

ComGage – Test step function SFct044

„Convert mea. value into Binary/BCD format“



1. Introduction

The ComGage test step function “Convert mea. value into Binary/BCD format” allows the conversion of measured value into the Binary / BCD format. The converted measuring value is saved in a group of registers that can be selected in the configuration. This group of registers can then be assigned to digital outputs Q1 ... Qx to output the value in Binary / BCD format.

2. Configuration

The test step function is created within a test step. By clicking the Setup button, the following dialog will be opened :

Convert mea. value into Binary/BCD-Format

Source: C1

Factor: 100 (i.e. 1 Digit = 0.01 mm)

Format: BCD-Format

Destination: R1 - R22

Number of bits: 20

OK

Cancel

R1 = BCD-Format / 1er Digit / Bit 0
R2 = BCD-Format / 1er Digit / Bit 1
R3 = BCD-Format / 1er Digit / Bit 2
R4 = BCD-Format / 1er Digit / Bit 3

R5 = BCD-Format / 10er Digit / Bit 0
R6 = BCD-Format / 10er Digit / Bit 1
R7 = BCD-Format / 10er Digit / Bit 2
R8 = BCD-Format / 10er Digit / Bit 3

R9 = BCD-Format / 100er Digit / Bit 0
R10 = BCD-Format / 100er Digit / Bit 1
R11 = BCD-Format / 100er Digit / Bit 2
R12 = BCD-Format / 100er Digit / Bit 3

R13 = BCD-Format / 1000er Digit / Bit 0
R14 = BCD-Format / 1000er Digit / Bit 1
R15 = BCD-Format / 1000er Digit / Bit 2
R16 = BCD-Format / 1000er Digit / Bit 3

R17 = BCD-Format / 10000er Digit / Bit 0
R18 = BCD-Format / 10000er Digit / Bit 1
R19 = BCD-Format / 10000er Digit / Bit 2
R20 = BCD-Format / 10000er Digit / Bit 3

R21 = Sign : 0='+' / 1='-'
R22 = Parity Even Bit

This dialog allows to configure the following settings :

Source

Here you can select the source of the value that shall be converted.
Available are the characteristics C1 to C128 and the registers R1 to R1000.

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Factor

Before the conversion, the value has to be made integer. For this, it is multiplied with the factor which is selected here. Which factor is needed depends on the number of decimal places. The result of this calculation is rounded afterwards.

Example : C1 = 20.337 Factor 1000 : 20337 will be converted
Factor 100 : 2034 will be converted

Available are : 1 (i.e. 1 Digit = 1 mm)
 10 (i.e. 1 Digit = 0.1 mm)
 100 (i.e. 1 Digit = 0.01 mm)
 1000 (i.e. 1 Digit = 1 µm)
 10000 (i.e. 1 Digit = 0.1 µm)
 100000 (i.e. 1 Digit = 0.01 µm)

Format

Here you can select to which format the value shall be converted.

Available are : Binary-Format / 1er-Complement
 Binary-Format / 2er-Complement
 BCD-Format

Destination

A group of 22 registers has to be selected. In these registers the converted value is saved. After the conversion, the registers correspond to the bits and always have the value 0 or 1.

An overview of which register corresponds to which bit is displayed below the selection fields after a selection has been made for "Number of bits" (see below), too.

Available are the register groups R1 - R22 to R977 - R998.

The 21st register of the selected group always contains information about the sign (0='+' / 1='-').

The 22nd register of the selected group is the Parity Even Bit. That means that the result of adding all 22 registers always has to be even. This can be checked and used for the sequence control.

Number of bits

Here you can select how many bits shall be used for the conversion.

The number of bits can be 1 to 20.

Please select the number of bits high enough to convert the values correctly.

3. Assignment of the registers to digital outputs

No.	Output value	Logic function of the output
Q1	Logic function of the output	R1=1
Q2	Logic function of the output	R2=1
Q3	Logic function of the output	R3=1
Q4	Logic function of the output	R4=1
Q5	Logic function of the output	R5=1
Q6	Logic function of the output	R6=1
Q7	Logic function of the output	R7=1
Q8	Logic function of the output	R8=1

In this way, a digital output is always set when the value of the related register = 1.