

# Function Bloc



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Référence	MRTU_CPU_Master
Révision	1.3
Auteur	JP Viskovic
Date	09/09/15
+ Support	<a href="http://support-omron.fr/">http://support-omron.fr/</a>

## Function Bloc Modbus RTU Master serial port Hostlink

Function	Modbus RTU master on serial port Hostlink																																																																																								
Symbols	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p style="text-align: center;">Write_Register</p> <p style="text-align: center;">MRTU_CPU_Fn06</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td>(BOOL)</td> <td>(BOOL)</td> </tr> <tr> <td>EN</td> <td>ENO</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Slave_No</td> <td>Busy</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Register_Address</td> <td>Error</td> </tr> <tr> <td>(INT)</td> <td>(BOOL)</td> </tr> <tr> <td>Value</td> <td>Done</td> </tr> <tr> <td>(BOOL)</td> <td></td> </tr> <tr> <td>Cmd_Write</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p style="text-align: center;">Write_Coil</p> <p style="text-align: center;">MRTU_CPU_Fn05</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td>(BOOL)</td> <td>(BOOL)</td> </tr> <tr> <td>EN</td> <td>ENO</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Slave_No</td> <td>Busy</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Coil_Address</td> <td>Error</td> </tr> <tr> <td>(BOOL)</td> <td>(BOOL)</td> </tr> <tr> <td>Value</td> <td>Done</td> </tr> <tr> <td>(BOOL)</td> <td></td> </tr> <tr> <td>Cmd_Write</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p style="text-align: center;">Read_Registers</p> <p style="text-align: center;">MRTU_CPU_Fn03</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td>(BOOL)</td> <td>(BOOL)</td> </tr> <tr> <td>EN</td> <td>ENO</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Slave_No</td> <td>Busy</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Register_Address</td> <td>Error</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Register_Qty</td> <td>Done</td> </tr> <tr> <td>(UINT)</td> <td></td> </tr> <tr> <td>RespData_DM</td> <td></td> </tr> <tr> <td>(BOOL)</td> <td></td> </tr> <tr> <td>Cmd_Read</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p style="text-align: center;">Write_Registers</p> <p style="text-align: center;">MRTU_CPU_Fn10</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td>(BOOL)</td> <td>(BOOL)</td> </tr> <tr> <td>EN</td> <td>ENO</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Slave_No</td> <td>Busy</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Register_Address</td> <td>Error</td> </tr> <tr> <td>(UINT)</td> <td>(BOOL)</td> </tr> <tr> <td>Register_Qty</td> <td>Done</td> </tr> <tr> <td>(UINT)</td> <td></td> </tr> <tr> <td>DataAddress_DM</td> <td></td> </tr> <tr> <td>(BOOL)</td> <td></td> </tr> <tr> <td>Cmd_Write</td> <td></td> </tr> </table> </div> </div>	(BOOL)	(BOOL)	EN	ENO	(UINT)	(BOOL)	Slave_No	Busy	(UINT)	(BOOL)	Register_Address	Error	(INT)	(BOOL)	Value	Done	(BOOL)		Cmd_Write		(BOOL)	(BOOL)	EN	ENO	(UINT)	(BOOL)	Slave_No	Busy	(UINT)	(BOOL)	Coil_Address	Error	(BOOL)	(BOOL)	Value	Done	(BOOL)		Cmd_Write		(BOOL)	(BOOL)	EN	ENO	(UINT)	(BOOL)	Slave_No	Busy	(UINT)	(BOOL)	Register_Address	Error	(UINT)	(BOOL)	Register_Qty	Done	(UINT)		RespData_DM		(BOOL)		Cmd_Read		(BOOL)	(BOOL)	EN	ENO	(UINT)	(BOOL)	Slave_No	Busy	(UINT)	(BOOL)	Register_Address	Error	(UINT)	(BOOL)	Register_Qty	Done	(UINT)		DataAddress_DM		(BOOL)		Cmd_Write	
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Condition of use	<p>The Modbus RTU CPU Master function block is offered 'as is' and may serve as a basis for development.</p> <p>Users should previously test its adequacy to the final application.</p> <p>Omron could not be held responsible in case of malfunction.</p>																																																																																								
Principe	<p>The serial port should be setup to RS232C mode using 8 data bits</p> <p style="color: red;">Front switch related to serial port should be on « Setup » (User configuration).</p> <p>List of Read/write command implemented</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Code</th> <th>Modbus Function</th> <th>Function block</th> </tr> </thead> <tbody> <tr> <td>0x03</td> <td>Read Holding Registers</td> <td>MRTU_CPU_Fn03</td> </tr> <tr> <td>0x05</td> <td>Write Single Coil</td> <td>MRTU_CPU_Fn05</td> </tr> <tr> <td>0x06</td> <td>Write Single Register</td> <td>MRTU_CPU_Fn06</td> </tr> <tr> <td>0x10</td> <td>Write Multiple Registers</td> <td>MRTU_CPU_Fn10</td> </tr> </tbody> </table>	Code	Modbus Function	Function block	0x03	Read Holding Registers	MRTU_CPU_Fn03	0x05	Write Single Coil	MRTU_CPU_Fn05	0x06	Write Single Register	MRTU_CPU_Fn06	0x10	Write Multiple Registers	MRTU_CPU_Fn10																																																																									
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Note: Modbus frames could be checked using the utility software [Multiway](#)

## 1- Input variables of function block MRTU\_CPU\_Fn03

Name	type	range	Description
EN	Bool	OFF, ON	FB Activation
Slave_No	UINT	0-00FF	Slave number
Register_Address	UINT	0-FFFF	Address of 1rst register
Register_Qty	UINT	0-00FF	Number of registers
RespData_DM	UINT	0-FFFF	Address of received read data (DM)
Cmd_Read	Bool	OFF, ON	Execute the read command

## 2- Input variables of function block MRTU\_CPU\_Fn05

Name	type	range	Description
EN	Bool	OFF, ON	FB Activation
Slave_No	UINT	0-00FF	Slave number
Coil_Address	UINT	0-FFFF	Coil Address
Value	Bool	OFF, ON	Value to write
Cmd_Write	Bool	OFF, ON	Execute the write command

## 3- Input variables of function block MRTU\_CPU\_Fn06

Name	type	range	Description
EN	Bool	OFF, ON	FB Activation
Slave_No	UINT	0-00FF	Slave number
Register_Address	UINT	0-FFFF	Address of the register
Value	UINT	0-FFFF	Value to write
Cmd_Write	Bool	OFF, ON	Execute the write command

## 4- Input variables of function block MRTU\_CPU\_Fn10

Name	type	range	Description
EN	Bool	OFF, ON	FB Activation
Slave_No	UINT	0-00FF	Slave number
Register_Address	UINT	0-FFFF	Address of 1rst register
Register_Qty	UINT	0-00FF	Number of registers
DataAddress_DM	UINT	0-FFFF	Data Source address in the DM area
Cmd_Write	Bool	OFF, ON	Execute the write command

## Output variables of function block MRTU\_CPU\_FN03, FN05, FN06 and FN10

Name	type	Range	Description
ENO	Bool	OFF, ON	ON : Hostlink port available
Busy	Bool	OFF, ON	Executing
Error	Bool	OFF, ON	Error flag
Done	Bool	OFF, ON	Operation completed (check the Error Flag for success)