Product data sheet
Characteristics

ATV12HU22M2
variable speed drive, Altivar 12, 2.2kW, 3hp, 200 to 240V, 1 phase, with heat sink



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	200...240 V - 15...10 %
Nominal output current	10 A
Motor power kW	2.2 KW
Motor power hp	3 Hp
EMC filter	Integrated
IP degree of protection	IP20
Motor power hp	3 Hp

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	10 A at 4 kHz
Method of access	Server Modbus serial
Speed drive output frequency	0.5…400 Hz
Speed range	1…20
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
Time constant	20 Ms +/- 1 ms for reference change
Transmission rate	9.6 kbit/s 19.2 kbit/s 38.4 kbit/s
Transmission frame	RTU
Number of addresses	1…247
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	150…170 % of nominal motor torque depending on drive rating and type of motor
Acceleration and deceleration ramps	Linear from 0 to 999.9 s U S
Motor slip compensation	Adjustable Preset in factory
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Nominal switching frequency	4 kHz
Braking to standstill	By DC injection
Brake chopper integrated	False
Line current	24.0 A at 100 V (heavy duty) 20.2 A at 120 V (heavy duty)
Maximum input current	20.2 A
Maximum output voltage	240 V
Apparent power	4.8 KVA at 240 V (heavy duty)
Maximum transient current	15.0 A during 60 s (heavy duty) 16.5 A during 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	10.0 A
Power dissipation in W	Forced cooling: 93.0 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 I^2t
Tightening torque	1.2 N.M
Insulation	Electrical between power and control
Quantity per set	Set of 1
Width	105 Mm
Height	142 Mm
Depth	156.2 Mm
Net weight	1.4 Kg

Environment

Operating altitude	> 1000...2000 m with current derating 1 % per 100 m <= 1000 m without derating
Operating position	Vertical +/- 10 degree
Product certifications	NOM[RETURN]CSA[RETURN]C-Tick[RETURN]UL[RETURN]GOST[RETURN]RCM[RETURN]
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- 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 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz
Volume of cooling air	16 M3/H
Overvoltage category	Class III
Regulation loop	Adjustable PID regulator
Electromagnetic emission	Radiated emissions environment 1 category C2 conforming to IEC 61800-3 2...16 kHz shielded Conducted emissions with integrated EMC filter environment 1 category C1 conforming to IEC Conducted emissions with additional EMC filter environment 1 category C1 conforming to IEC Conducted emissions with additional EMC filter environment 1 category C2 conforming to IEC Conducted emissions with additional EMC filter environment 2 category C3 conforming to IEC Conducted emissions with integrated EMC filter environment 1 category C2 conforming to IEC Conducted emissions with integrated EMC filter environment 1 category C2 conforming to IEC
Vibration resistance	1 gn (f = 13…200 Hz) conforming to IEC 60068-2-6 1.5 mm peak to peak (f = 3…13 Hz) - drive unmounted on symmetrical DIN rail - conforming to
Shock resistance	15 gn conforming to IEC 60068-2-27 for 11 ms
Relative humidity	5…95 % without condensation conforming to IEC 60068-2-3 5…95 % without dripping water conforming to IEC 60068-2-3
Noise level	45 DB
Pollution degree	2
Ambient air transport temperature	-25…70 °C
Ambient air temperature for operation	-10…50 °C without derating 50…60 °C with current derating 2.2 % per °C
Ambient air temperature for storage	-25…70 °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	18.500 Cm
Package 1 Length	18.500 Cm
Package 1 Weight	1.767 Kg
Unit Type of Package 2	S06
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	65.950 Kg

Offer Sustainability

Mercury free	Yes
Sustainable packaging	Yes
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
SCIP Number	4a84ec00-b29e-4a08-82b9-8e16a72fb187
REACh Regulation	Reference contains Substances of Very High Concern above the threshold
EU RoHS Directive	Compliant By Exemption
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which
Product contributes to saved and avoided emissions	Yes
End of life manual availability	End Of Life Information
Take-back	No
WEEE Label	The product must be disposed on European Union markets following specific waste collection and

Contractual warranty

Warranty (in months)	18

Product Life Status : Commercialised