

The EM32-4-LED is a 4 digit LED data display which is designed to be panel mounted in most low and medium volume applications. The display features 8mm digit height, 3 decimal points and a very low current consumption. This product is designed so no soldering is required. Connection is via 2 rows of square posts for the main functions and the optional external LEDs. The module features a round metal bezel, requiring a 32.5mm (1.28") diameter cut-out. It is secured with the nut provided. Protection from the front to IP 67 / NEMA 4X standards is achieved by placing the rubber seal between the module and panel during assembly.

## FEATURES

- 8mm (0.31") Digit Height
- 20mA @ 5Vd.c. Operation
- Programmable Decimal Points
- Drives up to 4 External LEDs
- Connection via 2 Rows of Posts
- Round Metal Bezel
- Requires 32.5mm (1.28") Diameter Cut-out
- IP67 / NEMA 4X Protected

## TYPICAL APPLICATIONS

- Panel Mount Instrumentation
- Process & Control
- Automotive



Consult the Lascar website for the latest **FREE** software components and application ideas. Alternatively, ask Lascar to write your software or program your modules with your code.  
[www.lascarelectronics.com](http://www.lascarelectronics.com) or  
[www.mdm1.info](http://www.mdm1.info)

## ORDERING INFORMATION

Standard Display

Stock Number  
**EM32-4-LED**

## ELECTRICAL SPECIFICATIONS

Specification	Min.	Typ.	Max.	Unit
Supply voltage	4	5	9	V d.c.
Supply current		20*		mA
Operating temperature range	-10		60	°C
Storage temperature range	-10		60	°C
V <sub>LED</sub>		3		V d.c.
Clock input frequency		500		kHz

Unless otherwise noted, specifications apply at  $T_A = 25^\circ\text{C}$ ,  $V_{\text{supply}} = 5\text{Vd.c.}$   
 Supply current depends on supply voltage, brightness setting and number of LEDs illuminated.

## SAFETY

To comply with the Low Voltage Directive (LVD 93/68/EEC), input voltages to the module's pins must not exceed 60Vdc. The user must ensure that the incorporation of the panel meter into the user's equipment conforms to the relevant sections of BS EN 61010 (Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use).

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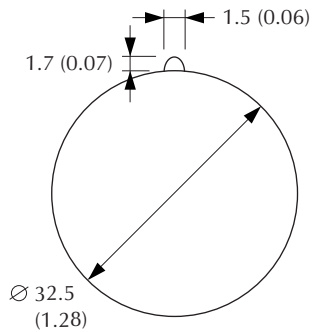
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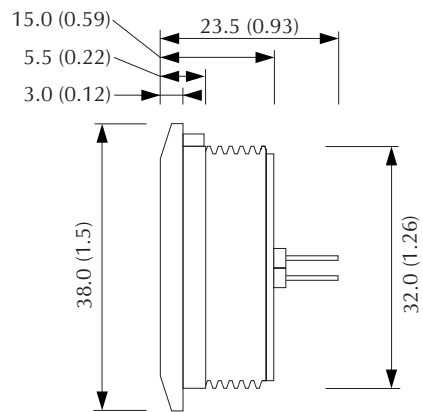
Specifications liable to change without prior warning EM32-4-LED Issue 4 October/2009 S.C. Applies to EM32-4-LED/1

## DIMENSIONS

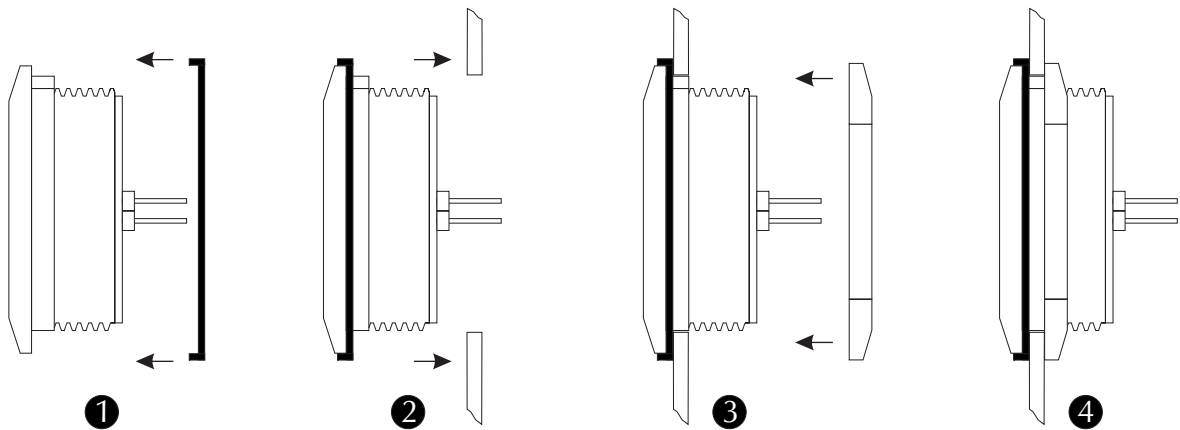
All dimensions in mm (inches)



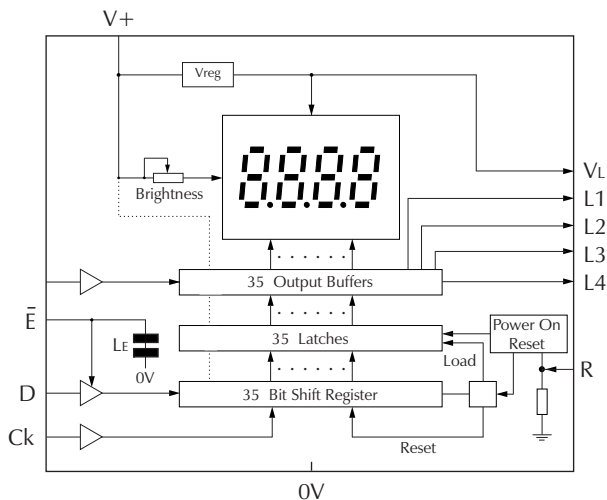
Panel cut-out



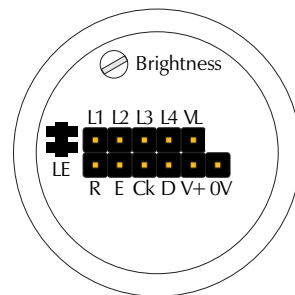
## PANEL MOUNTING



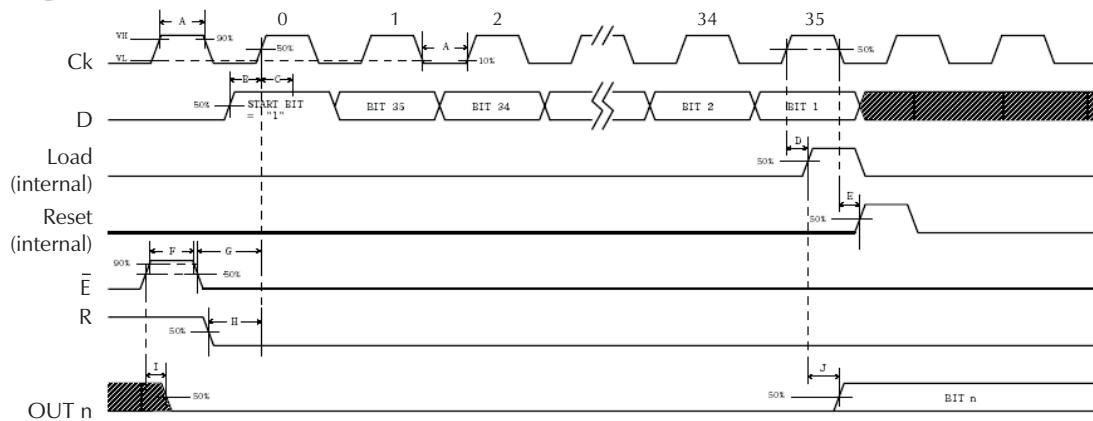
## FUNCTIONAL BLOCK DIAGRAM



## CONNECTIONS (rear view)



## TIMING

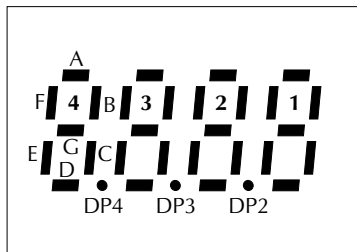


\* THE INTERNAL RESET ONLY CLEARS ALL INTERNAL SHIFT REGISTERS.

\*\* THE EXTERNAL RESET CLEARS ALL INTERNAL SHIFT REGISTERS AND LATCHES.

ITEM	DESCRIPTION	MIN	TYP	MAX	UNIT
A	Clock pulse width	250	—	—	nS
B	Serial data setup time	30	—	—	nS
C	Serial data hold time	30	—	—	nS
D	Time between clock activation & internal load pulse activation	35	—	—	nS
E	Time between clock falling & internal reset pulse activation	35	—	—	nS
F	External reset pulse duration	25	—	—	nS
G	External reset inactive setup time	120	—	—	nS
H	Data enable setup time	70	—	—	nS
I	Time between external reset activation & the output off	25	—	—	nS
J	Time between internal load activation & new output states arising	30	—	—	nS

## SERIAL DATA INPUT SEQUENCE



Data is clocked into latches in reverse order, starting with bit 35 (see timing diagram above)

Bit	Segment	Bit	Segment
1	A4	18	B2
2	B4	19	C2
3	C4	20	D2
4	D4	21	E2
5	E4	22	F2
6	F4	23	G2
7	G4	24	DP2
8	DP4	25	A1
9	A3	26	B1
10	B3	27	C1
11	C3	28	D1
12	D3	29	E1
13	E3	30	F1
14	F3	31	G1
15	G3	32	L3
16	DP3	33	L1
17	A2	34	L2
		35	L4

