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**1. Introduction**

Thank you for choosing Eaton Logic Controller (ELC) series products. The ELC-AN06AANN allows the connection of four analog inputs and outputs with digital and analog circuitry. The ELC transforms the input into a 12 bit digital signal and the output into a 2 points analog signal, which may be manipulated by using TO and FROM commands in the ladder logic program. There are 45 Controlled Registers (CR) in each module (each register is 16 bits). The Analog Input/Output Module of ELC-AN06AANN can readily write the data of analog input module by using commands FROM / TO via ELC program.

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**2. Specifications**

**2.1 Specifications**

<table>
<thead>
<tr>
<th>FOUR CH. (IN &amp; CONVERTER)</th>
<th>VOLTAGE INPUT</th>
<th>CURRENT INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Voltage</td>
<td>24 VDC(20VDC-28VDC) (-15% ~ +20%)</td>
<td></td>
</tr>
<tr>
<td>Analog Input Voltage</td>
<td>10V per module</td>
<td></td>
</tr>
<tr>
<td>Analog Output Voltage</td>
<td>-15V - 15V</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>12 bits (1LSB=2.5 mV)</td>
<td></td>
</tr>
<tr>
<td>Overall Accuracy</td>
<td>±0.5% of full scale during 0~55℃ (±0.25% at 25℃)</td>
<td></td>
</tr>
<tr>
<td>Response Time</td>
<td>3 ms ± 3%</td>
<td></td>
</tr>
</tbody>
</table>

**Isolation Method**

Field to Digital Area: 500V (Field to Analog Area: 500V)

**2.2 Other Specifications**

**Maximum Power Consumption**

For ASC/RTU mode, date format is 7Bits, even, 1 stop bit (7 E 1). For RTU mode, date format is 8Bits, even, 1 stop bit (8 E 1). The RS-485 is disabled when the ELC-AN06AANN is connected in series to an ELC.

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**3. Wiring Diagram**

**Connect to ELC MPU in Series**

When ELC-AN06AANN modules are connected to an ELC, the modules are numbered from 0~7. The closed dot ECU and 7 is the furthest. The Maximum number of modules is 8 modules and they do not occupy any digital I/O points of the MPU.

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**4. Connect to ELC MPU in Series**

When ELC-AN06AANN modules are connected to an ELC, the modules are numbered from 0~7. The closed dot ECU and 7 is the furthest. The Maximum number of modules is 8 modules and they do not occupy any digital I/O points of the MPU.
11. CR 828~829: That is the value of adjust GAIN value of CH5-CH6. That is the value of analog input voltage or current when conversion value from analog signal to digital is 2,000. Voltage setting range: -4V~+20V(-1,000LSB~+8,000LSB). Current setting range: -8mA~+40mA (-2,000LSB~+2,000LSB). It but needs to notice that GAIN VALUE – OFFSET VALUE = +400μA, +16mA (voltage/current). When this value under this range, the resolution of input signal will be thin and the variation of value will be larger. When this value exceeds this range, the resolution of input signal will be thick and the variation of value will be smaller.

The chart above is to adjust A/D conversion characteristic curve of voltage input mode and current input mode. Users can adjust conversion characteristic curve by changing OFFSET values (CR#18~CR21) and GAIN values (CR#24~CR27) depend on application.

Voltage input mode: Mode 0 of CR#1: GAIN = 5/2,000(0.25%) OFFSET=0(V) (b7~b0) Mode 1 of CR#1: GAIN = 4/2,000(0.2%) OFFSET=0(V) (b7~b0) GAIN: Voltage output value when digital input is K2,000. Setting range: -4V~+20V(-1,000LSB~+8,000LSB). OFFSET: Voltage output value when digital input is K0. Setting range: -5V~+5V(-2,000LSB~+2,000LSB). Mode 2 of CR#1: GAIN = 4/2,000(0.2%) OFFSET=4mA(200μA) Mode 3 of CR#1: GAIN = 1/2,000(0.5%) OFFSET=4mA(200μA)

Current output mode: Mode 0 of CR#1: GAIN = 5/2,000(0.25%) OFFSET=0(0μA) Mode 1 of CR#1: GAIN = 4/2,000(0.2%) OFFSET=0(0μA) Mode 2 of CR#1: GAIN = 4/2,000(0.2%) OFFSET=4mA(200μA) Mode 3 of CR#1: GAIN = 1/2,000(0.5%) OFFSET=4mA(200μA)

The chart above is to adjust D/A conversion characteristic curve of voltage output mode and current output mode. Users can adjust conversion characteristic curve by changing OFFSET values (CR#14~CR#15) and GAIN values (CR#18~CR#19) depend on application. Voltage output mode: Voltage output value when digital input is K2,000. Setting range is 0~10V=K64(H40) 0 1 0 0 0 0 0 0 Command error K128(H80) 1 0 0 0 0 0 0 0
LED or D/A LED should blink.

4. After receiving the first RS-485 command the A/D LED or D/A LED will blink.

5. If the input or output exceeds the upper or lower bounds, then the ERROR LED will blink.

6. When main ELC and extension unit communicate time-out or abnormal interrupt, LED ERROR of extension unit will keep lighting.