

# Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

## ABSOLUTE Digimatic Indicator ID-C SERIES 543 — Signal Output Function Type

- Enables a tolerance judgment to be output to external equipment for a measurement result against user-defined limits. Solid-state switching provides high reliability by avoiding metallic switch contacts.
- Output is enabled by directly connecting to external devices (sequencers, etc., for which a logical invert is available if required). The measurement and judgment results are displayed on the LCD. The judgment result is also indicated by 2 LEDs.
- A peak-detection function is equipped for measuring and judging peak values, such as runout.
- Positional detection is absolute (ABS system) relative to a set origin point\*<sup>1</sup> that does not need to be reset every time power is turned on. Furthermore, the ABS system ensures that overspeed errors do not occur.
- Provided with a 4 m cable.
- External power supply required is 5-24 VDC / 100 mA (max.).
- Dust-water protection level: Conforms to IP54.

\*<sup>1</sup> Regarding origin setting, refer to "Origin Setting of Digimatic Indicators" on page F-25.



543-350



## SPECIFICATIONS

| Metric    |            | <div> <div>ISO/JIS type</div> <div>ASME/ANSI/AGD type</div> </div> |                                 |                             |                                |                         |              |
|-----------|------------|--|---------------------------------|-----------------------------|--------------------------------|-------------------------|--------------|
| Order No. | Range (mm) | Resolution (mm)  | Maximum permissible error (mm)  |                             |                                | Measuring force MPL (N) | Net mass (g) |
|           |            |  | MPE <sub>E</sub> * <sup>2</sup> | Hysteresis MPE <sub>H</sub> | Repeatability MPE <sub>R</sub> |                         |              |
| 543-350   | 12.7       | 0.001/0.01 (selectable)  | 0.003                           | 0.002                       | 0.002                          | 2.5 or less             | 290          |
| 543-350B  |            |  |                                 |                             |                                |                         | 285          |

| Inch/Metric |                  | <div> <div>ISO/JIS type</div> <div>ASME/ANSI/AGD type</div> </div> |                                 |                             |                                |                         |              |
|-------------|------------------|--|---------------------------------|-----------------------------|--------------------------------|-------------------------|--------------|
| Order No.   | Range            | Resolution   | Maximum permissible error       |                             |                                | Measuring force MPL (N) | Net mass (g) |
|             |                  |  | MPE <sub>E</sub> * <sup>2</sup> | Hysteresis MPE <sub>H</sub> | Repeatability MPE <sub>R</sub> |                         |              |
| 543-351     | 0.5 in / 12.7 mm | 0.00005/0.0001   | ±0.00010 in / 0.003 mm          | 0.0001 in / 0.002 mm        | 0.0001 in / 0.002 mm           | 2.5 or less             | 295          |
| 543-351B    |                  | 0.0005 in.   |                                 |                             |                                |                         | 285          |
| 543-352     |                  | 0.001/0.01 mm (selectable)   |                                 |                             |                                |                         | 295          |
| 543-352B    |                  |  |                                 |                             |                                |                         | 285          |

\*<sup>2</sup> Error of indication for the total measuring range

Note 1: LCD readout does not rotate.

Note 2: MAX/MIN holding: sample rate is 100 readings/s; max. rate of change of reading is 100 μm/s or less.

Note 3: Products with an Order No. suffixed "B" have a flat back

Note 4: Standard contact point: 901312 (ISO/JIS type), 21BZB005 (ANSI/AGD type)

ABSOLUTE™



An inspection certificate is supplied as standard. Refer to page U-11 for details.

## Functions

- Signal output (-NG/OK/+NG, N-ch open drain, logical invert is available)
- Remote control (peak start preset/zero-set)
- Peak detection (MAX/MIN)
- Runout range measurement (MAX - MIN)
- Zero-setting (INC system)
- Presetting (ABS system)
- Direction switching
- Tolerance judgment (3 pairs of ABS, INC memory function)
- Resolution switching
- Calculation: f(x) = Ax
- Key lock
- Calibration mode (Signal output in Digimatic code format)
- Error alarm display

## Optional Accessories

- Lifting\*<sup>1</sup>
  - Lifting lever **21EZA198** (ISO/JIS Type), **21EZA199** (ASME/ANSI/AGD Type)
  - Lifting cable **21JZA295**
  - Lifting knob **21JZA105** (ISO/JIS Type), **21EZA150** (ASME/ANSI/AGD Type)

Digimatic power supply unit: **21EZA345**

To denote your AC power cable add the following suffixes to the order No.: **A** for UL/CSA, **D** for CEE, **DC** for CCC, **E** for KC. **No suffix** is required for JIS/100VAC.

Used in the calibration mode when executing automatic inspection using i-Checker **IC2000**.

In such a case, purchase connecting cable **21EAA194** (1 m), or **21EAA190** (2 m).

Note: It can't be used as a power supply when using in the normal mode.

- Contact points for Mitutoyo's dial indicators.\*<sup>2</sup>
- Measuring stands (Refer to pages F-84 to F-91 for details.)

\*<sup>1</sup> Dust-water protection is not guaranteed.

\*<sup>2</sup> Refer to pages F-57 to F-60 for details.

## Output signals and LCD display

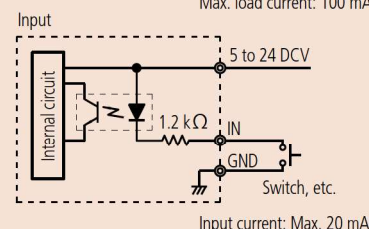
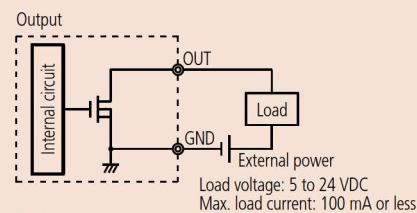
| Wire          | - NG | OK    | + NG | ABS data composition error |
|---------------|------|-------|------|----------------------------|
| Orange (- NG) | Low  | High  | High | High                       |
| Green (OK)    | High | Low   | High | High                       |
| Brown (+ NG)  | High | High  | Low  | High                       |
| LED           | Red  | Green | Red  | Red flashing               |
| LCD           | ◀    | ○     | ▶    | "x.xx" indication          |

Note: Logical invert is available.

## I/O Specifications

| Wire   | Signal             | I/O | Description   |
|--------|--------------------|-----|---|
| Black  | - V (GND)          | —   | Connected to minus (-) terminal   |
| Red    | + V                | —   | Power supply (5 to 24VDC)   |
| Orange | - NG               | O   | Tolerance judgment  |
| Green  | OK                 | O   | result output: Only the terminal corresponding to a judgment result is set to the low level.        |
| Brown  | + NG               | O   |   |
| Yellow | PRESET/RECALL ZERO | I   | External input terminal: If the relevant terminal is set to the low level, its signal becomes true. |
| Blue   | PEAK_START         | I   |   |
| Shield | FG                 | —   | Connected to GND (Earth)  |

Note: Measurement data cannot be output.



## DIMENSIONS

