and short-circuit protection           Analogue input number         1           Analogue input number         1           Analogue input type         Configurable voltage AI 1010 V 30 KOhm           Configurable voltage AI 1050 V 30 KOhm         Configurable voltage AI 1050 V 35 KOhm           Discrete input number         4           Discrete input type         Programmable L11L14 24 V 1830 V           Discrete input type         Programmable L11L14 24 V 1830 V           Discrete input type         Pogrammable L11L14 24 V 1830 V           Discrete input type         Software-configurable voltage AO 1010 V 470 Ohm 8 bits           Sampling duration         20 ms 4-1 m topic input           Analogue output type         Software-configurable voltage AO 1010 V 470 Ohm 8 bits           Discrete output number         2           Analogue output type         Software-configurable voltage AO 1010 V 470 Ohm 8 bits           Discrete output number         2           Analogue output type         Software-configurable curent AO 1 0.		
Tiphtening lorque       10.62 lbf.in (1.2 N.m)         Insulation       Electrical between power and control         Supply       Internal supply for reference polentiometer 5 V DC 4.755.25 V 10 mA overload and short-circuit protection         Analogue input number       1         Analogue input number       1         Analogue input number       1         Configurable voltage AI 1010 V 30 KOhm         Configurable voltage AI 1020 W3 KOhm         Configurable voltage AI 1020 W3 KOhm         Discrete input number       4         Discrete input type       Configurable voltage AI 1020 W3 KOhm         Discrete input type       Programmable LI1LI4 24 V 1830 V         Discrete input type       20 ms +/. 1 ms logic input         Analogue output number       1         Analogue output number       2         Discrete output type       Sothvare-configurable current AO 1020 mA 800 Ohm 8 bits<	Output voltage	200240 V 3 phases
Insulation       Electrical between power and control         Supply       Internal supply for reference potentiometer 5 V DC 4.755.25 V 10 mA overload and short-carbu protection         Analogue input number       1         Analogue input type       Configurable voitage AH 1010 V 30 KOhm         Configurable voitage AH 105 V 30 KOhm       Configurable voitage AH 105 V 30 KOhm         Discrete input number       4         Discrete input logic       Programmable L11L4 24 V 1830 V         Discrete input logic       Nagative logic (source) 04 5 V > 11 V         Sampling duration       20 ms +/ - 1 ms logic Input         10 ms analogue input       1         Analogue output number       2         Discrete output type       Software-configurable voltage AO1 010 V 470 Ohm 8 bits         Discrete output type       Not Configurable voltage AD1 010 V 470 Ohm 8 bits         Discrete output type       Configurable voltage AD1 010 V 47	Electrical connection	Terminal 5.5 mm <sup>2</sup> AWG 10 L1, L2, L3, U, V, W, PA, PC
Supply         Internal supply for reference polentiometer 5 V DC 4.755.25 V 10 mA overload and shot-dural protection           Analogue input number         1           Analogue input type         Configurable voltage AI1 010 V 30 kOhm Configurable voltage AI1 05 V 30 kOhm Configurable current AI1 020 mA 250 Ohm           Discrete input type         Programmable LI1LI 24 V 1830 V           Discrete input type         Programmable LI1LI 24 V 1830 V           Discrete input type         Programmable LI1LI 24 V 1830 V           Discrete input topic         Negative logic (sink) > 16 V < 10 V 35 kOhm Positive logic (sink) > 16 V < 10 V 35 kOhm	Tightening torque	10.62 lbf.in (1.2 N.m)
and short-circuit protection Internal supply for logic inputs 24 VDC 20.428.8 V 100 mA overload and short- circuit protection         Analogue input number       1         Analogue input type       Configurable voltage A11 010 V 30 kOhm Configurable voltage A11 05 V 30 kOhm         Discrete input number       4         Discrete input type       Programmable L11L14 24 V 1830 V         Discrete input togic       Negative logic (sink) > 16 V < 10 V.35 kOhm Postther logic (source) 0         Sampling duration       20 ms +/- 1 ms logic input         Linearity error       +/- 0.3 % of maximum value analogue input         Analogue output rumber       1         Analogue output trumber       1         Analogue output type       Software-configurable voltage A01 010 V 470 Ohm 8 bits         Discrete output number       2         Discrete output type       Software-configurable voltage A01 010 V 470 Ohm 8 bits         Discrete output number       2         Discrete output number       2         Discrete output number       2         Discrete output type       Software-configurable voltage A01 010 V 470 Ohm 8 bits         Discrete output number       2         Analogue output type       Opcic colupt L0+. L0-         Protected relay output R1A. R1B, R1C 1 C/O         Marinum switching current	Insulation	Electrical between power and control
Analogue input type         Configurable voltage A11 0 6 V 30 KOhm Configurable voltage A11 0 5 V 30 KOhm Configurable voltage A11 0 5 V 30 KOhm Configurable voltage A11 0 5 V 30 KOhm Discrete input type           Discrete input type         Programmable L11L14 24 V 1830 V           Discrete input type         Programmable L11L14 24 V 1830 V           Discrete input type         Programmable L11L14 24 V 1830 V           Discrete input togic         Negative logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.5 KOhm Positive logic (sink) > 16 V < 10 V 3.7 Ohm 8 bits Software-configurable voltage A01 010 V 470 Ohm 8 bits Software-configurable current A01 020 mA 800 Ohm 8 bits Discrete output number           1         Analogue output type         Software-configurable voltage A01 010 V 470 Ohm 8 bits Software-configurable current A01 020 mA 800 Ohm 8 bits Discrete output type           Discrete output type         Logic output L0+, LO- Protected relay output R1A. R1B, R1C 1 C/O           Minimum switching current         5 mA 24 V DC logic relay           As20 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay           A 24 DV DC logic relay         A 300 V DC relative cos phi = 1.LR = 0 ms logic relay           Acceleration and deceleration ramps         S           Linear from 0 to 999.9 s U         U           Protection type	Supply	and short-circuit protection Internal supply for logic inputs 24 V DC 20.428.8 V 100 mA overload and short-
Configurable voltage A11 0S V 30 KOhmDiscrete input number4Discrete input typeProgrammable L11L14 24 V 1830 VDiscrete input typeNegative logic (sink) > 16 V < 10 V 3.5 KOhm	Analogue input number	1
Discrete input type         Programmable L11L4 24 V 1830 V           Discrete input logic         Negative logic (sink) > 16 V < 10 V 3.5 KOhm	Analogue input type	Configurable voltage AI1 05 V 30 kOhm
Discrete input logic         Negative logic (sink) > 16 V < 10 V 3.5 kOhm Positive logic (source) 0 < 5 V > 11 V           Sampling duration         20 ms + 1 ms logic input 10 ms analogue input         Analogue output 1           Analogue output type         5 oftware-configurable voltage AO1 010 V 470 Ohm 8 bits Software-configurable current AO1 020 mA 800 Ohm 8 bits           Discrete output number         2           Discrete output type         Software-configurable output R1A, R1B, R1C 1 C/O           Minimum switching current         5 mA 24 V DC logic relay           A 30 V DC inductive cos phi = 0 4 L/R = 7 ms logic relay           3 A 250 V AC inductive cos phi = 1 L/R = 7 ms logic relay           A 30 V DC inductive cos phi = 1 L/R = 0 ms logic relay           A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay           A 30 V DC injection <= 30 s	Discrete input number	4
Positive logic (source) 0<5 V > 11 V           Sampling duration         20 ms +/ 1 ms logic input 10 ms analogue input           Linearity error         +/-0.3 % of maximum value analogue input           Analogue output number         1           Analogue output type         Software-configurable voltage AO1 010 V 470 Ohm 8 bits Software-configurable current AO1 020 mA 800 Ohm 8 bits           Discrete output number         2           Discrete output type         Logic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/O           Minimum switching current         5 mA 24 V DC logic relay 3 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 30 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 3 A 30 V DC resistive cos phi = 0.4 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 4 A 30 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 3 A 20 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 4 A 30 V DC resistive cos phi = 0.4 L/R = 7 ms logic relay 4 A 30 V	Discrete input type	Programmable LI1LI4 24 V 1830 V
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Analogue output number       1         Analogue output type       Software-configurable voltage AO1 010 V 470 Ohm 8 bits         Discrete output number       2         Discrete output type       Logic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/O         Minimum switching current       5 mA 24 V DC logic relay         Maximum switching current       5 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay         A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay       2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay         A 250 V AC resistive cos phi = 1.1/R = 0 ms logic relay       3 A 250 V AC resistive cos phi = 1.1/R = 0 ms logic relay         A A 30 V DC resistive cos phi = 1.1/R = 0 ms logic relay       4 A 30 V DC resistive cos phi = 1.1/R = 0 ms logic relay         Acceleration and deceleration ramps       S       Linear from 0 to 999.9 s         U       U       By DC injection <= 30 s	Sampling duration	
Analogue output type       Software-configurable voltage AO1 010 V 470 Ohm 8 bits         Discrete output number       2         Discrete output type       Logic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/O         Minimum switching current       5 mA 24 V DC logic relay         Maximum switching current       2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay         A 24 V DC logic relay       2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay         A 250 V AC relative cos phi = 1 L/R = 0 ms logic relay       2 A 30 V DC inductive cos phi = 1 L/R = 0 ms logic relay         A 250 V AC relative cos phi = 1 L/R = 0 ms logic relay       2 A 30 V DC inductive cos phi = 1 L/R = 0 ms logic relay         Acceleration and deceleration ramps       S       Linear from 0 to 999.9 s         U       U       By DC lipection <= 30 s	Linearity error	+/- 0.3 % of maximum value analogue input
Software-configurable current AO1 020 mA 800 Ohm 8 bitsDiscrete output number2Discrete output typeLogic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/OMinimum switching current5 mA 24 V DC logic relayMaximum switching current2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relayProtection typeAgainst input phase loss in three-phase Thermal motor protection via the drive by continuous calculation of Pt Line supply overvoltage Diversumet between undurp theses and earth Overheating protection Soft-circuit between motor phasesFrequency resolution </td <td>Analogue output number</td> <td>1</td>	Analogue output number	1
Discrete output type         Logic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/O           Minimum switching current         5 mA 24 V DC logic relay           Maximum switching current         2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay 2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay           Acceleration and deceleration ramps         S Linear from 0 to 999.9 s U           Braking to standstill         By DC injection <= 30 s	Analogue output type	
Protected relay output R1A, R1B, R1C 1 C/OMinimum switching current5 mA 24 V DC logic relayMaximum switching current2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0 ms logic relay 4 A 30 V DC resistive cos phi = 0 ms logic relay 4 A 30 v DC resistive cos phi = 0 ms logic relay 4 A 30 vertice and prove on tage in the phase 4 D degreeFrequency resolutionC E V ms logic relay = 0 ms	Discrete output number	2
Maximum switching current       2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay         2 A 30 V DC inductive cos phi = 1.1/R = 0 ms logic relay       3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay         4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay       4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay         Acceleration and deceleration ramps       S       Linear from 0 to 999.9 s         Braking to standstill       By DC injection <= 30 s	Discrete output type	
2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relayAcceleration and deceleration rampsS Linear from 0 to 999.9 s UBraking to standstillBy DC injection <= 30 s	Minimum switching current	5 mA 24 V DC logic relay
Linear from 0 to 999.9 s UBraking to standstillBy DC injection <= 30 s	Maximum switching current	2 A 30 V DC inductive cos phi = $0.4 \text{ L/R} = 7 \text{ ms}$ logic relay 3 A 250 V AC resistive cos phi = $1 \text{ L/R} = 0 \text{ ms}$ logic relay
Protection typeAgainst input phase loss in three-phase Thermal motor protection via the drive by continuous calculation of I²t Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Overheating protection Short-circuit between motor phasesFrequency resolution0.1 Hz display unit Converter A/D, 10 bits analog inputTime constant20 ms +/- 1 ms for reference changeMarkingCEOperating positionVertical +/- 10 degreeHeight5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Acceleration and deceleration ramps	Linear from 0 to 999.9 s
Thermal motor protection via the drive by continuous calculation of I²t Line supply overoltage Line supply outeroltage Overcurrent between output phases and earth Overheating protection Short-circuit between motor phasesFrequency resolution0.1 Hz display unit Converter A/D, 10 bits analog inputTime constant20 ms +/- 1 ms for reference changeMarkingCEOperating positionVertical +/- 10 degreeHeight5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Braking to standstill	By DC injection <= 30 s
Converter A/D, 10 bits analog inputTime constant20 ms +/- 1 ms for reference changeMarkingCEOperating positionVertical +/- 10 degreeHeight5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Protection type	Thermal motor protection via the drive by continuous calculation of I <sup>2</sup> t Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Overheating protection
MarkingCEOperating positionVertical +/- 10 degreeHeight5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Frequency resolution	
Operating positionVertical +/- 10 degreeHeight5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Time constant	20 ms +/- 1 ms for reference change
Height5.59 in (142 mm)Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Marking	CE
Width4.13 in (105 mm)Depth6.15 in (156.2 mm)Product weight3.09 lb(US) (1.4 kg)FunctionalityBasicSpecific applicationCommercial equipmentVariable speed drive application selectionCommercial equipment : mixer Commercial equipment : other application Textile : ironing	Operating position	Vertical +/- 10 degree
Depth       6.15 in (156.2 mm)         Product weight       3.09 lb(US) (1.4 kg)         Functionality       Basic         Specific application       Commercial equipment         Variable speed drive application selection       Commercial equipment : mixer Commercial equipment : other application Textile : ironing	Height	5.59 in (142 mm)
Product weight       3.09 lb(US) (1.4 kg)         Functionality       Basic         Specific application       Commercial equipment         Variable speed drive application selection       Commercial equipment : mixer Commercial equipment : other application Textile : ironing	Width	4.13 in (105 mm)
Functionality     Basic       Specific application     Commercial equipment       Variable speed drive application selection     Commercial equipment : mixer Commercial equipment : other application Textile : ironing	Depth	6.15 in (156.2 mm)
Specific application       Commercial equipment         Variable speed drive application selection       Commercial equipment : mixer         Commercial equipment : other application       Textile : ironing	Product weight	3.09 lb(US) (1.4 kg)
Variable speed drive application selection Commercial equipment : mixer Commercial equipment : other application Textile : ironing	Functionality	Basic
Commercial equipment : other application Textile : ironing	Specific application	Commercial equipment
Motor starter type Variable speed drive	Variable speed drive application selection	Commercial equipment : other application
	Motor starter type	Variable speed drive

#### Environment

Electromagnetic compatibility	Immunity to conducted disturbances level 3 EN/IEC 61000-4-6 Surge immunity test level 3 EN/IEC 61000-4-5 Voltage dips and interruptions immunity test EN/IEC 61000-4-11 Electrical fast transient/burst immunity test level 4 EN/IEC 61000-4-4 Electrostatic discharge immunity test level 3 EN/IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 EN/IEC 61000-4-3
Electromagnetic emission	Radiated emissions environment 1 category C2 EN/IEC 61800-3 216 kHz shielded motor cable Conducted emissions with integrated EMC filter environment 1 category C1 EN/ IEC 61800-3 2, 4, 8, 12 and 16 kHz shielded motor cable 5 m Conducted emissions with additional EMC filter environment 1 category C1 EN/ IEC 61800-3 412 kHz shielded motor cable 20 m Conducted emissions with additional EMC filter environment 1 category C2 EN/ IEC 61800-3 412 kHz shielded motor cable 50 m Conducted emissions with additional EMC filter environment 2 category C3 EN/ IEC 61800-3 412 kHz shielded motor cable 50 m Conducted emissions with additional EMC filter environment 1 category C2 EN/ IEC 61800-3 412 kHz shielded motor cable 50 m Conducted emissions with integrated EMC filter environment 1 category C2 EN/ IEC 61800-3 416 kHz shielded motor cable 5 m Conducted emissions with integrated EMC filter environment 1 category C2 EN/ IEC 61800-3 416 kHz shielded motor cable 5 m
Product certifications	CSA NOM GOST C-Tick UL
Vibration resistance	1 gn EN/IEC 60068-2-6 13200 Hz 1.5 mm peak to peak EN/IEC 60068-2-6 313 Hz drive unmounted on symmetri- cal DIN rail
Shock resistance	15 gn EN/IEC 60068-2-27 11 ms
Relative humidity	595 % without condensation IEC 60068-2-3 595 % without dripping water IEC 60068-2-3
Ambient air temperature for storage	-13158 °F (-2570 °C)
Ambient air temperature for operation	14122 °F (-1050 °C) protective cover from the top of the drive removed 122140 °F (5060 °C) with current derating 2.2 % per °C
Operating altitude	> 3280.846561.68 ft (> 10002000 m) with current derating 1 % per 100 m <= 3280.84 ft (1000 m) without derating

### Ordering and shipping details

Category	22042 - ATV12 DRIVE AND ACCESSORIES
Discount Schedule	CP4B
GTIN	00785901665168
Nbr. of units in pkg.	1
Package weight(Lbs)	3.89000000000001
Returnability	Y
Country of origin	ID

### Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 0901 - Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold
Product environmental profile	Available Product Environmental Profile
Product end of life instructions	Available Rend Of Life Information
California proposition 65	WARNING: This product can expose you to chemicals including:
Substance 1	Lead and lead compounds, which is known to the State of California to cause can- cer and birth defects or other reproductive harm.
Substance 2	Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm.
More information	For more information go to www.p65warnings.ca.gov

Contractual warranty

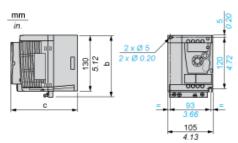
Warranty period

18 months

# ATV12HU15M2

# Dimensions

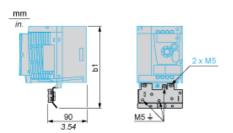
#### Drive without EMC Conformity Kit



#### Dimensions in mm

b	c
142	156.2
Dimensions in in.	
b	c
5.59	6.15

#### Drive with EMC Conformity Kit



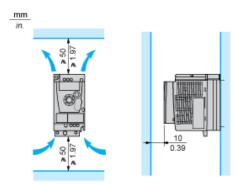
#### Dimensions in mm

b1	
188.2	
Dimensions in in.	
b1	
7.41	

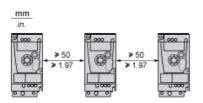
# ATV12HU15M2

### Mounting Recommendations

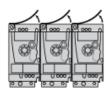
#### **Clearance for Vertical Mounting**



#### Mounting Type A



#### Mounting Type B



Remove the protective cover from the top of the drive.

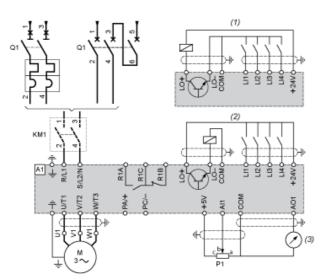
#### Mounting Type C



Remove the protective cover from the top of the drive.

# ATV12HU15M2

### Single-Phase Power Supply Wiring Diagram

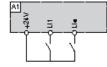


#### A1 Drive

- KM1 Contactor (only if a control circuit is needed)
- P1 2.2 kΩ reference potentiometer. This can be replaced by a 10 kΩ potentiometer (maximum).
- Q1 Circuit breaker
- (1) Negative logic (Sink)
- (2) Positive logic (Source) (factory set configuration)
- (3) 0...10 V or 0...20 mA

#### **Recommended Schemes**

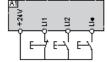
#### 2-Wire Control for Logic I/O with Internal Power Supply





- LI.: Reverse
- A1: Drive

#### 3-Wire Control for Logic I/O with Internal Power Supply



LI1: Stop

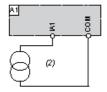
- LI2 : Forward
- LI•: Reverse
- A1: Drive

#### Analog Input Configured for Voltage with Internal Power Supply



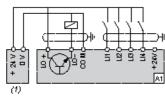
(1) 2.2 k $\Omega$ ...10 k $\Omega$  reference potentiometer A1 : Drive

Analog Input Configured for Current with Internal Power Supply



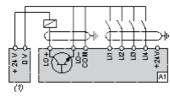
(2) 0-20 mA 4-20 mA supply A1 : Drive

Connected as Positive Logic (Source) with External 24 vdc Supply



(1) 24 vdc supply A1 : Drive

Connected as Negative Logic (Sink) with External 24 vdc supply



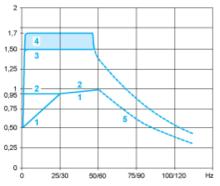
(1) 24 vdc supply

A1: Drive

Product data sheet **Performance Curves** 

### ATV12HU15M2

#### **Torque Curves**



- Self-cooled motor: continuous useful torque (1) 1:
- 2: Force-cooled motor: continuous useful torque
- 3: Transient overtorque for 60 s
- Transient overtorque for 2 s 4:
- 5: Torque in overspeed at constant power (2)
- (1) For power ratings  $\leq 250$  W, derating is 20% instead of 50% at very low frequencies.
- (2) The nominal motor frequency and the maximum output frequency can be adjusted from 0.5 to 400 Hz. The mechanical overspeed capability of the selected motor must be checked with the manufacturer.

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 VFD002EL11A
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 1300920078
 SR24
 R88D 

 GT04H
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 U-PKZ0(400V50HZ)
 LUCC12BL

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