

Q: How do I retrieve an analog value from the M-7019R module and

display it on the TouchPAD?

Refer to the following instructions for details of how to configure the M-7019R and TouchPAD devices to allow an analog value to be displayed.

Step 1: Ensure that the power supply and the wiring connections for both the M-7019R and the Host PC are correctly configured. Download and install the DCON Utility software, and open the DCON Utility to search for the M-7019R module. For detailed information about the installation and usage of the DCON Utility, refer to the DCON Utility user manual, which can be download from: http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/dcon_utility/.

Step 2: In the search results pane, click the module name to open the "7019R Firmware" dialog box, allowing you to configure the settings for M-7019R, as illustrated in the diagram below.

DCON Utility Pro V 2.0.0.8	
₹ ► II %	
Start Address 0 End A	Address 255
ID Address Baud Rate	Checksum Format Status Description
7019R 1[1h] 9600	Disable N,8,1 Remote I/O [Modbus RTU]8*AI (Universal mA,mV,V,The
	7019R Firmware[B403]
	Configuration AI About
	Address 1 01W
	Baud Rate 9600
	Parity N.8,1-None Parity -
	Checksum
	Analog Format Engineering Format 👻
	60/50 Hz 60Hz -
COM:3	Response Delay 0 ms
	Exat



Step 3: In the **"Configuration"** tab, select **"2'S Complement Format"** from the **"Analog Format"** drop down options in the **"Configuration"** settings area.

18 7019R Firmware[B4	03]	x
Configuration AI	About	
Protocol	Modbus R TU 👻	
Address	1 01H	
Baud Rate	9600 👻	
Parity	N,8,1-None Parity 🚽	
Checksum	Disable	
Analog Format 60/50 Hz	Complement Format	
Response Delay	0 ms Set Module Configurations	
Exit		

Step 4: Ensure that the power supply and the wiring connections for both the M-7019R and TouchPAD are correctly configured. Install the HMIWorks software and create a new project. For detailed information about HMIWorks and its installation and use on TouchPAD, refer to the HMIWorks and TouchPAD user manuals. Download the TouchPAD user manual from:

http://ftp.icpdas.com/pub/cd/touchpad/document/english/user_manual/.

Step 5: Click the **"Register Devices (I/O)"** option from the **"HMI"** menu to open the **"Devices"** dialog box, or press F3.





Step 6: In the **"Device information section"** of the **"Devices"** dialog box, select **"Modbus RTU Master"** item from the **"TouchPAD is"** drop-down options.

Devices								
Device information		_	Γ	Tag Name	IO Type	Start Address	Default Value	Comment
TouchPAD is:	Modbus TCP Master			•				
	Modbus TCP Master							
Device Series: Connection: Model Name:	Modbus RTU Master Modbus TCP Slave Modbus RTU Slave DCON Master	Search						
Device Name:		Assign						
Net ID:	1	(1~247)						
Timeout:	200	ms						
Scan Time :	200	ms		٠ 📃				Þ
				<u>O</u> K <u>C</u> ancel				Clear All <u>T</u> ags

Step 7: Select the **"M-7000"** item from the **"Device Series"** drop-down options.

Devices						
Device information	I	Tag Name	IO Type	Start Address	Default Value	Comment
TouchPAD is: Modbus RTU Master		Þ				
Device Series: M-7000						
Connection: M-7000						
Model Name: tM series MRTUM Select						
Device Name: LC_series Assign						
Net ID: IR series 12~247)						
PIR_series						
Soon Time : 200						
Scan Time : 200 ms						•
	' . 		1			
	l	<u>O</u> K <u>C</u> ancel				Clear All <u>T</u> ags



Step 8: Select the **"Create New..."** item from the "Connection" drop-down options to open the "New/Edit Connection..." dialog box.

Step 9: In the "New/Edit Connection..." dialog box, configure the connection information for the M-7019R module in the following manner:

- 1. Enter a name for the connection (e.g., SER_1) in the "Connection Name" field.
- 2. Select "COM1" from the "Connection Interface" drop-down options.
- 3. Select the **Baud Rate for the M-7019R** module (e.g., 9600) from the "Baud Rate" drop-down options.
- 4. Select the **Data Format for the M-7019R** module (e.g., 8, None, 1) from the "Data Bit", "Parity" and "Stop Bit" drop-down options.
- 5. Click the **"OK"** button to save the configuration and close the dialog box.

Devices								c	- O X
Device information			Та	g Name	IO Type	Start Address	Default Value	Comment	
TouchPAD is:	Modbus RTU Master	▼							
Device Series:	M-7000	-							
Connection:	Create New	•							
Model Name:		Select							
Device Name:		Assign							
Net ID:	1	(1~247)		lew/Edit Connection	_	-		×	D
Timeout:	200	ms							1
Scan Time :	200	ms		Connection Name	SER	L1	As	sign Name	
			•	Connection Interfac	ce CON	И1 💋	•		
				Note: The interface devices, not for do	e is for com wnloading f	munication betw firmware.	ween TouchPAI	D and I/O	Tags
				Serial Connectior	Settings-				
				Baud Rate	B	600 <u>-</u>			
				Data Bit	8	-	[
				Parity	4	None) 🔻			
				Stop Bit	1	-	[
			-						
					5 0	K Cano	cel		



Step 10: Click the **"Select"** button to select the **"M-7019R"** module and then click the **"OK"** button to save the configuration.

	Select [M-7000] Series	
Devices		
Device information	Mar M-7015	ue Comment
TouchPAD is: Modbus RTU Master 💌	M-7017Z-CH10	0
Al	M-70172-CH20	0
Device Series: M-7000	M-7019R	0
Connection: SER_1	M-7019Z	0
Model Name: M-7019R	M-7045	0
Device Name: Dev_M_7019R_1 Assign All	M-7051	0
Net ID: 1 (1~247)	M-7055 M-7060	0
Timeout: 200 ms	BLE M-7061	1
Scan Time : 200 ms	EC4 M-7065	×
,	101-7 004	•
<u>_</u>		Clear All <u>T</u> ags
	OK Cancel	

Step 11: In the "Tag Name" column, locate the reference to "TYPECODE_AI" and enter the value "8" (± 10 V)" in the "Default Value" field, and then click the "OK" button to save the configuration. For more information regarding Type Codes, refer to the "TypeCode .txt" file that can be found in the "C:/ICPDAS/HMIWorks_Standard/bin/Modules/M-7000/" folder.

Note: The TYPECODE_AI settings should always match the configuration of the M-7019R module.

Devices									x
Device information-		_	Г	Tag Name	IO Type	Start Address	Default Value	Comment	-
TouchPAD is:	Modbus RTU Master	·		A10	AI	0	0		
				Al1	AI	1	0		
Device Series:	M-7000	-		AI2	AI	2	0		
Connection:	SER 1	1		AI3	AI	3	0		
Model Name:	M-7019R	Select		Al4	AI	4	0		
Device Name:	Dev M 7019P 1	Accien	┢	AI5	AI	5	0		=
Device Name.		Assign	┢	AI6	AI	6	0		
Net ID:	1	(1~247)	┢	AI7	AI	7	0		
Timeout:	200	ms	E		Virtual	0	1		_
Scan Time :	200	ms	Ľ	TYPECODE_AI	Virtual	0	ŏ		I
)			•					Þ
				<u>O</u> K <u>C</u> ancel				Clear All <u>T</u> ags	
									11.

Step 12: The creation of the **"Dev_M_7019R_1"** device is now complete.





Step 13: The following procedure describes how to create a sample program for AIO:

- 1. Click the "ToolBox" tab and select the "Label" object from the "Widget (Ctrl+2)" pane.
- 2. Drag the Label object to the desired position on the design frame.
- Double-click the newly created Label object, "Label8" in this case, to open the "Select Tag" dialog box.
- 4. Select the "Dev_M_7019R_1_AIO" reference in the "Name" column to be used to represent the AIO tag, and then click the "OK" button.
- Click the "Inspector" tab, and then locate the "DecimalDigits" field in the "Inspector" pane. Enter the value "3" in the associated text field. Note: The AI value is enlarged 1000 times by default.





- 6. Click the "Libraries" tab, and select a "Light" object from the "Libraries" pane to be used to represent the ERROR tag.
- Click the "Workspace" tab, and then drag the "Dev_M_7019R_1_ERROR" tag from the "Workspace" pane to the desired position on the design frame.



The creation of the sample program for AIO is now complete.

Step 14: Once the sample program for AIO is complete, it can be uploaded to the TPD-433 module via USB. The detailed configuration and wiring information is as follows:

 Power off the TPD-433 module and use a flat-head screwdriver to set the Rotary Switch on the TPD-433 module to "Update AP" mode (position 9). Note that the default configuration is "Run" mode (position 0).





 Connect the TPD-433 module to the Host PC using a CA-USB10 cable, and then Power-on and reboot the TPD-433 module.



 The message: "MiniOS8 is running. Waiting for connection..." will be displayed on the TPD-433 module.



Step 15: The AIO sample program can now be uploaded to the TPD-433 module. Follow the procedure described below:

 In the HMIWorks application, click the "Run (Build & Download) F9" item from the "Run (Build & Download)" menu, or press F9.



 The "Frame1 rendering..." dialog will be displayed showing the progress of the update.



Once the upload is complete, i.e., when the progress indicator reaches 100%, power off the TPD-433 module and set the Rotary Switch to "Run" mode (position 0).



4. **Power-on and reboot** the TPD-433 module so that the module is operating in **"Run" mode**. The sample program for AIO will then be executed on the TPD-433 module.

Step 16: Verify the results of the AI functions test in the following manner.

- 1. Verify that the ERROR LED on the M-7019R module is in the normal communication state (green).
- 2. Verify that the correct AI read value is displayed in the AIO label on the TouchPAD.



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