

VXT/CM-20PA

Contrast Sensor | PNP Output | RGB Composite LED | IP67

Product Overview



The VXT/CM-20PA is a square-housing contrast (colour-mark) sensor that uses diffuse reflection and a tri-colour red/blue/green composite LED to detect subtle contrast and colour-mark differences on printed and packaged materials. It features a 4-digit digital display with teach-in setup, switchable L.on / D.on operation and a PNP open-collector output at 12–24V DC.

Key Features

- ✓ Square PC housing with RGB composite LED (625 / 470 / 525 nm)
- ✓ 10 mm ± 3 mm detection distance; 1 × 5 mm spot size
- ✓ Fast response: 0.5 ms (colour-mark mode) / 2 ms (colour mode)
- ✓ High switching frequency up to 6 kHz
- ✓ 4-digit digital tube display with M / ▲ / ▼ teach-in keys
- ✓ Switchable L.on (light-on) / D.on (dark-on) operation
- ✓ PNP open-collector switching output, 12–24V DC
- ✓ Reverse-polarity & short-circuit protection
- ✓ IP67 protection rating
- ✓ 2 m 3-core Ø4 mm cable

Applications

Packaging Machinery • Registration & Colour-Mark Detection • Printing & Labeling • Print Registration Control • Filling & Sealing Lines • Food & Beverage Packaging • Pharmaceutical Packaging • Automated Production Lines

Technical Specifications

DETECTION & OUTPUT	
Detection Method	Diffuse Reflection
Detection Distance	10 mm ± 3 mm
Spot Size	1 × 5 mm (distance setting: 10 mm)
Projection Element	Red / Blue / Green composite LED (peak λ 625 / 470 / 525 nm)
Output Mode	PNP open collector
Switch Mode	L.on (light entry) / D.on (shading) — selectable
Response Time	Colour-mark mode 0.5 ms; colour mode 2 ms
Switching Frequency	< 6 kHz
Hysteresis	5%
Digital Screen	4-digit digital tube display
Indicator	Output indicator: Red; Power LED: Green
ELECTRICAL	
Working Voltage	12–24V DC ±10%
Current Consumption	< 35 mA (24V)
Load Current	< 50 mA
Residual Voltage	< 1.5V (load current < 50 mA)
Group Pulse	±2000V
Static Electricity	±8000V
Insulation Withstand Voltage	±1000V 50/60 Hz 60 s

Technical Specifications (continued)

PROTECTION

Circuit Protection	Reverse polarity & short-circuit protection
Protection Degree	IP67

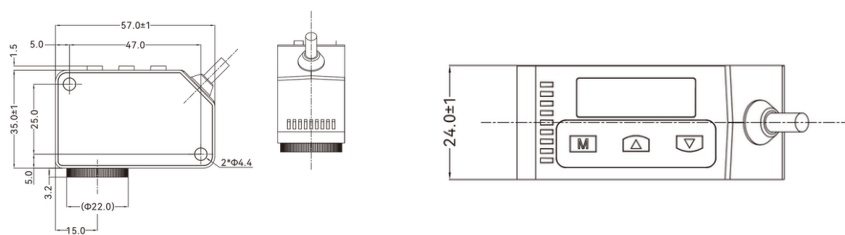
ENVIRONMENT

Ambient Temperature	Working -10°C to +55°C (no freezing / condensation); Storage -20°C to +70°C
Ambient Humidity	Working 35–85% RH; Storage 35–85% RH
Ambient Illuminance	Incandescent lamp irradiation ≤ 3000 Lux
Vibration Resistance	10–50 Hz, 1.5 mm amplitude, 2 h each in X, Y and Z directions

MECHANICAL

Housing Style	Square
Housing Material	PC
Dimensions	57 × 35 × 24 mm
Weight	0.05 kg
Connection Method	2 m / 3-core cable, Ø4 mm
Maximum Tightening Torque	—

Product Dimensions



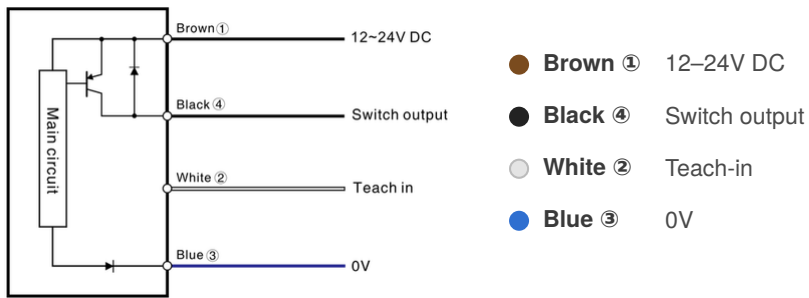
Unit: mm

Ordering Information

Model Number	Output Type	Detection Method
VXT/CM-20PA	PNP (open collector)	Diffuse Reflection — Contrast / Colour-mark

Connecting Diagram (PNP Output)

PNP Output



Notes

1. Detection distance is specified with a 1 × 5 mm spot at a 10 mm distance setting, at 25°C ambient temperature unless otherwise noted.
2. Teach the required contrast / colour mark using the M / ▲ / ▼ keys before operation.
3. Ambient illuminance on the sensing surface should not exceed 3000 Lux for rated performance.
4. Switch mode L.on / D.on is user-selectable to suit light-on or dark-on applications.
5. Connect the sensor strictly per the wiring diagram; incorrect wiring may damage or disable the sensor. Please contact Voxintech for the latest specifications.