# Product data sheet
## Characteristics

# ATV12H037F1
variable speed drive, Altivar 12, 0.37kW, 0.55hp, 100 to 120V, 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 | 100...120 V - 15...10 % |
| Nominal output current | 2.4 A |
| Motor power kW | 0.37 KW |
| Motor power hp | 0.55 Hp |
| EMC filter | Without EMC filter |
| IP degree of protection | IP20 |
| Motor power hp | 0.55 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 | 2.4 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<br>10 Ms for analogue input |
| Linearity error | +/- 0.3 % of maximum value for analogue input |
| Frequency resolution | Analog input: converter A/D, 10 bits<br>Display unit: 0.1 Hz |
| Time constant | 20 Ms +/- 1 ms for reference change |
| Transmission rate | 9.6 kbit/s<br>19.2 kbit/s<br>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<br>Write single register (06) 29 words<br>Write multiple registers (16) 27 words<br>Read/Write multiple registers (23) 4/4 words<br>Read device identification (43) |
| Type of polarization | No impedance |
| 4 quadrant operation possible | False |
| Asynchronous motor control profile | Voltage/Frequency ratio (V/f)<br>Quadratic voltage/frequency ratio<br>Sensorless flux vector control |
| 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 | S<br>U<br>Linear from 0 to 999.9 s |
| Motor slip compensation | Preset in factory<br>Adjustable |
| Switching frequency | 2...16 kHz adjustable<br>4...16 kHz with derating factor |
| Nominal switching frequency | 4 kHz |
| Braking to standstill | By DC injection |
| Brake chopper integrated | False |
| Line current | 11.4 A at 100 V (heavy duty)<br>9.3 A at 120 V (heavy duty) |
| Maximum input current | 9.3 A |
| Maximum output voltage | 240 V |
| Apparent power | 1.1 KVA at 240 V (heavy duty) |
| Maximum transient current | 3.6 A during 60 s (heavy duty)<br>4.0 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 | 2.4 A |
| Power dissipation in W | Natural: 29.0 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<br>Line supply undervoltage<br>Overcurrent between output phases and earth<br>Overheating protection<br>Short-circuit between motor phases<br>Against input phase loss in three-phase<br>Thermal motor protection via the drive by continuous calculation of $I^2t$ |
| Tightening torque | 0.8 N.M |
| Insulation | Electrical between power and control |
| Quantity per set | Set of 1 |
| Width | 72 Mm |
| Height | 143 Mm |
| Depth | 121.2 Mm |
| Net weight | 0.8 Kg |

## Environment

| | |
|---|---|
| Operating altitude | > 1000...2000 m with current derating 1 % per 100 m<br><= 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<br>UL 618000-5-1<br>IEC 61800-5-1<br>IEC 61800-3 |
| Assembly style | With heat sink |
| Electromagnetic compatibility | Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Immunity to conducted disturbances level 3 conforming to IEC 61000-4-6<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-<br>Surge immunity test level 3 conforming to IEC 61000-4-5<br>Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 |
| Environmental class (during operation) | Class 3C3 according to IEC 60721-3-3<br>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 |
| 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<br>Conducted emissions with additional EMC filter environment 1 category C1 conforming to IEC<br>Conducted emissions with additional EMC filter environment 1 category C2 conforming to IEC<br>Conducted emissions with additional EMC filter environment 2 category C3 conforming to IEC |
| Vibration resistance | 1 gn (f = 13…200 Hz) conforming to IEC 60068-2-6<br>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<br>5…95 % without dripping water conforming to IEC 60068-2-3 |
| Noise level | 0 DB |
| Pollution degree | 2 |
| Ambient air transport temperature | -25…70 °C |
| Ambient air temperature for operation | -10…40 °C without derating<br>40…60 °C with current derating 2.2 % per °C |
| Ambient air temperature for storage | -25…70 °C |

## Packing Units

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|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 10.600 Cm |
| Package 1 Width | 18.600 Cm |
| Package 1 Length | 18.600 Cm |
| Package 1 Weight | 1.031 Kg |
| Unit Type of Package 2 | S06 |
| Number of Units in Package 2 | 45 |
| Package 2 Height | 75.000 Cm |
| Package 2 Width | 60.000 Cm |
| Package 2 Length | 80.000 Cm |
| Package 2 Weight | 59.395 Kg |

## Offer Sustainability

| | |
|---|---|
| Mercury free | Yes |
| Sustainable packaging | Yes |
| Packaging made with recycled cardboard | Yes |
| Packaging without single use plastic | Yes |
| SCIP Number | 488b1fd0-df04-41cb-85a8-34a5a8230847 |
| 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 |
| 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