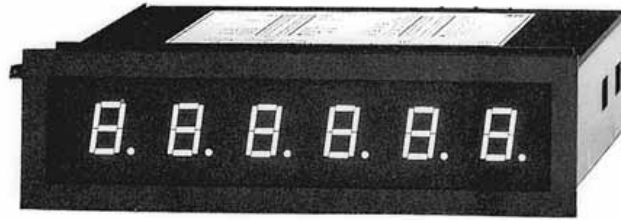


DIGITAL PANEL METER

MOSAIC DISPLAY 50mm - LPD SERIES



LPD06-15B
(50 × 175 × 136mm)

APPLICATION

With the development of automated measurement, centralized monitoring control graphics panel be in heavy usage recently.

This meter is installing by desk board and mosaic panel so according to the digital control system purposes, various data including with the display of major equipment, display of physical and various amount of electrical also can use it.

FEATURES

- ▶ Simplify wiring by adopted connector.
- ▶ High quality and high reliability noise resistance design.
- ▶ Adopted of high-intensity LED element and single power supply (DC24V)
- ▶ 2 types of LED: Large (character height: 25mm),
Small (character height: 15mm)
- ▶ 2 type input: BCD input and 7-segment input can be manufactured.
BCD Input: General BCD Input, data bus system, address or data bus system, address setting switch.

MOSAIC DISPLAY 50mm - LPD SERIES

TYPE DESIGNATION

(1) (2) (3) (4) (5) (6)
LPD 03 - 15 S - 4

1) Name of the Series

Symbol	Series Name
LPD	Digital Display

4) Size of Number

Symbol	Size of Number (h)
15	15.24mm
25	25.4mm

2) Polarity

Symbol	Display of Polarity
0	None
1	Polarity display

5) Type of input signal

Symbol	Display color
B	BCD input
S	7-segment input

3) Number of Digit

Symbol	Number of digit
1	1-digit
2	2-digit
3	3-digit
4	4-digit
5	5-digit
6	6-digit

6) Size of Box

Symbol	Size of Box
None (Standard)	2-digit use (1-digit, 2-digit) 3-digit use (3-digit) 4-digit use (4-digit) 6-digit use (5-digit, 6-digit)
4	3-digit or less for 4-digit BOX
6	4-digit or less for 6-digit BOX
6S	Transverse connector for 6-digit BOX

MOSAIC DISPLAY 50mm - LPD SERIES

COMMON STANDARD SPECIFICATIONS

ITEM	SPECIFICATION
Operation system	Date bus system
Display	LED (light-emitting diode: Red) display
Display driving signal	Open collector signal (DC24V, 1mA / signal line)
Auxiliary power	DC24V, $\pm 10\%$
Length of signal cable	50m or less: Flat cable, twist pair line etc.
Insulation resistance	DC500V, 50m Ω or more: Between electric circuit and outer case.
Withstand voltage	AC1500V, 50/60Hz 1 min: Between electric circuit and outer case.
Operation	0 ~+50 , 30~85%RH
Storage temperature range	-20 ~+70
External color	Munsell N1.5 (Black)

OPTION

Specify the below item according as necessary:

▶ Filter

Material: Acrylic ; Color: Carmine NO.102

Please use double sided tape adhesively the filter.

▶ D-96 installation tool

Please use it when mosaic panel is fitting.

▶ One side connector with cable

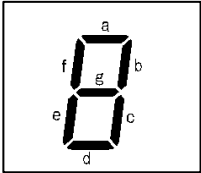
2m or 5m (Please specify the necessary length)

TERMINOLOGY AND FUNCTIONS

► BCD Input

4-bit binary unit, Input signal decimal indicator is constitute by 0~9.

► 7-segment Input



0~9 and other symbol is constitute by combination of 7-signal (a, b, c, d, e, f, g)

► Address

{BCD Input}

Assigned to each indicator, signal can read and retention the data. Please short and use with GND pin if static lighting system is used.

{7-segment Input}

Lot no. (00H~FFH) assigned to each digit (including polarity)

► Strobe signal

7-segment input is a signal read and retention data.

► Latch Signal

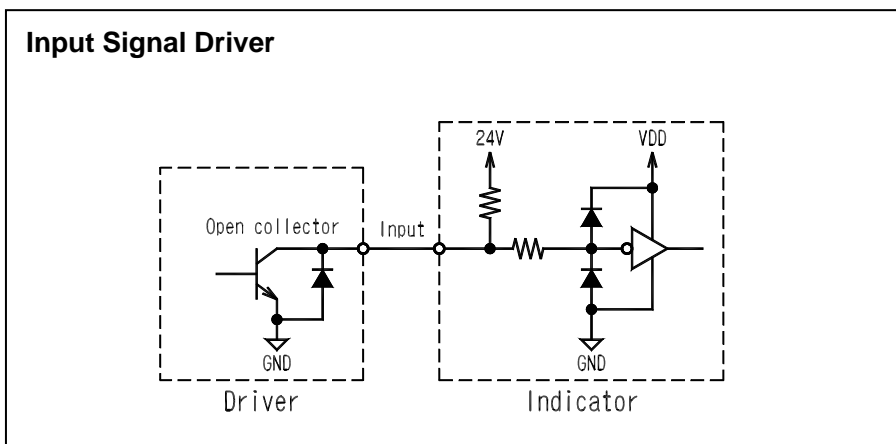
In the internal indicator, signal read and retention data.

► Lamp Test

Lamp test pin indicator and the short supply DC24V GND, lamp test are preference to all digit '8' and '±' display

► Input Signal Logic

	Logical	
	"0"	"1"
Negative-true logic	H	L
Signal level	10~24V	0~3V



MOSAIC DISPLAY 50mm - LPD SERIES

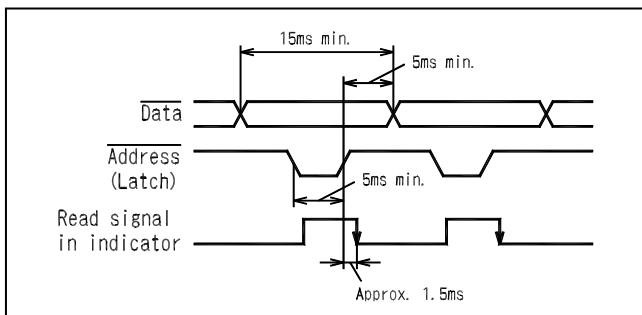
< BCD INPUT >

- ▶ Data Bus System
- ▶ Changeover to Static Lighting Display is possible

LIST OF SPECIFICATION

Size	Polarity	Digit	Type	Power consumption (W)	Weight (g)	Outline drawing
25.4mm	None	1	LPD01-25B	2	400	4-5
		2	LPD02-25B	3	400	A-4
		3	LPD03-25B	4	500	A-3
		3	LPD03-25B-4	4	550	A-2
		4	LPD04-25B	5	550	A-2
		4	LPD04-25B-6	5	750	A-1
	Polarity	±1	LPD11-25B	3	400	A-4
		±2	LPD12-25B	4	500	A-3
		±2	LPD12-25B-4	4	550	A-2
		±3	LPD13-25B	5	550	A-2
		±4	LPD14-25B	6	750	A-1
		±5	LPD15-25B	7	750	A-1
15.24mm	None	1	LPD01-15B	1.5	400	A-5
		2	LPD02-15B	2.5	400	A-4
		3	LPD03-15B	3.5	500	A-3
		3	LPD03-15B-4	3.5	550	A-2
		4	LPD04-15B	4.5	550	A-2
		4	LPD04-15B-6	4.5	750	A-1
	Polarity	±1	LPD-11-15B	2.5	400	A-4
		±2	LPD12-15B	3.5	500	A-3
		±2	LPD12-15B-4	3.5	550	A-2
		±3	LPD13-15B	4.5	550	A-2
		±4	LPD14-15B	5.5	750	A-1
		±5	LPD15-15B	6.5	750	A-1

DATA TRANSMISSION TIMING CHART



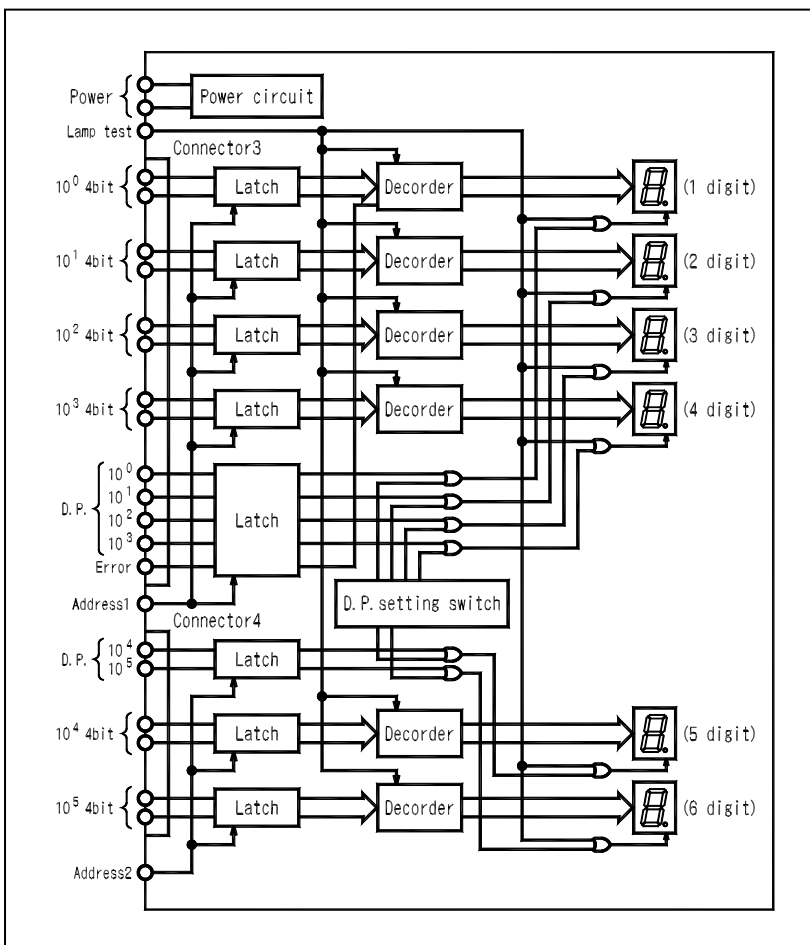
MOSAIC DISPLAY 50mm - LPD SERIES

SEQUENCE OF CONNECTOR TERMINAL

No.	Description			No.	Description
1	GND		2	$1 \times 10^0, 1 \times 10^4$	
3	$2 \times 10^0, 2 \times 10^4$		4	$4 \times 10^0, 4 \times 10^4$	
5	$8 \times 10^0, 8 \times 10^4$		6	$1 \times 10^1, 1 \times 10^5$	
7	$2 \times 10^1, 2 \times 10^5$		8	$4 \times 10^1, 4 \times 10^5$	
9	$8 \times 10^1, 8 \times 10^5$		10	1×10^2	
11	2×10^2		12	4×10^2	
13	8×10^2		14	1×10^3	
15	2×10^3		16	4×10^3	
17	8×10^3		18	D.P. (10^0), (10^4)	
19	D.P. (10^1), (10^5)		20	D.P. (10^2)	
21	D.P. (10^3)		22	ERROR "E"	
23	GND		24	GND	

Header HIF4A-24P-3.18DS (Main side)
[suitability socket]
 HIF4A-24D-3.18R
 Hirose Electric Co., Ltd

BLOCK DIAGRAM



MOSAIC DISPLAY 50mm - LPD SERIES

RELATIONSHIP BETWEEN INPUT SIGNAL AND NUMERAL DISPLAY

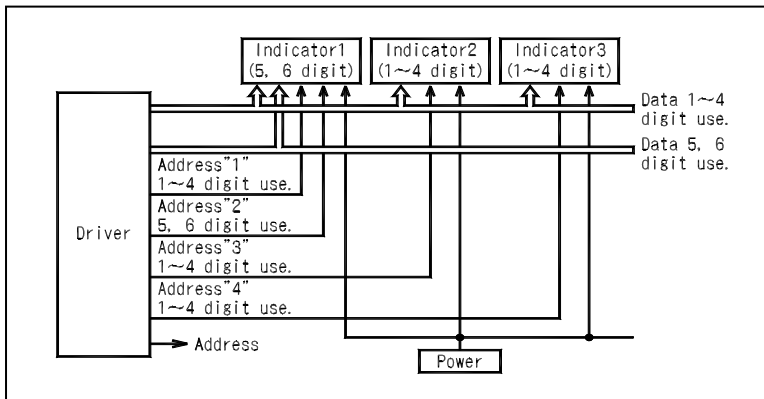
Truth Table							
BCD Input Code				D · P	Input		Display
8	4	2	1		LT	ADD.	Mark: 0~9
0	0	0	0	0	0	1	0
0	0	0	1	0	0	1	1
0	0	1	0	0	0	1	2
0	0	1	1	0	0	1	3
0	1	0	0	0	0	1	4
0	1	0	1	0	0	1	5
0	1	1	0	0	0	1	6
0	1	1	1	0	0	1	7
1	0	0	0	0	0	1	8
1	0	0	1	0	0	1	9
1	0	1	0	0	0	1	Light: OFF
1	0	1	1	0	0	1	Light: OFF
1	1	0	0	0	0	1	Light: OFF
1	1	0	1	0	0	1	Light: OFF
1	1	1	0	0	0	1	Light: OFF
1	1	1	1	0	0	1	Light: OFF
				1	0	1	.
					1		⌘.
					0	0	Latch

* There is not Zero Suppression function. If necessary please processing by software.
 (Please enter the data BCD input code A~F)

SIGNAL LINE

	1~4-digit	5~6-digit
Address	1	1
Data	BCD: 1~4-digit, Total: 16 D/P: 1~4-digit, Total: 4	BCD: 5, 6-digit, Total: 8 D · P: 5, 6-digit, Total: 2
Error	1	

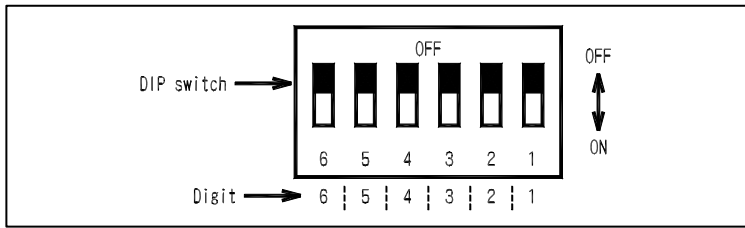
BUS COMPOSITION AT LATCH SYSTEM



MOSAIC DISPLAY 50mm - LPD SERIES

DECIMAL POINT ALLOCATION

Indicator decimal point allocation when D · P input signal is not used.



Decimal digit will be light up when the necessary digit DIP switch is ON.

IT CAN SWITCH FROM LATCH SYSTEM TO STATIC LIGHTING SYSTEM

Please short the address pin and GND pin before use.

DISPLAY

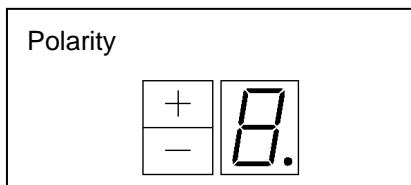
► Error Display

According with error data, display error (E) will be light up only when significant digit error and display will be blank when backward digit error.

► Blank Display

Blank will be displayed when BCD input data line A~F (hexadecimal) is entered.

► Polarity



+ : Enter '1' as BCD data

- : Enter '2' as BCD data

Note:

- 1) '+' will be displayed also when '1' or other No.like 0, 3, 4, 5, 6, 7, 8, 9 is entered to BCD data.
- 2) '-' will be displays also when '2' or other No.like 0, 3, 5, 6, 8 is entered into BCD data.
- 3) There are many display symbol can manufactured like $\frac{1}{2}$ or other.

► Number Display

7-segment LED display

MOSAIC DISPLAY 50mm - LPD SERIES

< 7-SEGMENT INPUT >

- ▶ Address data bus system (Max. 256 digit)
- ▶ Address setting swich

LIST OF SPECIFICATION

Size	Polarity	Digit	Type	Power consumption (W)	Weight (g)	Outline drawing
25.4mm	None	1	LPD01-25S	2	400	4-5
		2	LPD02-25S	3	400	A-4
		3	LPD03-25S	4	500	A-3
		3	LPD03-25S-4	4	550	A-2
		4	LPD04-25S	5	550	A-2
		4	LPD04-25S-6	5	750	A-1
		5	LPD05-25S	6	750	A-1
		6	LPD06-25S	7	750	A-1
	Polarity	±1	LPD11-25S	3	400	A-4
		±2	LPD12-25S	4	500	A-3
		±2	LPD12-25S-4	4	550	A-2
		±3	LPD13-25S	5	550	A-2
		±4	LPD14-25S	6	750	A-1
		±5	LPD15-25S	7	750	A-1
15.24mm	None	1	LPD01-15S	1.5	400	A-5
		2	LPD02-15S	2.5	400	A-5
		3	LPD03-15S	3.5	500	A-3
		3	LPD03-15S-4	3.5	550	A-2
		4	LPD04-15S	4.5	550	A-2
		4	LPD04-15S-6	4.5	750	A-1
		5	LPD05-15S	5.5	750	A-1
		6	LPD06-15S	6.5	750	A-1
	Polarity	±1	LPD11-15S	2.5	400	A-4
		±2	LPD12-15S	3.5	500	A-3
		±2	LPD12-15S-4	3.5	550	A-2
		±3	LPD13-15S	4.5	550	A-2
		±4	LPD14-15S	5.5	750	A-1
		±5	LPD15-15S	6.5	750	A-1

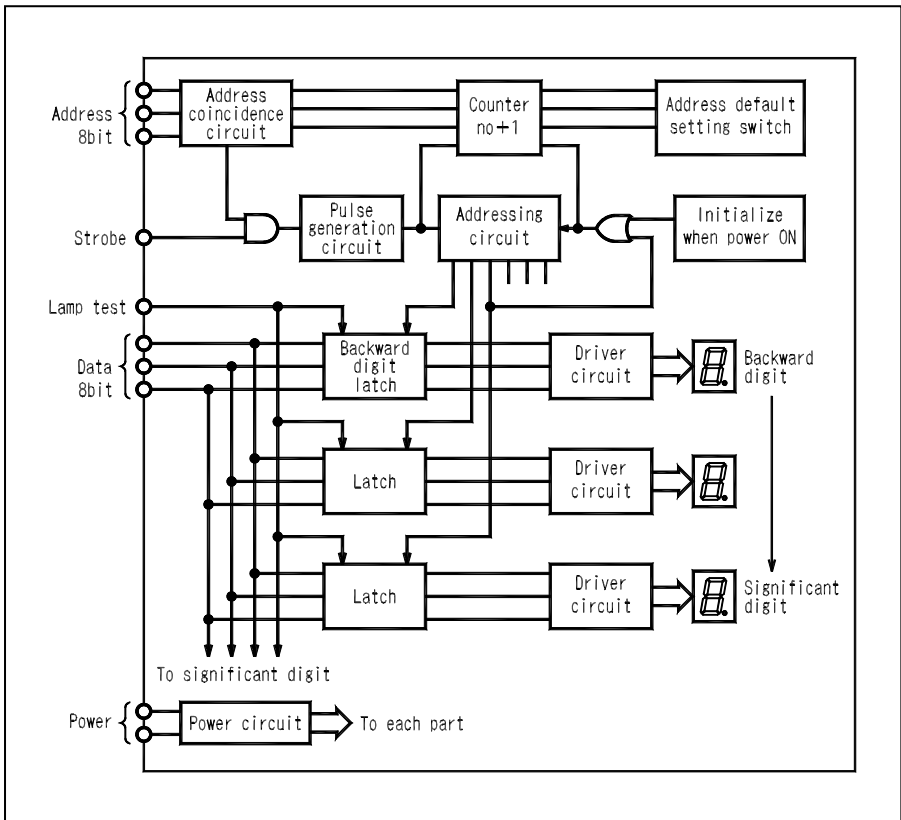
MOSAIC DISPLAY 50mm - LPD SERIES

SEQUENCE OF CONNECTOR TERMINAL

No.	Description	No.	Description
1	GND	2	GND
3	Address A0	4	Address A1
5	Address A2	6	Address A3
7	GND	8	GND
9	Address A4	10	Address A5
11	Address A6	12	Address A7
13	GND	14	GND
15	Data a	16	Data b
17	Data c	18	Data d
19	Data e	20	Data f
21	Data g	22	Data D.P.
23	Strobe	24	GND

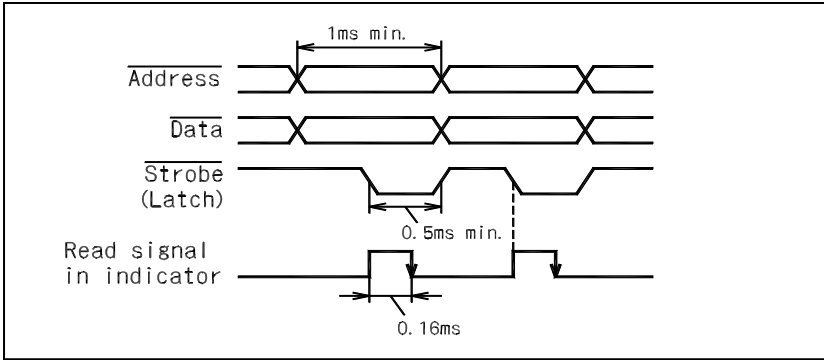
Header HIF4A-24P-3.18DS
 Suitability socket
 HIF4A-24D-3.18R
 Hirose Electric Co., Ltd

BLOCK DIAGRAM

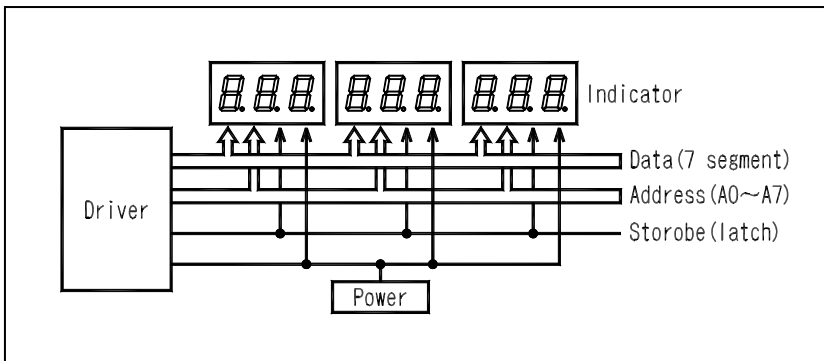


MOSAIC DISPLAY 50mm - LPD SERIES

TIMING CHART



BUS COMPOSITION

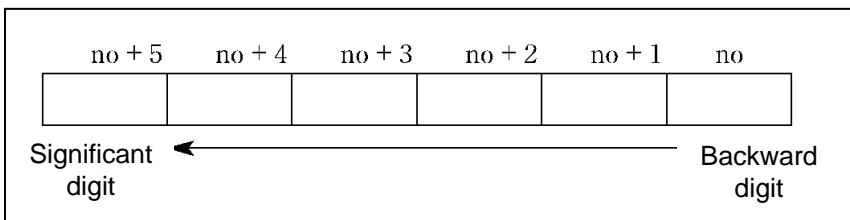


SIGNAL LINE

► 8-Address (00H~FFH)

Addition Initial value (no) address setting switch at backward digit of digital Indicator.

Significant digit and polarity backward digit (no) in sequence is from no+1, no+2 ... no+5.



► 8-Data

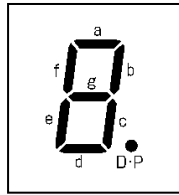
7-segment data: a, b, c, d, e, f, g, D · P

► 1-strobe

MOSAIC DISPLAY 50mm - LPD SERIES

DISPLAY

► 7-segment LED



► Error Display

Data a, b, c, d, e, f, g, will be display in 'E' by backward digit only, after 2-digit either 'E' or 'Blank', all digit data will be transmit.

► Blank Display

'Blank' will be display when each segment input is '0'

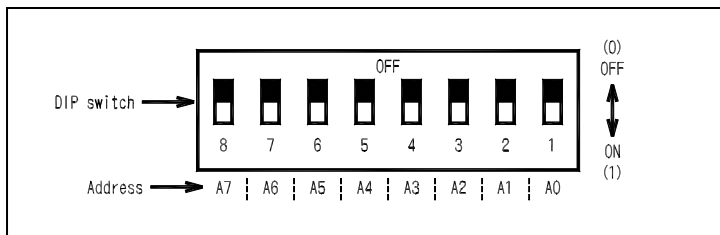
► Polarity

+ : '1' as data 'a'

- : '1' as data 'g'

ADDRESS ALLOCATION

Address setting by Dip switch



Dip Switch								Hexadecimal	
Backword digit				Significant digit				Significant digit	Backword digit
A7	A6	A5	A4	A3	A2	A1	A0		
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
1	1	1	1	1	1	1	0	F	E
1	1	1	1	1	1	1	1	F	F

* Set the min. digit address (00H~FFH) indicator by Dip switch.

* Address allocation indicator is number digit facts. (not display digit)

The address allocation is by each digit, the leading address is the number of indicator.

Indicator	No. 4				3				2			1					
	Content	... 3-digit				4-digit 3-digit usage				3-digit			Sign ±3-digit					
Address (00H~FFH)		0D	0C	0B		0A	09	08	07		06	05	04		03	02	01	00
Address allocation indicator		0BH				07H				04H			00H					

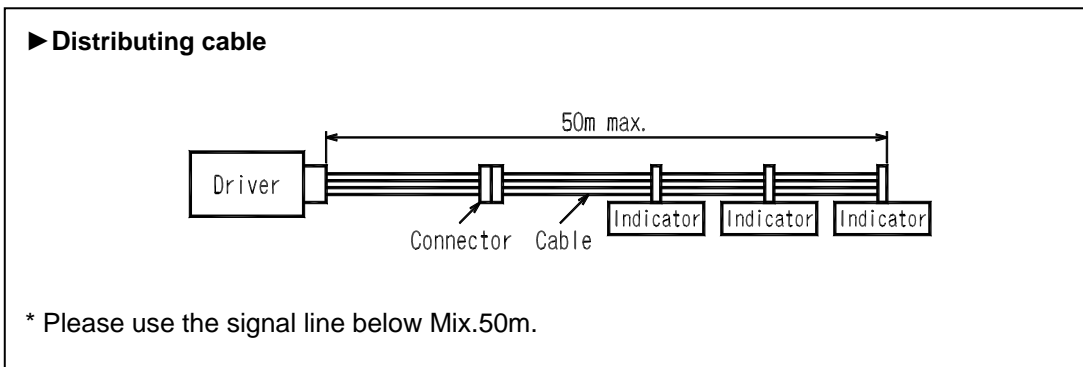
MOSAIC DISPLAY 50mm - LPD SERIES

ONE TOUCH WIRE CONNECTION

Ex.: <LPD05-15S>



Input	Signal	Wire Connection
BCD	BCD Signal (1~4-digit)	Connetor connection
	BCD signal (5~6-digit)	Connetor connection
	Latch signal	M4 screw terminal connection
	Lamp test signal	M4 screw terminal connection
	Aux. supply (DC24V)	M4 screw terminal connection
7-Segment	7-segment signal	Connetor connection
	Address signal	
	Strobe signal	
	Lamp test signal	M4 screw terminal connection
	Aux. supply (DC24V)	M4 screw terminal connection



MOSAIC DISPLAY 50mm - LPD SERIES

DIMENSION , PANEL CUT DIAGRAM , CONNECTING DIAGRAM

NO.	Dimension	Panel Cut Diagram	Connecting Diagram	
			7-segment Input	BCD Input
A-1				
A-2				
A-3				
A-1 A-2 A-3		-	-	-

MOSAIC DISPLAY 50mm - LPD SERIES

DIMENSION , PANEL CUT DIAGRAM , CONNECTING DIAGRAM

NO.	Dimension	Panel Cut Diagram	Connecting Diagram	
			7-segment Input	BCD Input
A-4				
A-5				
A-4 A-5		-	-	-

INSTALLATION FOR PANEL

▶ Install Disk Panel

* Please refer the panel cut size at dimension.

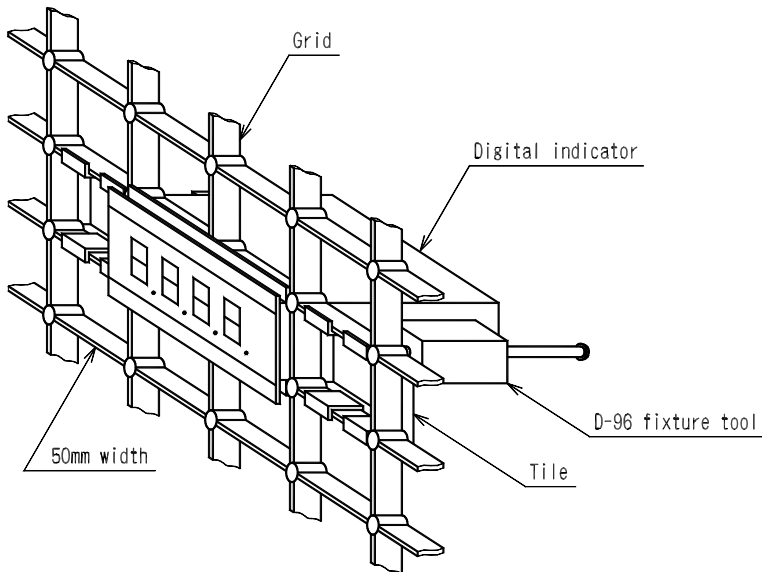
* Please lock the M3 counter sink from front of panel digital indicator.

* Please use double sided tape to stick up the filer from front.

MOSAIC DISPLAY 50mm - LPD SERIES

INSTALLATION FOR PANEL

► Install Mosaic Panel



* Installation for Mosaic Panel size is 25mm and 50mm are possible.

* Please use D-96 installation tool.

ITEM TO SPECIFY WHEN MAKE PURCHASE

- 1). Type Name
- 2). Aux. Power

Filter (Option)

For Disk Panel: 55mm width

For Mosaic Panel: 50mm width



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<http://www.daiichi-ele.co.jp>

Digital Measuring Instrument Catalog e-FB98-098a/-