

Example 1: MA-02 module control - implementation of the 01_H function

Sample MODBUS RTU protocol frame allowing to read the current state of the digital output and sample MA-02 module response are shown in **Table 1**. The request is sent to the MA-02 module with address equal to one. The following request allows to read all eleven outputs. 0F 07_H exit value means that outputs with the address of 0-3 and 8-10 are shorted to ground, and outputs with the address of 4-7 are open.

Request							
Address	Function	First output address		Number of outputs		CRC	
01 _H	01 _H	00 _H	00 _H	00 _H	0B _H	7D _H	CD _H
Response							
Address	Function	Number of bytes		Value of outputs		CRC	
01 _H	01 _H	02 _H		0F _H	07 _H	FD _H	CE _H

Table 1. Example of request frame allowing to read output status and sample system response

Example 2: MA-02 module control – implementation of the 05_H function

Sample MODBUS RTU protocol frame allowing to activate the seventh output of the module with the address of 10. In order to open the output, enter the value of 00 00_H in the "output value" request box.

Request							
Address	Function	First output address		Number of outputs		CRC	
0A _H	05 _H	00 _H	07 _H	FF _H	00 _H	3C _H	80 _H
Response							
Address	Function	Number of bytes		Value of outputs		CRC	
0A _H	05 _H	00 _H	07 _H	FF _H	00 _H	3C _H	80 _H

Table 2. Example of request frame causing a short circuit to ground of the seventh output and the correct system response.

Example 3: MA-02 module control – implementation of the 0F_H function

Sample MODBUS RTU protocol frame allowing the activation of outputs with the address of 0-3 and 8-11 and deactivation of outputs with the address of 4-7.

Request										
Address	Function	First output address		Number of outputs		Number of bytes		Value of outputs		CRC
02 _H	0F _H	00 _H	00 _H	00 _H	0B _H	02 _H	0F _H	07 _H	0B _H	22 _H
Response										
Address	Function	First output address		Number of outputs		Number of bytes		Value of outputs		CRC
02 _H	0F _H	00 _H	00 _H	00 _H	0B _H	02 _H	0F _H	07 _H	14 _H	3F _H

Table 3. Example of request frame allowing the activation of outputs with the address of 0-3 and 8-11 and deactivation of outputs with the address of 4-7.

Example 4: MA-02 module control – implementation of the 03_H function

Sample MODBUS RTU protocol frame allowing to read the programmable register address. For this purpose, set all address switches to OFF (device address 01 H). The module 20H returned value in the register at address zero. In the case of setting all the address switches to ON, the device address will be compatible with the programmable register value (in this case 32).

Request							
Address	Function	Register address		Number of registers		CRC	
01 H	03 H	00 H	00 H	00 H	01 H	84 H	0A H
Response							
Address	Function	Number of bytes		Register value		CRC	
01 H	03 H	01 H		00 H	20 H	49 H	9C H

Table 4. Example of request frame allowing to read the programmable register address.

Example 5: MA-02 module control – implementation of the 06_H function

Sample MODBUS RTU protocol frame allowing to set values in the programmable register. In this case, the programmable register is set to 20H (32). The address value stored in the programmable register may range from 1 to 247.

Request							
Address	Function	Register address		Register value		CRC	
01 H	06 H	00 H	00 H	00 H	20 H	88 H	12 H
Response							
Address	Function	Number of bytes		Register value		CRC	
01 H	06 H	00 H	00 H	00 H	20 H	88 H	12 H

Table 5. Example of request frame allowing to set the programmable register address.