

: E&I7 LR Vision Colour Sensor

Quick Start Guide



It is recommended to read this quick start guide first and refer to other included documentation for further details or when referenced to.

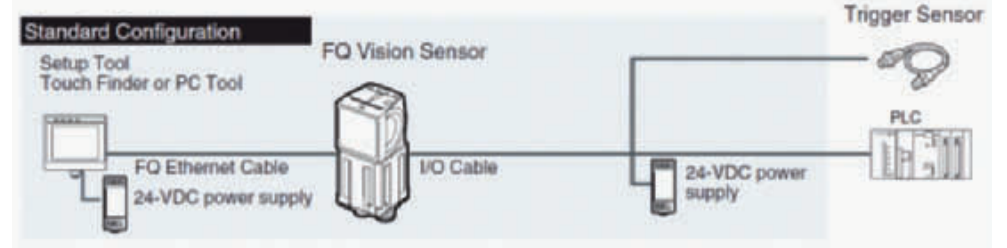
FQ&-CLR-V1P 3M Package content (part list)

- 1 x FQ&-S15050: Single function vision sensor
- 1 x FQ-WN003-E Ethernet cable 3m
- 1 x FQ-WD003-E I/O cable 3m
- 1 x AFBN004- _FQ&-CLR : E&I7 @ Quick Start Guide

FQ&-CLR-V32P 3M Package content (part list)

- 1 x FQ&-S25050F: Multi function vision sensor
- 1 x FQ-WN003-E Ethernet cable 3m
- 1 x FQ-WD003-E I/O cable 3m
- 1 x FQ&-D31 Touch Finder –programming device
- 1 x FQ-AC4 AC power supply (plug type C) for FQ&-D31
- 1 x FQ-BAT1 Battery for FQ2-D31
- 1 x AFBN004- _FQ2-CLR FQ&-CLR Quick Start Guide

STEP 1: General setup



A) Connect the sensor to power

Connect the I/O cable to the FQ2-CLR colour vision sensor and connect to a power source:

- brown: +24 VDC
- blue: 0 VDC



B) Connect the sensor to the programming tool

1) Programming via Touch Finder–programming device

- connect the sensor to the touch finder using the ethernet cable
- power up the touch finder using the battery or the AC power supply (refer to separate instruction sheets for details)

2) Programming via PC tool

- connect the sensor to your PC (manual IP address assignment) or a DHCP server (automatic IP address assignment)
- download the PC tool from www.omron-cxone.com/vision_sys

License No.:	1609-2389-9941-6099
Product Key:	8121306

Refer to Z326 FQ2 User Manual for detailed explanations on connecting the sensor and assigning the IP address. Please download from www.industrial.omron.eu/fq2-clr

STEP 2: Setting up the sensor

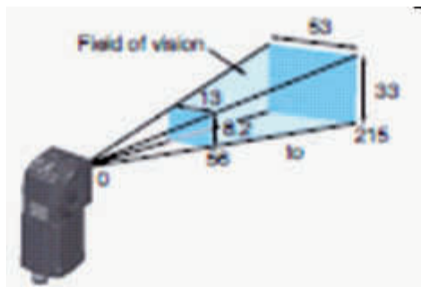
1. Connecting the sensor

Power up the Touch Finder or start the PC tool and follow the instructions. The sensor should connect automatically after a few seconds after powering up or press 'auto connect'.



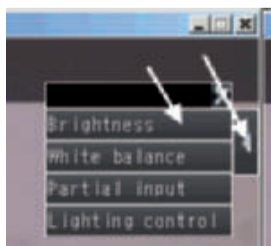
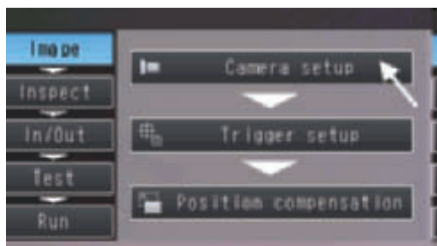
2. Adjusting the image

STEP a): mechanical adjustment
Place a GOOD sample of the object to be inspected in front of the sensor. Adjust the camera distance and position to the desired field of vision.

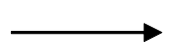


STEP b): brightness adjustment

Select from the IMAGE field CAMERA SETUP and BRIGHTNESS from the menu on the upper right hand side. If you do not see the below menu, select SENSOR SETTINGS from the bottom right menu.



If the picture brightness is too dark or too light, use the AUTO button or the manual adjustment until the object and the colour are clearly visible.



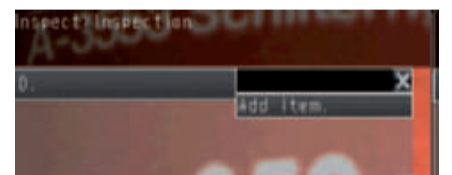
STEP 3: Setting up the inspection

Confirm the settings and return to the main menu.

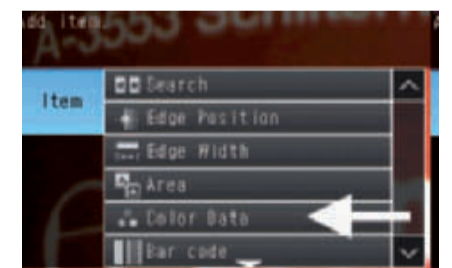
Select from the INSPECT field INSPECTION.



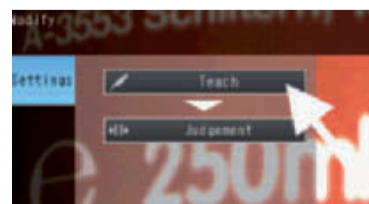
Select ADD item.



Select COLOR DATA from the list



To select the inspection area select TEACH, adjust the green inspection area, confirm with the OK and TEACH button and return to SETTINGS screen. For re-adjusting the inspection area after confirming or teaching select INSP. REGION from the upper right hand menu in the TEACH screen.



To set up the judgement criteria or to transmit the RGB values see next page.

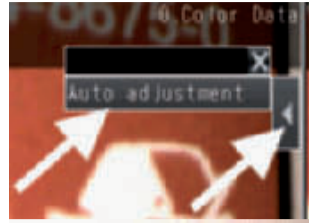
Note: Other inspection region shapes than rectangular can be defined. Refer to Z326 FQ2 Users Manual.

STEP 4: Setting up the judgement criteria

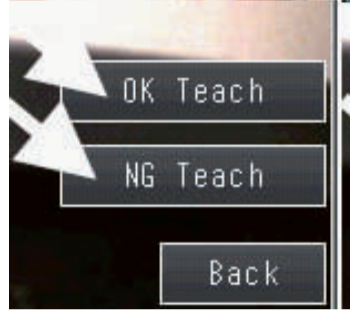
To set up the judgement criteria whether a product is considered suitable (OK) or not good (NG), several options are available.

1. Teaching with good (OK) and not good (NG) sample

Place the good (OK) sample in front of the sensor and select AUTO ADJUSTMENT from the menu on the upper right hand side.

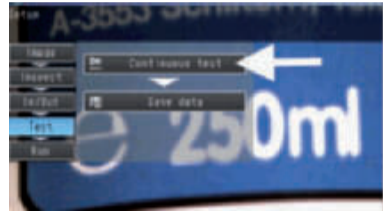


Press OK Teach for the good sample several Times or teach several good samples



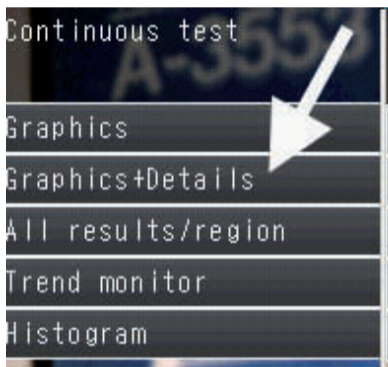
Replace the good sample by the not good sample and press NG Teach several times or teach several not good samples.

To verify the success of the teaching, Return to main menu and select from the TEST field CONTINUOUS TEST.



Select Graphics+Details

Test results of good and not good sample



To switch into normal operation return to main menu and select RUN

2. Manual tolerance adjustment (good sample only)

After setting up the inspection area select JUDGMENT.



Select the upper value and enter the accepted tolerance level.



A high number ensures a stable process. Setting a low number may be useful for detecting minor errors e.g. label displacements.



3. RGB value processing

Using the RGB values is recommended when using e.g. the 'worst OK sample' or the 'best NG sample' to set the thresholds. Return to main menu and select from the INSPECT field CALCULATION.



Select EXPRESSION

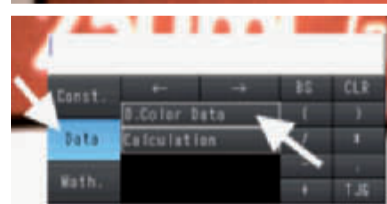


Select the first expression and select MODIFY.

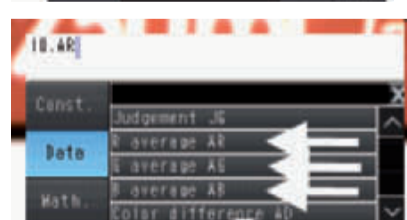
It is optional but recommended to first rename this and the following expressions to RED, GREEN, BLUE



After selecting MODIFY select DATA and COLOUR DATA.



Select R average AR for red colour.



Repeat this for the second and third expression with green (G average AG) and blue (B average AB)

Return to the calculation screen and select JUDGEMENT.

The actual RGB values are displayed. For each value upper and lower thresholds can be entered numerically. (adjustment via slider not possible as default values are too large)

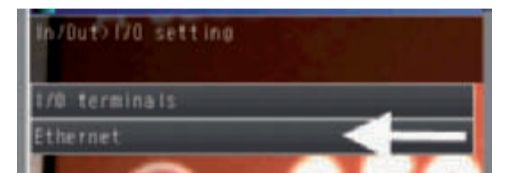


OPTIONAL: RGB out via ethernet

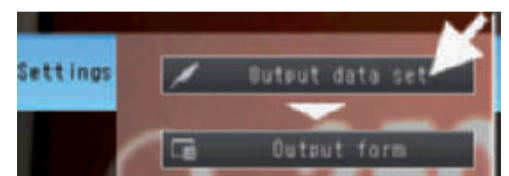
Return to the main menu. To assign the RGB values to the ethernet output, select from the IN/OUT field I/O SETTING.



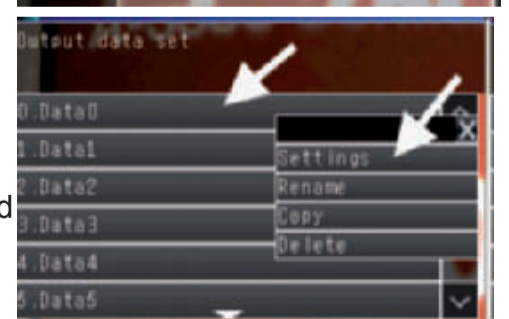
Select Ethernet



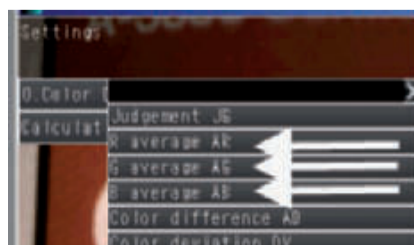
Select OUTPUT DATA SET



Select the first data and select SETTINGS.



Select COLOR DATA and Select R average AR for red. Repeat this for the 2nd and 3rd data with green and blue.



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