

variable speed drive, Altivar 12, 1.5kW, 2hp, 200 to 240V, 1 phase, with heat sink

ATV12HU15M2

Product availability: Stock - Normally stocked in distribution facility

## 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 kW	1.5 kW	
Maximum Horse Power Rating	2 hp	
EMC filter	Integrated	
IP degree of protection	IP20	
Maximum Horse Power Rating	2 hp	

# Complementary

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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 4 kHz	
Method of access	Server Modbus serial	
Speed drive output frequency	0.5400 Hz	
Speed range	120	
Sampling duration	20 ms +/- 1 ms logic input 10 ms analogue input	
Linearity error	+/- 0.3 % of maximum value analogue input	
Frequency resolution	Analog input converter A/D, 10 bits Display unit 0.1 Hz	
Time constant	20 ms +/- 1 ms for reference change	

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Transmission Rate	9.6 kbit/s 19.2 kbit/s 38.4 kbit/s	
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 (06) 29 words Write multiple registers (16) 27 words Read/write multiple registers (23) 4/4 words Read device identification (43)	
Type of polarization	No impedance	
4 quadrant operation possible	False	
Asynchronous motor control profile	Sensorless flux vector control Quadratic voltage/frequency ratio Voltage/frequency ratio (V/f)	
Maximum output frequency	4 kHz	
Transient overtorque	150170 % of nominal motor torque depending on drive rating and type of motor	
Acceleration and deceleration ramps	U S Linear from 0 to 999.9 s	
Motor slip compensation	Adjustable Preset in factory	
Switching frequency	216 kHz adjustable 416 kHz with derating factor	
Nominal switching frequency	4 kHz	
Braking to standstill	By DC injection	
Brake chopper integrated	False	
Line current	17.8 A 100 V heavy duty) 14.9 A 120 V heavy duty)	
Maximum Input Current per Phase	14.9 A	
Maximum output voltage	240 V	
Apparent power	3.6 kVA 240 V heavy duty)	
Maximum transient current	11.2 A 60 s heavy duty) 12.4 A 2 s heavy duty)	
Network Frequency	50-60 Hz	
Relative symmetric network frequency tolerance	5 %	
Prospective line Isc	1 kA	
Base load current at high overload	7.5 A	
Power dissipation in W	Forced cooling 72.0 W	
With safety function Safely Limited Speed (SLS)	False	
With safety function Safe brake management (SBC/SBT)	False	
With safety function Safe Operating Stop (SOS)	False	
With safety function Safe Position (SP)	False	
With safety function Safe programmable logic	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 (SLP)	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	10.6 lbf.in (1.2 N.m)	
Insulation	Electrical between power and control	
Quantity per Set	Set of 1	
Width	4.1 in (105 mm)	
Height	5.6 in (142 mm)	
Depth	6.1 in (156.2 mm)	
Net Weight	3.09 lb(US) (1.4 kg)	

# **Environment**

Operating altitude	> 3280.846561.68 ft (> 10002000 m) with current derating 1 % per 100 m	
-	<= 3280.84 ft (1000 m) without derating	
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	With heat sink	
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	Class 3C3 according to IEC 60721-3-3	
operation)	Class 3S2 according to IEC 60721-3-3	
Maximum acceleration under shock impact (during operation)	150 m/s² at 11 ms	
Maximum acceleration under	10 m/s² at 13200 Hz	
vibrational stress (during operation)	10 1110 04 10200112	
Maximum deflection under vibratory load (during operation)	1.5 mm at 213 Hz	
	4226.8 Gal/hr(US) (16 m3/h)	
Volume of cooling air	12200 341111(33) (13110)11)	

Regulation loop Adjustable PID regulator		
Electromagnetic emission	Radiated emissions environment 1 category C2 IEC 61800-3 216 kHz shielded motor cable Conducted emissions with integrated EMC filter environment 1 category C1 IEC 61800-3 2, 4, 8, 12 and 16 kHz shielded motor cable <16.4 ft (5 m) Conducted emissions with additional EMC filter environment 1 category C1 IEC 61800-3 412 kHz shielded motor cable <65.6 ft (20 m) Conducted emissions with additional EMC filter environment 1 category C2 IEC 61800-3 412 kHz shielded motor cable <164.04 ft (50 m) Conducted emissions with additional EMC filter environment 2 category C3 IEC 61800-3 412 kHz shielded motor cable <164.04 ft (50 m) Conducted emissions with integrated EMC filter environment 1 category C2 IEC 61800-3 416 kHz shielded motor cable <16.4 ft (5 m) Conducted emissions with integrated EMC filter environment 1 category C2 IEC 61800-3 2.416 kHz shielded motor cable <16.4 ft (5 m)	
Vibration resistance	1 gn 13200 Hz)IEC 60068-2-6 1.5 mm peak to peak 313 Hz) - drive unmounted on symmetrical DIN rail - IEC 60068-2-6	
Shock resistance	15 gn 11 ms IEC 60068-2-27	
Relative humidity	595 % without condensation IEC 60068-2-3 595 % without dripping water IEC 60068-2-3	
Noise level	45 dB	
pollution degree	2	
Ambient air transport temperature	-13158 °F (-2570 °C)	
Ambient air temperature for operation	14122 °F (-1050 °C) without derating 122140 °F (5060 °C) with current derating 2.2 % per °C	
Ambient Air Temperature for Storage	-13158 °F (-2570 °C)	

# Ordering and shipping details

Category	US1CP4B22042	
Discount Schedule	CP4B	
GTIN	3606480071096	
Returnability	Yes	
Country of origin	ID	

# **Packing Units**

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Unit Type of Package 1	PCE	
Number of Units in Package 1	1	
Package 1 Height	7.09 in (18.000 cm)	
Package 1 Width	7.28 in (18.500 cm)	
Package 1 Length	7.28 in (18.500 cm)	
Package 1 Weight	3.788 lb(US) (1.718 kg)	
Unit Type of Package 2	S06	
Number of Units in Package 2	30	
Package 2 Height	29.53 in (75.000 cm)	
Package 2 Width	23.62 in (60.000 cm)	
Package 2 Length	31.50 in (80.000 cm)	
Package 2 Weight	142.948 lb(US) (64.840 kg)	

# **Contractual warranty**

Warranty

Apr 9, 2025

18 months



Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing "Use Better, Use Longer, Use Again" campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

#### **Use Better**

Materials and Substances	
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
SCIP Number	4a84ec00-b29e-4a08-82b9-8e16a72fb187
REACh Regulation	REACh Declaration
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
Energy efficiency	
Product contributes to saved and avoided emissions	Yes

#### **Use Again**

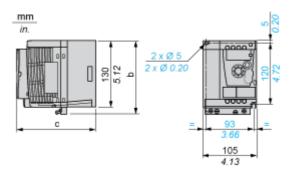
☼ Repack and remanufacture	
Take-back	No
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

# ATV12HU15M2

# **Dimensions Drawings**

## **Dimensions**

## **Drive without EMC Conformity Kit**



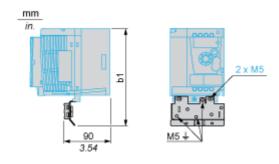
#### Dimensions in mm

b	С
142	156.2

#### Dimensions in in.

b	С
5.59	6.15

## **Drive with EMC Conformity Kit**



#### Dimensions in mm

# Dimensions in in.

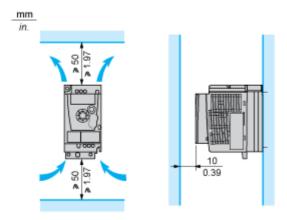
b1	ı
7.41	

# ATV12HU15M2

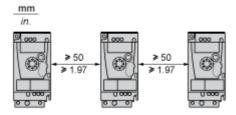
Mounting and Clearance

## **Mounting Recommendations**

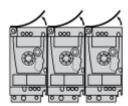
## **Clearance for Vertical Mounting**



## **Mounting Type A**

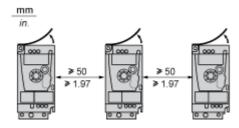


## **Mounting Type B**



Remove the protective cover from the top of the drive.

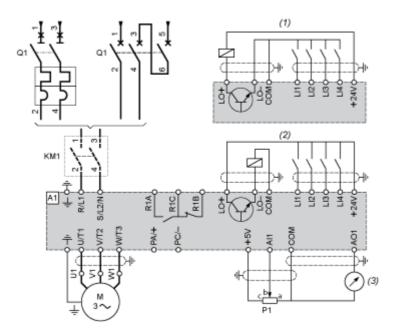
## **Mounting Type C**



Remove the protective cover from the top of the drive.

#### Connections and Schema

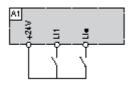
## **Single-Phase Power Supply Wiring Diagram**



- A1 Drive
- KM1 Contactor (only if a control circuit is needed)
- P1 2.2 k $\Omega$  reference potentiometer. This can be replaced by a 10 k $\Omega$  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

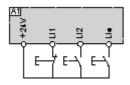


LI1: Forward

LI•: Reverse

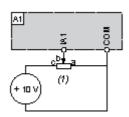
A1: Drive

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



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

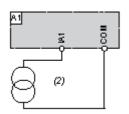
#### Analog Input Configured for Voltage with Internal Power Supply



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

A1: Drive

## **Analog Input Configured for Current with Internal Power Supply**



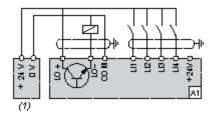
(2) 0-20 mA 4-20 mA supply

A1: Drive

# **Product data sheet**

# ATV12HU15M2

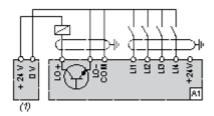
## Connected as Positive Logic (Source) with External 24 vdc Supply



(1) 24 vdc supply

A1: Drive

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



(1) 24 vdc supply

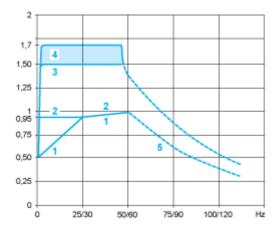
A1: Drive

# **Product data sheet**

## ATV12HU15M2

#### 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.