

Function Block



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0.15€ TTC/min

Référence	MTCP_ETN_Server
Révision	2.0
Auteur	JP Viskovic
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+ Support	http://support-omron.fr/

Modbus TCP Server for ETN unit n°0

Function	Modbus TCP Server dedicated to CS/CJ1W-ETN21 Unit n°0
Symbol	
File	MTCP_ETN_Server.zip
PLC	<ul style="list-style-type: none"> - CJ1xx-V3 + CJ1W-ETN21 et CJ2H/M + CJ1W-ETN21 - CS1xx + CS1W-ETN21
Conditions of use	<p>The FB Modbus TCP server provides some read/write features in accordance with the specifications defined by the Modbus organization.</p> <p>The Modbus TCP Client 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>
Restriction of use	The ETN21 unit should be set to No 0 and FB use socket N°1
Principe	<p>The FB MTCP_ETN_Server is listening for a client connection as soon as the EN input is activated.</p> <p>If the ETN21 is not in LISTEN mode or ESTABLISHED during 10s, the FB will restart the unit.</p> <p>In case of physical disconnection longer than 3s, the client is disconnected and the server switch to mode LISTEN.</p> <p>If the reset method is used by the client to disconnect (flag RST of TCP) then the server disconnect the client and switch to mode LISTEN.</p> <p>Reset_Unit can be used to reset the ETN unit (A501.00).</p> <p>Read/write coils are executed in CIO area. exemple : address Modbus 162 → CIO 10.02</p> <p>Read/write registers are executed in DM area. exemple : address Modbus 162 -> D0162</p>

Supported command list

Code	Function	Name in MODBUS
0x01	***** NOT SUPPORTED *****	Read Coils
0x02	***** NOT SUPPORTED *****	Read Discrete Inputs
0x03	I/O memory (DM) Read Multiple Registers	Read Holding Registers
0x04	I/O memory (CIO) Read Multiple Registers	Read Input Registers
0x05	I/O memory Write Single Coil (CIO)	Write Single Coil
0x06	I/O memory (DM) Write Single Register	Write Single Register
0x08	Echo back test	Diagnostic
0x0F	***** NOT SUPPORTED *****	Write Multiple Coils
0x10	I/O memory (DM) Write Multiple Registers	Write Multiple Registers

Memory Map

Used by the function Block

Type	range	Descriptions
Send/Receive Area	D32500-32767	store request and prepare response

Socket service flag & command switch

Type	range	Descriptions
Flag/command	CIO1000-1024	For more details see : Socket Service from W421
Parameter Area	D3000-D30099	

PLC area accessible by the Modbus TCP request

Address	MODBUS	PDU	Corresponding CS/CJ's address
Coils	1- 65536	0 - 65535	0-65535 (CIO 0.00- 4095.15)
Input Registers	1- 6144	0 - 6143	0-6143 (CIO 0 - CIO6143)
Holding Registers	1- 32768	0 - 32767	0-32767 (D0 - D32767)

Input Variables

Name	type	Range	Description
EN	Bool	OFF, ON	Enable FB execution
Reset_Unit	Bool	OFF, ON	Restart ETN21 (Unit n°0)
Reset_Counter	Bool	OFF, ON	Reset the reception counter

Output Variables

Name	type	Range	Description
ENO	Bool	OFF, ON	Server operational and listening for a client connection
Connected	Bool	OFF, ON	Client connected
IP_Client	UINT	0 - 00FF	Last field of client IP address
Error	Bool	OFF, ON	Error Socket service or Modbus Exception
Error_Code	Bool	OFF, ON	Error code (see list below)
Except_Counter	UINT	0 - FFFF	Counter of exception error
Recv_Counter	UINT	0 - FFFF	

Error_Code will output the socket service error code first.

Socket switch error code

Socket	Description
0020	Connection with remote socket broken during send (EPIPE).
003E	Internal buffer cannot be obtained due to high reception traffic
0042	ICMP data received (EMSGSIZE).
0044	ICMP data received (ENOPROTOPT).
0045	Error in communications with remote node (ECONNABORTED).
004B	Error in communications with remote node (ECONNRESET).
0053	Comm Error with remote node (ETIMEDOUT) or remote node does not exist.
0066	Internal memory cannot be obtained; cannot execute.
0080	Open request timed out.
0081	The specified socket was closed during open processing.
0082	Connection could not be established with specified remote node.
0302	CPU Unit error
1100	Number of receive bytes not in allowable range.
1101	The area designation of the Send/Receive Data Address is not in allowable range.
1103	The bit number in the Send/Receive Data Address is not 00.
110C	Request switch turned ON during another processing
2210	Specified socket has not been connected.
2211	Unit is busy: cannot execute.
220F	Specified socket is already open or already processing an open request
2607	Specified Socket Service Parameter Area is already being used for another socket

Modbus Error code

Exception	Description
0001	ILLEGAL FUNCTION
0002	ILLEGAL DATA ADDRESS
0003	ILLEGAL DATA VALUE