OMRON

Model

CQM1-AD042

Analog input unit

INSTRUCTION SHEET

Thank you for purchasing an OMRON product. Read this thoroughly and familiarize yourself with the functions and characteristics of the product before using it. Keep this instruction sheet for future reference.

■ Indicators

Name	Color	Function
RDY	Green	Lit when unit is operating normally.
2CH/ 4CH	Orange	Lit when four words are occupied. Not lit when two words are occupied.
ERR	Red	Lit when dipswitches 1..8 are all off or when an internal error has occurred.

■ Terminals

The following table lists the usage of the terminals.

Terminal	Name	Function
A1	V1+	CH1 positive voltage input
B1	V1-	CH1 negative voltage / current input
A2	I1+	CH1 positive current input
B2	nc	
A3	V2+	CH2 positive voltage input
B3	V2-	CH2 negative voltage / current input
A4	I2+	CH2 positive current input
B4	nc	
A5	V3+	CH3 positive voltage input
B5	V3-	CH3 negative voltage / current input
A6	I3+	CH3 positive current input
B6	reserved	
A7	V4+	CH4 positive voltage input
B7	V4-	CH4 negative voltage / current input
A8	I4+	CH4 positive current input
B8	reserved	
A9	FG	Connect to shielding of the input cable
B9	FG	Connect to shielding of the input cable

■ IR bit allocation

- **Input range :** -10 V to +10 V. (Data is presented in 2's complement)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
		Sign			d10	d9	d8	d7	d6	d5	d4	d3	d2	d1	d0

- **Input range :** 0 to 10 V / 0 to 5 V / 0 to 20 mA.
(Data is presented in straight binary)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	0	0	d11	d10	d9	d8	d7	d6	d5	d4	d3	d2	d1	d0

The error value 2000_h is written to the PLC when an internal error occurs and can only be removed by turning off the power of the PLC.

Caution

- All DIP switches should be set before mounting the Analog Input Unit to the CQM1.
- Setting all DIP switches to OFF results in an error because all input conversion is prohibited.
- Normally the unit occupies 4 words. When switches 5…8 are OFF, the unit occupies 2 words.
- Do not touch any internal components other than the DIP switches.
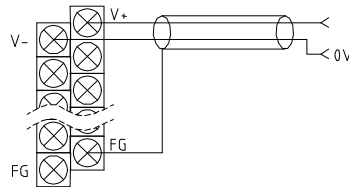
■ DIP Switch Settings

The following table provides DIP switch settings for selection of the analog input range :

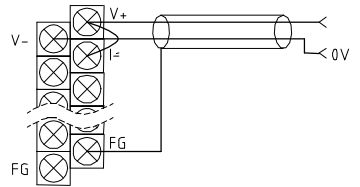| Input setting				Input range
Input 1	Input 2	Input 3	Input 4	
sw. 1: ON sw. 2: ON	sw. 3: ON sw. 4: ON	sw. 5: ON sw. 6: ON	sw. 7: ON sw. 8: ON	-10 to 10 V
sw. 1: OFF sw. 2: ON	sw. 3: OFF sw. 4: ON	sw. 5: OFF sw. 6: ON	sw. 7: OFF sw. 8: ON	0 to 10 V
sw. 1: ON sw. 2: OFF	sw. 3: ON sw. 4: OFF	sw. 5: ON sw. 6: OFF	sw. 7: ON sw. 8: OFF	0 to 5 V 0 to 20 mA
sw. 1: OFF sw. 2: OFF	sw. 3: OFF sw. 4: OFF	sw. 5: OFF sw. 6: OFF	sw. 7: OFF sw. 8: OFF	Conversion prohibited

■ Analog Input Connections

Connect a two-conductor twisted pair shielded cable to the Analog Input Unit as shown in the following illustrations.

Voltage Input   **Current Input**

Short-circuit the V+ and the I+ terminals for current input.

■ Specifications

Number of inputs	4	
Input ranges	-10 V to +10 V 0 V to 10 V 0 V to 5 V 0 mA to 20 mA	
Resolution	12 bits	
Accuracy	25 ° C	0.5 %
	0 to 55 ° C	1.0 %
Conversion speed	1.2 ms / channel	
Insulation	500 V AC between output and PLC bus	
Current consumption	170 mA at 5 V DC	
Input type	differential	
Input impedance	voltage 1 MΩ	current 250 Ω
Power supply	internal DC/DC converter	

■ Graph input vs. output
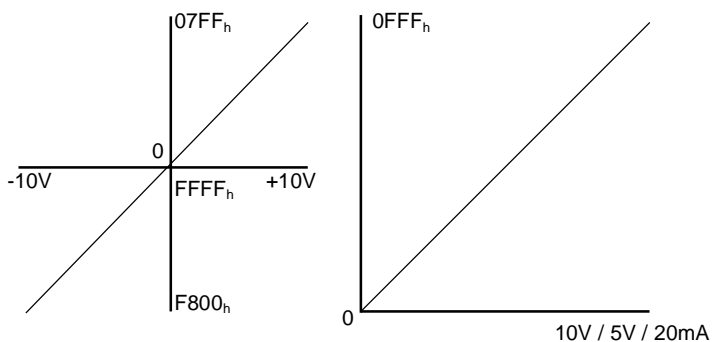
Note : Specifications subject to change without notice

Printed in The Netherlands