

# ABB Drives for HVAC NEMA/UL Type 3R Enclosed Products ACH550 1 to 550 HP

An environmental extension to the ABB ACH550 Drives product offering, the NEMA/UL Type 3R cabinet is designed to meet your outdoor mounted drive application needs. The application rated 3R design includes dual steel wall construction that allows direct sunlight exposure without the need for derating the drive's output. Thermostatically controlled heating and cooling, with dedicated control power supply, maintain the interior cabinet environment to provide reliable operation in the harshest of conditions.



ABB's NEMA/UL Type 3R features, combined with the ACH550 Base Drive or ACH550 with E-Clipse Bypass, will provide you with a factory built solution for your outdoor HVAC Drive needs.

## Saving Cost

- Reduce site installation costs with an integrated design
- Extend the drive's warranty when commissioned by an ABB Certified Start Up technician

## Highlights

- Single main disconnect (Circuit Breaker or Fused Disconnect Switch), mechanically interlocked with enclosure door and lockable in the off position with up to 3 padlocks
- Dual wall solar shielding offers radiant protection and convection cooling
- Powder coated steel construction
- Stainless steel cabinet hardware (Locks, Hinge Pins & Rivets)
- Filter less air intake below 75 HP (480V)

- Drive & Bypass Control Panels (key-pads) protected with external cover & accessible without opening enclosure door
- Wall or free standing mounting capabilities
- Thermostatically controlled cooling fans and silicone element space heaters
- Dedicated fused power supply for cabinet cooling and heating functions
- Full output current at 40°C / 104°F ambient (Solar derating not required)
- Low temperature climate operations -18°C / 0°F
- 100 kA short circuit current rating available up to 480 VAC
- UL 508A labeled

## Embedded Fieldbus Protocols

- BACnet (MS/TP)
- Johnson Controls N2
- Siemens Building Technology FLN
- Modbus RTU (EIA-485)

## Applications

- Rooftop Unit Retrofits
- Cooling Towers
- Exterior Exhaust Fans
- Outdoor Pump Skids

## Options

- Standard ACH550 options
- E-Clipse Bypass
- Bypass Service Switch (+F267)
- Additional AC Line Reactor (+E213)

**ACH550 Drives Models where NEMA/UL Type 3R may be included:**

- ACH550-BCR / BDR / (E-Clipse Bypass)
  - 3-Phase, 480 V, 1 to 400 Hp
  - 3-Phase, 208 to 240 V, 1 to 100 Hp
  - 3-Phase, 600 V, 2 to 150 Hp
  - Circuit Breaker (BCR)
  - Disconnect (BDR)
  
- ACH550-PCR / PDR
  - 3-Phase, 480 V, 1 to 550 Hp
  - 3-Phase, 208 to 240 V, 1 to 100 Hp
  - 3-Phase, 600 V, 2 to 150 Hp
  - Input Circuit Breaker (PCR)
  - Disconnect and Fuses (PDR)
  
- ACH550-2BCR / 2BFR / 8BCR / 8BFR (Multi-Pulse E-Clipse Bypass)
  - 3-Phase, 480 V, 20 to 550 Hp
  - 3-Phase, 208 to 240 V, 15 to 100 Hp
  - Circuit Breaker (BCR)
  - Fused disconnect (BFR)

Input power connection	
<b>Voltage and Power Range</b>	3-phase, 208 to 240 V, -10/+15% 3-phase, 480 V, -10/+15% 3-phase, 600 V, -10/+15%
<b>Frequency</b>	48 to 63 Hz
<b>Power Factor</b>	0.98 at nominal load
Output (motor) connection	
<b>Frequency</b>	0 to 500 Hz
<b>Acceleration Time</b>	0.1 to 1800 s
<b>Deceleration Time</b>	0.1 to 1800 s
Programmable control connections	
<b>Two analog inputs</b>	
Voltage signal	0 (2) to 10 V, 250k $\Omega$ , single-ended
Current signal	0 (4) to 20 mA, Rin = 100 $\Omega$
Potentiometer reference value	10 V, 10 mA, 1 to 10 k $\Omega$
<b>Two analog outputs</b>	
Auxiliary voltage	0 (4) to 20 mA, load < 500 $\Omega$
<b>Six digital inputs</b>	24 V DC, max. 250 mA (short circuit protected)
	12 to 24 V DC with internal or external supply, PNP and NPN
<b>Three relay outputs (Form C)</b>	
Maximum switching voltage	250 VAC/30 V DC
Maximum switching current	8 A at 24 VDC or 250 VAC, or 0.4 at 120 VDC
Maximum continuous current	2 A RMS
Serial communication	
<b>Embedded Building Automation Protocols</b>	BACnet (MS/TP) Johnson Controls N2 Siemens Buildings Technologies FLN Modbus RTU
Product compliance	
240V products	UL, cUL
480V products	UL, cUL
600V products	UL, cUL
Environmental limits	
<b>Protection class</b>	UL Type 3R (NEMA 3R)
<b>Ambient temperature (Operating)</b>	-18 to 40°C (0 to 104°F) -18 to 50°C (0 to 122°F) with derate
<b>Relative humidity</b>	5 to 95%, no condensation allowed, maximum relative humidity 60% in the presence of corrosive gas

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