# DMS-G/H CE LISTED 31ZY

# With projection amount adjuster

- Area adjustment can be made by projection amount adjuster.
  It is suitable for data transmission such as interlocking with
- carrier robots, indicating destination of AGVs etc.
- Price is as well reasonable level, with two models of 4BIT parallel type and two models of 8BIT parallel type.



# Specifications

## 4BIT model

| Туре                           | Parallel type   |           |           |           |           |  |
|--------------------------------|---|-----------|-----------|-----------|-----------|--|
| Model No.                      | DMS-GA1-V   | DMS-GA2-V | DMS-GA1-W | DMS-HA1-V | DMS-HA2-V |  |
| Direction                      | Head-on   | Head-on   |           |           | Side-on   |  |
| Transmission distance          | 1m  | 3m        | 0.5m      | 1m        | 3m        |  |
| Directional angle (full angle) | 30°   | 10°       |           | 30°       | 10°       |  |
| Transmission area              | ±0.4m at 0.5m   |           |           |           |           |  |
| Transmission method            | Half duplex two-way transmission  |           |           |           |           |  |
| Transmission time              | 40msec or less  |           |           |           |           |  |
| Modulation method              | Pulse modulation  |           |           |           |           |  |
| Detection method               | Parity check  |           |           |           |           |  |
| Projecting element             | Near infrared LED   |           |           |           |           |  |
| Receiving element              | Photo-transistor  |           |           |           |           |  |
| Power source                   | 10 to 30VDC (Available range)   |           |           |           |           |  |
| Current consumption            | 100mA or less   |           |           |           |           |  |
| Input                          | Contact or contactless open-collector (ON current 2.5mA or more, OFF current 1mA or less) |           |           |           |           |  |
| Output                         | NPN Open-collector (30V, 50mA or less)  |           |           |           |           |  |
| Connection                     | Cable (0.2mm <sup>2</sup> 15 cores shield wire in 2m)                                     |           |           |           |           |  |
| Ambient illuminance            | 4,000lux or less (incandescent light)   |           |           |           |           |  |
| Ambient temperature/humidity   | -10 to +50°C, 85%RH or less (not icing, not condensing)                                   |           |           |           |           |  |
| Vibration resistance           | Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions                  |           |           |           |           |  |
| Impact resistance              | 500m/s <sup>2</sup> , each 10 time in X, Y and Z directions                               |           |           |           |           |  |
| Protective structure           | IP64 (IEC Standard)   |           |           |           |           |  |
| Case material                  | Polycarbonate   |           |           |           |           |  |
| Weight                         | Approx. 280g  |           |           |           |           |  |

# 8BIT model

| Туре                           | Parallel type   |           |           |           |
|--------------------------------|---|-----------|-----------|-----------|
| Model No.                      | DMS-GB1-V   | DMS-GB2-V | DMS-HB1-V | DMS-HB2-V |
| Direction                      | Head-on   |           | Side-on   |           |
| Transmission distance          | 1m  | 3m        | 1m        | 3m        |
| Directional angle (full angle) | 30°   | 10°       | 30°       | 10°       |
| Transmission method            | Half duplex two-way transmission  |           |           |           |
| Transmission time              | 40msec or less  |           |           |           |
| Modulation method              | Pulse modulation  |           |           |           |
| Detection method               | Parity check  |           |           |           |
| Projecting element             | Near infrared LED   |           |           |           |
| Receiving element              | Photo-transistor  |           |           |           |
| Power source                   | 10 to 30VDC (Available range)   |           |           |           |
| Current consumption            | 100mA or less   |           |           |           |
| Input                          | Contact or contactless open-collector (ON current 2.5mA or more, OFF current 1mA or less) |           |           |           |
| Output                         | NPN Open-collector (30V, 50mA or less)  |           |           |           |
| Connection                     | Cable (0.2mm <sup>2</sup> 22 cores shield wire in 2m)                                     |           |           |           |
| Ambient illuminance            | 4,000lux or less (incandescent light)   |           |           |           |
| Ambient temperature/humidity   | -10 to +50°C, 85%RH or less (not icing, not condensing)                                   |           |           |           |
| Vibration resistance           | Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions                  |           |           |           |

| Impact resistance    | 500m/s <sup>2</sup> , each 10 time in X, Y and Z directions |  |  |
|----------------------|---|--|--|
| Protective structure | IP64 (IEC Standard)   |  |  |
| Case material        | Polycarbonate   |  |  |
| Weight               | Approx. 280g  |  |  |

## Input/Output circuit

### Input section(common)



Contact or contactless open-collector ON current: 2.5mA or more, OFF current: 1mA or less Note) 2-wire type sensor can't be used. (operating threshold current: 1.5 to 2mA)

#### Connection

#### 4BIT model



| Lead wire    | Pin No. | Spec.            |  |
|--------------|---------|------------------|--|
| Black        | 1       | IN1              |  |
| Brown        | 2       | IN2              |  |
| Red          | 3       | IN3              |  |
| Orange       | 4       | IN4              |  |
| White/Yellow | 5       | MODE*1           |  |
| Yellow       | 6       | SELECT*2         |  |
| White/Blue   | 7       | NC               |  |
| Green        | 8       | OUT1             |  |
| Blue         | 9       | OUT2             |  |
| Purple       | 10      | OUT3             |  |
| Gray         | 11      | OUT4             |  |
| White        | 12      | GO* <sup>3</sup> |  |
| Yellow/Green | 13      | COM (0V)         |  |
| Yellow/Red   | 14      | +VIN             |  |
| Yellow/Black | 15      | -VIN (0V)        |  |
| Shield       | Shield  |                  |  |

Output section(common)  $\begin{array}{c}
\downarrow_{5V}\\ \downarrow_{Lamp}\\ \downarrow_{U}\\ \downarrow_$ 



| Connector (2) |         |       |  |  |
|---------------|---------|-------|--|--|
| Lead wire     | Pin No. | Spec. |  |  |
| Green         | 1       | IN5   |  |  |
| Green/Black   | 2       | OUT5  |  |  |
| Blue          | 3       | IN6   |  |  |
| Blue/Black    | 4       | OUT6  |  |  |
| Purple        | 5       | IN7   |  |  |
| Purple/Black  | 6       | OUT7  |  |  |
| Gray          | 7       | IN8   |  |  |
| Gray/Black    | 8       | OUT8  |  |  |
| Pink/Black    | 9       | +VIN  |  |  |
| L.Blue/Black  | 10      | -VIN  |  |  |
|               |         |       |  |  |
| Shield        | Shield  |       |  |  |

\*1. Mode input

This is designed to select standby transmission and reception mode.

• Transmission standby mode when it is opened between MODE and I/O COM.

• Reception standby mode when it is short circuited between MODE and I/O COM.

\*2. Select input

This is designed to arbitarily stop transmission and reception operation by outside signal.

• Operates when it is opened between SELECT and I/O COM.

• Stops operation when it is short curcuited between SELECT and I/O COM.

\*3. GO output

This is designed to check for correct reception of optical signal.

• It is ON when optical signal is receiving.

• It is OFF when optical signal is interrupted (or non-receiving state).

Note) Terminal ends handling of not using input, output, GO output, SELECT input, MODE input NC (4BIT only) are to be treated individually and not touching to the other cables. If handled in one treatment, it will cause malfunction.

Connector (1)

Pin No.

1

3

4

5

6

7

8

9

10

11

12

Spec.

COM (0V)

MODE\*1

SELECT\*2

GO\*3

IN1

OUT1

IN2

OUT2

IN3

OUT3

IN4

OUT4

Lead wire

Light blue

White/Black

Brown/Black

Red/Black

Orange/Black Yellow

Yellow/Black

Orange

Pink White

Brown

Red

Note) The connector attached on the end of cable can not be used as connecting terminal.

Note) Make sure to set to the different mode. (If setting to transmission standby mode at one side, set to reception standby mode at other side.) Note) COM and -VIN are shorted internally.

#### 81

**Optical Data Transmission Device** 

# External dimensions

# Head-on type

# Side-on type



# SEMI standard

Model No.

| Model       | Beam direction | Cable length | Remarks                     |  |
|-------------|----------------|--------------|-----------------------------|--|
| DMS-HB1-Z05 | Side-on        | 5m           | Fitting screw:              |  |
| DMS-HB1-Z06 |                | 2m           | Millimeter screw            |  |
| DMS-HB1-Z09 |                | 5m           | Fitting corour Inch corour* |  |
| DMS-HB1-Z10 |                | 2m           | Fitting screw: Inch screw*  |  |

\* Equipment in corresponding to SEMI E84-0699 and -0999 may use millimeter screw. Inch screw is specified on the version after SEMI E84-0200A.

 $rac{h}{h}$  PNP output is also lined-up. Ask us.