ACS550 Features

Standard Features

UL, cUL, and CE
Full Graphic and Multilingual Display with Real-time clock and
  assistant
Start-Up Assistant with Verify
Motor ID Run
Motor Control
       Open and closed loop vector: speed and torque
       Scalar Control
Drive Input Fuses in ACS550-U2, PD, R5-R8 Frame PC and CC
1st Environment, Restricted CE Approval (30 m motor cable
  for R1-R6 frame). 2nd Environment for R7 & R8
Two (2) programmable Analog Inputs
Six (6) Digital inputs
Two (2) programmable Analog Outputs
Three (3) Programmable Form C Relay Outputs
Adjustable filters on Analog inputs and outputs
Input Speed Signals
       Two (2) Current 0 (4) - 20 mA, 0 (2)- 10VDC
       Increase/Decrease reference Contacts
Fieldbus adapters (communication modules)
Start/Stop
       2 wire control (dry contact closure)
       3 wire control (momentary dry contacts)
Adjustable Current Limit
Adjustable Torque Limit
Nine (9) Supervision Functions
Electronic Reverse
Power Loss Ride-Through
DC Injection Braking (in Scalar ONLY)
DC Magnetizing Start (provides maximum starting torque)
DC Hold
Flux Braking
Jog
Flux Optimization
Seven (7) Preset Speeds
Three (3) Critical Speed Lockout Bands
Self-Tuning Speed Controller
Automatic Reset Customer Selectable
Two (2) Independently Adjustable Accel and Decel Ramps
Linear or Adjustable "S" Curve Accel/Decel Ramps
Ramp to Stop or Coast to a Stop
Maximum Frequency Programmable up to 500 Hz
Two (2) Integral Programmable PID Setpoint Controller with
  assistant
Mathematical Functions on Analog Reference Signals
DC (R1 & R4 Frames) and AC (R5 Frames & above) Reactor
Integral Brake Chopper (R1 & R2 Frames)
Reference Trim
Mechanical Brake Control
Emergency Ramp Stop
Modbus RTU
Maintenance Calculator (v3.11a+)
Serial Communications Assistant (v3.11a+)
Drive Performance Optimization Assistant (v3.11a+)
User-defined Underload Curve (v3.11a+)
Coated Boards

Programmable Fault Functions

    AI (1,2 Loss)
    Encoder Error
    Panel Loss
    External Fault
    Motor Thermal Protection
    Stall Protection
    Underload
    Motor Phase Loss
    Supply Phase Loss
    Ground Fault
    Communications Fault
    Wiring Fault
    Supervision of optional IO

Preprogrammed Protections:
    Overcurrent
    Short Circuit and Ground Fault
    Overvoltage (Intermediate Circuit)
    Undervoltage (Intermediate Circuit)
    Input Phase Loss and Output Miswiring
    Drive and Motor Overtemperature
    Internal fault
    Overspeed

Available options

I/O Options
    3 Relay Extension Module OREL-01
    115/230V Digital Interface Module OHDI-01
    Pulse Encoder Interface OTAC-01
Fieldbus Adapter Modules
    DeviceNet RDNA-01
    Profibus-DP RPBA-01
    ControlNet RCNA-01
    CANopen RCAN-01
    EtherNet/IP and Modbus/TCP RETA-01
Dynamic Braking Units and Choppers
DriveWindow Light®-based Start-up & Programming Tool
Fan Replacement Kits
Remote Panel Mounting Kit
Flange Mounting Kits (R1 - R4) (R5-R6, available Q3, 2007)
FlashDrop (available Q3, 2007)
Drive with Disconnect or Circuit Breaker
Drive with Bypass
NEMA 3R Enclosure
NEMA 12 Enclosure

ACS550 Specifications

Input Connection

Input Voltage (U1, V1, W1)	208/220/230/240Vac 3-phase +10% / -15%
	380/400/415/440/460/480Vac 3-phase +10% / -15%
	500/525/550/575/600Vac 3-phase +10 / -15%
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

Output Connection

Output Voltage	0 to U1, 3-phase symmetrical, U_{Max} at the field weakening point
Output Frequency	0 to 500 Hz
Frequency Resolution	0.01 Hz
Continuous Current	$1.0 * I_{2N}$ (normal use)
	$1.0 * I_{2hd}$ (heavy-duty use)
Short Term Overload Capacity	$I_{Nmax} = 1.1 * I_{2N}$ (1 min / 10 minutes)
	$I_{Nhdmax} = 1.5 * I_{2hd}$ (1 min / 10 minutes)
Peak Overload Capacity	180% of I_{2hd} for 2 seconds each minute
Field Weakening Point	10 to 500 Hz
Switching Frequency	1, 4, 8 or 12kHz (Frame Dependent)
Acceleration & Deceleration Time	0.0 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	-15° to 40°C (5° to 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	60721-3-1, 60721-3-2 and 60721-3-3
Chemical Gasses	3C2
Solid Particles	3S2
Installation Site Altitude	0 to 1000 m (3300 ft) above sea level. In altitudes from 1000 to 2000m 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)
Vibration Max	In accordance with ISTA 1A and 1B specifications
Shock (IEC 60068-2-29)	Max 100 m/s2 (330 ft/s2) 11 ms
Free Fall	R1: 76 cm (30 in)
	R2: 61 cm (24 in)
	R3: 46 cm (18 in)
	R4: 31 cm (12 in)
	R5: 25 cm (10 in)
	R6: 15 cm (6 in)

Cooling Information

Cooling Method	Internal Fan
Power Loss	Approximately 3% of rated power

ACS550 Specifications (Continued)

Analog Inputs
Two (2) Programmable

Current Reference	0 (4) to 20 mA, R_{in}=100 Ohms, single ended
Voltage Reference	0 (2) to 10 V, R_{in} > 312kOhms, single ended
Max Delay	12 ... 32 ms
Input Updating Time	6 ms (Standard Application Software)
Optional Isolation	Available through external Module
Accuracy	$\pm$1%
Resolution	0.1%

Reference Power Supply

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

Analog Outputs
Two (2) 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
Six (6) Programmable Digital Inputs

Isolation	Isolated as one group
Signal Level	24 VDC, (10 V Logic 0)
Input Current	15 mA at 24VDC
Input Updating Time	5 ms $\pm$ 1ms
Input Impedence	2.4 kOhms

Internal 24 VDC Supply for Digital Inputs

Voltage	24 VDC, $\pm$ 10%
Maximum Current	250 mA
Protection	Short Circuit Proof

Relay Outputs
Three Programmable Relay Outputs

Switching Capacity	6 A at 30 VDC, 1500 VA / 230 VAC, or 0.4 A at 120 VDC
Maximum Continuous Current	I_C = 2 Amps RMS
Contact Material	Silver Nickel (AgN)
Isolation Test Voltage	4 kVAC, 1 minute
Output Updating Time	100 ms

Protections

Single Phase	Protected (input & output)
Overvoltage Trip Limit	1.3 * V1max
Undervoltage Trip Limit	0.65 * V1min
Overtemperature	115°C (239°F) R1 - R4 and R7 & R8, 125°C (257°F) R5 & R6
Auxiliary Voltage	Short Circuit Protected
Ground Fault	Protected
Microprocessor Fault	Protected
Motor Stall Protection	Protected
Motor Overtemperature	Protected (I2t)

Motor / Drive Compatibility

$$0.2 \leq \frac{I_M}{I_{2hd}} \leq 2$$

$$0.2 \leq \frac{P_M}{P_{Nhd}} \leq 2$$