PROFAB AUTOMATED CLEAT MACHINE MANUAL
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</table>
OPERATING/TECHNICAL MANUAL

PREVENTATIVE MAINTENANCE.
EVERY DAY
Clean end of coil sensor.

ONCE A WEEK
1. Clean the rolls and machine bed.
2. Remove any metal chips from entry guide.
3. Remove any metal chips from flying shear.
4. Put oil on flying shear rails.
5. If rollformer not being used for some time, spray protective oil on bright metal.

ONCE A MONTH
1. Check if retainer plate bolts and adjustment nuts are tightened.
2. Check hydraulic oil level. Top up if necessary.
3. Check coolant level. Top up if necessary.
4. Check the chain and gears. Lubricate and / or grease if necessary.

ONCE EVERY THREE MONTH
1. Check tension of the motor drive V - belt. Tighten if necessary.
2. Check entry guide bearings. Replace if necessary.
3. Check lock nuts at gears. Tighten if necessary.
4. Check cut ends for burrs. Sharpen blade and die-blocks if necessary.
5. Check hydraulic cylinders and hoses for leaks. Tighten nuts and connectors if necessary.

ONCE EVERY SIX MONTH
1. Inspect all rolls for cracks and wear. Replace if necessary.
2. Check uncoiler brake pads for wear. Replace if necessary.
4. Put grease on uncoiler moving parts.
5. Check oil level of gearboxes. Replace oil after 700 running hours.

LUBRICANTS
a. Hydraulic oil : AW 68 or equivalent.
b. Gearbox oil : Shell Omala oil 460 or equivalent.
c. Grease for gears : Esso Surrat 26K or equivalent.
OPERATING/TECHNICAL MANUAL

ASSEMBLY PLANS

STATION-1
STATION-9

[Diagram with dimensions and annotations for ACR-09b01 and ACR-09b02]
STATION-10
## ROLLFORMER PARTLIST

<table>
<thead>
<tr>
<th>NO.</th>
<th>PART NAME</th>
<th>MEDEL &amp; SIZE</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IKO BEARINGS BA 1816Z</td>
<td>50</td>
<td>PCS</td>
</tr>
<tr>
<td>2</td>
<td>IKO BEARINGS BA 2816Z</td>
<td>2</td>
<td>PCS</td>
</tr>
<tr>
<td>3</td>
<td>IKO BEARINGS BA 2216Z</td>
<td>2</td>
<td>PCS</td>
</tr>
<tr>
<td>4</td>
<td>NUT 5/8X2&quot; WW.</td>
<td>10</td>
<td>PCS</td>
</tr>
<tr>
<td>5</td>
<td>NUT 1/2X2 1/2&quot; WW.</td>
<td>40</td>
<td>PCS</td>
</tr>
<tr>
<td>6</td>
<td>NUT 1/2X1 1/2&quot; WW.</td>
<td>4</td>
<td>PCS</td>
</tr>
<tr>
<td>7</td>
<td>NUT 5/8X1 1/2&quot; WW.</td>
<td>4</td>
<td>PCS</td>
</tr>
<tr>
<td>8</td>
<td>NUT 5/8X2.5&quot; WW.</td>
<td>4</td>
<td>PCS</td>
</tr>
<tr>
<td>9</td>
<td>NUT 5/8X2&quot; WW.</td>
<td>8</td>
<td>PCS</td>
</tr>
<tr>
<td>10</td>
<td>NUT 3/8X1 1/2&quot; WW.</td>
<td>4</td>
<td>PCS</td>
</tr>
<tr>
<td>11</td>
<td>NUT 5/8&quot; WW.</td>
<td>4</td>
<td>PCS</td>
</tr>
<tr>
<td>12</td>
<td>UCP HOUSING 209D1</td>
<td>2</td>
<td>PCS</td>
</tr>
<tr>
<td>13</td>
<td>BEARINGS 51306</td>
<td>1</td>
<td>PCS</td>
</tr>
<tr>
<td>14</td>
<td>SPRING ID=13 OD=25 L=25</td>
<td>40</td>
<td>PCS</td>
</tr>
<tr>
<td>15</td>
<td>Motor 5 HP.</td>
<td>1</td>
<td>PCS</td>
</tr>
<tr>
<td>16</td>
<td>Motor gear PA30 1/60</td>
<td>1</td>
<td>PCS</td>
</tr>
<tr>
<td>17</td>
<td>LOCK RING #28</td>
<td>40</td>
<td>PCS</td>
</tr>
<tr>
<td>18</td>
<td>LUBRICATION NIPPLE 1/4&quot;</td>
<td>26</td>
<td>PCS</td>
</tr>
<tr>
<td>19</td>
<td>COUPLING SYC 5016</td>
<td>1</td>
<td>PCS</td>
</tr>
<tr>
<td>20</td>
<td>DOUBLE CHAIN # 60X20T</td>
<td>2</td>
<td>PCS</td>
</tr>
<tr>
<td>21</td>
<td>CINGLE CHAIN # 60X17T</td>
<td>1</td>
<td>PCS</td>
</tr>
</tbody>
</table>
1. EMERGENCY STOP
2. COUNTER
3. PILOT LAMP POWER
4. PUSHBUTTON SWITCH JOG FORWARD
5. SELECTOR SWITCH OFF ON HYDRAULIC PUMP
6. PUSHBUTTON SWITCH JOG REVERSE
7. SELECTOR SWITCH HAND OFF AUTO
8. PUSHBUTTON SWITCH CUT
9. PUSHBUTTON SWITCH START ROLLFORMER
10. PUSHBUTTON SWITCH STOP ROLLFORMER
DIAGRAM POWER DAN 096

THREE PHASE 220VAC+N+E
DIAGRAM CONTROL DAN 096
SINGLE PHASE 110VAC

SI = EMERGENCY STOP
SI= SELECTOR SWITCH OFF ON HYDRAULIC PUMP
DL1= OVERLOAD RELAY ROLLFORMER
DL2= OVERLOAD RELAY HYDRAULIC PUMP
FI = FUSE #1 5A

POWER SUPPLY
240V 3PH
220V 3PH
24VDC

LAMP 24VDC
LAMP HYDRAULIC PUMP
LAMP HYDRAULIC PUMP
LAMP FEED-OUT
LAMP FORWARD
LAMP REVERSE
PNEUMATIC VALVE CUTOFF
Addition and Subtraction

High-speed 30 Hz/10 Hz (with Dipswitch selected)
200 Hz/1 kHz (with Set-up Mode selected)

A preset counter that aggregates counts with functions that provide a large, two-color LED for display that is easy-to-read in a small DIN48x48 body. Dual output of predicted output and preset output can be set with settings for predicted output.

Merits

- **Large, easy-to-see display**
  A large LED for display with character height of 12 mm (4 digits) and 10 mm (6 digits) is used in a small DIN48x48 body.

- **Easy operation**
  Setting and changing of preset values with individual setting keys has the feel of digital switches.

- **User configurable digit number**
  User can configure the no. of digit.

- **Battery-less memory retention**
  EEPROM is used to retain values in memory, so there is no need for battery maintenance.

- **Removable terminals**
  Maintenance has been reduced via terminals that can be removed. After wiring, the terminal cover provides a safe surface for worry-free use.

- **Tamper proof**
  Key protection can be set for individual keys to prevent tampering.

- **Power source for a large-capacity sensor (AC P/S type only)**
  You can source the power for sensor from the built-in P/S 24VDC, 60mA.

- **Free power supply for the AC type**
  The operating AC voltage is wide as 85VAC~264VAC.

- **Various types of counts**
  - Prescaling
  - The input pulse can be converted to any values and displayed.
  - Dual phase addition/subtraction by individual input
    - The counting range can be from positive to negative.
      - However, settings are in the positive range.
  - Addition-Subtraction
    - Counts can be selected for positive or negative display.

- **Dual output with alarm output**
  Dual setting is possible with alarm output.
  Alarm values are values prior to reaching preset values.

- **High-speed response with 10 kcps**
  The input response frequency for this class is a maximum of 10 kHz. Input operational speed can be adjusted to switch to 30, 200, 1 k, or 10 kHz.

- **IP65**
  Membrane is used to protect from operation with wet or dirty hands. A special cover is also provided as an option to enhance the protective structure.

- **Designed in compliance with CE and UL**
List of Models

<table>
<thead>
<tr>
<th>Category</th>
<th>Model Number</th>
<th>Number of Digits</th>
<th>Source Voltage</th>
<th>Source Voltage (DC24 V 80 mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preset counter</td>
<td>KCV-4S</td>
<td>4</td>
<td>AC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-4S-C</td>
<td></td>
<td>DC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-6S</td>
<td>6</td>
<td>AC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-6S-C</td>
<td></td>
<td>DC</td>
<td></td>
</tr>
<tr>
<td>Total counter</td>
<td>KCV-4T</td>
<td>4</td>
<td>AC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-4T-C</td>
<td></td>
<td>DC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-6T</td>
<td>6</td>
<td>AC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KCV-6T-C</td>
<td></td>
<td>DC</td>
<td></td>
</tr>
</tbody>
</table>

AC: AC100~240V
DC: DC12~24V

Model number system

KCV-□□□

C: DC power
S: Output
T: Total
4: 4-digit
6: 6-digit
Series Name

Accessories: Installation Frame

4-digit

6-digit

General Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>AC power</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source voltage</td>
<td>AC100~240V</td>
<td>DC power</td>
</tr>
<tr>
<td>Permitted power fluctuation</td>
<td>AC85~264V</td>
<td>DC12~24V</td>
</tr>
<tr>
<td>Power consumption</td>
<td>approx. 11 VA</td>
<td>DC10~26.4V</td>
</tr>
<tr>
<td>Sensor power</td>
<td>DC24 V (20-28V) 60 mA (Max. 10% p-p ripple)</td>
<td>approx. 4 W</td>
</tr>
<tr>
<td>Memory Backup upon Power Failure</td>
<td>EEPROM (Writing Up to 100,000 times)</td>
<td>Memory Duration 10 years</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10~50°C</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20~70°C (with no freezing)</td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35~85%RH (with no dewing)</td>
<td></td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>AC 2kV for one minute (for AC Input, 0 V, and relay interconnexion)</td>
<td></td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>Durable Displacement amplitude 0.5 mm Frequency 10-55 Hz along three axes</td>
<td></td>
</tr>
<tr>
<td>Impact resistance</td>
<td>Durable Displacement amplitude 0.55 mm Frequency 10-55 Hz along three axes</td>
<td></td>
</tr>
<tr>
<td>Noise resistance</td>
<td>AC power ±1.5 V between terminals (pulse width 1 of μs and rise time 1 of ms)</td>
<td>DC power ±10 V between terminals (pulse width 1 of μs and rise time 1 of ms)</td>
</tr>
<tr>
<td>Protective structure</td>
<td>IP65 (front panel only)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 150 g</td>
<td>Approx. 110 g</td>
</tr>
<tr>
<td>Terminals</td>
<td>Conforming wiring 0.25~1.65mm²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conforming stripped contact R1.25-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permitted torque 0.5Nm</td>
<td></td>
</tr>
</tbody>
</table>
## Output modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Count</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hold</td>
<td>Continuous</td>
<td>Hold</td>
</tr>
<tr>
<td>One-shot</td>
<td>Reset</td>
<td>One-shot 1-9990 ms</td>
</tr>
<tr>
<td>Match</td>
<td>Continuous</td>
<td>Match</td>
</tr>
</tbody>
</table>

*Can be set in milliseconds from 10 to 9990 ms (in Setup mode).

## Output mode diagrams

**Addition mode**

**Subtraction mode**

**Hold output (continuous count)**

**One-shot output (reset count)**

**Matching mode (continuous count)**

When alarm values are set to 0, output operations for DC output will be the same as for relay output.

When displaying alarm output (DC output), the output LED will blink on and off.

## Counting timing

**Dual input mode**

**Input mode for addition or subtraction (during input of positive logic)**

**Subtraction**

**Input mode for addition or subtraction (during input of negative logic)**

$$\text{(Input)}$$

$$\text{with } \begin{cases} \text{or } & \text{the required counting speed is } (\text{CP}) \leq \end{cases}$$
Front Panel Layout and Description

Panel guide

1. Output (red)
   - Operating mode
     Lit when output is ON.
     Blinks when alarm output is ON.

2. Key protection (red)
   - Operating mode
     Blinks when key protection is ON (only when the key is ON).
   - Setup mode
     Displays key protection settings.

3. RST key
   - Operating mode
     Allows count values to be reset.
     (0 for Addition and preset values for Subtraction).
   - Setup mode
     Allows selection of set items.

The Total Counter has several lamps that differ with respect to the Preset Counter:

- Output: None
- Key protection: None other than for display in compliance with RST key.
- Preset values: Not displayed in Operating mode.
- Digit keys: Not effective in Operating mode.

Key strokes

1. Changing preset values
   Press a digit key once to increase the corresponding digit by one:
   \[ 0 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 9 \]
   After removing your finder from the key, the settings will be verified after about one second.

2. Resetting the count
   Press the RST key to reset the currently displayed count. The count is reset within 0.1 second after the key is pressed. For example, the current count 0010 is reset to 0 for Addition. It is reset to the preset value for Subtraction.

3. Protecting the keys
   Turning the Dip switch ON disables the reset and digit keys. If disabled keys are pressed, the LED for the corresponding key will blink. If Key protection is selected to disable keys in Setup mode, Dip switch 6 will come ON. At factory setup, Key protection in Setup mode is immediately disabled. If just turning...
Configure dip switches

- Use the dip switch on the top of the counter to configure various parameters and operation mode.
- Configure dip switches with power off. Operation with power up will have no effect.
- When dip switches are re-configured, you must press the Reset key in operating mode to reset the count values.

![Dip switch diagram]

- **Counting speed**
  The counting speed is selected with Dip switch 1.

<table>
<thead>
<tr>
<th>Counting speed</th>
<th>SW1</th>
</tr>
</thead>
<tbody>
<tr>
<td>30Hz</td>
<td>ON</td>
</tr>
<tr>
<td>10kHz</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Input mode**
  The input mode is selected with Dip switch 2.

<table>
<thead>
<tr>
<th>Input mode</th>
<th>SW2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual input</td>
<td>OFF</td>
</tr>
<tr>
<td>Dual input</td>
<td>ON</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Operational mode**
  The operational mode is selected with Dip switch 3.

<table>
<thead>
<tr>
<th>Operational mode</th>
<th>SW3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>ON</td>
</tr>
<tr>
<td>Subtraction</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Counting memory**
  The counting memory is selected with Dip switch 4.

<table>
<thead>
<tr>
<th>Counting memory</th>
<th>SW4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory auto save</td>
<td>ON</td>
</tr>
<tr>
<td>Power source reset</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Output mode**
  The output mode is selected with Dip switch 5. Match output can be selected in Setup mode.

<table>
<thead>
<tr>
<th>Output mode</th>
<th>SW5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hold output</td>
<td>ON</td>
</tr>
<tr>
<td>One-shot output</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Key protection**
  With Dip switch 6, [Do not protect keys] can be selected to take effect for keys set in Setup mode using [Protect keys]. Setting for keys to protect can performed in Setup mode. At the factory setup, [Do not protect keys] is set.

<table>
<thead>
<tr>
<th>Key protection</th>
<th>SW6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settings in setup mode take effect</td>
<td>ON</td>
</tr>
<tr>
<td>Do not protect keys</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup

- **Operating mode**
  The operating mode is selected with Dip switch 8.

<table>
<thead>
<tr>
<th>Operating mode</th>
<th>SW8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup mode</td>
<td>ON</td>
</tr>
<tr>
<td>Run mode</td>
<td>OFF</td>
</tr>
</tbody>
</table>
  # Factory setup
Setup mode

Settings that cannot be selected with dip switches can be set in Setup mode.

Items that can be configured in Setup Mode

1. Counting speed — 200/1 kHz, Dip switch 1
2. Input logic — Positive or negative logic
3. Output mode — Match output, Dip switch 5
4. Output duration — Duration of One-shot output can be set from 10-9999 ms in 10-ms increments
5. Prescaling — 4-digit: 0.001-9.999
   6-digit: 0.001-99.999
6. Prescaling factor — The scaling factor can be set for values used in prescaling.
   - 1x
   - 10x
   - 100x
   - 1000x
7. Number of digits — The number of counter digits for display can be set.
   - 4-digit: 1-4 digits
   - 6-digit: 1-6 digits
8. Decimal place — An arbitrary digit can be set for display of the decimal point.
9. Predicted output — Offset values can be set with respect to preset values.
   - 4-digit: 0-9999
   - 6-digit: 0-99999
10. Resetting key protection — Setting to disable the reset key can be performed.
11. Protecting digit keys — Setting to disable an arbitrary digit key can be performed.

* With a Total Counter, items 3, 4, 5, 6, 7, 10, and 11 are skipped.

1. Switching Between Setup mode and Run mode

Run mode

1. Setting Dip switch 8 to ON and turning on the power will start the Setup mode.
2. Setting Dip switch 8 to OFF and turning on the power will start the Run mode.

2. Operations in Setup mode

In Setup mode, the count can be initialized using the menu as follows:
- Represents factory setup.

- Counting speed setting
  - 1: 200 Selects 1 kHz
  - 2: 200 Selects 200 Hz
  - 3: 3:4 Selects Dip switch 1

- Input logics setting
  - 1: Positive
  - 2: Negative

- Output mode setting
  - 1: 1:4 Selects matching output
  - 2: 3:5 Selects with Dip switch 5

- Output duration setting
  - 1: 1:6 Selects 1 kHz
  - 2: 3:5 Selects with Dip switch 5

- Output duration is set with the digit key. Digit key 1 to 5 set in increments of 10 ms will be recognized in tenths (10) ms.

- Setting the preset value

- Setting the decimal point

- Selection of digit display

- Alarm output setting

- Reset key protection

- Digit key protection

- The number of digits selected for setting of digits will render effective the settings for the decimal place, alarm output, and key protection that follows. Only the selected number of digits is set.
- With the Total Counter, items marked with an * are skipped.
- When changing the setting of the number of digits selected, the decimal point will be removed, the alarm output and digit key will be set to 0, and preset values will automatically be changed to 5.
- After changing the default settings in Setup mode, press the Reset key in Run mode and reset count values.
Operational Example (for KCV-6S)

- Run mode
  Changing preset values
  1. Change the preset value from 120 to 240

Before changing

```
KCV
Out   kA
(1) (4) (0)
```

Press Digit key 2 twice.

```
KCV
Out   kA
(1) (4) (0)
```

Press Digit key 3 once.

```
KCV
Out   kA
(0) (4) (3)
```

Change complete

```
KCV
Out   kA
(0) (4) (3)
```

2. The preset value will be 240, and operations will continue with the altered value. Preset values will take effect about 1 second after being changed.

- Positioning application example with encoder

Positioning of a conveyor can be done in increments of 0.1 mm. It sets the Alarm in 20mm prior to the preset value to stop the conveyor in accurate position.

1. Prescale calculation

\[
\text{Prescale} = \frac{\pi \times \text{pulley diameter (mm)}}{\text{encoder pulse count}}
\]

\[
= \frac{3.1416 \times 15}{1000}
\]

\[
= 0.047\text{-mm pulse}
\]
2. Switching to Setup mode
Turn Dip switch 8 ON and then turn power ON (Dip switches 1-7 are OFF).

3. Changing setting contents

1. The setting screen for Counting speed is first displayed.
   - These values are initial values.
   - Press the RST key to proceed.

2. The setting screen for Input logic is displayed.
   - These values are initial values.
   - Press the RST key to proceed.

3. The setting screen for Output mode is displayed.
   - These values are initial values.
   - Press the RST key to proceed.

4. The setting screen for Output duration is displayed.
   - These values are initial values.
   - Press the RST key to proceed.

5. The setting screen for Prescaling settings is displayed.
   - Set prescaling to 0.047.
   - Press the 4 key 9 times.
   - Press the 2 key 4 times.
   - Press the 1 key 7 times, and 0.047 will appear.
   - Press the RST key to proceed.

6. The setting screen for Prescaling settings is displayed.
   - Set the scaling factor to 10.
   - Press the 3 key 1 time and 10 will appear.
   - Press the RST key to proceed.

7. The setting screen for the Number of digits is displayed.
   - These values are initial values.
   - Press the RST key to proceed.

8. The setting screen for the Decimal point is displayed.
   - Display the decimal point between the first and second digit.
   - Press the 2 key and the decimal point will be displayed between the first and second digit.
   - Press the RST key to proceed.

9. The setting screen for Alarm output is displayed.
   - Set the alarm output to 20.
   - Press the 3 key twice and 20.0 will appear.
   - Press the RST key to proceed.

4. Switching to Run mode
Turn the power OFF after completing setting in Setup mode and turn Dip switch 8 OFF (Run mode)
(When power is OFF, all the setups in Setup mode are saved in the memory).

5. Starting Run mode
Be sure to turn power ON after changing the setup in Setup mode and press the RST key to reset.
**Error Codes**

### Common Errors

<table>
<thead>
<tr>
<th>Error</th>
<th>Error type</th>
<th>Error details</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>E21</td>
<td>Memory data error</td>
<td>Preset values and Setup mode items have changed.</td>
<td>Press the [RD] key to eliminate the error display. The count value will be set to 5000, and the Setup mode contents will be set to settings used at factory setup.</td>
</tr>
<tr>
<td>Decimal point blinking</td>
<td>Counter Overflow Error</td>
<td>Count values have exceeded the display range.</td>
<td>Error display will be cleared by the &quot;[RD]&quot; key or when the count value return to the count range. In the counter, correct calculation is in a range from -2147483648 to 2147483647.</td>
</tr>
<tr>
<td>Decimal point blinking</td>
<td>Counter Underflow Error</td>
<td>Count values are below the display range.</td>
<td></td>
</tr>
</tbody>
</table>

- **Counter Overflow Error**
  
  ![Counter Overflow Error Diagram](image)

  All digits in the display turn to 0.

  - Decimal point blinking

- **Counter Underflow Error**
  
  ![Counter Underflow Error Diagram](image)

  Negative display

  - Decimal point blinking

### Option

<table>
<thead>
<tr>
<th>Option</th>
<th>Model Number</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber packing</td>
<td>KC-48P</td>
<td>Prevents water from entering the control panel by installing this between the installation panel and KCV.</td>
</tr>
</tbody>
</table>
| Front cover | KC-48C    | Protects the front panel from dirt and the like.
  
  - Material: Soft silicone rubber
  - Key operation can be performed with the front cover as-is. |
Precautions

Precautions for Use

(1) With the DC power source, the 0-V terminal (A) and the input common 0-V terminal (B) are internally short-circuited.
(2) Apply the rated voltage in one instant, not by gradually raising the voltage.
(3) Always use negative input logic to set the DC 2-wire proximity switch.
(4) During counting, changes to preset values will take effect about one second after key input of the change. In subtraction mode, key input takes effect when the count is reset valid preset value will be saved in the memory at loss of power.
(5) It is recommended to use a sheet included in the package to keep the setups for the future maintenance.
(6) Use in the following environments should be avoided:
   - A location where the ambient temperature is above 50°C or below 10°C.
   - A location where the ambient humidity is above 85% or abrupt temperature changes may cause condensation.
   - A location with dust, iron filings, corrosive gasses, or the like.
   - A location exposed to direct sunlight.
   - A location with significant vibrations or impact.
(7) When conducting testing of insulation withstand voltage, insulation resistance, or the like, remove the KCV counter from control box.

Precautions for Wiring

- Keep the wires away from power line.
- With regard to use in locations where extensive noise is generated, keep the KCV counter and wires away from the noise source to the extent possible.
- Empty terminals are not to be used as relay terminals.
- For connection, use of crimped contacts is recommended.
- When wiring the 1 and 7 terminals, do not install fork-shaped crimped contacts at an angle. Use a round crimped contact for angled installation.

Installation and Removal of the Main Body

Installation

1. Insert the main body through the panel installation port.

2. From the rear, mount the installation frame.

Installation frame: Can be installed vertically or horizontally.

Removal

Hold the tabs, spread them 0.3 mm.

Installation of the Terminal Block and Terminal Cover

- Do not use a screw other than the one used to fix the terminal block during shipment.
- Maintain a permitted torque of 0.3 Nm.
- Install the terminal block after wiring is complete.
External Dimensions (in mm)

Detailed Diagram of the Terminal Block

Boring Dimensions for Installation

1. When the installation handle is horizontal
2. When the installation handle is vertical

Complying wiring: 0.25~1.65mm²
Complying crimped contact: R1.25-3
Permitted torque: 0.5Nm

When aligning the front cover (KC48C and KC48P), line dimensions should be more than 55 mm.
1. EMERGENCY STOP
2. TOUCHSCREEN
3. SELECTOR SWITCH JOG FORWARD/REVERSE
4. PUSHBUTTON SWITCH CUT
5. PUSHBUTTON SWITCH START
6. PUSHBUTTON SWITCH STOP
7. RUN TIME HOUR METER
8. SETTING QUANTITY (Maximum 9999)
9. SHOW TOTAL QUANTITY
10. SHOW QUANTITY
### SETUP DISPLAY

<table>
<thead>
<tr>
<th>SETUP</th>
<th>MAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMER CUT DOWN</td>
<td>0.28 Sec</td>
</tr>
<tr>
<td>TIMER CUT UP</td>
<td>0.28 Sec</td>
</tr>
<tr>
<td>TIMER DELAY SENSOR</td>
<td>1.00 Sec</td>
</tr>
<tr>
<td>TIMER DELAY STOP</td>
<td>5.00 Sec</td>
</tr>
<tr>
<td>RESET TOTAL QTY</td>
<td>RESET</td>
</tr>
</tbody>
</table>

11. SETTING TIMER CUT DOWN
12. SETTING TIMER CUT UP
13. SETTING TIMER DELAY SENSOR
14. SETTING TIMER DELAY STOP
15. RESET TOTAL QUANTITY
DIAGRAM PLC PPI-084

PB1= PUSHBUTTON SW START
PB2= PUSHBUTTON SW STOP
PB3= PUSHBUTTON SW OUT
S2= SWITCH JOG F Ward
S3= SWITCH JOG REVERSE
INPUT / OUTPUT PLC DAN-PI-084

INPUT PLC

X2 = PUSHBUTTON START
X3 = PUSHBUTTON STOP
X4 = PUSHBUTTON CUT
X5 = SELECTOR SW JOG FORWARD
X6 = SELECTOR SW JOG REVERSE
X7 = OVERLOAD RELAY HYDRAULIC PUMP
X10 = OVERLOAD RELAY ROLLER
X11 = LIMIT SW SAFETY
X12 = PROXIMITY SW

OUTPUT PLC

Y0 = RELAY HYDRAULIC PUMP
Y1 = RELAY ROLLER FORWARD
Y2 = RELAY ROLLER REVERSE
Y4 = LAMP START
Y5 = LAMP STOP
Y6 = RELAY SOLENOID VALUE CUT DOWN
Y7 = RELAY SOLENOID VALUE CUT UP