# M-2217CI M-2217CI-4

# 8 / 4-ch Channel to Channel Isolation

**Differential Analog Input Module** 

**User Manual** 



M-2217CI



M-2217CI-4

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Edited by Jerry Tseng

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# 1. Introduction

M-2217CI-4/M-2217CI is a 4/8-channel analog input module with channel-to-channel isolation. All analog input channels can be individually configured with input ranges including  $\pm 1$  V,  $\pm 2.5$  V,  $\pm 5$  V,  $\pm 10$  V, 0-20 mA, 4-20 mA, and  $\pm 20$  mA. The module can be set as voltage or current inputs via the software and provides up to 120 VDC overvoltage protections, as well as 50 mA overcurrent protection at 110 VDC/ VAC. Additionally, each 4-20 mA input channel features open wire detection. The sampling rate of M-2217CI-4/M-2217CI can be set to either fast mode (200 Hz) or normal mode (10 Hz) for recording voltage and current values with timestamps. It also provides EMS (EFT/ESD/Surge) protection and 3000 VDC I/O isolation to enhance noise protection capabilities in industrial environments.

### **Features**

- Software Configurable Voltage/Current Input
- Adjustable Sampling Rate (200Hz/10Hz per channel)
- Records with Time Stamps for Voltage and Current Measurements M-2217CI-4: 480,000 records/each channel

M-2217CI: 320,000 records/each channel

Built-in I/O

M-2217CI-4: 4-ch AI (Differential)

M-2217CI: 8-ch AI (Differential)

3000 VDC Channel-to-channel Isolation

# 2. Hardware

# 2.1 System Specifications

Module	M-2217CI-4	M-2217CI			
CPU Module					
CPU	32-bi	t ARM			
Watchdog Timer	Module, Communication(Programmable)				
Isolation					
Intra-module Isolation	3750	) VDC			
EMS Protection					
EFT (IEC 61000-4-4)	±4 kV for	Power Line			
	±4 kV Contact	for each Terminal			
ESD (IEC 01000-4-2)	±8 kV Air for	r Random Point			
Surge (IEC 61000-4-5)	±2 kV for	Power Line			
LED Indicators					
Status	1 x Power and	Communication			
COM Ports					
Ports	1 x F	RS-485			
Baud Rate	1200 ~ 115200 bps				
Data Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)				
Protocol	Modbus RTU, DCON				
Bias Resistor	10 ΚΩ				
Power					
Reverse Polarity Protection	Y	/es			
Input Range	+10 ~ -	+48 VDC			
Consumption	2.8 W (Max.)	4.8 W (Max.)			
Mechanical					
Dimensions (mm)	33 x 184 x 12	29 ( W x L x H )			
Installation	DIN-Rail mounting				
Environment					
Operating Temperature	-25 ~ +75 ℃				
Storage Temperature	-30 ~	+80 °C			
Humidity	10 ~ 90% RH,	Non-condensing			

# 2.2 I/O Specifications

Module		M-2217CI-4	M-2217CI			
Analog Input						
Channels		4 Differential	8 Differential			
Туре		Voltage, Current (So	ftware Configurable)			
Panga	Voltage	±1 V, ±2.5 V,	±5 V, ±10 V			
Range	Current	0 ~20 mA, 4 ~ 2	20 mA, ±20 mA			
Resolution		16-	16-bit			
Accuracy		±0.1% of FSR				
Sampling Data	Normal Mode	10 Hz (Total)				
Sampling Rate	Fast Mode	200 Hz (Total)				
Input Impedance		Voltage: 20 MΩ, Current: 135 Ω				
Overvoltage Protect	ction	120 VDC				
Overcurrent Protect	tion	50 mA at 110 VDC (max.)				
Individual Channel Configuration		Yes				
Channel-to-Channel Isolation		3000 VDC				
Open Wire Detection	on	For 4 ~ 20 mA only				

### 2.3 Appearance



	LED Indicator	LED Status	Causes		
	PWR (Red)	Solid	Normal Operation		
		Blink	Waiting for Firmware to update		

# 2.4 Pin Assignments

Pin Assignment		Terminal No.		Pin Assignment		Pin Assignment		
M-2217CI-4	M-2217CI				M-2217CI-4	M-2217CI	M-2217CI-4/	M-2217CI
AIO-	AIO-	02		01	AI0+	AI0+	Power Input: +1	0 ~ +48 VDC
		04		03				
	AI1-	06		05		AI1+		
		08		07				+Vs
AI1-	AI2-	10		09	AI1+	AI2+		CND
		12		11				GND
	AI3-	14		13		AI3+		D+
		16		15				D-
AI2-	AI4-	18		17	AI2+	AI4+		D-
		20		19				F.G.
		22		21				
	AI5-	24		23		AI5+		l
		26		25			SW	2
		28		27				Reserved
AI3-	AI6-	30		29	AI3+	AI6+	- 4	FW Lindate
		32		31				
		34		33				INIT
	AI7-	36	<b>ÖÞ 1</b> 0	35		AI7+		TINTI

SW2

1	INIT	On for INIT mode
2	T.R.	On to provide 120 ohm terminal resistance on the RS-485 bus
3	FW Update	On to update firmware
4	Reserved	-

# 2.5 Wiring to the Connector

Insulated Terminals Dimensions (Unit: mm):



A tip for connecting or removing the wire to the connector:

1. Use the blade of the flat-head screwdriver to push down the wire clamp.



# 2.6 Wire Connection



### 2.7 Internal I/O Structure



# 2.8 Dimensions (unit: mm)



# 2.9 Application



# 3. Configuration via RS-485

- > The factory default settings for RS-485 communication
  - Address: 1
  - Protocol: Modbus/RTU
  - Baudrate: 9600
  - Parity: N,8,1
  - Response Delay (ms): 0

#### Note

If there are multiple M-2217CI-4 / M-2217CI connected to the same RS-485 network, each module needs be set with a unique RS-485 address. More than one module having the same address will cause communication failure

- Testing RS-485 Communication
  - 1. Download the DCON Utility Pro from <u>https://www.icpdas.com/en/product/guide+Software+Utility\_Driver+DCON\_Utility\_Pro</u>

#### 2. Launch the DCON\_Utility\_Pro.exe.

TE DCON Utility Pro V 2.0.0.0
Start Address 0 End Address 255
ID Address Baud Rate Checksum Format Status Description
Stop Search Start Search Set COM port Configuration

3. Click the icon



to configure the COM port.

4. Select the COM Port number used to connect the M-2217CI-4 / M-2217CI logger.

Comport Option	
Comport Option COM Port COM13 COM1 COM2 COM10 COM11	Timeout 200 ms cksum Format
COM12 COM12 OK Cancel	O E,8,1 O O,8,1

5. The Baud Rate is factory default to 9600 bps.

Comport Option				×
COM P	ort	Timeou	ut	
COM13	*	200	ms	
Baud Rate	Protocol Ch	ecksum Fo	rmat	
☑ 11520	57600	38400	☑ 19200	
9600	4800	2400	□ 1200	
ОК	Cancel			

6. Select the Protocol tab.

Comport Option		X
COM Port	Timeou	ıt
COM13	200	ms
	· · · · · · · · · · · · · · · · · · ·	
Baud Rate Protoco	Checksum For	mat
DCON	🗹 Modbus RTU	🗖 Modbus ASCII
OK Can	cel	

7. Select the Format tab and check the parity that set in the logger.

Comport Option				×
COM Port		Timeout		
COM13	~	200	ms	
Baud Rate Proto	col Check	sum Forma	t	
⊙ N,8,1	<mark>O</mark> N,8,2	O E,8,1	O 0,8,1	
ОКС	ancel			

8. Click the Start Search icon.



9. The M-2217CI logger searched out will be listed as below.

📲 DCON Utility Pro V 4.3.0.6									×
₹ ▶ ॥ ₽ ₽	СМД	<b>b</b>			F	AQ			
€ COM13:*	ID .	Address	Baud Rate	Checksum	Format	Status	Description	Comments	
	M2217Cl4	1[01h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]4*AI (mA,mV,V)	Supported	
Clear									
Done									 

#### 10. Click the module name to configure the logger.

M2217CI4 Firmware[B2	.09]				
Configuration AI	Logger Configuration	Commands Log	Summary		
Protocol	Modbus RTU -				
Address	1 🗧 01H				
Baud Rate	9600 -				
Data Format (INIT*)	N,8,1 -				
Checksum	Disabled 👻	]			
Analog Format	Engineering Form 👻				
Sample Mode	Normal Mode 🗸				
Response Delay	0 [Max.30n	ns] ?		Set	Module Configurations
Exit					

#### Note

The Protocol/Baud Rate/Parity/Checksum items marked with "(INIT\*)" means that when any of those items needs be modified, the pin 1.INIT needs to be set in ON position and power cycle the logger, then the item can be modified. After complete setting, set the pin 1.INIT back to OFF position and power cycle the logger again to take the setting effect.

#### > Al tab

]	Read AI value	Set the data type Code
18 M2217CI4	irmware[B209]	
Configuratio	A Al Logger Configuration Co	mands Log Summary
	Al Value Type Code	• • • • • • • • • • • • • • • • • • •
AI:00	00000 [+000.000] [08] +/- 10 V	
AI:01	04183 [+004.183] [08] +/- 10 V	•
AI:02	00000 [+000.000] [08] +/- 10 V	-
AI:03	04184 [+004.184] [08] +/- 10 V	
	Set all cha	annels as Al:00
Evit		
GET_CH3_INF	'UI_RANGE[ [08h]+/- 10 V ]; ==> (N	oError)

# > AI - Data Logger Configuration

Configuration AI Log	ger Configuration Commands Log Summary	
Real Time	Year     Month     Day     Hour     Minute     Secon       2024     09     20     00     00     00     00	
Log Status	Stop	
Overwrite Option	<ul> <li>Continue writing when data logger is full</li> </ul>	
Sample Period	Hour Minute Secon	
Start Logger Time	Year         Mont         Day         Hour         Minute         Secon           2024         09         20         00	
End Logger Time	Year         Mont         Day         Hour         Minute         Secon         Apply           2024         •         09         •         20         •         00         •         00         •         Apply	

Real Time	Set real time for logging data. (Year/Month/Date/Hour/Minute/Second)
Log Status	Display the current status of data logging
Log Command	Set the status of data logging. It can be set to Stop, Run, Period.
Overwrite Option	Whether to overwrite data when it is full. It can be set to Yes or No
Sample Period	The time interval for logging data. (Hour/Minute/Second)
Start Logger	The start time for logging data. (Year/Month/Date/Hour/Minute/Second).
Time	
End Logger Time	The end time for logging data. (Year/Month/Date/Hour/Minute/Second).

> INIT

In case of the following situations, users have to set The pin 1.INIT on DIP Switch in the ON position and Power-cycle the M-2217CI / M-2217CI module:



- Change protocol from PC
- Change DCON configuration such as baud rate, parity and checksum
- Communication failure with an M-2217CI-4 / M-2217CI module.

M2217CI4 Firmware[	[8209]
Configuration AI	Logger Configuration Commands Log Summary
Protocol (INIT*)	DCON -
Address	0 (OOH)
Baud Rate (INIT*)	9600 👻
Parity (INIT*)	N,8,1 -
Checksum (INIT*)	Disabled -
Analog Format	Engineering Form -
Sample Mode	Normal Mode
Response Delay	0 [Max.30ms] ? Set Module Configurations
Exit	

When a M-2217CI-4 / M-2217CI module is powered-on with the pin 1.INIT in ON position, the protocol is DCON, address is 0, Baud Rate is 9600 bps, Parity is set to N/8/1 and Checksum is disabled.

After configuring the communication parameters, click the *Set Module Configurations* button, set the INIT to OFF position and power-cycle the M-2217CI-4 / M-2217CI to take the settings effect.

#### Note

The INIT switch does not need to be set in the ON position when changing the address, baud rate and parity for ModbusRTU communication; users only have to power-cycle the module after complete configuration.

# Appendix A: DCON Command Sets

### A-1. M-2217CI-4 / M-2217CI DCON Command Sets

Command	Description				
\$AAB	Read the under range status of each channel for 4 to 20mA and 0 to 20mA				
	ranges				
\$AAF	Read firmware version				
\$AAI	Read INIT status				
	response:				
	!AA0 -> INIT short to GND				
	!AA1 -> else				
\$AAM	read module name				
\$AAP	Read Modbus RTU/DCON protocol				
	response:				
	!AA10 -> DCON				
	!AA11 -> Modbus RTU				
\$AAPN	Set Modbus RTU/DCON protocol				
	N-> 0: DCON, 1: Modbus RTU				
\$AAS1	Reload factory calibration parameters				
\$AA0	Span calibration				
\$AA0Ci	M-2217CI-4:				
	Channel i span calibration for current input, $i = 0$ to 3 in hex format				
	M-2217CI:				
	Channel i span calibration for current input, $i = 0$ to 7 in hex format				
\$AA1	Zero calibration				
\$AA2	Read configuration				
\$AA5	Read reset status				
	!AA1 first after power on, !AA0 others				
\$AA7CiRrr	Set the channel type code				
\$AA8Ci	Read the channel type code				
#AA	M-2217CI-4:				
	Read All Analog Inputs				
	response				
	>(channel 0 data) (channel 1 data) (channel 3 data)				
	M-2217CI:				
	Read All Analog Inputs				

	response			
	>(channel 0 data) (channel 1 data) (channel 7 data)			
Command	Description			
#AAN	M-2217CI-4:			
	Read Channel Analog Input			
	N = 0 to 3 in hex format			
	M-2217CI:			
	Read Channel Analog Input			
	N = 0 to 7 in hex format			
%AANNTTCCFF	set configuration, NN: new address, $TT = 00$ , CC: new baud rate			
	FF: data format			
@AACH	Clear all high latched analog inputs to the current values			
@AACHN	M-2217CI-4:			
	Clear channel high latched analog input to the current value, $N = 0$ to 3 in			
	hex format			
	M-2217CI:			
	Clear channel high latched analog input to the current value, $N = 0$ to 7 in			
	hex format			
@AACL	Clear all low latched analog inputs to the current values			
@AACLN	M-2217CI-4			
	Clear channel low latched analog input to the current value, $N = 0$ to 3 in			
	hex format			
	M-2217CI:			
	Clear channel low latched analog input to the current value, $N = 0$ to 7 in			
	hex format			
@AADLB	Read the beginning of the period setting of the data logger for period			
	logging mode			
	response			
	!AAyyyymmddhhmmss,			
@AADLByyyymm	Set the beginning of the period setting of the data logger for period logging			
ddhhmmss	mode			
	yyyy: year, 2000 to 2199, mm: month, 01 to 12, dd: date, 01 to 31, hh: hour,			
	0 to 24, mm: minute, 0 to 59, ss: second, 0 to 59			
@AADLC	Read the data logger command			
	response			
	!AAh, 0: stop, 1: run, 2: run in period mode			
@AADLCh	Set the data logger command, h->0: stop, 1: run, 2: run in period mode			

Command	Description				
@AADLE	Read the ending of the period setting of the data logger for period logging				
	mode				
	response				
	!AAyyyymmddhhmmss				
@AADLEyyyymm	Set the ending of the period setting of the data logger for period logging				
ddhhmmss	mode				
	yyyy: year, 2000 to 2199, mm: month, 01 to 12, dd: date, 01 to 31, hh: hour,				
	0 to 24, mm: minute, 0 to 59, ss: second, 0 to 59				
@AADLF	Read the index of the first record of the current log				
	response				
	!AAhhhhhhhh, hhhhhhhh in hex format				
@AADLI	Read the index of the log record to be read				
	response				
	!AAhhhhhhh, hhhhhhhh in hex format				
@AADLIhhhhhhhh	Set the index of the log record to be read				
	response				
	!AA				
@AADLN	Read the index of the last log record				
	response				
	!AAhhhhhhh, hhhhhhhh in hex format				
@AADLO	Read the overwriting mode when data logger is full				
	response				
	!AAh, 0: stop logging when full, 1: overwrite				
@AADLOh	Set the overwriting mode when data logger is full				
	h->0: stop logging when full, 1: overwrite				
@AADLP	Read the sampling period setting of the data logger				
	response				
	!AAsssssmmm, sssss: second, 0 to 65535, mmm: millisecond, 0 to 995				
@AADLPsssssmm	Set the sampling period setting of the data logger. The millisecond should				
m	be multiple of 5.				
@AADLS	Read logging status of the data logger				
	response				
	!AAhh, hh in hex format, 00: stopped, 01: running, others: error				
@AAET	Read the RTC time in Epoch format				
	response				
	!AAhhhhhhhh, hhhhhhhh in Epoch and hex format				
@AAEThhhhhhhh	Set the RTC time in Epoch format				

Command	Description		
@AARH	Read all high latched values of analog input channels		
@AARHN	Read channel high latched value of analog input		
@AARL	Read all low latched values of analog input channels		
@AARLN	Read channel low latched value of analog input		
@AART	Read RTC data		
	response		
	!AAYYYYMMDDHHMMSS		
@AARTYYYYM	Set RTC data		
MDDHHMMSS			
~**	clear host watchdog timeout counter		
~AA0	read host watchdog status		
~AA1	clear host watchdog timeout status		
~AA2	read host watchdog enable/disable status and timeout value		
~AA3ETT	enable/disable host watchdog and set timeout value		
	E-> 0: disable host watchdog, 1: enable host watchdog		
	TT: host watchdog timeout in 0.1s in hex format		
~AAEV	Enable/disable module calibration		
~AARD	read response delay time in ms in hex format		
~AARDVV	set response delay time in ms, VV in hex format, 00 - 1E		

# Baud Rate Setting (CC)

Bits 5:0

Baud rate,  $0x03 \sim 0x0A$ 

Code	0x03	0x04	0x05	0x06
Baud	1200	2400	4800	9600
Code	0x07	0x08	0x09	0x0A
Baud	19200	38400	57600	115200

Bits 7:6

00: no parity, 1 stop bit

01: no parity, 2 stop bits

10: even parity, 1 stop bit

11: odd parity, 1 stop bit

# Data Format Setting (FF)

#### Bit 6

- 0: checksum disabled
- 1: checksum enabled

#### Bit 5

- 0: normal mode
- 1: fast mode

#### Bit 1:0

- 00: engineering format
- 01: % of FSR format
- 10: hex format

### **Analog Input Type and Data Format Table**

Type code	Input Type	Data Format	Max.	Min.
05	-2.5 to +2.5	Engineering unit	+25000	-25000
03	V	2's comp HEX	7FFF	8000
06	-20 to +20	Engineering unit	+20000	-20000
00	mA	2's comp HEX	7FFF	8000
07	+4 to +20	Engineering unit	+20000	+4000
07	mA	2's comp HEX	FFFF	0000
0.0	-10 to +10	Engineering unit	+10000	-10000
08	V	2's comp HEX	7FFF	8000
00	-5 to +5	Engineering unit	+5000	-5000
09	V	2's comp HEX	7FFF	8000
0.4	-1 to +1	Engineering unit	+10000	-10000
UA	V	2's comp HEX	7FFF	8000
0D	-20 to +20	Engineering unit	+20000	-20000
	mA	2's comp HEX	7FFF	8000
1.4	0 to +20	Engineering unit	+20000	0
IA	mA	2's comp HEX	FFFF	0000

# Appendix B: ModbusMasterTooIPC

ModbusMasterTooIPC is a free, easy-to-use tool for Modbus communication and diagnosing the wiring. It is located in the company CD:

CD:\ Napdos\M-2217Cl\utility\ and needless to install

This section intends to guide the steps for creating the Modbus communication with M-2217CI logger.

- 1. Launch the ModbusMasterTooIPC.exe.
- 2. Select *New* in the File menu.



3. Input the file name and click on the *Save* button.

Nodbus Po	ll - Mbpoll1			
Save in:	🗀 ModbusMas	terTooIPC_20171017	• 📰 🕈	
My Recent Documents	Configuration	File nmt		
	File name: Save as type:	M-2217CI Modbus Master Tool Files (".mmt)	<ul><li>✓</li><li>✓</li></ul>	Save Cancel

4. Select *Connect* in the *Connection* menu.

🔜 Modbus Master T	ool ¥1.1.1.0 2014/10/1	7 T: Wodbus Maste	erTooIPC_201	410 📃	
🖳 File Setup	Connection Window	About		-	8 ×
Slave ID = 1, F0	Connect				
Error = 0	Disconnect				
Base 0(Hex)	Base 1	Value Desc	ription		
0 (0x0)	30001 =	0			
1 (0x1)	30002 =	0			
2 (0x2)	30003 =	0			
Disconnect					:

5. Select the communication interface. When using RS-485 as the interface, select the COM port, check the RTU mode and click on the *OK* button.

Connect		
Interface:	COM1 🗸	Scan Interval(ms): 220
Baudrate:	115200 🗸	Timeout(ms): 200
Data Bit:	8	Delay Between Poll(ms): 20
Parity:	0-None Parity 🔽	
Stop Bit:	1	
Mode:	⊙ RTU O ASCII	Cancel OK

6. Select *Definition* in the *Setup* menu.

🔡 Modbu	s Master	Tool ¥1.1.1.0	2014/10/17	T:Wodb	ousMasterTooIPC_20	1410			×
📑 File	Setup	Connection	Window	About			-	8	×
Slave ID		Definition							
Error = 0		Vew Window							
Base 0		5et Value		Value	Description				
0 (0x0)		5et Description		0					
1 (0x1)	_	- 2000Z -		0					
2 (0x2)		30003 =		0					
									:

7. Select the Modbus function code, input the start address and length, and click on the *OK* button.

Def	inition		X
	Slave ID:	1	ОК
	Function:	04 Read Input Registers	
	Address:	0	Cancel
	Length:	10	
	Format:	Singed Int16	
De	escriptions	Clear All Descriptions	

#### 8. Read data.

🔡 М	odbus	Master	Tool ¥1.1.1.0	2014/10/17	T:Wodt	ousMaster	ТооРС	_201410	. 💶			×
	File	Setup	Connection	Window	About					- 1	5	×
Slav	'e ID	= 1, F	C=4									
Erro	r = 0											
Ва	se 0(	(Hex)	Base 1		Value	Descr	iption					
0 (	OxO)		30001 =		779							
1 (	Ox1)		30002 =		4199							
2 (	0x2)		30003 =		2350							
3 (	Ox3)		30004 =		7430							
4 (1	0x4)		30005 =		983							
Conne	ection i	s establi	shed. IP= 10.1.	0.131								:

- 9. Write data to Holding Register or Coil Status
  - 1. Highlight the Modbus address in the Holding Register or Coil Status list
  - 2. Select Set Value in the Setup menu.
  - 3. Input the data in the Value box and click on the OK button



# Appendix C: Modbus Address Table

# C-1. M-2217CI-4 / M-2217CI Modbus Address Mappings (Base 1)

Address	Description	Attribute
30001 ~	M-2217CI-4:	R
30004	Analog input value of channel 0 to 3	
40001 ~		
40004		
30001 ~	M-2217CI:	R
30008	Analog input value of channel 0 to 7	
40001 ~		
40008		
40257 ~	M-2217CI-4:	R/W
40260	Type code of channel 0 to 3	
40257 ~	M-2217CI:	R/W
40264	Type code of channel 0 to 7	
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	RS-485 module address, 1 to 247	R/W
40486	RS-485 baud rate and parity settings	R/W
	Bits 5:0	
	Baud rate, valid range: 3 ~ 10	
	Bits 7:6	
	00: no parity, 1 stop bit	
	01: no parity, 2 stop bit	
	10: even parity, 1 stop bit	
	11: odd parity, 1 stop bit	
40488	RS-485 response delay time in ms, valid range, $0 \sim 30$	R/W
40489	RS-485 host watchdog timeout value, 0 ~ 255, in 0.1s	R/W
40492	RS-485 host watchdog timeout count, write 0 to clear	R/W
30513 ~	M-2217CI-4:	R
30516	High latched analog input value of channel 0 to 3	
40513 ~		
40516		

Address	Description	Attribute
30513 ~	M-2217CI:	R
30520	High latched analog input value of channel 0 to 7	
40513 ~		
40520		
30545 ~	M-2217CI-4:	R
30548	Low latched analog input value of channel 0 to 3	
40545 ~		
40548		
30545 ~	M-2217CI:	R
30552	Low latched analog input value of channel 0 to 7	
40545 ~		
40552		
40865	RTC year, 2000 to 2159	R/W
40866	RTC month, 1 to 12	R/W
40867	RTC date, 1 to 31	R/W
40868	RTC hour, 0 to 23	R/W
40869	RTC minute, 0 to 59	R/W
40870	RTC second, 0 to 59	R/W
40871 ~	The index of the last log record	R
40872		
40873 ~	The index of the log record to be read	R/W
40874		
40875	The status of the data logging, 0: stopped, 1: running	R
40876	The data logger command, 0: stop, 1: run in continuous mode, 2: run	R/W
	in period mode	
40877	Continue writing when data logger is full, 0: no, 1: yes	R/W
40879	Data logger sampling period in seconds	R/W
40880	Data logger sampling period in milliseconds, 0 ~ 1000. It should be	R/W
	multiple of 5	
40881	Starting year when logging in period mode, 2000 ~ 2159	R/W
40882	Starting month when logging in period mode, 1 ~ 12	R/W
40883	Starting date when logging in period mode, 1 ~ 31	R/W
40884	Starting hour when logging in period mode, 0 ~ 23	R/W
40885	Starting minute when logging in period mode, 0 ~ 59	R/W
40886	Starting second when logging in period mode, 0 ~ 59	R/W

Address	Description	Attribute
40887	Ending year when logging in period mode, 2000 ~ 2159	R/W
40888	Ending month when logging in period mode, 1 ~ 12	R/W
40889	Ending date when logging in period mode, 1 ~ 31	R/W
40890	Ending hour when logging in period mode, 0 ~ 23	R/W
40891	Ending minute when logging in period mode, 0 ~ 59	R/W
40892	Ending second when logging in period mode, 0 ~ 59	R/W
40899 ~	The index of the first record of the current log	R
40900		
34097 ~	Read log data and it should be multiple of 7 registers. For each 7	R
34206	registers, they are value of channel 0,, value of channel 3, time	
44097 ~	stamp low word, time stamp high word, and millisecond time stamp.	
44206	The time stamp is in Epoch time format.	
10129 ~	M-2217CI-4:	R
10132	Over/under range status of channel 0 to 3 for 4 ~ 20mA or 0 ~ 20mA	
00129 ~	ranges	
00132		
10129 ~	M-2217CI:	R
10136	Over/under range status of channel 0 to 7 for 4 ~ 20mA or 0 ~ 20mA	
00129 ~	ranges	
00136		
00257	RS-485 Protocol, 0: DCON, 1: Modbus RTU	R/W
00261	RS-485 host watchdog mode, 1: enable, 0: disable.	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog	R/W
	timeout status	
	Only for Modbus RTU protocol	
00271	0: 10Hz normal mode, 1: 200Hz fast mode	R/W
00272	Write 1 to load factory calibration parameters	W
00273	Reset status, 1: first read after powered on, 0: not the first read after	R
	powered on	

# **Appendix D: Firmware Update**

### D-1. Steps of updating firmware for M-2217CI-4 / M-2217CI

The M-2217CI-4 / M-2217CI support firmware updating by RS-485 cable. Users can update firmware in their local site without sending module back. The following instruction describes how to update M-2217CI-4 / M-2217CI firmware

#### Step 1 Download the latest M-2217CI-4 / M-2217CI installation package

The latest installation package adds an executable file for updating the M-2217CI-4 / M-2217CI firmware. Users can find the file on the product page on the ICP DAS web site

#### Step 2 Switch SW2 into FW Update mode

The switch setting is shown in figure SW2. The **<u>FW Update</u>** switch **On** to update firmware.



Figure SW2. The hardware setting for enabling firmware update functionality

SW2_3 Status	LED Status	Causes
Off	Solid	Normal Operation
On	Blink	Waiting for Firmware to update

#### Step 3 Execute the firmware update software and select firmware

Click RS485-TVAISP, Execute the firmware update software here



Choose **COM** port and users can select the firmware file by clicking the "**Program**" button.

🔄 Tiva ISP		_ • •
COM5 -	Program	
I		~
		Ŧ

Step 4: Select the firmware file and click on the Open button.

8	×
○○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	
M-2217CI_B29_20240813.bin BIN 38.4 KB	
File name:	bin files (*.BIN)

Step 5: After the update is complete, close the window,

Set the SW2\_3 (FW Update) switches to the "OFF" position and reboot the module.

COM1  Program		
sze: 39400 99E8 am11:25:43Programming 39400 am11:26:04Finished Restarting	^	
		ON
	-	

# **Revision History**

Revision	Date	Description
1.0.0	2024/10	First released