



**Frame 15**  
5-7.5 HP (3.73-5.6 kW)



**Frame 18**  
7.5-10 HP (5.6-7.46 kW)



**Frame 20**  
10 HP (7.46 kW)

### 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

#### Applications



Fans



HVAC



Hospitals

## Aircore MC Mission Critical

### AFE Technology for Cleaner, Smarter, Resilient Power

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

#### 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 further 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



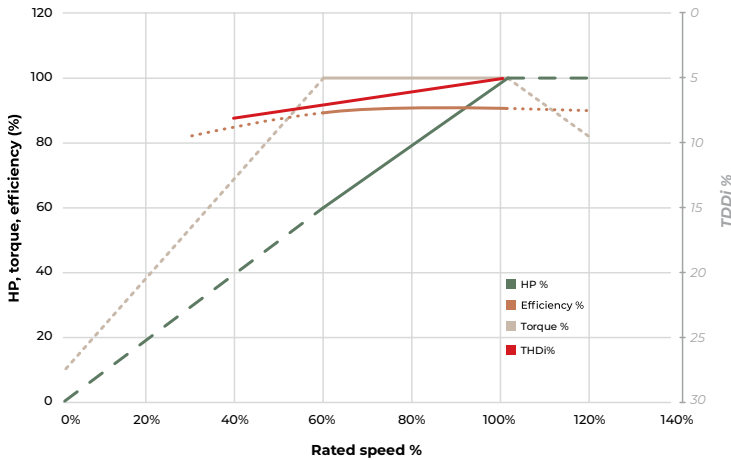
**Customize your motor system and instantly generate a tailored datasheet using our Motor Selection Tool (MST).**



Preview power, amperage, energy savings, and more.

[mst.goinfinitum.com](http://mst.goinfinitum.com)

## Performance



The recommended RPM range for this motor is 20-100% RPM. Operating below 20% RPM is not advised except during coasting or ramp-up. For operation outside of this recommended range, please contact Infinitum. These curves are for reference only; actual performance may vary. This graph is a composite performance for the Aircore MC portfolio. Refer to the Motor Selection Tool (MST) for individual models.

- Torque (Nm)
- Power
- Efficiency

## General Information

Motor Technology	Axial Flux, PCB Stator
VFD Technology	Integrated, Si-Ca based High Efficiency Drives, Active Front End (AFE)
System Efficiency* (Motor + VFD)	92%
Rated Speed	1800 to 4200RPM (See Table)
Minimum Speed	100RPM
Maximum Speed	120% Rated
Duty Cycle	Continuous
Service Factor	1.0
Cooling	TEFC
Thermal Protection	Electronically Protected (EP-L)
IP Rating	IP65
Mounting	Peripheral Mount C-Face 182-TC
Mounting Orientation	Horizontal Vertical

\*Calculated

## Mechanical Information

Rotation	CW, CCW
Bearing (DE & NDE)	6206 Hybrid Ceramic
Grease	Permanent Mobil Polyrex
Rotor Inertia	0.49 kg.m <sup>2</sup>
Grounding Brush	Included, DE


## Electrical Information

Supply Voltage	460VAC +/-10%
Rated Amps*	6A-12A
Maximum Voltage Imbalance	+/-3% Phase-Phase Voltage
Short Circuit Rating (SCCR)	65kA
Insulation Class	MOT150 Class B
Grounding	Solid Ground High Resistance Ground (HRG)
Harmonics	<5% TDDi
Power Factor	0.98

## Power, Speed

Frame Size	Rated Torque (Nm)	Rated Power (HP)	Rated Speed (RPM)	Weight (Lbs)
AM20-x	40	10	1800	130
AM18-x	20	10	3600	100
AM18-x	30	10	2400	100
AM18-x	30	7.5	1800	100
AM15-x	22	7.5	2400	86
AM15-x	15	7.5	3600	86
AM15-x	20	5	1800	86
AM15-x	15	5	2400	86

## Controls & Communication

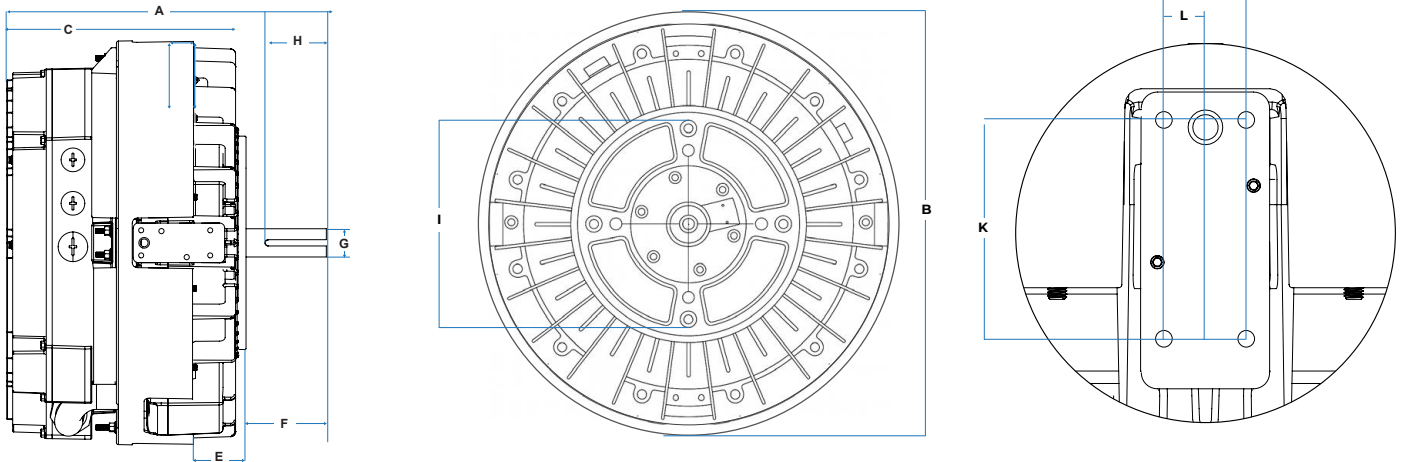
Communication	
	MODBUS RTU for I-con (Desktop or Mobile)
Analog Input	0-10V, 4-20mA
Analog Output	0-10V, 4-20mA
Digital Input	4x
Digital Outputs	2x
Relay	Analog Input
Aux Power	250mA, 24VDC

## Ambient Conditions

Ambient Temp (Operation)	-13F to 104F (-25C to 40C) 2% Power Derate per 1C up to 50C
Ambient Temp (Storage)	-40F to 185F (-40 to 85C)
Altitude	0 to 3300 ft. (0-1000M) 9% Power Derate per 1000 M up to 4000 M
Humidity (Operation & Storage)	95% RH, No Condensation
Contamination (Operation & Storage)	No conductive dust

## Certifications

UL 1004-7 UL 1004-1 UL 61800-5-1 CSA 22.2 N077 IEEE 519



Frame Size	A	B	C	E	F	G	H	I	K	L	M
AM20-X	326.5	537.3	237.3	34.5	82.7	28.6	60.0	184.1	69.9	12.7	25.4
AM18-X	322.0	472.0	233.1	29.4	82.1	28.6	60.0	184.1	69.9	12.7	25.4
AM15-X	324.4	417.3	234.1	36.2	82.3	28.6	60.0	184.1	69.9	12.7	25.4

All measurements in mm

## Mounting & dimensions

There are four mounting pad locations.	Each pad is spaced 90° apart, containing 4 mounting holes and one lifting eye hole.	The DE face of the mounting block has threaded holes for four bolts (1/2"-13).	All bolt holes should be used for secure mounting of the motor to equipment
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## Catalog Number Decoder

**AM20-0590-1225-ABAH-AA60** Example

Family	Frame	HP	Rated Speed	Product Code
<b>AM</b>	<b>20</b>	<b>0590</b>	<b>1225</b>	<b>ABAH - AA60</b>
			1 2 3 4	5 6 7 8

Family	Name
AM	Aircore MC

Frame	Motor Diameter
13	Refer to Dimensions
15	Refer to Dimensions
18	Refer to Dimensions
20	Refer to Dimensions

HP	Motor Power
XXXX	(Example) XX.XX
1000	(Example) 10HP
0590	(Example) 5.90HP

List is not exhaustive

Rated Speed	RPM
1225	(Example) 1225 RPM

List is not exhaustive

## Product Code

Postion 1	Voltage
A	460V* 3-phase

\*Check the Motor Selection Tool (MST) for compatible models.

## Product Code

Postion 2	Communication
A	MODBUS RTU/Analog
B (Optional)	BACnet MS/TP/Analog

Postion 3	VFD
A	All Features
B	Reserved

Position 4	Bearings
H	Hybrid Ceramic 6206

Position 5	Shaft
A	L 3.3", D 1.13"
B (Optional)	L 4.0", D 1.13"

Postion 6	Reserved
A	Default

Position 7	Ingress Protection
6	IP65

Position 8	Miscellaneous
3	EP-L, HRG, Delta

Generate a tailored datasheet using our Motor Selection Tool. [mst.goinfinitum.com](https://mst.goinfinitum.com)