



Product Features

UL, cUL, CE, C-Tick, and GOST-R
Optional Full Graphic and Multilingual Display
with real time clock
Optional Basic Control Panel
Optional Blank Cover
Start-Up, Maintenance and Diagnostic Assistant
Motor ID Run
Motor Control
Scalar Control, Sensorless Vector and Flux Vector
Two (2) Programmable Analog Inputs
Five (5) Programmable Digital Inputs
One (1) Programmable Analog Output
One (1) Programmable Form C Relay Output
One (1) Programmable Digital Output (pulse train output)
Input Speed Signals
Two (2) Current 0 (4) - 20 mA, 0 (2)- 10VDC
Bipolar voltage reference with external power supply
Pulse Train Input
Start/Stop
2 wire control (dry contact closure)
3 wire control (momentary dry contacts)
Adjustable Current Limit
Nine (9) Supervision Functions
Electronic Reverse
Power Loss Ride-Through
DC Injection Braking
DC Magnetizing Start (provides maximum starting torque)
Seven (7) Preset Speeds
Three (3) Critical Speed Lockout Bands
Two (2) Independently Adjustable Accel and Decel Ramps
Linear or Adjustable "S" Curve Accel/Decel Ramps
Internal Braking Chopper
Sequence Programming
Ramp to Stop or Coast to a Stop
Maximum Frequency Programmable up to 500 Hz
Two independent Integral Programmable PID Setpoint
Controllers
Coated Boards
RoHS (Verify RoHS label)

Programmable Fault Functions

AI < Min (A 1,2 loss)
Panel Loss
Supply Phase
Ground Fault
Wiring Fault
External Fault 1,2
Motor Thermal Protection
Motor Stall Protection
Underload
Encoder Error
Communications Fault
Overcurrent
Over/Undervoltage

Preprogrammed Protections:

Overcurrent
Short Circuit
Overvoltage (Intermediate Circuit) 1.3 * input voltage
Undervoltage (Intermediate Circuit) 0.65 * input voltage
Input Phase Loss and output miswiring
Device Overtemperature
Motor Overtemperature
Overspeed
Underload
Motor Phase Loss
DC Over/Undervoltage

Available options

Flashdrop (MFDT-01)
NEMA 1 Enclosure Kit (MUL1-R1/-R3/-R4)
DriveWindow Light®-based Start-up & Programming Tool
Fieldbus Adapter Modules
Modbus (FMBA-01, FRSA-00)
Profibus (FPBA-01)
DeviceNet (FDNA-01)
CANopen (FCAN-01)
Display, Programming and Demo Cases
NEMA 4X Panel Cover Kit (ACS/H-CP-EXT-IP66)
Cabinet Panel Mounting (OPMP-01)
Speed POT, Start/Stop and FWD/REV switches (MPOT-01)
Pulse Encoder Interface (MTAC-01)

Specifications

Input Connection

Input Voltage (U1, V1, W1)	208/220/230/240Vac 1-phase or 3-phase $\pm 10\%$ 380/400/415/440/460/480Vac 3-phase $\pm 10\%$
Input Frequency	48 to 63 Hz, maximum rate of change 17%/second
Line Imbalance	Max $\pm 3\%$ of nominal phase to phase input voltage
Fundamental Power Factor	0.98 (at nominal load)
Connection	Terminals U1, V1, W1 (1-phase L, N)

Output Connection

Output Voltage	0 to U1, 3-phase symmetrical
Output Frequency	0 to 500 Hz
Frequency Resolution	0.01 Hz
Continuous Current	Rated I_{2N} for $f_s = 4\text{kHz}$
Short Term Overload Capacity	$1.5 * I_{2N}$ (at least 1 min / 10 min)
Field Weakening Point	30 to 500 Hz
Switching Frequency	4, 8 or 12 kHz (derate I_{2N} to 80% for 8 kHz, derate ambient temp to 30°C and I_{2N} to 65% for 12 kHz) (16 kHz, v. 2.41+)
Acceleration & Deceleration Time	0.1 to 1800 s
Efficiency	98% at nominal power level
Short circuit withstand rating	100,000 AIC
Connection	Terminals U2, V2, W2

Ambient Conditions, Operation

Air Temperature	-10°C (14°F) to 40°C (104°F), no frost allowed, above 40°C the maximum output current is de-rated 1% for every additional 1°C (up to 50°C (122°F) maximum limit)
Relative Humidity	5 to 95%, no condensation allowed, maximum relative humidity is 60% in the presence of corrosive gasses
Contamination Levels	
IEC	60721-3-3
Chemical Gasses	3C2
Solid Particles	3S2
Installation Site Altitude	0 to 1000 m (3300 ft) above sea level. At sites from 1000 m to 2000 m (3300 ft to 6600 ft) above sea level, the maximum power is de-rated 1% for every additional 100 m (330 ft).

Ambient Conditions, Storage & Transportation (in Protective Shipping Package)

Air Temperature	-40° to 70°C (-40° to 158°F)
Relative Humidity	Less than 95%, no condensation allowed
Atmospheric Pressure	70 to 106 kPa (10.2 to 15.4 PSI)

Cooling Information

Cooling Method	Internal Fan except for Frame R0
Power Loss	Approximately 3% of rated power

Specifications (cont'd)

Analog Inputs

Two (2) Programmable Analog Inputs

Current Reference	Unipolar	0 (4) to 20 mA, $R_{in} = 100 \text{ ohm}$
	Bipolar	-20 mA to 20 mA, $R_{in} = 100 \text{ ohm}$
Voltage Reference	Unipolar	0 (2) to 10 V, $R_{in} > 312 \text{ kohm}$
	Bipolar	-10 V to 10 V, $R_{in} > 312 \text{ kohm}$
Resolution		0.1%
Accuracy		$\pm 1\%$

Reference Power Supply

Voltage	+10 VDC, $\pm 1\%$ at 25°C (77°F)
Maximum Load	10 mA
Applicable Potentiometer	1 kOhm to 10 kOhm

Analog Outputs

One (1) Programmable Current Outputs

Signal Level	0 (4) to 20 mA
Accuracy	$\pm 3\%$ Full Scale Range at 25°C (77°F)
Maximum Load Impedance	500 ohms

Digital Inputs

Five (5) Programmable Digital Inputs

Voltage	12 to 24 VDC with internal or external supply
Type	PNP and NPN
Input Current	15 mA at 24 VDC
Input Updating Time	8 ms, $\pm 1 \text{ ms}$
Frequency Input	Pulse Train 0 to 16 kHz (X1A:16 only)
Input Impedance	2.4 kohm

Internal 24 VDC Supply for Digital Inputs

Voltage	24 VDC, $\pm 10\%$
Maximum Current	200 mA

Relay Outputs

One (1) Programmable Relay Output

Type	NO + NC
Switching Voltage	12-250 VAC / 30 VDC
Maximum Switching Current	0.5 A / 30 VDC; 5 A / 230 VAC
Maximum Continuous Current	2 Amps RMS

Digital Outputs

One (1) Programmable Digital Output

Type	Transistor Output
Maximum Switching Voltage	30 VDC
Maximum Switching Current	100 mA / 30 VDC, short circuit protected
Frequency	10 to 16 Hz
Resolution	1 Hz
Accuracy	0.2%



Notes for product selection

General Notes

- I_{2N} : continuous base current at 40°C (104°F) and 50°C (120°F). Overload cycle 150% for 1 minute / 10 minutes allowed.
- Continuous output current at 50°C (120°F) shown for 230Vac NEC motor ratings. Use with input voltages less than 230Vac may require larger drive when operating a 50°C (120°F)
- Current ratings do not change with different supply voltages.
- The rated current of the ACS350 must be greater than or equal to the rated motor current to achieve the rated motor power given in the table.
- Horsepower ratings are based on NEC motor ratings for typical 4-pole motors (1800 rpm). Check motor nameplate current for compatibility.
- Kilowatt ratings are based on IEC motor ratings for typical 4-pole motors (1500 rpm). Check motor nameplate current for compatibility.

CONFIGURED

To order a Configured ACS350 drive, select the appropriate type code from this page. To add options, simply add a [+] to the end of the type code followed by the plus code of the desired option. Configured Options are shown on the Configured Option Pages.

Example: ACS350-03U-06A7-2+J400+K451 means add the Advanced Operator Panel and DeviceNet Adapter

Contact Customer Service for lead times of Configured Drives

Note: A blank panel is provided as standard. Specify +J404 (Basic Panel) or +J400 (Advanced Panel) when an operator panel is required.