



# Keyence KV Series

## Overview

Maple Systems' MAP Family & OIT Family Operator Interface Terminals (Maple OITs) communicate with Keyence KV Series of Programmable Logic Controllers (PLCs) using the programming port located on the front of the PLC in a point-to-point single master, single slave format.

Compatible PLCs	
PLC Family	PLC Model
Keyence KV Series	KV10, KV16, KV24, KV40, KV80, KV300

## Communications Cable

The Maple OIT should be connected to the programming port located on the front of the PLC. Refer to Technical Note 1061 for information on communication cable part numbers and cable assembly instructions. If you will be assembling your own communications cable, cable assembly instructions are also available on our web site at [www.maple-systems.com](http://www.maple-systems.com).

**WARNING:** If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the Maple OIT or loss of communications can result.

## PLC Settings

Keyence KV10 to KV80 support 9600 baud rate only. Keyence KV300 with a KVL2 module will support other baud rates.

# Accessible PLC Memory

## PLC Register Memory

The following table lists the PLC register memory ranges that Maple's OITs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by Maple's OITs. The following PLC register memory is displayable in 16-bit or 32-bit formats on the Maple OIT.

PLC Register Address	Format	PLC Register Description
0 - 17615	16,32	Relays
DM0 - DM9999	16,32	Data Memory
TM 0 - 31	16,32	Temporary Memory
T@ 0 - 249	16	Timer (Current)
T# 0 - 249	16	Timer (Preset)
C@ 0 - 249	16	Counter (Current)
C# 0 - 249	16	Counter (Preset)
CTH@ 0 - 1	16	High-Speed Counter (Current)
CTC 0 - 3	16	High-Speed Counter (Compare)

Format indicates the bit-sizes that are valid, where the following formats can be used:

- 1: 1/0 Coil, On/Off Coil, ASCII String
- 8: Bank8
- 16: Signed, Decimal, 4 Digit BCD, Bank16, ASCII Character
- 32: 8 Digit BCD, Long

## PLC Discrete Memory

The following table lists the PLC discrete memory ranges that Maple's OITs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by Maple's OITs. The following discrete PLC memory is displayable in single-bit and bank formats on the Maple OIT.

PLC Bit Address	Format	PLC Bit Description
T 0 - 249	1	Timer (Coil)
C 0 - 249	1	Counter (Coil)
CTH 0 - 1	1	High Speed Counter (Coil)

# OITware-200 Settings

The following table lists the communications settings that must be configured in OITware-200.

Please note:

- the Default column lists OITware-200's default setting; your PLC's default may be different
- the Options column lists OITware-200's options; your PLC may not support every option

Name	Default	Options	Important Notes
Baud Rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	The Keyence KV Series programming port settings support 9600 baud rate only.
Parity	Even	Even, Odd, None, Mark, Space	Must match the Keyence KV Series programming port settings.
Data Bits	8	7, 8	Must match the Keyence KV Series programming port settings.
Stop Bits	1	1, 2	Must match the Keyence KV Series programming port settings.
Status Coils	1700	0 to 17615	Must be within the PLC's supported memory range.
Address, Source Address, Destination Address	N/A		
Password	N/A		
Message Request Register	DM0	DM0 to DM9999	Must be within the PLC's supported memory range.
Current Message Register (optional)	DM2	DM0 to DM9999	Must be within the PLC's supported memory range.
Function Key Coils (optional)	1900	0 to 17615	Must be within the PLC's supported memory range.
Screen Dependent Function Key Coils (optional)	2500	0 to 17615	Must be within the PLC's supported memory range. Applies to OITs with Screen Dependent Function Keys.
Control Key Coils (optional)	2700	0 to 17615	Must be within the PLC's supported memory range.
Status LED Coils (optional)	2100	0 to 17615	Must be within the PLC's supported memory range. Applies to OITs with Status LEDs.
Function Key LED Coils (optional)	2300	0 to 17615	Must be within the PLC's supported memory range. Applies to OITs with Function Key LEDs.

# MAPware-100 Settings

The following table lists the communications settings that must be configured in MAPware-100. Please note:

- the Default column lists MAPware-100's default setting; your PLC's default may be different
- the Options column lists MAPware-100's options; your PLC may not support every option

Name	Default	Options	Important Notes
Baud Rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	The Keyence KV Series programming port settings support 9600 baud rate only.
Parity	Even	Even, Odd, None, Mark, Space	Must match the Keyence KV Series programming port settings.
Data Bits	8	7, 8	Must match the Keyence KV Series programming port settings.
Stop Bits	1	1, 2	Must match the Keyence KV Series programming port settings.
Status Coils	1700	0 to 17615	Must be within the PLC's supported memory range.
Address, Source Address, Destination Address	N/A		
Password	N/A		
Message Request Register	DM0	DM0 to DM9999	Must be within the PLC's supported memory range.
Function Key Coils (optional)	1900	0 to 17615	Must be within the PLC's supported memory range.

## Important PLC Memory Considerations

If your PLC's memory range is smaller than the range supported by Maple's OITs, it is possible to configure the Maple OIT to monitor a PLC memory address which does not exist. Since this can cause unpredictable results, when you configure the Maple OIT please ensure that all selected PLC memory addresses are valid for your PLC model.

Do not configure the Maple OIT to write to any PLC memory address which should only be written to by the PLC.

**On using Bank 8 or Bank 16 formats**

When using these formats, each PLC coil (bit) is individually displayed in terms of 1 and 0, with the lowest addressed coil displayed in the right-most position in the field. Therefore, if using coils 0-15, the 0 is the least significant bit displayed in the right-most position and 15 is the most significant bit displayed in the left-most position. The address used must start on a byte boundary when using these formats.

**Accessing the Counter (C, CTH) and Timer (T) Registers**

When accessing the Counter (C, CTH) and Timer (T) registers, the coil, current and present values can be read and write, except the CTC coil cannot be set ON.