Aircore EC

Mission Critical

Designed to go beyond

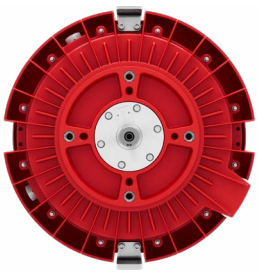
AFE Technology for Cleaner, Smarter, Resilient Power

When uptime is non-negotiable, Infinitum's Mission Critical motors deliver.

In data centers, hospitals, and cleanrooms, one thing is certain: electrical "noise" and power drops can bring operations to a halt. That's why Infinitum's IEEE 519 compliant AFE motors are engineered to provide ultra-low harmonics, near-unity power factor, and power-loss ride through capability.

Benefits You Can Measure:

- **IEEE 519 compliance**
  THDi as low as 1%
- **Power factor of 98%**
  Less wasted energy
- **Power loss ride-through capability**
  No motor dropouts during power transfer
- **Low insertion loss**
  Less heat, longer motor life
- **Retrofit ready**
  Upgrade to mission-critical AFE in minutes
- **Designed for efficiency and sustainability**
  91%+ total system efficiency



Integrated AFE

- Incorporates wideband harmonic mitigation using an Active Front End (AFE) technology
- Lowers harmonic content well below IEEE 519 levels across the motor's operating range while maintaining unity power factor futher improving system performance limiting insertion losses below 1% at high efficiency
- As an integrated solution, the AFE eliminates additional wiring and infrastructural costs typically associated with passive filters or other solutions

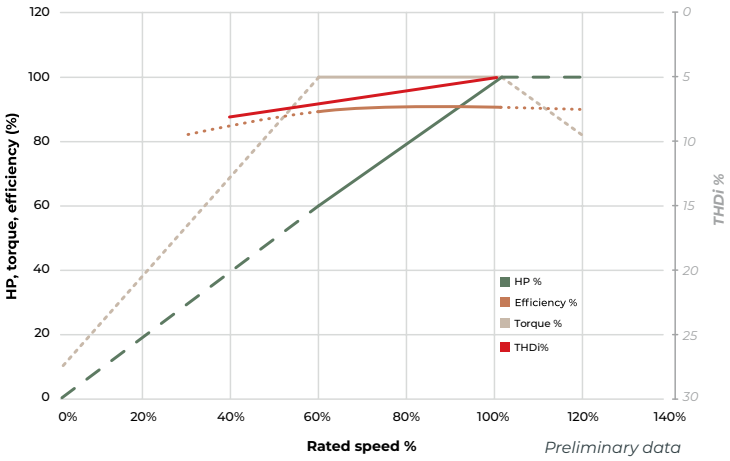
Optimized efficiency and reliability

- Meets highest efficiency standards at a wide range of load conditions.
- State-of-the-art VFD allows precise speed control, and reduces energy usage.
- Increased operational efficiency by eliminating torque ripple, cogging, stator hysteresis and eddy current losses.
- High Resistance Ground (HRG) capability for increased reliability
- Hybrid ceramic bearings for increased longevity

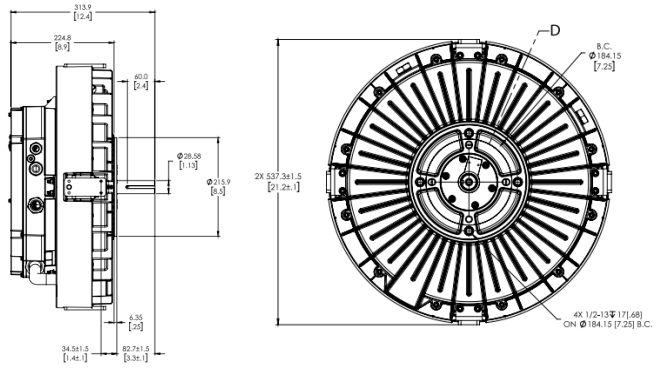
Sustainable solutions

- Maximum power density in a smaller and lighter package.
- PCB stator uses 66% less copper and has proven to be 10x more reliable than traditional iron-core, copper-wound stators.
- Easy serviceability through our modular design enables the reuse and extended lifespan of components, keeping them out of the landfill.

Aircore mission critical operating range



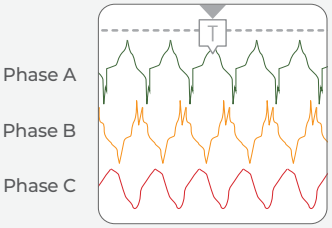
Preliminary data



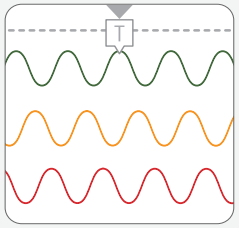
Dimensions shown for AM20 frame.

Integrated AFE

- Built-in harmonic mitigation and power factor correction.
- Designed to improve energy efficiency, reduce energy costs and minimize power distribution issues in industrial uses.
- IEEE 519 compliant.



10-HP, 1800 RPM without AFE
- Power Factor 82%
- THDi >40% and THDv 4.7%
- Input Current 12 A
- System Efficiency 91%



10-HP, 1800 RPM **with** AFE
- Power Factor 98%
- THDi 1.4% and THDv 2.9%
- Input Current 11 A
- System Efficiency 91%

Catalog number	Power	Speed (RPM)	Torque (Nm)	Diameter	Motor + drive length	Motor + drive weight
AM20-1000-1800-AAAH-AA43	10 HP 7.46 kW	1800	40	21.0in 53.3cm	10.6in 22.1cm	146.8lb 66.6kg
AM18-1000-2400-AAAH-AA43	10 HP 7.46 kW	2400	30	18.6in 47.2cm	8.7in 22.1cm	106.3lb 48.2kg
AM18-0750-1800-AAAH-AA43	7.5 HP 5.59 kW	1800	30	18.6in 47.2cm	8.7in 22.1cm	110.2lb 50.0kg
AM15-0500-1800-AAAH-AA43	5 HP 3.77 kW	1800	20	16.4in 41.7cm	8.7in 22.1cm	85.6lb 38.8kg

Electrical	
Voltage	460 VAC (± 10%), 3Φ, 60Hz
Speed control	Modbus RTU, BACnet MSTP, Analog
Input/Outputs	4x Digital Inputs and 2x Digital Outputs
Aux Power Supply	24 VDC, 250mA
Grounding Scheme	Solid Y or Corner Grounded Delta (HRG)
Power Factor	Unity

Mechanical	
Enclosure	TEFC/IP54
Mounting options	Peripheral, C-Face
Bearings	6206, Hybrid Ceramic
Shaft Grounding	Grounding Brush (NDE)

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