

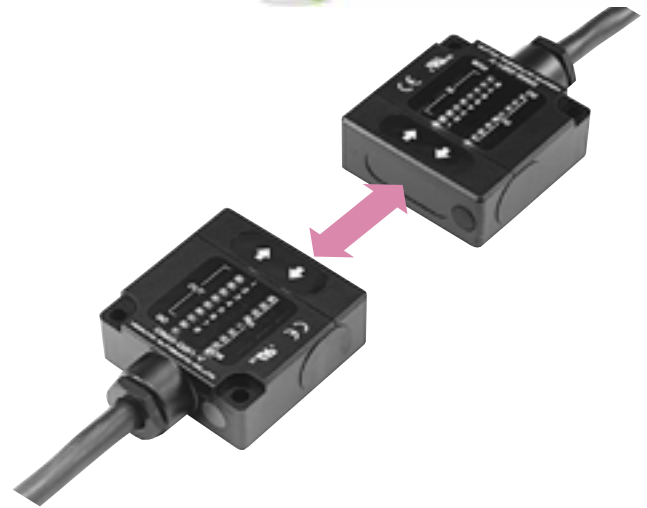
# Optical Data Transmission Device



## DMS SERIES CE

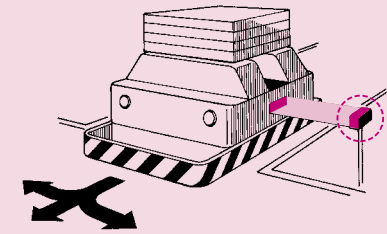
With projection amount adjuster

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 at a very reasonable level, with two models of 4BIT parallel type and two models of 8BIT parallel type.

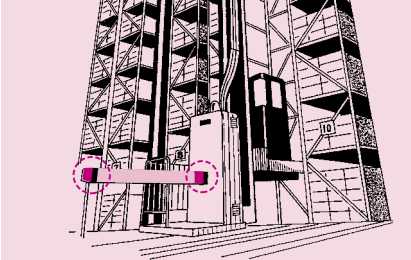


### Applications

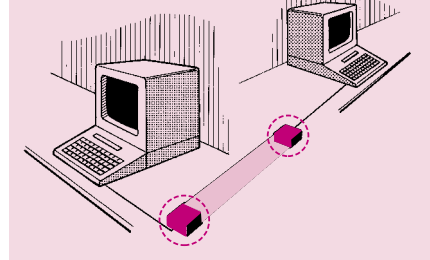
Instruction of destination/ Job to AGV



Instruction of stacker crane address



Data transmission between micro-computers



### Specifications

4BIT model

Type	Parallel type				
Model No.	DMS-GA1-V	DMS-GA2-V	DMS-GA1-W *	DMS-HA1-V	DMS-HA2-V
Direction	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)				
Current consumption	100mA Max.				
Ambient illuminance	4,000lux or less (incandescent light)				
Ambient temperature/humidity	-10 to +50 °C, 85%RH or less				
Connection	Lead wire (0.2mm <sup>2</sup> 15 cores shield wire in 2m)				
Protective structure	IP64 (IEC Standard)				
Case	Polycarbonate				
Weight	Approx. 280g				

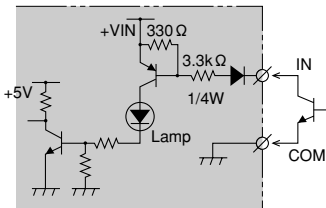
\*DMS-GB1-W with 8-bit is also available. (Transmission rate is the same as DMS-GA1-W.)

## 8BIT model

Type	Parallel type			
	DMS-GB1-V	DMS-GB2-V	DMS-HB1-V	DMS-HB2-V
Model				
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)			
Current consumption	100mA Max.			
Ambient illuminance	4,000lux or less (incandescent light)			
Ambient temperature/humidity	-10 to +50°C, 85%RH or less			
Connection	Lead wire (0.2mm <sup>2</sup> 22 cores shield wire in 2m)			
Protective structure	IP64 (IEC Standard)			
Case	Polycarbonate			
Weight	Approx. 280g			

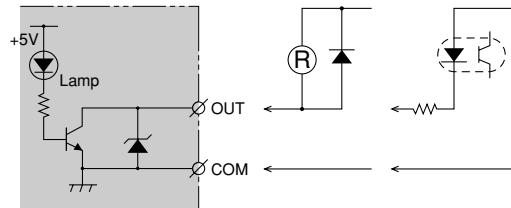
### Input/Output circuit

#### 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)

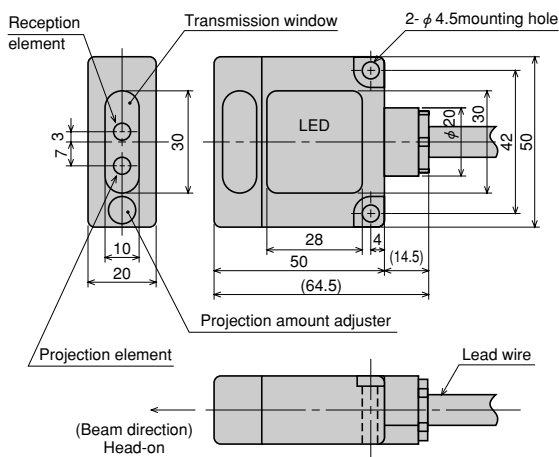
#### Output section(common)



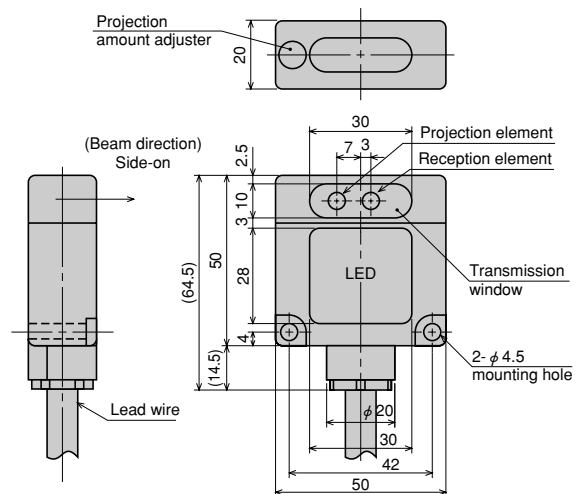
NPN open-collector output  
 30VDC 50mA  
 Residual voltage 1.8V or less

### External dimensions

#### Head-on type

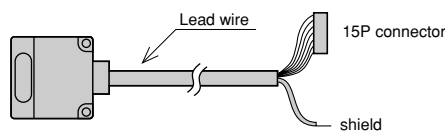


#### Side-on type



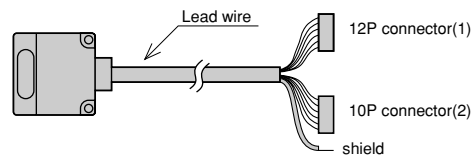
## ■ Connection

### 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*3
Yellow/Green	13	COM(0V)
Yellow/Red	14	+VIN
Yellow/Black	15	-VIN(0V)
Shield		Shield

### 8BIT model



Connector(1)		
Lead wire	Pin No.	Spec.
Light blue	1	COM(0V)
Pink	2	MODE*1
White	3	SELECT*2
White/Black	4	GO*3
Brown	5	IN1
Brown/Black	6	OUT1
Red	7	IN2
Red/Black	8	OUT2
Orange	9	IN3
Orange/Black	10	OUT3
Yellow	11	IN4
Yellow/Black	12	OUT4

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
Light 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 arbitrarily stop transmission and reception operation by outside signal arbitrarily.

- Operates when it is opened between SELECT and I/O COM.
- Stops operation when it is short circuited 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 received.
- it is OFF when optical signal is interrupted (or non-receiving state).

Note) Terminal ends handling of not using input, output, GO out the other lead wires. If handled in one treatment, it will cause malfunction.

Note) The connector attached can not be used as relay terminal.

Note) If one is set to transmission standby mode, set other one to reception standby mode.

put, SELECT input, MODE input and NC(4BIT type) are to be treated individually and not together.

to reception standby mode.

## ■ SEMI standard

### Model No.

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

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

☆PNP output is also lined-up. Ask us.