

# LIGHT GRIDS PHOTOELECTRIC SENSORS

## FAST DETECTION, COUNTING AND MEASUREMENT

Contrinex's robust, plug-and-play **light grids** offer fast response times, reliable detection of the most varied objects and immunity to interference from ambient light. **DGI** detection grids can detect objects with diameters of 0.9, 2, 4, 8 or 25 mm, depending on type. **MGI** measurement grids can measure the dimensions of a detected object, and determine its position.

### KEY ADVANTAGES

- ✓ Plug-and-play installation
- ✓ Small installation space with cross-section: 40 × 20.5 mm

#### Detection grids

- ✓ Fast response time 0.8 ms ... 4.8 ms
- ✓ Ideal for detection and counting of even the smallest objects
- ✓ Resolution: 0.9 mm, 2 mm, 4 mm, 8 mm or 25 mm
- ✓ Detection height: up to 2,010 mm

#### Measurement grids

- ✓ Ideal for position and dimension control
- ✓ Center beam spacing: 5 mm or 12 mm
- ✓ Analog output 0–10 V or 4–20 mA
- ✓ Measurement height: up to 1,418 mm



## PRODUCT OVERVIEW

| SERIES            | Housing size mm   | DGI             | MGI             |
|-------------------|-------------------|-----------------|-----------------|
|                   |                   | □ 40 × 20.5 × H | □ 40 × 20.5 × H |
| s <sub>n</sub> mm | Detection grids   | 8,000           | –               |
|                   | Measurement grids | –               | 4,000           |

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COMMON FEATURES

|                   |              |
|-------------------|--------------|
| Supply Voltage    | 24 VDC       |
| Polarity          | Push-Pull    |
| Temperature range | −5 ... +50°C |
| Enclosure rating  | IP65         |

OUTPUT

[##] Resolution in mm

see p. 198

DGI-[xx]A-[xxxx]-[xxx]-[xxx]— see p. 198

Dimensions

[####] Beam height in mm

Reference key on page 198

OPERATING PRINCIPLE

 Detection grid

ACCESSORIES

 **A** Group A: M8 3-pin  
Sub-group: Field attachable connectors  
Sub-group: Distribution boxes

 **B** Group B: M8 4-pin  
Sub-group: Field attachable connectors

 **C** Group C: M12 4-pin  
Sub-group: Field attachable connectors  
Sub-group: Distribution boxes

 **D** Group D: M12 AC/DC 3-pin

 **E** Group E: Universal mounting brackets  
Sub-group: Mechanical stops

 **F** Group F: Photoelectric mounting brackets

 **G** Group G: Photoelectric reflectors

 **H** Group H: Sensor tester

Go to page 298 for details

 **CABLES**  
Cable lengths available:  
2 m, 5 m, 10 m  
other customised lengths possible

DETECTION GRIDS  
DGI SERIES

| FAMILY                       | OPERATING PRINCIPLE                                                                 | DETECTION RANGE (mm) | HOUSING SIZE (mm)      | LIGHT SOURCE         |  |
|------------------------------|-------------------------------------------------------------------------------------|----------------------|------------------------|----------------------|--|
| DETECTION GRIDS – DGI SERIES |    | 800                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |    | 800                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |    | 400                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |    | 400                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |   | 800                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 800                  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 4,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 4,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 8,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 8,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 8,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |  | 8,000                | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                              |                                                                                     |                      |                        |                      |  |
|                              |                                                                                     |                      |                        |                      |  |
|                              |                                                                                     |                      |                        |                      |  |
|                              |                                                                                     |                      |                        |                      |  |

### KEY ADVANTAGES

- ✓ Compact aluminum housing (40 × 20.5 mm × height)
- ✓ Resolution of 0.9 mm to 25 mm, capable of detecting even the smallest object
- ✓ Detection range up to 8,000 mm
- ✓ Beam height from 75 mm up to 2,010 mm
- ✓ Two push-pull outputs (PNP + NPN), Light-ON + Dark-ON
- ✓ Fast response time from 0.8 to 4.8 ms
- ✓ Potentiometer for fine adjustment on 0.9 mm and 2 mm resolution grids



|  | HOUSING MATERIAL | CABLE | CONNECTOR                                                                               | RESOLUTION (mm) | LIGHT GRID HEIGHT (mm) | OUTPUT 1 | OUTPUT 2 | PART REFERENCE              | ACCESSORIES (SEE PAGE 188) |
|--|------------------|-------|-----------------------------------------------------------------------------------------|-----------------|------------------------|----------|----------|-----------------------------|----------------------------|
|  | Aluminum         |       |  M12   | 2               | 100                    | Light-ON | Dark-ON  | <b>DGI-02A-0075-PMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12   | 4               | 100                    | Light-ON | Dark-ON  | <b>DGI-04A-0075-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12   | 0.9             | 100                    | Light-ON | Dark-ON  | <b>DGI-01A-0075-PMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12   | 0.9             | 180                    | Light-ON | Dark-ON  | <b>DGI-01A-0155-PMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 2               | 180                    | Light-ON | Dark-ON  | <b>DGI-02A-0155-PMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 4               | 180                    | Light-ON | Dark-ON  | <b>DGI-04A-0155-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 8               | 212                    | Light-ON | Dark-ON  | <b>DGI-08A-0190-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 8               | 500                    | Light-ON | Dark-ON  | <b>DGI-08A-0480-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 25              | 500                    | Light-ON | Dark-ON  | <b>DGI-25A-0480-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 25              | 980                    | Light-ON | Dark-ON  | <b>DGI-25A-0960-NMS-107</b> | <b>C F</b>                 |
|  | Aluminum         |       |  M12 | 25              | 2,036                  | Light-ON | Dark-ON  | <b>DGI-25A-2010-NMS-107</b> | <b>C F</b>                 |

COMMON FEATURES

|                   |              |
|-------------------|--------------|
| Supply Voltage    | 24 VDC       |
| Polarity          | Analog       |
| Temperature range | −5 ... +50°C |
| Enclosure rating  | IP65         |

OUTPUT

[##] Center beam spacing in mm

see p. 198

MGI-[xx]A-[xxxx]-[xxx]-[xxx]— see p. 198

Dimensions

[####] Beam height in mm

Reference key on page 198

OPERATING PRINCIPLE

 Measurement grid

ACCESSORIES



A

Group A: M8 3-pin

Sub-group: Field attachable connectors

Sub-group: Distribution boxes



B

Group B: M8 4-pin

Sub-group: Field attachable connectors



C

Group C: M12 4-pin

Sub-group: Field attachable connectors

Sub-group: Distribution boxes



D

Group D: M12 AC/DC 3-pin



E

Group E: Universal mounting brackets

Sub-group: Mechanical stops



F

Group F: Photoelectric mounting brackets



G

Group G: Photoelectric reflectors



H

Group H: Sensor tester

Go to page 298 for details



CABLES

Cable lengths available:

2 m, 5 m, 10 m

other customised lengths possible

MEASUREMENT GRIDS

MGI SERIES

| FAMILY                         | OPERATING PRINCIPLE                                                                 | SENSING RANGE (mm) | HOUSING SIZE (mm)      | LIGHT SOURCE         |  |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------|------------------------|----------------------|--|
| MEASUREMENT GRIDS – MGI SERIES |    | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                                |    | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                                |    | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                                |    | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                                |   | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |
|                                |  | <div></div> 4,000  | 40 × 20.5 (Light Grid) | LED, infrared 880 nm |  |



## KEY ADVANTAGES

- ✓ Compact aluminum housing (40 × 20.5 mm × height)
- ✓ Center beam spacing 5 mm and 12 mm
- ✓ Measurement range up to 4,000 mm
- ✓ Beam height from 230 mm up to 1,420 mm
- ✓ Analog output 0–10 V or 4–20 mA
- ✓ Fast response time from 3 to 14 ms
- ✓ Four switching modes selectable through multi-switch



|  | HOUSING MATERIAL | CABLE     | CONNECTOR | RESOLUTION (mm) | LIGHT GRID HEIGHT (mm) | OUTPUT 1    | OUTPUT 2   | PART REFERENCE       | ACCESSORIES (SEE PAGE 190) |
|--|------------------|-----------|-----------|-----------------|------------------------|-------------|------------|----------------------|----------------------------|
|  | Aluminum         | 0.3 m PUR | M12       | 6               | 260                    | 4 ... 20 mA | 0 ... 10 V | MGI-05A-0232-NMS-149 | C F                        |
|  | Aluminum         | 0.3 m PUR | M12       | 6               | 500                    | 4 ... 20 mA | 0 ... 10 V | MGI-05A-0472-NMS-149 | C F                        |
|  | Aluminum         | 0.3 m PUR | M12       | 6               | 980                    | 4 ... 20 mA | 0 ... 10 V | MGI-05A-0952-NMS-149 | C F                        |
|  | Aluminum         | 0.3 m PUR | M12       | 14              | 500                    | 4 ... 20 mA | 0 ... 10 V | MGI-12A-0458-NMS-149 | C F                        |
|  | Aluminum         | 0.3 m PUR | M12       | 14              | 980                    | 4 ... 20 mA | 0 ... 10 V | MGI-12A-0938-NMS-149 | C F                        |
|  | Aluminum         | 0.3 m PUR | M12       | 14              | 1,460                  | 4 ... 20 mA | 0 ... 10 V | MGI-12A-1418-NMS-149 | C F                        |

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