



Infinitum Aircore EC
Gen2/3, Gen4 Parameters
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Register Number	Parameter	Description	Options	Type	Read/Write	Units	Default Value	Gen2	Gen4	Notes
Section 10: Motor										
1001	Run/Stop Command	Operation command to motor	0 = Stop 1 = Start	Bit Field 1	Read/ Write	None	None	x	x	
1002	Direction Command	Direction command only when motor stopped. Shaft rotation direction viewed from drive end of shaft	0 = CCW 1 = CW	Bit Field 1	Read/ Write	None	0=CCW	x	x	
1003	Speed Command	Speed command to motor in rpm. Values cannot exceed those in Register # 1101 through 1102	Integer between Speed User Minimum and Speed User Maximum	Unsigned ODP	Read/ Write	RPM	100	x	x	
Section 11: Operating Limits										
1101	Speed User Minimum	Configurable speed must be greater than Register # 1114	Integer between Model Type Speed Absolute Minimum and Model Type Speed Absolute Maximum	Unsigned ODP	Read/ Write	RPM	100	x	x	
1102	Speed User Maximum	Configurable speed must be less than Register # 1115	Integer between Model Type Speed Absolute Minimum	Unsigned ODP	Read/ Write	RPM	Motor Rated Speed	x	x	

			and Model Type Speed Absolute Maximum							
1105	Acceleration Ramp Duration	Duration of ramp time acceleration in seconds. Must be less than Register # 1112	Number between 10 & 90	Unsigned ODP	Read/Write	Seconds	30	x	x	
1106	Deceleration Ramp Duration	Duration of ramp time deceleration in seconds. Must be less than Register # 1113	Number between 10 & 90	Unsigned ODP	Read/Write	Seconds	30	x	x	
1107	Skip Speed 1	Avoids operating at specified rpm. Bypassed by range defined in Register # 1110	None	Unsigned ODP	Read/Write	RPM	0 = disabled	x	x	
1108	Skip Speed 2	Avoids operating at specified rpm. Bypassed by range defined in Register # 1110	None	Unsigned ODP	Read/Write	RPM	0 = disabled	x	x	
1109	Skip Speed 3	Avoids operating at specified rpm. Bypassed by range defined in Register # 1110	None	Unsigned ODP	Read/Write	RPM	0 = disabled	x	x	
1110	Skip Speed Bandwidth	Specifies bandwidth for speed ranges to be avoided in	0 = 30 RPM, 1 = 60 RPM	Unsigned ODP	Read/Write	RPM	0 = 30 RPM	x	x	

		Register #s 1108 through 1110	2 = 90 RPM							
1111	Direction Allowed	Fixes rotation of motor to specified direction or enables directional control.	0 = Allow CCW/CW 1 = Fixed CCW 2 = Fixed CW	Enumerated	Read/Write	None	0 = Allow CCW/CW	x	x	
1112	Maximum Accel Allowed	Manufacturers maximum acceleration rate allowed in rpm. Configured at factory	None	Unsigned 0DP	Read	RPM/Sec	None	x	x	
1113	Maximum Deceleration Allowed	Manufacturers maximum deceleration rate allowed in rpm. Configured at factory	None	Unsigned 0DP	Read	RPM/Sec	None	x	x	
1114	Motor Type Speed Minimum	Motor Type minimum speed for the motor configured at the factory.	None	Unsigned 0DP	Read	RPM/Sec	100	x	x	
1115	Motor Type Speed Maximum	Motor Type maximum speed for the motor configured at the factory.	None	Unsigned 0DP	Read	RPM/Sec	Motor Dependent	x	x	
Section 12: Operation Type										
1201	Control Mode	Select source for control signals: Register #s 1202 through 1205 must be	0 = I/O Terminals (Analog & Digital) 1 = Modbus Interface	Enumerated	Read/Write	None	1 = Modbus Interface	x	x	

		selected for I/O terminals use Register #s 1202 through 1205 must be overridden to allow Modbus use	(TCP or RTU) 2 = GUI override				(either TCP or RTU)			
1202	Speed Input Source	Selects speed input source input commands. Digital input selection allows desired constant speed settings in Register #s 2201 through 2204	0 = Modbus 1 = Analog 2 = DI1 & DI2 3 = DI2 & DI3 4 = DI3 & DI4	Enumerated	Read/ Write	None	0 = Modbus	x	x	
1203	Start/Stop Input Source	Selects source for Start and Stop Commands. Digital input selection used in Register # 1202 allows Modbus use.	0 = Modbus 1 = DI1 2 = DI2 3 = DI3 4 = DI4	Enumerated	Read/ Write	None	0 = Modbus	x	x	
1204	Direction Input Source	Selects source for direction commands. Digital input selection in Register #s 1202 and 1203 allows Modbus use.	0 = Modbus 1 = DI1 2 = DI2 3 = DI3 4 = DI4	Enumerated	Read/ Write	None	0 = Modbus	x	x	
1205	Clear Fault Input Source	Selects source for fault reset commands. Digital input selection in Register #s 1202 through 1204 allows Modbus use.	0 = Modbus 1 = DI1 2 = DI2 3 = DI3 4 = DI4	Enumerated	Read/ Write	None	0 = Modbus	x	x	

1209	Estop Source	Selects the source for Estop command. If digital input is selected that is already used by 1202-1204, Modbus will be used.	0 = Modbus 1 = DI1 2 = DI2 3 = DI3 4 = DI4	Enumerated	Read/ Write	None	0 = Modbus	x	x	
Section 13: Fault Reset										
1301	Number of Attempts	Defines number of automatic fault reset attempts. Not all faults can be reset automatically If drive exceeds set number it must be reset from source selected in Register # 1205	0 = Stop on fault 1 through 10 = number of restart attempts per fault 99 = Keep trying to restart	Unsigned 0DP	Read/ Write	None	3 = 3 attempts	x	x	
1302	Reset Delay	Defines time between successive automatic reset attempts	0.0 = Immediately reset decimal between 0.0-120.0 = Time in seconds, 0.5 second increments	Unsigned 1DP	Read/ Write	Seconds	10 = 5 seconds	x	x	

Section 20: Terminal Settings (AI)										
2001	AI1 Function	Select function for Analog Input AI1.	0 = Speed control	Enumerated	Read/ Write	None	0 =Speed Control	x	x	
2002	AI1 Minimum Setting	Defines minimum percent value corresponding to minimum mA(V) signal for analog input AI1: 0 = 0 to 100% (0 to 20 mA) 20 = 20 to 100% (4 to 20 mA)	Enter number between 0 & 100 Must be less than Register # 2003	Unsigned 1DP	Read/ Write	%	speed user minimum (100 rpm) / speed user minimum(Motor Rated Speed) * 100 %	x	x	
2003	AI1 Maximum Setting	Defines minimum percent value corresponding to maximum mA(V) signal for analog input AI1: 80 = 0 to 80% (0 to 16 mA) 100 = 0 to 100% (0 to 20 mA)	Enter number between 0 & 100 Must be greater than Register # 2002	Unsigned 1DP	Read/ Write	%	100 = 100%	x	x	
2006	AI1 Type Selection	Selects input type for AI1	0 = Voltage 1= Current	Enumerated	Read/ Write	None	0 = Voltage	x	x	

Section 21: Terminal Settings (Digital In)										
2101	DI1 Function	Indicates behavior assigned to DI1 respective to input parameters for Register #s 1202 through 1205.	0 = None 1 = Run 2 = Direction 3 = Clear Fault 4 = Constant Speed	Enumerated	Read	None	None	x	x	
2102	DI2 Function	Indicates behavior assigned to DI1 respective to input parameters for Register #s 1202 through 1205.	0 = None 1 = Run 2 = Direction 3 = Clear Fault 4 = Constant Speed	Enumerated	Read	None	None	x	x	
2103	DI3 Function	Indicates behavior assigned to DI1 respective to input parameters for Register #s 1202 through 1205.	0 = None 1 = Run 2 = Direction 3 = Clear Fault 4 = Constant Speed	Enumerated	Read	None	None	x	x	
2104	DI4 Function	Indicates behavior assigned to DI1 respective to input parameters for Register #s 1202 through 1205.	0 = None 1 = Run 2 = Direction 3 = Clear Fault 4 = Constant Speed	Enumerated	Read	None	None	x	x	

Section 22: Terminal Settings (Constant Speed)										
2201	Constant Speed 1	Speed motor operates when corresponding combination of digital inputs are activated. Speed must within parameters for Register #s 1101 through 1102	Number between Speed User Minimum and Speed User Maximum	Unsigned 0DP	Read/Write	RPM	100	x	x	
2202	Constant Speed 2	Speed motor operates when corresponding combination of digital inputs are activated. Speed must within parameters for Register #s 1101 through 1102	Number between Speed User Minimum and Speed User Maximum	Unsigned 0DP	Read/Write	RPM	100	x	x	
2203	Constant Speed 3	Speed motor operates when corresponding combination of digital inputs are activated. Speed must within parameters for Register #s 1101 through 1102	Number between Speed User Minimum and Speed User Maximum	Unsigned 0DP	Read/Write	RPM	100	x	x	
2204	Constant Speed 4	Speed motor operates when corresponding	Number between Speed User Minimum	Unsigned 0DP	Read/Write	RPM	100	x	x	

		combination of digital inputs are activated. Speed must within parameters for Register #s 1101 through 1102	and Speed User Maximum							
Section 23: Terminal Settings (Analog Out)										
2301	AO1 Function	Connects motor signal to analog output AO1	0 = Speed 1 = Torque 2 = Power 3 = Current 4 = 10 V (for potentiometer)	Enumerated	Read/ Write	None	0 = Speed	x	x	Only uses Speed and 10V
2305	AO1 Type	Selects output signal type	0 = Voltage 1 = Current	Bit Field 1	None	None	0 = Voltage	x	x	
Section 24: Terminal Settings (Digital Out)										
2401	DO1 Function	Selects motor status indicated by corresponding output	0 = None 1 = Active 2 = Fault 3 = At Range	Enumerated	Read/ Write	None	1 = Active	x	x	
2402	DO2 Function	Selects motor status indicated by corresponding output	0 = None 1 = Active 2 = Fault 3 = At Range	Enumerated	Read/ Write	None	2 = Fault	x	x	

Section 30: Monitor (Electrical)										
3001	DC Bus Voltage	Indication of DC Bus Voltage (V)	None	Signed 1DP	Read	Volts (V)	None	x		Removed for Gen4
3004	Average RMS Current	Indication of Average RMS motor phase current (A)	None	Signed 2DP	Read	Amps (A)	None	x		Removed for Gen4
Section 31: Monitor (Environmental)										
3101	Stator RTD	Displays temperature value from associated sensor. Defined in Register # 3151	None	Signed 0DP	Read	°C	None	x		Gen2 uses stator RTD
3102	Stator Average	Displays temperature value from associated sensor. Defined in Register # 3152	None	Signed 0DP	Read	°C	None		x	Gen4 uses average of two thermistors
3103	T3 Heatsink	Displays temperature value from associated sensor. Defined in Register # 3153	None	Signed 0DP	Read	°C	None		x	
3104	T2 Stator NTC1	Displays temperature value from associated sensor. Defined in Register # 3154	None	Signed 0DP	Read	°C	None		x	
3105	Inv board temp	Displays temperature value from associated	None	Signed 0DP	Read	°C	None	x	x	

		sensor. Defined in Register # 3155								
3106	T3 Heatsink	Displays temperature value from associated sensor. Defined in Register # 3156	None	Signed ODP	Read	°C	None	x		
3107	T4 Stator NTC2	Displays temperature value from associated sensor. Defined in Register # 3157	None	Signed ODP	Read	°C	None		x	
3114	T14 CIM Board Temp	Displays temperature value from associated sensor. Defined in Register # 3164	None	Signed ODP	Read	°C	None	x	x	
3151	Temp Label 1	Factory set label value measured in Register # 3101	None	Enumerated	Read	None	Stator Calc Temp	x		Gen2 uses stator RTD temp sensor
3152	Temp Label 2	Factory set label value measured in Register # 3102	None	Enumerated	Read	None	Stator Calc Temp		x	Average of two thermistors
3153	Temp Label 3	Factory set label value measured in Register # 3103	None	Enumerated	Read	None	Heat Sink Temp		x	Gen4 only
3154	Temp Label 4	Factory set label value measured in Register # 3104	None	Enumerated	Read	None	Stator Thermistor 1 Temp		x	Gen4 only
3155	Temp Label 5	Factory set label value measured in Register # 3105	None	Enumerated	Read	None	Inverter Board Temp	x		

3156	Temp Label 6	Factory set label value measured in Register # 3106	None	Enumerated	Read	None		x		Gen2 only
3157	Temp Label 7	Factory set label value measured in Register # 3107	None	Enumerated	Read	None	Stator Thermistor 2 Temp		x	Gen4 only
3164	Temp Label 14	Factory set label value measured in Register # 3114	None	Enumerated	Read	None	CIM Board Temp	x	x	
Section 32: Monitor (Performance)										
3201	Output Torque	Indication of output torque calculated by drive	None	Signed 3DP	Read	Nm	None	x		Removed for Gen4
3202	Output Power	Indication of output power calculated by drive	None	Unassigned 0DP	Read	Watts (W)	None	x		Removed in Gen4
Section 33: Monitor (Operating)										
3301	Run/Stop Actual	Displays motor Run/Stop status	None	Bit Field 1	Read	CW or CCW	None	x	x	
3302	Direction Actual	Displays direction of motor rotation	None	Bit Field 1	Read	None	None	x	x	
3303	Speed Actual	Displays measured speed of motor	None	Signed 0DP	Read	RPM	None	x	x	

Section 35: Monitor (Analog In)										
3501	AIN1 Value	Displays input signal to AI1	None	Unsigned 1DP	Read	%	None	x	x	
Section 36: Monitor (Analog Out)										
3601	AOUT1 Value	Displays signal out to AO1	None	Unsigned 1DP	Read	%	None	x	x	
Section 37: Monitor (DI)										
3701	DIN1 Value	Displays status of DI1	None	Bit Field 1	Read	None	None	x	x	
3702	DIN2 Value	Displays status of DI2	None	Bit Field 1	Read	None	None	x	x	
3703	DIN3 Value	Displays status of DI3	None	Bit Field 1	Read	None	None	x	x	
3704	DIN4 Value	Displays status of DI4	None	Bit Field 1	Read	None	None	x	x	
Section 38: Monitor (Digital Out)										
3801	DOUT1 Value	Displays status of DO1	None	Bit Field 1	Read	None	None	x	x	
3802	DOUT2 Value	Displays status of DO2	None	Bit Field 1	Read	None	None	x	x	

Section 40: Faults										
4001	Active Faults	Monitors for active Faults	None	Bit Field 1	Read	None	None	x	x	
4003	Clear Faults	Write "1" to this register to clear Faults	None	Unsigned 0DP	Write	None	None	x	x	
4011	Fault Word	Displays encoded Fault word	None	Bit Fault 0 FAULT_HW 1 FAULT_Overcurrent 2 FAULT_Overvoltage 3 FAULT_Undervoltage 4 FAULT_Overtemp 5 FAULT_GateDriver 6 FAULT_GateDriverU V 7 Reserved 8 FAULT_UARTComm Error 9 Reserved 10 Reserved 11 FAULT_MotorParam eters 12 FAULT_Motor_Disabl e	Read	None	None	x	x	

				13 Fault_Inverter_Flash 14 Fault_Inverter_Error 15 Fault_CIM						
4012	Gate Drive Fault	Fault Word – Gate Drive	None	Bit Gate Fault 0 GATE_DRV_FLT 1 GATE_DRV_FLT_Un defined 2 GATE_DRV_FLT_Un defined 3 GATE_DRV_FLT_UV LO	Read	None	None	x	x	
4013	Over Temp Fault	Fault Word- Over Temp	None	bit OverTemp Src 0 OVRTMP_Therm1 (1) 1 OVRTMP_Therm2 (2) 2 OVRTMP_Therm3 (4) 3 OVRTMP_Therm4 (8) 3 OVRTMP_StatorRTD (64) 4 Reserved (128) 5 OVRTMP_Board (256)	Read	None	None	x	x	

4014	CIM Fault Status	Fault Word – Comm/IO	None	bit CIM Fault 0 CIM_FAULT_INVCO MM 1 CIM_FAULT_DIN 2 CIM_FAULT_AIN 3 CIM_FAULT_USER2 4V 4 CIM_FAULT_INVSET T	Read	None	None	x	x	
Section 70: Device Information										
7002	Motor Max Current	Displays maximum motor current	None	Unsigned 2DP	Read	Amps (A)	None	x	x	
7003	Motor Voltage	Displays nominal VAC for motor	None	Unsigned 0DP	Read	Volts (V)	None	x	x	
7004	Motor Serial No (Word 1)	Displays Word 1 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7005	Motor Serial No (Word 2)	Displays Word 2 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7006	Motor Serial No (Word 3)	Displays Word 3 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7007	Motor Serial No (Word 4)	Displays Word 4 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7008	Motor Serial No (Word 5)	Displays Word 5 of motor serial number	None	Unsigned 0DP	Read	None	None		x	

7009	Motor Serial No (Word 6)	Displays Word 6 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7010	Motor Serial No (Word 7)	Displays Word 7 of motor serial number	None	Unsigned 0DP	Read	None	None		x	
7011	Old SN1	Displays Word 1 of motor serial number	None	Unsigned 0DP	Read	None	None	x		
7012	Old SN2	Displays Word 2 of motor serial number	None	Unsigned 0DP	Read	None	None	x		
7013	Old SN3	Displays Word 3 of motor serial number	None	Unsigned 0DP	Read	None	None	x		
7014	Old SN4	Displays Word 4 of motor serial number	None	Unsigned 0DP	Read	None	None	x		
7021	Motor Model	Displays Motor Model number	None	Unsigned 0DP	Read	None	None	x	x	
7031	Inverter Firmware Major	Displays Inverter Firmware Major Version	None	Unsigned 0DP	Read	None	None	x	x	
7032	Inverter Firmware Minor	Displays Inverter Firmware Minor Version	None	Unsigned 0DP	Read	None	None	x	x	
7033	CIM Firmware Major	Displays CIM Major Version	None	Unsigned 0DP	Read	None	None	x	x	
7034	CIM Firmware Minor	Displays CIM Minor Version	None	Unsigned 0DP	Read	None	None	x	x	
7035	Motor Type	Displays Motor Type	None	Unsigned 0DP	Read	None	None	x	x	
7036	Hardware ID	Displays HW ID	None	Unsigned 0DP	Read	None	None	x	x	

7039	Hardware ID INV	Displays Inv ID	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
7040	Hardware ID VFD	Displays VFD ID	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
7041	Hardware ID CIM	Displays CIM	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
7042	Horsepower	Displays Horsepower	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
7043	Frame Size	Displays Fame Size	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
7044	Stator Type	Stator Type	None	Unsigned 0DP	Read	None	None		x	Added for Gen4
Section 71: Device Information (Lifetime)										
7101	Drive Runtime	Displays Drive Runtime hours	0 = Reset	Unsigned 0DP	Read/Write	Hour (hr)	None	x	x	
7102	Motor Runtime	Displays Motor Runtime hours	0 = Reset	Unsigned 0DP	Read/Write	Hour (hr)	None	x	x	
7103	Motor MWh	Displays power consumed by motor (MWh)	0 = Reset	Unsigned 1DP	Read/Write	Mega Watt Hour (MWh)	None	x		Removed for Gen4

Section 86: MAC Address Words										
8601	RTU Slave Address	Modbus RTU slave address	1-247	Unsigned ODP	Read/Write	None	247	x	x	
8602	RTU Baud Rate	Modbus RTU baud rate	0 = 1200 bps 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 57600 bps 7 = 76800 bps 8 = 115200 bps	Enumerated	Read/Write	None	4 = 19200 bps	x	x	
8603	RTU Parity	Modbus RTU parity	0 = No Parity 1 = Even Parity 2 = Odd Parity	Enumerated	Read/Write	None	1 = Even Parity	x	x	
8604	MAC Address (Word 1)	MAC Address bytes 1 & 2	None	Unsigned ODP	Read	None	None	x	x	
8605	MAC Address (Word 2)	MAC Address bytes 3 & 4	None	Unsigned ODP	Read	None	None	x	x	
8606	MAC Address (Word 3)	MAC Address bytes 5 & 6	None	Unsigned ODP	Read	None	None	x	x	
8607	IoT Update Rate	IoT Update Frequency in seconds (default is 60)	0-65535 = 0-65535 seconds	Unsigned ODP	Read/Write	Seconds	900 = 900 Seconds	x	x	

8611	Modbus Monitor Enable	Enable for Modbus Monitor failover feature	0 = Disable 1 = Enable	Bit Field 1	Read/	None	0 = Disable	x	x	
8612	Modbus Monitor Timeout	Time in seconds to detect Modbus communications fault	0-65535 = 0-65535 seconds	Unsigned ODP	Write	Seconds	30 = 30 Seconds	x	x	
8613	Modbus Monitor Resume	If set, resume previous speed when communications resumes	0 = Disable 1 = Enable	Bit Field 1	Read/	None	0 = Disable	x	x	
8614	Modbus Monitor Stop	Stop motor in event of loss of communications	0 = Fail Over Speed 1 = Stop Motor	Bit Field 1	Write	None	0 = Fail Over Speed	x	x	
8615	Modbus Monitor Speed	Interim motor speed during loss of communications	Integer between Speed User Minimum and Speed User Maximum	Unsigned ODP	Read/	RPM	100 RPM	x	x	
Section 87: System Controls										
8701	Parameter Save	Saves valid parameter values to permanent memory	None	Bit Field 1	Read/ Write	None	None	x	x	

Section 88: Parameter Table “Type” Specifications

Type	Description	Words	Minimum Value	Maximum Value
Signed 0DP	Signed 16-bit number with no characters past decimal point	1	-32768	32767
Signed 1DP	Signed 16-bit number with one character past decimal point	1	-3276.8	3276.7
Signed 2DP	Signed 16-bit number with two characters past decimal point	1	-327.68	327.67
Signed 3DP	Signed 16-bit number with three characters past decimal point	1	-32.768	32.768
Unsigned 0DP	Unsigned 16-bit number with no characters past decimal point	1	0	65536
Unsigned 1DP	Unsigned 16-bit number with one character past decimal point	1	0.0	6553.6
Unsigned 2DP	Unsigned 16-bit number with two characters past decimal point	1	0.00	655.36
Enumerated	An unsigned number defined by an enumerated list. The list is defined in a corresponding table	1	0	65536