



List of registers in the FBM 22

Note: When using the Modbus Poll Software, addressing should be set to "Protocol Addresses (Base0" under the "Display" menu.

Address	Bytes	Register and Description
0 to 3	4	Serial Number, 4 byte value
4	1	Firmware Version, low byte
5	1	Firmware Version, hi byte
6	1	Modbus device address
7	1	Product Model
8	1	Hardware Revision
9	1	PIC Version Number
10-12		Reserved
13	1	Calibration register - used to calibrate the outputs
14		Reserved
15	1	Baudrate setting: 0 will set 9600bps, 1 will set 19200bps
16	1	Firmware Update Register, used to show the status of firmware updates
17-99	1	Reserved
100	2	Output 1 Register
101	2	Output 2 Register
102	2	Output 3 Register
103	2	Output 4 Register
104	2	Output 5 Register
105	2	Output 6 Register
106	2	Output 7 Register
107	2	Output 8 Register
108	2	Output 9 Register
109	2	Output 10 Register
110	2	Output 11 Register
111	2	Output 12 Register
112-115	0	Reserved
116	2	Register 116, 117 and 118 hold the position information on each of the hand-on-auto switches on the FBM modules. Each switch has three positions and therefore each switch requires 2 bits to hold the state.
117	2	Modbus registers are 16 bits wide so we can hold the status of 8 switches in register 116, the next 8 are held in register 117 and so on, up to number of switches on the particular FBM module.
118	2	The switch states are as follows: 00=off, the switch is in the center position 10=auto, the switch is positioned towards the terminal block 01=hand, manually on, The switch is positioned towards the center of the module (away from the terminal block).
119	2	Input 1 register high word
120	2	Input 1 register low word
121	2	Input 2 register, high word
122	2	Input 2 register, low word
123	2	Input 3 register, high word
124	2	Input 3 register, low word
125	2	Input 4 register, high word
126	2	Input 4 register, low word



127	2	Input 5 register high word
128	2	Input 5 register low word
129	2	Input 6 register, high word
130	2	Input 6 register, low word
131	2	Input 7 register, high word
132	2	Input 7 register, low word
133	2	Input 8 register, high word
134	2	Input 8 register, low word
135	2	Input 9 register high word
136	2	Input 9 register low word
137	2	Input 10 register, high word
138	2	Input 10 register, low word
139-143	5	Date stamp of Channel 1: Year, Month, Day, Hour, Minute respectively
144-148	5	Date stamp of Channel 2: Year, Month, Day, Hour, Minute respectively
149-153	5	Date stamp of Channel 3: Year, Month, Day, Hour, Minute respectively
154-158	5	Date stamp of Channel 4: Year, Month, Day, Hour, Minute respectively
159-163	5	Date stamp of Channel 5: Year, Month, Day, Hour, Minute respectively
164-168	5	Date stamp of Channel 6: Year, Month, Day, Hour, Minute respectively
169-173	5	Date stamp of Channel 7: Year, Month, Day, Hour, Minute respectively
174-178	5	Date stamp of Channel 8: Year, Month, Day, Hour, Minute respectively
179-183	5	Date stamp of Channel 9: Year, Month, Day, Hour, Minute respectively
184-188	5	Date stamp of Channel 10: Year, Month, Day, Hour, Minute respectively
189	1	Assign each input sample type: 0 = Analogue 1 = Pulse. Input 1:Correspond to bit0 and input 2 correspond to bit1 and so on.
190	2	Analogue Input1 original data
191	2	Analogue Input2 original data
192	2	Analogue Input3 original data
193	2	Analogue Input4 original data
194	2	Analogue Input5 original data
195	2	Analogue Input6 original data
196	2	Analogue Input7 original data
197	2	Analogue Input8 original data
198	2	Analogue Input9 original data
199	2	Analogue Input10 original data
200	1	Range setting for each input
201	1	183 correspond to input 1
202	1	184 correspond to input2, etc
203	1	0 = Raw data
204	1	1 = 10K Celsius
205	1	2 = 10K Fahrenheit
206	1	3 = 0 - 100%
207	1	4 = ON/OFF
208	1	5 = OFF/ON
209	1	6 = Pulse Input, 7 = Lighting Control



210	1	Filter coefficient for input 1,0 through 100, default is 20
211	1	Filter coefficient for input 2,0 through 100, default is 20
212	1	Filter coefficient for input 3,0 through 100, default is 20
213	1	Filter coefficient for input 4,0 through 100, default is 20
214	1	Filter coefficient for input 5,0 through 100, default is 20
215	1	Filter coefficient for input 6,0 through 100, default is 20
216	1	Filter coefficient for input 7,0 through 100, default is 20
217	1	Filter coefficient for input 8,0 through 100, default is 20
218	1	Filter coefficient for input 9,0 through 100, default is 20
219	1	Filter coefficient for input 10 through 100, default is 20
220	1	Timer for input 1, how long time the lightingcontrol take over the outputs
221	1	Timer for input 2, how long time the lightingcontrol take over the outputs
222	1	Timer for input 3, how long time the lightingcontrol take over the outputs
223	1	Timer for input 4, how long time the lightingcontrol take over the outputs
224	1	Timer for input 5, how long time the lightingcontrol take over the outputs
225	1	Timer for input 6, how long time the lightingcontrol take over the outputs
226	1	Timer for input 7, how long time the lightingcontrol take over the outputs
227	1	Timer for input 8, how long time the lightingcontrol take over the outputs
228	1	Timer for input 9, how long time the lightingcontrol take over the outputs
229	1	Timer for input 10, how long time the lightingcontrol take over the outputs
230	1	Input 1 timer Left, how much time left for lighting control
231	1	Input 2 timer Left, how much time left for lighting control
232	1	Input 3 timer Left, how much time left for lighting control
233	1	Input 4 timer Left, how much time left for lighting control
234	1	Input 5 timer Left, how much time left for lighting control
235	1	Input 6 timer Left, how much time left for lighting control
236	1	Input 7 timer Left, how much time left for lighting control
237	1	Input 8 timer Left, how much time left for lighting control
238	1	Input 9 timer Left, how much time left for lighting control
239	1	Input 10 timer Left, how much time left for lighting control
240		Light control disable/enable, each bit correspond to one output, output 1 correspond to least significant bit, 0 = disable, 1 = enable
241	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
242	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
243	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
244	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
245	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
246	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
247	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2
248	1	Select which input as lighting control trigger, 0 = disable lighting control, 1=input1, 2 = input 2



For example, if we would like to read the input 2 register at module node address #1,

Slave Address	Function	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC Hi Byte	CRC Hi Byte
1	3	0	109	0	1	xx	xx

Or we read 8 values after input 2 in module 1,

Slave Address	Function	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC Hi Byte	CRC Hi Byte
1	3	0	109	0	8	xx	xx

Or we write 600 to output 4 in module 1,

Slave Address	Function	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC Hi Byte	CRC Hi Byte
1	6	0	103	0	600	xx	xx

More details can be found in Modbus Serial Communication Section

Note about register when updating the firmware

There are two registers that will tell the CPU information about the model and hardware of FBM modules.

Note: after updating the firmware you MUST setup these registers first or the module may not function properly

Product Model is register address 7

The corresponding values are as follows:

- FBM 16 =
- FBM 21 =
- FBM 22 =
- FBM 32 = 22

Hardware revision is register address 8

The hardware revision can be found by removing the front cover of the module. It is written in white sildscreen on the edge of the board