

ATV630U22N4

variable speed drive ATV630 - 2.2kW/3HP -
380...480V - IP21/UL type 1



Main

Range of product	Altivar Process ATV600
Product or component type	Variable speed drive
Product specific application	Process and utilities
Device short name	ATV630
Variant	Standard version
Product destination	Asynchronous motors Synchronous motors
Mounting mode	Wall mount
EMC filter	Integrated EN/IEC 61800-3 category C3 150 m Integrated EN/IEC 61800-3 category C2 50 m
IP degree of protection	IP21 IEC 61800-5-1 IP21 IEC 60529
Degree of protection	UL type 1 UL 508C
Type of cooling	Forced convection
Supply frequency	50...60 Hz - 5...5 %
Network number of phases	3 phases
[Us] rated supply voltage	380...480 V - 15...10 %
Motor power kW	2.2 kW normal duty 1.5 kW heavy duty
Motor power hp	3 hp normal duty 2 hp heavy duty
Line current	4.3 A 380 V normal duty 3.1 A 380 V heavy duty 3.8 A 480 V normal duty 2.9 A 480 V heavy duty
Prospective line I _{sc}	50 kA
Apparent power	3.2 kVA 480 V normal duty 2.4 kVA 480 V heavy duty
Continuous output current	5.6 A 4 kHz normal duty 4 A 4 kHz heavy duty
Maximum transient current	6.2 A 60 s normal duty

	6 A 60 s heavy duty
Asynchronous motor control profile	Constant torque standard Variable torque standard Optimized torque mode
Synchronous motor control profile	Permanent magnet motor
Output frequency	0.0001...0.5 kHz
Nominal switching frequency	4 kHz
Switching frequency	2...12 kHz adjustable 4...12 kHz with derating factor
Safety function	STO (safe torque off) SIL 3
Discrete input logic	16 preset speeds
Communication port protocol	Ethernet Modbus serial Modbus TCP
Option card	Communication module Profinet slot A Communication module Profibus DP V1 slot A Communication module CANopen daisy chain RJ45 slot A Communication module CANopen SUB-D 9 slot A Digital and analog I/O extension module slot A/slot B Communication module CANopen screw terminals slot A Output relay extension module slot A/slot B Communication module DeviceNet slot A Communication module Modbus TCP/EtherNet/IP slot A Communication module Ethernet IP/Modbus TCP/MD-Link slot A

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1444 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACH	Reference contains SVHC above the threshold - Go to CaP for more details Go to CaP for more details
Product environmental profile	Available Product environmental
Product end of life instructions	Available End of life manual

Complementary

Output voltage	\leq power supply voltage
Permissible temporary current boost	1.5 x In 60 s heavy duty 1.1 x In 60 s normal duty
Motor slip compensation	Adjustable Automatic whatever the load Can be suppressed Not available in permanent magnet motor law
Acceleration and deceleration ramps	Linear adjustable separately from 0.01 to 9000 s S, U or customized
Braking to standstill	By DC injection
Protection type	Safe torque off motor Safe torque off drive Line supply undervoltage drive Motor phase break motor Thermal protection drive Overload of output voltage drive Overvoltages on the DC bus drive Thermal protection motor Overheating drive Short-circuit protection drive Motor phase break drive Line supply phase loss drive Overspeed drive Overcurrent between output phases and earth drive Line supply overvoltage drive

	Break on the control circuit drive
Frequency resolution	0.012/50 Hz analog input 0.1 Hz display unit
Electrical connection	Screw terminal 2.5...6 mm ² AWG 14...AWG 10 line side Removable screw terminals 0.5...1.5 mm ² AWG 20...AWG 16 control Screw terminal 2.5...6 mm ² AWG 14...AWG 10 motor
Type of connector	RJ45 Ethernet/Modbus TCP on the remote graphic terminal RJ45 Modbus serial on the remote graphic terminal
Physical interface	2-wire RS 485 Modbus serial
Transmission frame	RTU Modbus serial
Transmission rate	4.8, 9.6, 19.2, 38.4 kbit/s Modbus serial 10/100 Mbit/s Ethernet IP/Modbus TCP
Exchange mode	Half duplex, full duplex, autonegotiation Ethernet/Modbus TCP
Data format	8 bits, configurable odd, even or no parity Modbus serial
Type of polarization	No impedance Modbus serial
Number of addresses	1...247 Modbus serial
Method of access	Slave Modbus TCP
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 % <= 10 mA overload and short-circuit protection External supply for digital inputs 24 V DC 19...30 V <= 1.25 mA overload and short-circuit protection Internal supply for digital inputs and STO 24 V DC 21...27 V <= 200 mA overload and short-circuit protection
Local signalling	3 LEDs dual colour embedded communication status 4 LEDs dual colour communication module status 1 LED red presence of voltage 3 LEDs local diagnostic
Width	144 mm
Height	350 mm
Depth	203 mm
Product weight	4.5 kg
Analogue input number	3
Analogue input type	Software-configurable voltage AI1, AI2, AI3 0...10 V DC 30 kOhm 12 bits Software-configurable current AI1, AI2, AI3 0...20 mA 250 Ohm 12 bits
Discrete input number	8
Discrete input type	Programmable as pulse input DI5, DI6 0...30 kHz 24 V DC <= 30 V Programmable DI1...DI6 24 V DC <= 30 V 3.5 kOhm Safe torque off STOA, STOB 24 V DC <= 30 V > 2.2 kOhm
Input compatibility	Level 1 PLC EN/IEC 61131-2 DI1...DI6 discrete input Level 1 PLC IEC 65A-68 DI5, DI6 discrete input Level 1 PLC EN/IEC 61131-2 STOA, STOB discrete input
Discrete input logic	Positive logic (source) DI5, DI6 < 0.6 V > 2.5 V Positive logic (source) STOA, STOB < 5 V > 11 V Positive logic (source) DI1...DI6 < 5 V > 11 V Negative logic (sink) DI1...DI6 > 16 V < 10 V
Analogue output number	2
Analogue output type	Software-configurable voltage AO1, AO2 0...10 V DC 470 Ohm 10 bits Software-configurable current AO1, AO2 0...20 mA 10 bits
Sampling duration	2 ms +/- 0.5 ms DI1...DI4 discrete input 5 ms +/- 1 ms DI5, DI6 discrete input 5 ms +/- 0.1 ms AI1, AI2, AI3 analog input 10 ms +/- 1 ms AO1 analog output
Accuracy	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AO1, AO2 for a temperature variation 60 °C analog output
Linearity error	+/- 0.15 % of maximum value analog input AI1, AI2, AI3 +/- 0.2 % analog output AO1, AO2
Relay output number	3
Relay output type	Configurable relay logic R1 fault relay NO/NC 100000 cycles Configurable relay logic R3 sequence relay NO 100000 cycles Configurable relay logic R2 sequence relay NO 100000 cycles
Refresh time	5 ms +/- 0.5 ms R1, R2, R3 relay output
Minimum switching current	5 mA 24 V DC R1, R2, R3 relay output

Maximum switching current	3 A 30 V DC resistive 1 R1, R2, R3 relay output 2 A 250 V AC inductive 0.4 7 ms R1, R2, R3 relay output 2 A 30 V DC inductive 0.4 7 ms R1, R2, R3 relay output 3 A 250 V AC resistive 1 R1, R2, R3 relay output
Isolation	Between power and control terminals
Specific application	Utility
IP degree of protection	IP21

Environment

Insulation resistance	> 1 mOhm 500 V DC for 1 minute to earth
Noise level	54.5 dB 86/188/EEC
Power dissipation in W	30 W natural convection 380 V 4 kHz 60 W forced convection 380 V 4 kHz
Volume of cooling air	38 m3/h
Operating position	Vertical +/- 10 degree
THDI	<= 48 % full load IEC 61000-3-12
Electromagnetic compatibility	1.2/50 μ s - 8/20 μ s surge immunity test level 3 IEC 61000-4-5 Conducted radio-frequency immunity test level 3 IEC 61000-4-6 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3
Pollution degree	2 EN/IEC 61800-5-1
Vibration resistance	1 gn 13...200 Hz IEC 60068-2-6 1.5 mm peak to peak 2...13 Hz IEC 60068-2-6
Shock resistance	15 gn 11 ms IEC 60068-2-27
Relative humidity	5...95 % without condensation IEC 60068-2-3
Ambient air temperature for operation	-15...50 °C without derating 50...60 °C with derating factor
Ambient air temperature for storage	-40...70 °C
Operating altitude	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
Environmental characteristic	Dust pollution resistance class 3S3 EN/IEC 60721-3-3 Chemical pollution resistance class 3C3 EN/IEC 60721-3-3
Standards	UL 508C IEC 61000-3-12 IEC 60721-3 EN/IEC 61800-5-1 EN/IEC 61800-3 EN/IEC 61800-3 environment 1 category C2 EN/IEC 61800-3 environment 2 category C3 IEC 61508 IEC 13849-1
Product certifications	ATEX INERIS ATEX zone 2/22 CSA TÜV UL REACH DNV-GL
Marking	CE
Discrete and process manufacturing	Mining mineral and metal : fan Mining mineral and metal : pump Building - HVAC : compressor Food and beverage processing : other application Others : compressor Water and waste water : other application Building - HVAC : compressor centrifugal Oil and gas : compressor Oil and gas : fan Oil and gas : pump
Power range	1.1...2 kW 2.2...3 kW
Voltage range	380...440 V 480...500 V

Network number of phases	3 phases
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