

BD Miniature Digital Display Unit

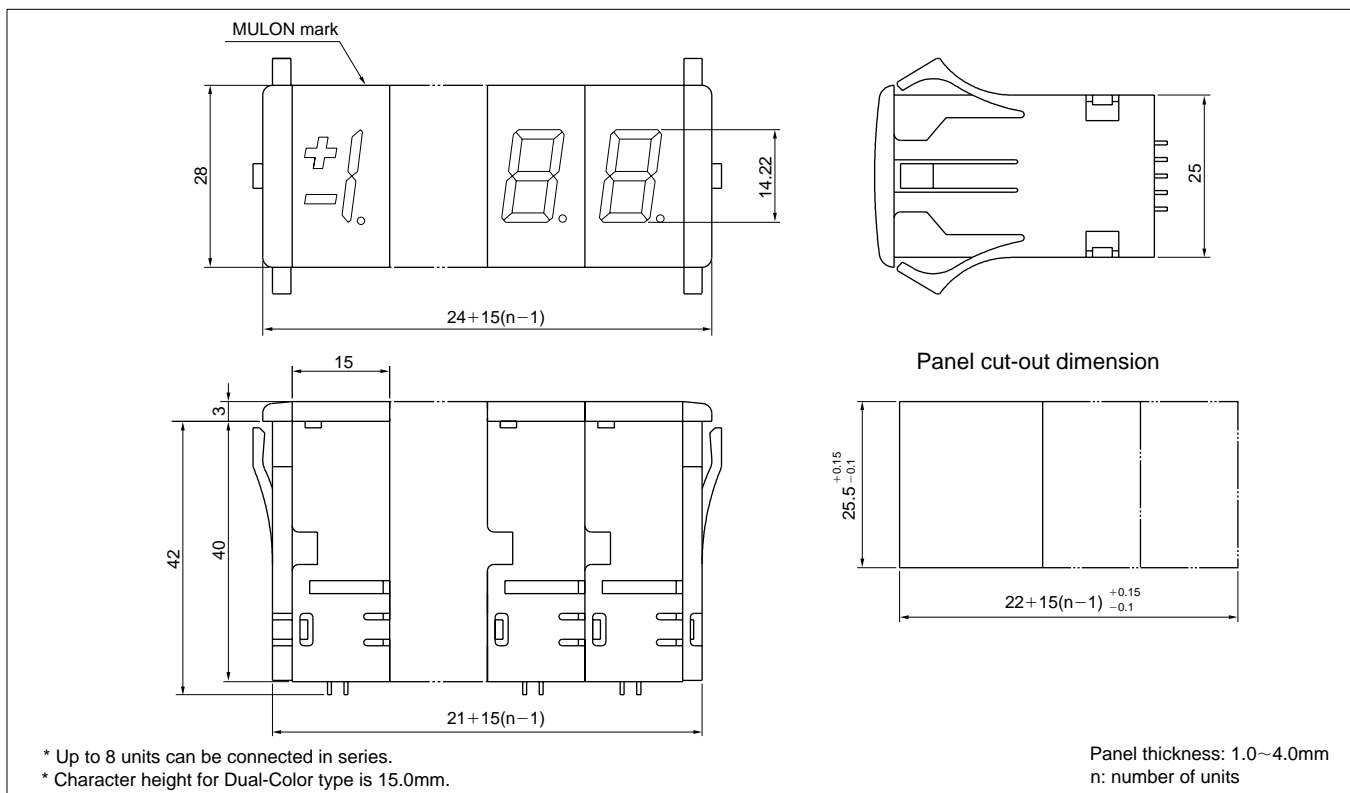
R shaped smart design 7-segment display unit includes Dual-Color Type.

FEATURES

- Compact size 7-segment display unit.
- Depth behind panel : 40mm
- Character height : 14mm
- Numerical unit can be easily displayed by BCD codes.
- R shaped smart design with smoked cover gives good appearance for the panel.
- Red, Green, Dual-Color(R/G) LED available.
- One-touch easy panel mounting with side plates.
- Terminal connection : IC pitch(2.54mm pitch) terminal for Connector.
- Display: 7-segment numerical unit, Symbol Unit, Character Unit.



DIMENSIONS / PANEL CUT-OUT



* Panel Cut Dimension should be after panel paintings.

Tolerance : ±0.4mm

SPECIFICATIONS

Numerical(with circuit) · Symbol Unit

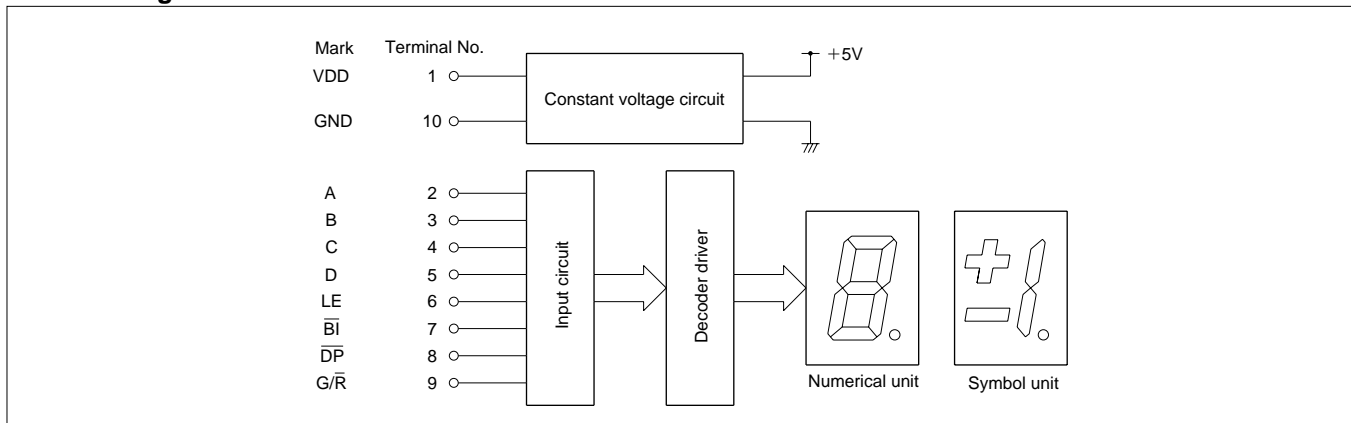
● Electrical Rating

Item	Type	BD- $\frac{8}{3}$ □□ 1	BD- $\frac{8}{3}$ □□ 2	BD- $\frac{8}{3}$ □□ 3
Supply voltage		DC5V \pm 5%	DC12V \pm 10%	DC24V \pm 10%
Current consumption		65mA MAX (1 unit)		
High level input voltage		3.5V~5V		
Low level input voltage		0V~1.5V		

● General Specification

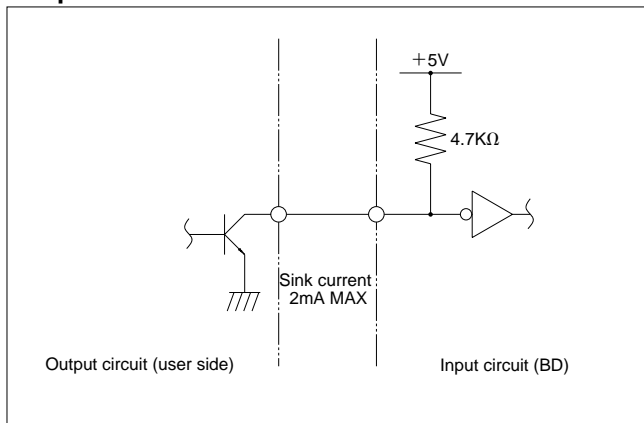
Display pattern	<ul style="list-style-type: none"> ● BCD Numerical unit 7-segment LED : 0~9, Decimal point ● Symbol unit \pm!, +, -, \pm, +!, -!, \pm!
Luminous element	Red, Green, Dual-Color(Red/Green)
Input logic(Data only)	Positive, Negative
Ambient Temperature	-15~50°C
Ambient Humidity	80%RH

● Block Diagram



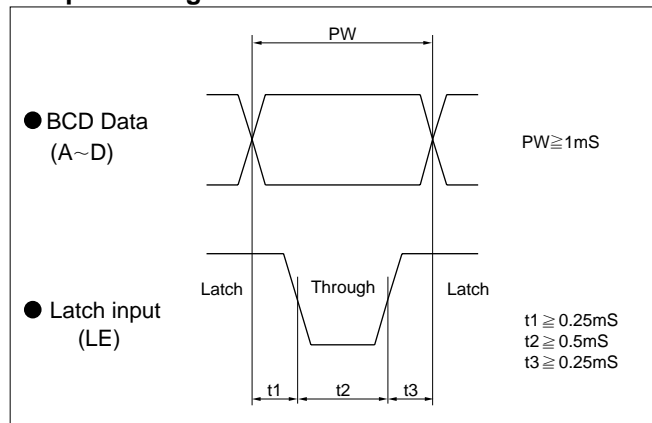
Note: 5V type has no Constant voltage circuit.

● Input circuit and connection



- Note
- 1) Since internal circuit is operated with +5V, user side output should be Open Collector Circuit, or less than +5V impression circuit.
 - 2) While power is not supplied in the unit, even low voltage not to be impressed on the input circuit.

● Input Timing



SPECIFICATIONS

● BCD Signals Truth Table

Input								Output	
G/R	DP	BI	LE	D	C	B	A	BCD	Symbol
X	H	H	L	L(H)	L(H)	L(H)	L(H)	0	+!
X	H	H	L	L(H)	L(H)	L(H)	H(L)	1	+
X	H	H	L	L(H)	L(H)	H(L)	L(H)	2	±!
X	H	H	L	L(H)	L(H)	H(L)	H(L)	3	±
X	H	H	L	L(H)	H(L)	L(H)	L(H)	4	±
X	H	H	L	L(H)	H(L)	L(H)	H(L)	5	-
X	H	H	L	L(H)	H(L)	H(L)	L(H)	6	-!
X	H	H	L	L(H)	H(L)	H(L)	H(L)	7	+
X	H	H	L	H(L)	L(H)	L(H)	L(H)	8	±!
X	H	H	L	H(L)	L(H)	L(H)	H(L)	9	±
X	H	H	L	H(L)	L(H)	H(L)	H(L)	Blank	Blank
X	H	H	L	H(L)	L(H)	H(L)	H(L)	Blank	Blank
X	H	H	L	H(L)	H(L)	L(H)	L(H)	Blank	Blank
X	H	H	L	H(L)	H(L)	L(H)	H(L)	Blank	Blank
X	H	H	L	H(L)	H(L)	H(L)	L(H)	Blank	Blank
X	H	H	L	H(L)	H(L)	H(L)	H(L)	Blank	Blank
X	L	X	X	X	X	X	X	.	.
X	X	L	X	X	X	X	X	Blank	Blank
X	X	X	H	X	X	X	X	Latch Data (A-D) before 'H'	
H	X	X	X	X	X	X	X	Green	—
L	X	X	X	X	X	X	X	Red	—

Note: 1) Either H, L is acceptable for X
 2) () = Negative Logic

Character Unit

● LED Rating

Rated voltage	Rated current (mA)		
	Full-Face	Split-Face	Dual-Color
5V	40	20×2	40×2
12V	20	20×2	20×2
24V	20	20×2	20×2

● Connecting Circuit

Type	Rated voltage	Connecting Circuit
Full-Face	5V	
	12V 24V	
Split-Face	5V 12V 24V	
	Dual-Color	5V
12V 24V		

Numerical Unit(without circuit)

● LED Rating

Absolute Maximum Rating

(Ta=25°C)

Item	Mark	Rating		Unit
		Red	Green	
DC forward current	IFDC/seg	20	20	mA
Pulse forward current *	IFP/seg	110	110	mA
DC reverse current	VR	6	6	V

*Duty ratio = 1/10 Pulse width = 1ms

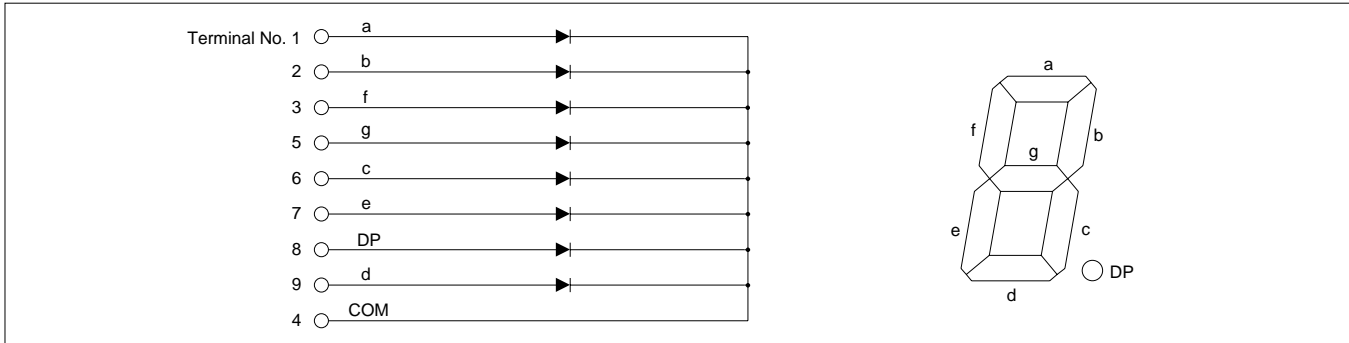
SPECIFICATIONS

Electrical/Optical Performance

(Ta=25°C)

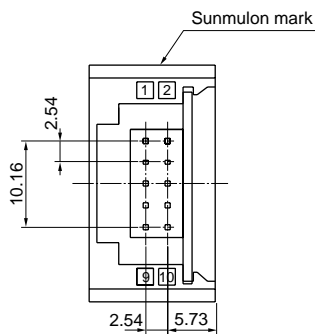
Item	Mark	Meas'ment Condition	Red	Green	Unit
Forward voltage	VF	IF=10mA	2.0	2.0	V
Reverse current	IR	VR=6V	Max. 5	Max. 5	μA
Luminous intensity/Segment	IV	IF=10mA	0.56	1.00	mcd
Peak radiation wavelength	λP	IF=10mA	700	565	nm
Spectral half-width	Δλ	IF=10mA	100	30	nm

● Connecting Circuit

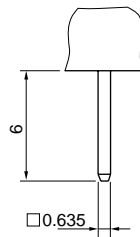


TERMINALS

● Terminals Arrangement



Terminals shape



● Connector Set (Type No. BD-0556)

OMRON XG4M-1030 XG4T-1004
(Socket) (Strain Relief)
XG5Z-1002
(Lock Lever)

* Connectors are not appended, please procure above connector set or prepare equivalent.

● Terminals Function Table

Terminal No.	Numerical · Symbol Unit			Character Unit		
	Mark	Description	Functions	Mono-Color	Dual-Color	Split-Face
1	VDD	⊕ Power supply	⊕ Power input	Anode(+)	Anode(+)	Anode(+)
2	A(2 ⁰)	Data	● Indicate figures and symbols according to data signal input. See truth table.	—	—	—
3	B(2 ¹)					
4	C(2 ²)					
5	D(2 ³)					
6	LE	Latch	● 'H' makes latching data. ● 'L' makes data 'through'.	Cathode(-)	Cathode(-) Green	Cathode(-) upper Side
7	$\bar{B}I$	Blanking	● 'L' makes display 'OFF' except Decimal Point.	—	—	—
8	$\bar{D}P$	Decimal point	● 'L' makes Decimal Point 'ON'.	—	Cathode(-)Red	Cathode(-)Lower Side
9	G/R	Color Select	● 'H' for Green, 'L' for Red. (Not use for Mono-Color type)	—	—	—
10	GND	Ground	⊖ Power input. Electrical potential norm of all signals.	—	—	—

Tolerance : ±0.4mm

ORDERING CODE

Numerical· Symbol Unit (with circuit)

BCD Numerical unit(B)



* Side plates to be ordered separately.

Symbol Unit(C)



BD — [] [] [] []

● DISPLAY

B	BCD Numerical unit
C	Symbol Unit

● INPUT LOGIC

1	Positive
2	Negative

● SUPPLY VOLTAGE

1	5V
2	12V
3	24V

● LED COLOR

R	Red
G	Green
RG	Dual-Color (Red/Green)

* Dual-Color type is available for B numerical unit only.

Character Unit



* Side plates to be ordered separately.

BD — D [] 1 2 [] A

● DISPLAY

D	Character Unit
---	----------------

● DISPLAY TYPE

0	Full-Face
2	Split-Face
3	Dual-Color

● LED COLOR

R	Red
G	Green

● LEGEND PLATE

A	Attached
---	----------

● SUPPLY VOLTAGE

1	5V
2	12V
3	24V

* In case of Split-Face, LED and color location should be specified as follow:

Sunmulon mark	
1	Upper
2	Lower

Full-Face : Put color no. into the frame 1
 Split-Face : Put color no. into the frame 1,2
 Dual-Color Put color no. RG into the frame 1, 2

NUMERICAL UNIT (WITHOUT CIRCUIT)



* Side plates to be ordered separately.

BD — E 1 []

● DISPLAY

E	Numerical Unit (W/O Circuit)
---	------------------------------

● Polarity

I	Cathode Common
---	----------------

● LED COLOR

R	Red
G	Green

● SIDE PLATES

* A pair of Side Plate (Right/Left) is necessary for mounting on panel.

BD-0206-K

*A pair of Side Plate (Right/Left) be supplied by ordering above part no.