December 6, 2012

Optical Data Transmission Device For Ethernet (PoE-enabled) Specifications

DME-GB1-PE
DME-HB1-PE

Corresponding to SI unit

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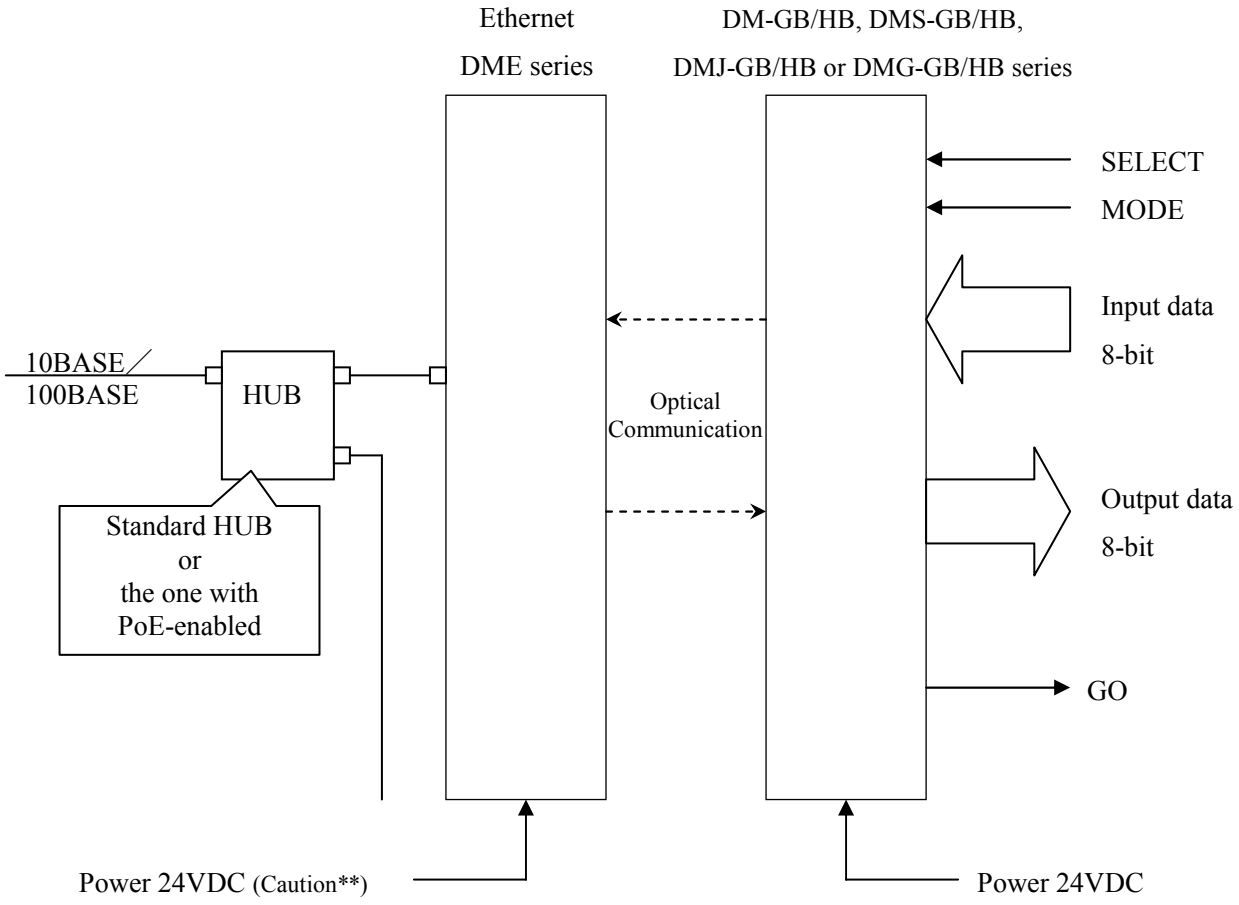
Symbol	Amended reason		Pages	Date	Corrector	Amended No.

Approved by	Checked by	Drawn by	Designed by	Title	Optical Data Transmission Device for Ethernet DME-GB1/HB1-PE Specifications	
			Oka	Drawing No.	C-42-03612	1/7

1. General

This is an optical data transmission device with 8-bit parallel I/O and Ethernet interface. This device provides the Logging function that memorizes communication data, therefore it's very useful to analyze the status when troubles such as interlock occur. It's easy to load the logging data from LAN. The product can reduce wiring requirements because PoE)Power over Ethernet) is available.

This is compatible with standard models DMS/DMG/DMJ-HB1/GB1 series (optical communication, input/output and installation, etc.) so it is possible to replace them with this DME series at the current facilities.



****Caution : Never supply the power source with another wiring when it is supplied with PoE.**

2. Specifications

Model No.	DME-GB1-PE	DME-HB1-PE
Transmission distance	0 to 1m	
Directive angle	30° (Full angle)	
Transmission directions	Head-ON	Side-ON
Transmission capacity (Input/Output)	8-bit/8-bit	
Transmission method	Half-duplex two-way transmission	
Transmission time	40ms	
Modulation method	Pulse modulation	
Verification method	Parity check	
Power source	24VDC ±10% Or PoE (Power over Ethernet) by Standard No. IEEE802.3af (Note 1)	
Current consumption	60mA Max.	
Ambient illuminance	4,000lux or less	
Ambient temperature/ humidity	−10 to 50℃ 85%RH or less (Non condensing)	
Vibration resistance	Double amplitude 1.5mm 10 to 55Hz for each 2 hours in X,Y and Z directions	
Impact resistance	490m/s^2 Each 10 times in X,Y and Z directions	
Connection	Plug-in LAN jack (RJ-45) / Connector (Power 24VDC + 1-input)	
Protective structure	IP40	
Communications Standards	10BASE-T / 100BASE-TX Auto-Negotiation Function : available / MDI/MDIX : not available	
Protocol	TCP/IP, UDP/IP, IPv4, ARP, ICMP (PING response)	

(Note 1) : Regarding Power source
Please be sure to use the STP Ethernet cable with Category 5 or higher when power is supplied via PoE
Please note that it should be connected the power through either 24VDC or PoE, but never both.

3. Data Logging

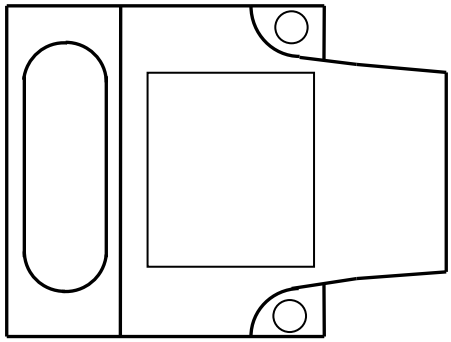
(1) This device constantly records transmission/reception data and the invariable time of GO, SELECT and reception data in non-volatile memory. All data is triggered by change of transmission/reception data, SELECT input and Go output. Note 2)

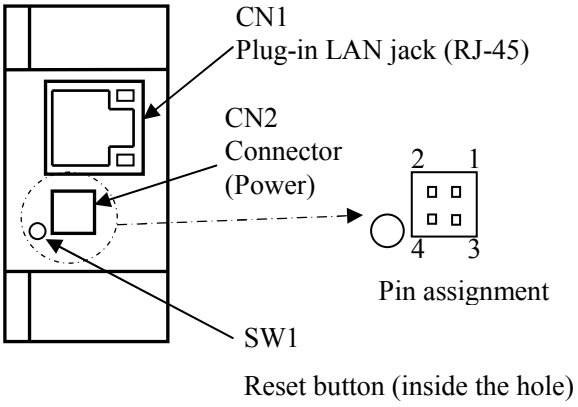
(2) Specifications of optical communication log

Recording Capability	Max. 100 times Note 1)	
Memorizing data	Transmission/Reception data each 8-bit GO output SELECT input Time stamp Power-on-timing	
Memorizing cycle	Min. 20ms	
Memorizing life	Memorizing times	10^{10} times
	Memorizing years	10 years

Note 2) Transmission/reception data is monitored and memorized. It may be different with input/output data. In case that data change number exceeds the recording capability, the oldest data will be overwritten.

4. External wiring





<CN 1> Model number : TM11R-5M2-88-LP (made by Hirose)

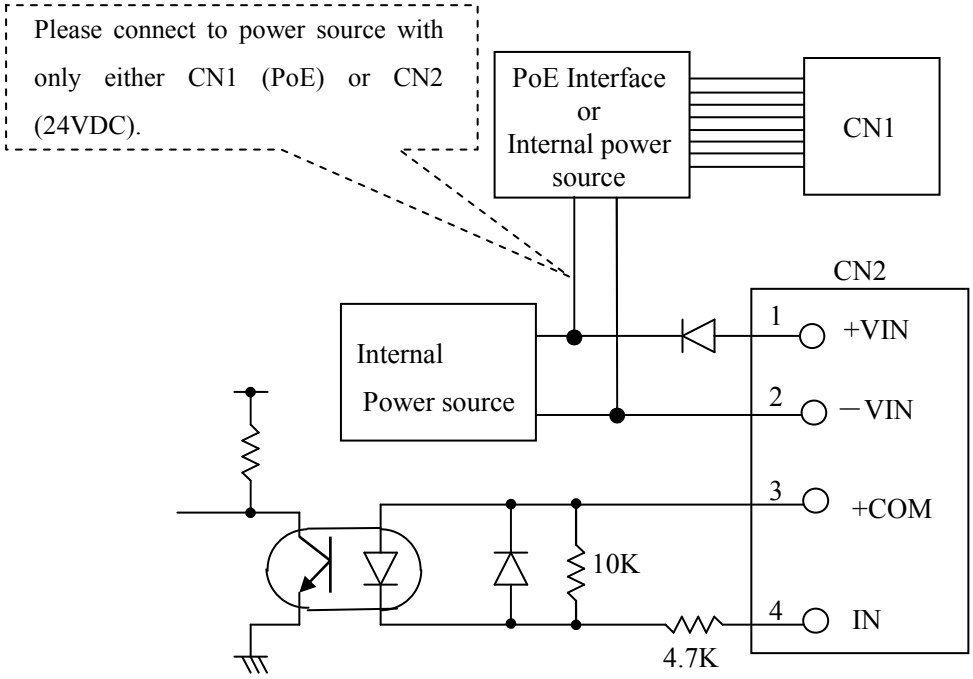
Pin No.	Signal	Function	PoE power line Note 3)	
			Alternative A	Alternative B
1	Tx +	Ethernet Transmission + line signal	Positive	
2	Tx -	Ethernet Transmission - line signal	Positive	
3	Rx +	Ethernet Reception + line signal	Negative	
4	NC	No connection		Positive
5	NC	No connection		Positive
6	Rx-	Ethernet Reception - line signal	Negative	
7	NC	No connection		Negative
8	NC	No connection		Negative

Note 3) The PoE power line is selected by PSE (power-sourcing equipment) side.

<CN 2> Model number : DF11-4DP-2DS (made by Hirose)

Pin No.	Signal	Function
1	+ VIN	Power source +24VDC
2	- VIN	Power source 0V
3	+ COM	Common for input (+)
4	IN	Input (-)

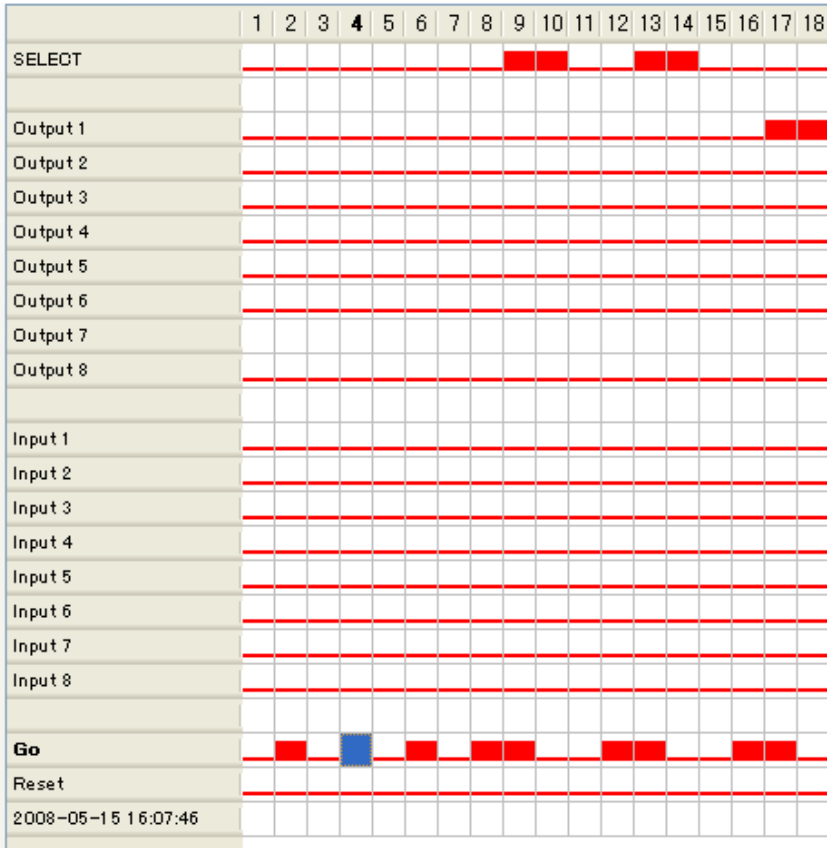
5. Input circuit



6. Logging function of optical communications

The device constantly records a set of optical transmission/reception data and its time stamp during an operation sequence, for instance, the sequence generated between Active equipment and Passive equipment.

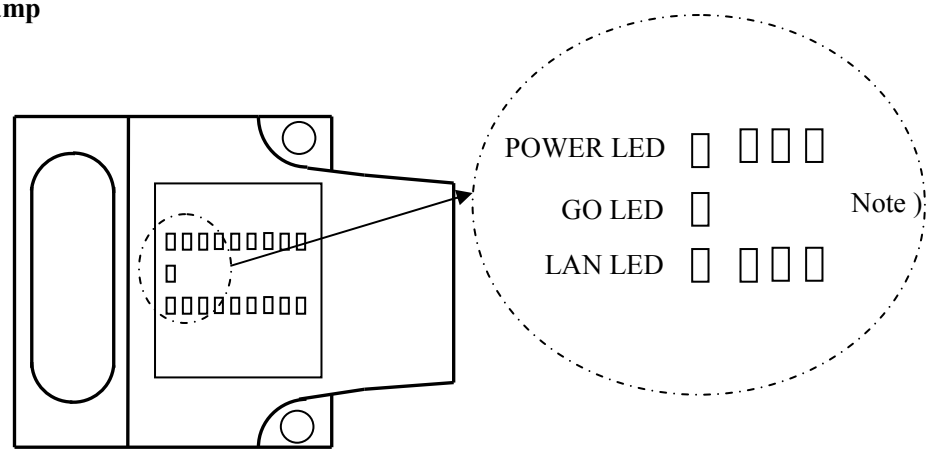
The following example shows a sequence data (timing chart) that the device can record.



7. Network communications specifications

Please refer to the specifications drawing No. C-42-3623

8. LED lamp



- POWER : It lights up when power-on
- GO : It lights up when the optical axis is coincident with other one's.
- LAN : It lights up or flickers when the state of LAN connection and communication.

Note) This model is not available indication LEDs for Input and Output.

9. Reset button

It can change the network configuration return to the default setting.

<Default setting>

IP address	192.168.0.10
Subnet mask	255.255.255.0
Default gate way	192.168.0.1
Port number	10940

10. Input signal

This 1-bit external input can be defined as an arbitrary input signal, it can be controlled communication except for UDP (M or S packet) communication.

As for setting valid/invalid of the function and the arbitrary input signal, it can be done through the web server.

① Valid or invalid of the function

② Signal setting (IN1 to 8, MODE, or SELECT input)

③ Condition setting (the Logic of UDP command (PRIORITY/AND/OR/NOT))