Product data sheet

Specifications



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

ATH630U30N4Z

Product availability: Stock - Normally stocked in distribution facility

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
Phase	3 phase
[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	7.2 A 380 V normal duty) 6.2 A 480 V normal duty) 5.1 A 380 V heavy duty) 4.8 A 480 V heavy duty)
Maximum transient current	7.9 A 60 s normal duty) 7.7 A 60 s heavy duty)
Motor power kW	3.0 kW normal duty 2.2 kW heavy duty
Maximum Horse Power Rating	3 hp normal duty 3 hp heavy duty
Line current	5.371 A 380 V normal duty) 4.6 A 480 V normal duty) 4.2 A 380 V heavy duty) 3.6 A 480 V heavy duty)
EMC filter	Class C2 EMC filter integrated
Safety Function	STO (safe torque off)
Safety level	SIL 3 IEC 61508 PL = e ISO 13849-1
Cybersecurity function	True
Cybersecurity level and standard	Security level (SL) 1 IEC 62443-4-2
Communication port protocol	Modbus serial BACnet MS/TP

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

Option card	Communication module BACnet IP Communication module PROFINET Communication module 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 DC4.4 kOhm DI5, DI6 programmable as pulse input 0…30 kHz, 24 V DC
Discrete input logic	Positive logic (source) DI1...DI6), <= 5 V, >= 11 V Positive logic (source) STOA, STOB), <= 5 V, >= 11 V Negative logic (sink) DI1...DI6), > 16 V, < 10 V Positive logic (source) DI5, DI6), < 0.6 V, > 2.5 V
Input compatibility	DI1...DI6 discrete input level 1 PLC IEC 61131-2 DI5, DI6 pulse input level 1 PLC IEC 65A-68 STOA, STOB discrete input level 1 PLC IEC 61131-2
Supply	External supply for control circuit 24 V DC 19…30 V), <800 mA overload and short-circuit protection Internal supply for digital inputs and STO 24 V DC 20.4…27 V), <200 mA overload and short-circuit protection Internal supply for reference potentiometer 10.5 V DC +/- 5 %, <10 mA short-circuit
Analogue input number	3
Analogue input type	AI1 0...10 V DC 30 kOhm 12 bits AI2 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration) 250 Ohm 12 bits AI3 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration) 250 Ohm 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 470 Ohm 10 bits Software-configurable current AQ1, AQ2 0...20 mA 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 analog input AQ1, AQ2 +/- 0.2 % analog output
Relay output number	3
Relay output type	Relay outputs R1A, R1B, R1C 1 NO 1 NC 100000 cycles Relay outputs R2A, R2C 1 NO 100000 cycles Relay outputs R3A, R3C 1 NO 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 resistive load 3 A 250 V AC Relay output R1, R2, R3 resistive load 3 A 30 V DC Relay output R1, R2, R3 inductive load, cos phi = 0.4 0.7 ms 2 A 250 V AC Relay output R1, R2, R3 inductive load, cos phi = 0.4 0.7 ms 2 A 30 V DC
Minimum switching current	Relay output R1, R2, R3 5 mA 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	5 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	3.8 kVA normal duty) 3.0 kVA heavy duty)
power loss static current independent	22 W
Power dissipation in W	AF (air forced) 74 W 6 kHz normal duty) AN (air natural) 29 W 6 kHz normal duty) AF (air forced) 56 W 6 kHz heavy duty) AN (air natural) 27 W 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	5.7 in (145 mm)
Height	7.8 in (197 mm)
Depth	6.5 in (166 mm)
Net Weight	5.29 lb(US) (2.40 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	3280.84 ft (1000 m) without derating 3280.84...9842.52 ft (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 IEC 60068-2-3
Volume of cooling air	10831.2 Gal/hr(US) (41 m3/h)

Noise level	53 dB
Pollution degree	2
Ambient air temperature for operation	5…122 °F (-15…50 °C) without derating 122…140 °F (50…60 °C) with derating factor
Ambient Air Temperature for Storage	-40…158 °F (-40…70 °C)

Ordering and shipping details

Category	US1CP4D22201
Discount Schedule	CP4D
GTIN	3606487957829
Returnability	Yes
Country of origin	ID

Packing Units

Unit Type of Package 1	PCE
Nbr. of units in pkg.	1
Package 1 Height	9.252 in (23.500 cm)
Package 1 Width	7.677 in (19.500 cm)
Package 1 Length	10.866 in (27.600 cm)
Package weight(Lbs)	6.687 lb(US) (3.033 kg)
Unit Type of Package 2	S06
Number of Units in Package 2	9
Package 2 Height	29.528 in (75.000 cm)
Package 2 Width	23.622 in (60.000 cm)
Package 2 Length	31.496 in (80.000 cm)
Package 2 Weight	83.776 lb(US) (38.000 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	**1 738 kg CO2 eq.**
Carbon footprint of the manufacturing phase [A1 to A3]	**53 kg CO2 eq.**
Carbon footprint of the distribution phase [A4]	**0.5 kg CO2 eq.**
Carbon footprint of the installation phase [A5]	**2 kg CO2 eq.**
Carbon footprint of the use phase [B2, B3, B4, B6]	**1 680 kg CO2 eq.**
Carbon footprint of the end-of-life phase [C1 to C4]	**4 kg CO2 eq.**
Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Substances

Average percentage of ASI certified metals	**100 %**
Packaging made with recycled cardboard	**Yes**
Packaging without single use plastic	**Yes**
SCIP Number	**Acf6cfca-a54f-4970-82a4-62cc23bfe862**
EU RoHS Directive	Compliant By Exemption
REACh Regulation	Reference contains Substances of Very High Concern above the threshold
California proposition 65	**WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov**

Use Longer

Lifetime extension

Repair	**No**

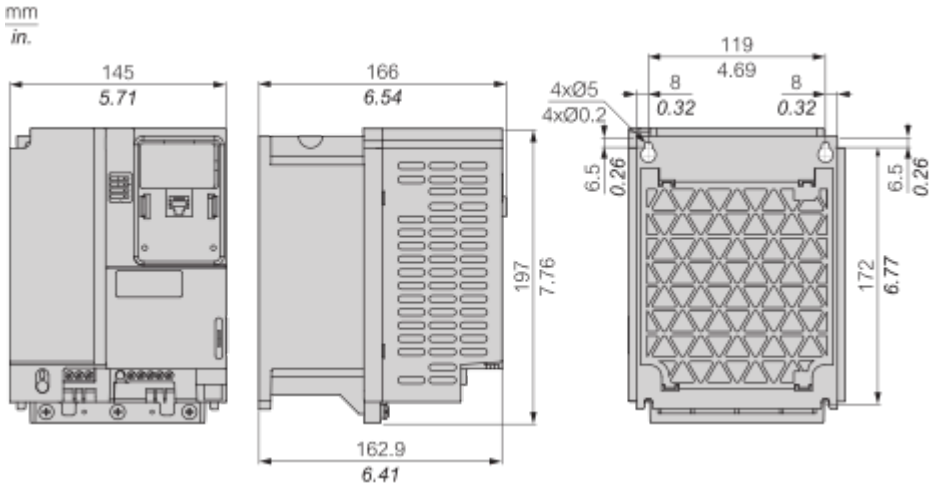
Use Again

Repack and remanufacture

Recyclability potential, in %	**78**
Removable battery	**Yes**
Take-back	**No**
WEEE Label	**The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.**

Dimensions Drawings

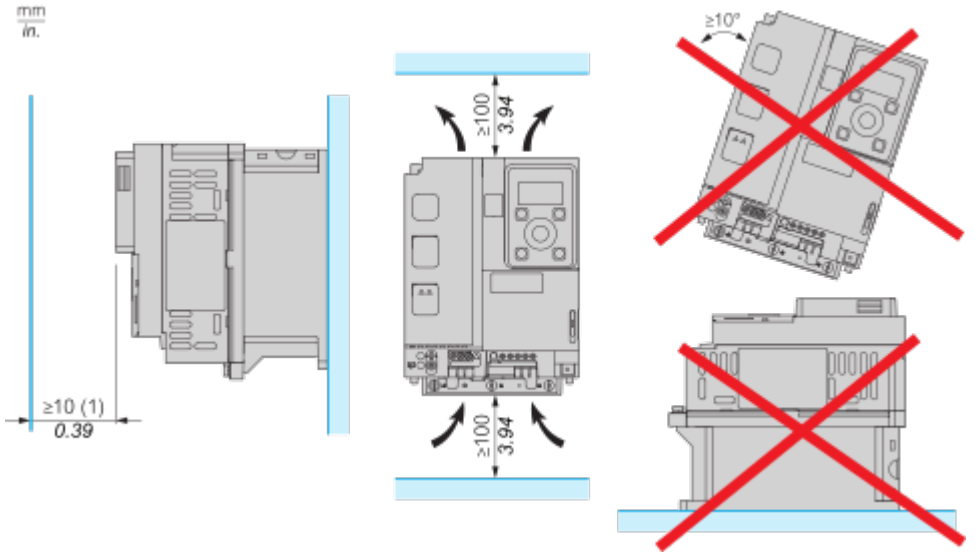
Dimensions



Mounting and Clearance

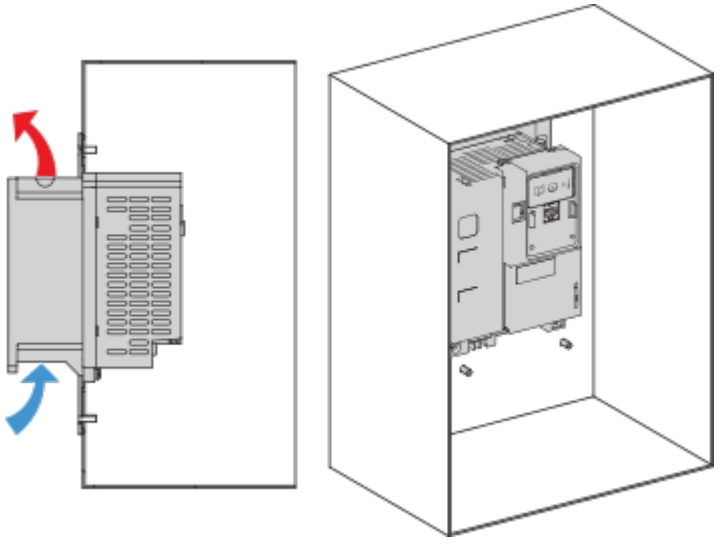
Mounting

Clearances and Mounting Position

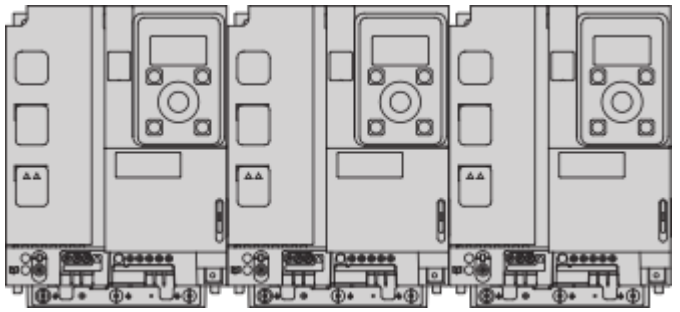


(1) : 50 mm (2 in.) for option module and display terminal

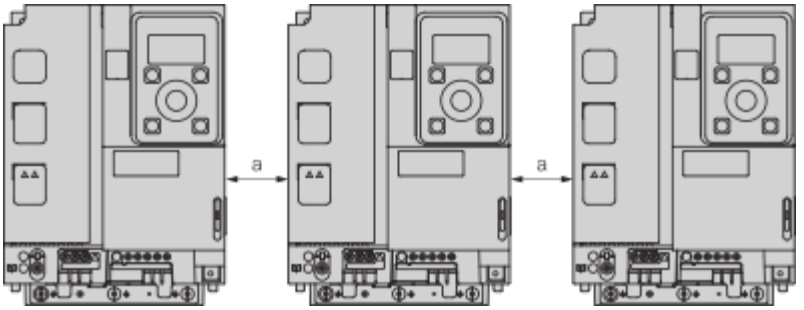
Enclosed with flange-mounting kit



Mounting Type B - Side by Side



Mounting Type C - Individual

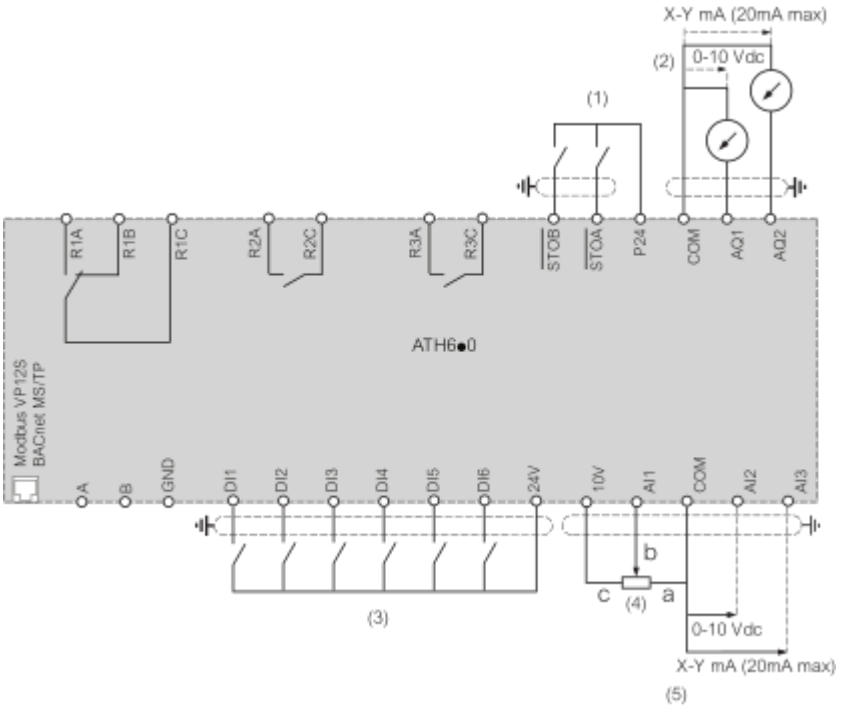


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Connections and Schema

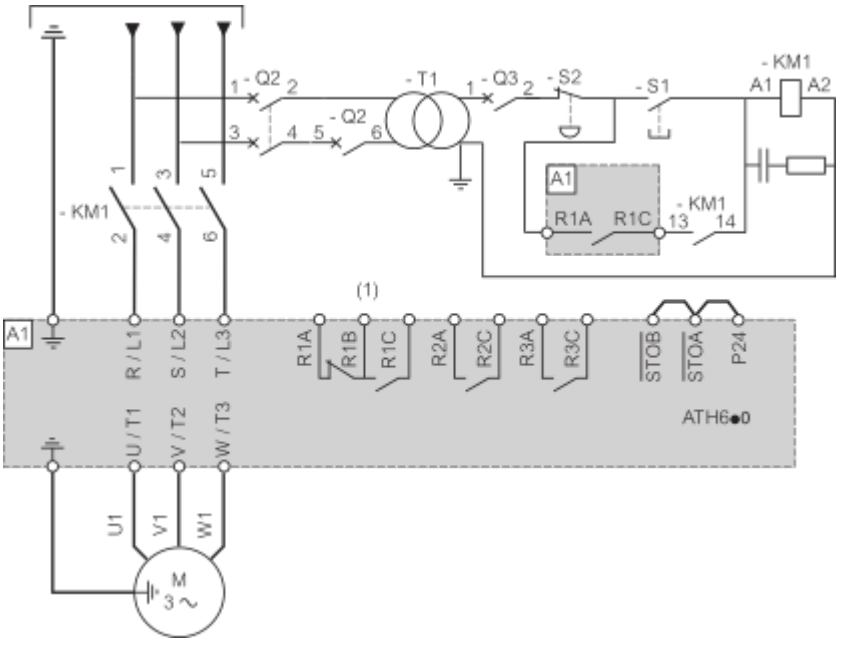
Wiring Diagrams

Control Block Wiring Diagram



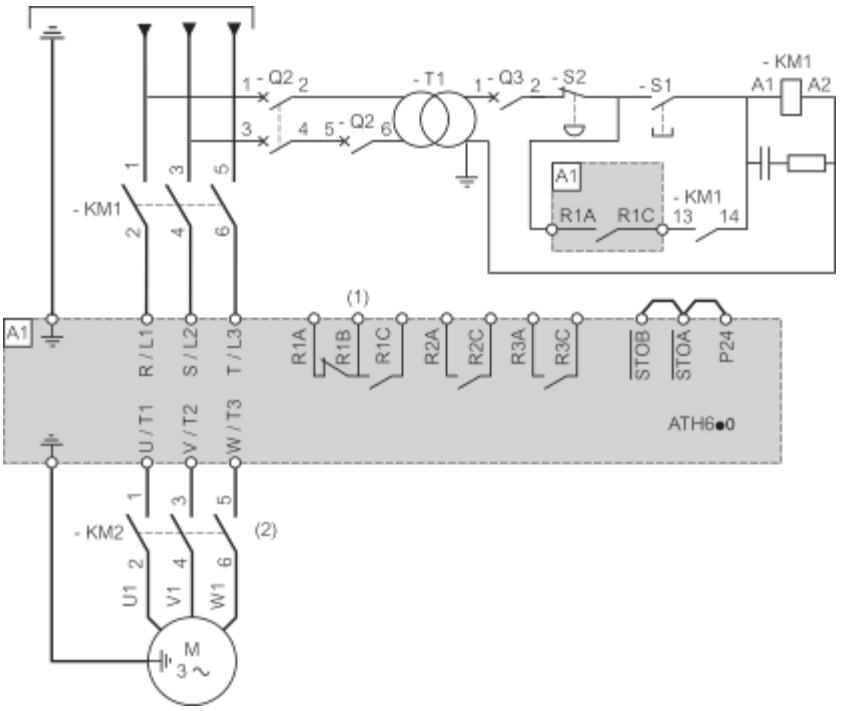
(1) : STO Safe Torque Off
(2) : Analog Output
(3) : Digital Input
(4) : Reference potentiometer (ex. SZ1RV1002)
(5) : Analog Input

Three-phase Power Supply - Diagram With Line Contactor Without Safety Function STO



(1) : Use relay output R1 set to operating state Fault to switch Off the product once an error is detected

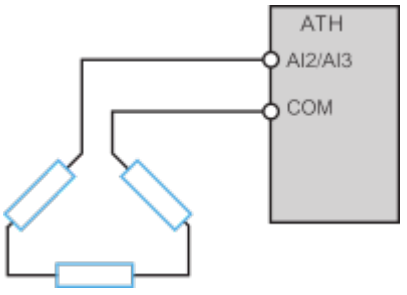
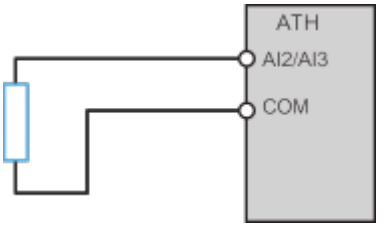
Three-phase Power Supply - Diagram With Downstream Contactor



(1) : Use relay output R1 set to operating state Fault to switch Off the product once an error is detected
(2) : Command of KM2 can be done by using the **[Output contactor cmd]** OCC function. For more information, refer to the Programming manual.

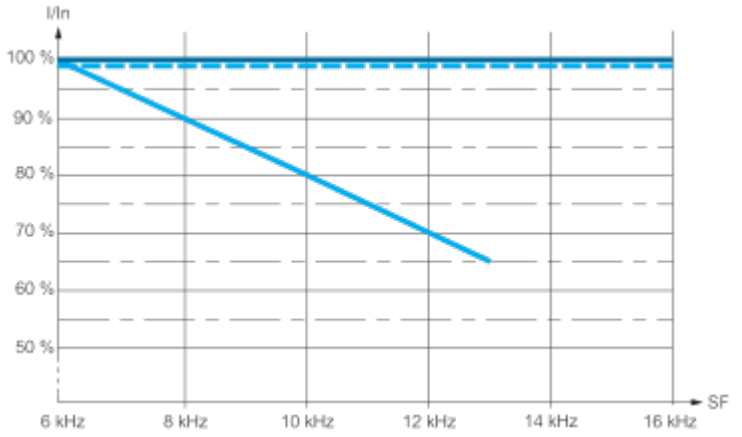
Sensor Connection

It is possible to connect 1 sensor on terminals AI2 or AI3.

3 PTC sensors in series	PT100, PT1000 or KTY
	

Performance Curves

Derating Curves - Mounting type B and C



40 °C (104 °F)
50 °C (122 °F)
60 °C (140 °F)
In : Nominal Drive Current
SF : Switching Frequency

Image of product / Alternate images

Alternative











