



variable speed drive, Altivar Machine ATV340, 7.5kW, heavy duty, 400V, 3 phases, Ethernet

ATV340U75N4E

Main

Altivar Machine ATV340
Variable speed drive
Machine
Cabinet mount
Standard version
EtherNet/IP Modbus serial Modbus TCP
3 phases
5060 Hz +/- 5 %
380480 V - 1510 %
16.5 A
11 kW for normal duty 7.5 kW for heavy duty
15 hp for normal duty 10 hp for heavy duty
Class C3 EMC filter integrated
IP20

Complementary

Discrete input number	PTI programmable as pulse input: 030 kHz, 24 V DC (30 V) DI1DI5 safe torque off, 24 V DC (30 V), impedance: 3.5 kOhm programmable	
Discrete input type		
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	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	1	

Analogue output type	Software-configurable voltage AQ1: 010 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1: 020 mA impedance 500 Ohm, resolution 10 bits	
Relay output number	2	
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	Automatic whatever the load Not available in permanent magnet motor law Can be suppressed Adjustable	
Switching frequency	216 kHz adjustable 416 kHz with derating factor	
Nominal switching frequency	4 kHz	
Braking to standstill	By DC injection	
Brake chopper integrated	True	
Line current	22.0 A at 380 V (normal duty) 17.7 A at 480 V (normal duty) 25.6 A at 380 V (heavy duty) 20.4 A at 480 V (heavy duty)	

Line current	25.6 A at 380 V without line choke (heavy duty) 20.4 A at 480 V without line choke (heavy duty) 22 A at 380 V with external line choke (normal duty) 17.7 A at 480 V with external line choke (normal duty) 14.6 A at 380 V with external line choke (heavy duty) 12.1 A at 480 V with external line choke (heavy duty)	
Maximum input current	25.6 A	
Maximum output voltage	480 V	
Apparent power	17 kVA at 480 V (normal duty) 17 kVA at 480 V (heavy duty)	
Maximum transient current	26.4 A during 60 s (normal duty) 24.8 A during 60 s (heavy duty) 32.4 A during 2 s (normal duty) 29.7 A during 2 s (heavy duty)	
Electrical connection	Screw terminal, clamping capacity: 46 mm² for DC bus Screw terminal, clamping capacity: 0.22.5 mm² for control Screw terminal, clamping capacity: 1.56 mm² for motor Screw terminal, clamping capacity: 2.56 mm² for line side	
Prospective line Isc	22 kA	
Base load current at high overload	16.5 A	
Base load current at low overload	24.0 A	
Power dissipation in W	Natural convection: 180 W at 380 V, switching frequency 4 kHz (heavy duty) Forced convection: 180 W at 380 V, switching frequency 4 kHz (heavy duty) Natural convection: 249 W at 380 V, switching frequency 4 kHz (normal duty) Forced convection: 249 W at 380 V, switching frequency 4 kHz (normal duty)	
Electrical connection	DC bus: screw terminal 46 mm²/AWG 12AWG 10 Control: screw terminal 0.22.5 mm²/AWG 24AWG 12 Motor: screw terminal 1.56 mm²/AWG 14AWG 10 Line side: screw terminal 2.56 mm²/AWG 12AWG 10	
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	

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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	110.0 mm
Height	270.0 mm
Depth	234.0 mm
Net weight	3.0 kg
Continuous output current	24 A at 4 kHz for normal duty
	16.5 A at 4 kHz for heavy duty

Environment

Operating altitude	<= 3000 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
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)	70 m/s² at 22 ms
Maximum acceleration under vibrational stress (during operation)	5 m/s² at 9200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 29 Hz
Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volume of cooling air	76.0 m3/h
Type of cooling	Forced convection
Overvoltage category	Class III

Regulation loop	Adjustable PID regulator
Noise level	46.5 dB
Pollution degree	2
Ambient air transport temperature	-4070 °C
Ambient air temperature for operation	-1550 °C without derating (vertical position) 5060 °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	11.000 cm
Package 1 Width	37.000 cm
Package 1 Length	32.000 cm
Package 1 Weight	3.800 kg
Unit Type of Package 2	P06
Number of Units in Package 2	10
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	51.000 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

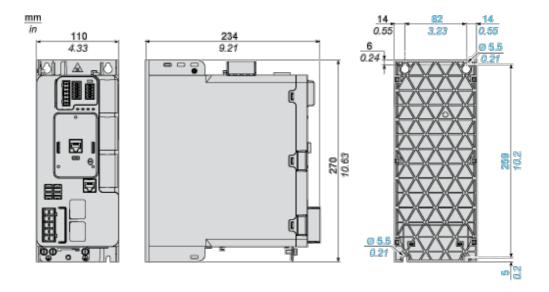
Certifications & Standards

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	

Dimensions Drawings

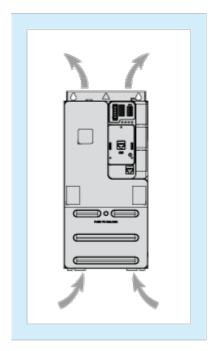
Dimensions

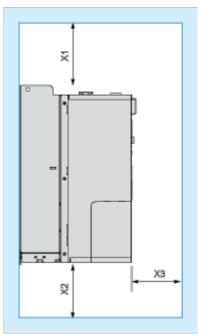
Views: Front - Left - Rear



Mounting and Clearance

Clearance





Dimensions in mm

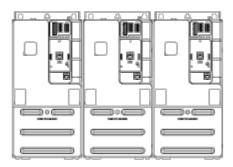
X1	X2	X3
≥ 100	≥ 100	≥ 60

Dimensions in in.

X1	X2	Х3
≥ 3.94	≥ 3.94	≥ _{2.36}

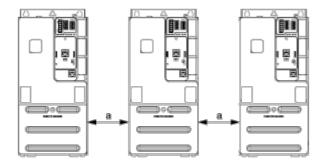
Mounting Types

Mounting Type A: Side by Side IP20



Possible, at ambient temperature ≤ 50 °C (122 °F)

Mounting Type B: Individual IP20



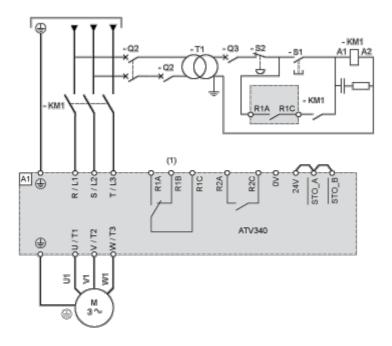
a 50 mm (1.97 in.) from 50...60°C, no restriction below 50°C

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.

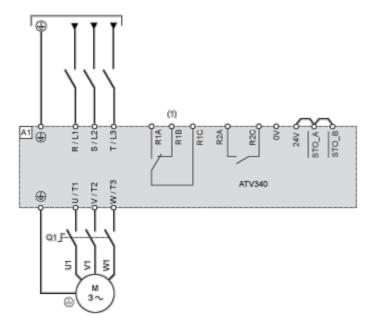
A1: Drive

KM1: Line Contactor
Q2, Q3: Circuit breakers

S1: PushbuttonS2: Emergency stop

T1: Transformer for control part

Three-phase Power Supply With Downstream Breaking via Switch Disconnector

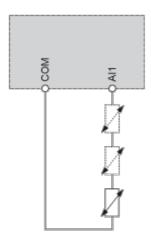


(1) Use relay output R1 set to operating state Fault to switch Off the product once an error is detected.

A1: Drive

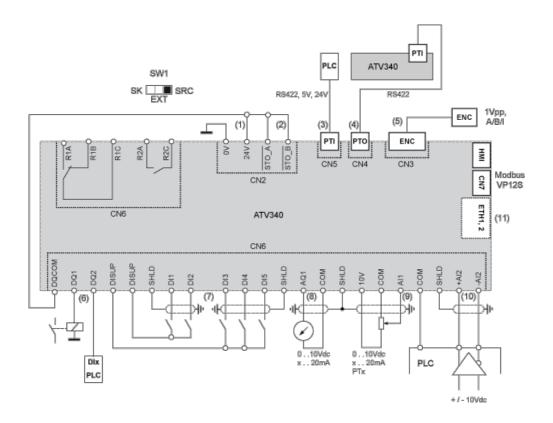
Q1: Switch disconnector

Sensor Connection



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

Control Block Wiring Diagram

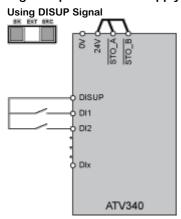


- (1) 24V supply (STO)
- (2) STO Safe Torque Off
- (3) PTI Pulse Train In
- (4) PTO Pulse Train Out
- (5) Motor Encoder connection
- (6) Digital outputs
- (7) Digital inputs
- (8) Analog output
- (9) Analog input
- (10) Differential Analog Input
- (11) Ethernet port (only on Ethernet drive version)

SW1: Sink/Source switch
R1A, R1B, R1C: Fault relay
R2A, R2C: Sequence relay

Digital Inputs Wiring

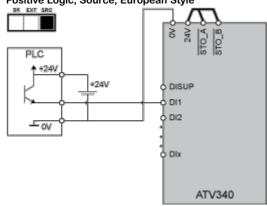
Digital Inputs: Internal Supply



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



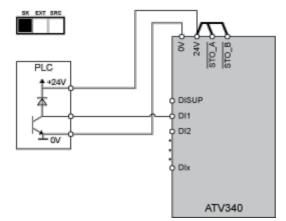
Negative Logic, Sink, Asian Style St. Dat Sinc. PLC +24V DISUP DIX ATV340

Digital Inputs: Internal supply Negative Logic, Sink, Asian Style

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Product datasheet

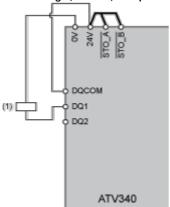
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Digital Outputs Wiring

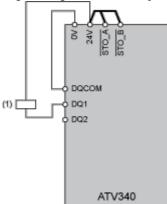
Digital Outputs: Internal Supply

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



(1) Relay or valve

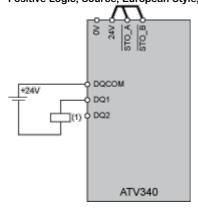
Negative Logic, Sink, Asian Style, DQCOM to 0V



(1) Relay or valve

Digital Outputs: External Supply

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

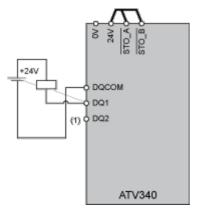


(1) Relay or valve

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

Product datasheet

ATV340U75N4E



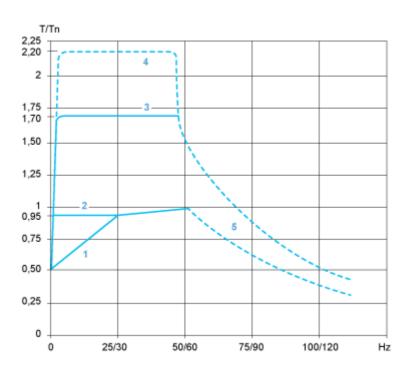
(1) Relay or valve

Product datasheet

ATV340U75N4E

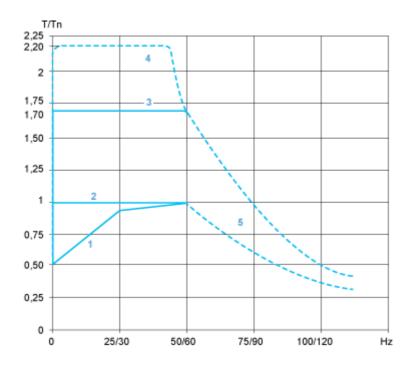
Performance Curves

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

Image of product in real life situation

