



# Mitsubishi

## Q Series

### Overview

Maple Systems' **Silver Series/HMI500** Human-Machine Interface terminals (Maple HMIs) communicate with Mitsubishi Q Series PLCs using the MC protocol (format 1). When configured with EZware-500, the Maple HMI is the master in a point-to-point single master, single slave format.

Compatible PLCs	
Family	Model
CPUs Supported	Q00, Q01
CPUs <u>NOT</u> Supported	Q00J
Q Series (Comm Modules)	QJ71C24

### Communications Cable

The Maple HMI should be connected to either the RS232C or RS422 connection on the front of the QJ71C24 module.

A list of communications cables offered by Maple Systems as well as cable assembly instructions to assist you in assembling your own communications cable are available on our website at [www.maple-systems.com/cables.htm](http://www.maple-systems.com/cables.htm).

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

# Comm Module Settings

In the GX Developer “PLC data List” check the “PLC Parameter” and make the following settings:
“Parity Check” must be enabled.
“Sum Check” must be enabled.
“Mode” must be set to Protocol 1 for the selected port (RS232 or RS422).
Computer Link / Multidrop Link must be set to Computer Link.
Station Number must be set to 0.
Set the “Transmission wait time” to 10mS
Finally, select “RUN write setting” to download the new settings

## Accessible PLC Memory

### Register Memory

The following table lists the controller’s register memory ranges that the Maple HMIs are able to access. Please note that your controller’s memory range may be *smaller* or *larger* than that supported by these HMIs. The following register memory can be displayed in 16, 32, or 64 bit format on the Maple HMI.

PLC Register Type	Address Range	Format	PLC Register Description
R	0 - 32767	dddd (d=decimal)	File Registers
D	0 - 11135	dddd	Data Registers
Z	0 - 9	d	Index Registers
TN	0 - 511	ddd	Timers (current value)
SN	0 - 511	ddd	Retentive Timers (current value)
CN	0 - 511	ddd	Counters (current value)
W	0 - 77F	hhh (h=hexadecimal)	Link Registers
SW	0 - 3FF	hhh	Special Link Registers
ZR	0 - FFFF	hhhh	File Registers

## Discrete Memory

The following table lists the controller's discrete memory (bit) ranges that the Maple HMIs are able to access. Please note that your controller's memory range may be *smaller* or *larger* than that supported by these HMIs. The following discrete memory is displayable in single-bit format on the Maple HMI.

PLC Bit Type	Address Range	Format	PLC Bit Description
X	0 - 77F	hhh (h=hexadecimal)	Inputs
Y	0 - 77F	hhh	Outputs
M	0 - 8191	dddd (d=decimal)	Internal Control Relays
L	0 - 2047	dddd	Latch Relays
F	0 - 1023	dddd	Annunciators
V	0 - 1023	dddd	Edge Relays
B	0 - 77F	hhh	Link Relays
TC	0 - 511	ddd	Timer Coils
SS	0 - 511	ddd	Retentive Timer Contacts
SC	0 - 511	ddd	Retentive Timer Coils
CS	0 - 511	ddd	Counter Contacts
CC	0 - 511	ddd	Counter Coils
SB	0 - 3FF	hhh	Special Link Relays
S	0 - 2047	dddd	Step Relays
DX	0 - 77F	hhh	Direct Inputs
DY	0 - 77F	hhh	Direct Outputs
TS	0 - 511	ddd	Timer Contacts

## Important Memory Considerations

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

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

# EZware-500 Settings

The following table lists the communications settings that must be configured in EZware-500. These settings can be found in the Edit-Set System Parameters menu under the PLC tab. Please note:

- the **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Mitsubishi QJ71C24
- the **Options** column lists EZware-500's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	Mitsubishi Melsec_Q[pds]		
Serial port I/F:	RS232	RS232, RS485 4W	
Data Bits:	8	8 only	Fixed (Set Comm Module to 8)
Stop Bits:	1	1 only	Fixed (Set Comm Module to 1)
Baud Rate:	9600	9600,19200, 38400,57600, 115200	Must match the module setting. Use the fastest baud rate supported by PLC.
Parity:	Odd	Odd only	Fixed (Set Comm Module to ODD)
HMI station No.:	0	N/A	Does not apply to this protocol.
PLC station No.:	0	0	Set the PLC to Address 0
Multiple HMI:	Disable	Disable, Master, Slave	use for multiple HMIs
HMI-HMI link speed:	38400	38400, 115200	use for multiple HMIs
PLC time out constant (sec)	3.0	1.5 to 5.0	adjust if longer timeout is required
PLC block pack:	0	0-10	see <i>HMI500 Series Installation and Operation Manual</i>

\*\* Extended addressing mode is not supported by this protocol.