

# Product data sheet

Specifications



variable speed drive, Altivar Machine ATV340, 5.5kW, heavy duty, 400V, 3 phases, Ethernet

ATV340U55N4E

Product availability: Stock - Normally stocked in distribution facility

Price\*: 1,558.44 USD

## Main

|                              |                                            |
|------------------------------|--------------------------------------------|
| Range of Product             | Altivar Machine ATV340                     |
| Product or Component Type    | Variable speed drive                       |
| Product Specific Application | Machine                                    |
| variant                      | Standard version                           |
| Mounting Mode                | Cabinet mount                              |
| Communication Port Protocol  | EtherNet/IP<br>Modbus TCP<br>Modbus serial |
| Phase                        | 3 phase                                    |
| Supply frequency             | 50...60 Hz +/- 5 %                         |
| [Us] rated supply voltage    | 380...480 V - 15...10 %                    |
| Nominal output current       | 12.7 A                                     |
| Motor power kW               | 7.5 kW normal duty<br>5.5 kW heavy duty    |
| Maximum Horse Power Rating   | 10 hp normal duty<br>7 hp heavy duty       |
| EMC filter                   | Class C3 EMC filter integrated             |
| IP degree of protection      | IP20                                       |

## Complementary

|                         |                                                                                                                                                                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrete input number   | 5                                                                                                                                                                                                                                                                         |
| Discrete input type     | PT1 programmable as pulse input 0...30 kHz, 24 V DC 30 V)<br>DI1...DI5 safe torque off, 24 V DC 30 V)3.5 kOhm<br>programmable                                                                                                                                             |
| number of preset speeds | 16 preset speeds                                                                                                                                                                                                                                                          |
| Discrete output number  | 2.0                                                                                                                                                                                                                                                                       |
| Discrete output type    | Programmable output DQ1, DQ2 30 V DC 100 mA                                                                                                                                                                                                                               |
| Analogue input number   | 2                                                                                                                                                                                                                                                                         |
| Analogue input type     | AI1 software-configurable current 0...20 mA 250 Ohm 12 bits<br>AI1 software-configurable temperature probe or water level sensor<br>AI1 software-configurable voltage 0...10 V DC 31.5 kOhm 12 bits<br>AI2 software-configurable voltage - 10...10 V DC 31.5 kOhm 12 bits |
| Analogue output number  | 1                                                                                                                                                                                                                                                                         |
| Analogue output type    | Software-configurable voltage AQ1 0...10 V DC 470 Ohm 10 bits<br>Software-configurable current AQ1 0...20 mA 500 Ohm 10 bits                                                                                                                                              |

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

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Relay output number                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Output voltage                      | <= power supply voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Relay output type                   | Relay outputs R1A<br>Relay outputs R1C 100000 cycles<br>Relay outputs R2A<br>Relay outputs R2C 100000 cycles                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum switching current           | Relay output R1C resistive, cos phi = 1 3 A 250 V AC<br>Relay output R1C resistive, cos phi = 1 3 A 30 V DC<br>Relay output R1C inductive, cos phi = 0.4 7 ms 2 A 250 V AC<br>Relay output R1C inductive, cos phi = 0.4 7 ms 2 A 30 V DC<br>Relay output R2C resistive, cos phi = 1 5 A 250 V AC<br>Relay output R2C resistive, cos phi = 1 5 A 30 V DC<br>Relay output R2C inductive, cos phi = 0.4 7 ms 2 A 250 V AC<br>Relay output R2C inductive, cos phi = 0.4 7 ms 2 A 30 V DC |
| Minimum switching current           | Relay output R1B 5 mA 24 V DC<br>Relay output R2C 5 mA 24 V DC                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Physical interface                  | 2-wire RS 485                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Connector Type                      | 3 RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Method of access                    | Slave Modbus RTU<br>Slave Modbus TCP                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Transmission Rate                   | 4.8 kbit/s<br>9.6 kbit/s<br>19.2 kbit/s<br>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  | Optimized torque mode<br>Constant torque standard<br>Variable torque standard                                                                                                                                                                                                                                                                                                                                                                                                        |
| Synchronous motor control profile   | Reluctance motor<br>Permanent magnet motor                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Pollution degree                    | 2 IEC 61800-5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Maximum output frequency            | 0.599 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01...9999 s<br>S, U or customized                                                                                                                                                                                                                                                                                                                                                                                                                |
| Motor slip compensation             | Automatic whatever the load<br>Can be suppressed<br>Adjustable<br>Not available in permanent magnet motor law                                                                                                                                                                                                                                                                                                                                                                        |
| Switching frequency                 | 2...16 kHz adjustable<br>7...16 kHz with derating factor                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nominal switching frequency         | 4 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Braking to standstill               | By DC injection                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Brake chopper integrated            | True                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Line current                        | 15.3 A 380 V normal duty)<br>12.2 A 480 V normal duty)<br>20.0 A 380 V heavy duty)<br>16.0 A 480 V heavy duty)                                                                                                                                                                                                                                                                                                                                                                       |

|                                                             |                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Line current</b>                                         | 20 A 380 V without line choke heavy duty)<br>16 A 480 V without line choke heavy duty)<br>15.3 A 380 V with external line choke normal duty)<br>12.2 A 480 V with external line choke normal duty)<br>11.6 A 380 V with external line choke heavy duty)<br>9.4 A 480 V with external line choke heavy duty) |
| <b>Maximum Input Current per Phase</b>                      | 20.0 A                                                                                                                                                                                                                                                                                                      |
| <b>Maximum output voltage</b>                               | 480 V                                                                                                                                                                                                                                                                                                       |
| <b>Apparent power</b>                                       | 12.1 kVA 480 V normal duty)<br>13.3 kVA 480 V heavy duty)                                                                                                                                                                                                                                                   |
| <b>Maximum transient current</b>                            | 18.2 A 60 s normal duty)<br>19.1 A 60 s heavy duty)<br>22.3 A 2 s normal duty)<br>22.9 A 2 s heavy duty)                                                                                                                                                                                                    |
| <b>Electrical connection</b>                                | Screw terminal 4...6 mm² DC bus<br>Screw terminal 0.2...2.5 mm² control<br>Screw terminal 1.5...6 mm² line side<br>Screw terminal 1.5...6 mm² motor                                                                                                                                                         |
| <b>Prospective line Isc</b>                                 | 22 kA                                                                                                                                                                                                                                                                                                       |
| <b>Base load current at high overload</b>                   | 12.7 A                                                                                                                                                                                                                                                                                                      |
| <b>Base load current at low overload</b>                    | 16.5 A                                                                                                                                                                                                                                                                                                      |
| <b>Power dissipation in W</b>                               | Natural convection 134 W 380 V 4 kHz heavy duty)<br>Forced convection 134 W 380 V 4 kHz heavy duty)<br>Natural convection 164 W 380 V 4 kHz normal duty)<br>Forced convection 164 W 380 V 4 kHz normal duty)                                                                                                |
| <b>Electrical connection</b>                                | DC bus screw terminal 4...6 mm² AWG 12...AWG 10<br>Control screw terminal 0.2...2.5 mm² AWG 24...AWG 12<br>Line side screw terminal 1.5...6 mm² AWG 14...AWG 10<br>Motor screw terminal 1.5...6 mm² AWG 14...AWG 10                                                                                         |
| <b>With safety function Safely Limited Speed (SLS)</b>      | True                                                                                                                                                                                                                                                                                                        |
| <b>With safety function Safe brake management (SBC/SBT)</b> | True                                                                                                                                                                                                                                                                                                        |
| <b>With safety function Safe Operating Stop (SOS)</b>       | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe Position (SP)</b>              | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe programmable logic</b>         | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe Speed Monitor (SSM)</b>        | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe Stop 1 (SS1)</b>               | True                                                                                                                                                                                                                                                                                                        |
| <b>With sft fct Safe Stop 2 (SS2)</b>                       | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe torque off (STO)</b>           | True                                                                                                                                                                                                                                                                                                        |
| <b>With safety function Safely Limited Position (SLP)</b>   | False                                                                                                                                                                                                                                                                                                       |
| <b>With safety function Safe Direction (SDI)</b>            | False                                                                                                                                                                                                                                                                                                       |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection type           | Thermal protection motor<br>Safe torque off motor<br>Motor phase loss motor<br>Thermal protection drive<br>Safe torque off drive<br>Overheating drive<br>Overcurrent drive<br>Output overcurrent between motor phase and earth drive<br>Output overcurrent between motor phases drive<br>Short-circuit between motor phase and earth drive<br>Short-circuit between motor phases drive<br>Motor phase loss drive<br>DC Bus overvoltage drive<br>Line supply overvoltage drive<br>Line supply undervoltage drive<br>Input supply loss drive<br>Exceeding limit speed drive<br>Break on the control circuit drive |
| Width                     | 4.3 in (110.0 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Height                    | 10.6 in (270.0 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Depth                     | 9.2 in (234.0 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Net Weight                | 6.4 lb(US) (2.9 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Continuous output current | 16.5 A 4 kHz normal duty<br>12.7 A 4 kHz heavy duty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Environment

|                                                                  |                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating altitude                                               | <= 9842.52 ft (3000 m) with current derating above 1000m                                                                                                                                                                                                                                                                                                   |
| Operating position                                               | Vertical +/- 10 degree                                                                                                                                                                                                                                                                                                                                     |
| Product Certifications                                           | UL<br>CSA<br>TÜV<br>EAC<br>CTick                                                                                                                                                                                                                                                                                                                           |
| marking                                                          | CE                                                                                                                                                                                                                                                                                                                                                         |
| Standards                                                        | IEC 61800-3<br>IEC 61800-5-1<br>IEC 60721-3<br>IEC 61508<br>IEC 13849-1<br>UL 618000-5-1<br>UL 508C                                                                                                                                                                                                                                                        |
| Assembly style                                                   | With heat sink                                                                                                                                                                                                                                                                                                                                             |
| Electromagnetic compatibility                                    | Electrostatic discharge immunity test level 3 IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3<br>Electrical fast transient/burst immunity test level 4 IEC 61000-4-4<br>1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5<br>Conducted radio-frequency immunity test level 3 IEC 61000-4-6 |
| Environmental class (during operation)                           | Class 3C3 according to IEC 60721-3-3<br>Class 3S3 according to IEC 60721-3-3                                                                                                                                                                                                                                                                               |
| Maximum acceleration under shock impact (during operation)       | 70 m/s² at 22 ms                                                                                                                                                                                                                                                                                                                                           |
| Maximum acceleration under vibrational stress (during operation) | 5 m/s² at 9...200 Hz                                                                                                                                                                                                                                                                                                                                       |
| Maximum deflection under vibratory load (during operation)       | 1.5 mm at 2...9 Hz                                                                                                                                                                                                                                                                                                                                         |
| Permitted relative humidity (during operation)                   | Class 3K5 according to EN 60721-3                                                                                                                                                                                                                                                                                                                          |
| Volume of cooling air                                            | 20077.4 Gal/hr(US) (76.0 m3/h)                                                                                                                                                                                                                                                                                                                             |
| Type of cooling                                                  | Forced convection                                                                                                                                                                                                                                                                                                                                          |
| Overvoltage category                                             | Class III                                                                                                                                                                                                                                                                                                                                                  |

|                                       |                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Regulation loop                       | Adjustable PID regulator                                                                                                         |
| Noise level                           | 46.6 dB                                                                                                                          |
| Pollution degree                      | 2                                                                                                                                |
| Ambient air transport temperature     | -40...158 °F (-40...70 °C)                                                                                                       |
| Ambient air temperature for operation | 5...122 °F (-15...50 °C) without derating vertical position<br>122...140 °F (50...60 °C) with derating factor vertical position) |
| Ambient Air Temperature for Storage   | -40...158 °F (-40...70 °C)                                                                                                       |
| Isolation                             | Between power and control terminals                                                                                              |

## Ordering and shipping details

|                   |               |
|-------------------|---------------|
| Category          | US1CP4B22182  |
| Discount Schedule | CP4B          |
| GTIN              | 3606480967030 |
| Returnability     | Yes           |
| Country of origin | US            |

## Packing Units

|                              |                            |
|------------------------------|----------------------------|
| Unit Type of Package 1       | PCE                        |
| Number of Units in Package 1 | 1                          |
| Package 1 Height             | 5.197 in (13.200 cm)       |
| Package 1 Width              | 14.567 in (37.000 cm)      |
| Package 1 Length             | 12.598 in (32.000 cm)      |
| Package 1 Weight             | 8.400 lb(US) (3.810 kg)    |
| Unit Type of Package 2       | S06                        |
| Number of Units in Package 2 | 10                         |
| 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             | 112.215 lb(US) (50.900 kg) |

Sustainability



**Green Premium™ label** is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO<sub>2</sub> products.

**Guide to assessing product sustainability** is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

[Learn more about Green Premium >](#)

[Guide to assess a product’s sustainability >](#)



Transparency   RoHS/REACH

Resource performance

 Upgraded Components Available

Well-being performance

 Mercury Free

 Rohs Exemption Information   [Yes](#)

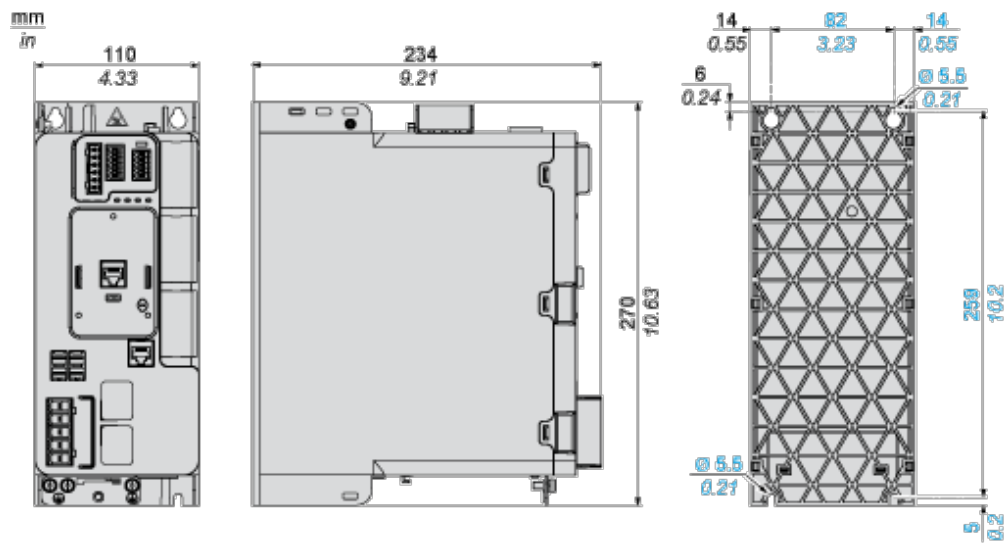
Certifications & Standards

|                           |                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reach Regulation          | <a href="#">REACH Declaration</a>                                                                                                                                                                                                                               |
| Eu Rohs Directive         | Pro-active compliance (Product out of EU RoHS legal scope)                                                                                                                                                                                                      |
| China Rohs Regulation     | <a href="#">China RoHS declaration</a>                                                                                                                                                                                                                          |
| Environmental Disclosure  | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                   |
| Weee                      | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.                                                                                                                                    |
| Circularity Profile       | <a href="#">End of Life Information</a>                                                                                                                                                                                                                         |
| 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 <a href="#">www.P65Warnings.ca.gov</a> |

Dimensions Drawings

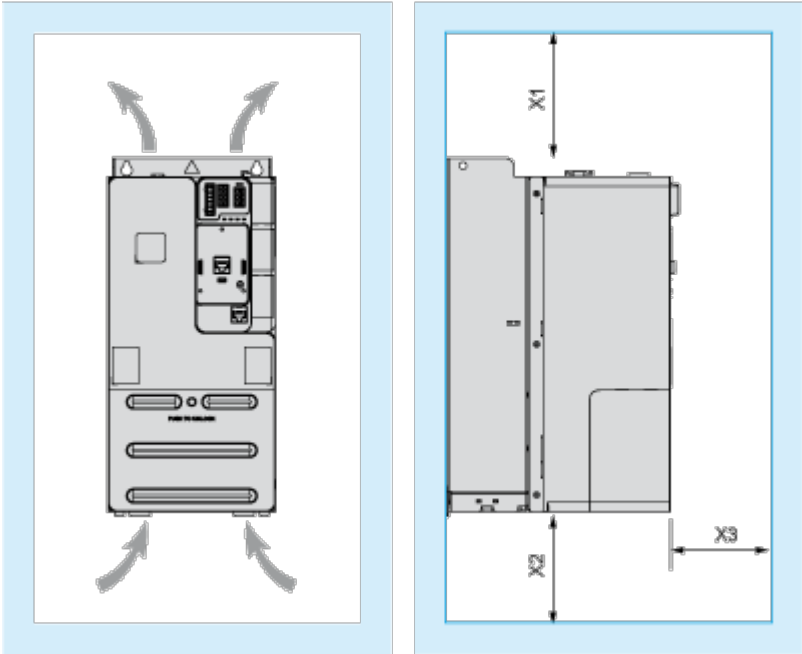
Dimensions

Views: Front - Left - Rear



Mounting and Clearance

Clearance



Dimensions in mm

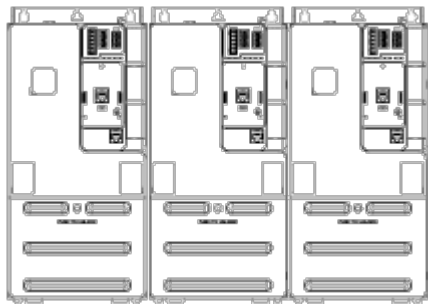
| X1  | X2  | X3 |
|-----|-----|----|
| 100 | 100 | 60 |

Dimensions in in.

| X1   | X2   | X3   |
|------|------|------|
| 3.94 | 3.94 | 2.36 |

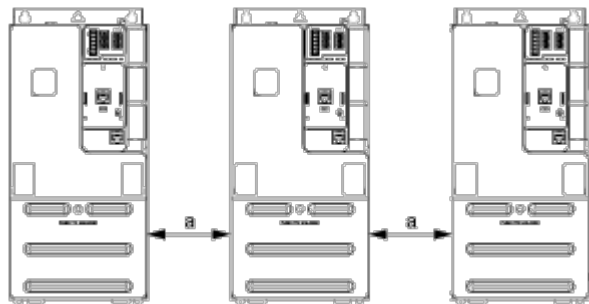
Mounting Types

Mounting Type A: Side by Side IP20



Possible, at ambient temperature  $\leq 50\text{ }^{\circ}\text{C}$  (122  $^{\circ}\text{F}$ )

Mounting Type B: Individual IP20



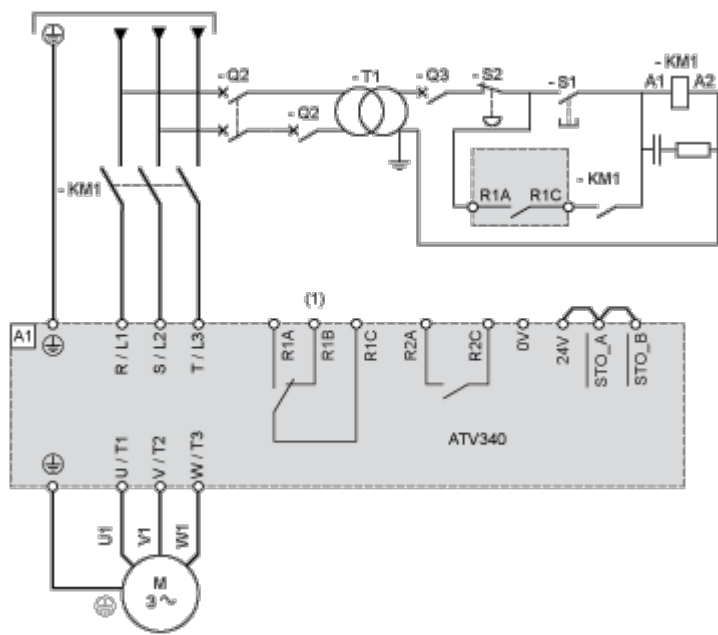
a  50 mm (1.97 in.) from 50...60 $^{\circ}\text{C}$ , no restriction below 50 $^{\circ}\text{C}$

Connections and Schema

Connections and Schema

Three-phase Power Supply with Upstream Breaking via Line Contactor Without Safety  
Function STO

Connection diagrams conforming to standards ISO13849 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.



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

A1 : Drive

KM1 : Line Contactor

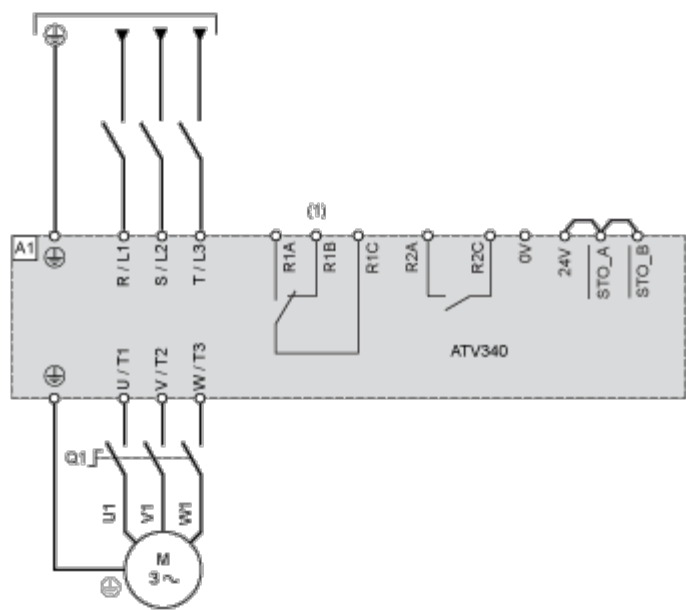
Q2, Q3 : Circuit breakers

S1 : Pushbutton

S2 : Emergency stop

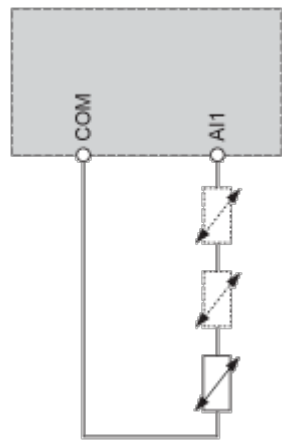
T1 : Transformer for control part

Three-phase Power Supply With Downstream Breaking via Switch Disconnect



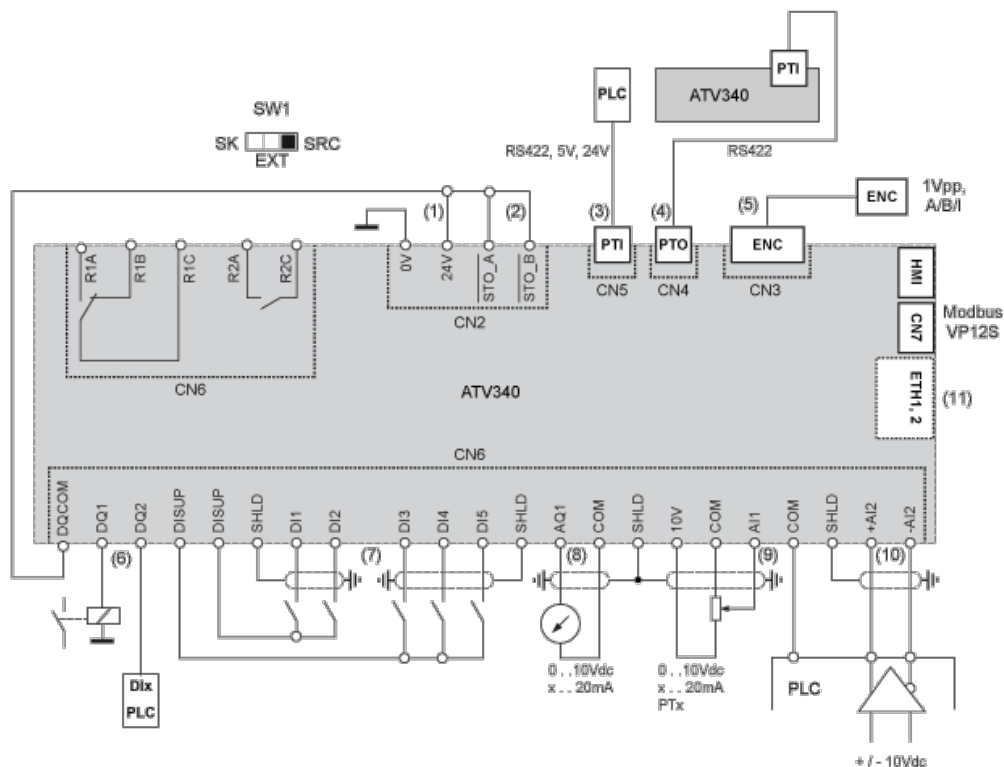
- (1) Use relay output R1 set to operating state Fault to switch Off the product once an error is detected.
- A1 : Drive
- Q1 : Switch disconnector

Sensor Connection



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

### Control Block Wiring Diagram



- (1) 24V supply (STO)
- (2) STO - Safe Torque Off
- (3) PTI - Pulse Train In
- (4) PTO - Pulse Train Out
- (5) Motor Encoder connection
- (6) Digital outputs
- (7) Digital inputs
- (8) Analog output
- (9) Analog input
- (10) Differential Analog Input
- (11) Ethernet port (only on Ethernet drive version)

SW1 : Sink/Source switch

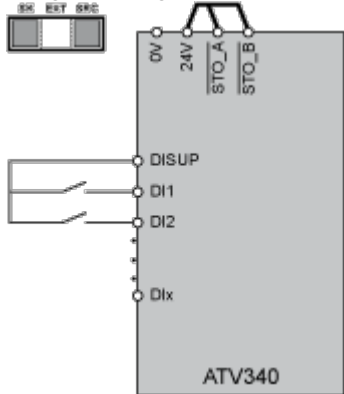
R1A, R1B, R1C : Fault relay

R2A, R2C : Sequence relay

Digital Inputs Wiring

Digital Inputs: Internal Supply

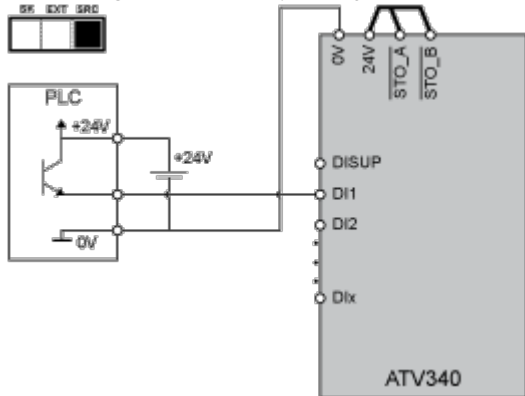
Using DISUP Signal



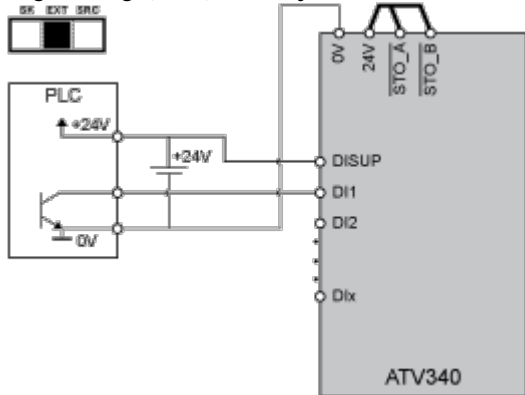
In SRC position DISUP outputs 24 V. In SK position DISUP is connected to 0 V.

Digital Inputs: External Supply

Positive Logic, Source, European Style

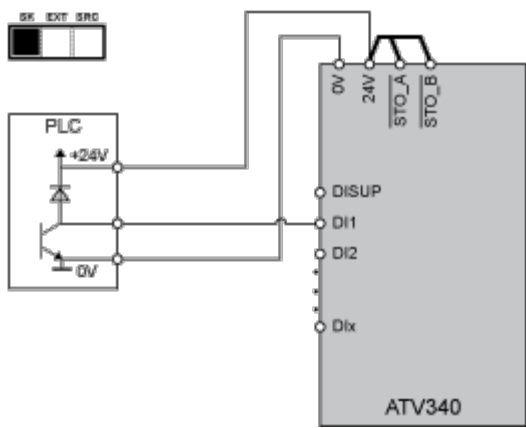


Negative Logic, Sink, Asian Style



Digital Inputs: Internal supply

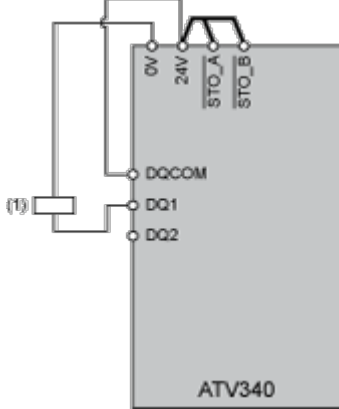
Negative Logic, Sink, Asian Style



Digital Outputs Wiring

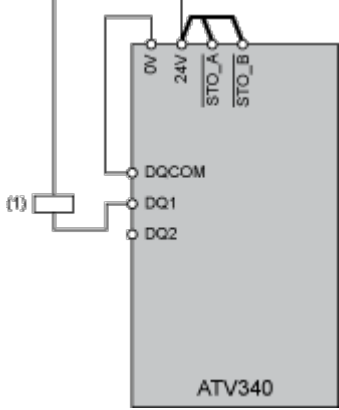
Digital Outputs: Internal Supply

Positive Logic, Source, European Style, DQCOM to +24V



(1) Relay or valve

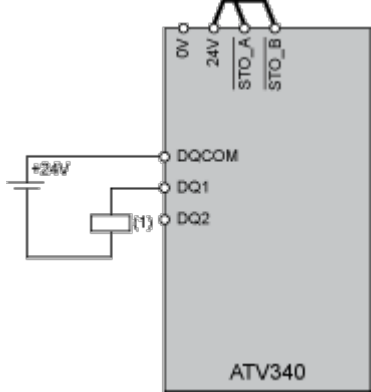
Negative Logic, Sink, Asian Style, DQCOM to 0V



(1) Relay or valve

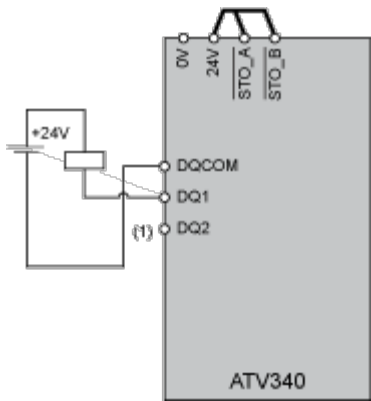
Digital Outputs: External Supply

Positive Logic, Source, European Style, DQCOM to +24V



(1) Relay or valve

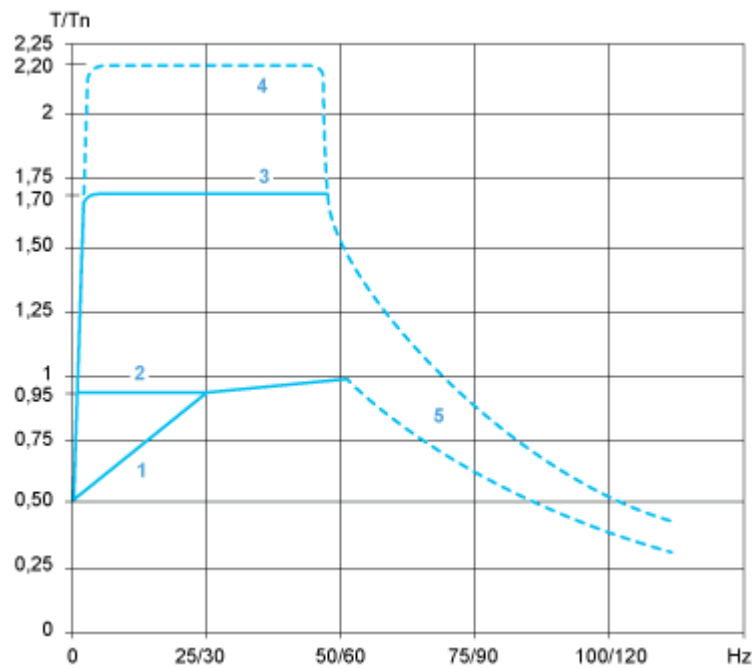
Negative Logic, Sink, Asian Style, DQCOM to 0V



(1) Relay or valve

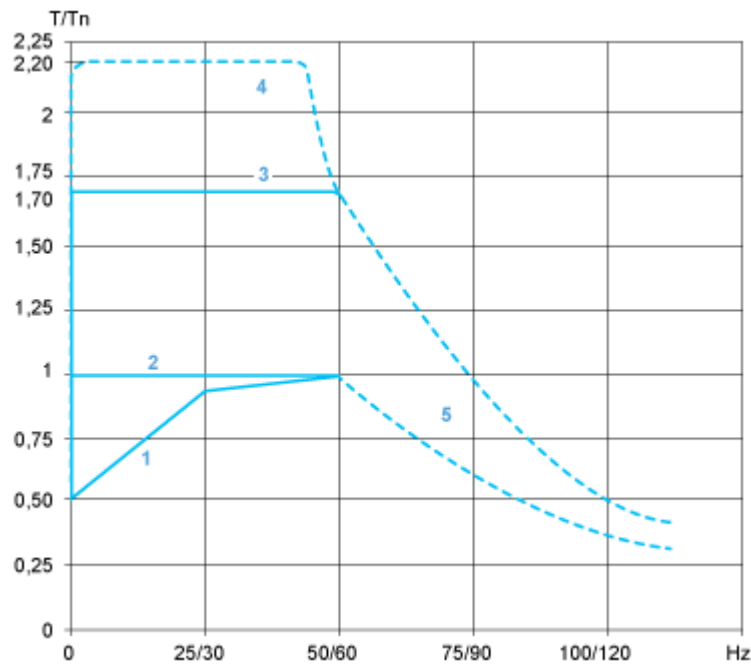
Performance Curves

Open Loop Applications



- 1 : Self-cooled motor: continuous useful torque
- 2 : Force-cooled motor: continuous useful torque
- 3 : Overtorque for 60 s maximum
- 4 : Transient overtorque for 2 s maximum
- 5 : Torque in overspeed at constant power

Closed Loop Applications



- 1 : Self-cooled motor: continuous useful torque
- 2 : Force-cooled motor: continuous useful torque
- 3 : Overtorque for 60 s maximum
- 4 : Transient overtorque for 2 s maximum
- 5 : Torque in overspeed at constant power