

variable speed drive ATV12 - 1.5kW - 2hp - 200..240V - 3ph - on base plate

Local distributor code: 392951786

ATV12PU15M3

! Discontinued on: 9 Feb 2023

(!) Discontinued

EAN Code: 3606480071232

Main

Range Of Product	Altivar 12
Product Or Component Type	Variable speed drive
Product Specific Application	Simple machine
Mounting Mode	Cabinet mount
Communication Port Protocol	Modbus
Supply Frequency	50/60 Hz +/- 5 %
[Us] Rated Supply Voltage	200240 V - 1510 %
Nominal Output Current	7.5 A
Motor Power Hp	2 hp
Motor Power Kw	1.5 kW
Motor Power Hp	2 hp
Emc Filter	Without EMC filter
Ip Degree Of Protection	IP20

Complementary

Discrete Input Number	4
Discrete Output Number	2
Analogue Input Number	1
Analogue Output Number	1
Relay Output Number	1
Physical Interface	2-wire RS 485
Connector Type	1 RJ45
Continuous Output Current	7.5 A at 4 kHz
Method Of Access	Server Modbus serial
Speed Drive Output Frequency	0.5400 Hz
Speed Range	120
Sampling Duration	20 ms, tolerance +/- 1 ms for logic input 10 ms for analogue input
Linearity Error	+/- 0.3 % of maximum value for analogue input
Frequency Resolution	Analog input: converter A/D, 10 bits Display unit: 0.1 Hz

Transmission Rate 9.6 kbits 10.2 kbits 38.4 kbits Transmission Frame RTU Number Of Addresses 1247 Data Format 8 bits, configurable odd, even or no parity Communication Service Read holding registers (16) 27 words Write single register (16) 27 words Readwrite multiple registers (23) 24 words Write single registers (16) 27 words Readwrite multiple registers (18) 27 words Read device infortification (43) Type Of Potarization No impedance 4 Quadrant Operation Possible False Vollagefrequency ratio (V/f) Sensoriess flux vector control Quadratic voltagefrequency ratio (V/f) Sensoriess flux vector control Quadratic voltagefrequency ratio (V/f) Ramps 8 Linear from 0 to 999.9 s Motor Silp Compensation Adjustable Press in factory Switching Frequency 4 kitz 1 Linear from 0 to 999.9 s Motor Silp Compensation Adjustable Press in factory Switching Frequency 4 kitz Braking To Standstill By DC injection Brake Chopper Integrated False Line Current 11.1 A at 100 V (heavy duly) Maximum Output Voltage 240 V Apparent Power 3.9 kVA at 240 V (heavy duly) Maximum Fransient Current 11.2 A during 65 s (heavy duly) Network Frequency 50.60 Hz Relative Symmetric Network Frequency Prospective Line Isc 5 KA Base Load Current At High Orderdoad Power Dissipation in W Natural: 73.0 W With Sately Function Safe False		
Transmission Frame RTU Number Of Addresses 1247 Data Format 8 bits, configurable odd, even or no parity Communication Service Read holding registers (03) 29 words Write single register (03) 29 words Write single register (03) 29 words Write single register (03) 40 words Read device identification (43) Type Of Polarization No impedance 4 Quadrant Operation Possible Asynchronous Motor Control Possible Asynchronous Motor Control Possible Asynchronous Motor Control Possible Asynchronous Motor Control Quadrate voitage/frequency ratio (V/I) Sensoriess flux vector control Quadrate voitage/frequency ratio Maximum Output Frequency 4 kHz Transient Overtorque 150170 % of nominal motor torque depending on drive rating and type of motor Acceleration And Deceleration Ramps Sufficient Linear from 0 to 999.9 s Motor Silp Compensation Adjustable Prese in fact device Prese in fact device Prese in fact device Prese in fact device 1.10 kHz with derating factor Nominal Switching Frequency 4 kHz Braking To Standstill By DC injection Brake Chopper Integrated False Line Current 1.1.1 A at 100 V (heavy duty) 9.3 A at 120 V (heavy duty) Maximum Input Current 9.3 A Maximum Cutput Voltage 240 V Apparent Power 3.9 kVA at 240 V (heavy duty) Maximum Transient Current 1.1.2 A during 00 s (heavy duty) Maximum Transient Current 1.1.2 A during 0 s (heavy duty) 1.24 A during 0 s (heavy duty) 1.24 A during 0 s (heavy duty) 1.24 A during 0 s (heavy duty) Maximum Frequency 5000 Hz Relative Symmetric Network Frequency 5000 Hz Relative Symmetric Network Frequency False Linet Gorean As False Linet Gorean As False Linet Gorean As False False Linet Gorean As False	Time Constant	20 ms +/- 1 ms for reference change
Number Of Addresses 1247 Data Format 8 bits, configurable odd, even or no parity Communication Service Read holding registers (03) 29 words Write single registers (03) 29 words Write insights registers (03) 29 words Readwrite multiple registers (23) 44 words Read words Read device identification (43) Type Of Polarization No impedance 4 Quadrant Operation Possible False Asynchronous Motor Control Profile Voltage/frequency ratio (V/I) Sensories false wester control Quadratic voltage/frequency ratio (V/I) Sensories false wester control Quadratic voltage/frequency ratio (V/I) Ramps United States of Control Profile Sensories false (Sala States) Motor Slip Compensation Adjustable Pricest in factory Switching Frequency 216 kirtz adjustable 416 kirtz adjustable A16 kirtz with derating factor Nominal Switching Frequency 4 kirtz Braking To Standstill By DC injection Brake Chopper Integrated False Line Current 11.1 At 100 V (heavy duty) 9.3 A at 120 V (heavy duty) Maximum Dutput Voltage 240 V Apparent Power 3.3 kirt at 240 V (heavy duty) Maximum Translent Current 11.2 A during 60 s (heavy duty) Maximum Translent Current 5. % Read words Age and the Sales False Chopper Integrated 5. KA Base Load Current 4. High 7.5 A Overload 7.5 A Power Dissipation in W Natural: 73.0 W With Safety Function Safe Brake Mith Safety Function Safe False With Safety Function Safe False Holds Safety Function Safe False With Safety Function Safe False	Transmission Rate	19.2 kbit/s
Data Format 8 bits, configurable odd, even or no parity Communication Service Read holding registers (03) 29 words Write inspile registers (03) 29 words Write inspile registers (23) 24 words Read-write multiple registers (23) 44 words Read device identification (43) Type Of Polarization No impedance 4 Quadrant Operation Possible 4 Quadrant Operation Possible False Asynchronous Motor Control Profile Voltage/Requency ratio (V/7) Sensoless flux vector control Quadratic Voltage/Requency ratio (V/7) Sensoless flux vector control Quadratic Voltage/Requency ratio Maximum Output Frequency 4 kHz Transient Overtorque 150170 % of nominal motor torque depending on drive rating and type of motor Acceleration And Deceleration Ramps Motor Slip Compensation Adjustable Preset in factory Switching Frequency 216 kHz adjustable A16 kHz with derating factor Nominal Switching Frequency 4 kHz Braking To Standstill By DC injection Brake Chopper Integrated False Line Current 11.1.1 at 100 V (heavy duty) 9.3 A at 120 V (heavy duty) 9.3 A at 120 V (heavy duty) Maximum Input Current 3.9 A Maximum Transient Current 1.1.2 A during 80 s (heavy duty) 1.2.4 A during 80 s (heavy duty) 1.2.4 A during 2 s (heavy duty) 1.2.4 A during 2 s (heavy duty) Network Frequency 5060 Hz Relative Symmetric Network Frequency 1010 False With Safety Function Safe Brake Monagement (Sba2Bb) With Safety Function Safe Brake Monagement (Sba2Bb) With Safety Function Safe Poeration (Sp) With Safety Function Safe Position (Sp)	Transmission Frame	RTU
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Maximum Transient Current 11.2 A during 60 s (heavy duty) 12.4 A during 2 s (heavy duty) Network Frequency 5060 Hz Relative Symmetric Network Frequency Tolerance Prospective Line Isc 5 kA Base Load Current At High Overload Power Dissipation In W Natural: 73.0 W With Safety Function Safely Limited Speed (SIs) With Safety Function Safe Brake Management (Sbc/Sbt) With Safety Function Safe Operating Stop (Sos) With Safety Function Safe Position (Sp) With Safety Function Safe False Position (Sp) With Safety Function Safe False False False False False	Maximum Output Voltage	240 V
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Operating Stop (Sos) With Safety Function Safe Position (Sp) With Safety Function Safe False		False
Position (Sp) With Safety Function Safe False		False
		False
		False

With Safety Function Safe Speed Monitor (Ssm)	False
With Safety Function Safe Stop 1 (Ss1)	False
With Sft Fct Safe Stop 2 (Ss2)	False
With Safety Function Safe Torque Off (Sto)	False
With Safety Function Safely Limited Position (SIp)	False
With Safety Function Safe Direction (Sdi)	False
Protection Type	Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Overheating protection Short-circuit between motor phases Against input phase loss in three-phase Thermal motor protection via the drive by continuous calculation of I²t
Tightening Torque	1.2 N.m
Insulation	Electrical between power and control
Quantity Per Set	Set of 1
Width	105 mm
Height	143 mm
Depth	98.2 mm
Net Weight	1 kg

Environment

Environment	
Operating Altitude	<= 1000 m without derating > 10003000 m with current derating 1 % per 100 m
Operating Position	Vertical +/- 10 degree
Product Certifications	NOM CSA C-Tick UL GOST RCM KC
Marking	CE
Standards	UL 508C UL 618000-5-1 IEC 61800-5-1 IEC 61800-3
Assembly Style	On base plate
Electromagnetic Compatibility	Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Immunity to conducted disturbances level 3 conforming to IEC 61000-4-6 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 Surge immunity test level 3 conforming to IEC 61000-4-5 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
Environmental Class (During Operation)	Class 3C3 according to IEC 60721-3-3 Class 3S2 according to IEC 60721-3-3
Maximum Acceleration Under Shock Impact (During Operation)	150 m/s² at 11 ms
Maximum Acceleration Under Vibrational Stress (During Operation)	10 m/s² at 13200 Hz
Maximum Deflection Under Vibratory Load (During Operation)	1.5 mm at 213 Hz
Overvoltage Category	Class III

Regulation Loop	Adjustable PID regulator
Electromagnetic Emission	Radiated emissions environment 1 category C2 conforming to IEC 61800-3 216 kHz shielded motor cable Conducted emissions with additional EMC filter environment 1 category C1 conforming to IEC 61800-3 412 kHz shielded motor cable <5 m Conducted emissions with additional EMC filter environment 1 category C2 conforming to IEC 61800-3 412 kHz shielded motor cable <20 m Conducted emissions with additional EMC filter environment 2 category C3 conforming to IEC 61800-3 412 kHz shielded motor cable <20 m
Vibration Resistance	1 gn (f = 13200 Hz) conforming to IEC 60068-2-6 1.5 mm peak to peak (f = 313 Hz) - drive unmounted on symmetrical DIN rail - conforming to IEC 60068-2-6
Shock Resistance	15 gn conforming to IEC 60068-2-27 for 11 ms
Relative Humidity	595 % without condensation conforming to IEC 60068-2-3 595 % without dripping water conforming to IEC 60068-2-3
Noise Level	0 dB
Pollution Degree	2
Ambient Air Transport Temperature	-2570 °C
Ambient Air Temperature For Operation	-1040 °C without derating 4060 °C with current derating 2.2 % per °C
Ambient Air Temperature For Storage	-2570 °C

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	18.000 cm
Package 1 Width	18.700 cm
Package 1 Length	18.700 cm
Package 1 Weight	1.300 kg
Unit Type Of Package 2	P06
Number Of Units In Package 2	30
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	57.370 kg

Contractual warranty

Warranty 18 months

Sustainability

Green PremiumTM label is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >

Well-being performance

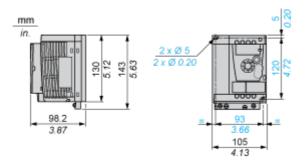
Weil being performance	
Mercury Free	
Rohs Exemption Information	Yes
Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Weee	The product must be disposed on European Union markets following specific waste

collection and never end up in rubbish bins

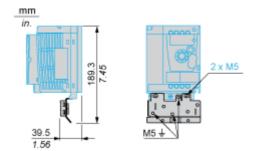
Dimensions Drawings

Dimensions

Drive without EMC Conformity Kit



Drive with EMC Conformity Kit

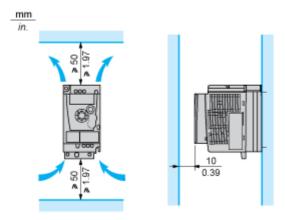


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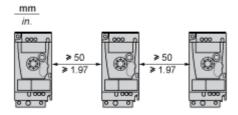
Mounting and Clearance

Mounting Recommendations

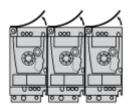
Clearance for Vertical Mounting



Mounting Type A

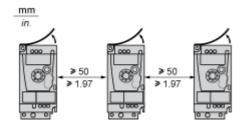


Mounting Type B



Remove the protective cover from the top of the drive.

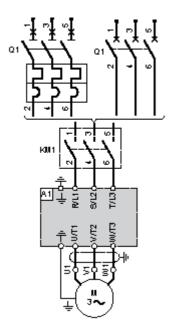
Mounting Type C



Remove the protective cover from the top of the drive.

Connections and Schema

Three-Phase Power Supply Wiring Diagram



A1 Drive

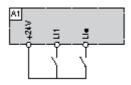
KM1 Contactor (only if a control circuit is needed)

Q1 Circuit breaker

25 Apr 2024

Recommended Schemes

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

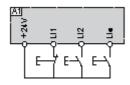


LI1: Forward

LI•: Reverse

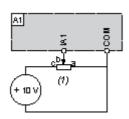
A1: Drive

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



LI1: Stop
LI2: Forward
LI•: Reverse
A1: Drive

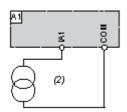
Analog Input Configured for Voltage with Internal Power Supply



(1) 2.2 k Ω ...10 k Ω reference potentiometer

A1: Drive

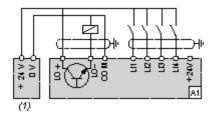
Analog Input Configured for Current with Internal Power Supply



(2) 0-20 mA 4-20 mA supply

A1: Drive

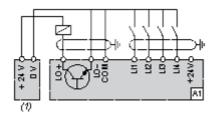
Connected as Positive Logic (Source) with External 24 vdc Supply



(1) 24 vdc supply

A1: Drive

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



(1) 24 vdc supply

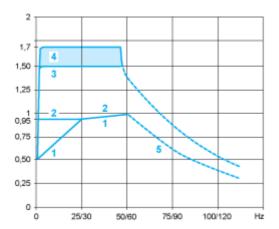
A1: Drive

Product datasheet

ATV12PU15M3

Performance Curves

Torque Curves



- 1: Self-cooled motor: continuous useful torque (1)
- 2: Force-cooled motor: continuous useful torque
- 3: Transient overtorque for 60 s
- 4: Transient overtorque for 2 s
- 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.