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# MC series

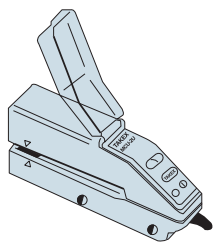
U-shaped mark sensor

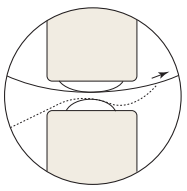


- A Blue LED type is now available
  (ideal for detecting yellow register marks)
- Lens surface is constantly cleaned
- No damage to sheets with the large curvature convex lens
  - Water resistant IP 67 washable housing
  - Multi-turn pot. for easy adjustment

## Type

| Detection method | Detection interval | Model | Light source | Operation mode | Output mode | | Remarks |
|---|---|---|---|---|---|---|---|
| U-shaped through beam | 2 mm fixed | **MC-U2R** | Red LED | Light ON/ Dark ON selectable (with switch) | Open colector | NPN | For detection of labels |
| | | **MC-U2RTC** | | | | NPN/PNP 2 outputs | |
| | | **MC-U2G** | Green LED | | | NPN | For detection of register marks |
| | | **MC-U2GTC** | | | | NPN/PNP 2 outputs | |
| | | **MC-U2B** | Blue LED | | | NPN | Effective for detection of yellow marks |
| | | **MC-U2BTC** | | | | NPN/PNP 2 outputs | |

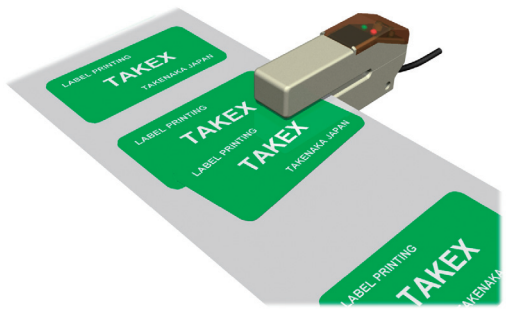




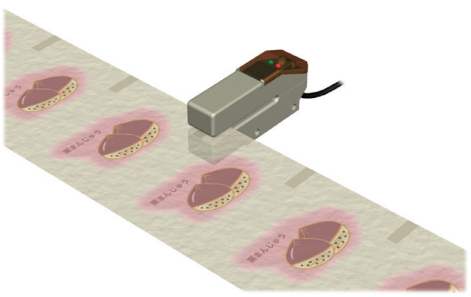
- The center of detection is constantly cleaned for stable detection, even with Japanese paper, etc., that generates a large amount of dust.
- The top lens is also cleaned by the “spring effect” of work caused by release of tension that occurs when the work runs out.

## Applications

- Detection of overlapped labels




- Detection of register marks on wrappers of Japanese confectionary (Japanese paper)



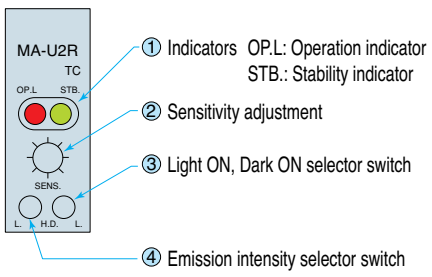
## Rating/Performance/Specification

| Type | NPN type | | | NPN/PNP Dual output type | | |
|---|---|---|---|---|---|---|
| | For detection of labels | Register mark detection | | For detection of labels | Register mark detection | |
| Model | **MC-U2R** | **MC-U2G** | **MC-U2B** | **MC-U2RTC** | **MC-U2GTC** | **MC-U2BTC** |
| Detection method | U-shaped through beam | | | | | |
| Detection interval | 2 mm fixed | | | | | |
| Power supply | 12 – 24 VDC ±10% / Ripple: 10 % or less | | | | | |
| Current consumption | 20mA or less | 28mA or less | 22mA or less | 22mA or less | 30mA or less | 24mA or less |
| Output mode | NPN open collector output<br>Rating: Sink current 100 mA (30 VDC) or less | | | NPN / PNP open collector 2 outputs<br>Rating: Sink current (NPN), source current (PNP) 100 mA (30 VDC) or less | | |
| Operation mode | Light ON/Dark ON selectable (with switch) | | | | | |
| Response time | 0.5 ms or less | | | | | |
| Light source (light wavelength) | Red LED (680nm) | Green LED (525nm) | Blue LED (450nm) | Red LED (680nm) | Green LED (525nm) | Blue LED (450nm) |
| Indicator | OPL: Operation indicator (Red LED), STB: Stability indicator (Green LED) | | | | | |
| Volume (VR) | SENS: 4 turn sensitivity adjustment without stopper provided | | | | | |
| Switch (SW) | ●Light ON/Dark ON selector switch provided L: Light ON, D: Dark ON<br>●Emission intensity selector switch provided L: low powered, H: high powered | | | | | |
| Short-circuit protection | Provided | | | | | |
| Material | Case: heat resistant ABS, Lens: Glass | | | | | |
| Connection | Cable type (outer diameter: dia.4mm) 0.2 mm2 x 3 cores, 3 m, black | | | Cable type (outer diameter: dia.4mm) 0.2 mm2 x 4 cores, 3 m, black | | |
| Weight | Approx. 120 g or less | | | | | |
| Accessory | Screwdriver for adjustment, operation manual | | | | | |

## Environmental Specification

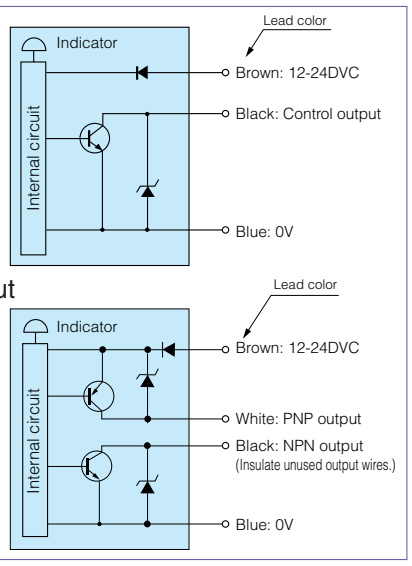
| | |
|---|---|
| Ambient light | 5,000 lx or less |
| Ambient temperature | –25 - +55 °C (non-freezing) |
| Ambient humidity | 35-85%RH (non-condensing) |
| Protective structure | IP67 |
| Vibration | 10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction |
| Shock | 100 m/s² / 3 times each in 3 directions |
| Dielectric withstanding | 500 VAC for 1 minute |
| Insulation resistance | 500 VDC, 20 MΩ or higher |

## Panel Layout




## Input/Output Circuit and Connection

● NPN output
MC-U2R
MC-U2G
MC-U2B

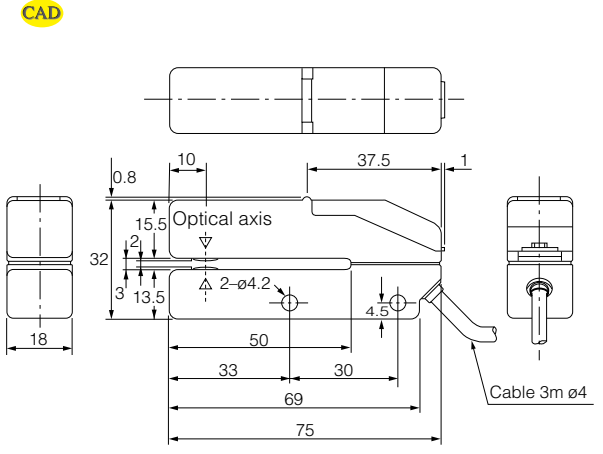



● NPN/PNP output
MC-U2RTC
MC-U2GTC
MC-U2BTC




## Dimensions (in mm for all models)

CAD




In the condition of load short-circuit or overload, the output transistor turns off. Check the load condition before restarting.

CAD To download CAD data including dimensions, please visit www.takex-elec.co.jp/index_e.html.