Digital Indicators
K3HB Series (Pulse Input Series)

The K3HB Series has been made complete with the addition of Digital Signal Input Models.

- Easy recognition of judgment results using two-color display that can be switched between red and green.
- Equipped with a position meter for monitoring operating status trends.
- External event inputs allows using various measurement and discrimination applications.
- Series expanded to include DeviceNet models.
- Short body with depth of only 95 mm (see note) (from behind the front panel).
- UL certification (Certification Mark License).
- CE Marking conformance by third party assessment body.
- Water-resistant enclosure conforms to NEMA 4X (equivalent to IP66).

Note: Depth of 97 mm for DeviceNet models.

NEW

⚠ Refer to *Common Precautions* on page 30.

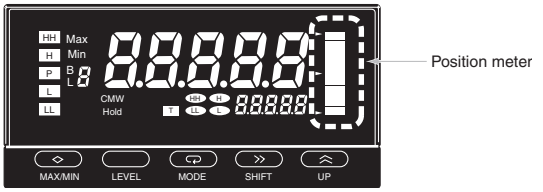
Features

Red-Green Display Allows Easy Recognition of Judgment Results

The measurement value display can be set to switch between red and green in accordance with the status of comparative outputs. This means that the status can be easily seen at a distance.

Position Meter Enables Easy Monitoring of Operating Status Trends

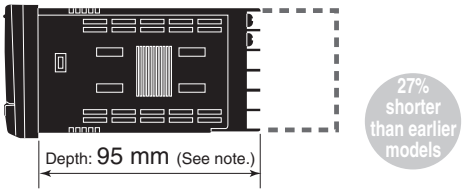
The present value with respect to the measurement or display range (full scale) can be viewed on a bar display. The operating status can be grasped intuitively, allowing easy judgment of levels and threshold values.



Note: This function is different from the single-LED display of the K3HB-C.

Short Body with Depth of Only 95 mm (from Behind the Front Panel)

A short body of only 95 mm (see note) contributes to the development of slimmer and smaller control panels and installations.



(The depth is 100 mm when mounted to the terminal cover.)

Note: Depth of DeviceNet models is 97 mm.

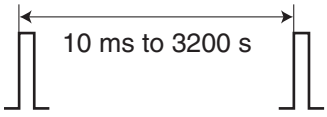
50 kHz High-speed Pulse Measurement (K3HB-R)

Supports high-speed pulse measurement (up to 50 kHz) of rotary encoders or any ON/OFF pulse signal, which enables rotational measurement of objects rotating at high speeds.

Note: No-voltage contacts of up to 30 Hz are supported.

Measurement of Wide Range of Pulse Interval Times (K3HB-P)

Measures and displays the results of the pulse interval between two points. The pulse interval measurement range is broad, from 10 ms to 3,200 s.



High-speed Up/Down Counting Pulse Measurement (K3HB-C)

Perfect for high-speed measurement of rotary encoders or any ON/OFF pulse signals. Cumulative pulse input is 50 kHz, quadrature pulse inputs are 25 kHz, and up/down pulse inputs are 30 kHz.

Note: No-voltage contacts of up to 30 Hz are supported.

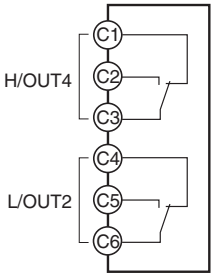
Features

Many I/O Variations for Discrimination, Control, and Information Applications

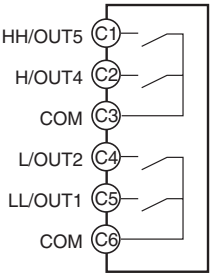
Digital Indicators are used in a wide variety of applications, from an electronic measurement value display or equipment/device operating status display to a host communications interface in monitoring and control systems. OMRON provides a complete lineup for a variety of input and control output applications to meet all your application requirements.

Relay Outputs

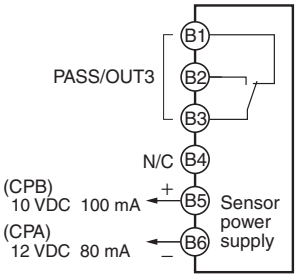
H and L: SPDT



HH, H, L, and LL: SPST-NO

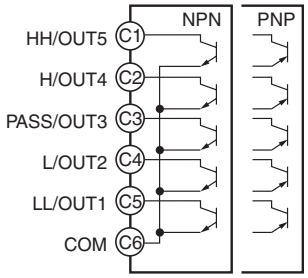


PASS: SPDT



Transistor Outputs

NPN or PNP



Communications Output

RS-232 or RS-485

RS-232C or RS-485

Linear Output

Voltage Output or Current Output

0 to 20 mA DC/
4 to 20 mA DC
or
0 to 5 VDC/
1 to 5 VDC/
0 to 10 VDC

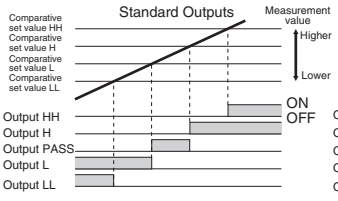
DeviceNet

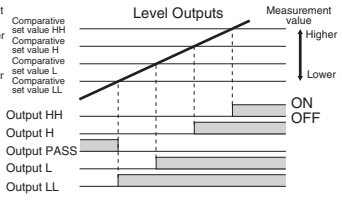
BCD Output

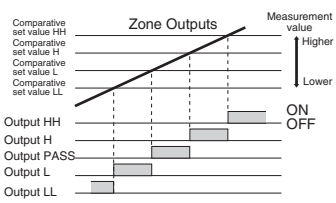
NPN Open Collector

Select a Comparative Output Pattern to Suit the Discrimination or Control Application

- The output pattern for comparative outputs can be selected. In addition to high/low comparison with set values, output based on level changes is also possible. (Use the type of output pattern appropriate for the application.)



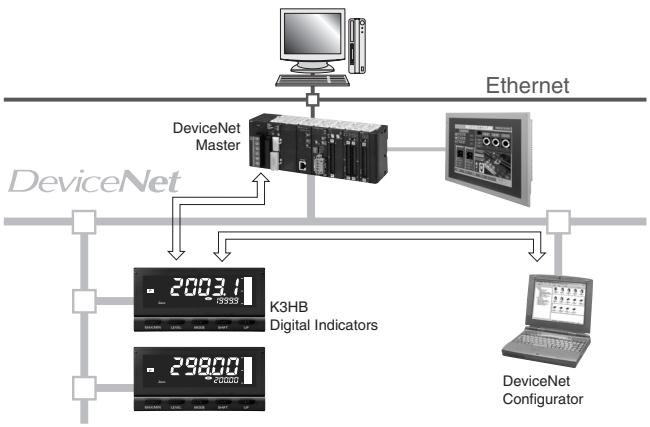




Note: The HH, H, L or LL outputs must be set in that order for the zone outputs to output correctly.
(This is because the comparative set values and outputs for standard and level outputs are in a 1-to-1 relationship, whereas the meaning of zone outputs depends on the settings of all the comparative set values.)

Lineup Includes DeviceNet Models Enabling High-speed Data Communications with PLCs without Special Programming

- DeviceNet compliance enables high-speed data transmission by allocating setting and monitoring parameters in the I/O memory of the PLC. This capability greatly reduces labor spent in developing communications programs.



Note: The applications provided in this catalog are intended as reference only. Do not attempt to use any of them in real systems without first confirming machine and device functions and safety. For applications that require safety, ensure that there is sufficient leeway in ratings and performances, install fail-safe measures, and take any other safety measures required by the application. In addition, contact your nearest OMRON representative and confirm specifications.

K3HB-series Product Lineup

■ K3HB-R Rotary Pulse Indicator (Page 4)

Performs High-speed Rotation Measurement and Passing Time Measurement

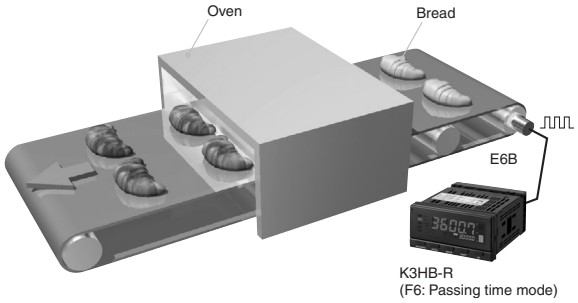
Rotary Pulse Input Model: K3HB-R

K3HB-RNB: NPN input/voltage pulse input

K3HB-RPB: PNP input

- Input types: rpm/circumferential speed, absolute ratio, error ratio, error, concentration, and passing time
- Measurement range: 0.5 mHz to 50 kHz

Displaying Bread Baking Time



■ K3HB-P Time Interval Indicator (Page 10)

Measuring Passing Speed between Two Points and Providing Time Judgments

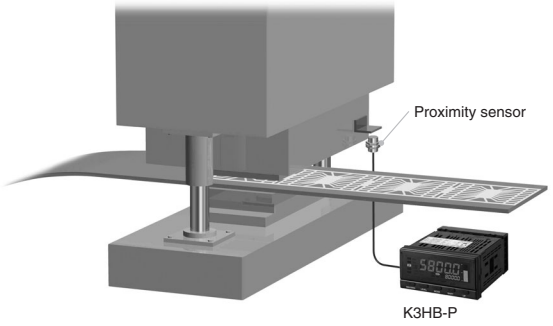
Pulse Input Model: K3HB-P

K3HB-PNB: NPN input/voltage pulse input

K3HB-PPB: PNP input

- Inputs: Passing speed, cycle, time difference, time band, measuring length, interval
- Measurement ranges: Functions F1, F3, and F4: 10 ms to 3200 s
  Function F2: 20 ms to 3200 s
  Functions F5 and F6: 0 to 4 gigacounts

Measuring Shot Speed



■ K3HB-C Up/Down Counting Pulse Indicator (Page 15)

Measuring and Monitoring High-speed Up/Down Pulses

Up/down Counting Pulse Input Model: K3HB-C

K3HB-CNB: NPN input/voltage pulse input

- Inputs: Individual inputs (up/down), quadrature inputs (up/down), cumulative input
- Response frequency: Individual inputs: 30 kHz, quadrature inputs: 25 kHz, cumulative input: 50 kHz

Note: No-voltage contacts of up to 30 Hz are supported.

- Measurement ranges: Functions F1 and F2: ±2 gigacounts
  Function F3: 0 to 4 gigacounts

Counting Workpieces