



### Hovedkarakteristikk

Produktspekter	Altivar Process ATV600
Produkt eller komponent type	Frekvensomformer
Produktspesifikk applikasjon	Prosess og verktøy
Kortnavn utstyr	ATV630
Variant	Standard versjon
Produsert i	Asynkron motorer Synchronous motors
Monteringsmetode	Wall mount
EMC filter	Integrated EN/IEC 61800-3 category C2 50 m Integrated EN/IEC 61800-3 category C3 150 m
IP-grad	IP21 IEC 61800-5-1 IP21 IEC 60529
Grad av beskyttelse	UL type 1 UL 508C
Kjølemetode	Tvangsstyrt konveksjon
Nettfrekvens	50...60 Hz - 5...5 %
Network number of phases	3 faser
[Us] matespenning	380...480 V - 15...10 %
Motoreffekt kW	37 kW normal duty 30 kW heavy duty
Motoreffekt hk	50 hp normal duty 40 hp heavy duty
Nettstrøm	66.2 A 380 V normal duty 57.3 A 480 V normal duty 54.8 A 380 V heavy duty 48.3 A 480 V heavy duty
Maks kortslutningsnivå I <sub>sc</sub>	50 kA
Tilsynelatende effekt	47.6 kVA 480 V normal duty 40.2 kVA 480 V heavy duty
Nominell utgangsstrøm	74.5 A 4 kHz normal duty 61.5 A 4 kHz heavy duty
Maksimale transient strøm	82 A 60 s normal duty 92.3 A 60 s heavy duty
Motorkontroll metode	Konstant dreiemoment standard Variabelt dreiemoment standard Optimalisert dreiemoment-modus
Synchronous motor control profile	Permanent magnet motor
Output frequency	0.0001...0.5 kHz
Nominell svitsjefrekvens	4 kHz
Switching frequency	2...12 kHz Justrbar 4...12 kHz with derating factor
Sikkerhetsfunksjon	STO (safe torque off) SIL 3
Diskrét inngangs logikk	16 forhåndsinnstilte hastigheter
Kommunikasjonsprotokoll	ETHERNET Modbus serial Modbus TCP
Funksjonskort	Communication module Profibus DP V1 slot A Communication module Profinet slot A Communication module DeviceNet slot A Communication module Modbus TCP/EtherNet/IP slot A Communication module CANopen daisy chain RJ45 slot A Communication module CANopen SUB-D 9 slot A Communication module CANopen screw

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terminals slot A  
 Digital and analog I/O extension module slot A/slot B  
 Output relay extension module slot A/slot B  
 Communication module Ethernet IP/Modbus  
 TCP/MD-Link slot A

## Alternativer

Utgangsspennning	<= strømforsyningsspennning
Tillatt korttidstrøm	1.1 x In 60 s normal duty 1.5 x In 60 s heavy duty
Motor slip kompensasjon	Justrbar Automatic whatever the load Can be suppressed Not available in permanent magnet motor law
Akselerasjons- og retardasjonsramper	Lineær justerbare separat fra 0,01 til 9000 s S, U eller tilpasset
Bremsing til stillstand	Ved DC-bremsing
Beskyttelsestype	Line supply overvoltage drive Line supply phase loss drive Line supply undervoltage drive Overcurrent between output phases and earth drive Thermal protection Motor Thermal protection drive Safe torque off motor Motor phase break motor Safe torque off drive Overheating drive Short-circuit protection drive Motor phase break drive Overspeed drive Break on the control circuit drive Overvoltages on the DC bus drive Overload of output voltage drive
Frekvensopløsning	Display unit Analog input
Elektrisk tilkobling	Removable screw terminals 0.5...1.5 mm <sup>2</sup> AWG 20...AWG 16 control Screw terminal 35...50 mm <sup>2</sup> AWG 3...AWG 1 line side Screw terminal 35...50 mm <sup>2</sup> AWG 3...AWG 1 motor
Type konnektor	RJ45 Ethernet/Modbus TCP on the remote graphic terminal RJ45 Modbus serial on the remote graphic terminal
Fysisk interface	2-wire RS 485 Modbus serial
Ramme for overføring	RTU Modbus serial
Transmission rate	10/100 Mbit/s Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s Modbus serial
Exchange-modus	Half duplex, full duplex, autonegotiation Ethernet/Modbus TCP
Datoformat	8 bits, configurable odd, even or no parity Modbus serial
Polarisasjonstype	No impedance Modbus serial
Antall adresser	1...247 Modbus serial
Tilgangsmetode	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
Lokal varsling	3 LEDs local diagnostic 3 LEDs dual colour embedded communication status 4 LEDs dual colour communication module status 1 LED red presence of voltage
Bredde	226 mm
Høyde	673 mm
Dybde	271 mm
Vekt	28.2 kg
Antall analoge innganger	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/4...20 mA 250 Ohm 12 bits

Discrete input number	8
Discrete input type	Programmable DI1...DI6 24 V DC 3.5 kOhm Programmable as pulse input DI5, DI6 0...30 kHz 24 V DC Safe torque off STOA, STOB 24 V DC > 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
Diskrét inngangs logikk	Positive logic (source) DI1...DI6 < 5 V > 11 V Negative logic (sink) DI1...DI6 > 16 V < 10 V Positive logic (source) DI5, DI6 < 0.6 V > 2.5 V Positive logic (source) STOA, STOB < 5 V > 11 V
Analog utgangsnummer	2
Analog utgangstype	Software-configurable voltage AO1, AO2 0...10 V DC 470 Ohm 10 bits Software-configurable current AO1, AO2 0...20 mA 10 bits
Sampling varighet	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
Nøyaktighet	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AO1, AO2 for a temperature variation 60 °C analog output
Lineær feil	+/- 0.15 % of maximum value analog input AI1, AI2, AI3 +/- 0.2 % analog output AO1, AO2
Relé utgang nummer	3
Reléutgangstype	Configurable relay logic R1 fault relay NO/NC 100000 cycles Configurable relay logic R2 sequence relay NO 100000 cycles Configurable relay logic R3 sequence relay NO 100000 cycles
Refresh time	5 ms +/- 0.5 ms R1, R2, R3 relay output
Minimum brytestrøm	5 mA 24 V DC R1, R2, R3 relay output
Maximum svitsjestrøm	3 A 250 V AC resistive 1 R1, R2, R3 relay output 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
Skille	Between power and control terminals
Funksjonalitet	Full
Specific application	Utility
IP grad av beskyttelse	IP21
Diskret og prosess produksjon	Building - HVAC compressor centrifugal Building - HVAC compressor centrifugal Food and beverage processing other application Mining mineral and metal fan Mining mineral and metal pump Oil and gas fan Water and waste water other application Building - HVAC screw compressor Food and beverage processing pump Food and beverage processing fan Food and beverage processing atomization Oil and gas electro submersible pump (ESP) Oil and gas water injection pump Oil and gas jet fuel pump Oil and gas compressor for refinery Water and waste water centrifuge pump Water and waste water positive displacement pump Water and waste water electro submersible pump (ESP) Water and waste water screw pump Water and waste water lobe compressor Water and waste water screw compressor Water and waste water compressor centrifugal Water and waste water fan Water and waste water conveyor Water and waste water mixer
Effektområdet	30...50 kW 380...440 V 3 phases 30...50 kW 480...500 V 3 phases
Motor starter typen	Variable speed drive
<b>Miljø</b>	
Isolasjonsmotstand	> 1 mOhm 500 V DC for 1 minute to earth
noise level	63.5 dB 86/188/EEC

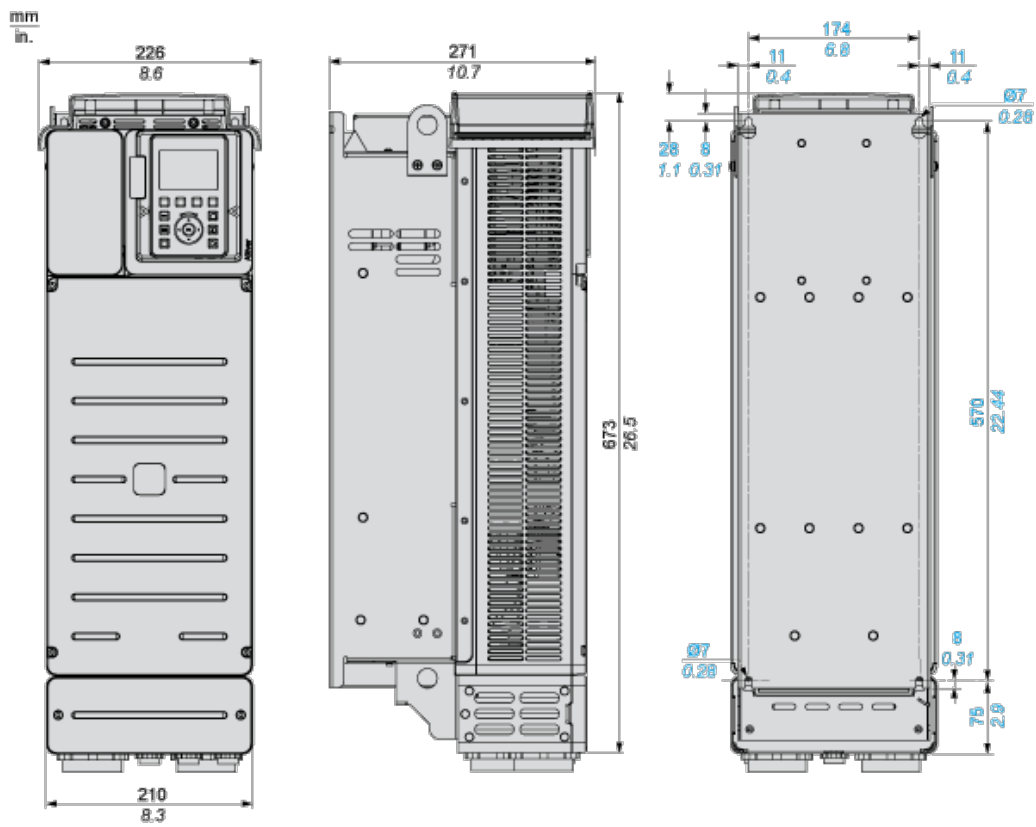
Effekttap i W	106 W natural convection 380 V 4 kHz 796 W forced convection 380 V 4 kHz
volum av kjøleluft	240 m3/t
driftsposisjon	Vertikal +/- 10 grader
THDI	<= 48 % from 80...100 % of load IEC 61000-3-12
elektromagnetisk kompatibilitet	1.2/50 µs - 8/20 µs surge immunity test nivå 3 IEC 61000-4-5 Electrical fast transient/burst immunity test nivå 4 IEC 61000-4-4 Immunitetstest for elektrostatisk utladning nivå 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test nivå 3 IEC 61000-4-3 Conducted radio-frequency immunity test nivå 3 IEC 61000-4-6
Forurensninggrad	2 EN/IEC 61800-5-1
Vibrasjonsmotstand	1.5 mm peak to peak 2...13 Hz IEC 60068-2-6 1 gn 13...200 Hz IEC 60068-2-6
støtmotstand	15 gn 11 ms IEC 60068-2-27
relativ fuktighet	5...95 % uten kondens IEC 60068-2-3
omgivelsestemperatur for drift	50...60 °C with derating factor -15...50 °C uten lastreduksjon
omgivelsestemperatur for lagring	-40...70 °C
operating altitude	<= 1000 m uten lastreduksjon 1000...4800 m with current derating 1 % per 100 m
miljødata	Chemical pollution resistance class 3C3 EN/IEC 60721-3-3 Dust pollution resistance class 3S3 EN/IEC 60721-3-3
standarder	EN/IEC 61800-3 EN/IEC 61800-3 environment 1 category C2 EN/IEC 61800-3 environment 2 category C3 UL 508C EN/IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1
produktsertifikater	ATEX INERIS ATEX zone 2/22 CSA TÜV UL REACH DNV-GL
merking	CE

## Bærekraftig

Bærekraftig	Green Premium produkt
RoHS (datokode: YYWW)	Compliant - since 1426 - Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold
Produktets miljøprofil	Tilgjengelig
Destruksjons-instruks	Tilgjengelig

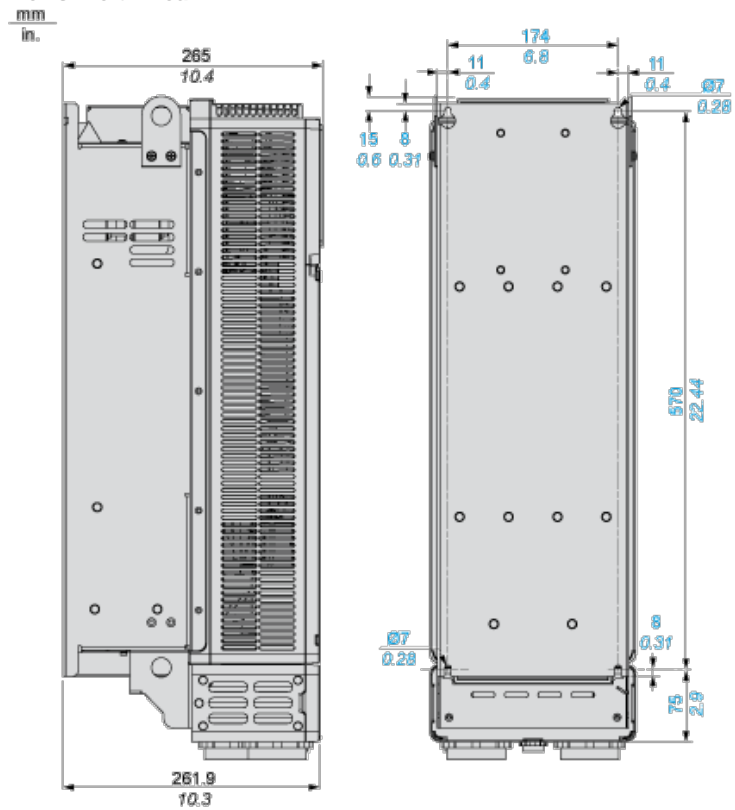
## Dimensions

Views: Front - Left - Rear



Drive Without IP21 Top Cover

Views: Left - Rear



Clearances



X1	X2	X3
≥ 100 mm (3.94 in.)	≥ 100 mm (3.94 in.)	≥ 10 mm (0.39 in.)

## Mounting Types

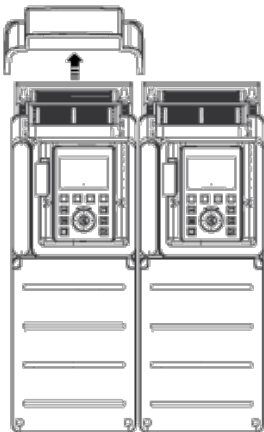
### Mounting Type A: Individual IP21



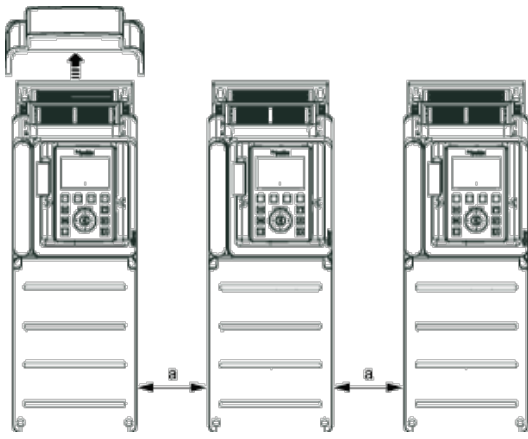
$a \geq 110 \text{ mm (4.33 in.)}$

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### Mounting Type B: Side by Side IP20 (Possible, 2 Drives Only)



### Mounting Type C: Individual IP20

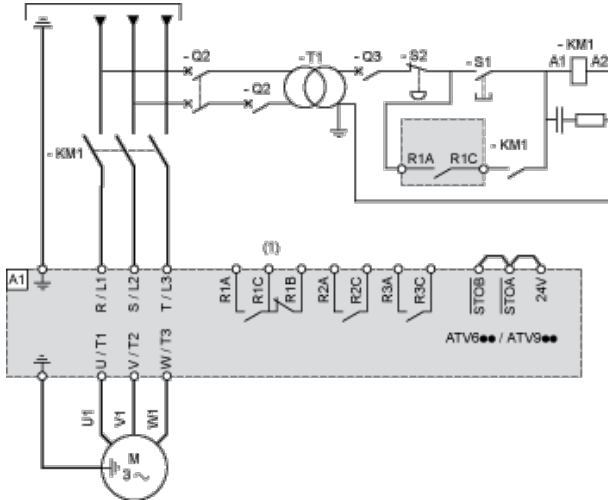


$a \geq 110 \text{ mm (4.33 in.)}$

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### Single or Three-Phase Power Supply with Upstream Breaking via Line Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



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

A1 : Drive

KM1 :Line Contactor

Q2, Circuit breakers

Q3 :

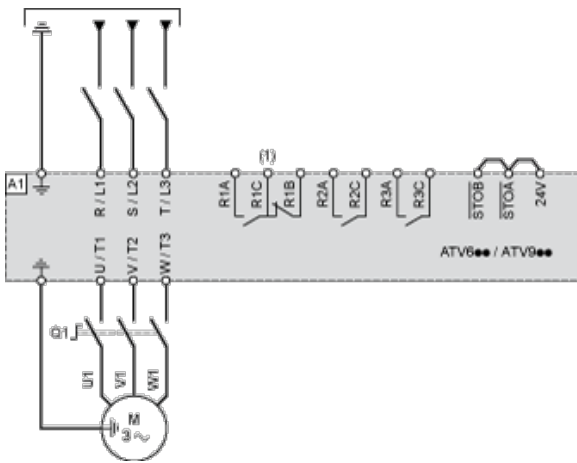
S1, Pushbuttons

S2 :

T1 : Transformer for control part

### Single or Three-Phase Power Supply with Downstream Breaking via Switch Disconnecter

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1

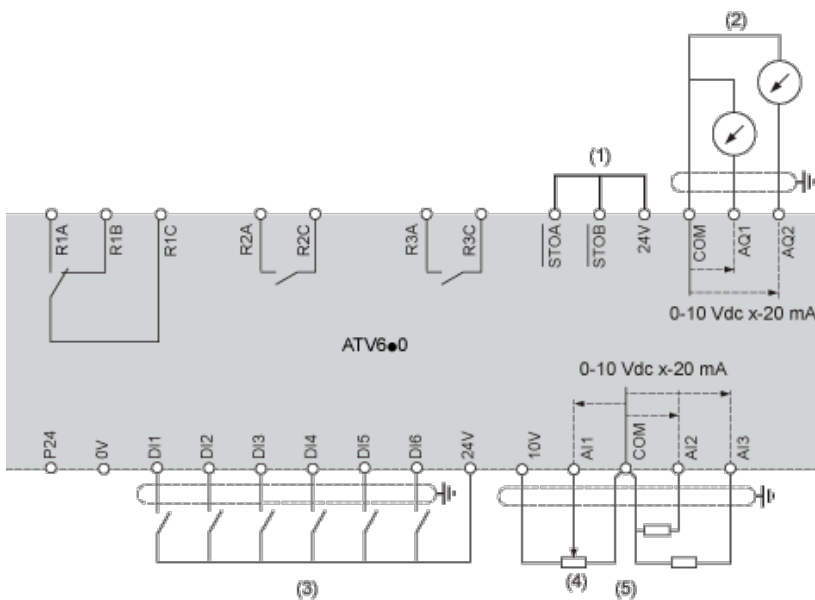


(1) Use digital output R1 set to operating state Fault to switch Off the product once an error is detected.

A1 : Drive

Q1 : Switch disconnector

### Control Block Wiring Diagram



(1) Safe Torque Off

(2) Analog Output

(3) Digital Input

(4) Reference potentiometer

(5) Analog Input

A1 : ATV6.. Drive

R1A, Fault relay

R1B,

R1C :

R2A, Sequence relay

R2C :

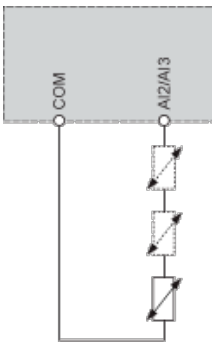
R3A, Sequence relay

R3C :

### Sensor Connection

It is possible to connect either 1 or 3 sensors on terminals AI2 or AI3.



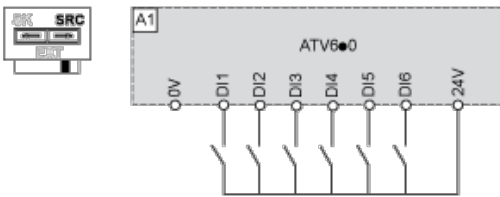


## Sink / Source Switch Configuration

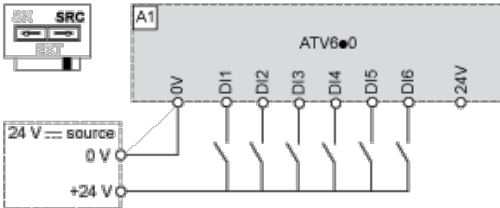
The switch is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

- ▮ Set the switch to Source (factory setting) if using PLC outputs with PNP transistors.
- ▮ Set the switch to Ext if using PLC outputs with NPN transistors.

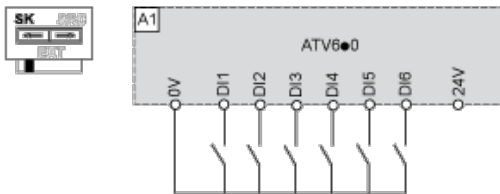
### Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



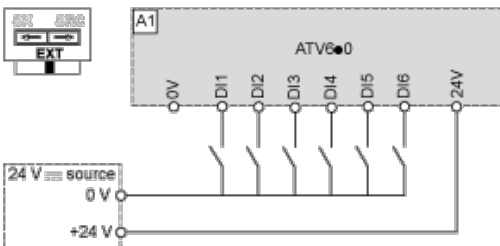
### Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs



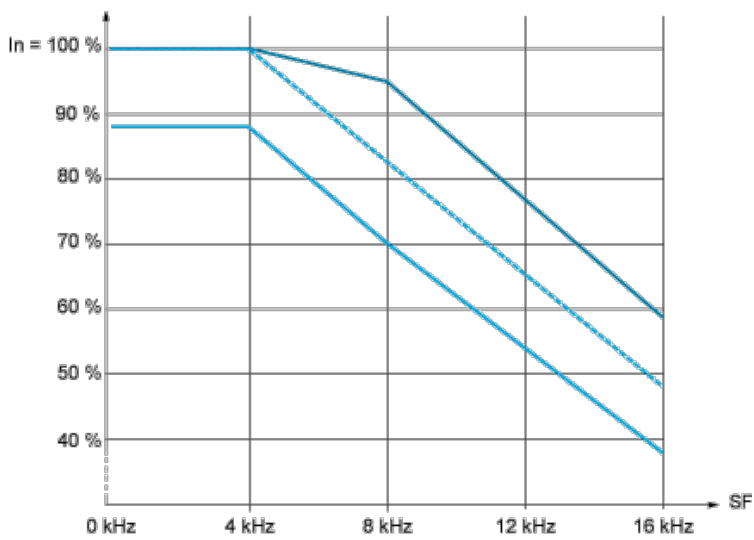
### Switch Set to SK (Sink) Position Using the Output Power Supply for the Digital Inputs



### Switch Set to EXT Position Using an External Power Supply for the DIs



## 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

### Our Proposal: Circuit Breaker + Contactor + Drive for Motor Power 37 kW and 380 or 440 VAC

Motor Power (kW)	Icu (kA)	Breaker	Contactors (*)	Motor Starter
37 kW for 380 V	70	 28100	 LC1D65AP7	 ATV630D37N4
37 kW for 440 V	50	 GV3L65	 LC1D65AP7	 ATV630D37N4

Non contractual pictures.

(\*) You can select the contactor proposed or variants. Please consider examples hereafter or follow the link to the complete offer.

Motor Power kW	Coil voltage VAC - 50/60 Hz	24	48	110	115	220	230	400	Other
37	LC1D65A ..	B7	E7	F7	FE7	M7	P7	V7	Complete Offer

Motor Power kW	Coil voltage VDC - U 0.75...1.25 Uc	24	48	Other
37	LC1D65A ..	BD	ED	Complete Offer

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