

In-Sight Communication Examples Using a Mitsubishi Q Series PLC

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Overview

This document describes the sample applications installed with In-Sight explorer to show methods of using a Mitsubishi Q Series PLC to control and get results from an In-Sight vision system. In these examples, the user will use the contacts in the PLC program to control the In-Sight vision system.

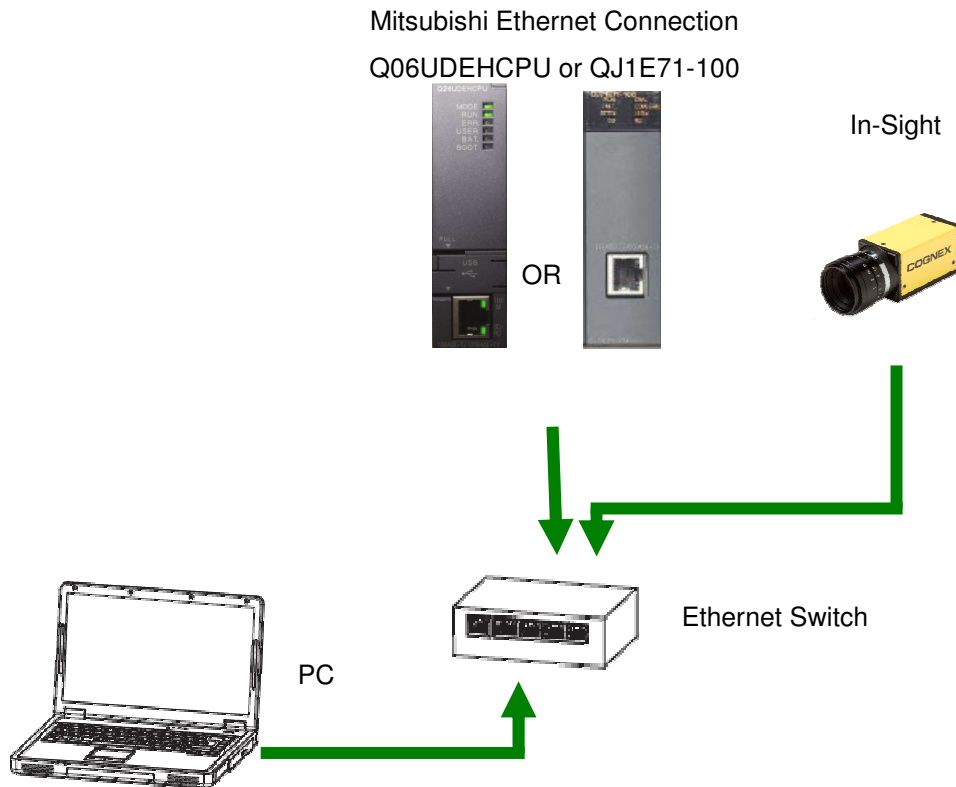
Minimum Software Requirements

The table below lists the minimum software versions for Cognex and Mitsubishi software:

Software	Examples	Version
Cognex		
In-Sight Explorer	All	4.3
Mitsubishi		
GX Developer	Ladder Logic	8.78G
GX Works2	Function Blocks	1.09K

System Setup

For these examples, the In-Sight vision system, PLC, and PC are connected to an Ethernet switch.



The following settings are used in the examples:

In-Sight:

IP Address: 192.168.0.1

Subnet Mask: 255.255.255.0

Telnet Port: 23 (default)

Q-Series PLC:

IP Address: 192.168.0.2

Subnet Mask: 255.255.255.0

The PLC files have the IP address in the project. Loading the project file will update the IP address for the PLC. If necessary, change the IP Address and telnet port of the vision system through the Sensor→Network Settings or the System→Add Sensor/Device to Network menus.

Vision System Setup

In these examples, the user will use the contacts in the PLC program to control In-Sight to acquire an image, perform an inspection and send the results to the PLC. There are PDF files that can be used as samples for each of the inspections. The PDF files should be printed out and used with the In-Sight vision system. The PDF files are located in the following directory and described in the table below:

C:\Program Files\Cognex\In-Sight\In-Sight Sample Projects 4.3.0\Mitsubishi Communications\Part Images

Filename	Examples
xy and inspect.pdf	xy-en.job, inspect-en.job
IDCode.pdf	IDCode-en.job

Example setup:

This document provides an example of a lens, working distance and field of view to use with these printed PDF files. The field of view does not need to be exact because the PatMax tools and ReadID tools will tolerate changes in scale of the part.

The user can also retrain the PatMax models in the files xy-en.job, inspect-en.job and retrain the ReadID tool in IDCode-en.job to work with a different field of view. The jobs must be resaved to the In-Sight vision system to work properly with the GOT sample program.

Vision System: In-Sight Micro 1400

Lens: 8 mm c-mount lens with a 5 mm spacer

Working Distance: 280 mm (11 inches)

Field of View – 170 mm (approximately 6 ¾ inches)

Filenames and Locations

Cognex In-Sight Files:

There are three In-Sight job files that are used in the PLC control examples. The In-Sight files are located in the following directory, and described in the table below:

C:\Program Files\Cognex\In-Sight\In-Sight Sample Projects 4.3.0\Mitsubishi Communications\Control Examples\In-Sight Job Files

Filename	Examples	Purpose
xy-en.job	All	Returns X, Y, Angle
inspect-en.job	All	Returns Pass/Fail
IDCode-en.job	All	Returns QR Decode String

Mitsubishi Files:

The files to use for the specific model of PLC are described in the tables in this section.

The PLC files to use depend on the model of PLC that you will use, and the method, ladder logic or function block. The Q Series PLC programs are located in folders within the directory below and descriptions are described in the table below:

C:\Program Files\Cognex\In-Sight\In-Sight Sample Projects 4.3.0\Mitsubishi Communications\Control Examples

Filename	Example	CPU	SubDirectory
In-Sight_E71_Q06UDHCPU_EN	Ladder Logic	QJ7171-100	Ladder Logic
In-Sight_QnUDE_Q06UDEHCPU_EN	Ladder Logic	Q06UDEHCPU	
In-Sight_FB_E71_EN	Fuction Blocks	QJ7171-100	Function Block\Cognex_In-Sight
In-Sight_FB_QnUDEH_EN	Function Blocks	Q06UDEHCPU	

Loading Files

In-Sight Files

Save all three In-Sight job files, xy-en.job, inspect-en.job and IDCode-en.job to the In-Sight vision system. The GOT main screen will load the correct In-Sight job directly from the In-Sight vision system.

Q-Series PLC Files

Start GX Developer for ladder logic examples, and GX Works2 for function block examples.

Load the appropriate file for the CPU on your PLC. PLC files are located in the following directories:

For ladder logic:

C:\Program Files\Cognex\In-Sight\In-Sight Sample Projects 4.3.0\Mitsubishi Communications\Control Examples\Ladder Logic

For function blocks:

C:\Program Files\Cognex\In-Sight\In-Sight Sample Projects 4.3.0\Mitsubishi Communications\Control Examples\Function Block\Cognex_In-Sight

Running the Example Files:

1. Put In-Sight Online.
2. Reset the PLC.
3. Put the PLC into Run mode.

You can now control the In-Sight vision system by controlling the contacts in the PLC program.