

## Chapter 1. INTRODUCTION

The G6F-DA2V and the G6F-DA2I are digital/analog conversion modules for use with the GLOFA PLC GM6 series CPU module. (Hereafter the G6F-DA2V and G6F-DA2I are called the D/A conversion module)

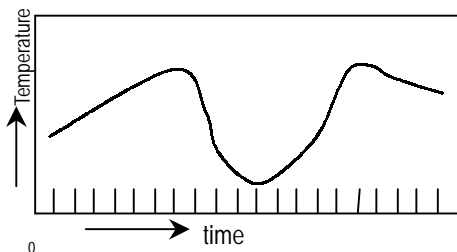
The D/A conversion module is to convert a 16-bit, signed BIN digital value into an analog output signal (voltage or current).

### 1.1 Features

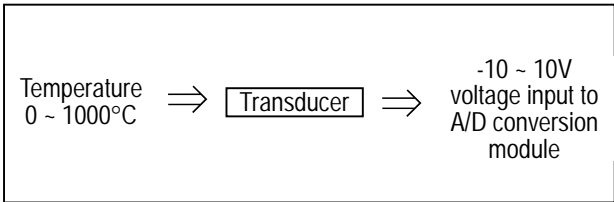
- 1) Allows digital to Analog conversion for 4 channels per a module.
  - G6F-DA2V: 1 module can be performed for D/A conversion (voltage output) of 4 channels.
  - G6F-DA2I: 1 module can be performed for D/A conversion (current output) of 4 channels.
- 2) The number of the analog module including G6F-AD2A, 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

#### 1.2.1 A - Analog Value



[Fig 1.1] Analog Value

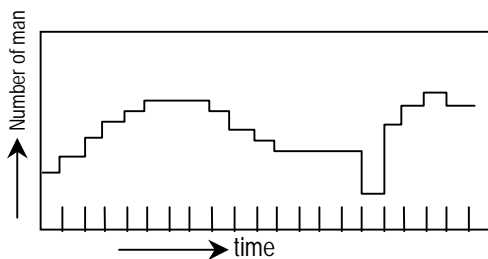


[Fig 1.2] Example of Transducer

Analog value is a sequentially changing value such as voltage, current, temperature, speed, pressure, flux, etc.

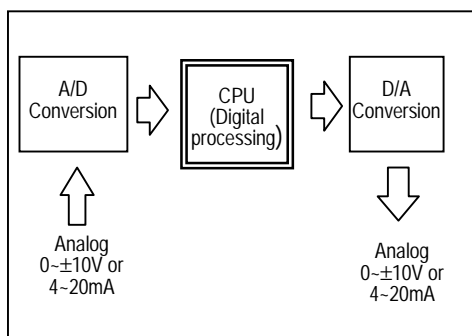
Temperature, for example, is sequentially changing according to the time. Because this temperature is not inputted on the PLC directly, the same analog value of DC voltage (0 to  $\pm 10\text{V}$ ) or current (4 to 20mA) in accordance with the temperature should be input on the PLC through transducer.

### 1.2.2 D - Digital Value



[Fig. 1.3] Digital quality

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.

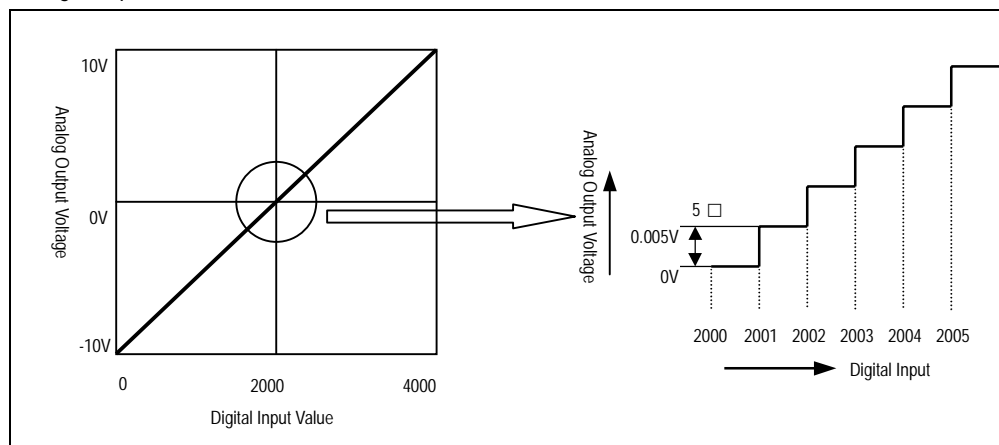


[Fig. 1.4] conversion processing in the PLC

Analog value isn't written directly on the CPU. For analog input to the CPU operation, analog converted to digital value has to be input on the CPU. and for analog output, the digital of CPU should be converted to analog.

1.2.3 Digital/ Analog Conversion Characteristics

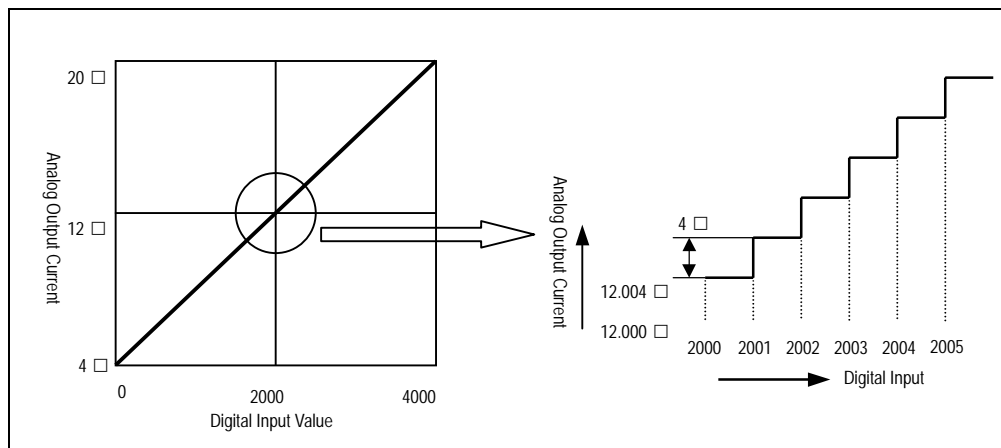
1) Voltage output - G6F-DA2V



[Fig 1.5] D/A conversion characteristics(Voltage output)

Digital/analog conversion module allows digital value of the CPU to be converted into an analog value and to be output externally. Digital input value of 0 leads to analog output value of -10V and 4000 leads to 10V. Digital input value of 1 is equal to 5mV.

2) Current output – G6F-DA2I



[Fig 1.6] D/A conversion characteristics(Current output)

On current output, digital value of 0 is to be converted into 4mA and 4000. into 20mA. Digital input of 1 is equal to 4  $\mu$ A.