

MOD-ETH

Connection with MOD-6TE

Example how to connect MOD-ETH with MOD-6TE and read registers by Modbus TCP



1 Connect temperature sensors to channel 2 of the MOD-6TE module. In this example it will be PT100 2-wire.



2 Connect MOD-6TE and MOD-ETH using RS485:



pair

3 Connect power supply to MOD-6TE and MOD-ETH.





4 Open IO Configurator

Link to download:

https://www.aspar.com.pl/katalogi/IOMODULES/KONFIGURATOR/software/ Konfigurator_IO.zip

5 Connect MOD-6TE with IO Configurator via USB cable and set type of temperature sensor and read the temperature channel 2 – **24,1°C** (register value **241**)

Ø IO Configurator	_		\times
Device type:	*	(0
6TE Module Transmission Info			
Sensor Register Value Alarm Level Remember Alarm status value MIN MAX alarm Status			
Channel 1 🔲 32767 Settings 0 0			
Chainel 2 🗹 241 24,1 °C Setting 🚺 🗍			
Channers I 32767 Setting			
Channel 4 32767 Setting Inputmode PT100 2-wire -			
Channel 5 32767 Setting Constant-incention temperature			
Channel 6 32767 Setting			
Junction temperature 217 OK Cancel			
Measuring current 252 252 uA Filtering 1			
Constant junction temperature 0			
Junction temperature offset			
Alam outputs settings			
value value Status			
Settings 0 0 0			
Settings 0 0 0			



☆

6 Set communication parameters in MOD-6TE and MOD-ETH in IO Configurator - (TRANSMISSION):

<u>MOD-ETH</u>	MOD-6TE
Baud rate: 19200 Parity: NONE Data bits: 8 Stop bits: 1 Response delay: 0 Modbus Type: RTU	Address: 2 Baud rate: 19200 Parity: NONE Data bits: 8 Stop bits: 1 Response delay: 0 Modbus Type: RTU

7 Connect MOD-ETH to your PC using Ethernet cable and open using web browser MOD-ETH: 192.168.1.135 (login: admin, password: 0000).

🔿 192.168.1.135





8 Set:

8.1 NETWORK

IP:	192.168.1.135	
Mask:	255.255.255.0	
Gateway:	192.168.1.1	
Modbus port:	502	0
HTTP port	80	\$
Connection Timeout:	60	≎ s
	Save Res	et Device

8.2 MODBUS CONFIG (GATEWAY MODE)

Baudrate: 19200 🗸
Parity: None 🗸
Bits: 8 🗸
Stop Bits: 1 🗸
Modbus Configuration: RTU -
Device Address: 1
RS485 Timeout: 500
vice Table Refresh Slow: 10000
e Table Refresh Normal: 2000
vice Table Refresh Fast
Mode: GATEWAY
(Saus)
Save

The MOD-ETH module has two different working modes. The first is the Modbus TCP **GATEWAY**, in which the device converts the frames of Modbus TCP into Modbus RTU/ASCII and sends them to the RS485 network's devices.

The second mode is the **Device Table** function, in which the module reads the RS485 network's devices only using the earlier-defined requests and ignores the requests addressed to other devices in the Modbus TCP network. The communication with external modules is only possible through the internal registers of the module in the range of addresses from 1000 to 1099.



Connection with MOD-6TE

9 Read channel 2 of MOD-6TE (**GATEWAY MODE**) using Modbus Master Device.

In this case Modbus Master Device is software – **QModMaster**.

Below the window with Modbus TCP settings – Master Device. You have to use: address of MOD-6TE: 2, READ HOLDING REGISTER - function 3, and start address: 53 (Channel 2 in MOD-6TE)

🚅 QModMaster		- 🗆	×	🗈 Bus Monitor	_	
File Options Commands View Help				🔒 🏷 😫		
🕄 🕑 💉 📰 🚺 🏷 C 📑	🖸 🔀 🧮 🧳 🖷	Image:	٥	Raw Data		
Modbus Mode TCP V Unit ID 2 + Scar Function Code Read Holding Registers (0x03)	Rate (ms) 1000 ♀ ▼ Start Address 53 ♀ De	c 🍸		[TCP]>Tx > 15:01:14:630 - 18 7D 00 00 06 02 03 00 01 [TCP]>Tx > 15:01:14:643 - 18 7D 00 00 00 05 02 03 02 00 F1 [TCP]>Tx > 15:01:15:622 - 18 7E 00 00 06 62 03 00 01 [TCP]>Tx > 15:01:15:624 - 18 7E 00 00 06 02 03 02 00 11 [TCP]>Tx > 15:01:15:634 - 18 7E 00 00 05 02 03 02 00 F1 [TCP]>Tx > 15:01:15:634 - 18 7F 00 00 06 02 03 02 00 F1		
Number of Registers 1 0 Data Format De	rc ▼ Signed 🗌			[TCP]>Rx > 15:01:16:637 - 18 7F 00 00 00 05 02 03 02 00 F1 [TCP]>Tx > 15:01:17:633 - 18 80 00 00 00 60 20 30 03 500 01 [TCP]>Rx > 15:01:17:645 - 18 80 00 00 00 50 20 30 02 00 F1 [TCP]>Tx > 15:01:18:635 - 18 81 00 00 00 05 02 03 00 35 00 01 [TCP]>Tx > 15:01:18:647 - 18 81 00 00 00 00 50 20 30 00 35 00 01		
Modbus TCF	• Settings ? ×					
Slave IP 192.16 TCP Port 502	0K Cancel					
TCP : 192.168.1.135:502 Base Addr : 0	Packets : 6298 Er	rors: 0	.:			

There is only one temp. sensor. 00 F1 (hex) **241 - 24,1 °C** - this is temperature No 2 from MOD-6TE.



MOD-ETH

Connection with MOD-6TE

10 MODBUS CONFIG (**DEVICE TABLE MODE**)



10.1 Add new devices (DEVICE TABLE MODE)



Int	ernal Registers	Devices						
Device Address	Function	Size	Register Address	Internal Address	Speed	ON/OFF	Delete Device	Status
2 🗘	(0x03) Read Holding Registers 💙	1 0	53 🗘	1000 🗘	Fast 🗸	ON V	Delete Save Confi	OK g Load Config

53 (dec) – channel 2 temperature in MOD-6TE



The max amount of new devices is 25.

The communication with external modules is only possible through the internal registers of the module in the range of addresses from **1000 to 1099**.

- 11 Read channel 2 of MOD-6TE (**DEVICE TABLE MODE**) using Modbus Master Device.
- 11.1 Open the table of internal registers.

Inte	ernal Registers	Devices						
Device Address	Function	Size	Register Address	Internal Address	Speed	ON/OFF	Delete Device	Status
2 🗘	(0x03) Read Holding Registers 🗸	1 🗘	53 🗘	1000 🗘	Fast 🗸	ON 🗸	Delete	ок
Add Device							Save Config	Load Config

In	iternal I	Regist	ters			Dev	ices													
Address	0	0		01		02		03		04		05		06		07		08		09
1000	240	\$	0	\$	0	¢	0	¢	0	¢	0	\$	0	¢	0	\$	0	0	0	<
1010	0	\$	0	$\hat{}$	0	÷	0	÷	0	\$	0	\$	0	\$	0	<>	0	\$	0	$\hat{}$
1020	0	<>	0	\$	0	÷	0	÷	0	\$	0	\$	0	\$	0	\$	0	\$ \$	0	^ >
1030	0	<>	0	^	0	÷	0	÷	0	÷	0	\$	0	÷	0	$\hat{}$	0	$\hat{}$	0	~ ~ ~
1040	0	\$	0	\$	0	÷	0	\$	0	\$	0	\$	0	\$	0	\$	0	$\hat{\cdot}$	0	^
1050	0	\sim	0	\$	0	¢	0	\$	0	\$	0	\$	0	\$	0	\$	0	÷	0	\$
1060	0	$\hat{}$	0	÷	0	¢	0	¢	0	\$	0	÷	0	\$	0	\$	0	÷	0	÷
1070	0	$\hat{}$	0	÷	0	÷	0	÷	0	\$	0	÷	0	¢	0	\$	0	÷	0	÷
1080	0	$\hat{}$	0	\$	0	÷	0	$\hat{\cdot}$	0	\$	0	÷	0	\$	0	$\hat{}$	0	$\hat{\cdot}$	0	÷
1090	0	<>	0	÷	0	\$	0	\$	0	$\hat{}$	0	\$	0	$\hat{}$	0	÷	0	÷	0	\$



Connection with MOD-6TE

The read temperature value is located in the internal register 1000 - 240 - 24,0 °C.

12 Read internal register **1000** using Modbus Master Device.

In this case Modbus Master Device is software – **QModMaster**.

Below the window with Modbus TCP settings – Master Device. You have to use: address of MOD-ETH: 1, READ HOLDING REGISTER - function 3, and start address: 1000 (internal register in MOD-ETH)



00 F0 (hex) 240 - 24,0 °C - this is temperature No 2 from MOD-6TE.