

Product data sheet

Specifications



variable speed drive ATV11 - 0.37kW - 230V 1-phase supply - IP20

ATV11HU09M2E

! Discontinued on: 31 December 2010

! End-of-service on: 31 December 2012

! Discontinued

Main

Range of product	Altivar 11
Product or component type	Variable speed drive
Product specific application	Simple machine
Component name	ATV11
Application market	European
Assembly style	With heat sink
EMC filter	Integrated
Built-in fan	Without
Network number of phases	1 phase
[Us] rated supply voltage	200...240 V - 15...10 %
Supply frequency	50...60 Hz - 5...5 %
Motor power kW	0.37 kW
Line current	5.3 A at 230 V, I _{sc} = 1 kA
Nominal output current	2.1 A 230 V motor 4 kHz
Maximum transient current	3.1 A for 60 s
Power dissipation in W	20.5 W at nominal load
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Braking torque	150 % of nominal motor torque with braking resistor at high inertia 20 % of nominal motor torque without braking resistor at no load 80 % of nominal motor torque with braking resistor at no load
Asynchronous motor control profile	Sensorless flux vector control with PWM type motor control signal
Electrical connection	Terminal, clamping capacity: 1.5 mm ² , AWG 14 (AI1, RA-RC, LI1...LI4, DO) Terminal, clamping capacity: 1.5 mm ² , AWG 14 (L1, L2, L3, U, V, W, PA, PC)
Supply	Internal supply for logic inputs: 15 V (+/- 15 %) 100 A, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 5...5.25 VDC 10 A, protection type: overload and short-circuit protection
Analogue input type	Configurable current AI1 4...20 mA 250 Ohm without adding resistor Configurable voltage AI1 0...5 V 40000 Ohm only with internal supply Configurable current AI1 0...20 mA 250 Ohm Configurable voltage AI1 0...10 V 40000 Ohm
Sampling duration	AI1: 20 ms analog

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

LI1...LI4: 20 ms discrete

Response time	20 ms DO
Linearity error	DO: +/- 1 % for output AI: +/- 5 % for input
Discrete input type	Assignable LI1 forward 5000 Ohm 15 V 24 V Assignable LI2 reverse 5000 Ohm 15 V 24 V Assignable LI3/LI4 4 preset speeds 5000 Ohm 15 V 24 V
Discrete input logic	Positive logic (source) (LI1...LI4), < 5 V (state 0), > 11 V (state 1)
Discrete output type	Assignable as external voltage DO 30 V max, 30 mA Assignable as open collector logic output DO 100 Ohm, 50 mA max Factory set as PWM open collector output DO at 2 kHz 10 mA max Protected relay logic RA-RC 1 NO Assignable as internal voltage DO
Minimum switching current	RA-RC 10 mA at 24 V DC
Maximum switching current	2 A 250 V AC inductive cos phi = 0.4 7 ms RA-RC 2 A 30 V DC inductive cos phi = 0.4 7 ms RA-RC 5 A 250 V AC resistive cos phi = 1 0 ms RA-RC 5 A 30 V DC resistive cos phi = 1 0 ms RA-RC
Protection type	Line supply overvoltage: drive Line supply undervoltage: drive Overheating protection: drive Short-circuit between motor phases: drive Thermal protection: motor Overcurrent between output phases and earth: drive
Frequency resolution	Display unit: 0.1 Hz Analog input: converter A/D, 10 bits
Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to EN/IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to EN/IEC 61000-4-4 Electrostatic discharge immunity test level 3 conforming to EN/IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to EN/IEC 61000-4-3
Maximum motor cable length	10 m without additional EMC filter from 2 to 16 kHz conforming to EN 55011 class A group 1 10 m without additional EMC filter from 2 to 16 kHz conforming to EN 55022 class A group 1 20 m with additional EMC filter from 2 to 16 kHz conforming to EN 55011 class B 5 m without additional EMC filter from 2 to 12 kHz conforming to EN 55011 class B 5 m without additional EMC filter from 2 to 12 kHz conforming to EN 55022 class B 50 m with additional EMC filter from 2 to 16 kHz conforming to EN 55011 class A group 1
Vibration resistance	1 gn (f= 13...200 Hz) conforming to EN/IEC 60068-2-6 1.5 mm peak to peak (f= 3...13 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn for 11 ms conforming to EN/IEC 60068-2-27
Relative humidity	5...93 % without condensation conforming to IEC 60068-2-3 5...93 % without dripping water conforming to IEC 60068-2-3
Ambient air temperature for operation	-10...40 °C without derating 40...50 °C by removing the protective cover from the top of the drive 50...60 °C by removing the protective cover from the top of the drive with current derating of 2.2 % per °C
Operating altitude	<= 1000 m without derating > 1000 m with current derating 1 % per 100 m

Complementary

Product destination	Asynchronous motors
Supply voltage limits	170...264 V
Network frequency limits	47.5...63 Hz
Speed drive output frequency	0...200 Hz
Nominal switching frequency	4 kHz
Speed range	1...20
Transient overtorque	150...170 % of nominal motor torque
Regulation loop	Factory-set with the speed loop stability and gain Adjustable frequency Possible correction for machines with high resistive torque/inertia/fast cycles
Motor slip compensation	Preset in factory Adjustable
Prospective line Isc	1 kA

Output voltage	<= power supply voltage
Insulation	Electrical between power and control
Analogue input number	1
Discrete input number	4
Discrete output number	2
Acceleration and deceleration ramps	Linear from 0 to 99.9 s
Braking to standstill	By DC injection
Insulation resistance	> 500 MOhm
Marking	CE
Operating position	Vertical +/- 10 degree
CAD overall width	72 mm
CAD overall height	142 mm
CAD overall depth	125 mm
Outer dimension	142 x 72 x 125 mm
Product weight	1 kg

Environment

Standards	EN 50178
Product certifications	N998 CSA UL C-Tick
IP degree of protection	IP20
Ambient air temperature for storage	-25...65 °C
Variable speed drive application selection	Conveyor Packaging
Motor power range AC-3	0...0.5 kW at 200...240 V 1 phase
Motor starter type	Variable speed drive

Packing Units




Package 1 Weight	1.078 kg
Package 1 Height	1.850 dm
Package 1 width	0.950 dm
Package 1 Length	1.850 dm

Contractual warranty

Warranty	18 months
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template data bom 1



Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactora (*)	Motor Starter
0.18	> 100	 GV2ME08	 LC1K0910P7	 ATV12H018M2

*these are not the real data

template data bom 2

Template of Data Bom id 2

Motor Power (kW)	Icu (kA)	Breaker	Contactors
0.18	> 100	 GV2ME07	 LC1K0910P7

*these are not the real data

template data bom 3


Template of Data Bom id 3

Motor Power (kW)	Icu (kA)	Thermal overload relay	Breaker	Contactors
0.37	> 100	 ATV12H037M2	 ATV12H037M2	 ATV12H037M2

*these are not the real data

template data bom 4

Template of Data Bom id 4

Motor Power (kW)	Motor Starter	Information
0.37	 ATV12H037M3	information

*these are not the real data




Product data sheet

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Template BOM 1 + Var 1

template data bom 1 + data variant 1

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactor (*)	Motor Starter
0.55	> 100	 GV2ME14	 LC1K0910P7	 ATV12H055M2

*these are not the real data

Template of Data Variants 1

Motor Power kW	Coil voltage VAC - 50/60 Hz	24	48	110	115	220	230	400	Other
0.55	reference ..	value	value	value	value	value	value	value	value

*these are not the real data




Product data sheet

ATV11HU09M2E

Template BOM 1 + Var 2

template data bom 1 + data variant 2

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactor (*)	Motor Starter
0.75	15	 GV2ME16	 LC1K1210P7	 ATV12H075M2

*these are not the real data

Template of Data Variants 2

Motor Power kW	Coil voltage VDC - U 0.75...1.25 Uc	24	48	Other
0.75	reference ..	value	value	other

*these are not the real data




Product data sheet

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Template BOM 1 + Var 3

template data bom 1 + data variant 3

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactors (*)	Motor Starter
0.75	> 100	 GV2ME14	 LC1K0910P7	 ATV12H075M3

*these are not the real data

Template of Data Variants 3

Motor Power kW	Coil voltage Low Consumption VDC - U 0.8...1.25 Uc	24	110	Other
0.75	reference ..	value	value	other

*these are not the real data

Product data sheet

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Template BOM 1 + Var 4

template data bom 1 + data variant 4

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactors (*)	Motor Starter
1.5	15	 GV2ME21	 LC1D18P7	 ATV12HU15M2

*these are not the real data




Template of Data Variants 4

Motor Power kW	Icu (kA) at 400V	36	50	70
1.5	value	value	value	value

*these are not the real data

template data bom 1 + data variant 1 2 3 4

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactor (*)	Motor Starter
1.5	15	 GV2ME16	 LC1K1210P7	 ATV12HU15M3

*these are not the real data

Template of Data Variants 1

Motor Power kW	Coil voltage VAC - 50/60 Hz	24	48	110	115	220	230	400	Other
1.5	reference ..	value	value	value	value	value	value	value	value

*these are not the real data

Template of Data Variants 2

Motor Power kW	Coil voltage VDC - U 0.75...1.25 Uc	24	48	Other
1.5	reference ..	value	value	other

*these are not the real data

Template of Data Variants 3

Motor Power kW	Coil voltage Low Consumption VDC - U 0.8...1.25 Uc	24	110	Other
1.5	reference ..	value	value	other

*these are not the real data

Template of Data Variants 4

Motor Power kW	Icu (kA) at 400V	36	50	70
1.5	value	value	value	value

*these are not the real data

template data bom 1 - table of 2 rows




Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactors (*)	Motor Starter
1	10	 GV2ME32	 LC1D25P7	 ATV12HU22M2
2	10	GV2ME32	LC1D25P7	ATV12HU22M2

**these are not the real data*

template data bom 1 - table of 3 rows



Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactora (*)	Motor Starter
1	15	 GV2ME20	 LC1D18P7	 ATV12HU22M3
2	15	GV2ME20	LC1D18P7	ATV12HU22M3
3	15	GV2ME20	LC1D18P7	ATV12HU22M3

**these are not the real data*

template data bom 1 - table of 4 rows




Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactor (*)	Motor Starter
1	15	 GV2ME21	 LC1D25P7	 ATV12HU30M3
2	15	GV2ME21	LC1D25P7	ATV12HU30M3
3	15	GV2ME21	LC1D25P7	ATV12HU30M3
4	15	GV2ME21	LC1D25P7	ATV12HU30M3

**these are not the real data*

template data bom 1 - table of 8 rows

Template of Data Bom id 1

Motor Power (kW)	Icu (kA)	Breaker	Contactora (*)	Motor Starter
1	10	 GV2ME32	 LC1D25P7	 ATV12HU40M3
2	10	GV2ME32	LC1D25P7	ATV12HU40M3
3	10	GV2ME32	LC1D25P7	ATV12HU40M3
4	10	GV2ME32	LC1D25P7	ATV12HU40M3
5	10	GV2ME32	LC1D25P7	ATV12HU40M3
6	10	GV2ME32	LC1D25P7	ATV12HU40M3
7	10	GV2ME32	LC1D25P7	ATV12HU40M3
8	10	GV2ME32	LC1D25P7	ATV12HU40M3

*these are not the real data

Recommended replacement(s)

ATV11HU09M2E is replaced by:

1x



variable speed drive ATV12 - 0.37kW - 0.55hp - 200..240V - 1ph - with heat sink
 ATV12H037M2