MODBUS Variables Table

Scale X .Y indicates a binary fraction where…
X specifies the number of integer bits
Y specifies the number of fractional bits
value = integer part + (fractional part / 2^Y)

Scale Example

Scale = 11.5 AMPS X = 11, Y = 5
Value = 80
80 decimal = 0x50 = 0000 0000 0101 0000 B
integer part = 0000 0000 010 B = 2 decimal
fractional part = 10000 B = 16
value = 2 + 16/2^5 = 2+16/32 = 2.5 AMPS

Access
RO - READ ONLY (MODBUS INPUT REGISTER)
RW - READ/WRITE (MODBUS HOLDING REGISTER)
RPW - READ/PROTECTED-WRITE (MODBUS HOLDING REGISTER)

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
2	Firmware Version	UINT16	RO	FALSE		0.01 Version					Firmware Version in minor rev units (e.g. 213 >> Version 2.13)
3	(reserved)	UINT16	RO	FALSE							(reserved)
4	Disables	UINT16	RO	FALSE		DISABLING_SOURCES_ENUM					Bitmap of sources keeping drive from becoming enabled
5	Faults	UINT16	RO	FALSE		FAULTS_ENUM					Bitmap of all active faults.
6	Hard Faults	UINT16	RO	FALSE		FAULTS_ENUM					Bitmap of all active faults that are 'hard' faults. The drive will remain disabled while any hard faults are pending.
7	Soft Faults (warnings)	UINT16	RO	FALSE		FAULTS_ENUM					Bitmap of all active faults that are 'soft' faults (warnings).
8	Bus Voltage (Filtered)	UINT32	RO	FALSE	11.21	VOLTS					Filtered bus voltage. The low word may usually be ignored as it contains only insignificant bits used for filtering.
9	Bus Voltage (Filtered) (H)	UINT16	RO	FALSE	11.5	VOLTS					Filtered bus voltage.
10	Board Temperature	UINT32	RO	FALSE	11.21	DEG C					Filtered board temperature. The low word may usually be ignored as it contains only insignificant bits used for filtering.
11	Board Temperature (H)	UINT16	RO	FALSE	11.5	DEG C					Filtered board temperature.
12	Power	UINT32	RO	FALSE	11.21	AMPS^2					Filtered power factor (square of continuous current). The low word may usually be ignored as it contains only insignificant bits used for filtering.
13	Power (H)	UINT16	RO	FALSE	11.5	AMPS^2					Filtered power factor (square of continuous current).
14	Position Tracking Error	INT16	RO	FALSE	1.15		-32768	32767			Position tracking error from sin/cos position feedback sensors. Tracking error is calculated as: 1 - (sin^2 + cos^2)
15	Bus Voltage	UINT16	RO	FALSE	11.5	VOLTS					Instantaneous bus voltage
100	Active Input Functions	UINT32	RO	FALSE		INPUT_FUNCTIONS_ENUM					Bitmap of active input functions
102	Active Output Functions	UINT32	RO	FALSE		OUTPUT_FUNCTIONS_ENUM					Bitmap of active output functions
104	Active Inputs	UINT16	RO	FALSE		INPUTS_ENUM					Bitmap of unmasked active inputs (after input polarity interpretation)
105	Active Outputs	UINT16	RO	FALSE		OUTPUTS_ENUM					Bitmap of active outputs (before output polarity interpretation)
106	H/W Inputs	UINT16	RO	FALSE		INPUTS_ENUM					Bitmap of active hardware inputs (before input polarity interpretation)
107	H/W Outputs	UINT16	RO	FALSE		OUTPUTS_ENUM					Bitmap of active hardware outputs (after output polarity interpretation)
200	Analog Input (raw)	UINT16	RO	FALSE	1.15	ADC	0	0x7FFF			Raw analog input from ADC
201	Analog Output (raw)	UINT16	RO	FALSE	1.15	PWM ON-TIME					Analog output DAC PWM on-time
202	Analog Input	INT16	RO	FALSE	1.15	USER CAL					Analog input scaled to user calibration range
203	Analog Input (calibrated)	INT16	RO	FALSE	6.10	VOLTS or mAmps			1.12		Calibrated analog input scaled to volts or milliamps
204	Analog Output	INT32	RO	FALSE	1.31		0	0x7FFFFFFF			DAC output value
206	Analog Position Target	INT32	RO	FALSE	16.16	REVS					Filtered analog target position command
208	Analog Velocity Target	INT16	RO	FALSE	8.8	RPS					Filtered analog target velocity command
209	Analog Current Target	INT16	RO	FALSE	9.7	AMPS					Filtered analog target current command

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
300	Command Mode	UINT16	RO	FALSE		COMMAND_MODE_ENUM					Current command mode of operation
301	I Feedback (abs)	UINT16	RO	FALSE	9.7	AMPS					Absolute value of instantaneous feedback current.
302	I Continuous	UINT32	RO	FALSE	9.23	AMPS					Continuous current. The low word may usually be ignored as it contains only insignificant bits used for filtering.
303	I Continuous (H)	UINT16	RO	FALSE	9.16	AMPS					Continuous current
304	P command	INT32	RO	FALSE	16.16	REVS					Position command
306	P feedback	INT32	RO	FALSE	16.16	REVS					Position feedback
308	P error	INT32	RO	FALSE	16.16	REVS					Position error (P command - P feedback)
310	V command	INT32	RO	FALSE	8.24	RPS					Velocity command
311	V command (H)	INT16	RO	FALSE	8.8	RPS					Velocity command
312	V feedback	INT32	RO	FALSE	8.24	RPS					Velocity feedback
313	V feedback (H)	INT16	RO	FALSE	8.8	RPS					Velocity feedback
314	V error	UINT32	RO	FALSE	8.24	RPS					Velocity error
315	V error (H)	INT16	RO	FALSE	8.8	RPS					Velocity error
316	V display	INT32	RO	FALSE	8.24	RPS					Filtered feedback velocity
317	V display (H)	INT16	RO	FALSE	8.8	RPS					Filtered feedback velocity
318	I display	INT32	RO	FALSE	9.23	AMPS					Filtered feedback current
319	I display (H)	INT16	RO	FALSE	9.7	AMPS					Filtered feedback current
320	Pos Limit Minus	INT32	RO	FALSE	16.16	REVS			1.12		Runtime positive position limit in effect
322	Pos Limit Plus	INT32	RO	FALSE	16.16	REVS			1.12		Runtime negative position limit in effect
400	Scope Flags	UINT16	RO	FALSE		BITMAP					Reserved for data-scope flags
401	Scope Timestamp	UINT16	RO	FALSE		uSec					Scope variable update timestamp
402	Scope Variable Data 1	INT32	RO	FALSE							Data-scope variable data
404	Scope Variable Data 2	INT32	RO	FALSE							Data-scope variable data
406	Scope Variable Data 3	INT32	RO	FALSE							Data-scope variable data
408	Scope Variable Data 4	INT32	RO	FALSE							Data-scope variable data
500	Hall Sine Min	INT16	RO	FALSE	1.15						Linear Hall minimum analog sine input since last reset
501	Hall Sine Max	INT16	RO	FALSE	1.15						Linear Hall maximum analog sine input since last reset
502	Hall Cosine Min	INT16	RO	FALSE	1.15						Linear Hall minimum analog cosine input since last reset
503	Hall Cosine Max	INT16	RO	FALSE	1.15						Linear Hall maximum analog cosine input since last reset
504	Psine In	INT16	RO	FALSE	1.15						Sine position tracking input angle
505	Pcosine In	INT16	RO	FALSE	1.15						Cosine position tracking input angle
506	Psine Out	INT16	RO	FALSE	1.15						Sine position tracking output angle
507	Pcosine Out	INT16	RO	FALSE	1.15						Cosine position tracking output angle
508	Paccel	INT32	RO	FALSE	1.31	REV/PWM_UPDATE^2					Position tracking acceleration
510	Pvelocity	INT32	RO	FALSE	1.31	REV/PWM_UPDATE					Position tracking velocity
512	PrevAngle	UINT32	RO	FALSE	0.32	REV					Position tracking rev angle
514	PeAngle	UINT16	RO	FALSE	0.16	ELEC ANGLE					Position tracking electrical angle
515	Electric Angle	UINT16	RO	FALSE	0.16	ELEC ANGLE					Commutation electrical angle
516	E sine	INT16	RO	FALSE	1.15						Sine electrical angle
517	E cosine	INT16	RO	FALSE	1.15						Cosine electrical angle
518	IR (raw)	INT16	RO	FALSE	1.15	ADC					R phase raw current feedback
519	IS (raw)	INT16	RO	FALSE	1.15	ADC					S phase raw current feedback
520	IT (raw)	INT16	RO	FALSE	1.15	ADC					T phase raw current feedback
521	IR	INT16	RO	FALSE	9.7	AMPS					R phase current feedback or -(S+T) used for commutation
522	IS	INT16	RO	FALSE	9.7	AMPS					S phase current feedback or -(R+T) used for commutation
523	IT	INT16	RO	FALSE	9.7	AMPS					T phase current feedback or -(R+S) used for commutation
524	IR (scaled)	INT16	RO	FALSE	9.7	AMPS					R phase current feedback
525	IS (scaled)	INT16	RO	FALSE	9.7	AMPS					S phase current feedback
526	IT (scaled)	INT16	RO	FALSE	9.7	AMPS					T phase current feedback

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
527	(reserved)	UINT16	RO	FALSE							(reserved)
528	ID command	INT16	RO	FALSE	9.7	AMPS					ID (flux) current vector command
529	IQ command	INT16	RO	FALSE	9.7	AMPS					IQ (torque) current vector command
530	ID feedback	INT16	RO	FALSE	9.7	AMPS					ID (flux) current vector feedback
531	IQ feedback	INT16	RO	FALSE	9.7	AMPS					IQ (torque) current vector feedback
532	ID error	INT16	RO	FALSE	9.7	AMPS					ID current vector error
533	IQ error	INT16	RO	FALSE	9.7	AMPS					IQ current vector error
534	ID rotating	INT16	RO	FALSE	9.7	AMPS					ID current vector command in rotating reference frame
535	IQ rotating	INT16	RO	FALSE	9.7	AMPS					IQ current vector command in rotating reference frame
536	ID voltage	INT16	RO	FALSE	11.5	VOLTS					ID vector voltage command
537	IQ voltage	INT16	RO	FALSE	11.5	VOLTS					IQ vector voltage command
538	ID rotating voltage	INT16	RO	FALSE	11.5	VOLTS					ID vector voltage command in rotating reference frame
539	IQ rotating voltage	INT16	RO	FALSE	11.5	VOLTS					IQ vector voltage command in rotating reference frame
540	R voltage	INT16	RO	FALSE	11.5	VOLTS					R 3-phase balanced voltage command
541	S voltage	INT16	RO	FALSE	11.5	VOLTS					S 3-phase balanced voltage command
542	T voltage	INT16	RO	FALSE	11.5	VOLTS					T 3-phase balanced voltage command
543	Harmonic voltage	INT16	RO	FALSE	11.5	VOLTS					3rd Harmonic voltage component
544	R PWM	UINT16	RO	FALSE	11.5	VOLTS					R phase PWM voltage (inludes 3rd harmonic)
545	S PWM	UINT16	RO	FALSE	11.5	VOLTS					S phase PWM voltage (inludes 3rd harmonic)
546	T PWM	UINT16	RO	FALSE	11.5	VOLTS					T phase PWM voltage (inludes 3rd harmonic)
547	(reserved)	UINT16	RO	FALSE	11.5	VOLTS					(reserved)
548	ID Controller	INT32	RO	FALSE	11.21	VOLTS					ID current vector PI controller
550	IQ Controller	INT32	RO	FALSE	11.21	VOLTS					IQ current vector PI controller
552	P Controller	INT32	RO	FALSE	9.23	AMPS					Position loop controller
4000	Security Key	UINT16	RW	FALSE							Security and non-volatile memory protection key
4001	Commands	UINT16	RW	FALSE		EXEC_CMD_ENUM					Bitmap of direct execution commands to drive
4100	(reserved)	UINT16	RW	FALSE							(reserved)
4101	(reserved)	UINT16	RW	FALSE							(reserved)
4102	Scope Var 1 MODBUS ID	UINT16	RW	FALSE			0	65535			Scope monitor variable 1 MODBUS identifier
4103	Scope Var 1 Flags	UINT16	RW	FALSE		VMONITOR_ENUM					Scope monitor variable 1 flags
4104	Scope Var 2 MODBUS ID	UINT16	RW	FALSE			0	65535			Scope monitor variable 2 MODBUS identifier
4105	Scope Var 2 Flags	UINT16	RW	FALSE		VMONITOR_ENUM					Scope monitor variable 2 flags
4106	Scope Var 3 MODBUS ID	UINT16	RW	FALSE			0	65535			Scope monitor variable 3 MODBUS identifier
4107	Scope Var 3 Flags	UINT16	RW	FALSE		VMONITOR_ENUM					Scope monitor variable 3 flags
4108	Scope Var 4 MODBUS ID	UINT16	RW	FALSE			0	65535			Scope monitor variable 4 MODBUS identifier
4109	Scope Var 4 Flags	UINT16	RW	FALSE		VMONITOR_ENUM					Scope monitor variable 4 flags
4200	Serial Errors	UINT16	RW	FALSE		SERIAL_ERROR_ENUM					Serial diagnostics error flags (write zero to clear)
4201	Serial Rx Unexpected	UINT16	RW	FALSE							Serial unexpected received characters count (write zero to clear)
4300	Host Input Functions	UINT32	RW	FALSE		INPUT_FUNCTIONS_ENUM					Host active Input Functions
4302	Host Disables	UINT16	RW	FALSE		BITMAP (Host Defined)	0	65535			Host disabling flags (write zero to enable - any non-zero value will keep drive disabled)
4303	Host Command Mode	UINT16	RW	FALSE		COMMAND_MODE_ENUM					Host direct command mode (write zero to exit direct host command mode)
4304	Host Position Command	INT32	RW	FALSE	16.16	REVS					Host direct target position command
4306	Host Velocity Command	INT16	RW	FALSE	8.8	RPS					Host direct velocity command or velocity limit for positioning mode
4307	Host Accel	UINT16	RW	FALSE	12.4	RPS/S					Host acceleration limit for velocity or position command modes
4308	Host Current	INT16	RW	FALSE	9.7	AMPS					Host direct current command or current limit for position and velocity modes
4309	Host Voltage	INT16	RW	FALSE	11.5	VOLTS					Host direct voltage command
4310	Host Input Inhibits	UINT16	RW	FALSE		INPUTS_ENUM					Host hardware input inhibits mask
4311	Host Output Inhibits	UINT16	RW	FALSE		OUTPUTS_ENUM					Host hardware output inhibits mask

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
4312	Host Outputs	UINT16	RW	FALSE		OUTPUTS_ENUM					Host direct active outputs mask (or'ed with user outputs if user outputs not masked)
4313	Factory Test Word	UINT16	RW	FALSE							Reserved for factory test/calibration use
5000	Drive Name	STRING	RW	TRUE		ASCII					ASCII string name for Drive (16-chars max, NOT zero terminated)
5100	Options	UINT16	RW	TRUE		OPTION_FLAGS_ENUM					Bitmap of drive option flags
5101	Power-up Delay	UINT16	RW	TRUE		MS			1.12		Power-up delay and non-disabling fault recovery time (ms)
5102	Hard Fault Enables	UINT16	RW	TRUE		FAULTS_ENUM					Bitmap of faults that will cause a hard fault (disabling drive)
5103	Soft Fault Enables	UINT16	RW	TRUE		FAULTS_ENUM					Bitmap of faults that will cause a soft fault (warning) without disablin drive
5104	Default Command Mode	UINT16	RW	TRUE		COMMAND_MODE_ENUM					Default operating mode
5105	Alternate Command Mode	UINT16	RW	TRUE		COMMAND_MODE_ENUM					Alternate operating mode
5106	Fault Stop Enables	UINT16	RW	TRUE		FAULTS_ENUM			1.12		Bitmap of faults that will force a stop
5107	Fault Move Enables	UINT16	RW	TRUE		FAULTS_ENUM			1.12		Bitmap of faults that will force a move to dedicated position
5200	User I Peak	UINT16	RW	TRUE	9.7	AMPS					User peak current limit
5201	I Limit Time	UINT16	RW	TRUE		MS					In current limit hysteresis time before 'In Current Limit' output function goes active
5202	Position Error Limit	UINT32	RW	TRUE	16.16	REVS					Position error limit to trigger positional error fault
5204	In Position Window	UINT32	RW	TRUE	16.16	REVS					Position error window within which the 'In Position' output function will be active
5206	Position Error Time	UINT16	RW	TRUE		MS					Time outside of position error limit required to trigger positional error fault
5207	In Position Time	UINT16	RW	TRUE		MS					Time within in-position window (without falling outside of window) required to activate 'In Position' output function
5208	Pos Limit Minus Revs	INT32	RW	TRUE	16.16	REVS			1.12		Negative position limit
5210	Pos Limit Plus Revs	INT32	RW	TRUE	16.16	REVS			1.12		Positive position limit
5212	Pos Limit Minus Percent	UINT16	RW	TRUE	1.15	PERCENT	0	32767	1.12		Negative position limit as percent of analog input range
5213	Pos Limit Plus Percent	UINT16	RW	TRUE	1.15	PERCENT	0	32767	1.12		Positive position limit as percent of analog input range
5214	Pos Limit Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767	1.12		Velocity limit used when past enabled position limit
5215	Pos Limit I Foldback	UINT16	RW	TRUE	9.7	AMPS	0	32767	1.12		Current limit used when past enabled position limit
5216	Pos Limit I Peak	UINT16	RW	TRUE	9.7	AMPS	0	32767	1.12		Momentary peak current set when pos limit current limit hit
5217	Pos Limit I Peak Time	UINT16	RW	TRUE		MS			1.12		Time (ms) pos limit peak current is held
5300	Serial Flags	UINT16	RW	TRUE		SERIAL_FLAGS_ENUM					Bitmap of serial flag setup options
5301	Serial Axis ID	UINT16	RW	TRUE			1	247			MODBUS slave address ID (will not take effect until next power-up)
5302	Serial Baud	UINT16	RW	TRUE		BITS/S					MODBUS serial baud rate (4800,9600,19200,38400) (will not take effect until next power-up)
5303	Serial Rx Timeout	UINT16	RW	TRUE		MS	0				MODBUS extra inter-character delay time before end of request
5304	Serial Frame Delay	UINT16	RW	TRUE		MS	0				MODBUS extra inter-frame delay from receive to transmit
5305	(reserved)	UINT16	RW	TRUE							(reserved)
5400	Ploop KP	UINT16	RW	TRUE	1.15		0	32767			Position loop gain
5401	Ploop KD	UINT16	RW	TRUE	1.15		0	32767			Position loop derivative (velocity loop proportional)
5402	Ploop KI	UINT16	RW	TRUE	1.15		0	32767			Position loop integral
5403	Ploop KVF	UINT16	RW	TRUE	1.15		0	32767	1.12		Position loop gain velocity foldback
6000	Stop Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Stop acceleration
6001	Home Flags	UINT16	RW	TRUE		HOME_FLAGS_ENUM					Bitmap of homing options
6002	Home Position	INT32	RW	TRUE	16.16	REVS					Absolute position upon completion of home
6004	Home Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Homing velocity
6005	Home Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Homing acceleration
6006	Home I Limit	UINT16	RW	TRUE	9.7	AMPS	0	32767			Homing current limit
6007	Jog Flags	UINT16	RW	TRUE		JOG_FLAGS_ENUM					Bitmap of jog options
6008	Jog Slow Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Jog velocity 1
6009	Jog Fast Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Jog velocity 2
6010	Jog Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Jog acceleration
6011	(reserved)	UINT16	RW	TRUE							(reserved)
6012	(reserved)	UINT16	RW	TRUE							(reserved)
6013	(reserved)	UINT16	RW	TRUE							(reserved)
6014	Dedicated Move Position	INT32	RW	TRUE	16.16	REVS					Dedicated move / Emergency move Position
6016	Dedicated Move Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Dedicated move / Emergency move Velocity
6017	Dedicated Move Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Dedicated move / Emergency move Acceleration
6018	Move 1 Flags	UINT16	RW	TRUE		MOVE_FLAGS_ENUM					Move 1 flags bitmap
6019	Move 2 Flags	UINT16	RW	TRUE		MOVE_FLAGS_ENUM					Move 2 flags bitmap
6020	Move 3 Flags	UINT16	RW	TRUE		MOVE_FLAGS_ENUM					Move 3 flags bitmap
6021	Move 4 Flags	UINT16	RW	TRUE		MOVE_FLAGS_ENUM					Move 4 flags bitmap

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
6022	Move 1 Position/Distance	INT32	RW	TRUE	16.16	REVS					Move 1 Position/Distance
6024	Move 2 Position/Distance	INT32	RW	TRUE	16.16	REVS					Move 2 Position/Distance
6026	Move 3 Position/Distance	INT32	RW	TRUE	16.16	REVS					Move 3 Position/Distance
6028	Move 4 Position/Distance	INT32	RW	TRUE	16.16	REVS					Move 4 Position/Distance
6030	Move 1 Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Move 1 Velocity
6031	Move 2 Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Move 2 Velocity
6032	Move 3 Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Move 3 Velocity
6033	Move 4 Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Move 4 Velocity
6034	Move 1 Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Move 1 Acceleration
6035	Move 2 Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Move 2 Acceleration
6036	Move 3 Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Move 3 Acceleration
6037	Move 4 Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Move 4 Acceleration
6038	Move 1 Feed Velocity	INT16	RW	TRUE	8.8	RPS	-32768	32767			Move 1 Feed Velocity
6039	Move 2 Feed Velocity	INT16	RW	TRUE	8.8	RPS	-32768	32767			Move 2 Feed Velocity
6040	Move 3 Feed Velocity	INT16	RW	TRUE	8.8	RPS	-32768	32767			Move 3 Feed Velocity
6041	Move 4 Feed Velocity	INT16	RW	TRUE	8.8	RPS	-32768	32767			Move 4 Feed Velocity
6042	Move 1 Feed I Limit	UINT16	RW	TRUE	9.7	AMPS	0	32767			Move 1 Feed Current Limit
6043	Move 2 Feed I Limit	UINT16	RW	TRUE	9.7	AMPS	0	32767			Move 2 Feed Current Limit
6044	Move 3 Feed I Limit	UINT16	RW	TRUE	9.7	AMPS	0	32767			Move 3 Feed Current Limit
6045	Move 4 Feed I Limit	UINT16	RW	TRUE	9.7	AMPS	0	32767			Move 4 Feed Current Limit
7000	H/W Input Polarities	UINT16	RW	TRUE		INPUTS_ENUM					Bitmap of hardware input polarities
7001	H/W Output Polarities	UINT16	RW	TRUE		OUTPUTS_ENUM					Bitmap of hardware output polarities
7002	Input 1 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 1
7004	Input 2 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 2
7006	Input 3 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 3
7008	Input 4 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 4
7010	Input 5 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 5
7012	Input 6 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 6
7014	Input 7 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 7
7016	Input 8 Function Assignment	UINT32	RW	TRUE		INPUT_FUNCTIONS_ENUM					Input function assigned to Input 8
7018	Output 1 Function Assignmer	UINT32	RW	TRUE		OUTPUT_FUNCTIONS_ENUM					Output function assigned to Output 1
7020	Output 2 Function Assignmer	UINT32	RW	TRUE		OUTPUT_FUNCTIONS_ENUM					Output function assigned to Output 2
7022	Output 3 Function Assignmer	UINT32	RW	TRUE		OUTPUT_FUNCTIONS_ENUM					Output function assigned to Output 3
7024	Output 4 Function Assignmer	UINT32	RW	TRUE		OUTPUT_FUNCTIONS_ENUM					Output function assigned to Output 4
7100	AIN Filter Coef	UINT16	RW	TRUE	1.15		0	32767			Analog input smoothing filter coefficient
7101	AOUT Filter Coef	UINT16	RW	TRUE	1.15		0	32767			Analog output smoothing filter coefficient
7102	AIN Cal Low	INT16	RW	TRUE	1.15	ADC	0	32767			Analog input that maps to minimum analog command
7103	AIN Cal High	INT16	RW	TRUE	1.15	ADC	0	32767			Analog input that maps to maximum analog command
7104	AOUT Cal Low	INT16	RW	TRUE	1.15	DAC	-32768	32767			User low analog input calibration offset
7105	AOUT Cal High	UINT16	RW	TRUE	1.15	DAC	0	32767			User high analog input calibration offset
7106	AIN Position Minimum	INT32	RW	TRUE	16.16	REVS					Minimum analog position command
7108	AIN Position Maximum	INT32	RW	TRUE	16.16	REVS					Maximum analog position command
7110	AIN Velocity Minimum	INT16	RW	TRUE	8.8	RPS	-32768	32767			Minimum analog velocity command
7111	AIN Velocity Maximum	INT16	RW	TRUE	8.8	RPS	-32768	32767			Maximum analog velocity command
7112	AIN Current Minimum	INT16	RW	TRUE	9.7	AMPS	-32768	32767			Minimum analog current command
7113	AIN Current Maximum	INT16	RW	TRUE	9.7	AMPS	-32768	32767			Maximum analog current command
7114	AOUT MODBUS ID	UINT16	RW	TRUE			0	65535			Modbus ID of variable monitored on analog output (0 if none)
7115	AOUT Flags	UINT16	RW	TRUE		VMONITOR_ENUM					Flags for variable monitored on analog output

ID	Variable Name	Type	Access	NVM	Scale	Units	Min	Max	Fw Min	Fw Max	Description
7116	AOUT Variable Minimum	INT32	RW	TRUE							Minimum value of variable monitored on analog output
7118	AOUT Variable Maximum	INT32	RW	TRUE							Maximum value of variable monitored on analog output
7120	Analog Velocity	UINT16	RW	TRUE	8.8	RPS	0	32767			Velocity limit for analog positioning operating mode
7121	Analog Position Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767			Accel limit for analog position mode (or analog velocity pre 1.14)
7122	Analog Velocity Accel	UINT16	RW	TRUE	12.4	RPS/S	0	32767	1.14		Accel limit for analog velocity mode
9000	Part Number	STRING	RPW	TRUE							ASCII string name for Board Part Number (16-chars max, NOT zero terminated)
9016	Serial Number	STRING	RPW	TRUE							ASCII string name for Board Serial Number (16-chars max, NOT zero terminated)
9100	Model	STRING	RPW	TRUE							ASCII string name for Actuator Model (16-chars max, NOT zero terminated)
9116	Electrical Cycles Per Rev	UINT16	RPW	TRUE		CYCLES	1	5			Actuator electrical cycles per mechanical rev (poles/2)
9117	R	UINT16	RPW	TRUE	8.8	OHMS L-L					Actuator winding resistance
9118	L	UINT16	RPW	TRUE	8.8	mH L-L					Actuator winding inductance
9119	KE	UINT16	RPW	TRUE		Vrms/KRPM				1.10	Actuator voltage constant (back EMF) (unused)
9120	KT	UINT16	RPW	TRUE	6.10	Nm/AMP					Actuator torque constant
9121	J	UINT16	RPW	TRUE	0.18	kg-m^2					Actuator inertia
9200	Low Voltage Trip	UINT16	RPW	TRUE	11.5	VOLTS					Low voltage fault trip point
9201	High Voltage Trip	UINT16	RPW	TRUE	11.5	VOLTS					High voltage fault trip point
9202	Board Temperature Trip	UINT16	RPW	TRUE	11.5	DEG C					Board thermistor fault trip point
9203	I trip	UINT16	RPW	TRUE	9.7	AMPS					Peak current fault trip point
9204	I peak	UINT16	RPW	TRUE	9.7	AMPS					Peak current command limit
9205	I continuous	UINT16	RPW	TRUE	9.7	AMPS					Continuous current command limit
9206	Power Filter Coef	UINT16	RPW	TRUE	1.15		0	32767			Power filter smoothing coefficient
9207	Ain 20ma Trip Level	UINT16	RPW	TRUE	6.10	mAmps			1.12		Analog current input loss of signal trip point
9300	Vbus Offset	INT16	RPW	TRUE	11.5	VOLTS					Bus voltage calibration offset
9301	Vbus Scale	UINT16	RPW	TRUE	11.5	VOLTS/ADC					Bus voltage calibration scale
9302	Board Temp Offset	INT16	RPW	TRUE	11.5	DEG C					Board thermistor calibration offset
9303	Board Temp Scale	UINT16	RPW	TRUE	11.5	DEG C/ADC					Board theremistor calibration scale
9304	Psine Zero	INT16	RPW	TRUE	1.15						Linear Hall sine calibration offset
9305	Psine Scale	INT16	RPW	TRUE	3.13						Linear Hall sine calibration scale
9306	Pcosine Zero	INT16	RPW	TRUE	1.15						Linear Hall cosine calibration offset
9307	Pcosine Scale	INT16	RPW	TRUE	3.13						Linear Hall cosine calibration scale
9308	Rphase Offset	INT16	RPW	TRUE		ADC BITS					R phase calibration zero offset
9309	Rphase Scale	INT16	RPW	TRUE	10.6	AMPS FULL SCALE					R phase calibration scale
9310	Sphase Offset	INT16	RPW	TRUE		ADC BITS					S phase calibration zero offset
9311	Sphase Scale	INT16	RPW	TRUE	10.6	AMPS FULL SCALE					S phase calibration scale
9312	Tphase Offset	INT16	RPW	TRUE		ADC BITS					T phase calibration zero offset
9313	Tphase Scale	INT16	RPW	TRUE	10.6	AMPS FULL SCALE					T phase calibration scale
9314	AOUT Zero Calibration	INT16	RPW	TRUE	1.15		-32768	32767			Analog output zero calibration offset
9315	Electric Angle Offset	UINT16	RPW	TRUE	0.16	2PI RADIANS	0	65535			Electrical angle commutation offset
9317	Vloop Bandwidth	UINT16	RPW	TRUE	0		0	32767	1.12		Final pos loop current command filter bandwidth factor
9318	Ain Vlow	INT16	RPW	TRUE	6.10	VOLTS			1.12		Calibrated voltage corresponding to Ain VlowRaw
9319	Ain Vhigh	INT16	RPW	TRUE	6.10	VOLTS			1.12		Calibrated voltage corresponding to Ain VHighRaw
9320	Ain Vlow Raw	INT16	RPW	TRUE	1.15	ADC			1.12		Raw ADC value corresponding to Ain Vlow
9321	Ain Vhigh Raw	INT16	RPW	TRUE	1.15	ADC			1.12		Raw ADC value corresponding to Ain Vhigh
9322	Ain Ilow	INT16	RPW	TRUE	6.10	mAmps			1.12		Calibrated current corresponding to Ain IlowRaw
9323	Ain Ihigh	INT16	RPW	TRUE	6.10	mAmps			1.12		Calibrated current corresponding to Ain IhighRaw
9324	Ain IlowRaw	INT16	RPW	TRUE	1.15	ADC			1.12		Raw ADC value corresponding to Ain Ilow
9325	Ain IhighRaw	INT16	RPW	TRUE	1.15	ADC			1.12		Raw ADC value corresponding to Ain Ihigh
9400	Position tracking gain	UINT16	RPW	TRUE	1.15		0	32767			Linear Halls position tracking gain
9401	Position tracking damping	UINT16	RPW	TRUE	1.15		0	32767			Linear Halls position tracking damping factor
9402	Iloop KP	UINT16	RPW	TRUE	1.15		0	32767			Current loop proportional gain
9403	Iloop KI	UINT16	RPW	TRUE	1.15		0	32767			Current loop integral gain

ENUMERATED VALUES

These tables specify the specific values expected for bitmapped or enumerated value parameters.

FAULTS_ENUM

This table specifies the bit values for fault setup and status variables.

Name	Value	Description
NONE	0x0000	None
PEAK_CURRENT	0x0001	Instantaneous system peak current limit exceeded
CONTINUOUS_CURRENT	0x0002	Continuous current exceeds rated current
POSITION_TRACKING	0x0004	SIN/COS position signals from actuator detected illegal state or runtime tracking error
SWITCH_NOT_FOUND	0x0008	Move or Home termination input did not occur before current limit reached
LOW_BUS_VOLTAGE	0x0010	DC Bus under minimum required operating voltage
HIGH_BUS_VOLTAGE	0x0020	DC Bus over maximum allowed operating voltage
POSITION_ERROR	0x0040	Position error has exceed position error window for position error time limit
BOARD_TEMPERATURE	0x0080	Board thermistor reading over maximum allowed temperature reading
ACTUATOR_TEMPERATURE	0x0100	Actuator over-temperature switch active
LOSS_OF_SIGNAL	0x0200	20ma analog current input below trip level
INVALID_USER_PARAMETERS	0x2000	CRC error in non-volatile user parameters
INVALID_SYSTEM_PARAMETERS	0x4000	CRC error in non-volatile system parameters
RESTART	0x8000	Unexpected DSP restart while powered on

INPUTS_ENUM

This table specifies the bit values for hardware inputs status and polarities variables.

Name	Value	Description
NONE	0x0000	None
INPUT_1	0x0001	Hardware Input 1
INPUT_2	0x0002	Hardware Input 2
INPUT_3	0x0004	Hardware Input 3
INPUT_4	0x0008	Hardware Input 4
INPUT_5	0x0010	Hardware Input 5
INPUT_6	0x0020	Hardware Input 6
INPUT_7	0x0040	Hardware Input 7
INPUT_8	0x0080	Hardware Input 8

OUTPUTS_ENUM

This table specifies the bit values for hardware outputs status and polarities variables.

Name	Value	Description
NONE	0x0000	None
OUTPUT_1	0x0001	Hardware Output 1
OUTPUT_2	0x0002	Hardware Output 2
OUTPUT_3	0x0004	Hardware Output 3
OUTPUT_4	0x0008	Hardware Output 4

INPUT_FUNCTIONS_ENUM

This table specifies the values used to designate input functionality. These values are used for both assigning functionality to hardware inputs and for specifying direct host (simulated) active input functions or monitoring active input functions.

Name	Value	Description
NONE	0x00000000	No input function assignment / no input functions active
ENABLE_MOMENTARY	0x00000001	Momentary (edge triggered) drive enable
ENABLE_MAINTAINED	0x00000002	Maintained (level sensitive) drive enable
STOP	0x00000004	Stop motion (level sensitive)
PAUSE	0x00000008	Pause index and home motion (level sensitive)
JOG_POSITIVE	0x00000010	Jog in positive direction (level sensitive)
JOG_NEGATIVE	0x00000020	Jog in negative direction (level sensitive)
JOG FAST	0x00000040	Select 2nd (normally faster) speed for jog (level sensitive)
ALTERNATE_MODE	0x00000080	Select alternate operating mode (level sensitive
HOME	0x00000100	Execute Home motion (edge triggered)
DEDICATED_MOVE	0x00000200	Execute Move to Dedicated Position (level sensitive)
DEFINE_HOME	0x00000400	Define current position as Home position (edge triggered)
TEACH_ENABLE	0x00000800	Enable MOVEx_TEACH input functions (level sensitive)
MOVE1_MAINTAINED	0x00001000	Execute Move1 motion (level sensitive)
MOVE2_MAINTAINED	0x00002000	Execute Move2 motion (level sensitive)
MOVE3_MAINTAINED	0x00004000	Execute Move3 motion (level sensitive)
MOVE4_MAINTAINED	0x00008000	Execute Move4 motion (level sensitive)
MOVE1_MOMENTARY	0x00010000	Execute Move1 motion (edge triggered)
MOVE2_MOMENTARY	0x00020000	Execute Move2 motion (edge triggered)
MOVE3_MOMENTARY	0x00040000	Execute Move3 motion (edge triggered)
MOVE4_MOMENTARY	0x00080000	Execute Move4 motion (edge triggered)
SWITCH_1	0x00100000	Home or Move termination input 1 (level sensitive)
SWITCH_2	0x00200000	Home or Move termination input 2 (level sensitive)
SWITCH_3	0x00400000	Home or Move termination input 3 (edge triggered)
SWITCH_4	0x00800000	Home or Move termination input 4 (edge triggered)
MOVE1_TEACH	0x01000000	Set Move 1 position to current feedback position and save current user parameters (edge triggered)
MOVE2_TEACH	0x02000000	Set Move 2 position to current feedback position and save current user parameters (edge triggered)
MOVE3_TEACH	0x04000000	Set Move 3 position to current feedback position and save current user parameters (edge triggered)
MOVE4_TEACH	0x08000000	Set Move 4 position to current feedback position and save current user parameters (edge triggered)
	0x10000000	(reserved)
	0x20000000	(reserved)
RESET_FAULTS	0x40000000	Clear active faults (edge triggered)
	0x80000000	(reserved)

OUTPUT_FUNCTIONS_ENUM

This table specifies the values used to designate ouput functionality. These values are used for both assigning output status functionality to hardware outputs and for monitoring of active ouput function status flags.

Name	Value	Description
NONE	0x00000000	No output function assignment / no output status functions active
ENABLED	0x00000001	Drive is enabled
HOMED	0x00000002	Absolute position has been established
READY	0x00000004	Drive is enabled and absolute position has been established
FAULT	0x00000008	A unmasked (hard) fault is pending (disabling drive)
WARNING	0x00000010	A masked (soft) fault is active
FAULT_OR_WARNING	0x00000020	A fault is active (hard or soft)
IN_CURRENT_LIMIT	0x00000040	Drive's current command is being limited by system or user current limit
OVER_RATED_CURRENT	0x00000080	Current feedback is over rated current
STOPPED	0x00000100	Drive is enabled motion is stopped by active STOP input function
PAUSED	0x00000200	Move, Dedicated Move, or Home is active and motion is held by active PAUSE input function
JOGGING	0x00000400	Drive is enabled and JOG (positive or negative) is active
JOGGING_POSITIVE	0x00000800	Drive is enabled and JOG POSITIVE is active
JOGGING_NEGATIVE	0x00001000	Drive is enabled and JOG NEGATIVE is active
DEFAULT_MODE	0x00002000	Drive is enabled and the default operating mode is active
ALTERNATE_MODE	0x00004000	Drive is enabled and the alternate operating mode is active
HOMING	0x00008000	Drive is enabled and home motion is active
DEDICATED_MOVE	0x00010000	Drive is enabled and the dedicated move is active
AT_HOME	0x00020000	The drive is IN_POSITION at the defined home position
AT_DEDICATED_POSITION	0x00040000	The drive is IN_POSITION at the dedicated move position
MOVE_ACTIVE	0x00080000	The drive is enabled a MOVE (1 to 4) is active
MOVE1_ACTIVE	0x00100000	The drive is enabled and MOVE1 is active
MOVE2_ACTIVE	0x00200000	The drive is enabled and MOVE2 is active
MOVE3_ACTIVE	0x00400000	The drive is enabled and MOVE3 is active
MOVE4_ACTIVE	0x00800000	The drive is enabled and MOVE4 is active
AT_MOVE1	0x01000000	The drive is IN_POSITION at MOVE1 position or past MOVE1 position if a feed move
AT_MOVE2	0x02000000	The drive is IN_POSITION at MOVE2 position or past MOVE2 position if a feed move
AT_MOVE3	0x04000000	The drive is IN_POSITION at MOVE3 position or past MOVE3 position if a feed move
AT_MOVE4	0x08000000	The drive is IN_POSITION at MOVE4 position or past MOVE4 position if a feed move
IN_POSITION	0x10000000	Drive is enabled, at zero command velocity, and has been within position error window for position error time
POSITION_LIMIT	0x20000000	Outside of position limit range
	0x40000000	(reserved)
	0x80000000	(reserved)

DISABLING_SOURCES_ENUM

This table specifies the bit values for sources disabling the drive.

Name	Value	Description
NO_DISABLES	0x0000	None - drive will be enabled unless the operating command mode is CMDMD_DISABLED.
INPUT_FUNCTION_DISABLE	0x0001	Disabled by inactive enable input function
HOST_DISABLE	0x0002	Disabled by non-zero host disabling flags
HARD_FAULT_DISABLE	0x0004	Disabled by active fault mapped as hard fault
POWER_UP_DISABLE	0x4000	Disabled during internal power-up initialization
INTERNAL_DISABLE	0x8000	Disabled internally

COMMAND_MODE_ENUM

This table defines the command mode options available for the Default, Alternate, and Host operating modes. Locking and voltage modes are used internally for test and calibration. When the Host command mode is set to anything other than CMDMD_DISABLED, the specified Host comand mode will take priority over the default or alternate operating mode in effect.

Name	Value	Description
CMDMD_DISABLED	0	No active command mode (drive will stay disabled)
CMDMD_IO	1	Command from motion input functions (Move, Jog, …)
CMDMD_ANALOG_POSITION	2	Position command from analog input
CMDMD_ANALOG_VELOCITY	3	Velocity command from analog input
CMDMD_ANALOG_CURRENT	4	Current command from analog input
CMDMD_HOST_POSITION	5	Position command from Host (using Host velocity, acceleration, and Host current as limit)
CMDMD_HOST_VELOCITY	6	Velocity command from Host (using Host acceleration and Host current from current limit)
CMDMD_HOST_CURRENT	7	Torque current command from Host
CMDMD_HOST_ILOCK	8	Locking current command from Host
CMDMD_HOST_VLOCK	9	Direct voltage command from Host
CMDMD_HOST_VOLTAGE	10	Locking voltage command from Host

OPTION_FLAGS_ENUM

This table specifies the bit value definitions for the User Options parameter.

Name	Value	Description
OPTIONS_NONE	0x0000	None - no options selected
OPTIONS_AUTO_ENABLE	0x0001	Enable without requiring active Enable input function
OPTIONS_TEACH_ENABLE	0x0002	Enable Move Teach Inputs without requiring active Teach Enable input function
OPTIONS_20MA_ANALOG_IN	0x0004	Analog input is 20milliamp current loop (Analog input is voltage input if this flag is not set)
OPTIONS_POLARITY	0x0008	Reverse drive direction sense (position, velocity, current)
PLIMIT_MINUS_ENABLE	0x0010	Enable negative direction position limit
PLIMIT_PLUS_ENABLE	0x0020	Enable positive direction position limit
PLIMIT_PERCENT	0x0040	Set position limits as percent of analog position range
DEDICATED_MOVE_DISABLE	0x0080	Disable drive upon completion of a dedicated move

SERIAL_FLAGS_ENUM

This table specifies the bit value definitions for the Serial Options parameter.

Name	Value	Description
SERIAL_NONE	0x0000	None - no options selected
SERIAL_ODD_PARITY	0x0001	Odd parity (if SERIAL_NO_PARITY is NOT set)
SERIAL_NO_PARITY	0x0002	Enable Move Teach Inputs without requiring active Teach Enable input function
SERIAL_TWO_STOP	0x0004	2 stop bits (default is 1)
SERIAL_RX_WARN	0x0008	Warn (but accept) chars received before frame idle time has been met

HOME_FLAGS_ENUM

This table specifies the bit value definitions for the Home Flags parameter.

Name	Value	Description
HOME_NONE	0x0000	None - no options selected
HOME_DIR_POSITIVE	0x0001	Home direction is positive (+)
HOME_ILIMIT	0x0080	Terminate Home when home current limit is reached
HOME_SWITCH_1	0x0100	Terminate Home on Input Function Switch 1
HOME_SWITCH_2	0x0200	Terminate Home on Input Function Switch 2
HOME_SWITCH_3	0x0400	Terminate Home on Input Function Switch 3
HOME_SWITCH_4	0x0800	Terminate Home on Input Function Switch 4
HOME_ILIMIT_AND_SWITCH_1	0x0180	Terminate Home when home current limit is reached and Switch 1 active

HOME_ILIMIT_AND_SWITCH_2	0x0280	Terminate Home when home current limit is reached and Switch 2 active
HOME_ILIMIT_AND_SWITCH_3	0x0480	Terminate Home when home current limit is reached and rising edge of Switch 3
HOME_ILIMIT_AND_SWITCH_4	0x0880	Terminate Home when home current limit and rising edig of Switch 4
HOME_REQUIRE_DEFAULT	0x1000	Require Home before allowing default command operating mode
HOME_REQUIRE_ALTERNATE	0x2000	Require Home before allowing alternate command operating mode
HOME_AUTO_EXECUTE	0x8000	Execute Home on enable if absolute position has not yet been established

JOG_FLAGS_ENUM

This table specifies the bit value definitions for the Jog Flags parameter.

Name	Value	Description
JOG_NONE	0x0000	None - no options selected
JOG_ILIMIT	0x0001	Set position limit foldback current limit during jog
JOG_OVERRIDE_DEFAULT	0x1000	Allow JOG input functions to override default command operating mode
JOG_OVERRIDE_ALTERNATE	0x2000	Allow JOG input functions to override alternate command operating mode

MOVE_FLAGS_ENUM

This table specifies the bit value definitions for all Move Flags parameters.

Name	Value	Description
MOVE_NONE	0x0000	None - no options selected
MOVE_DIR_FORCE_POSITIVE	0x0001	Allow absolute move only in positive direction
MOVE_DIR_FORCE_NEGATIVE	0x0002	Allow absolute move only in negative direction
MOVE_INCREMENTAL	0x0004	Move is for incremental distance (Move Position parameter is distance rather than position)
MOVE_FEED_POSITIVE	0x0010	Feed in positive direction upon completion of move to position or move for distance
MOVE_FEED_NEGATIVE	0x0020	Feed in negative direction upon completion of move to position or move for distance
MOVE_IFAULT	0x0040	Fault if feed current limit hit during feed part of move
MOVE_ILIMIT	0x0080	Terminate feed part of Move when feed current limit is reached
MOVE_SWITCH_1	0x0100	Terminate feed part of Move on Input Function Switch 1
MOVE_SWITCH_2	0x0200	Terminate feed part of Move on Input Function Switch 2
MOVE_SWITCH_3	0x0400	Terminate feed part of Move on Input Function Switch 3
MOVE_SWITCH_4	0x0800	Terminate feed part of Move on Input Function Switch 4

VMONITOR_ENUM

This table specifies the bit value definitions for variable monitoring flags. These flags are used by AOUT flags.

Name	Value	Description
VMONITOR_NONE	0x0000	None - no options selected
VMONITOR_32_BIT	0x0001	Variable is 32-bit variable

EXEC_CMD_ENUM

This table specifies the bit value definitions for direct execution Command word. Any flags set are automatically cleard when the action has been completed so the Command variable may be monitored after writing to determine when action has finished. The EXEC_CMD_ERROR flag will be set if any requested command was unable to complete successfully. This error flag is never cleared by the system but will be cleared only when the Command variable is set to a new value.

Name	Value	Description
EXEC_CMD_RESTART	0x0001	Restart drive from cold-start
EXEC_CMD_WRITE_NVMEM	0x0002	Write user parameters from RAM to user area of non-volatile memory
EXEC_CMD_WRITE_SYS_NVMEM	0x0004	Write system parameters from RAM to system area of non-volatile memory
EXEC_CMD_RESET_MIN_MAX	0x0008	Resets min/max monitor variables
EXEC_CMD_DEFAULT_USER	0x2000	Sets RAM user parameters to default values
EXEC_CMD_DEFAULT_SYS	0x4000	Sets RAM system parameters to default values
EXEC_CMD_ERROR	0x8000	Command error flag (set on command error but never cleared by drive)

SERIAL_ERROR_ENUM

This table specifies the bit value definitions for the Serial Errors variable. These flags are set but never cleared by the drive. The Host may clear them directly by writing a zero to Serial Errors.

Name	Value	Description
SERIAL_ERROR_NONE	0x0000	None - no errors observed since last clear of Serial Errors
SERIAL_ERROR_RX_COUNT	0x0001	MODBUS request received had too few characters
SERIAL_ERROR_CRC	0x0002	MODBUS request CRC error observed
SERIAL_ERROR_RX_OVERFLOW	0x0004	Receive character buffer overflow
SERIAL_ERROR_PARITY	0x0100	Parity error
SERIAL_ERROR_FRAMING	0x0200	Framing error
SERIAL_ERROR_NOISE	0x0400	H/W noise on RX line
SERIAL_ERROR_OVERRUN	0x0800	Internal UART RX overrun