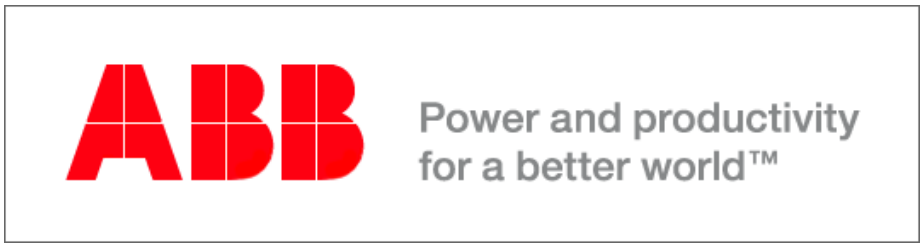

ACH550® HVAC Drive Submittal

DATE:

PROJECT NAME:

CONTRACTOR:

ENGINEER:

SUBMITTED BY:

SUBMITTALS FOR: _____RECORD
_____APPROVAL (Return a copy of the approved submittal)

ACH550 Features

Standard Features

- UL and cUL
- 1st Environment, Restricted Distribution CE Approval (30 m motor cable) for R1 - R6 frames - 2nd Environment for R7 & R8 Frames
- Start-Up Assistant
- Full Graphic and Multilingual Display
- Fused Disconnect (ACS550-U2 ONLY)
- Two (2) Programmable Analog Inputs
- Six (6) Programmable Digital inputs
- Two (2) Analog Outputs
- Adjustable Filters on Analog Inputs and Outputs
- Input Speed Signals
    - Current 0 (4) ... 20 mA
    - Voltage 0... 10VDC
    - Increase/Decrease Reference Contacts
    - Fieldbus Adapters
- Start/Stop
    - 2 Wire (Dry Contact Closure)
    - 3 Wire (Momentary Dry Contacts)
- Adjustable Current Limit
- Adjustable Torque Limit
- Nine (9) Supervision Functions
- Electronic Reverse
- Motor ID Run
- Power Loss Ride-Through
- DC Injection Braking (in V/Hz ONLY)
- DC Magnetizing Start
- DC Hold
- Flux Braking
- Seven (7) Preset Speeds
- Three (3) Critical Speed Lockout Bands
- V/Hz, Sensorless and Flux Vector Modes of Motor Control (Flux vector not available at time of printing)
- Automatic Reset Customer Selectable
- Two (2) Independently Adjustable Accel and Decel Ramps
- Linear or Two (2) Adjustable US" Curve Accel/Decel Ramps
- Ramp or Coast to a Stop
- Maximum Frequency Programmable up to 500 Hz
- Two (2) Integral Independent Programmable PID Setpoint Controller
- Mathematical Functions on Analog Reference Signals
- Patent Pending Swinging Choke Design for Harmonic Mitigation (R1 - R4 frames) 5% impedance
- AC Input Line Reactor for Harmonic Mitigation (R5 - R8 frames) 3% impedance

- Integral Brake Chopper (R1 & R2 Frames)
- Emergency Stop Ramp
- Modbus RTU
- Programmable Fault Functions for Protection include:
    - AI<Min
    - Panel Loss
    - External Fault
    - Motor Thermal Protection
    - Stall
    - Underload
    - Motor Phase Loss
    - Ground Fault
- Preprogrammed Protections include:
    - Overcurrent
    - Short Circuit
    - Overvoltage
    - Undervoltage
    - Input Phase Loss
    - Output Device (IGBT) Overtemperature
    - Motor Overtemperature Protection Wt)

Available Options

- 3 Relay Extension Module OREL-01
- 115/230 V Digital Input Interface Module OHDI-01
- Pulse Encoder Interface Module OTAC-01
- Fieldbus Adapter Modules
    - DeviceNet RDNA-01
    - Profibus-DP RPBA-01
- Braking Units and Choppers
- DriveWindow Light@-based Start-up, Operation, Programming and Diagnostic Tool
- Fan Replacement Kits
- Remote Panel Mounting Kit
- Flange Mounting Kits

ACS550 Specifications

Input Connection	
Input Voltage (U_1)	208/220/230/240 VAG 3-phase +10% ... -15% 380/400/415/440/460/480 VAG 3-phase +10% ... -15%
Input Frequency	48 to 63 Hz
Line Imbalance	Max +/-3% of nominal phase to phase input voltage
Fundamental Power Factor (cos)	0.98 (at nominal load)
Connection	U_1,V_1,W_1
Output Connection	
Output Voltage	0 to U1, 3-phase symmetrical, U_2 at the field weakening point
Output Frequency	-500 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	1.1 * I_{2N} (1 min/10 min) 1.5 * I_{2hd} (1 min/10 min)
Peak Overload Capacity	180% of 1_{2hd} for 2 seconds each minute
Base Motor Frequency Range	10 to 500 Hz
Switching Frequency	1, 4, or 8 kHz
Acceleration Time	0 to 1800 s
Deceleration Time	0 to 1800 s
Efficiency	98% at nominal power level
Short Circuit Withstand Rating	100,000 AIC
Connection	U_2, V_2, W_2
Ambient Conditions, Operation	
Air Temperature	-15° to 40°C (5° to 104°F), no frost allowed, above 40°C the maximum output currents 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	3C1 and 3C2
Solid Particles	3S2
Installation Site Altitude	0 to 1000 m (3300 ft) above sea level. At sites over 1000 m (3300 ft) above sea level, the maximum power is de-rated 1% for every additional 100 m (330 ft). If the installation site is higher than 2000 m (6600 ft) above sea level, please contact your local ABB

	distributor or representative for further information.
Vibration	Mechanical conditions Class 3M4 (IEC 60721-3-3) 9...200 Hz 10m/s² (33 ft/s²) 2...9 Hz 3.0 m (0.12 in)
Ambient Conditions, Storage (in Protective Shipping Package)	
Air Temperature	-40° to 70°C (-40° to 158°F)
Relative Humidity	Less than 95%, no condensation allowed
Vibration	In accordance with ISTA 1A and 1 B specifications
Shock (IEC 60068-2-29)	Max 100 m/s² (330 ft/s²) 11 ms
Ambient Conditions, Transportation (in Protective Shipping Package)	
Air Temperature	-40° to 70°C (-40° to 158°F)
Relative Humidity	Max 95%
Atmospheric Pressure	60 to 106 kPa (8.7 to 15.4 PSI)
Vibration	In accordance with ISTA 1A and 1 B 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
Analog Inputs	
Two Programmable Inputs	
Voltage Reference	0 (2) to 10 V, 250 kOhm, single ended
Current Reference	0 (4) to 20 mA, 100 Ohms, single ended
Potentiometer	10 VDC, 10 mA, 1K to 10 kOhms
Accuracy	+/- 1 %
Input Updating Time	12ms
Terminal Block Size	2.3 mm² / 14 AWG
Reference Power Supply	
Voltage	+10 VDC, 1% at 25°C (77°F)
Maximum Load	10mA
Applicable Potentiometer	1 kOhm to 10 kOhm
Terminal Block Size	2.3 mm² / 14 AWG
Analog Outputs	
Two Programmable Current Outputs	
Signal Level	0 (4) to 20mA
Accuracy	+/-1% Full Scale Range at 25°C (77"F)
Maximum Load Impedance	500 Ohms

Output Updating Time	TBD
Terminal Block Sizes	2.3 mm^2 / 14 AWG

Digital Inputs

Six Programmable Digital Inputs

Isolation	Isolated as one group
Terminal Block Size	2.3 mm^2 / 14 AWG
Signal Level	24 VDC, (10V Logic 0)
Input Current	15 mA at 24 VDC
Input Updating Time	TBD

Internal 24 VDC Supply for Digital Inputs

Voltage	24 VDC, +/-10%
Maximum Current	250 mA
Protection	Short Circuit Proof

Relay Outputs

Three Programmable Relay Outputs

Switching Capacity	8 A at 24 VDC or 250 VAC, 0.4 A at 120 VDC
Maximum Continuous Current	I_c = 2A RMS
Contact Material	Silver Cadmium Oxide (AgCdO)
Isolation Test Voltage	4 kVAC, 1 minute
Terminal Block Size	Cables 0.3 to 3.3 mm2 (12 to 22 AWG)
Output Updating Time	100 ms

Protections

Single Phase	Protected (input & output)
Overvoltage Trip Limit	1.3 * U_{1nom}
Undervoltage Trip Limit	0.65 * U_{1nom}
Overtemperature (IGBT)	115°C (239°F)
Ground Fault	Protected
Microprocessor Fault	Protected
Motor Stall Protection	Protected
Motor Overtemperature Protection (I^2t)	Protected