Infinitum

Infinitum Aircore EC Parameters

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Register Number	Parameter	Description	Options	Type	Read/ Write	Units	Default Value
Section 10: Motor							
1001	Run/Stop Command	Operation command to motor	0 = Stop 1 = Start	Bit Field 1	Read/ Write	None	None
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
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 0DP	Read/ Write	RPM	100
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 0DP	Read/ Write	RPM	100
1102	Speed User Maximum	Configurable speed must be less than Register # 1115	Integer between Model	Unsigned 0DP	Read/	RPM	Motor Rated Speed

			Type Speed Absolute Minimum and Model Type Speed Absolute Maximum		Write		
1105	Acceleration Ramp Duration	Duration of ramp time acceleration in seconds. Must be less than Register # 1112	Number between 0 & 90	Unsigned 0DP	Read/ Write	Seconds	45
1106	Deceleration Ramp Duration	Duration of ramp time deceleration in seconds. Must be less than Register # 1113	Number between 0 & 90	Unsigned 0DP	Read/ Write	Seconds	45
1107	Skip Speed 1	Avoids operating at specified rpm. Bypassed by ranged defined in Register # 1110	None	Unsigned 0DP	Read/ Write	RPM	0 = disabled
1108	Skip Speed 2	Avoids operating at specified rpm. Bypassed by ranged defined in Register # 1110	None	Unsigned 0DP	Read/ Write	RPM	0 = disabled
1109	Skip Speed 3	Avoids operating at specified rpm. Bypassed by ranged defined in Register # 1110	None	Unsigned 0DP	Read/ Write	RPM	0 = disabled
1110	Skip Speed Bandwidth	Specifies bandwidth for speed ranges to be avoided in Register #s 1108 through 1110	0 = 30 RPM, 1 = 60 RPM 2 = 90 RPM	Unsigned 0DP	Read/ Write	RPM	0 = 30 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

1112	Maximum Accel Allowed	Manufacturers maximum acceleration rate allowed in rpm. Configured at factory	None	Unsigned 0DP	Read	RPM/Sec	None
1113	Maximum Deceleration Allowed	Manufacturers maximum deceleration rate allowed in rpm. Configured at factory	None	Unsigned 0DP	Read	RPM/Sec	None
1114	Motor Type Speed Minimum	Motor Type minimum speed for the motor configured at the factory.	None	Unsigned 0DP	Read	RPM/Sec	100
1115	Motor Type Speed Maximum	Motor Type maximum speed for the motor configured at the factory.	None	Unsigned 0DP	Read	RPM/Sec	Motor Dependent
Section 12: Operation Type							
1201	Control Mode	Select source for control signals: Register #s 1202 through 1205 must be selected for I/O terminals use Register #s 1202 through 1205 must be overridden to allow Modbus use	0 = I/O Terminals (Analog & Digital) 1 = Modbus Interface (TCP or RTU) 2 = GUI override	Enumerated	Read/ Write	None	1 = Modbus Interface (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

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
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
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
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
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	Unsigned 0DP	Read/ Write	None	3 = 3 attempts

			99 = Keep trying to restart				
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
Section 20: Terminal Settings (AI)							
2001	AI1 Function	Select function for Analog Input AI1.	0 = Speed control	Enumerated	Read/ Write	None	0 =Speed Control
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 %
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%
2006	AI1 Type Selection	Selects input type for AI1	0 = Voltage 1= Current	Enumerated	Read/ Write	None	0 = Voltage

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
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
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
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
Section 22: Terminal Settings (Constant Speed)							
2201	Constant Speed 1	Speed motor operates when corresponding combination of	Number between Speed	Unsigned 0DP	Read/	RPM	100

		digital inputs are activated. Speed must within parameters for Register #s 1101 through 1102	User Minimum and Speed User Maximum		Write		
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
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
2204	Constant Speed 4	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
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

2305	AO1 Type	Selects output signal type	0 = Voltage 1= Current	Bit Field 1	None	None	0 = Voltage
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 4 = Warning	Enumerated	Read/ Write	None	1 = Active
2402	DO2 Function	Selects motor status indicated by corresponding output	0 = None 1 = Active 2 = Fault 3 = At Range 4 = Warning	Enumerated	Read/ Write	None	2 = Fault
Section 30: Monitor (Electrical)							
3001	DC Bus Voltage	Indication of DC Bus Voltage (V)	None	Signed 1DP	Read	Volts (V)	None
3004	Average RMS Current	Indication of Average RMS motor phase current (A)	None	Signed 2DP	Read	Amps (A)	None
Section 31: Monitor (Environmental)							
3101	Temp # 1	Displays temperature value from associated sensor. Defined in Register # 3151	None	Signed 0DP	Read	°C	None

3105	Temp #5	Displays temperature value from associated sensor. Defined in Register # 3155	None	Signed 0DP	Read	°C	None
3106	Temp #6	Displays temperature value from associated sensor. Defined in Register # 3156	None	Signed 0DP	Read	°C	None
3114	Temp #14	Displays temperature value from associated sensor. Defined in Register # 3164	None	Signed 0DP	Read	°C	None
3151	Temp Label 1	Factory set label value measured in Register # 3101	None	Enumerated	Read	None	Stator Temp (RTD)
3155	Temp Label 5	Factory set label value measured in Register # 3105	None	Enumerated	Read	None	Inverter Board Temp
3156	Temp Label 6	Factory set label value measured in Register # 3106	None	Enumerated	Read	None	Heat Sink Temp
3164	Temp Label 14	Factory set label value measured in Register # 3114	None	Enumerated	Read	None	CIM Board Temp
Section 32: Monitor (Performance)							
3201	Output Torque	Indication of output torque calculated by drive	None	Signed 3DP	Read	Nm	None
3202	Output Power	Indication of output power calculated by drive	None	Unassigned 0DP	Read	Watts (W)	None

Section 33: Monitor (Operating)							
3301	Run/Stop Actual	Displays motor Run/Stop status	None	Bit Field 1	Read	CW or CCW	None
3302	Direction Actual	Displays direction of motor rotation	None	Bit Field 1	Read	None	None
3303	Speed Actual	Displays measured speed of motor	None	Signed 0DP	Read	RPM	None
Section 35: Monitor (Analog In)							
3501	AI1 Value	Displays input signal to AI1	None	Unsigned 1DP	Read	%	None
Section 36: Monitor (Analog Out)							
3601	AO1 Value	Displays signal out to AO1	None	Unsigned 1DP	Read	%	None
Section 37: Monitor (DI)							
3701	DI1 Value	Displays status of DI1	None	Bit Field 1	Read	None	None
3702	DI2 Value	Displays status of DI2	None	Bit Field 1	Read	None	None
3703	DI3 Value	Displays status of DI3	None	Bit Field 1	Read	None	None
3704	DI4 Value	Displays status of DI4	None	Bit Field 1	Read	None	None
Section 38: Monitor (Digital Out)							
3801	DO1 Value	Displays status of DO1	None	Bit Field 1	Read	None	None

3802	DO2 Value	Displays status of DO2	None	Bit Field 1	Read	None	None
Section 40: Fault/Warnings							
4001	Active Faults	Monitors for active Faults	None	Bit Field 1	Read	None	None
4003	Clear Faults	Write "1" to this register to clear Faults	None	Unsigned 0DP	Write	None	None
4011	Fault Word	Displays encoded Fault word	None	Bit Fault 0 FAULT_HWOvercurrent 1 FAULT_SWOvercurrent 2 FAULT_Overvoltage 3 FAULT_Undervoltage 4 FAULT_Overtemp 5 FAULT_GateDriver 6 FAULT_GateDriverUV 7 FAULT_DCBusOC 8 FAULT_UARTCommError 9 FAULT_IphaseImbalance 10 FAULT_VphaseImbalance 11 FAULT_MotorParameters 12 FAULT_EStop 13 Fault_Undefined 14 Fault_Undefined 15 Fault_CIM	Read	None	None
4012	Gate Drive Fault	Fault Word – Gate Drive	None	Bit Gate Fault 0 GATE_DRV_FLT_U 1 GATE_DRV_FLT_V 2 GATE_DRV_FLT_W 3 GATE_DRV_FLT_UVLO	Read	None	None

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_StatorRTD (8) 4 OVRTMP_StatorPhase (16) 5 OVRTMP_Board	Read	None	None
4014	Comm IO Fault	Fault Word – Comm/IO	None	bit CIM Fault 0 CIM_FAULT_INVCOMM 1 CIM_FAULT_DIN 2 CIM_FAULT_AIN 3 CIM_FAULT_USER24V 4 CIM_FAULT_INVSETT	Read	None	None
Section 70: Device Information							
7002	Motor Max Current	Displays maximum motor current	None	Unsigned 2DP	Read	Amps (A)	None
7003	Motor Voltage	Displays nominal VAC for motor	None	Unsigned 0DP	Read	Volts (V)	None
7011	Motor Serial No (Word 1)	Displays Word 1 of motor serial number	None	Unsigned 0DP	Read	None	None
7012	Motor Serial No (Word 2)	Displays Word 2 of motor serial number	None	Unsigned 0DP	Read	None	None
7013	Motor Serial No (Word 3)	Displays Word 3 of motor serial number	None	Unsigned 0DP	Read	None	None
7014	Motor Serial No (Word 4)	Displays Word 4 of motor serial number	None	Unsigned 0DP	Read	None	None

7021	Motor Model	Displays Motor Model number	None	Unsigned 0DP	Read	None	None
7031	Inverter Firmware Major	Displays Inverter Firmware Major Version	None	Unsigned 0DP	Read	None	None
7032	Inverter Firmware Minor	Displays Inverter Firmware Minor Version	None	Unsigned 0DP	Read	None	None
7033	CIM Firmware Major	Displays CIM Major Version	None	Unsigned 0DP	Read	None	None
7034	CIM Firmware Minor	Displays CIM Minor Version	None	Unsigned 0DP	Read	None	None
Section 71: Device Information (Lifetime)							
7101	Drive Runtime	Displays Drive Runtime hours	0 = Reset	Unsigned 0DP	Read/ Write	Hour (hr)	None
7102	Motor Runtime	Displays Motor Runtime hours	0 = Reset	Unsigned 0DP	Read/ Write	Hour (hr)	None
7103	Motor MWh	Displays power consumed by motor (MWh)	0 = Reset	Unsigned 1DP	Read/ Write	Mega Watt Hour (MWh)	None
Section 86: MAC Address Words							
8601	RTU Slave Address	Modbus RTU slave address	1-247	Unsigned 0DP	Read/ Write	None	247
8602	RTU Baud Rate	Modbus RTU baud rate	0 = 1200 bps 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps	Enumerated	Read/ Write	None	4 = 19200 bps

			5 = 38400 bps 6 = 57600 bps 7 = 76800 bps 8 = 115200 bps				
8603	RTU Parity	Modbus RTU parity	0 = No Parity 1 = Even Parity 2 = Odd Parity	Enumerated	Read/ Write	None	1 = Even Parity
8604	MAC Address (Word 1)	MAC Address bytes 1 & 2	None	Unsigned 0DP	Read	None	None
8605	MAC Address (Word 2)	MAC Address bytes 3 & 4	None	Unsigned 0DP	Read	None	None
8606	MAC Address (Word 3)	MAC Address bytes 5 & 6	None	Unsigned 0DP	Read	None	None
8607	IoT Update Rate	IoT Update Frequency in seconds (default is 60)	0-65535 = 0-65535 seconds	Unsigned 0DP	Read/ Write	Seconds	900 = 900 Seconds
8611	Modbus Monitor Enable	Enable for Modbus Monitor failover feature	0 = Disable 1 = Enable	Bit Field 1	Read/	None	0 = Disable
8612	Modbus Monitor Timeout	Time in seconds to detect Modbus communications fault	0-65535 = 0-65535 seconds	Unsigned 0DP	Write	Seconds	30 = 30 Seconds
8613	Modbus Monitor Resume	If set, resume previous speed when communications resumes	0 = Disable 1 = Enable	Bit Field 1	Read/	None	0 = Disable
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

8615	Modbus Monitor Speed	Interim motor speed during loss of communications	Integer between Speed User Minimum and Speed User Maximum	Unsigned 0DP	Read/	RPM	100 RPM

Section 87,88: System Controls

8701	Parameter Save	Saves valid parameter values to permanent memory	None	Bit Field 1	Read/ Write	None	None

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