

Variable speed drive, Altivar Solar, 0.55kW, 380 to 500V, 3 phases, compact

ATV320U06N4C412

Main

Range of product	Altivar Solar	
Product or component type	Variable speed drive	
Product specific application	Pumping applications	
Variant	Standard version Standard version	
Format of the drive	Compact	
Mounting mode	Wall mount	
Communication port protocol	Modbus serial CANopen	
Option card	Communication module, Ethernet IP/Modbus TCP	
[Us] rated supply voltage	380500 V - 1510 %	
Nominal output current	1.9 A	
Motor power kW	0.55 kW for heavy duty	
EMC filter	Class C2 EMC filter integrated	
IP degree of protection	IP20	

Complementary

Discrete input number	7	
Discrete input type	STO safe torque off, 24 V DC, impedance: 1.5 kOhm DI1DI6 logic inputs, 24 V DC (30 V) DI5 programmable as pulse input: 030 kHz, 24 V DC (30 V)	
Discrete input logic	Positive logic (source) Negative logic (sink)	
Discrete output number	3	
Discrete output type	Open collector DQ+ 01 kHz 30 V DC 100 mA Open collector DQ- 01 kHz 30 V DC 100 mA	
Analogue input number	3	
Analogue input type	Al1 voltage: 010 V DC, impedance: 30 kOhm, resolution 10 bits Al2 bipolar differential voltage: +/- 10 V DC, impedance: 30 kOhm, resolution 10 bits Al3 current: 020 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration), impedance: 250 Ohm, resolution 10 bits	
Analogue output number	1	
Analogue output type	Software-configurable current AQ1: 020 mA impedance 800 Ohm, resolution 10 bits Software-configurable voltage AQ1: 010 V DC impedance 470 Ohm, resolution 10 bits	
Relay output number	2	

Relay output type	Configurable relay logic R1A 1 NO electrical durability 100000 cycles Configurable relay logic R1B 1 NC electrical durability 100000 cycles Configurable relay logic R1C Configurable relay logic R2A 1 NO electrical durability 100000 cycles	
	Configurable relay logic R2C	
Maximum switching current	Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 30 V DC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 30 V DC	
Minimum switching current	Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC	
Method of access	Slave CANopen	
Number of addresses	1247 1127	
Data format	8 bits, configurable odd, even or no parity	
Type of polarization	No impedance	
4 quadrant operation possible	True	
Asynchronous motor control profile	Voltage/frequency ratio, 5 points Flux vector control without sensor, standard Voltage/frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points	
Synchronous motor control profile	Vector control without sensor	
Maximum output frequency	0.599 kHz	
Acceleration and deceleration ramps	Linear U S CUS Ramp switching Acceleration/deceleration ramp adaptation Acceleration/deceleration automatic stop with DC injection Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 6000 s	
Motor slip compensation	Automatic whatever the load Adjustable 0300 % Not available in voltage/frequency ratio (2 or 5 points)	
Switching frequency	216 kHz adjustable 416 kHz with derating factor	
Nominal switching frequency	4 kHz	
Braking to standstill	By DC injection	
Brake chopper integrated	True	
Line current	2.8 A at 380 V (heavy duty) 2.2 A at 500 V (heavy duty)	
Maximum input current	2.8 A	
Maximum output voltage	500 V	
Apparent power	1.9 kVA at 500 V (heavy duty)	
Maximum transient current	2.9 A during 60 s	
Short-circuit protection	thermal protection	
Network frequency	5060 Hz	
Relative symmetric network frequency tolerance	5 %	
Prospective line Isc	5 kA	

Base load current at high overload	7.1 A	
Power dissipation in W	Fan: 27.0 W at 380 V, switching frequency 4 kHz	
Electrical connection	Screw terminal, clamping capacity: 0.51.5 mm² for analog input Screw terminal for analog output Screw terminal	
With safety function Safely Limited Speed (SLS)	True	
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)	True	
With sft fct Safe Stop 2 (SS2)	False	
With safety function Safe torque off (STO)	True	
With safety function Safely Limited Position (SLP)	False	
With safety function Safe Direction (SDI)	False	
Protection type	Input phase breaks: drive Overcurrent between output phases and earth: drive Overheating protection: drive Short-circuit between motor phases: drive Thermal protection: drive	
Width	105.0 mm	
Height	142.0 mm	
Depth	158.0 mm	
Net weight	1.2 kg	
Power factor	0.455 at 380 V	
Braking torque	170 % with braking resistor	
Local signalling	1 LED (red) for drive fault 1 LED (red) for CANopen error 1 LED (green) for CANopen run	
Transient overtorque	170200 % of nominal motor torque	

Environment

Operating position	Vertical +/- 10 degree	
Product certifications	CE	
	UR	
	UKCA	
	RCM	
Marking	CE	
	UR	
	UKCA	
	RCM	
Standards	IEC 61800-5-1	
Assembly style	With heat sink	

Electromagnetic compatibility	Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 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	
Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3	
Volume of cooling air	18.0 m3/h	
Overvoltage category	II .	
Regulation loop	Adjustable PID regulator	
Speed accuracy	+/- 10 % of nominal slip 0.2 Tn to Tn	
Noise level	51 dB	
pollution degree	2	
Ambient air transport temperature	-2570 °C	
Ambient air temperature for operation	-1050 °C without derating 5060 °C with derating factor	
Ambient air temperature for storage	-2570 °C	
Operating altitude	10002000 m with current derating 1 % per 100 m <= 1000 m without derating	

Packing Units

•	
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	18 cm
Package 1 Width	18.5 cm
Package 1 Length	18.5 cm
Package 1 Weight	1.672 kg
Unit Type of Package 2	S06
Number of Units in Package 2	30
Package 2 Height	75 cm
Package 2 Width	60 cm
Package 2 Length	80 cm
Package 2 Weight	63.16 kg



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 >

☑ Environmental footprint	
Carbon footprint (kg.eq.CO2 per CR, Total Life cycle)	795
Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Packaging	
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
SCIP Number	C0283eca-aee5-4ec9-9f8c-c7e056d0a8d7

Use Again

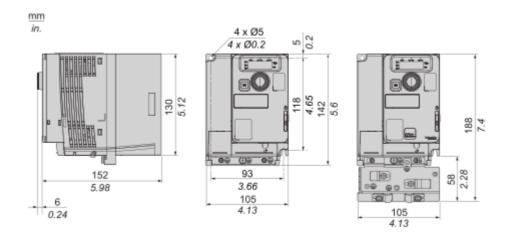
○ Repack and remanufacture	
Circularity Profile	End of Life Information
Take-back	No
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Product datasheet

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Dimensions Drawings

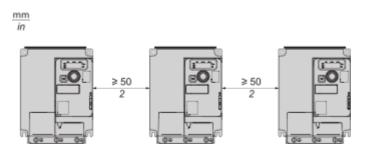
Dimensions



Mounting and Clearance

Mounting Types

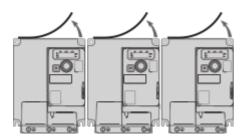
Individual with Ventilation Cover



Free space ≥ 50 mm (2 in.) on each side, with vent cover fitted.

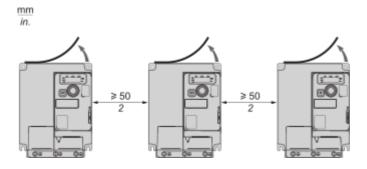
Mounting type A is suitable for drive operation at surrounding air temperature less or equal to 50 °C (122 °F)

Side by Side, Ventilation Cover Removed



Drives mounted side-by-side, vent cover should be removed. The degree of protection becomes IP20.

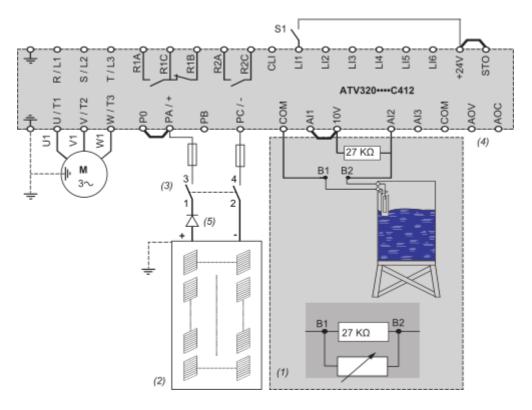
Individual, Ventilation Cover Removed



Free space ≥ 50 mm (2 in.) on each side. Vent cover should be removed for operation at surrounding air temperature above 50 °C (122 °F). The degree of protection becomes IP20.

Connections and Schema

Wiring



- (1) Tank water / liquid probe is optional.
- (2) The photovoltaic modules used shall comply with UL 1703. The solar panels and the drive input shall be in compliance with NEC article 690. For the photovoltaic installation ground connection, safety instructions and orientation, refer to the photovoltaic panel user manual.
- (3) Protection according to the concerned voltage, current and according to the photovoltaic arrays manual.
- (4) For AOC or AOV diagnostic values on ATV320 Solar drive.
- (5) On some applications, a blocking diode is mandatory.

NOTE: Check that the Logic Input switch is on Source position:

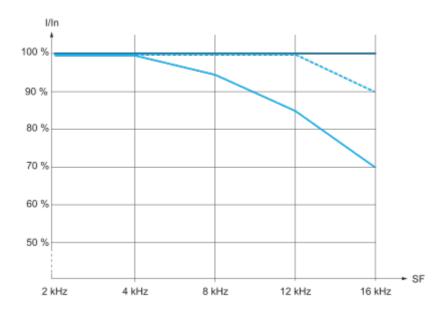


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Performance Curves

Derating Curves



40 °C (104 °F) - Mounting type A, B and C 50 °C (122 °F) - Mounting type A, B and C 60 °C (140 °F) - Mounting type B and C

In: Nominal Drive Current SF: Switching Frequency