

16-bit data (word data)

Data size and data range

16-bit data includes signed and unsigned 16-bit data.

In signed 16-bit data, a negative number is represented in two's complement.

Data name	Data size	Value range	
		Decimal notation	Hexadecimal notation
Signed 16-bit data	16 bits (1 word)	-32768 to 32767	0000H to FFFFH
Unsigned 16-bit data		0 to 65535	

Handling 16-bit data with bit devices

A bit device can be handled as 16-bit data by performing digit specification.

Item	Notation	Example
Bit device	K□Bit device start number □: Number of digits (Specify the number within the range of 1 to 4.)	K4X10 K2M113

Handling 16-bit data with bit type array labels

A bit type array label can be handled as 16-bit data by performing digit specification.

The following table shows the notation for handling a bit type array label as 16-bit data by digit specification.

Item	Notation	Example
Bit type array label	K□Label name □: Number of digits (Specify the number within the range of 1 to 4.) Specify a label name without an array element.	K1L_BOOL

Digit specification range

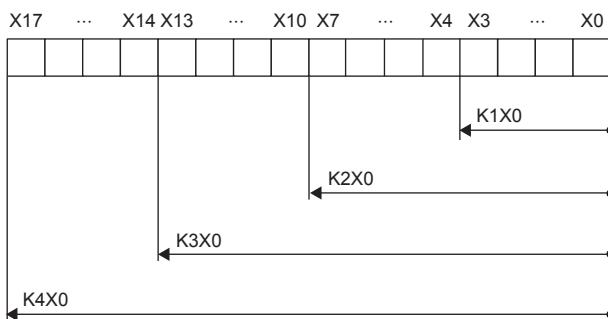
The following table lists the range of 16-bit data for each digit specification.

Digit specification	Decimal notation	Hexadecimal notation
K1	0 to 15	0H to FH
K2	0 to 255	00H to FFH
K3	0 to 4095	000H to FFFFH
K4	Signed 16-bit data: -32768 to 32767 Unsigned 16-bit data: 0 to 65535	0000H to FFFFH

Ex.

When digit specification is made for X0, the applicable number of points is as follows.

- K1X0 → 4 points from X0 to X3
- K2X0 → 8 points from X0 to X7
- K3X0 → 12 points from X0 to X13
- K4X0 → 16 points from X0 to X17



■ Specifying a bit device with digit specification in the source (s)

When a bit device with digit specification is specified in the source of an instruction, 0 is stored in the bits, which follow the bit for which digit specification is made in the source, in the word device of the destination.

Ladder example	Processing
<ul style="list-style-type: none"> • 16-bit data instruction 	<p>D0: b15 ... b4 b3 b2 b1 b0 0 0 0 0 0 0 0 0 0 0 0 0 X3 X2 X1 X0</p>

■ Specifying a bit device with digit specification in the destination (d)

When a digit specification is made in the destination of an instruction, the number of points by the digit specification is applicable in the destination.

The bit devices after the number of points specified by nibble remain unchanged.

Ladder example	Processing
<ul style="list-style-type: none"> • When the source data is a word device 	<p>M115 ... M108 M107 ... M100 (1): The data remain the same.</p>