ZFV-CA50/CA55

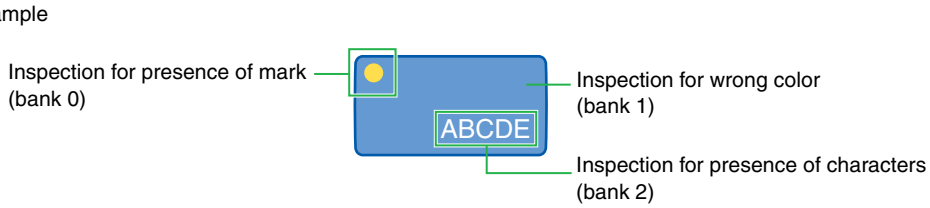
Additional Function Instructions

This document describes the additional function of the ZFV-CA50/CA55 called Multi-inspection Measurements. Multi-inspection Measurements enable up to eight simultaneous measurements on a single image by using only one Controller.
The other functions are the same as the ZFV-CA40/CA45. Read these instructions together with the *ZFV-CA40/CA45 Operation Manual* (Cat. No. Z240/Z243/Z244).

Overview

The ZFV-CA50/CA55 Sensor can continuously perform the measurements of banks 0 to 7 in response to a single measurement trigger on a single image. Each bank contains one measurement.

Example



● Measurement Flow

(1) When the measurement trigger is input, one camera image is captured.
(2) Measurements are performed on this image from the displayed bank until the last bank. After the measurements have been performed, the display returns to the starting bank for the next measurement cycle.

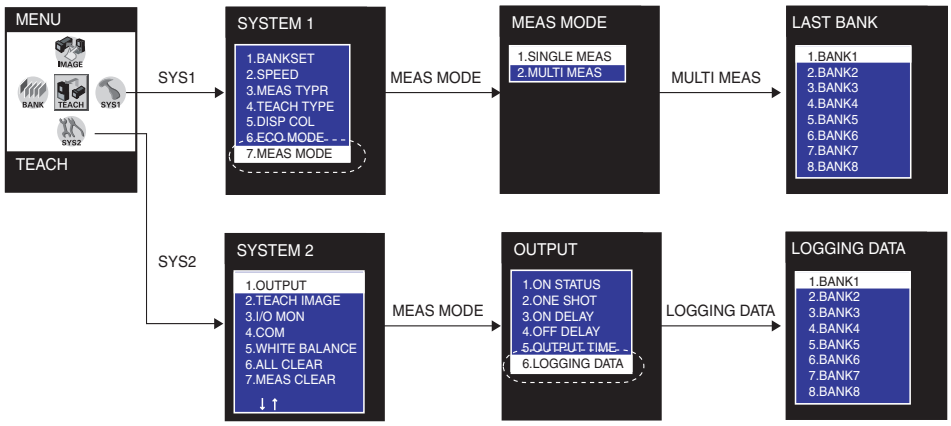
● Precautions

- The last bank must be set before starting to take measurements.
- Teaching is valid only for the bank that is currently displayed. Teach inspection conditions separately for each bank.
- The light intensity and shutter speed are not set to automatic by default. Select [IMAGE] - [CONTRAST] - [FIX] and then set the light and shutter settings according to the object being measured. Use the same settings for all banks from the first bank to the last bank.
- When a Data Storage Unit is connected, data can be logged for only one bank. The user can select the bank whose measured data is output.
- ZFV Amplifier Units cannot be connected.

ZFV-CA50/CA55 Original Settings

■ Menu Hierarchy

Two items, MEAS MODE and LOGGING DATA, have been added to the ZFV-CA40/CA45 menus.



■ Setting the Use of Banks

You can set whether to perform a single measurement for only the displayed bank or to perform measurements for multiple banks for a single trigger.

▶ MENU MODE - [SYSTEM 1] - [MEAS MODE]

Setting	Description
MULTI MEAS	Multiple banks are continuously measured in response to a single measurement trigger. Measurements are performed from the currently displayed bank until the bank specified as the last bank.
SINGLE MEAS (default)	A measurement is performed only for the currently displayed bank after a single measurement trigger. In other words, banks are switched in the same way as for the ZFV-CA40/CA45.

▶ MENU MODE - [SYSTEM 1] - [MEAS MODE] - [MULTI MEAS]

Setting	Description
LAST BANK (BANK 1 to BANK 8)	Specify the bank for the last measurement in the measurement cycle. LASTBANK must be higher than the current displayed bank.

■ Selecting the Bank for Data Output to the Data Storage Unit

Connect a ZS-DSU Data Storage Unit to log image data and measured data. In Multi-measurement Mode, the measured data of the selected bank can be logged.

▶ MENU MODE - [SYSTEM 2] - [OUTPUT] - [LOGGING DATA]

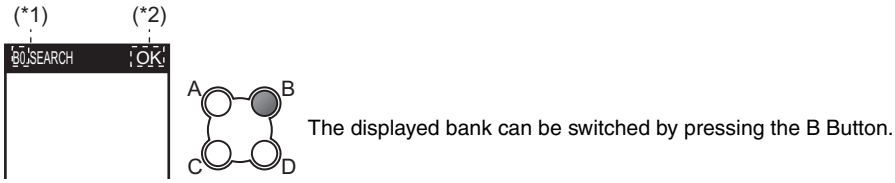
Setting	Description
BANK 1 to BANK 8	Sets the bank number for logging in the Data Storage Unit.

Displaying Results in RUN Mode

This section describes the displays and operation keys in RUN Mode when Multi-measurement Mode is set. All other displays and operation keys are the same as for the ZFV-CA40/CA45.

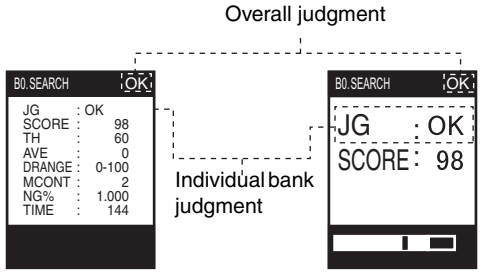
■ Displaying the Title Area

When MULTI MEAS is selected, the bank number is displayed in the title area (*1). In addition, the overall judgment is displayed in the overall judgment area (*2).



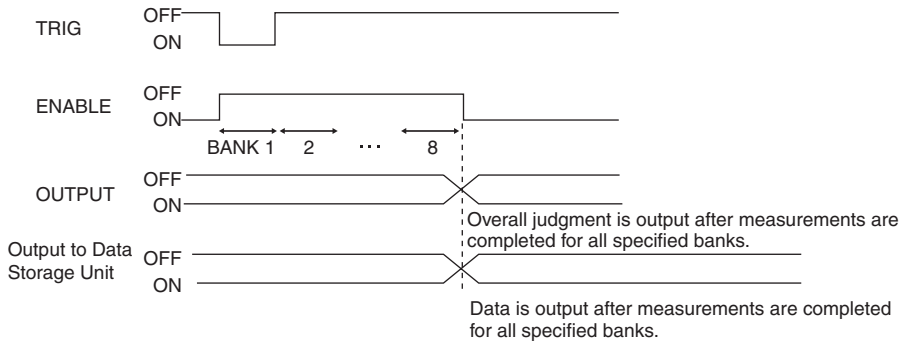
■ Judgment Results on Measurement Results Screen

The individual bank judgment is displayed in the center of the screen, and the overall judgment is displayed at the top of the screen.



Results Output Timing

The basic timing chart is the same as for the ZFV-CA40/CA45.
This section describes the overall judgment results and the timing of data output to the Data Storage Unit when Multi-measurement Mode is set.
The overall judgment is output and data is output to the Data Storage Unit after the measurements have been completed for all of the specified banks.



No-protocol Communications Commands

The LASTBANK command is supported in addition to the no-protocol communications commands supported by the ZFV-CA40/CA45.

Command	Format	Returned value	Description
LASTBANK	LASTBANK <delimiter>	<BANK No.> <delimiter> OK <delimiter>	Acquires the last bank setting when Multi-measurement Mode is set.
	LASTBANK <BANK No. 1 to 8> <delimiter>	OK <delimiter>	Changes the last bank when Multi-measurement Mode is set.

CompoWay/F Communications Commands

The following CompoWay/F communications commands are supported in addition to those supported by the ZFV-CA40/CA45.

Commands for Reading Parameter Area

Data name	MRC	SRC	Parameter type	Read start address	Specification of number of elements	Data to be read	Data length
Measure-ment mode	02 hex	01 hex	C100 hex	0AYY hex (See note.)	8001 hex	0: Single Measure-ment Mode 1: Multi-measure-ment Mode	32
Last bank number	02 hex	01 hex	C101 hex	0AYY hex (See note.)	8001 hex	1 to 8	32
Logged bank number	02 hex	01 hex	C102 hex	0AYY hex (See note.)	8001 hex	1 to 8	32

Commands for Writing Parameter Area

Data name	MRC	SRC	Parameter type	Write start address	Specification of number of elements	Data to be write	Data length
Measure-ment mode	02 hex	02 hex	C100 hex	0AYY hex (See note.)	8001 hex	0: Single Measure-ment Mode 1: Multi-measure-ment Mode	32
Last bank number	02 hex	02 hex	C101 hex	0AYY hex (See note.)	8001 hex	1 to 8	32
Logged bank number	02 hex	02 hex	C102 hex	0AYY hex (See note.)	8001 hex	1 to 8	32

Note: YY = Machine number