Product datasheet

Specification





Variable speed drive, Altivar Machine ATV340, 75 kW, 400 V, 3 phases, Ethernet

ATV340D75N4E

Main

Range of product	Altivar Machine ATV340
product or component type	Variable speed drive
Product specific application	Machine
variant	Standard version
mounting mode	Wall mount
Communication port protocol	Modbus serial EtherNet/IP Modbus TCP
Option card	Communication module, PROFINET Communication module, DeviceNet Communication module, CANopen Communication module, EtherCAT
Network number of phases	3 phases
Supply frequency	5060 Hz +/- 5 %
[Us] rated supply voltage	380480 V - 1510 %
Nominal output current	145.0 A
Motor power kW	90 kW for normal duty 75 kW for heavy duty
Motor power hp	4051 ()
motor power rip	125 hp for normal duty 100 hp for heavy duty
EMC filter	· · · · · · · · · · · · · · · · · · ·
	100 hp for heavy duty

Complementary

Discrete input number	PTI safe torque off: 030 kHz, 24 V DC (30 V) DI1DI5 programmable as pulse input, 24 V DC (30 V), impedance: 3.5 kOhm programmable	
Discrete input type		
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	

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	Al1 software-configurable current: 020 mA, impedance: 250 Ohm, resolution 12 bits Al1 software-configurable temperature probe or water level sensor Al1 software-configurable voltage: 010 V DC, impedance: 31.5 kOhm, resolution 12 bits Al2 software-configurable voltage: - 1010 V DC, impedance: 31.5 kOhm, resolution		
	12 bits		
Analogue output number	2		
Analogue output type	Software-configurable voltage AQ1, AQ2: 010 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2: 020 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	1247		
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 Constant torque standard Optimized torque mode		
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	S, U or customized Linear adjustable separately from 0.019999 s		
Motor slip compensation	Adjustable Not available in permanent magnet motor law Automatic whatever the load Can be suppressed		
Switching frequency	18 kHz adjustable 2.58 kHz with derating factor		

Nominal switching frequency	2.5 kHz	
Braking to standstill	By DC injection	
Brake chopper integrated	True	
Line current	156.2 A at 380 V (normal duty) 135.8 A at 480 V (normal duty) 134.3 A at 380 V (heavy duty) 118.1 A at 480 V (heavy duty)	
Line current	156.2 A at 380 V with internal line choke (normal duty) 135.8 A at 480 V with internal line choke (normal duty) 134.3 A at 380 V with internal line choke (heavy duty) 118.1 A at 480 V with internal line choke (heavy duty) 134.3 A 118.1 A	
Maximum input current	156.2 A	
Maximum output voltage	480 V	
Apparent power	112.9 kVA at 480 V (normal duty) 98.2 kVA at 480 V (heavy duty)	
Maximum transient current	207.6 A during 60 s (normal duty) 217.5 A during 60 s (heavy duty) 207.6 A during 2 s (normal duty) 217.5 A during 2 s (heavy duty)	
Electrical connection	Screw terminal, clamping capacity: 0.751.5 mm² for control Screw terminal, clamping capacity: 120 mm² for line side Screw terminal, clamping capacity: 95120 mm² for DC bus Screw terminal, clamping capacity: 120 mm² for motor	
Prospective line Isc	50 kA	
Base load current at high overload	145.0 A	
Base load current at low overload	173.0 A	
Power dissipation in W	Natural convection: 158 W at 380 V, switching frequency 4 kHz (heavy duty) Forced convection: 1359 W at 380 V, switching frequency 4 kHz (heavy duty) Natural convection: 180 W at 380 V, switching frequency 4 kHz (normal duty) Forced convection: 1585 W at 380 V, switching frequency 4 kHz (normal duty)	
Electrical connection	Control: screw terminal 0.751.5 mm²/AWG 18AWG 16 Line side: screw terminal 120 mm²/AWG 4/0250 kcmil DC bus: screw terminal 95120 mm²/AWG 3/0250 kcmil Motor: screw terminal 120 mm²/250 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	58.4 kg		
Continuous output current	173 A at 4 kHz for normal duty		
	145 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/s² at 11 ms		
Maximum acceleration under vibrational stress (during operation)	10 m/s² at 13200 Hz		
Maximum deflection under vibratory load (during operation)	1.5 mm at 213 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	69.9 dB
Pollution degree	2
Ambient air transport temperature	-4070 °C
Ambient air temperature for operation	-1540 °C without derating (vertical position) 4050 °C with derating factor (vertical position)
Ambient air temperature for storage	-4070 °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 cm
Package 1 Width	43 cm
Package 1 Length	111 cm
Package 1 Weight	72.5 kg

Sustainability Green Premium

Green PremiumTM **label** is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ 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

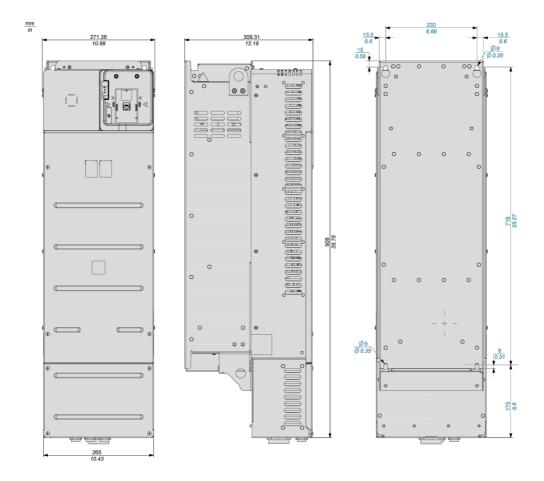
Reach Regulation	REACh Declaration		
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)		
China Rohs Regulation	China RoHS declaration		
Environmental Disclosure	Product Environmental Profile		
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins		
Circularity Profile	End of Life Information		

Jul 2, 2024

Dimensions Drawings

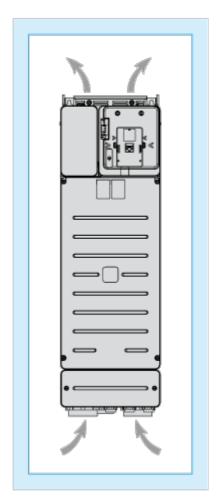
Dimensions

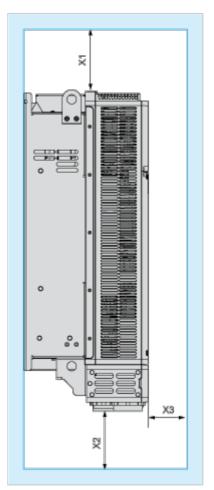
Views: Front - Left - Rear



Mounting and Clearance

Clearance





Dimensions in mm

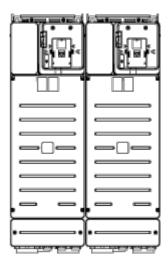
X1	X2	X3
≥ 100	≥ 100	≥ 10

Dimensions in in.

X1	X2	X3
[▶] 3.94	≥ 3.94	[▶] 0.39

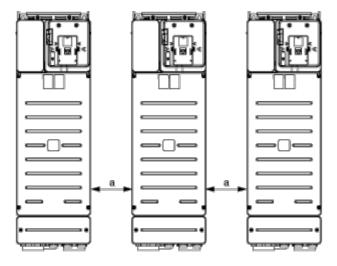
Mounting Types

Mounting Type A: Side by Side IP20



Possible, up to 50 °C, 2 drives only

Mounting Type B: Individual IP20



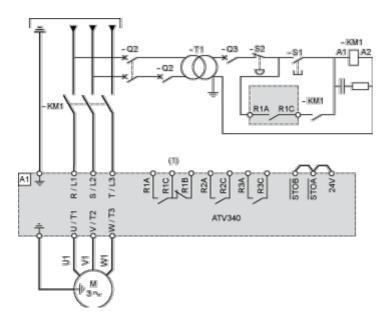
a 110 mm (4.33 in.)

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 capacitySIL1, 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.

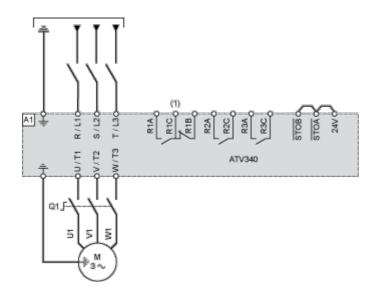
A1: Drive

KM1 : Line ContactorQ2, Q3 : Circuit breakers

S1: PushbuttonS2: Emergency stop

T1: Transformer for control part

Three-Phase Power Supply with Downstream Breaking via Switch Disconnector



Product datasheet

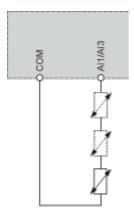
ATV340D75N4E

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

A1: Drive

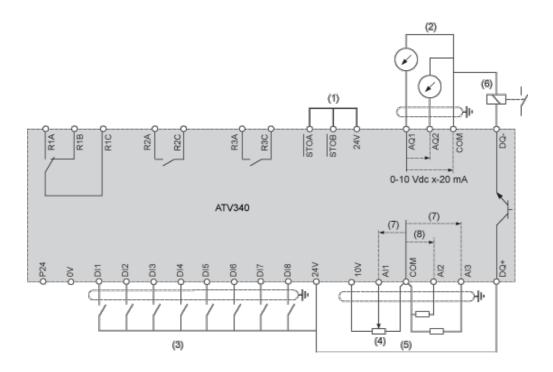
Q1 : Switch disconnector

Sensor Connection



It is possible to connect either 1 or 3 sensors on terminals Al1/Al3.

Control Block Wiring Diagram



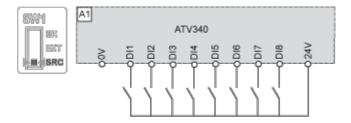
- (1) Safe Torque Off
- (2) Analog Output
- (3) Digital Input
- (4) Reference potentiometer
- (5) Analog Input
- (6) Digital Output
- (7) 0-10 Vdc, x-20 mA
- (8) 0-10 Vdc, -10 Vdc...+10 Vdc

A1: ATV340 Drive

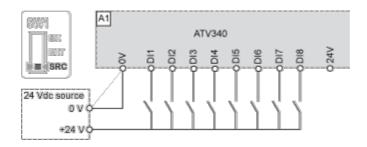
R1A, R1B, R1C: Fault relay
R2A, R2C: Sequence relay
R3A, R3C: Sequence relay

Digital Inputs Wiring

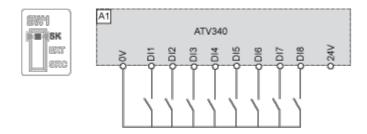
Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



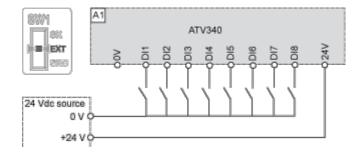
Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs



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

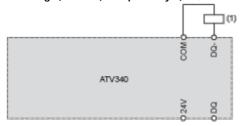


13

Digital Outputs Wiring

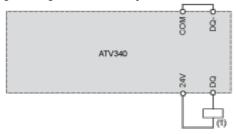
Digital Outputs: Internal Supply

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



(1) Relay or valve

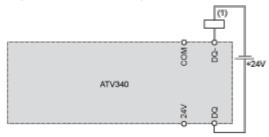
Negative Logic, Sink, Asian Style, DQ switches to 0V



(1) Relay or valve

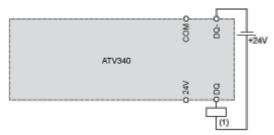
Digital Outputs: External Supply

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



(1) Relay or valve

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



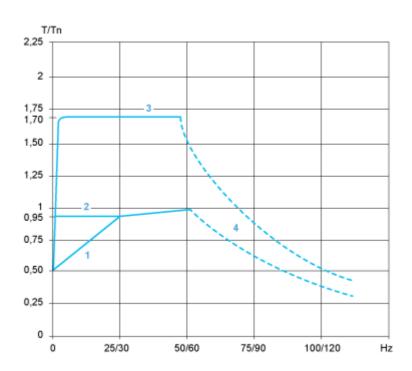
(1) Relay or valve

Product datasheet

ATV340D75N4E

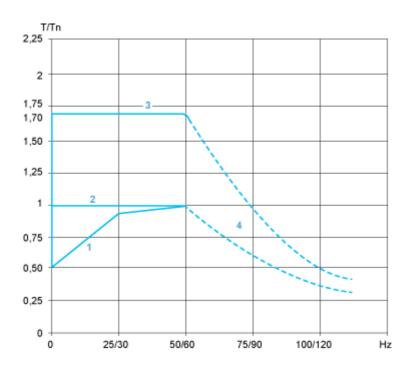
Performance Curves

Open Loop Applications



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