OPTICAL DATA TRANSMISSION DEVICES
SPECIFICATIONS

1.Configuration

Transmitter/Receiver (A)

Transmitter/Receiver (B)

Output data
16BIT

Input data
16BIT

$\overline{GO}$

$\overline{SELECT}$

$\overline{STB}$

Light

Input data
16BIT

Output data
16BIT

$\overline{SELECT}$

$\overline{GO}$

Light

$\overline{STB}$

Power source
10～30VDC

Power source
18～30VDC

MODE switch

MODE switch

R   T

R   T
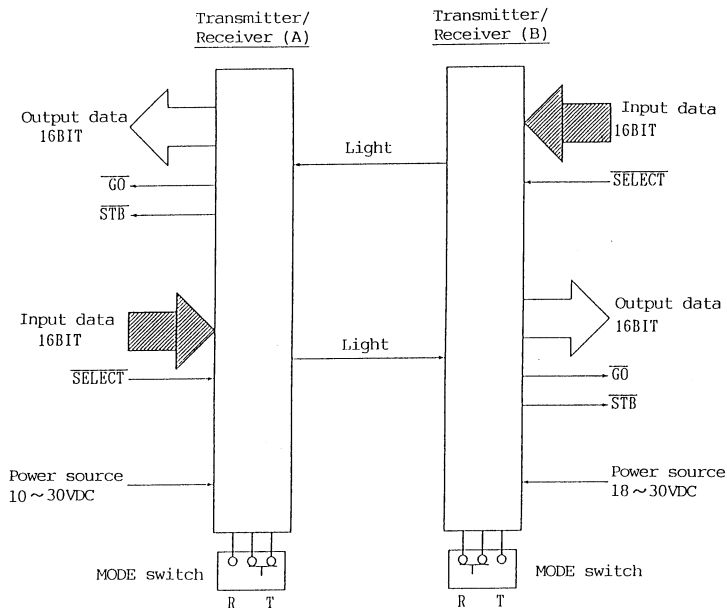
2.Specifications

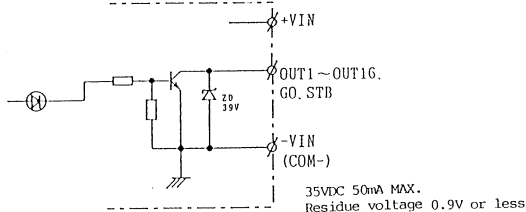| Model No.	DMH-GC1	DMH-HC1
Transmission direction	HEAD-ON	SIDE-ON
Directional angle	±13°	
Transmission distance	0～3m(Adustable by light-projection volume)	
Transmission capacity (Input/output)	16 BIT/16 BIT	
Transmission method	Half-duplex two-way transmission	
Transmission time	15msec Max.	
Modulation method	FSK modulation	
Verification method	Bit reverse comparison method	
Power source	24VDC(10V～30VDC)	
Current consumption	150mA Max.	
Allowable ambient illuminance	Fluorescent lamp:10000lux Incandescent lamp:3000lux	

Amendment		Title	SPECIFICATIONS OPTICAL DATA TRANSMISSION DEVICE		
		Approved by	MORI	Date	Sep.19th'92
		Checked by	MAEJIMA	Drawing No.	C-42-2040
		Drawn by	HINO		

Allowable ambient temperature and humidity	-10℃～+50℃, 85%RH or less
Vibration resistance	Double amplitude 1.5mm 10～55Hz 2 hours for X, Y & Z directions(JIS5025)
Impact resistance	500m/s² each 3 times for X, Y & Z directions(JIS5026)
Connection method	Cable 2m with simplified connection
Protective structure	IP64
External dimensions	98 X 90 X 20
Weight	Approx.400g(including cable 2m)

Input(IN1～IN16 SELECT)

ON voltage   2V or less
OFF voltage   8V or more
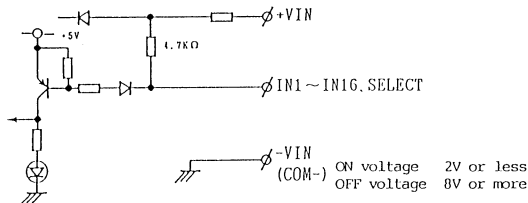
Output(OUT1～OUT16 STB GO)

35VDC 50mA MAX.
Residue voltage 0.9V or less

3.Transmission characteristics

(1)Characteristics data   Unit(msec.)

Items	Abbreviation	MIN.	MAX.
Input data hold time	t I H	10	———
Transmission time	tON, tOFF	5	15
Transmission start delay time (Against optical axis coincidence)	t S D	40	50
Output hold time(Against SELECT A)	tOH1	30	60
Output hold time(Against SELECT B)	tOH2	———	2
Output hold time (Against light-interruption)	tOH3	30	60

(2)Characteristics measurement conditions
  *It sets A side to transmission priority(T) and B side to reception priority(R).
  *It sets input to A side and output to B side.

(3)Measurement block diagram
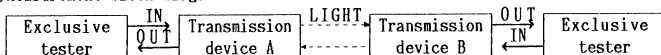
(4)Transmission timing
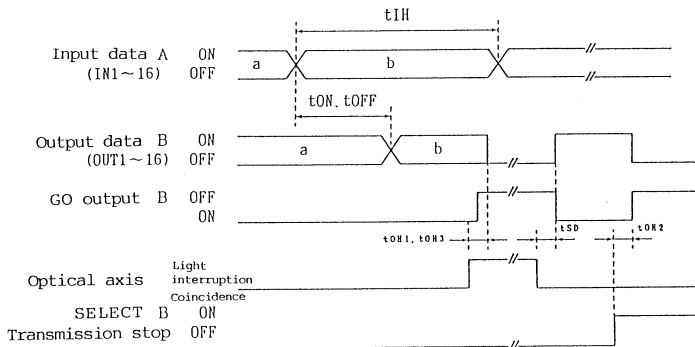
4.Terminal functions

Name	Functions
IN1~IN16	Input data
OUT1~OUT16	Output data
SELECT (SEL)	It is shorted to GND ··· Transmission/reception is stopped
	It is opened ··· Transmission/reception is operated
GO	It is ON at normal data reception and OFF at light-interruption.
STB	It is ON at normal data fixed.
+VIN	24V(10~30V)
-VIN	0V

<INIT MODE setting>
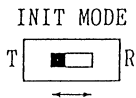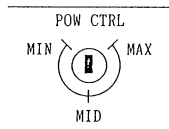   Mode changeover can be made by slide switch in the front.
   If the opposite side is set to T mode, the other side should be set to R mode.

INIT MODE

T [■□] R

<Max.reaching distance against light-projection adjustment VR(Typical)>
   Make a setting of light-projection volume with VR in the front.

POW CTRL
MIN ╲   ╱ MAX
      (▯)
       MID

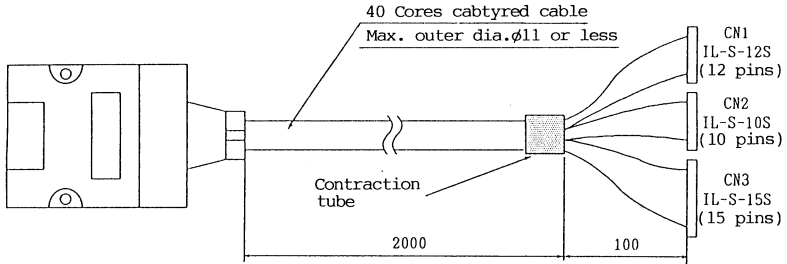| (VR position)	(Reaching distance)	(Operation angle)
*MIN	0~1m or less	13° or more
*MID	0~3.5m or less	13° or more
*MAX	0~4.5m or more	13° or more

Note 1) Above value is standard.   It may be different between the above value and actual
        distance.
Note 2) In case of making light volume adjustment with VR, make sure to adjust with margin of
        1.5 times for Max.reaching distance.
Note 3) In case of setting VR to Max., its distance is 3m or more but abnormal communication
        etc. may be occured in that case.   Make sure to use with setting distance, 3m or
        less.

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		Checked by	MAEJIMA	Drawing No.	C-42-2040
		Drawn by	HINO		

5.Connection table

40 Cores cabtyred cable
Max. outer dia.ø11 or less

CN1 IL-S-12S (12 pins)
CN2 IL-S-10S (10 pins)
CN3 IL-S-15S (15 pins)

Contraction tube

2000   100

Pin No.		Wire colors (Marks)		Signal names	Pin No.		Wire colors (Marks)		Signal names
CN1	1	Pink	(Red 1)	+VIN	CN2	8	Gray	(Black 1)	OUT 8
	2		(Red 2)	-VIN		9		(Black 2)	IN 7
	3		(Red 3)	OUT 16		10		(Black 3)	OUT 7
	4		(Red 4)	IN 16	CN3	1	Orange	(Red 1)	IN 6
	5		(Black 1)	OUT 15		2		(Red 2)	OUT 6
	6		(Black 2)	IN 15		3		(Red 3)	IN 5
	7		(Black 3)	OUT 14		4		(Red 4)	OUT 5
	8		(Black 4)	IN 14		5		(Black 1)	IN 4
	9	Light blue	(Red 1)	OUT 13		6		(Black 2)	OUT 4
	10		(Red 2)	IN 13		7		(Black 3)	IN 3
	11		(Red 3)	OUT 12		8		(Black 4)	OUT 3
	12		(Red 4)	IN 12		9	Green	(Red 1)	IN 2
CN2	1		(Black 1)	OUT 11		10		(Red 2)	OUT 2
	2		(Black 2)	IN 11		11		(Red 3)	IN 1
	3		(Black 3)	OUT 10		12		(Red 4)	OUT 1
	4	Gray	(Red 1)	IN 10		13		(Black 1)	S E L
	5		(Red 2)	IN 9		14		(Black 2)	G0
	6		(Red 3)	OUT 9		15		(Black 3)	S T B
	7		(Red 4)	IN 8					

Note) Light blue(black 4), gray(black 4) & green(black 4) can't be used.
In case of using cutting cable, cut it at the base.

Cable 2 m
φ11

2 - φ5 Mounting hole

Mode changeover switch

Light-projector VR

20
98
115

60

80

50

44

90

20
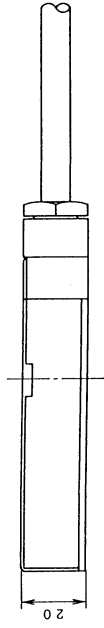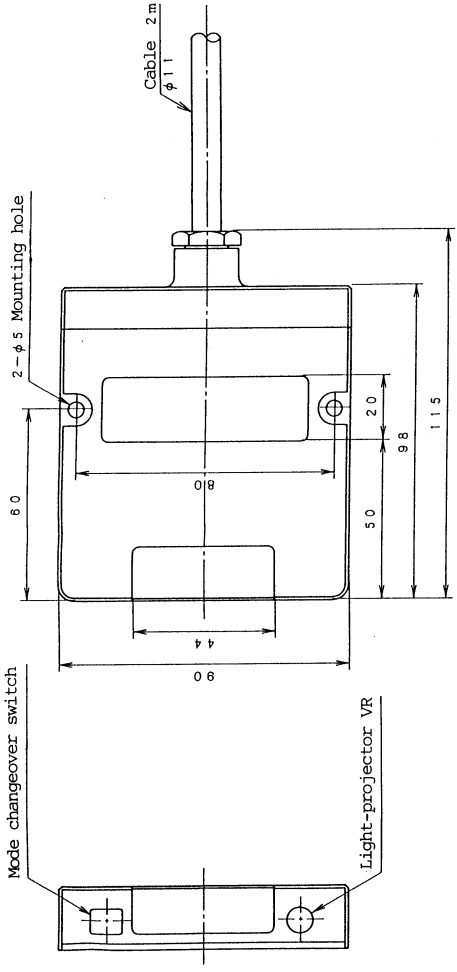
Title		DMH-GC1
		EXTERNAL DIMENSIONS
Checked by	HINO	Date	Mar.3rd'93
Drawn by		Drawing	MC-40-2432-1
Traced by	SOTOMA	No.	

1/1

Ⅲ HOKUYO AUTOMATIC CO., LTD.

Amendment