

# Tutorial 5

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ET0917 / ET0817 / ET0832

NUMBER SYSTEM AND CODES

# Learning Outcome

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Define the following numbering systems

- Decimal
- Binary
- Hexadecimal

Capable of converting from one numbering or coding system to another

Define Bit, Byte, Word, Least Significant Bit (LSB) and Most Significant Bit (MSB)

Differentiate data types such as:

- Boolean
- Signed, unsigned Integer
- Word, Double Word
- Float, Real

# Q1 - MCQ

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Which statement is correct?

- a) 1 byte has 16 bits, 1 word has 32 bits
- b) Floating point is used whenever we need hexadecimal
- c) 2 bytes (16 bits) forms one word, double word has 32 bits
- d) Modern PLC uses BCD as the default numbering system

## Q2 - MCQ

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16-bit **Word (W)** would allow a maximum range of: 0 to 65535 as unsigned integer.

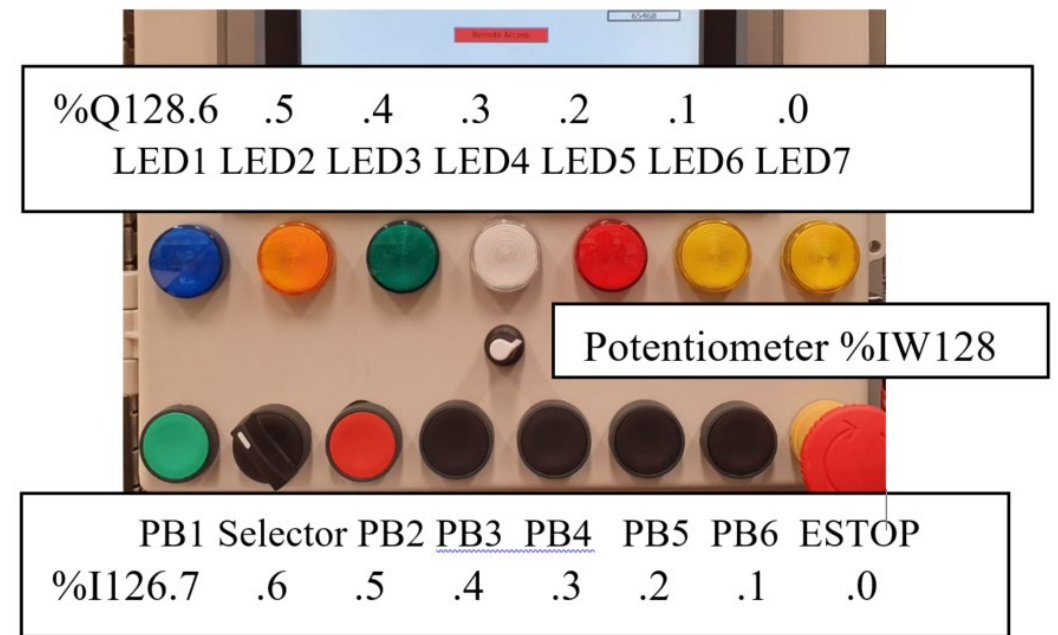
What is the range of a 16-bit integer (signed)?

- a) -128 to 127
- b) 0 to 65535
- c) -65536 to 65535
- d) -32768 to 32767

# Q3 - MCQ

From the PLC, you read the byte %Q128 has hexadecimal value 0x03. Select the correct status:

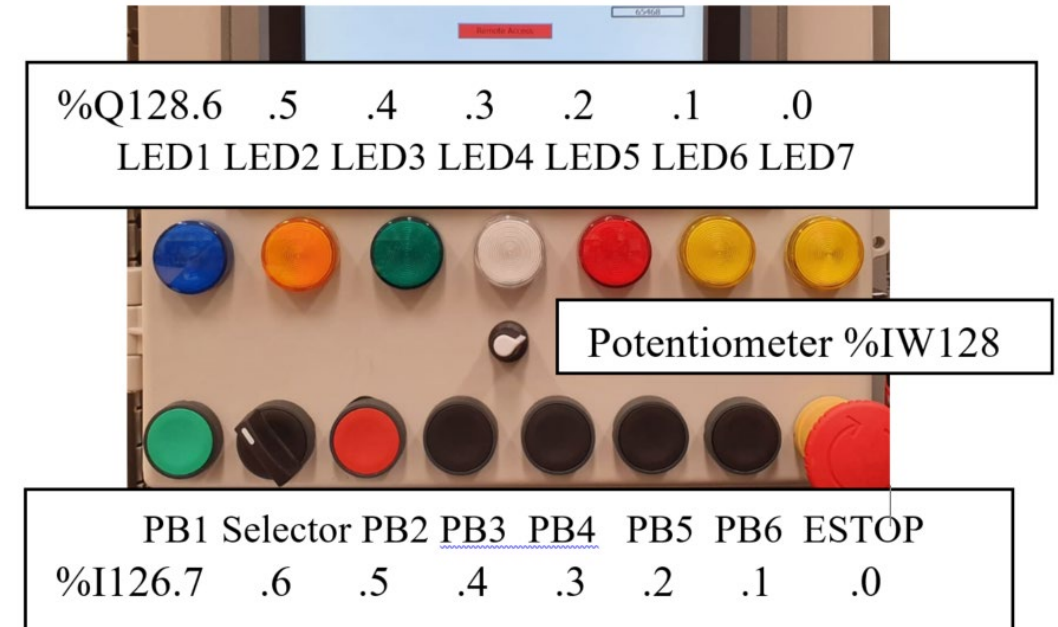
- a) Only LED1 is on, the rest are off
- b) LED6 and LED7 are ON. The rest are off
- c) LED1 and LED2 are ON. The rest are off
- d) E\_Stop and PB6 are ON. The rest are off



# Q4 - MCQ

If you need to output “10” in BCD to byte %Q128, which LED would need to light up?

- a) LED2
- b) LED3
- c) LED6
- d) LED7



# Q5 - MCQ

When we are going to use Potentiometer with the address as the image. What is the data type that we would be assigning?

- a) Boolean
- b) Integer
- c) Long Integer
- d) Floating Point/ REAL

