

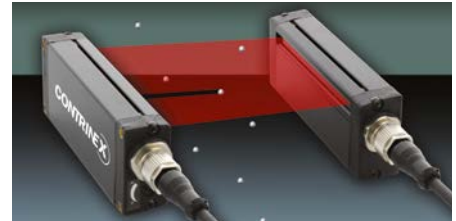
## APPLICATION

### Infrared light grids detect misshapen and oversize carton packs after automated shrink-wrapping process

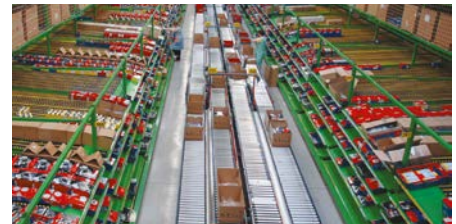
During high-volume packaging operations, conveyors deliver stacked cartons to shrink-wrapping stations. At each station, a wrapping machine encloses a stack in heat-shrink film and an infrared oven shrinks the film to form a sealed pack of cartons. An infrared-light measurement grid, mounted beside the conveyor, checks the dimensions of each pack as it leaves the oven and signals a plant-wide control system if a wrapped pack is misshapen or oversize.

## INDUSTRIES

Packaging, logistics, materials handling, assembly, automation, laundry industry, small parts production, woodworking industry



*Counting of small objects*



*Carton measurement and sorting*



*Logistics systems*



*Packaging systems*

# 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

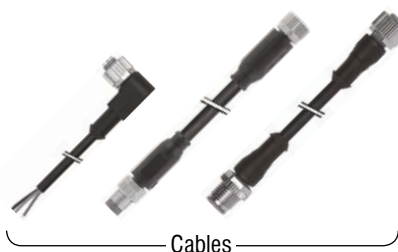


### PRODUCT OVERVIEW

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

### ACCESSORIES

Go to page 298 to see all the accessories



## COMMON FEATURES

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

## OUTPUT

DGI-**xx**A-**xxxx**-**xxx**-**xxx** — see p. 198

Resolution in mm: [##]  
 Dimensions: [####]  
 Beam height in mm: [####]

see p. 198

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





**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)
	Aluminium		M12	2	100	Light-ON	Dark-ON	<b>DGI-02A-0075-PMS-107</b>	<b>C F</b>
	Aluminium		M12	4	100	Light-ON	Dark-ON	<b>DGI-04A-0075-NMS-107</b>	<b>C F</b>
	Aluminium		M12	0.9	100	Light-ON	Dark-ON	<b>DGI-01A-0075-PMS-107</b>	<b>C F</b>
	Aluminium		M12	0.9	180	Light-ON	Dark-ON	<b>DGI-01A-0155-PMS-107</b>	<b>C F</b>
	Aluminium		M12	2	180	Light-ON	Dark-ON	<b>DGI-02A-0155-PMS-107</b>	<b>C F</b>
	Aluminium		M12	4	180	Light-ON	Dark-ON	<b>DGI-04A-0155-NMS-107</b>	<b>C F</b>
	Aluminium		M12	8	212	Light-ON	Dark-ON	<b>DGI-08A-0190-NMS-107</b>	<b>C F</b>
	Aluminium		M12	8	500	Light-ON	Dark-ON	<b>DGI-08A-0480-NMS-107</b>	<b>C F</b>
	Aluminium		M12	25	500	Light-ON	Dark-ON	<b>DGI-25A-0480-NMS-107</b>	<b>C F</b>
	Aluminium		M12	25	980	Light-ON	Dark-ON	<b>DGI-25A-0960-NMS-107</b>	<b>C F</b>
	Aluminium		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

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

[##] Center beam spacing in mm  
see p. 198

Dimensions  
[###] Beam height in mm

Reference key on page 198

## OPERATING PRINCIPLE



## 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		4,000	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
		4,000	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



MEASUREMENT GRIDS – MGI SERIES



**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)
	Aluminium	0.3 m PUR 	 M12	6	260	4 ... 20 mA	0 ... 10 V	<b>MGI-05A-0232-NMS-149</b>	<b>C F</b>
	Aluminium	0.3 m PUR 	 M12	6	500	4 ... 20 mA	0 ... 10 V	<b>MGI-05A-0472-NMS-149</b>	<b>C F</b>
	Aluminium	0.3 m PUR 	 M12	6	980	4 ... 20 mA	0 ... 10 V	<b>MGI-05A-0952-NMS-149</b>	<b>C F</b>
	Aluminium	0.3 m PUR 	 M12	14	500	4 ... 20 mA	0 ... 10 V	<b>MGI-12A-0458-NMS-149</b>	<b>C F</b>
	Aluminium	0.3 m PUR 	 M12	14	980	4 ... 20 mA	0 ... 10 V	<b>MGI-12A-0938-NMS-149</b>	<b>C F</b>
	Aluminium	0.3 m PUR 	 M12	14	1,460	4 ... 20 mA	0 ... 10 V	<b>MGI-12A-1418-NMS-149</b>	<b>C F</b>