

ATV930D22Y6

variable speed drive, ATV930, 22kW/30HP,
500V/690V, IP00

Product availability : Stock - Normally stocked in distribution facility



Price** : 4,569.00 USD



Main

Range of product	Altivar Process ATV900
Product or component type	Variable speed drive
Device application	Industrial application
Device short name	ATV930
Variant	With braking chopper Standard version
Product destination	Asynchronous motors Synchronous motors
Mounting mode	Wall mount
EMC filter	Integrated conforming to EN/IEC 61800-3 category C3 with <= 25 m motor cable maxi
IP degree of protection	IP00 conforming to IEC 61800-5-1
Type of cooling	Forced convection
Supply frequency	50...60 Hz (+/- 5 %)
Network number of phases	3 phases
[Us] rated supply voltage	500...690 V (- 15...10 %)
Motor power kW	18.5 kW at 500 V (normal duty)
Motor power hp	25 hp at 500 V (normal duty)
Line current	27.6 A at 500 V (normal duty)
Prospective line Isc	70 kA
Apparent power	31.1 kVA at 690 V (normal duty)
Continuous output current	29 A at 4 kHz (normal duty)
Maximum transient current	34.8 A during 60 s (normal duty)
Asynchronous motor control profile	Optimized torque mode Constant torque standard Variable torque standard
Synchronous motor control profile	Synchronous reluctance motor Permanent magnet motor
Speed drive output frequency	0.1...599 Hz

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

Nominal switching frequency	4 kHz
Switching frequency	2...8 kHz adjustable
Safety function	STO (safe torque off) SIL 3
Number of preset speeds	16 preset speeds
Communication port protocol	Ethernet/IP Modbus TCP Modbus serial
Option module	Slot A: communication module Profibus DP V1 Slot A: communication module Profinet Slot A: communication module DeviceNet Slot A: communication module CANopen daisy chain RJ45 Slot A: communication module CANopen SUB-D 9 Slot A: communication module CANopen screw terminals Slot A: communication module EtherCAT Slot A/slot B/slot C: digital and analog I/O extension module Slot A/slot B/slot C: output relay extension module Slot B: 5/12 V digital encoder interface module Slot B: analog encoder interface module Slot B: resolver encoder interface module

Complementary

Output voltage	<= power supply voltage
Motor slip compensation	Can be suppressed Not available in permanent magnet motor law Adjustable Automatic whatever the load
Acceleration and deceleration ramps	Linear adjustable separately from 0.01...9999 s S, U or customized
Braking to standstill	By DC injection
Protection type	Motor: thermal protection Motor: safe torque off Motor: motor phase break Drive: thermal protection Drive: safe torque off Drive: overheating Drive: overcurrent between output phases and earth Drive: overload of output voltage Drive: short-circuit protection Drive: motor phase break Drive: overvoltages on the DC bus Drive: line supply overvoltage Drive: line supply undervoltage Drive: line supply phase loss Drive: overspeed Drive: break on the control circuit
Frequency resolution	Display unit: 0.1 Hz Analog input: 0.012/50 Hz
Electrical connection	Control, screw terminal: 0.5...1.5 mm ² (AWG 20...AWG 16)
Connector type	2 RJ45 (on the control block) Ethernet IP/Modbus TCP
Physical interface	2-wire RS 485 Modbus serial
Transmission frame	RTU Modbus serial
Transmission rate	10/100 Mbit/s Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial
Exchange mode	Half duplex, full duplex, autonegotiation Ethernet IP/Modbus TCP
Data format	8 bits, configurable odd, even or no parity Modbus serial
Type of polarization	No impedance Modbus serial
Number of addresses	For Modbus serial
Method of access	Slave Modbus TCP
Supply	External supply for digital inputs: 24 V DC (19...30 V) current <= 1.25 mA (overload and short-circuit protection)
Local signalling	3 mono/dual colour LED for local diagnostic
Width	9.69 in (246 mm)
Height	16.54 in (420 mm)

Depth	9.53 in (242 mm)
Product weight	48.5 lb(US) (22 kg)
Analogue input number	3
Analogue input type	Software-configurable voltage AI1, AI2, AI3: 0...10 V DC impedance 30 kOhm, resolution 12 bits
Discrete input number	10
Discrete input type	Programmable DI1...DI8: 24 V DC (<= 30 V) impedance 3.5 kOhm
Input compatibility	Discrete input DI1...DI8: level 1 PLC conforming to EN/IEC 61131-2
Analogue output number	2
Discrete output number	2
Discrete output type	Logic output DQ+ : 0...1 kHz (<= 30 V) DC, 100 mA
Sampling duration	Discrete input DI1...DI8: 2 ms (+/- 0.5 ms)
Accuracy	Analog input AI1, AI2, AI3: +/- 0.6 % for a temperature variation 60 °C Analog output AQ1, AQ2: +/- 1 % for a temperature variation 60 °C
Linearity error	Analog input AI1, AI2, AI3: +/- 0.15 % of maximum value
Maximum switching current	Relay output R1 on resistive load (cos phi = 1) : 3 A at 250 V AC
Relay output number	3
Relay output type	Configurable relay logic R1: fault relay NO/NC electrical durability 100000 cycles
Refresh time	Relay output R1, R2, R3: 5 ms (+/- 0.5 ms)
Minimum switching current	Relay output R1, R2, R3: 5 mA at 24 V DC
Isolation	Between power and control terminals
IP degree of protection	IP21

Environment

Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Noise level	58 dB conforming to 86/188/EEC
Power dissipation in W	463 W (forced convection) at 500 V switching frequency 4 kHz
Vibration resistance	1.5 mm peak to peak (f = 2...13 Hz) conforming to IEC 60068-2-6 1 gn (f = 13...200 Hz) conforming to IEC 60068-2-6
Shock resistance	15 gn during 11 ms conforming to IEC 60068-2-27
Volume of cooling air	87178.34 Gal/hr(US) (330 m3/h)
Operating position	Vertical +/- 10 degree
Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 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 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6
Pollution degree	2 EN/IEC 61800-5-1
Environmental characteristic	Chemical pollution resistance class 3C3 conforming to EN/IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to EN/IEC 60721-3-3
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for operation	-15...50 °C without 122...140 °F (50...60 °C) with derating factor
Ambient air temperature for storage	-40...158 °F (-40...70 °C)
Operating altitude	1000...4800 m with current derating 1 % per 100 m
Standards	EN/IEC 61800-3 UL 508C EN/IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1 EN/IEC 61800-3 (environment 2 category C3)
Product certifications	CSA REACH TÜV UL
Marking	CE

Ordering and shipping details

Category	22276 - ATV930 FRAMES 1 & 2
Discount Schedule	CP4E
GTIN	00785901022602
Nbr. of units in pkg.	1
Package weight(Lbs)	21000
Returnability	Y
Country of origin	IN

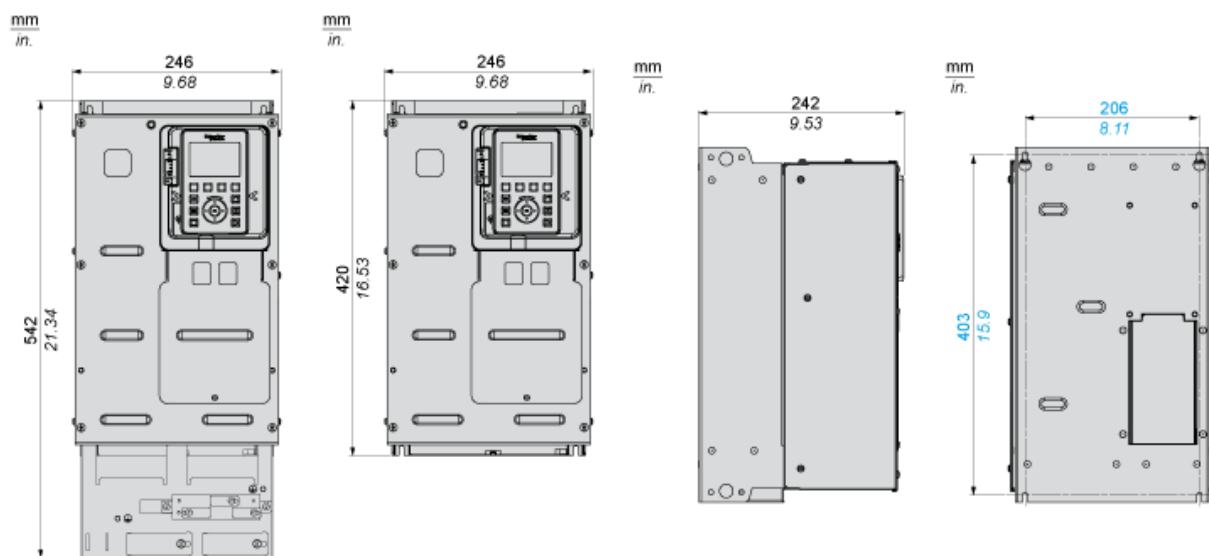
Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1728 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available End of Life Information
Product end of life instructions	Available
California proposition 65	WARNING: This product can expose you to chemicals including:
----- Substance 1	Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm.
----- Substance 2	Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm.
----- More information	For more information go to www.p65warnings.ca.gov

Dimensions

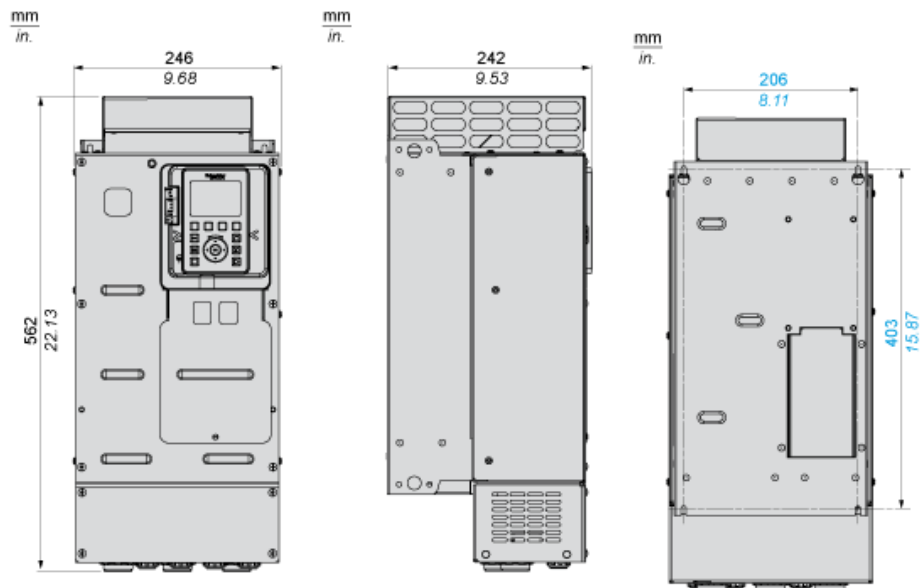
Drives without Top Cover

Front View with EMC Plate, Front, Left and Rear View without EMC Plate

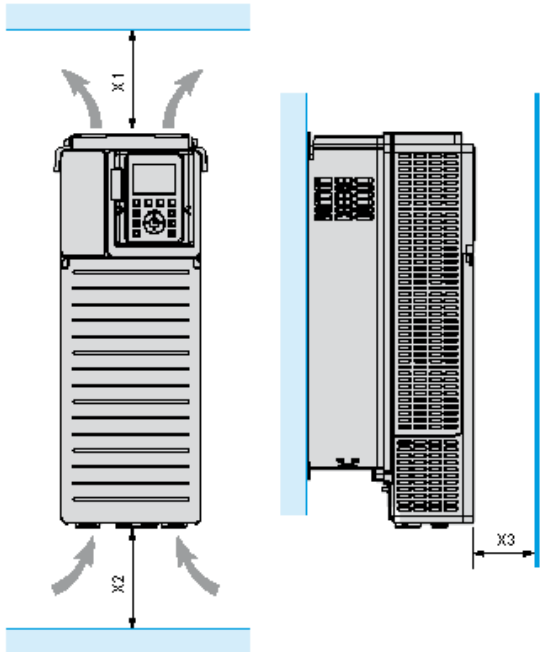


Drives with IP20 Top Cover

Front, Left and Rear View



Clearances

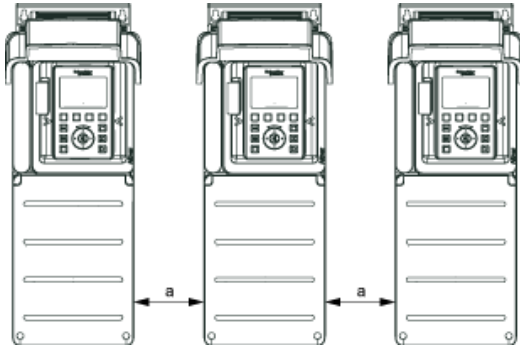


X1	X2	X3
≥ 100 mm (3.94 in.)	≥ 100 mm (3.94 in.)	≥ 10 mm (0.39 in.)

- Mount the device in a vertical position ($\pm 10^\circ$). This is required for cooling the device.
- Do not mount the device close to heat sources.
- Leave sufficient free space so that the air required for cooling purposes can circulate from the bottom to the top of the drive.

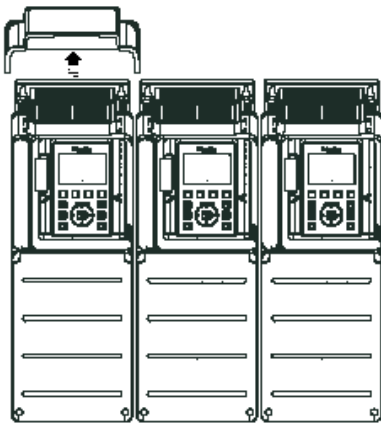
Mounting Types

Mounting Type A: Individual IP21

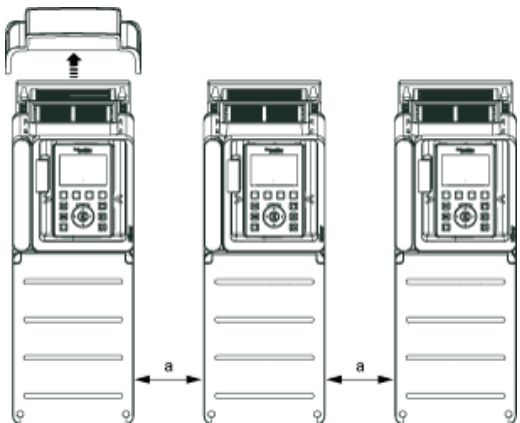


$a \geq 0$

Mounting Type B: Side by Side IP20



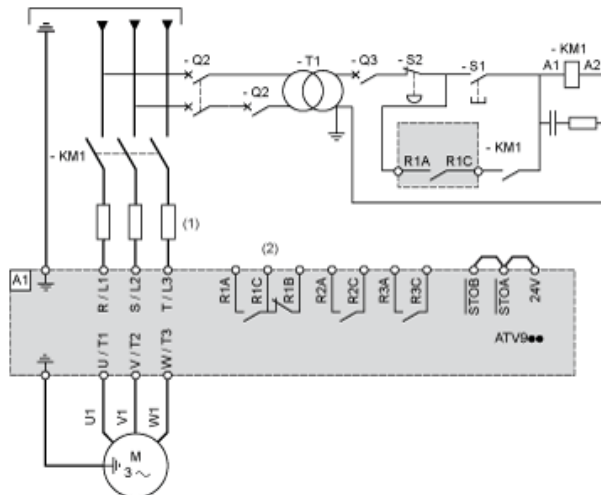
Mounting Type C: Individual IP20



$a \geq 0$

Three-Phase Power Supply with Upstream Breaking via Line Contactor

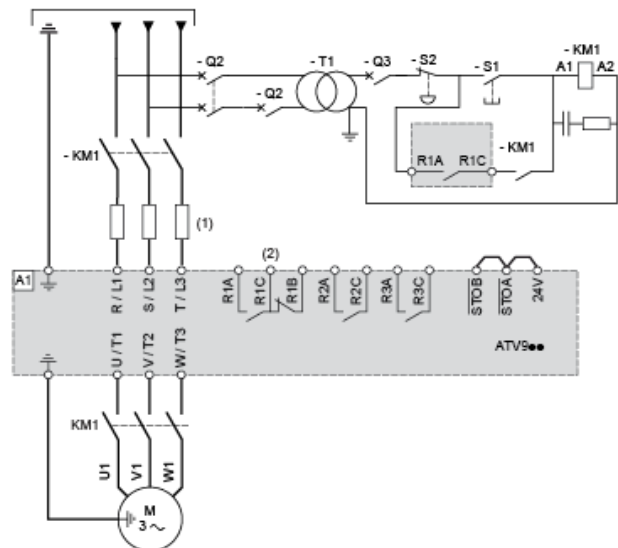
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



- (1) Line choke if used
- (2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.
- A1 : Drive
- KM1 : Line Contactor
- Q2, Q3 : Circuit breakers
- S1, S2 : Pushbuttons
- T1 : Transformer for control part

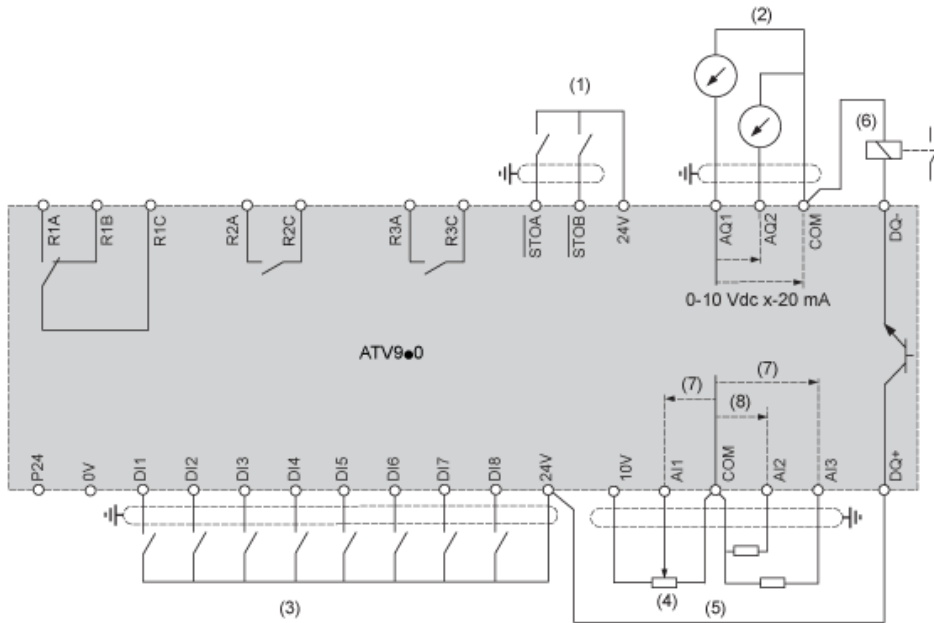
Three-Phase Power Supply with Downstream Breaking via Contactor

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) Line choke if used
 - (2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.
- A1 : Drive
KM1 : Contactor

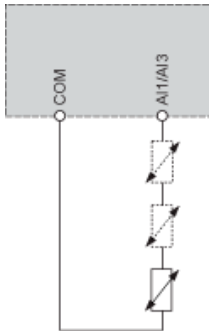
Control Block Wiring Diagram



- (1) Safe Torque Off
- (2) Analog Output
- (3) Digital Input
- (4) Reference potentiometer
- (5) Analog Input
- (6) Digital Output
- (7) 0-10 Vdc, x-20 mA
- (8) 0-10 Vdc, -10 Vdc...+10 Vdc

R1A, R1B, R1C Relay
R2A, R2C Sequence relay
R3A, R3C Sequence relay

Sensor Connection



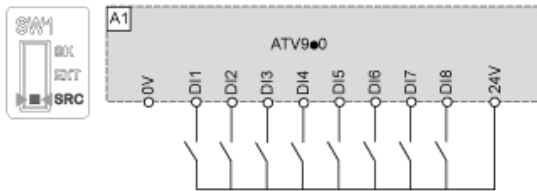
It is possible to connect either 1 or 3 sensors on terminals AI1 or AI3

Sink / Source Switch Configuration

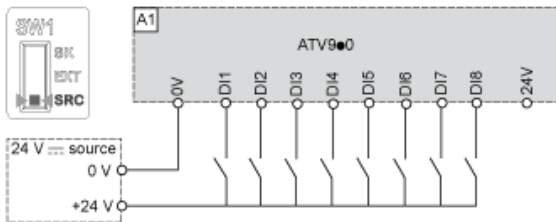
The switch is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

- 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.

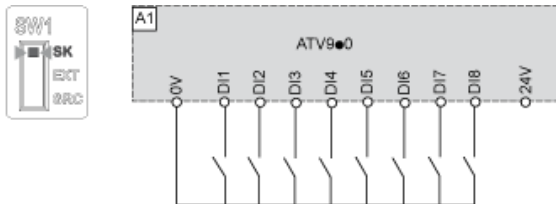
Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



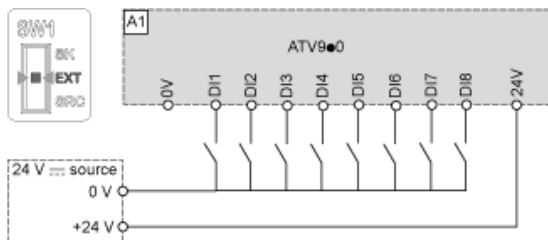
Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs



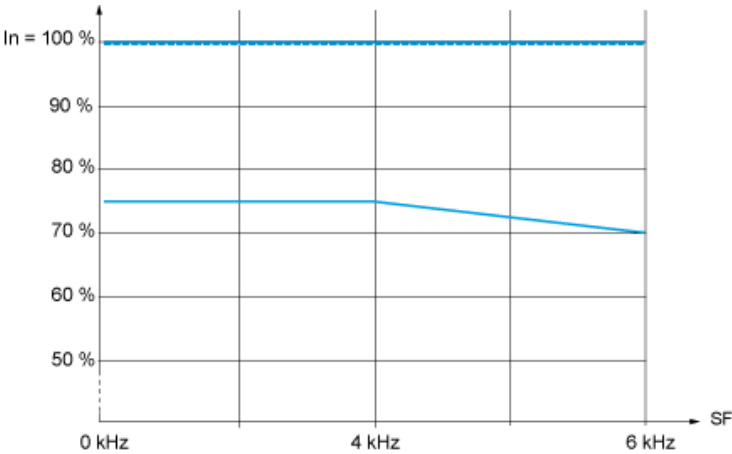
Switch Set to SK (Sink) Position Using the Output Power Supply for the Digital Inputs



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