3. Basic Operating Information

3.1 Setting the Mode

The mode is set using the SET/RUN switch. Set this switch according to the operation to be performed.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Select all set conditions, to reach the threshold value, etc.</td>
</tr>
<tr>
<td>RUN</td>
<td>Select all detect operation or set the following: Manual adjustment of threshold value, teaching power adjustment, zero reset, or key lock.</td>
</tr>
</tbody>
</table>

3.2 Key Operations

The operations are used to switch the displays and set detection conditions. The functions of the keys depend on the current mode.

- **Lit when the output for channel 1 is ON.**
- **Lit when the output for channel 2 is ON.**
- **Used to switch the channel to display or set.**
- **Used to change the display and select function, etc.**
- **Used to connect and disconnect the Fiber Unit.**

3.3 Power tuning Errors

- **Lit when the output for channel 1 is ON.**
- **Lit when the output for channel 2 is ON.**
- **Used to switch the mode.**
- **Used to change the display (set function, etc.).**
- **Used to connect and disconnect the Fiber Unit.**

4. Basic Settings

4.1 Setting the Operation Mode

Select either light-ON or dark-ON operation.

- **Select operation mode with SET/RUN switch.**

4.2 Adjusting the Power (as Required)

Power tuning can be used to adjust the incident light level that is currently being received to the power tuning target value.

Before turning ON the power, always secure the detection object and Head and be sure that the incident light level is stable.

**Setting Method**

- **Set the MODE key setting to PTUN (power tuning) in advance. PTUN is the default setting.**
- **Set the power tuning with the channel selector.**
- **Press the POWER button.**

If the power setting is set to 1-2 (differential operation), the value between the two measured values is set as the threshold. This value is used as the threshold setting for channel 2.

4.3 Teaching With and Without a Workpiece

Teaching can be performed before, during and once after the workpiece is removed, and the value between the two measured values is set as the threshold.

If a specific time for pressing a key is not given in a procedure, press the key for approximately 1 second. For example, if the procedure says ‘press the UP key,’ then press the UP key for approximately 1 second and then release it.

4.4 Setting Thresholds

1. **Manually Setting**

- Press the MODE key.

2. **Teaching With and Without a Workpiece**

- **Position a workpiece.**
- **Remove a workpiece.**

The value that is set will depend on the detection method and power adjustment settings.

4.5 Precautions for Correct Use

- **Always keep the protective cover in place when using the Amplifier Unit.**
- **Connector Short-circuit Protection (for Amplifier Units with Connectors)**

5. Setting the Threshold at the Maximum Sensitivity

The threshold is set to the maximum sensitivity. This is convenient when using the longest sensing distance.

6. Teaching Error

- **After performing teaching, when the following is displayed on the digital display, the error has occurred. Power tuning is possible in this state.**

- **Adjust the Head to increase the incident light level.**

7. Teaching for Reflective Sensor Heads

Teaching for a Through-beam Sensor Head is performed without a workpiece. A value about 6% less than the incident light level with no workpiece is set as the threshold value.

This method is ideal to stably detect even very small differences in light level.
The following functions can be set in SET mode. The default settings are shown in the transition boxes between functions. All settings except for the operation mode and timer settings are the same for both channels.

1. Values shown for thresholds, incident light levels, percentages, etc., are examples only. Actual displays may vary.

2. Convenient Functions
   - Reversed display

3. I/O Circuits

4. Detailed Settings

5. Display Orientation

6. Display select/switch

7. Installation of the Amplifier Unit
   - Mounting Units
   - Joining Amplifier Units (for units with Connectors)

8. Connecting the Fiber Unit
   - Open the protective cover
   - Push up the lock button
   - Insert the fibers all the way to the back of the connection insertion opening.
   - Return the lock button to its original position to secure the fibers.

9. Key Lock

10. Dimensions

Suitability for Use

The products contained in this sheet are not safety rated. They are not designed or rated for ensuring safety of persons, and should not be relied upon as a safety component or protective device for such purposes.

Please refer to separate catalogs for OMRON’s safety rated products. OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer’s application or use of the product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS. AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE IN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

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