

## SPECIFICATIONS

### DM 4 BIT TYPE COMMUNICATION COMPATIBLE DEVICE FOR MAINTENANCE

DMS-GA1-C(HEAD-ON)  
DMS-HA1-C(SIDE-ON)



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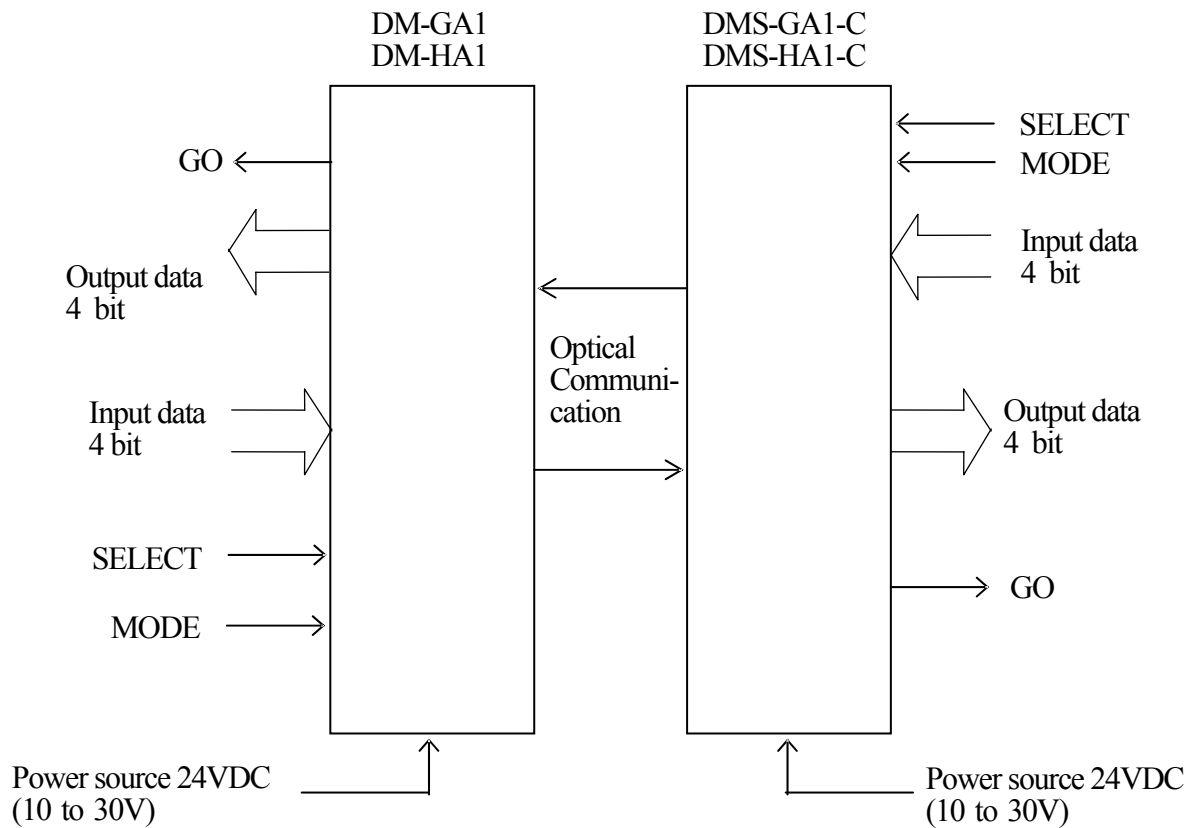
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Symbol	Amended reason			Pages	Date	Corrector	Amended No.
Approved by	Checked by	Drawn by	Designed by	Title	DM 4 Bit Type Communication Compatible Device DMS-GA1/HA1-C Specifications		
MAEJIMA	KAMITANI	OJIMA	OJIMA				

**HOKUYO AUTOMATIC CO.,LTD.**

## 1. Configuration



## 2. Specifications

Model No.	DMS-GA1-C	DMS-HA1-C
Transmission distance	0 to 0.6m(Changeable by adjuster)	
Directive angle	30 degrees(Full angle)	
Transmission directions	HEAD-ON	SIDE-ON
Transmission capacity (Input/Output)	4 bit/4 bit	
Transmission method	Half-duplex two-way transmission	
Transmission time	100msec	
Modulation method	Pulse modulation	
Verification method	Double continuous coincident detection	
Power source	18 to 30VDC	
Current consumption	100mA Max.	
Ambient illuminance	4,000lux or less	
Ambient temperature/humidity	-10 to 50 degrees C / 85%RH or less	
Vibration resistance	Double amplitude 1.5mm, 10 to 30Hz, 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	
Connection	Cable type(0.2mm <sup>2</sup> , 15-core shield cable, 2m long)	
Protective structure	IP64	

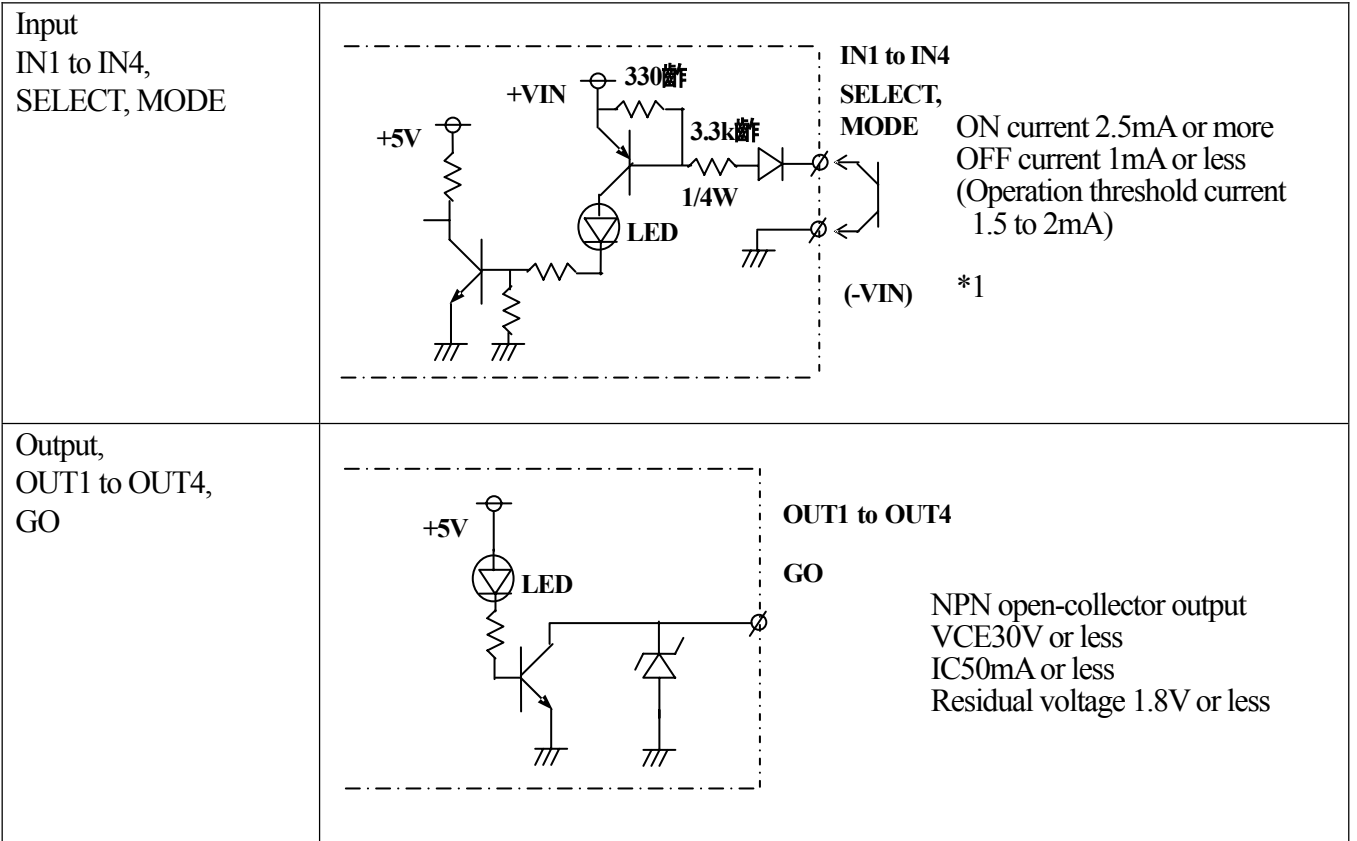
Title

DM 4 Bit Type Communication Compatible Device  
DMS-GA1/HA1-C Specifications

Drawing  
No.

C-42-3257

2/5



\*1. 2-wire sensor isn't available.

### 3. Transmission characteristics

#### (1) Characteristics data

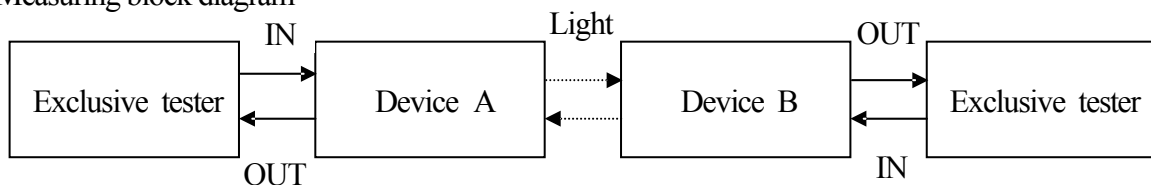
Items	Symbols	MIN	MAX	Unit(msec)
Input data holding time	tIH	80	-	
Transmission time	tON, tOFF	30	100	
Transmission starting delay time (Against optical axis coincidence)	tSD	20	60	
Output holding time(Against SELECT A)	tOH1	20	60	
Output holding time(Against SELECT B)	tOH2	20	60	
Output holding time(Against light-interruption)	tOH3	50	60	

#### (2) Characteristics measuring condition

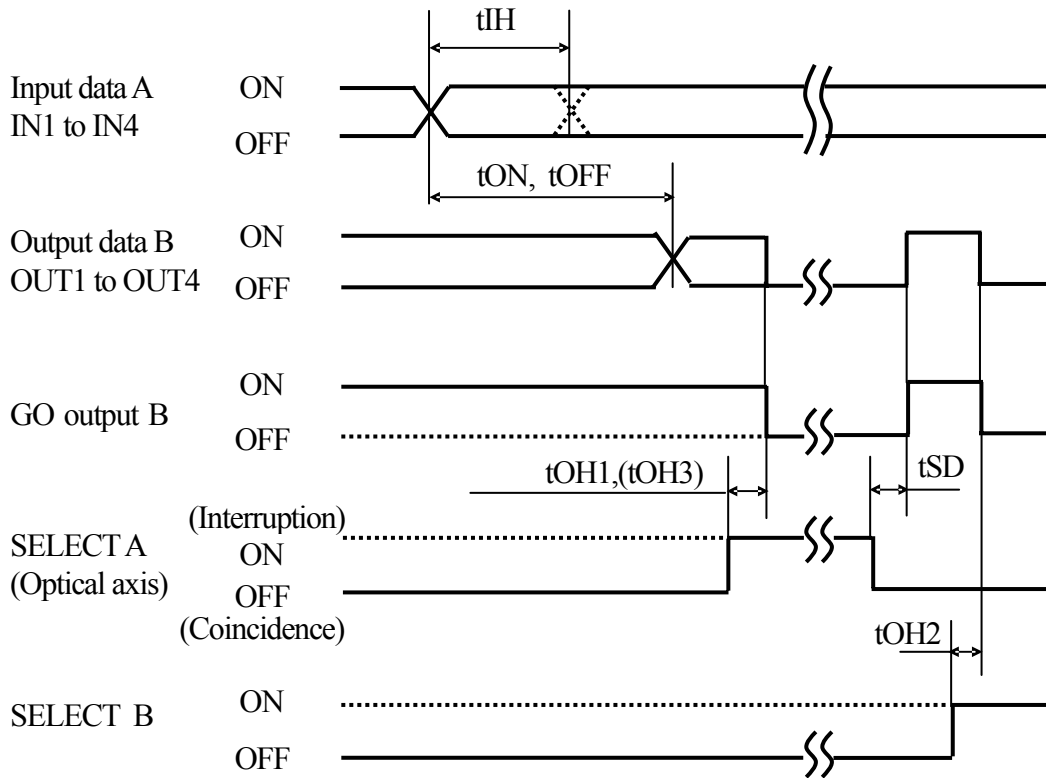
\*Mode : Side A – Reception stand-by mode, Side B – Transmission stand-by mode

\*It was measured under input(side A) and output(side B).

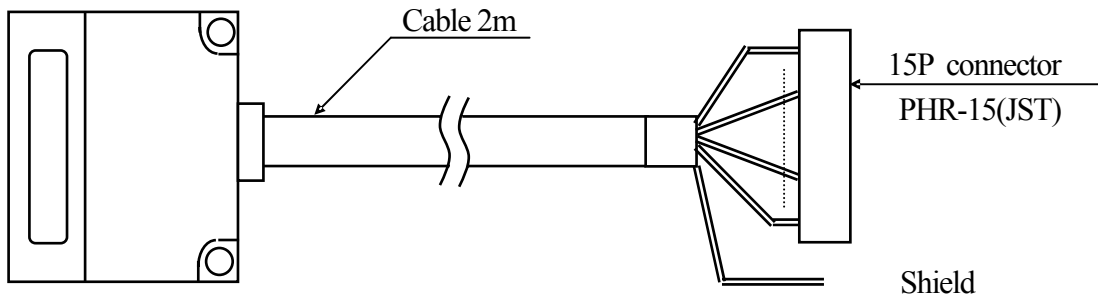
#### (3) Measuring block diagram



(4) Transmission timing



4. External wiring



Title	DM 4 Bit Type Communication Compatible Device DMS-GA1/HA1-C Specifications	Drawing No.	C-42-3257	4/5
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Colors	Pin No.	Functions
Black	1	IN1
Brown	2	IN2
Red	3	IN3
Orange	4	IN4
White/yellow	5	MODE
Yellow	6	SELECT
White/blue	7	NC
Green	8	OUT1
Blue	9	OUT2
Purple	10	OUT3
Gray	11	OUT4
White	12	GO
Yellow/green	13	COM(0V)
Yellow/red	14	+VIN
Yellow/black	15	-VIN(0V)
Shield		Shield

(Note) No.13 is connected to No.15 inside.

### 5. Function for each terminal

Terminals	Functions
IN1 to IN 4	Input data
OUT1 to OUT4	Output data
SELECT	It is shorted to COM : Transmission/reception is stopped It is opened : Transmission/reception is operated
MODE	It is opened : Transmission standby mode It is shorted to COM : Reception standby mode
GO	It is ON when normal data was received and OFF when light was interrupted
COM	Common for input/output
+VIN	+24V(10 to 30V)
-VIN	0V
	Power source

Note) Make sure to set other one to reception standby mode.

### 6. Difference between DM-GA1/HA1 and this type

This new type is basically the same specifications as DM-GA1/HA1 regarding optical communication and it is possible to communicate. However, pay attention of the following points:-

- External dimension is the same as DMS series and it is different from DM-GA1/HA1.
- Input part becomes pulse oscillating state because a current flows by inner processing only when input reads-in.
- Cable with white/blue is not connected.(It isn't connected to COM(0V))
- It can adjust communicating distance with light-projecting adjuster.(This isn't sensitivity adjuster)



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Title	DM 4 Bit Type Communication Compatible Device DMS-GA1/HA1-C Specifications	Drawing No.	C-42-3257	5/5
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