

# MODBUS RTU

Epulse50 servo drive implements Modbus RTU protocol on a RS232 serial point to point communication interface.

## Available functions

Function name	Function code
Read Holding Register	0x03
Write Single Register	0x06
Write Multiple Registers	0x10

## Modbus register areas

Parameter type	MODBUS address
Servo parameter	0x00 to 0x3FF
Input variables	0x1000 to 0x103F
Output variables	0x1200 to 0x123F

## Basic command

Enabling, disable and set the speed

Command	Address	Data Write	Unit	NOTE
Opmode	0x0010	2	-	2 = digital speed
Enabling	0x1000	bit 0 = 1	-	
Disabling	0x1000	bit 0 = 0	-	
Speed setpoint	0x1026	xxxx	RPM	

Reading the status and the current

Command	Address	Data Write	Unit	NOTE
Enabling OK	0x1200	Bit 0 = 1	-	if enabled bit 0 is set to 1 otherwise is set to 0
Read speed	0x1218	xxxx	-	
Read Q current	0x1210	xxxx	Amper x 10	

## Input Variable table

Modbus Address	Tag	Param	Value	Unit	Modbus Address	Tag	Param	Value	Unit
1000	0	CMD0	0000	hex	1020	32	Q Current Setpoint	0,0	A
1001	1	CMD1	0000	hex	1021	33	D Current Setpoint	0,0	A
1002	2	CMD2	0000	hex	1022	34	Current Saturation	0,0	%
1003	3	CMD3	0000	hex	1023	35	I35	0,000	
1004	4	IN_DIG_OUT_P2P	0		1024	36	Speed Limit	0	RPM
1005	5	IN_STORE_TUNING_PAR	0		1025	37	I37	0	
1006	6	IN_LATCH_MODE	0		1026	38	Speed Setpoint	0	RPM
1007	7	IN_START_P2P_ASSIGN	0		1027	39	I39	0	
1008	8	IN_PLL_SELECT	0		1028	40	I40	0	
1009	9	I9	0		1029	41	I41	0,00	
100A	10	INP_CAN_FREE_MAPPING_L	0000		102A	42	DBG_CMD_POSI	0	
100B	11	INP_CAN_FREE_MAPPING_H	0000		102B	43	DBG_OPERATION_MODE	0	
100C	12	I12	0		102C	44	Position Setpoint	0	
100D	13	I13	0		102D	45	I45	---	
100E	14	Brake Select	0000	hex	102E	46	Frequency Setpoint	0,0	Hz
100F	15	Brake Control	0000	hex	102F	47	General Purpose Input 0	0000	Hex
1010	16	Backup	0		1030	48	General Purpose Input 1	0	
1011	17	I17	0		1031	49	I49	0	
1012	18	Analog In CMD	0000	hex	1032	50	I50	0	
1013	19	I19	0		1033	51	I51	0	
1014	20	I20	0		1034	52	I52	0	
1015	21	Autotest	0000	hex	1035	53	I53	0	
1016	22	Autotest Type	0		1036	54	I54	0	
1017	23	I23	0,0		1037	55	I55	0	
1018	24	I24	0		1038	56	I56	0	
1019	25	I25	0		1039	57	I57	0	
101A	26	Preset Feedback Turns	0		103A	58	IN_CMD0_ATC	0000	
101B	27	Preset Feedback Angle	0		103B	59	I59	0	
101C	28	Analog Input 1	0	mV	103C	60	I60	0	
101D	29	Analog Input 2	0	mV	103D	61	I61	0	
101E	30	Analog Input 3	0	mV	103E	62	I62	0	
101F	31	Analog Input 4	0	mV	103F	63	PW	0	

## Output Variable Table

Modbus Address	Tag	Param	Value	Unit	Modbus Address	Tag	Param	Value	Unit
1200	0	Status 0	0000	hex	1220	32	I2t Regen Resistor	0	%
1201	1	Status 1	0000	hex	1221	33	Motor PTC	0	
1202	2	Status 2	0000	hex	1222	34	Power On Time	0	s
1203	3	Status 3	0000	hex	1223	35	Q35	---	
1204	4	Alarm 0	0000	hex	1224	36	STOA	0,0	V
1205	5	Alarm 1	0000	hex	1225	37	STOB	0,0	V
1206	6	Alarm 2	0000	hex	1226	38	Regen Power	0,0	W
1207	7	Alarm 3	0000	hex	1227	39	Q39	0,0	
1208	8	Warning 0	0000	hex	1228	40	Brake Status	0000	hex
1209	9	Warning 1	0000	hex	1229	41	Feedback Status	0	
120A	10	Warning 2	0000	hex	122A	42	Feedback Monitor	0	hex
120B	11	Warning 3	0000	hex	122B	43	Feedback Supply	0,0	V
120C	12	Digital Input	0000	hex	122C	44	Q44	0	
120D	13	Digital Output	0000	hex	122D	45	Analog Input 1	0	mV
120E	14	Iu Offset	0		122E	46	Analog Input 2	0	mV
120F	15	Iw Offset	0		122F	47	Sync Time	0	us
1210	16	Q Current	0,0	A	1230	48	Actual Node ID	0	
1211	17	D Current	0,0	A	1231	49	CAN State-machine	0	
1212	18	Aux Supply	0,0	V	1232	50	CAN Port Status	0000	
1213	19	Q19	0		1233	51	P2P Num. of nodes	0	
1214	20	DC Current	0,0	A	1234	52	DSP402 State-machine	0	
1215	21	DC Current_Offset	0		1235	53	CAN_FREE_DATA_16	0	
1216	22	I2t Drive	0	%	1236	54	CAN_FREE_DATA_32_L	0	
1217	23	DC Link Voltage	0,0	V	1237	55	CAN_FREE_DATA_32_H	---	
1218	24	Speed	0	RPM	1238	56	Abs Feedback Position	0	counts
1219	25	Mechanical Angle	0		---	---	---	---	---
121A	26	Position	0	counts	123A	58	Q58	0	
---	---	---	---	---	123B	59	Bootloader version	0000	
121C	28	OUT_POS_LATCH_VAL	0	UDM	123C	60	Firmware version	0000	
---	---	---	---	---	123D	61	LIB_VERSION	0000	
121E	30	Heatsink Temp	0,0	°C	123E	62	RAM_Aux1	0000	
121F	31	Internal Temp	0,0	°C	123F	63	RAM_Aux2	0000	

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