

Product datasheet

Specifications



Variable speed drive, Altivar Machine ATV340, 55 kW, 400 V, 3 phases, Ethernet

ATV340D55N4E

Main

| | |
|------------------------------|--|
| Range of product | Altivar Machine ATV340 |
| Product or component type | Variable speed drive |
| Product specific application | Machine |
| Mounting mode | Wall mount |
| Variant | Standard version |
| Communication port protocol | EtherNet/IP Modbus TCP Modbus serial |
| Option card | Communication module, PROFINET Communication module, DeviceNet Communication module, CANopen Communication module, EtherCAT |
| Network number of phases | 3 phases |
| Supply frequency | 50...60 Hz +/- 5 % |
| [Us] rated supply voltage | 380...480 V - 15...10 % |
| nominal output current | 106.0 A |
| Motor power kW | 75 kW for normal duty 55 kW for heavy duty |
| Motor power hp | 100 hp for normal duty 75 hp for heavy duty |
| EMC filter | Class C3 EMC filter integrated |
| IP degree of protection | IP20 |
| Degree of protection | UL type 1 |

Complementary

| | |
|-------------------------|---|
| Discrete input number | 8 |
| Discrete input type | PT1 safe torque off: 0...30 kHz, 24 V DC (30 V) DI1...DI5 programmable as pulse input, 24 V DC (30 V), impedance: 3.5 kOhm programmable |
| number of preset speeds | 16 preset speeds |
| Discrete output number | 1.0 |
| Discrete output type | Programmable output DQ1, DQ2 30 V DC 100 mA |
| Analogue input number | 3 |

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

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

| | |
|--|--|
| Analogue input type | AI1 software-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 12 bits AI1 software-configurable temperature probe or water level sensor AI1 software-configurable voltage: 0...10 V DC, impedance: 31.5 kOhm, resolution 12 bits AI2 software-configurable voltage: -10...10 V DC, impedance: 31.5 kOhm, resolution 12 bits |
| Analogue output number | 2 |
| Analogue output type | Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2: 0...20 mA impedance 500 Ohm, resolution 10 bits |
| Relay output number | 3 |
| Output voltage | <= power supply voltage |
| Relay output type | Relay outputs R1A Relay outputs R1C electrical durability 100000 cycles Relay outputs R2A Relay outputs R2C electrical durability 100000 cycles |
| Maximum switching current | Relay output R1C on resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1C on resistive load, cos phi = 1: 3 A at 30 V DC Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R1C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC Relay output R2C on resistive load, cos phi = 1: 5 A at 250 V AC Relay output R2C on resistive load, cos phi = 1: 5 A at 30 V DC Relay output R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC |
| Minimum switching current | Relay output R1B: 5 mA at 24 V DC Relay output R2C: 5 mA at 24 V DC |
| Physical interface | 2-wire RS 485 |
| Connector type | 3 RJ45 |
| Method of access | Slave Modbus RTU Slave Modbus TCP |
| Transmission rate | 4.8 kbit/s 9.6 kbit/s 19.2 kbit/s 38.4 kbit/s |
| Transmission frame | RTU |
| Number of addresses | 1...247 |
| Data format | 8 bits, configurable odd, even or no parity |
| Type of polarization | No impedance |
| 4 quadrant operation possible | True |
| Asynchronous motor control profile | Variable torque standard Optimized torque mode Constant torque standard |
| Synchronous motor control profile | Reluctance motor Permanent magnet motor |
| Pollution degree | 2 conforming to IEC 61800-5-1 |
| Maximum output frequency | 0.599 kHz |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01...9999 s S, U or customized |
| Motor slip compensation | Not available in permanent magnet motor law Automatic whatever the load Can be suppressed Adjustable |
| Switching frequency | 1...8 kHz adjustable 2.5...8 kHz with derating factor |

| | |
|---|---|
| Nominal switching frequency | 2.5 kHz |
| Braking to standstill | By DC injection |
| Brake chopper integrated | True |
| Line current | 131.3 A at 380 V (normal duty) 112.7 A at 480 V (normal duty) 98.9 A at 380 V (heavy duty) 86.9 A at 480 V (heavy duty) |
| Line current | 131.3 A at 380 V with internal line choke (normal duty) 112.7 A at 480 V with internal line choke (normal duty) 98.9 A at 380 V with internal line choke (heavy duty) 86.9 A at 480 V with internal line choke (heavy duty) 98.9 A 86.9 A |
| Maximum input current | 131.3 A |
| Maximum output voltage | 480 V |
| Apparent power | 93.7 kVA at 480 V (normal duty) 72.2 kVA at 480 V (heavy duty) |
| Maximum transient current | 174 A during 60 s (normal duty) 159 A during 60 s (heavy duty) 174 A during 2 s (normal duty) 159 A during 2 s (heavy duty) |
| Electrical connection | Screw terminal, clamping capacity: 0.75...1.5 mm ² for control Screw terminal, clamping capacity: 70...120 mm ² for DC bus Screw terminal, clamping capacity: 95...120 mm ² for line side Screw terminal, clamping capacity: 95...120 mm ² for motor |
| Prospective line Isc | 50 kA |
| Base load current at high overload | 106.0 A |
| Base load current at low overload | 145.0 A |
| Power dissipation in W | Natural convection: 115 W at 380 V, switching frequency 4 kHz (heavy duty) Forced convection: 917 W at 380 V, switching frequency 4 kHz (heavy duty) Natural convection: 158 W at 380 V, switching frequency 4 kHz (normal duty) Forced convection: 1359 W at 380 V, switching frequency 4 kHz (normal duty) |
| Electrical connection | Control: screw terminal 0.75...1.5 mm ² /AWG 18...AWG 16 DC bus: screw terminal 70...120 mm ² /AWG 1/0...250 kcmil Line side: screw terminal 95...120 mm ² /AWG 3/0...250 kcmil Motor: screw terminal 95...120 mm ² /AWG 3/0...250 kcmil |
| With safety function Safely Limited Speed (SLS) | True |
| With safety function Safe brake management (SBC/SBT) | True |
| With safety function Safe Operating Stop (SOS) | False |
| With safety function Safe Position (SP) | False |
| With safety function Safe programmable logic | False |
| With safety function Safe Speed Monitor (SSM) | False |
| With safety function Safe Stop 1 (SS1) | True |
| With sft fct Safe Stop 2 (SS2) | False |
| With safety function Safe torque off (STO) | True |
| With safety function Safely Limited Position (SLP) | False |
| With safety function Safe Direction (SDI) | False |

| | |
|----------------------------------|---|
| Protection type | Thermal protection: motor Safe torque off: motor Motor phase loss: motor Thermal protection: drive Safe torque off: drive Overheating: drive Overcurrent: 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 Motor phase loss: drive DC Bus overvoltage: drive Line supply overvoltage: drive Line supply undervoltage: drive Input supply loss: drive Exceeding limit speed: drive Break on the control circuit: drive |
| Width | 271.0 mm |
| Height | 908.0 mm |
| Depth | 309.0 mm |
| Net weight | 57.9 kg |
| Continuous output current | 145 A at 4 kHz for normal duty 106 A at 4 kHz for heavy duty |

Environment

| | |
|---|--|
| Operating altitude | <= 4800 m with current derating above 1000m |
| Operating position | Vertical +/- 10 degree |
| Product certifications | UL CSA TÜV EAC CTick |
| Marking | CE |
| Standards | IEC 61800-3 IEC 61800-5-1 IEC 60721-3 IEC 61508 IEC 13849-1 UL 618000-5-1 UL 508C IEC 61000-3-12 |
| Maximum THDI | <48 % full load conforming to IEC 61000-3-12 <48 % 80 % load conforming to IEC 61000-3-12 |
| Assembly style | With heat sink |
| 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 |
| Maximum acceleration under shock impact (during operation) | 150 m/s ² at 11 ms |
| Maximum acceleration under vibrational stress (during operation) | 10 m/s ² at 13...200 Hz |
| Maximum deflection under vibratory load (during operation) | 1.5 mm at 2...13 Hz |
| Permitted relative humidity (during operation) | Class 3K5 according to EN 60721-3 |
| Volume of cooling air | 295.0 m3/h |

| | |
|---------------------------------------|---|
| Type of cooling | Forced convection |
| Overvoltage category | Class III |
| Regulation loop | Adjustable PID regulator |
| Noise level | 62.4 dB |
| Pollution degree | 2 |
| Ambient air transport temperature | -40...70 °C |
| Ambient air temperature for operation | -15...50 °C without derating (vertical position) 50...60 °C with derating factor (vertical position) |
| Ambient air temperature for storage | -40...70 °C |
| Isolation | Between power and control terminals |

Packing Units

| | |
|------------------------------|------------|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 60.000 cm |
| Package 1 Width | 43.000 cm |
| Package 1 Length | 111.000 cm |
| Package 1 Weight | 73.000 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 | 35013 |
|----------------------------------|-------|

Use Better

Materials and Substances

| | |
|--|--|
| Packaging made with recycled cardboard | Yes |
| Packaging without single use plastic | No |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) |
| SCIP Number | B8d5fdde-166b-4332-b5d0-afde1be95439 |
| REACH Regulation | REACH Declaration |

Energy efficiency

| | |
|--|-----|
| Product contributes to saved and avoided emissions | Yes |
|--|-----|

Use Longer

Lifetime extension

| | |
|--------|----|
| Repair | No |
|--------|----|

Use Again

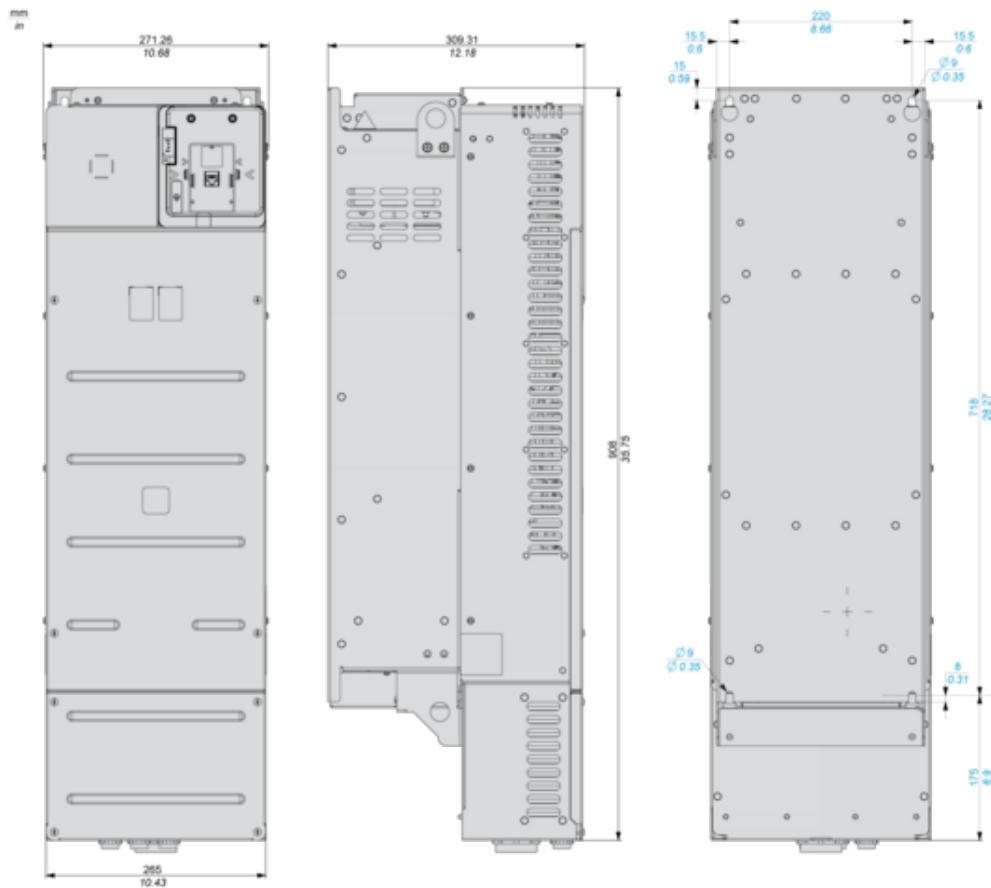
Repack and remanufacture

| | |
|------------|---|
| 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 |

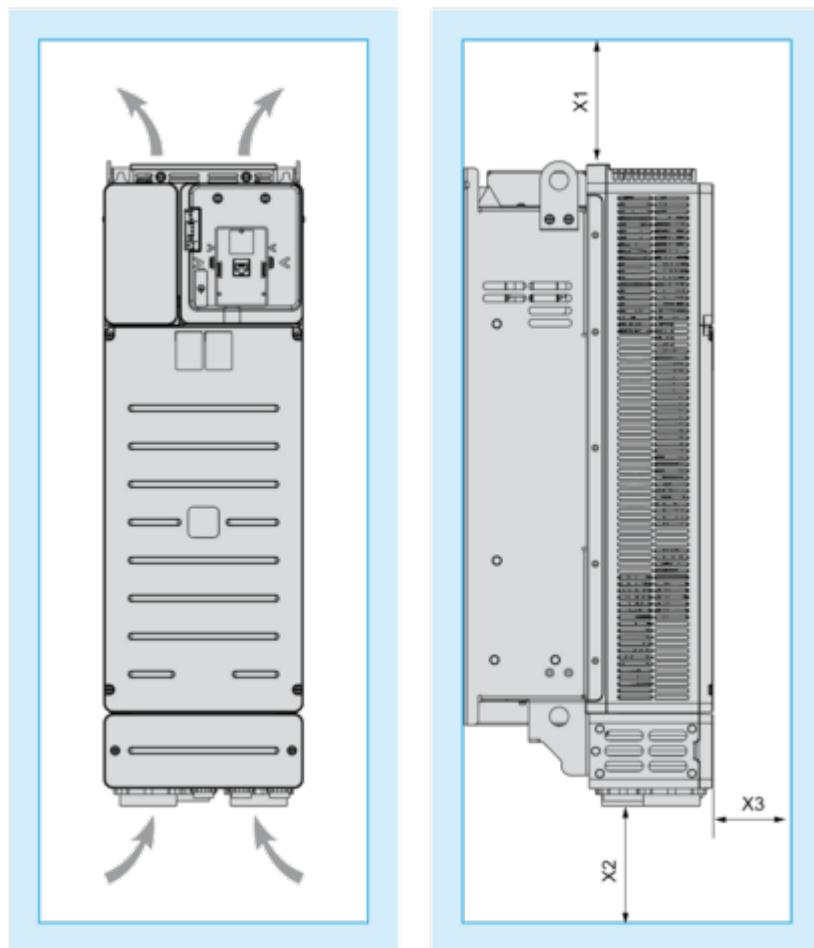
Dimensions Drawings

Dimensions

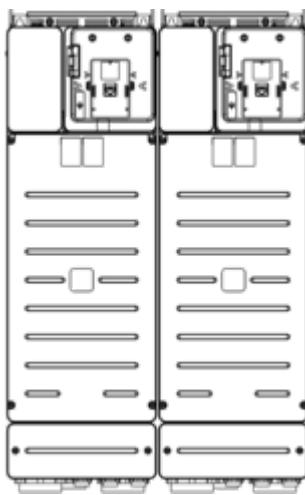
Views: Front - Left - Rear



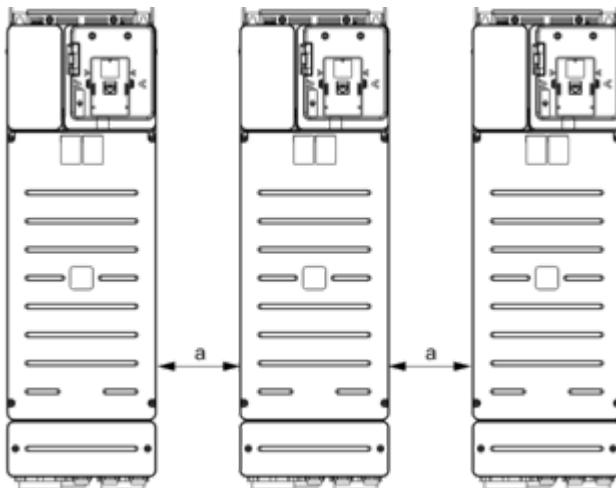
Mounting and Clearance

Clearance

| X1 | X2 | X3 | | | |
|-------|--------|-------|--------|------|--------|
| mm | in. | mm | in. | mm | in. |
| ≥ 100 | ≥ 3.94 | ≥ 100 | ≥ 3.94 | ≥ 10 | ≥ 0.39 |

Mounting Types**Mounting Type A: Side by Side IP20**

Possible, up to 50 °C, 2 drives only

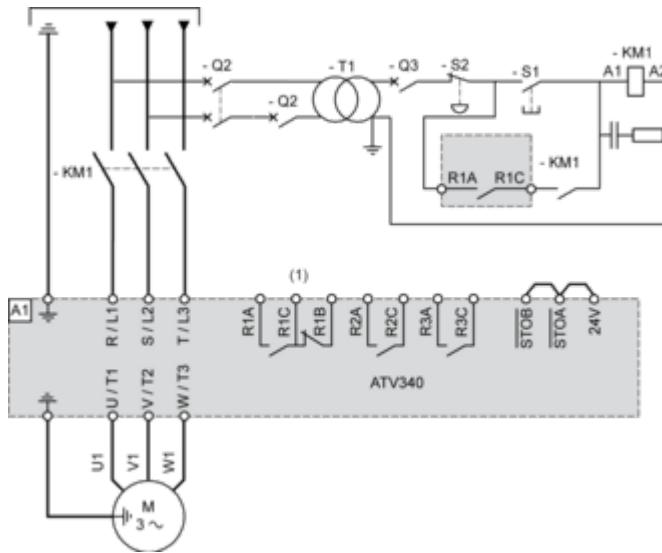
Mounting Type B: Individual IP20

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

Connections and Schema

Connections and Schema

Three-phase Power Supply - Diagram With Line Contactor

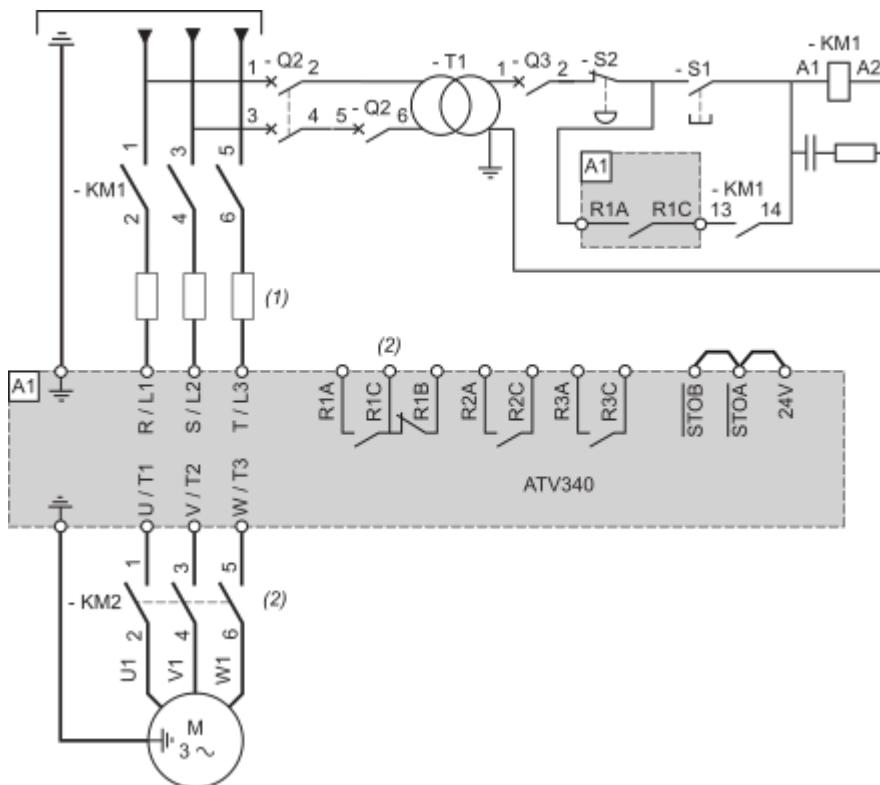


(1) : Use relay output R1 set to operating state Fault to switch Off the product once an error is detected.

NOTE :

- Press S1 until the initialization of the drive is finished.
- An external 24V power supply can be connected so that the control part of the drive is always power supplied.

Three-phase Power Supply - Diagram With Downstream Contactor



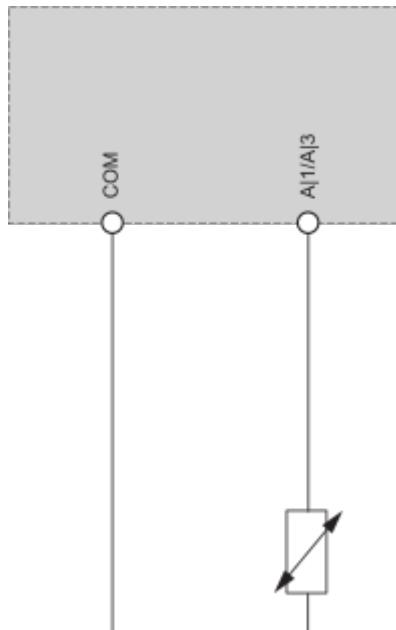
(1) : Use relay output R1 set to operating state Fault to switch Off the product once an error is detected.

(2) : Command of KM2 can be done by using the [Output contactor cmd] OCC function. For more information, refer to the programming manual.

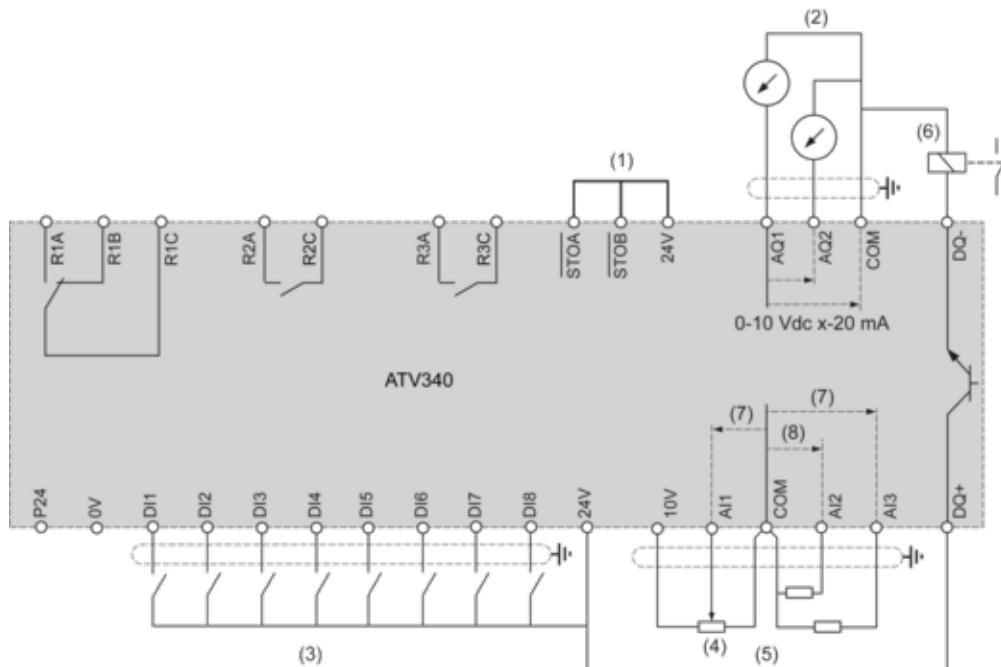
NOTE :

- Close upstream contactor, then press S1 after the initialization of the drive is finished.
- An external 24V power supply can be connected so that the control part of the drive is always power supplied.

Sensor Connection



Control Block Wiring Diagram



(1) : STO Safe Torque Off

(2) : Analog Output

(3) : Digital Input - Shielding instructions are given in the Electromagnetic Compatibility section

(4) : Reference potentiometer (ex. SZ1RV1002)

(5) : Analog Input

(6) : Digital output

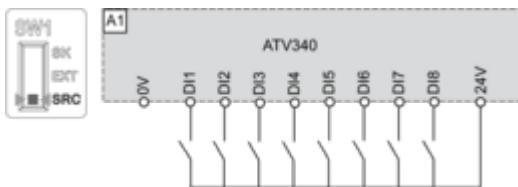
(7) : 0-10 Vdc, x-20 mA

(8) : 0-10 Vdc, -10 Vdc...+10 Vdc

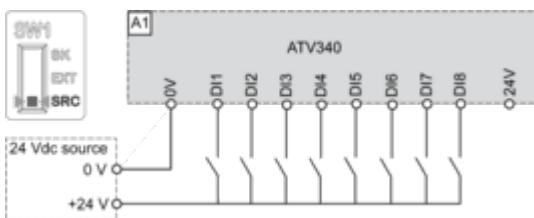
NOTE : PTI function is not available on frame sizes 4 and 5.

Digital Inputs Wiring

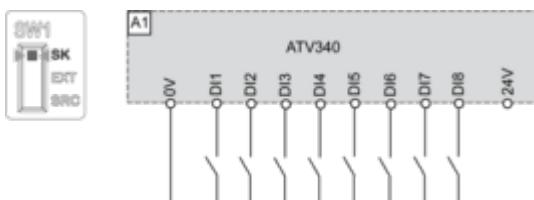
Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



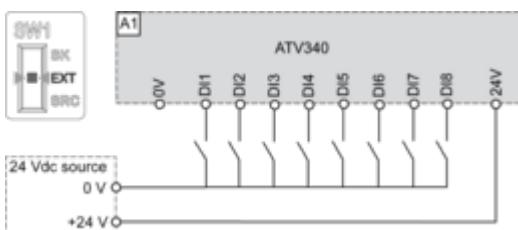
Switch Set to SRC (Source) Position and Use of an External Power Supply for the DI



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



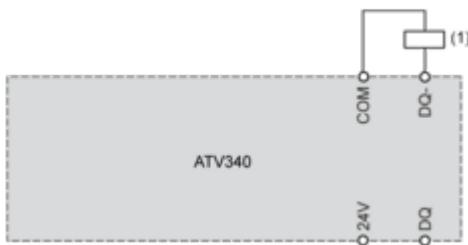
Switch Set to EXT Position Using an External Power Supply for the DI



Digital Outputs Wiring

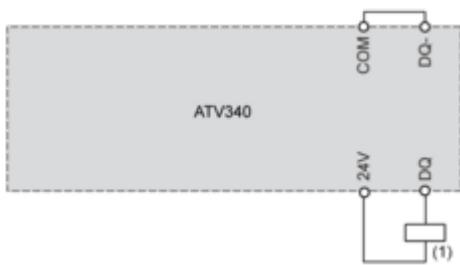
Digital Outputs: Internal Supply

Positive Logic, Source, European Style, DQ switches to +24V



(1) Relay or valve

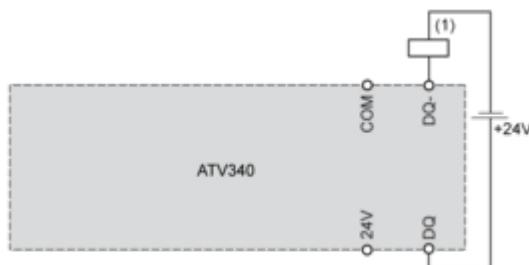
Negative Logic, Sink, Asian Style, DQ switches to 0V



(1) Relay or valve

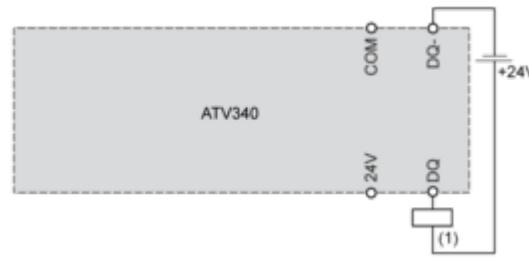
Digital Outputs: External Supply

Positive Logic, Source, European Style, DQ switches to +24V



(1) Relay or valve

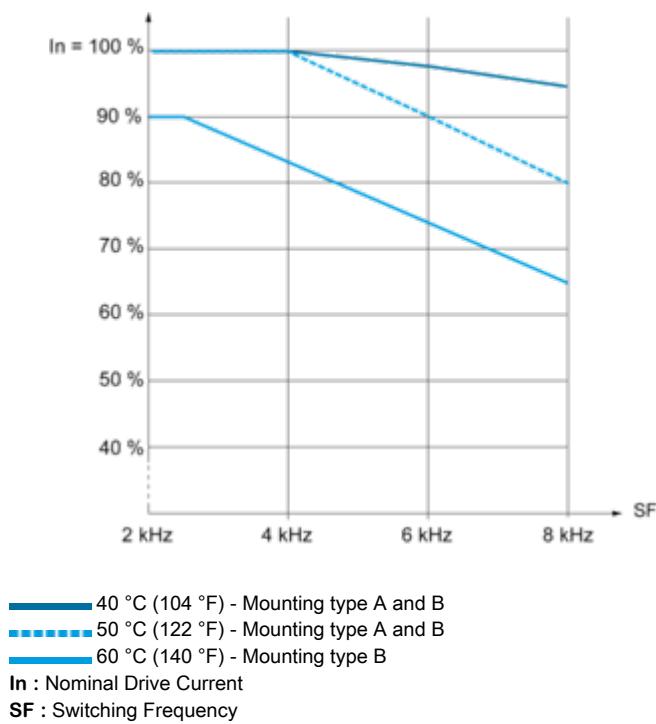
Negative Logic, Sink, Asian Style, DQ switches to 0V



(1) Relay or valve

Performance Curves

Derating Curves



Technical Illustration

Dimensions

