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# Keyence il-1000 manual pdf

You're reading a free preview Page 2 doesn't appear in this preview. IL Series User's Guide Read this manual before using to achieve maximum performance. After reading, keep this manual in a safe place so you can refer to it at any time. CMOS Multi-Function Analog Laser Sensor 236GB Page 2 2 IL-E - Classification is implemented based on IEC60825-1 based on FDA Laser Notice No.50 (CDRH) requirement. Laser safety measures Laser emission indicator Laser radiation emission indicator laser radiation emission indicator is turned on during laser emission. Flashes when the laser output is interrupted. The position of the IL-S025/IL-S065/IL-2000 indicator will be different from the top. Laser emission stop input When the stop input of the laser emission emission is set as an external input, the laser emission can be interrupted by activating the external input (input response time 20 ms). Laser emission remains interrupted while the external input is active. The laser is emitted within 20 ms being the external input of the off. For the conditions of the detection outputs and analog outputs during the laser emission stop input, refer to 11. External Input (page 4-30) of the User's Guide. Page 3 3 IL-E Laser Warning Labels The following diagrams show the type and location of laser warning labels on the IL series. IL-S025/IL-S065/IL-065/IL-100/IL-300/IL-600 Opening label IEC warning/explanatory label (CLASS 2) IL-2000 Opening label Opening label Opening Opening Label Laser Transmitter IEC Warning Label (Class 2) Aperture Label Opening Label Laser Transmitter IEC Alert/Explanatory Label (Class 2) Page 4 Installation Environment To use this product normally and safely, do not install this product in the following locations. Product failures may occur. Continuing to use this product in abnormal conditions can cause a product failure. Precautions on the use of CAU CAUTION - Use with the correct power source and voltage. Otherwise, a fire, electric shock or product failure may occur. Do not attempt to open or edit the IL series. In this way it can cause fires or electric shocks. WARNING - Before disconnecting the cables, be sure to turn off the main unit and the devices connected to the main unit. Otherwise, the drive may be damaged. Do not turn off power when changing settings. Some or all of the setting data may be lost. CMOS Multi-Function Laser Laser Sensorfi, IL-1000 Series English ModelIL-1000TypeDIN-rail mountMain drive/Expansion UnitCompatibleDisplayMinimumune not viewableIL-030: 1 m, IL-065/IL-100: 2 m, IL-300: 10 m, IL-600: 50 m, IL-2000: 100 m Gamma VIEWIL-030/IL-065/IL-100: ±99,999 mm at ±99 mm (4 selectable levels), IL-300/IL-1 600: ±999.99 mm to ±999 mm (3 selectable levels), the-2000: ±9999.9 mm to ±9999 mm (2 selectable levels)Approx display frequency. 10 times/sec. Analog voltage output±5 V, 1 to 5 V, 0 to 5 V Preventable output 100 Ω-1Anlog current output4 to 20 mA Maximum load resistance of 350 Ω-1Control inputBank non-voltage switch input 2-zero-shift inputStop input emission Input input control Outbound controlPNP changeover possible/N.O., N.C. changeover possible) - 3Alarm output collector (NPN, PNP changeover possible/N.C.) Current power voltage10 to 30 VDC ripple (P-P) 10% included, Class 2-4Power flow2300 mW or less (30 V: 77 mA or lower)Environmental resistance Degree of pollution2 Ambient temperature from 10 to 50 degrees centigrade from 14 to 122 degrees (no condensation or freezing)Relative humidity35 to 85 % RH (no condensation)Vibration resistance10 to 55 Hz, Double width 1.5 mm 0.06, 2 hours in each of the X's, Y, and the directions of zMaterialCase / Front sheet: Polycarbonate; Key top: Polyacetel; Cable: PVCWeightApprox. 150 g (including attachments) Download: 236GB CMOS Multi-Function Analog Laser Sensor IL Series User Manual Read this manual before using to achieve maximum performance. After reading, keep this manual in a safe place so you can refer to it at any time. Introduction This manual describes the basic operations and information for the IL series. Read this manual carefully to ensure the performance and function of the IL series for safe use. Keep this manual in a safe place for future reference. Make sure this manual is provided to the end user of the device. Symbols The following symbols alert the user to important messages. Be sure to read these messages carefully. General safety precautions - On startup and during operation, be sure to monitor the functions and performance of this product and confirm normal operation. It is recommended to take substantial security measures to avoid damage in the event of a problem. If the product is modified or used differently from those described in the specifications, its functions and performance cannot be guaranteed. Wavelength FDA Element Model (CDRH) Part1040.10 IEC 60825-1 Laser Class Laser Class Laser Class Description Il-S025/IL-S065/IL-065/ IL-030 IL-100/IL-300/IL-600/ IL-2000 6 55 nm 655 nm Class 1 Laser product - Class 2 laser product - 220 W 560 W - Class 1 Laser Product Class 2 Laser Product 220 W 560 W - La is implemented based on IEC60825-1 based on the Laser Notice No.50 (FDA) requirement. Laser warning labels The following diagrams show the type and location of laser warning labels IEC (CLASS 2) IEC warning/explanatory labels are only ached on class 2 laser products. Use the appropriate warning/explanatory IEC label included in the packaging of this product based on the countries and/or regions where this product is used. In this case, it can be affixed to the IEC warning/explanatory label, which has already been affixed to this product. WARNING of abnormal conditions If the following conditions occur, turn off the power immediately. Influence of dirt measurement errors can occur due to dust, water, oil, etc. - Blow away dirt on the transmitter and receiver with clean air. Clean with a soft stewed cloth with alcohol for heavy dirt. Blow away the dirt attached to the object with clean air or clean it. The CSA Certificate IL series complies with the following CSA and UL standards and has been certified by CSA (Class 2252 05 / Class 2252 85). Applicable standard: CAN/CSA C22.2 No.61010-1 UL61010-1 - Use the following power supply. CSA/UL listed power supply that provides the Class 2 output as defined in the CEC (Canadian Electrical Code) and NEC (National Electrical Code) or in the listed csA/UL power supply that has been evaluated as a limited power source as defined in CAN/ CSA-C22.2 No.IL-E 7In-Table introduction Safety

precautions.....
1 General Precautions
.....
1 Safety information for the IL series
.....
1 Safety precautions on laser
products.....
1.....
3-3 Initial reset 3-8 Operation to change the connected head model..... 3-9 3-4 Setting the tolerance setting value
.....
3-10 Manual approach
.....
3-11 Automatic setting (When other step count filter) ..... 3-12 Automatic setting (When the step counting filter)..... 15. Display figure
.....
4-39 16. Energy saving function ..... 4-40 17. How the head is
displayed.....
4-40 18. View color..... 4-41 4-3
Calculation
function.....
before use 1 this chapter describes the overview of the il series and the name and function function Part. IL-E 1-1 Control of the contents of the package..... 1-2 1-2 Names and functions of the parties
.....
1-1 1 Control of the contents of the package The following equipment and accessories are included in the package. Before using the drive, make sure that all items are included. We thoroughly inspected the contents of the package before shipping. However, in the case of defective or broken objects, contact the nearest KEYENCE office.1-1 Control of the package contents sensor Head IL-030 (type 30 mm) IL-S025 (type 25 mm) IL-S065 (type 65 mm) IL-065 (type 65 mm) IL-100 (type 100 mm) 1 IL-300 (type 300 mm) IL-600 (type 600 mm) Before use Sensor heads x 1 Mounting bracket x 1 Insulating sheet x 1 Flat nut x 1 M3 x screw L30 x 2 laser warning sticker x 1 Sensor head x 1 Mounting bracket x 1 Insulating sheet x 1 flat nut x 1 M3 x L30 screw x 2 Sensor heads x 1 Mounting bracket x 1 Insulating sheet x 1 flat nut x 1 M4 x L35 screw x 2 Lase1-1 Control of the contents of the op-87056 sensor head package (2 m) OP-87057 (5 m) OP-87058 (10 m) OP-87059 (20 m) 1 OP-87660 (2 m) OP-87661 (5 m) OP-87662 (10 m) OP-87663 (20 m) OP-84338 Before use Cable connector head sensor x 2 Sensor head connection cable (straight connector M8) x 1 Sensor head connection cable (L-shaped connector) x 1 OP-87606 IL-2000 head mounting bracket x 1 flat nut x 1 M5 x L60 screw x 2 1-4 IL-E1-2 Part Sensor Amplifier Unit 1 DIN rail mount type (IL-1000/IL-1050) 1 Expansion Unit Connector - Before use The amplifier control unit cover amplifier control unit Expansion unit -2 Sensor Head Connector No. 1 When shipped from the factory, a protective cover is installed on the expansion slots. 2 Non è installato sull'unità principale (IL-1000).1-2 Parte Nomi e funzioni Unità di controllo amplificatore 1 Tipo di supporto ferroviario DIN (IL-1000/IL-1050) (16) (15) (14) (14) (2) Prima dell'uso (3) (4) (5) (1) (1 13) (6) (7) (8) (9) (10) (11) (12) Tipo di montaggio del pannello (IL-1500/IL-1550) (16) (15) (14) (1) (2) (3) (4) (5) (13) (13) (13

Connecting and mounting the MEMO Head 2 Sensor Installation and Connection 2-12 I-EBasic Operations This chapter describes the basic operations and settings for the IL series. Operation IL-E 3-1 When the power is turned on for the first time..... 3-2 3-2 Operations on main screens
..... 3-3 3-3 Initial reset (Initialization)
3-8 3-4 Setting tolerance setting value ..... 3-10 3-5 Zero displacement function (displacement of internal measurement value (R.V.)) .... 3-1 Operation When the power is turned on for the first time When the amplifier is turned on for the first time after the sensor head is connected, the initial setting screen is displayed after a few seconds. make the initial settings under to the following procedure. The initial setting is required for both the main unit and expansion units when units are added. After the initial setting is complete, the initial setting will not be displayed when power is turned on the second time or after.3-2 Operations on main screens R.V. (Internal Measurement Value) and P.V. (Judgment Value) This section describes R.V. (Internal Measurement Value) displayed on the secondary display (bottom level) and P.V. (Judgment Value) displayed on the main display (top level). R.V. (Internal measurement R.V. (Internal measurement value) is the value displayed when a lens is placed in the measurement range. R.V. - Raw value 3-4 Setting tolerance setting value (page 3-10) The judgment value (P.V.3-2 operations on the main screens secondary display (bottom level) The secondary display can be switched with the W/X arrow button. Depending on the type of value displayed, the secondary display indicator [R.V. / ANALOG / HI / LO / SHIFT] lights up. HOLD DOWN LASER HI [R.V.] ON GO LO ALIGNMENT 3 BANK0 1 2 3 R.V. HI CALC CHECK R.V. ANALOG THE SHIFT ZERO SHIFT TIMING (1) R.V. display screen - Displayed only for the main unit and when analog output is used.3-2 Operations on main screen (1) R.V. The displayed value is not retained. (2) Analog output screen (displayed when using the analog output of the main unit) Displays the voltage value (unit: V) or the current value (unit: mA) of the analog output.3-2 Operations on main screen setup operations This section describes the functions that can be operated on the main screen and the functions that can be worked after the display changes on each setup screen. Operable functions on the type of main-screen DIN track mount (IL-1000/IL-1050) 3 Panel mounting type (IL-1500/IL-1550) The basic operations buttons used the main SCREEN HOLD LASER HI GO ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK ANALOG THE SHIFT -O SHIFT TIMING Press the W or X.3-2 Button Operations on the main screens available Functions from the main screen HOLD LASER GO THE ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK ANALOG THE SHIFT SHIFT TIMING Press the [MODE] button for about 2 seconds. 4-2 Basic settings and Advanced Settings (page 4-4) Basic settings Basic settings such as measurement mode, response time is done. Advanced settings More advanced settings such as wait, the delay timer allow the drive to be used in larger applications.3-3 Initial reset (initialized) When initial reset is performed, all settings are initialized, excluding calibration. The polarity and analog output setting of the judgment output can be changed with the same operation. Main screen HOLD LASER HI GO THE ALIGNMENT BANK0 1 2 3 R.V. HI CALC 1 CHECK ANALOG LO -O SHIFT TIMING Shift While pressing the [MODE] button, press the [SET] button 5 times. 3 HOLD LASER HI GO Basic operations LO ALIGNMENT BANK0 1 2 3 R.V.3-3 Initial reset operation (initialization) to modify the connected head model If the linked head model has been modified, you must initialize the zero displacement function and calibration function. the model of the connected head is modified, the following display is displayed. 1 Connect the head of a different model into the amplifier. [rESET] will appear on the main display and [Y.or.n] will appear on the secondary display. HOLD LASER HI LO ALIGNMENT BANK0 1 2 3 R.V.3-4 Setting tolerance setting value The tolerance setting value consists of the upper limit value (high-sided setting value) and the lower limit value (low low side value). By setting these values, judgments are delivered in three levels: when the judgment value (V.P.) goes beyond the upper limit (HIGH judgment), and when the judgment is within the acceptable range (GO judgment).3-4 Setting the tolerance setting value When setting HIGH side setting value < low lateral setting value, the judgment output is as follows. The output of the GO judgment is not exceded regardless of the judgment value (P.V.). (When you set the high-side setting value - LOW-side setting VALUE - judgment value (P.V.) and the hysteresis setting to 0.000, go judgment output is enabled.) When the judgment value (P.V.3-4 Setting tolerance setting value 4 Press the S/T button to set the low-side setting value. IL-S025/IL-030/IL-S065/IL-065/IL-100 Item LOW field setting range setting range -99.999 to 99.999 Default value -5,000 Setting range -999 From 999 to 999.99 The default value of -50.00 Sets the range from -9999.9 to 9999.9 Default value -500.3-4 Setting the tolerance setting value 3 Press the S/T button to set the tolerance setting width. Main piece P.V. HOLD LASER HI GO LO ALIGNMENT BANK0 1 2 3 R.V. HI ANALOG LO CALC CHECK SHIFT ZO SHIFT TIMING Width setting IL-S025/IL-030/IL-S065/IL-065/IL-100 Item Setting width Setting range from 0.000 to 99.999 Default value 0.200 IL-300/IL-600 Element Setting Width Setting range from 0.00 to 999.99 Default value 2.00 3 IL-2000 Item setup range from 0.0 to 9999.3-4 Setting tolerance value 2 by pointing with this method. the median value of the good target and faulty target is set as the tolerance setting value when there are a good target and a faulty HIGH/LOW target. When the optimization result exceeds the set range, the setting range limit value becomes the setting value. Two-point optimization is not performed if the internal measurement value (R.V.) is [----]. If executed, [no.uaL] will flash several times on the main display.3-4 Setting tolerance setting value 5 Measure the valid target again and press the [SET] button. (Confirmation of the first low-side point) The internal measurement value (R.V.) is imported as a good target measurement value. [Loset] appears on the main display (top level). 6 Measure the faulty low side target and press the [SET].3-4 AutoSet button tolerance setting value (when filtering the number of steps) 2 tuning points 3 When there is a standard step, 2 times the pitch value will be set as HIGH (upper limit value) and half of the step value will be automatically set as LOW (lower limit value).3-4 Setting tolerance setting value 1 tuning point When there is a measuring object (here masterwork) that can be understood by the standard step. Depending on the step value (P.V.) of the masterwork, 2 times the side setting value HIGH judgment value (upper limit) and 1/2 of the low judgment value (lower limit) side setting value can be set automatically. If the P.V. (Judgment (Judgment is A, HIGH (A) x 2, and LOW (A) ÷ 2 will be the settings.3-5 Zero displacement function (internal measure value shift (R.V.)) The internal measurement value (R.V.) is moved (offset) to an arbitrary displacement target value. The judgment value (P.V.) is also moved (offset). In a run of unit that uses the calculation function, the calculation function, the calculation value (CALC value) will be moved (offset) to the target displacement value instead of R.V. You can use the following two methods. Press the [Zero Shift] button (within 1 second).3-5 Zero displacement function (displacement of the internal measure value (R.V.)) Enabling zero displacement when the following operation is performed on the main screen, the zero displacement indicator [SHIFT of zero] lights up for about 0.5 seconds, and the current internal measure value (V.R.) moves to the target value of the displacement. Press the zero move key [Zero Shift] (within 1 second). - Activate the external input zero displacement input for 20 ms or more. 13.3-6 Banking function (posting multiple tolerance setting values) Using the banking function, you can register up to four specified tolerance settings models. Using the lock function, each setting entry recorded in advance can be switched easily.3-7 Key lock function The key lock function prevents unwanted operations on the buttons during measurement. When the key lock feature is turned on, operations other than switching to the home screen and cancelling the key lock feature are disabled. Start locking the key while pressing the [MODE] button on the home screen, press the S or T button for 2 seconds or more. After [Loc] flashes on the main display (top level) for a few seconds, the home screen is reset. HOLD LO ALIGNMENT BANK0 1 2 3 R.V.3-7 Memo key lock function 3 Basic operations 3-22 II-ESetting Various functions This chapter describes the various functions of the IL series. IL-E 4-1 Setup operations
4-2 4-2 Basic settings and Advanced Settings ..... 4-4 4-3 Calculation function
4-42 4-4 Calibration function ..... 4-1 Setting up operations This section explains the functions that can be worked on the main screen and the workable after the display changes on each setup screen. Functions available on the type of mounting of the main screen DIN panel (IL-1000/IL-1050) Panel mounting type (IL-1500/IL-1550) 4 Setting of various functions Buttons used Main screen HOLD LASER HI GO ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK ANALOG THE SHIFT S.O SHIFT TIMING Press the W or X.4-1 button Setting the available operations functions after display changes at each SETTING screen HOLD LASER HI GO ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK ANALOG THE SHIFT SHIFT SHIFT TIMING Press [MODE] press the [MODE] button for about 2 seconds. 4-2 Basic settings and Advanced Settings (page 4-4) Basic settings Basic settings such as measurement mode, response time.4-2 Basic settings and Advanced Advanced List of setting entries You can set the following items. Type Item Setup 1. Measurement direction FKT 2. Sampling frequency 4 52F Basic setting various functions 3. Average Frequency, Step Counting Filter, High Pass Filter #X' 4. Setting the alarm / 5. Output status QWV 6. The wait function. F 7. Advanced Setting VK/ 8 Input Range. Timer Delay F.; 9. Hysteresis :;5 10.4-2 Basic Settings and Advanced Settings Item Setting Type 11. Reference page description KP external input Select the functions of the 4 external inputs. 4-30 Set up the bank switching method. 4-35 Store display status settings based on zero displacement function in non-volatile memory. (EEPROM) 4-38 Set the operation of the mutual interference prevention function. 4-38 Set the displayed figures of the judgment value (P.V.), the internal measurement value (R.V.4-2 Basic Settings and Advanced Settings Setting Screen This section describes the operations and setup screen to change the basic settings and the detailed setting. How to switch to the [MODE] button for about 2 seconds on the main screen. The settings screen appears.4-2 Basic Settings and Advanced Settings Advanced Settings Advanced Settings Selection Screen [MODE] or X 6. HOLD LASER HI GO LO BANK0 1 2 3 R.V. HI CALC CHECK Increase. F Advanced Settings [MODE] or X 5 - SHIFT 7.Timing Settings HOLD LASER HI GO LO EO SHIFT TIMING LO BANK0 1 2 3 R.V. HI CALC CHECK :5 ANALOG LO [MODE] or X HOLD LO BANK0 1 2 3 R.V. HI CALC CHECK DPANALOG LO LO or X HOLD LO BANK0 1 2 3 R.V.4-2 Basic settings and Advanced Settings  T 1. Measurement Item Sets whether the display value increase or decreases when the object approaches the sensor head. Measurement increase/decrease direction Default value Description The display value increases as the object approaches the sensor head. Display value 4 Normal 99.999 Setting various functions - 99.999 c Measurement value 0 The display value decreases when the object approaches the sensor head. Reverse 99.4-2 Display value Basic settings and Advanced Settings 3. Average frequency, step counting filter, high-pass filter #' The average frequency, step count filter, and high pass filter data captured by the sampling cycle will be set. Average rate The average value is the moving average. If the measured value fluctuates, stable measurements can be obtained by increasing the average count. Also, when you select [diff], the step function or [HPF] the High-pass filter function will be activated. 3.4-2 Basic settings and Settings Step Count Filter Confirm steps above the specified height (LOW setting value), is the filter that outputs a shot. If the steps are recognized, the internal measurement value (V.R.) from the moment a sudden change occurs in the direction of , until such a change has stopped will be the P.V. (Judgment Value). In addition, the once shooting set, will make the exit decision Go up, and will hold the P.V.4-2 Basic Basic or Advanced Settings Measured Value Reference R.V Value (Internal Measurement Value) P.V Value (Judgment Value) Side Setting Value LOW 0 ON GO Judgment Value OFF One-shot Output Time - One-Stroke Exit Time The sampling cycle is 5.5 ms when 0.33 ms. 6 ms when 5.5 ms and 8 ms when 2 ms. 4 high-pass filter 3. Average rate, pressure step count filter, S/T High-pass filter button HOLD LASER HI GO LO BANK0 1 2 3 R.V.4-2 Basic settings and Advanced Settings Point 4 Setting Various Functions 4-12 - When the mutual interference prevention feature is enabled, The average expansion unit is set to the same as the main unit, so that the average setting screen for skipped expansion units is.4-2 Basic settings and Advanced Settings. Alarm setting The IL series comes complete a measurement if it does not fall within the measurement range or if the amount of light is excessive or insufficient. (If measurement is impossible for a number of samples equal to the alarm number, the ---- appear.) Details of operations when measurement is impossible are set with the alarm setting. The alarm output is ON during normal measurement. Turns off when an alarm or error status occurs.4-2 Basic settings and Advanced Settings 2. Output status Based on the judgment value (P.V.), set the output state (N.O./N.C.) of the ON/OFF judgment output and the edge control output. Item output status 4 Setting range no (normally open), nC (normally closed) Default value there are no three judgements as follows.4-2 Basic settings and Advanced Settings .> Wait function The retention method is set to the judgment value (V.V.). Functions other than Peak Auto Sleep and Auto Inner Lock require the use of the external input (timed input). WARNING When functions other than Peak Auto Lock and Automatic Grip at the bottom are set, assign external input 3 (pink/purple wire) to the timed input. 11. External Input (page 4-30) Reference - While the judgment value (P.V.4-2 Basic settings and Advanced Settings Example hold When the timed input is enabled, the judgment value (V.V.) is maintained. When Level is set by 7. Input range (page 4-23) The judgment value (V.V.) is maintained only while the timed input is ON. Internal measure value (R.V.) 1 Display value 4 Time Timing Input ON OFF Setting various functions #1 The main unit (IL-1000/IL-1500) displays the calculation value (CALC value) when the calculation function is used.4-2 Calculation settings and Advanced Peak Settings keep the maximum value of the specified period (sampling period) is maintained as a judgment value (V.V.). When Level is set by 7. Timed input (page 4-23) The sampling period is from the drop edge of the time entry to the next increase edge. On the increasing edge, the internal measurement value (V.R.) maximized during the sampling period is maintained as a judgment value. When timed input is turned off, the next sampling period begins. Judgment value (P.V.4-2 (P.V.4-2 Advanced Settings At the bottom keep the minimum value of the specified period (sampling period) is maintained as a judgment value (V.V.). When Level is set by 7. Timed input (page 4-23) The sampling period is from the drop edge of the time entry to the next increase edge. On the increasing edge, the internal measurement value (V.R.) reduced to a minimum during the sampling period is maintained as a judgment value. When timed input is turned off, the next sampling period begins.4-2 Basic Settings and Advanced Settings #1 11. External input (page 4-30) - 2 The main unit (IL-1000/IL-1500) displays the calculation value (CALC value) when the calculation function is used. 4-3 Calculation function (page 4-42) - 3 If the R.V. value (or CALC value) causes an alarm even once during the sampling period, the internal the wait will be ---- Peak-to-Peak suspension The difference between the maximum value and the minimum value of the specified period (sampling period) is considered as a judgment value (P.4-2 Basic settings and Advanced Settings When Edge is set to 7. Timed input (page 4-23) The sampling period is from the increasing edge of the time input to the next growing edge of the timed input. On the increasing edge, the difference between the maximum value and the minimum value of the internal measurement value (VSR) during the sampling period is considered as the judgment value (V.V.). When timed input is enabled, the next sampling period has already begun. View value Judgment value (P.V.4-2 Basic settings and Advanced Settings Automatic Peak Detection when the internal measurement value (R.V.) goes beyond the specified trigger level, sampling begins. When it falls below the trigger level, the sampling ends. At the end of sampling, the maximum internal measurement value (VSR) during the sampling period is maintained as a judgment value (V.V.). External input is not necessary. Judgment value (V.V.) Internal measurement value (R.V.4-2 Basic settings and advanced settings Histeresteis has the same value as the one set for 9. Isteresteis (page 4-26). Automatic reference block When the internal measurement value (R.V.) falls below the specified trigger level, sampling begins. When it goes beyond the trigger level, the sampling ends. At the end of sampling, the internal measurement value (VSR) reduced to a minimum during the sampling period is maintained as a judgment value (V.V.). External input is not required.4-2 Basic settings and Advanced Settings II-2000 Item Trigger level Setting range -9999.9 to 9999.9 Default value 100.0 The isteresis has the same value as the one set for 9. Isteresteis (page 4-26). 6K/ 7. Input range The external input operation (timed input) used for 6. Wait function (page 4-15) is set. If Auto Peak Lock or Auto Lock is set at the bottom, this element is ignored. Level, EdgeLevel, edGe (Edge) Default Level, Sampling Edge 8.4-2 Basic settings and Advanced Settings Chart Reference 4 - The are time chart when the judgment output is normally open (default). ON/OFF is reverse for normal closed. 5. Ext status (page 4-14) - Indicates not taken into account in the following time chart. Note that invalid causes affects the ON/OFF timing of the judgment output. • 9. Hysteresis (page 4-26) Timer delay #' The delay timer is not used.4-2 Basic settings and Advanced Settings 1. Timer OFF Time setting range 0 to OFF is delayed for the specified time set to the timer. In addition, the time it takes to change the high judgment output and low judgment exit operations from OFF to ON is delayed. Judgment value (P.V.4-2 Basic settings and Advanced Settings :;5 9. You would instite The isteresteis for the value of the tolerance setting is set. If the judgment value (V.V.) fluctuates due to the vibration of the object, etc. and the judgment output repeats ON/OFF, increasing the hytheresis value stabilizes ON/OFF. 3-4 Setting tolerance setting value (page 3-10) IL-S025/IL-030/IL-S065/IL-065/IL-065/IL-100 Article Hysteresis 4 Setting various Functions Setting Range Default Value 0.000 Setting Range Default Value 0.4-2 Basic Settings and Advanced Settings #P) 10. Analog output scale The analog output scaling for the judgment value (P.V.) is set. If the analog output is set to no output, this screen is ignored. 3-1 Operation when power is first turned on (page 3-2) 3-3 Initial reset (initialization) (page 3-8) Analog output Description Default Resizing is not done. c Resizing is performed.4-2 Basic settings and Advanced Settings Upper bounding screen and lower bound setting screen When set to default state [dEFL], the following screens will be ignored. If set to free range or bank, the upper and lower bound setting screens are displayed. For free range (FrEE) 10. Analog output Scaling HOLD LASER HI GO ALIGNMENT 4 BANK0 1 2 3 R.V.4-2 Basic settings and Advanced Settings Setting range for analog output scaling If the free range or lower limit is selected for analog output scale state. IL-S025/IL-030/IL-S065/IL-065/IL-100 Upper Limit Element Lower limit Setting range -99,999 to 99,999 -99,999 to 99,999 Default value 10,000 -10,000 Range Setting -9999 999 to 999.99 -999.99 to 999.99 Default value from 100.00 -100.00 Interval setting from -9999.9 to 9999.9 -9999.9 to 9999.4-2 Basic settings and KP 11 Advanced Settings. External input You can select the functions to be assigned to four external inputs (external input from 1 to 4). Powerinput-output cable (page 2-7) External input Description Default Functions that can be assigned to the external inputs are changed by factory default.4-2 Basic settings and Advanced Settings Factory default 1 Sensor Setting Reset Reset to set ON, the calculation function (page 4-42) - 5 Zero displacement function (displacement of the internal measurement value (R.V.) R.V. first moved R.V. after moved Max. 20 ms 4 ON entrance round zero OFF Min. 20 ms Min.4-2 Basic settings and Advanced Settings Time interval When timed input is enabled while using the wait function, the judgment value (V.V.) is maintained. 6. Wait function (page 4-15) 2-Time chart When sample lock is set 7. Input Range (page 4-23) setting: Measured Period Level 4 Measured Period Measured Period Sample Hold Judgment Value (P.V.) Output Rating Setting Various Functions Max. 2 ms Max. 2 ms Max. 2 ms ON OFF Min Input Interval. 2 ms Min. 2 ms 7.4-2 Basic settings and Advanced Settings z When Peak hold, Bottom hold or Peak-to-peak hold is set to 7. Input Range (page 4-23) setting: Level Judgment value (P.V.) result of judgment Previous result No sampling period Maximum. 2 ms Input Range Max. 2 ms No sampling Max. 2 ms ON OFF Min. 2 ms Min. 2 ms 4 7. Input Range (page 4-23) setting: Edge Sampling period 2 Sampling period 1 Interval Previous result Sampling period 1 result Sampling period 2 maximum result. 2 ms Max.4-2 Basic settings and Advanced Bank Input A/Bank Input B Combining the ON/OFF setting of bank input A and bank input B, you can change banks. 3-6 Banking function (registration of multiple tolerance setting values) (page 3-20) 12. Bank exchange method (Page 4-35) Time chart judgment value (P.V.) judgment output A bank 0 Bank 1 Bank 2 Bank 3 Max. 20 ms Bank Input B Max. 20 ms ON OFF-Max.4-2 Basic settings and Advanced Settings Emission Stop input Laser emission remains interrupted while laser emission stop input is swed. The laser emission indicator on the sensor amplifier turns off while the laser output is interrupted. Amplifier control unit (page 1-6) Reference measurements are stored in the sensor amplifier. If a disconnection occurs in the sensor amplifier, the amplifier control unit will be unable to read the measurement data. In the event of a disconnection, the bank can be switched using external input. If input is set up for external inputs, the bank can be switched using external input. 11. External input (page 4-30) 12. Bank exchange method (page 4-35) 1 Banks are switched with the ON/OFF combination of bank entrance A and bank entrance B. The bank entrance must be kept 20 ms or more. More. Basic settings and Advanced Settings 13. Zero-valued memory function 5(V When zero displacement is performed with the sensor amplifier turned on, it is saved to non-volatile memory (EEPROM) regardless of setting. 3-5 Zero displacement function (internal measurement value shift (R.V.4-2 Basic Settings and Advanced Settings Point - If the data between the heads is not synchronized when using the calculation function or when the DL series is connected, turn off the mutual interference prevention feature and set the sampling frequency of the main unit to a speed other than 0.33 ms. When mutual interference prevention is enabled or 0.33 ms is set, the time to update the internal data of the main drive and expansion unit will not match.4-2 Basic settings and Advanced Settings ·EQ 16. Power saving function When no button is pressed for more than a minute, the power saving function is activated with the sensor amplifier. The power management feature is activated as soon as the setting is complete. The normal display is restored by pressing any button. 4-2 Basic settings and advanced settings Near the IL-S025 measurement center: 25 mm ± 0.25 mm IL-S065 / 065 / 100 mm ± 1 mm IL-300 / 600 / 2000 mm ± 7 mm IL-600 / 065 / 100 mm ± 20 mm: (2000: 2000 mm ± 50 mm IL-030 EZ-EITER A Distance indicator %Q ; 16. Display color The LED color of the amplifier is set.4-3 Calculation function The internal measurement value (R.V.) for the main unit and the expansion unit installed next to the main unit is preferred to as expansion unit 1) can be calculated (addition or subtraction). If there is more than one expansion unit, the calculation function can only be used between the main unit and expansion unit 1. There are two calculation modes for the calculation function. How to add - Subtraction mode Point 4 Setting up various functions 1.4-3 Method of addition calculation function In addition mode, the added value of the internal measurement value (R.V.) for the main unit (A) and the expansion unit 1 (B) is considered as the calculation value (CALC value). Calculation value (A's R.V.) - (R.V.) of B You can measure the thickness or width of a large object that cannot be measured with the measurement range of a sensor head.4-3 Method of the calculation function (main unit only) Main screen HOLD LASER HI GO ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK ANALOG LO SHIFT -E SHIFT TIMING Press [MODE] - Key W 2 seconds or more at the same time 4 HOLD LASER HI GO THE ALIGNMENT BANK0 1 2 3 R.V. HI CALC CHECK %. ANALOG LO 1 Q(( [20.CaL] is displayed on the main display (top level). 2 Setting various functions [MODE] or X HOLD LASER HI GO LO LO button 1 2 3 R.V.4-4 Method of setting the calibration function (R.V. Calibration) When there is a difference between the internal measure value (V.R.) and the actual size of the object, the value can be calibrated. The zero point (offset) and the skew are both correct. The R.V. Calibration displayed value that you want to display (2) [5'V ] R.V. before calibration (2) R.V. you want to view (1) [5'V ] 4 R.V.4-4 Calibration function [SEt1] R.V. value HOLD BANK0 1 2 3 R.V. HI CALC CHECK LASER GO LO 3 ANALOG LO Insert the SHIFT piece A for which the measured value is known, and using the S/T buttons, set the R.V. you want to display (1) for that workpiece. The current internal measurement value is displayed on the main display (top level). [SEt1] and the R.V. you want to display (1) are alternately displayed on the secondary display (bottom level) (P.V.) HOLD CALC CHECK LASER HI GO LO CALIBRATION FUNCTION THE ®aamp;BANK0 1 2 3 R.V. HI ANALOG LO Insert the SHIFT piece B for which the measured value is known. The A-E-D SHIFT TIMING X Stop button