

Chapter 1. INTRODUCTION

The G6F-AD2A is analog/digital conversion modules for use with the GLOFA PLC GM 6 series CPU module.

The G6F-AD2A is used on GM6 series module. (Hereafter the G6F-AD2A is called the A/D conversion module)

The A/D conversion module is to convert an analog input signal (voltage or current) from external device into a 16-bit signed BIN (Binary) digital value.

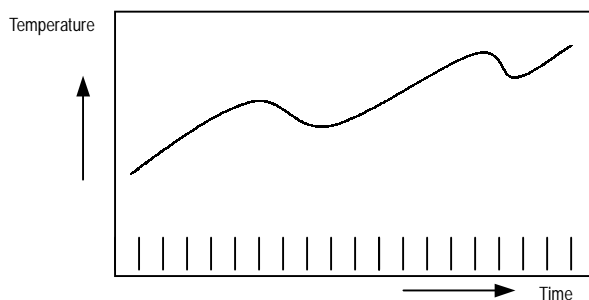
1.1 Features

1) 4 channels analog to digital conversion is possible with a single module.

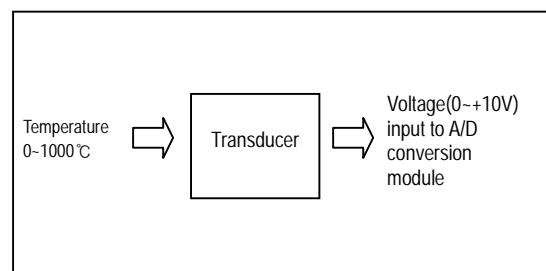
The G6F-AD2A has 4 channels of A/D conversion with each channel selectable for voltage or current input.

2) The number of the analog module including G6F-AD2A, G6F-DA2V and G6F-DA2I used on a base unit is limitless. But the number of analog module is limited by the $\pm 15\text{VDC}$ capacity of the power supply module (GM6-PAFB)

1.2 Glossary



[Fig 1.1] Analog Value

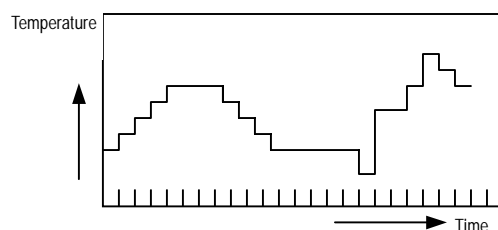


[Fig 1.2] Transducer

1.2.1 A-Analog Value

Analog value is a sequentially changing value such as voltage, current, temperature, speed, pressure, flux, etc. Temperature, for example, is sequentially changing according to the time. Because this temperature is not inputted to the PLC, the analog value of DC voltage (0 to +10 V) or current (4 to 20 mA) in accordance with the temperature should be inputted to the PLC through transducer.

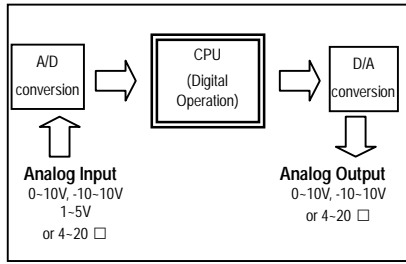
1.2.2 D-Digital Value



[Fig 1.3] Digital Value

Digital value is non-sequentially changing value written as the number like 0, 1, 2, 3. The signal of on or off is written as digital value of 0 or 1.

There are BCD value and binary value in the range of digital value.

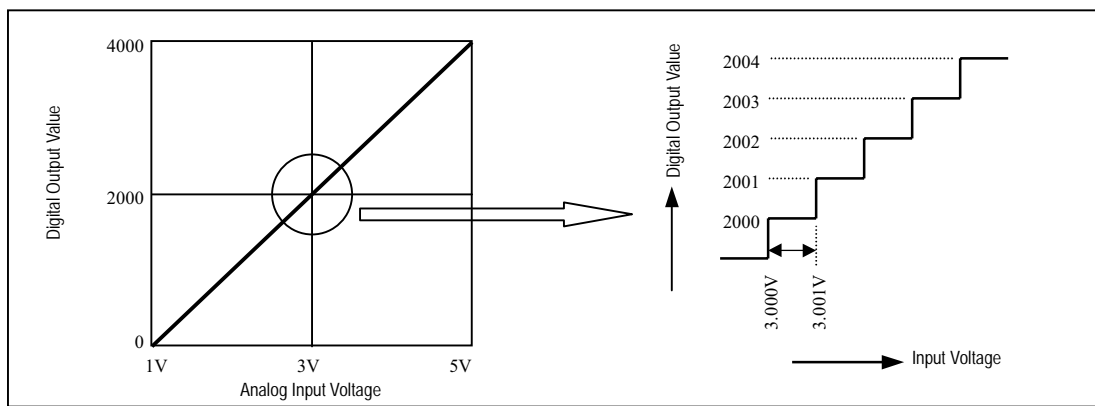


[Fig 1.4] PLC Processing

Analog value can not be written directly to the CPU. For analog input to the CPU operation, analog data converted to digital value has to be inputted to the CPU and the digital value of the CPU should be converted to analog value for analog output.

1.2.3 Analog/Digital Conversion Characteristics

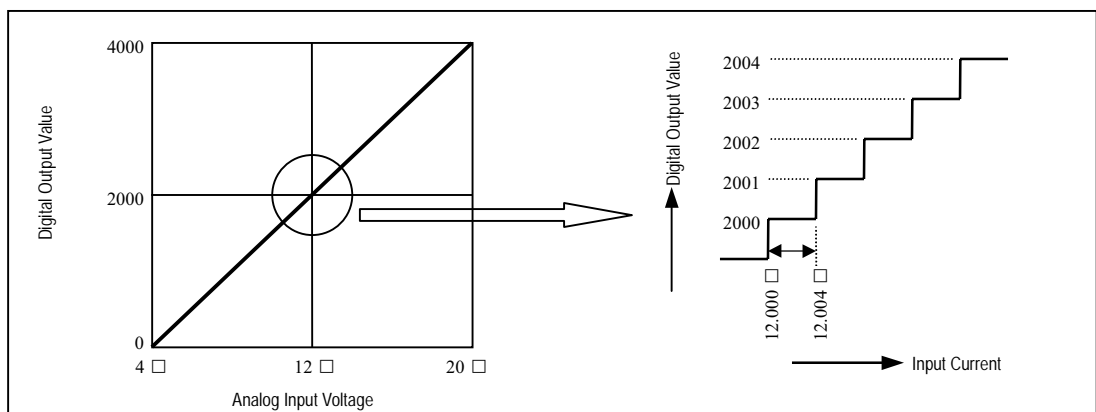
1) Voltage input



[Fig 1.5] A/D Conversion Characteristics (Voltage Input)

Analog/digital conversion module allows external analog input to be converted to digital value and to be processed in the CPU. On voltage input, input of 1V leads to digital value of 0 and 5V to 4000 as digital value. Input of 1mV is equal to digital value of 1. Therefore, input less than 1mV shouldn't be converted.

2) Current input



[Fig 1.6] A/D Conversion Characteristics (Current input)

On current input, input of 4mA leads to digital value of 0, 12mA to 2000 and 20mA to 4000. Input of 4μA is equal to digital value of 1. Therefore, input less than 4μA can't be converted.