April. 2nd'06

OPTICAL DATA TRANSMISSION DEVICE
EWF-11A-02
EWF-11B-02
(64Kbps)
SPECIFICATIONS

△ x 2	Correction of typo and Addition of Item No.7				2, 4	Apr.28'09	Hino	FA-6288
Synbol	Amended reason				Pages	Date	Corrector	Amended No.
Approved by	Checked by	Drawn by	Designed by	Title	Optical Data Transmission Device EWF-11A/B-02 Specifications			
MAEJIMA	MAEJIMA	HINO	HINO	Drawing No.	C-42-3685			1/5

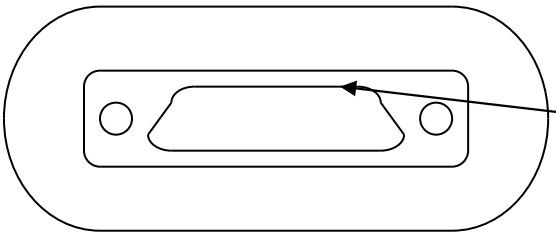
1. General

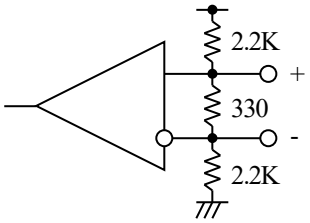
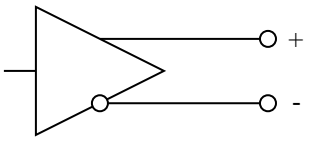
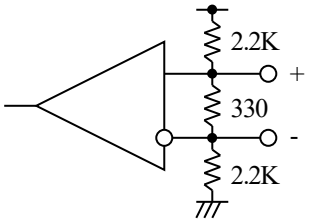
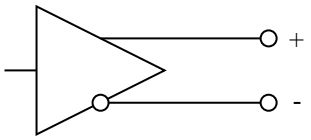
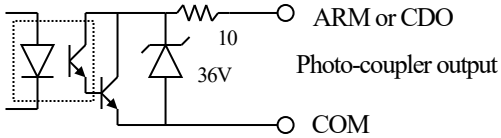
This device is a serial type optical data transmission device with 100m distance. This device provides A and B type because of full-duplex two-way transmission system.
This model is available to communication with transmission speed in 64Kbps.

2. Specifications

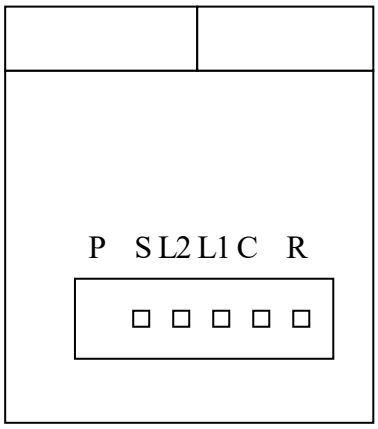
Model No.	EWF-11A-02	EWF-11B-02
Transmission distance	100m	
Directional angle	4 degrees(Full angle)	
Power source	24VDC(+/- 10%)	
Current consumption	80mA(24VDC)	
Transmission method	Full-duplex two-way transmission	
Transmission speed	DC to 64Kbps	
Interface	RS-422	
Modulated method	FSK	
Modulated frequency	Transmission : 5.5MHz Reception : 6.0MHz	Transmission : 6.0MHz Reception : 5.5MHz
Connection	D-sub connector 25 pins socket	
Ambient temperature/humidity	-10 to 50 degrees C, 85%RH or less(but not icing)	
Ambient illuminance	10000lux or less(Halogen and incandescent lamp)	
Impact resistance	490m/s^2 each 10 time in X, Y and Z directions	
Vibration resistance	Double amplitude 1.5mm 10 to 55Hz, each 2 hour in X, Y and Z directions	
Protective structure	IP40	
Warning output(ARM)	Photo-coupler open-collector(pressure-resistance 35V) ON when light-receiving level margin 1.5 times or more (Max. 50mA, residual voltage 1.5V)	
Light-receiving output(CDO)	Photo-coupler open-collector(pressure-resistance 35V) ON when light-receiving, (Max. 50mA, residual voltage 1.5V)	

3. Connections



Pin No.	Signals	I/O circuit
14	+SD	 RS-422 Transmission data input
15	-SD	
16	+RD	 RS-422 Reception data output
17	-RD	
12	+SRD OFF ⚠	 RS-422 Transmission/Receiving stop input
13	-SRD OFF ⚠	
18	+CD	 RS-422 Carrier detection output
19	-CD	
20	SG	GND for signal(isolated with 0V of power source)
11	+VIN	Power source input 24VDC
23	-VIN(0V)	
4	ARM	
25	CDO	
6	COM	
1	FG	(Connected with fixed pin in connector)

4. Indicators



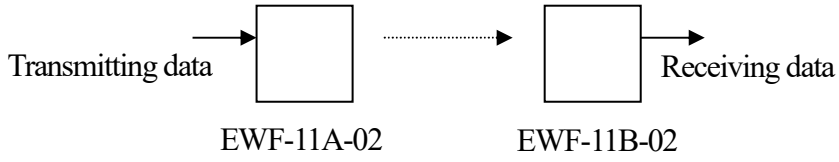
P : Power lamp
S : Transmission data lamp
L2 : Level lamp(Lights up when light-receiving level margin is 2.0 times or more)
L1 : Level lamp(Lights up when light-receiving level margin is 1.5 times or more)
C : Carrier detection lamp((Lights up when light-receiving level margin is 1.0 times or more)
R : Reception data lamp

5. Signal logic(RS-422)

Opposite station	Own station
Input signal : Level	Output signal : Level
+SD : H, -SD : L	+RD : H, -RD : L
+SD : L, -SD : H	+RD : L, -RD : H
+SD OFF : L, -SD OFF : H (When transmission stop input*)	+RD : H, -RD : L
	+CD : H, -CD : L (Turn-over operation for the above mentioned when light-receiving)

Output signal level H : +3V to +5V, L : 0V to +1V
* It will be possible to transmit by turning over or opening transmission stop input.

6. Transmission delay time
Measuring structure



Transmitting delay time from transmitting data to receiving data : 50 μ sec or less

7. Optical axis adjustment ⚠

(1) Prior confirmation of installation location
Before installation of the product, make sure that the base for installing is not distorted and that the machine axis of the base is aligned. If it is distorted or the position of the base is misaligned, please correct it and install it so that the machine axis matches.

(2) Temporary fixing of the brackets
Temporarily fix paired EWF facing each other in close range (2 to 3m) for optical axis adjustment.

For mounting screws to fix with the unit :

The mounting screws should be fastened firmly a little at the front point each so that the units moves up and down, and loosen at the rear point each until the spring washers work a little.

For mounting screws to fix with the base :

Please fix the brackets at only the front point each so that it can swing to the left and right.

Turn on the power of the units once in the temporary fixing state and check the light receiving status of both sides.

(3) Optical axis adjustment procedure

1. After temporary fixing, please complete the setting on both sides in the center of the projection light beam as much as possible.
2. Please adjust the level of projection and receiving volume so that is maximum on each side at the longest point in range to be used.
3. After both preliminary adjustments are completed, make further adjustments so that they are centered in the horizontal and vertical directions.
   (Adjust so that the center of light projection beam is at the center of the receiving lens on the other side.)
4. Please fix the screws finally after all adjustment is completed.