

EPA300 UNIVERSAL PROCESS CONTROLLER

MODBUS PROTOCOL ADDRESS TABLES

COIL ADDRESS TABLE

Coil Address(hex)	Parameter Name	Parameter Explanation	Count of Bit	Value	Read/Write
0x00	RESET_VALLEY	Resetting the minimum value read since the device was started	1 bit	Default Value = 0 0 = Inactive 1 = Active	Read/Write
0x01	RESET_PEAK	Resetting the maximum value read since the device was started			
0x02	RESET_PEAK_VALLEY	Resetting the maximum and minimum values read since the device was started			
0x03	TARE_APPLY	Activating the Tare function			
0x04	PLAY_BUZZER_100MS	Buzzer's beeping			
0x05	OUT1_SET	Switch off the relay 1			
0x06	OUT1_CLEAR	Switch on the relay 1			
0x07	OUT2_SET	Switch off the relay 2			
0x08	OUT2_CLEAR	Switch on the relay 2			
0x09	OUT3_SET	Switch off the relay 3			
0x0A	OUT3_CLEAR	Switch on the relay 3			
0x0B	OUT4_SET	Switch off the relay 4			
0x0C	OUT4_CLEAR	Switch on the relay 4			

*In order for the relay outputs to be controlled by the coil parameters, the corresponding relay (mode) must be OFF.

HOLDING REGISTER ADDRESS TABLE

Holding Register Address (hex)	Parameter Name	Parameter Explanation	Count of Bit	Default Value	Read/Write	
0x00	DECIMAL_POINTS	Decimal point location on the screen display (0=A, 1=A.A, 2=A.AA, 3=A.AAA, 4=A.AAAA)	16 bit (word)	1	Read/Write	
Relay 1 Output	0x01	SET1A_HIGH	Set-1A value [MSB]	0	Read/Write	
	0x02	SET1A_LOW	Set-1A value [LSB]	250		
	0x03	SET1B_HIGH	Set-1B value [MSB]	0		
	0x04	SET1B_LOW	Set-1B value [LSB]	350		
	0x05	MODE1	Function type (0=OFF, 1=Stand, 2=Band, 3=Catch, 4=Dual, 5=Periodic)	16 bit (word)		1
	0x06	DELAY1_HIGH	Delay time (second) [MSB]	16 bit (H word)		0
	0x07	DELAY1_LOW	Delay time (second) [LSB]	16 bit (L word)		0
	0x08	HYSUP1_HIGH	Upper hysteresis value [MSB]	16 bit (H word)		0
	0x09	HYSUP1_LOW	Upper hysteresis value [LSB]	16 bit (L word)		0
	0x0A	HYSDOWN1_HIGH	Lower hysteresis value [MSB]	16 bit (H word)		0
	0x0B	HYSDOWN1_LOW	Lower hysteresis value [LSB]	16 bit (L word)		0
	0x0C	OFFSET1_HIGH	Offset value [MSB]	16 bit (H word)		0
	0x0D	OFFSET1_LOW	Offset value [LSB]	16 bit (L word)		0
	0x0E	CONDITION_MODE1	Normally the state of the relay (0 = N.C. = Off 1 = N.O. = On)	16 bit (word)		0

HOLDING REGISTER ADDRESS TABLE

Holding Register Address (hex)	Parameter Name	Parameter Explanation	Count of Bit	Default Value	Read/Write	
Relay 2 Output	0x0F	SET2A_HIGH	Set-2A value [MSB]	16 bit (H word)	0	Read/Write
	0x10	SET2A_LOW	Set-2A value [LSB]	16 bit (L word)	350	
	0x11	SET2B_HIGH	Set-2B value [MSB]	16 bit (H word)	0	
	0x12	SET2B_LOW	Set-2B value [LSB]	16 bit (L word)	500	
	0x13	MODE2	Function type (0=OFF, 1=Stand, 2=Band, 3=Catch, 4=Dual, 5=Periodic)	16 bit (word)	1	
	0x14	DELAY2_HIGH	Delay time (second) [MSB]	16 bit (H word)	0	
	0x15	DELAY2_LOW	Delay time (second) [LSB]	16 bit (L word)	0	
	0x16	HYSUP2_HIGH	Upper hysteresis value [MSB]	16 bit (H word)	0	
	0x17	HYSUP2_LOW	Upper hysteresis value [LSB]	16 bit (L word)	0	
	0x18	HYSDOWN2_HIGH	Lower hysteresis value [MSB]	16 bit (H word)	0	
	0x19	HYSDOWN2_LOW	Lower hysteresis value [LSB]	16 bit (L word)	0	
	0x1A	OFFSET2_HIGH	Offset value [MSB]	16 bit (H word)	0	
	0x1B	OFFSET2_LOW	Offset value [LSB]	16 bit (L word)	0	
	0x1C	CONDITION_MODE2	Normally the state of the relay (0 = N.C. = Off 1 = N.O. = On)	16 bit (word)	0	
Relay 3 Output	0x1D	SET3A_HIGH	Set-3A value [MSB]	16 bit (H word)	0	Read/Write
	0x1E	SET3A_LOW	Set-3A value [LSB]	16 bit (L word)	500	
	0x1F	SET3B_HIGH	Set-3B value [MSB]	16 bit (H word)	0	
	0x20	SET3B_LOW	Set-3B value [LSB]	16 bit (L word)	800	
	0x21	MODE3	Function type (0=OFF, 1=Stand, 2=Band, 3=Catch, 4=Dual, 5=Periodic)	16 bit (word)	1	
	0x22	DELAY3_HIGH	Delay time (second) [MSB]	16 bit (H word)	0	
	0x23	DELAY3_LOW	Delay time (second) [LSB]	16 bit (L word)	0	
	0x24	HYSUP3_HIGH	Upper hysteresis value [MSB]	16 bit (H word)	0	
	0x25	HYSUP3_LOW	Upper hysteresis value [LSB]	16 bit (L word)	0	
	0x26	HYSDOWN3_HIGH	Lower hysteresis value [MSB]	16 bit (H word)	0	
	0x27	HYSDOWN3_LOW	Lower hysteresis value [LSB]	16 bit (L word)	0	
	0x28	OFFSET3_HIGH	Offset value [MSB]	16 bit (H word)	0	
	0x29	OFFSET3_LOW	Offset value [LSB]	16 bit (L word)	0	
	0x2A	CONDITION_MODE3	Normally the state of the relay (0 = N.C. = Off 1 = N.O. = On)	16 bit (word)	0	
Relay 4 Output	0x2B	SET4A_HIGH	Set-4A value [MSB]	16 bit (H word)	0	Read/Write
	0x2C	SET4A_LOW	Set-4A value [LSB]	16 bit (L word)	800	
	0x2D	SET4B_HIGH	Set-4B value [MSB]	16 bit (H word)	0	
	0x2E	SET4B_LOW	Set-4B value [LSB]	16 bit (L word)	850	
	0x2F	MODE4	Function type (0=OFF, 1=Stand, 2=Band, 3=Catch, 4=Dual, 5=Periodic)	16 bit (word)	1	
	0x30	DELAY4_HIGH	Delay time (second) [MSB]	16 bit (H word)	0	
	0x31	DELAY4_LOW	Delay time (second) [LSB]	16 bit (L word)	0	
	0x32	HYSUP4_HIGH	Upper hysteresis value [MSB]	16 bit (H word)	0	
	0x33	HYSUP4_LOW	Upper hysteresis value [LSB]	16 bit (L word)	0	
	0x34	HYSDOWN4_HIGH	Lower hysteresis value [MSB]	16 bit (H word)	0	

HOLDING REGISTER ADDRESS TABLE

Holding Register Address (hex)	Parameter Name	Parameter Explanation	Count of Bit	Default Value	Read/Write	
Relay 4 Output	0x35	HYSDOWN4_LOW	Lower hysteresis value [LSB]	16 bit (L word)	0	Read/Write
	0x36	OFFSET4_HIGH	Offset value [MSB]	16 bit (H word)	0	
	0x37	OFFSET4_LOW	Offset value [LSB]	16 bit (L word)	0	
	0x38	CONDITION_MODE4	Normally the state of the relay (0 = N.C. = Off 1 = N.O. = On)	16 bit (word)	0	

* MSB (Most Significant Bit) or H word (HIGH): Represents the 16 bits which are significant for a 32-bit number.

* LSB (Least Significant Bit) or L word (LOW): refers to the 16 bits which are small for a 32-bit number.

* For values to be entered with H word and L word, the function code Write Multiple Register (0x10) must be used and both values must be entered at any time. The decimal point value for these values is always 3.

* For example to set the value of SET1A to 66.5, SET1A_HIGH = 1000 (1.000d) and SET1A_LOW = 964 (0.964d).

ANALOG OUTPUT1	0x39	ANALOG_OUTPUT1	1 = Analog output directly reflects the value coming from the sensor. 0 = Analog output, manually specified in percentage.	16 bit (word)	1	Read/Write
	0x3A	ANALOG_OUTPUT1_SET	Specify analogue output as a manual percentage. Decimal points are always 2. For example; This value is 6500 (65.00d) since the analog output for 0-10 V is 6.5%.		0	
ANALOG OUTPUT2	0x3B	ANALOG_OUTPUT2	1 = Analog output directly reflects the value coming from the sensor. 0 = Analog output, manually specified in percentage	16 bit (word)	1	Read/Write
	0x3C	ANALOG_OUTPUT2_SET	Specify analogue output as a manual percentage. Decimal points are always 2. For example; This value is 6500 (65.00d) since the analog output for 0-10 V is 6.5%.		0	
ANALOG OUTPUT3	0x3D	ANALOG_OUTPUT3	1 = Analog output directly reflects the value coming from the sensor. 0 = Analog output, manually specified in percentage	16 bit (word)	1	Read/Write
	0x3E	ANALOG_OUTPUT3_SET	Specify analogue output as a manual percentage. Decimal points are always 2. For example; This value is 6500 (65.00d) since the analog output for 0-10 V is 6.5%.		0	

HOLDING REGISTER ADDRESS TABLE

Holding Register Address (hex)	Parameter Name	Parameter Explanation	Count of Bit	Default Value	Read/Write
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RS-232 & RS-485	0x3F	UART_PROTOCOL	Protocol selection (0=ASCII, 1=MB_RTU, 2=MB_ASCII)	16 bit (word)	1	Read/Write
	0x40	UART_ADRESS	Address information for network connection (1 to 247)		1	
	0x41	UART_BAUD	Baudrate (0=600, 1=1200, 2=2400, 3=4800, 4=9600, 5=14400, 6=19200, 7=38400, 8=57600, 9=115200)		4	
	0x42	UART_PARITY	Parity (0=None, 1=Odd, 2=Even)		0	
	0x43	UART_PERIOD	Period (1/ms cinsinden)		100	
	0x44	MODBUS_RAWDATA	It is used to send data from the connected MODBUS device to EPA (This feature is active in V3.3 and later versions)		-	

* MSB (Most Significant Bit) or H word (HIGH): Represents the 16 bits which are significant for a 32-bit number.

* LSB (Least Significant Bit) or L word (LOW): refers to the 16 bits which are small for a 32-bit number.

* For values to be entered with H word and L word, the function code Write Multiple Register (0x10) must be used and both values must be entered at any time. The decimal point value for these values is always 3.

* For example to set the value of SET1A to 25.5, SET1A_HIGH = 0 (0d), SET1A_LOW = 25500 (25.500d).

** Analogue output set by parameter Analog_Output1_Set only operates when Analog_Output1 = 0. When Analog_Output1 = 1, the analogue output is not in device control, the value from the sensor is transferred directly.

INPUT REGISTER ADDRESS TABLE

Input Register Address (hex)	Parameter Name	Parameter Explanation	Count of Bit	Default Value	Read/Write
0x00	ANALOG_RAW_VALUE	Unprocessed raw value from sensor	16 bit (word)	-	Read-only
0x01	DECIMAL_POINTS	Decimal point location on the screen display (0=A, 1=A.A, 2=A.AA, 3=A.AAA, 4=A.AAAA)		1	
0x02	PROCESS_VALUE	Current value displayed on device screen		-	
0x03	VALLEY_VALUE	The lowest value read since the device was turned on		-	
0x04	PEAK_VALUE	The highest value read since the device was turned on		-	
0x05	DIGITAL_IOS	Status of External Tare Module (4.bit), status of 1st and 2nd relays (0. and 1.bit) [00000 = All Inactive, 10011 = All Active]	16 bit (word)	00000	Read-only
0x06	TARE_STATUS	Process Value indicates whether the value is tare or not. 0 = no tare, 1 = tare		0	

Function Code Definitons

Read Coil	0x01
Read Holding Register	0x03
Read Input Register	0x04
Write Single Coil	0x05
Write Single Register	0x06
Write Multiple Coils	0x0f
Write Multiple Register	0x10

