

BD Miniature Digital Display Unit

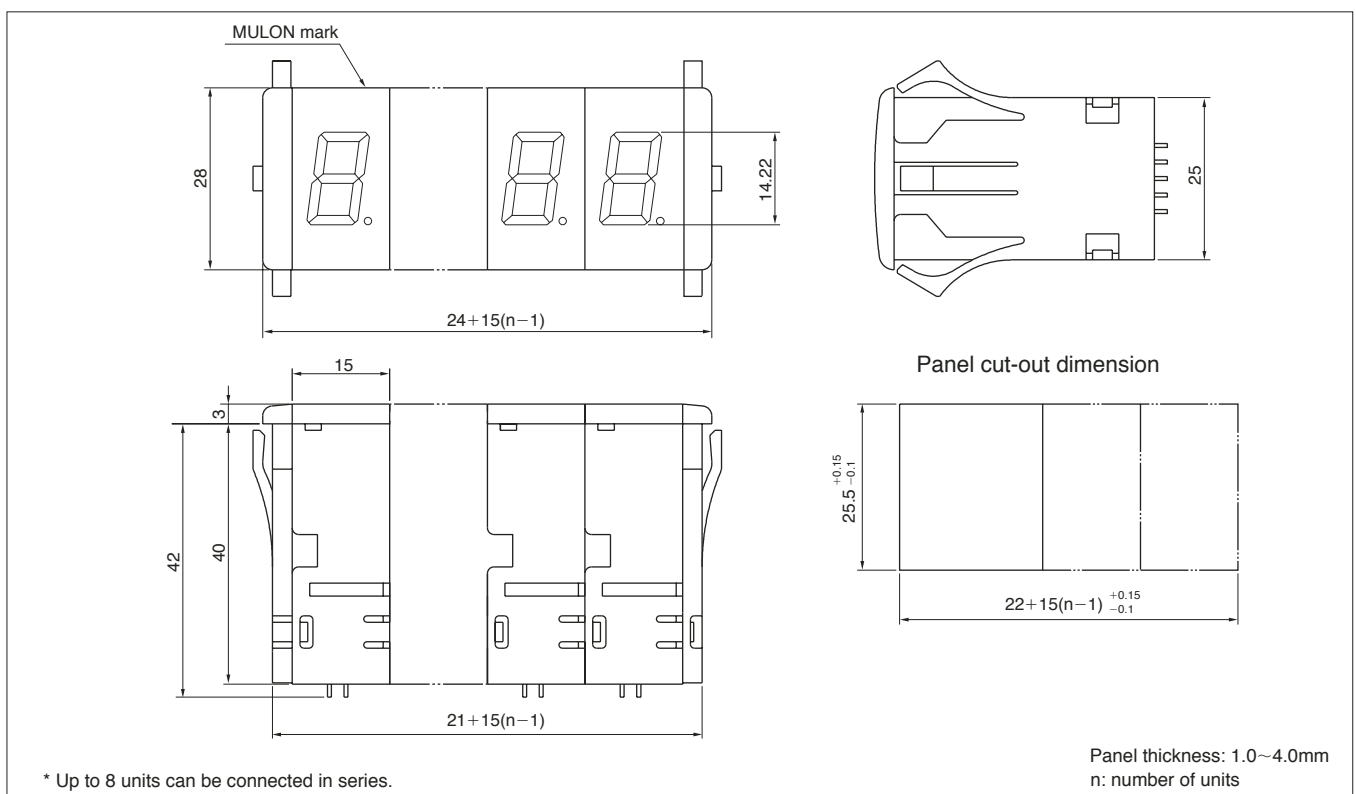
R shaped smart design 7-segment display unit.

■ 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.
- One-touch easy panel mounting with side plates.
- Terminal connection : IC pitch(2.54mm pitch) terminal for Connector.
- Display: 7-segment numerical unit, Character Unit.



DIMENSIONS / PANEL CUT-OUT



* Panel Cut Dimension should be after panel paintings.

Tolerance : $\pm 0.4\text{mm}$

SPECIFICATIONS

Numerical(with circuit) · Symbol Unit

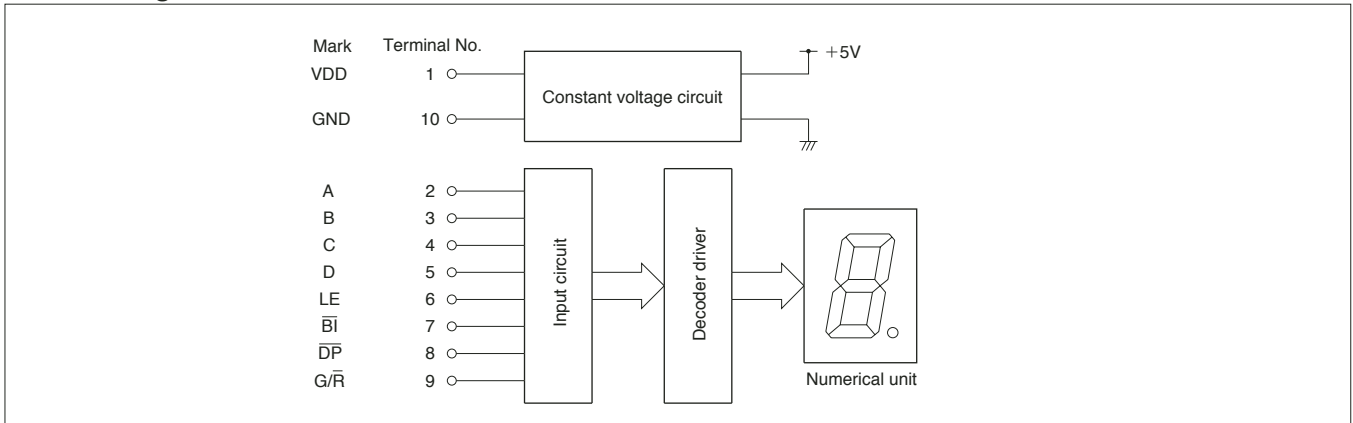
● Electrical Rating

Item	Type	BD-BN □□1	BD-BN □□2	BD-BN □□3
Supply voltage		DC5V±5%	DC12V±10%	DC24V±10%
Current consumption		65mA MAX (1 unit)		
High level input voltage		3.5V~5V		
Low level input voltage		0V~1.5V		

● General Specification

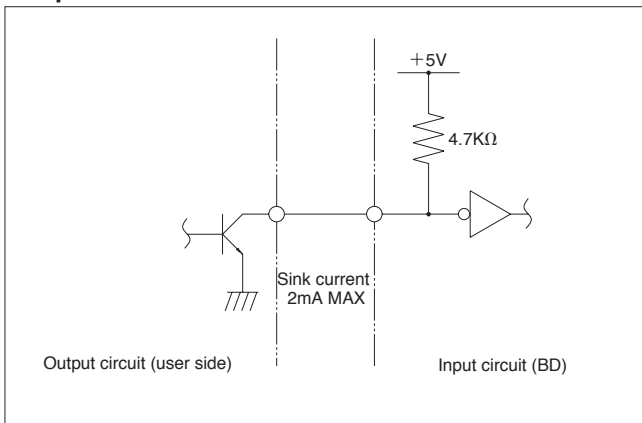
Display pattern	● BCD Numerical unit 7-segment LED : 0~9, Decimal point
Luminous element	Red, Green
Input logic(Data only)	Positive, Negative
Ambient Temperature	-15~50°C
Ambient Humidity	80%RH

● Block Diagram



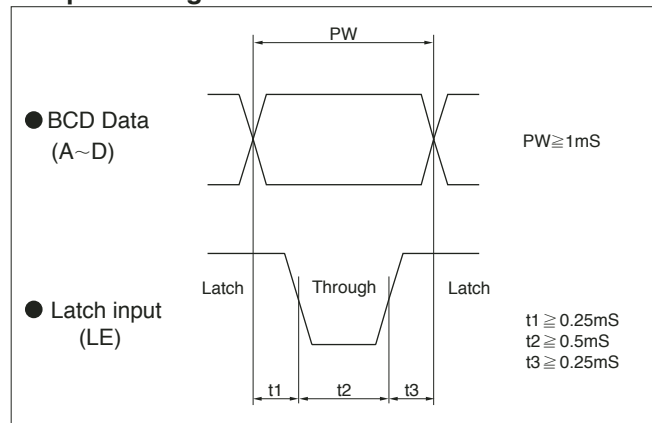
Note: 5V type has no Constant voltage circuit.

● 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
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)	L(H)	Blank
X	H	H	L	H(L)	L(H)	H(L)	H(L)	Blank
X	H	H	L	H(L)	H(L)	L(H)	L(H)	Blank
X	H	H	L	H(L)	H(L)	L(H)	H(L)	Blank
X	H	H	L	H(L)	H(L)	H(L)	L(H)	Blank
X	H	H	L	H(L)	H(L)	H(L)	H(L)	Blank
X	L	X	X	X	X	X	X	.
X	X	L	X	X	X	X	X	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

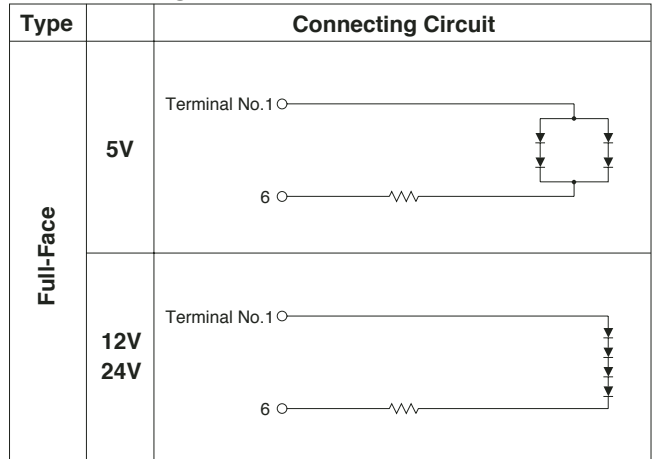
Note: 1) Either H, L is acceptable for X
 2) () = Negative Logic

Character Unit

● LED Rating

Rated voltage	Rated current (mA)
	Full-Face
5V	40
12V	20
24V	20

● Connecting Circuit



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

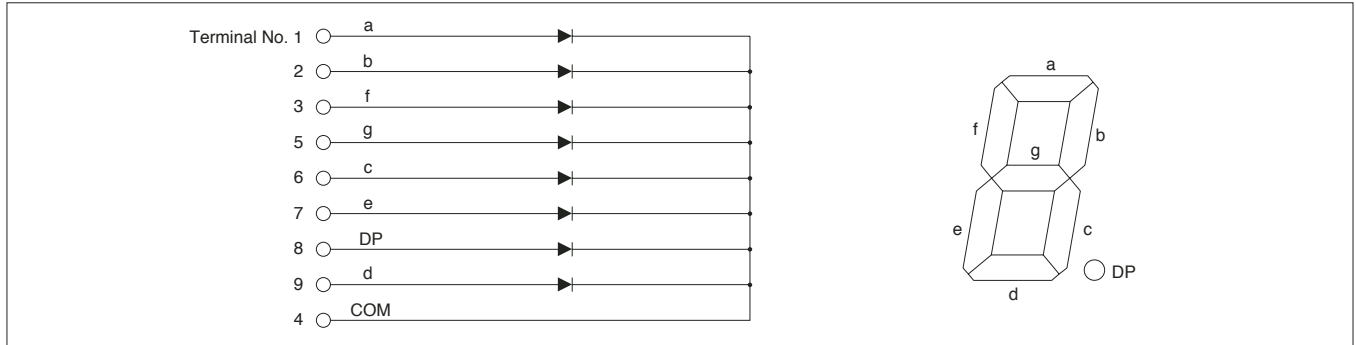
SPECIFICATIONS

Electrical/Optical Performance

(Ta=25°C)

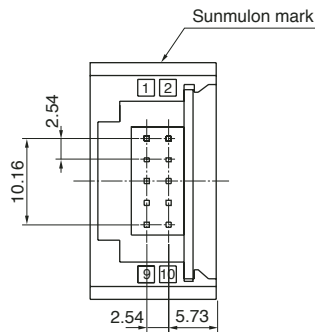
Item	Mark	Meas'ment Condition	Red	Green	Unit
Forward voltage	VF	IF=10mA	2.0	2.0	V
Reverse current	IR	VR=6V	Max. 5	Max. 5	μA
Luminous intensity/Segment	IV	IF=10mA	0.56	1.00	mcd
Peak radiation wavelength	λP	IF=10mA	700	565	nm
Spectral half-width	Δλ	IF=10mA	100	30	nm

● Connecting Circuit

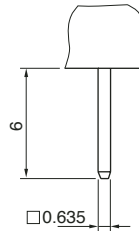


TERMINALS

● Terminals Arrangement



Terminals shape



● Applicable Connector (representative example)

OMRON XG4M-1030 XG4T-1004
(Socket) (Strain Relief)

* Connectors are not appended.

● Terminals Function Table

Terminal No.	Mark	Description	Numerical · Symbol Unit	Character Unit
			Functions	Mono-Color
1	VDD	⊕ Power supply	⊕ Power input	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(-)
7	$\overline{\text{BI}}$	Blanking	● 'L' makes display 'OFF' except Decimal Point.	—
8	$\overline{\text{DP}}$	Decimal point	● 'L' makes Decimal Point 'ON'.	—
9	—	—	—	—
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.

BD - [] [] [] []

● DISPLAY
BN BCD Numerical unit

● INPUT LOGIC
1 Positive
2 Negative

● SUPPLY VOLTAGE
1 5V
2 12V
3 24V

● LED COLOR
R Red
G Green

Character Unit



* Side plates to be ordered separately.

BD - D [] 1 2 [] A

● DISPLAY
D Character Unit

● DISPLAY TYPE
0 Full-Face

● LED COLOR
R Red
G Green

● LEGEND PLATE
A Attached

● SUPPLY VOLTAGE
1 5V
2 12V
3 24V

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.