Product datasheet

Specifications

variable speed drive, Altivar HVAC ATH600, ATH630, 7.5kW, 10hp, 380 to 480V, 3 phase, IP20

ATH630U75N4Z

Main

Range of product	Altivar HVAC ATH600
Product specific application	HVAC
Product or component type	Variable speed drive
Variant	Standard version
Device short name	ATH630
Product destination	Asynchronous motors Synchronous motors
Mounting mode	Cabinet mount
IP degree of protection	IP20
Network number of phases	3 phases
[Us] rated supply voltage	380...480 V - 15...10 %
Relative symmetric mains voltage tolerance	10 %
Supply frequency	50...60 Hz - 5...5 %
Relative symmetric network frequency tolerance	5 %
nominal output current	16 A at 380 V (normal duty) 14 A at 480 V (normal duty) 12 A at 380 V (heavy duty) 11 A at 480 V (heavy duty)
Maximum transient current	17.6 A during 60 s (normal duty) 18.0 A during 60 s (heavy duty)
Motor power kW	7.5 kW for normal duty 5.5 kW for heavy duty
Motor power hp	10 hp for normal duty 7.5 hp for heavy duty
Line current	12.94 A at 380 V (normal duty) 11 A at 480 V (normal duty) 9.7 A at 380 V (heavy duty) 8.3 A at 480 V (heavy duty)
EMC filter	Class C2 EMC filter integrated
Safety function	STO (safe torque off)
Safety level	SIL 3 conforming to IEC 61508 PL = e conforming to ISO 13849-1
Cybersecurity function	True
Cybersecurity level and standard	Security level (SL) 1 conforming to IEC 62443-4-2
Communication port protocol	Modbus serial BACnet MS/TP

Option card	Communication module for BACnet IP Communication module for PROFINET Communication module for Ethernet IP/Modbus TCP Digital and analog I/O extension module Output relay extension module

Complementary

Discrete input number	8
Discrete input type	STOA, STOB safety input, 24 V DC DI1...DI6 digital input, 24 V DC, impedance: 4.4 kOhm DI5, DI6 programmable as pulse input: 0…30 kHz, 24 V DC
Discrete input logic	Positive logic (source) (DI1...DI6), <= 5 V (state 0), >= 11 V (state 1) Positive logic (source) (STOA, STOB), <= 5 V (state 0), >= 11 V (state 1) Negative logic (sink) (DI1...DI6), > 16 V (state 0), < 10 V (state 1) Positive logic (source) (DI5, DI6), < 0.6 V (state 0), > 2.5 V (state 1)
Input compatibility	DI1...DI6: discrete input level 1 PLC conforming to IEC 61131-2 DI5, DI6: pulse input level 1 PLC conforming to IEC 65A-68 STOA, STOB: discrete input level 1 PLC conforming to IEC 61131-2
Supply	External supply for control circuit: 24 V DC (19…30 V), <800 mA, protection type: overload and short-circuit protection Internal supply for digital inputs and STO: 24 V DC (20.4…27 V), <200 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer: 10.5 V DC +/- 5 %, <10 mA, protection type: short-circuit
Analogue input number	3
Analogue input type	AI1: 0...10 V DC, impedance: 30 kOhm, resolution 12 bits AI2: 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration), impedance: 250 Ohm, resolution 12 bits AI3: 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration), impedance: 250 Ohm, resolution 12 bits AI2, AI3 PTC/PT 100/PT 1000/KTY84 temperature probe
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2: 0...10 V impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2: 0...20 mA, resolution 10 bits
Accuracy	+/- 1.5 % (AI1, AI2, AI3) for a temperature variation 60 °C +/- 1 % (AQ1, AQ2) for a temperature variation 60 °C
Linearity error	AI1, AI2, AI3: +/- 0.15 % of maximum value for analog input AQ1, AQ2: +/- 0.2 % for analog output
Relay output number	3
Relay output type	Relay outputs R1A, R1B, R1C: 1 NO 1 NC electrical durability 100000 cycles Relay outputs R2A, R2C: 1 NO electrical durability 100000 cycles Relay outputs R3A, R3C: 1 NO electrical durability 100000 cycles
Sampling duration	2 ms + 0...0.5 ms DI1...DI6 digital input 5 ms + 0...1 ms DI5, DI6 pulse input 5 ms + 0...1 ms AI1, AI2, AI3 10 ms + 0...1 ms AQ1, AQ2 5 ms +/- 0.5 ms R1, R2, R3
Maximum switching current	Relay output R1, R2, R3 on resistive load load: 3 A at 250 V AC Relay output R1, R2, R3 on resistive load load: 3 A at 30 V DC Relay output R1, R2, R3 on inductive load load, cos phi = 0.4 and L/R = 0.7 ms: 2 A at 250 V AC Relay output R1, R2, R3 on inductive load load, cos phi = 0.4 and L/R = 0.7 ms: 2 A at 30 V DC
Minimum switching current	Relay output R1, R2, R3: 5 mA at 24 V DC
Physical interface	2-wire RS 485
Connector type	RJ45 and open style terminals
Method of access	Server Modbus RTU Subordinate BACnet MS/TP

Transmission rate	4800 bps, 9600 bps, 19200 bps, 38.4 Kbps 9.6, 19.2, 38.4, 76.8 kbit/s
Transmission frame	RTU MS/TP
Number of addresses	1…247 1…127
Data format	8 bits, configurable odd, even or no parity 8 bits, no parity, 1 stop
Type of polarization	120 ohm termination or no impedance
Prospective line Isc	22 kA
Output frequency	0.4 kHz
Output voltage	<= power supply voltage
4 quadrant operation possible	False
Asynchronous motor control profile	Voltage/frequency ratio, 5 points Flux vector control with 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
Acceleration and deceleration ramps	Acceleration/deceleration ramp adaptation Linear S, U or customized
Motor slip compensation	Adjustable Automatic whatever the load Can be suppressed Not available with synchronous motors
Switching frequency	6...16 kHz adjustable with derating factor
Nominal switching frequency	6 kHz
Braking to standstill	By DC injection
Brake chopper integrated	False
Apparent power	9.1 kVA (normal duty) 6.9 kVA (heavy duty)
power loss static current independent	26 W
Power dissipation in W	AF (air forced): 174 W, switching frequency 6 kHz (normal duty) AN (air natural): 41 W, switching frequency 6 kHz (normal duty) AF (air forced): 134 W, switching frequency 6 kHz (heavy duty) AN (air natural): 37 W, switching frequency 6 kHz (heavy duty)
Standards	UL 61800-5-1 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1 RoHS
Product certifications	CE UKCA UL CULus EAC RCM KCC ATEX

Marking	CE UKCA CULus EAC RCM ATEX WEEE ROHS KCC
With safety function Safe torque off (STO)	True
Protection type	Thermal overload protection: motor Safe torque off: motor Motor phase loss: motor Against exceeding limit speed: motor Temperature protection: drive Overheating: drive Output overcurrent between motor phase and earth: drive Output overcurrent between motor phases: drive Short-circuit between motor phase and earth: drive Short-circuit between motor phases: drive DC Bus overvoltage: drive Line supply overvoltage: drive Line supply undervoltage: drive Input supply loss: drive Break on the control circuit: drive
Width	160 mm
Height	232 mm
Depth	183 mm
Product weight	3.8 kg
Function available	Fire mode Forced fire mode Run permissive PID controller 3 additional PID Damper control Underload detection for broken belt Scroll compressor management Skipped frequencies Catch on the fly Power monitoring Cybersecure firmware update

Environment

Operating altitude	1000 m without derating 1000...3000 m with current derating 1 % per 100 m
Operating position	Vertical position
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
Environmental class (during operation)	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3 Class 3B1 according to IEC 60721-3-3
Maximum acceleration under shock impact (during operation)	15 gn at 11 ms
Maximum acceleration under vibrational stress (during operation)	1 gn at 13…200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz
Relative humidity	5…95 % without condensation conforming to IEC 60068-2-3
Volume of cooling air	71 m3/h

Noise level	54 dB
Pollution degree	2
Ambient air temperature for operation	-15…50 °C without derating 50…60 °C with derating factor
Ambient air temperature for storage	-40…70 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	24.500 cm
Package 1 Width	23.000 cm
Package 1 Length	31.000 cm
Package 1 Weight	4.608 kg
Unit Type of Package 2	S06
Number of Units in Package 2	10
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	59.000 kg

Contractual warranty

Warranty (in months)	18

Environmental Data

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

Total lifecycle Carbon footprint	**2 968 kg CO2 eq.**
Carbon footprint of the manufacturing phase [A1 to A3]	**73 kg CO2 eq.**
Carbon footprint of the distribution phase [A4]	**0.8 kg CO2 eq.**
Carbon footprint of the installation phase [A5]	**2 kg CO2 eq.**
Carbon footprint of the use phase [B2, B3, B4, B6]	**2 886 kg CO2 eq.**
Carbon footprint of the end-of-life phase [C1 to C4]	**6 kg CO2 eq.**
Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Substances

Packaging made with recycled cardboard	**Yes**
Packaging without single use plastic	**Yes**
SCIP Number	**D582d21b-2d5d-44ed-9712-31cb7f89778b**
EU RoHS Directive	Compliant By Exemption
REACh Regulation	Reference contains Substances of Very High Concern above the threshold

Use Longer

Lifetime extension

Repair	**No**

Use Again

Repack and remanufacture

Recyclability potential, in %	**72**
End of life manual availability	End of Life Information
Removable battery	**Yes**
Take-back	**No**

Offer Marketing Illustration

Product benefits / Features

Offer Marketing Illustration

Product benefits / Features

Image of product / Alternate images

Alternative