LED GPIO Board

Kamal & Co

Low Cost & Industrial Grade Cabinets

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Description

LED GPIO board allows connecting of up to 5 potential free contacts to the Board with each GPIO mapped to a predefined Message. An IDLE message can also be set to display when no GPIOs are active.

An ASCII protocol over Serial is used to set up the Messages . The protocol can control the Text, Font , Effect , Speed etc for each message.

There are also effects for displaying text that is larger than the LED Board.

Product Features

- Up to 5 GPIOs can be used for displaying 5 Messages, with one IDLE message when no GPIO is active.
- Protocol - Simple ASCII with Start and End Character With CRC for error detection.
- Board can be configured via RS-232 or RS-485.
- Four Built in Fonts
- Ten Effects
- Speed and Stay time can be defined for messages
- IDLE time can be set which will allow the default message to be displayed after a predefined time.
- 5 contacts on LED board cabinet
- Active Trigger of any one GPIO to display respective message
- Active Triggering of more than one GPIO will page scroll one message after another
- Active Trigger can be Pulse,Latch etc
- Best suited for triggering alarms, ANDON, Line status, BMS, Fire alarm, EB/DG changeover etc

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Notes and Options.

- All display are in Single colour.
- The Default supply is always in RED colour.
- Other colours on request at extra cost.
- RED colour Brightness is good for viewing both indoors and outdoors.
- For outdoor units – cost increases by 18% on base price.
- Titles and other fixed designs can be added to your specification.
- Mounting provision
  - #1 – Top eye bolts – you can hang it from ceiling.
  - # 2 – Side clamps – you can bolt it to your supports.

Sizes and Models

Model	Digit Height (mm)	No. Of Characters/ Digits per screen		Height (mm)	Width (mm)	Depth (mm)	Max Power (W)
		140mm high	70mm high				
ECON-IC-GPIO-11	One line of 140mm OR Two lines of 70mm	4	10	160	320	50	35
ECON-IC-GPIO-12		8	20	160	640	50	65
ECON-IC-GPIO-13		12	30	160	960	50	95
ECON-IC-GPIO-14		16	40	160	1280	50	125

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Technical Specifications	
VOLTAGE	230 VAC 1 PHASE MAIN POWER
OPERATING TEMP	5 TO 55'C
STORAGE TEMP	0 TO 65'C
RELATIVE HUMIDITY	UPTO 95% RH NON CONDENSING
DISPLAY	FULL MATRIX
LED COLOUR	RED
CHARACTERS TABLE	ASCII CHAR. (CODE 30H TO 5 FH)
PROTOCOL	ASCII PROTOCOL
INTERFACE BY	RS232/RS485 COMMUNICATION
DATA TRANSFER RATE	9600 BAUD (8,n,1)
DATA TYPE	CHARACTER,INTEGER AND FLOAT
ACCESSORIES	POWER CABLE 1 METER

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Electrical Connections.

Connect the potential free GPIO Inputs at respective terminals provided in the cabinet side. Maximum 5 GPIO inputs can be connected.

Connect the common terminal with Ground.

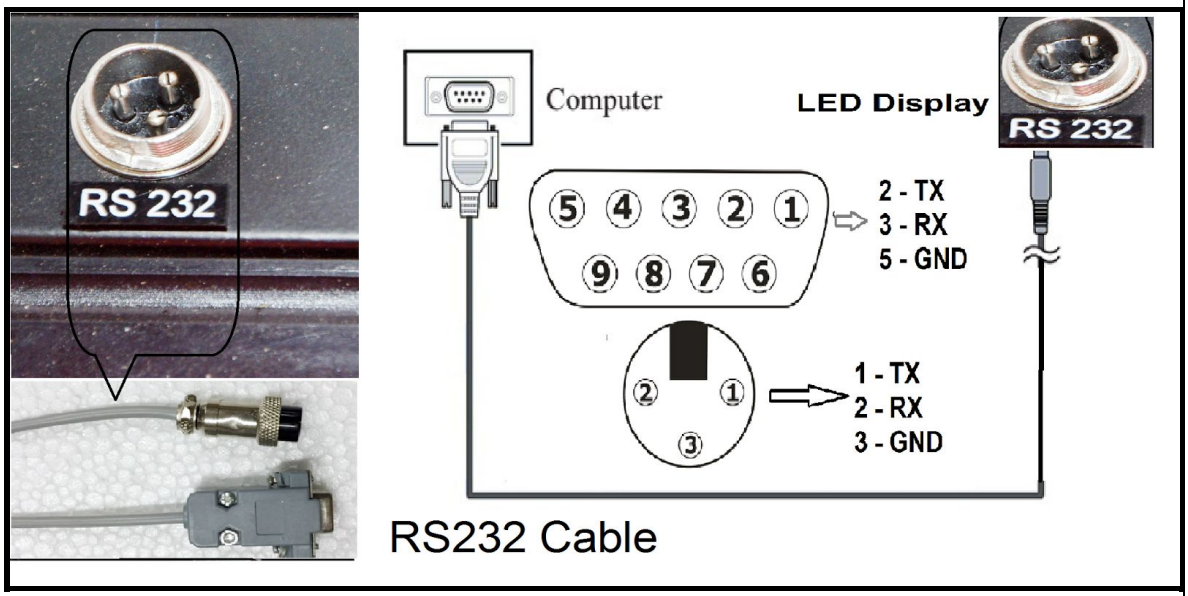
No electrical pulses should be applied at these terminals.

Power up the unit.

Now the display is ready to accept the GPIO inputs.If any GPIO inputs triggered respective message will be displayed in the led display.

Triggering more than one GPIO will page scroll one message after another.An IDLE message will be displayed when no GPIOs are active.

Different messages to respective GPIO can be set as Simple ASCII Command via RS232 or RS485 .



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Configuration Protocol.

1) All modules have built-in communication ports. Connect PC with Module through RS232/RS485 communication port.

2)In RS232 communication Connect the Module to serial port of PC through end to end DB9 connector cable.

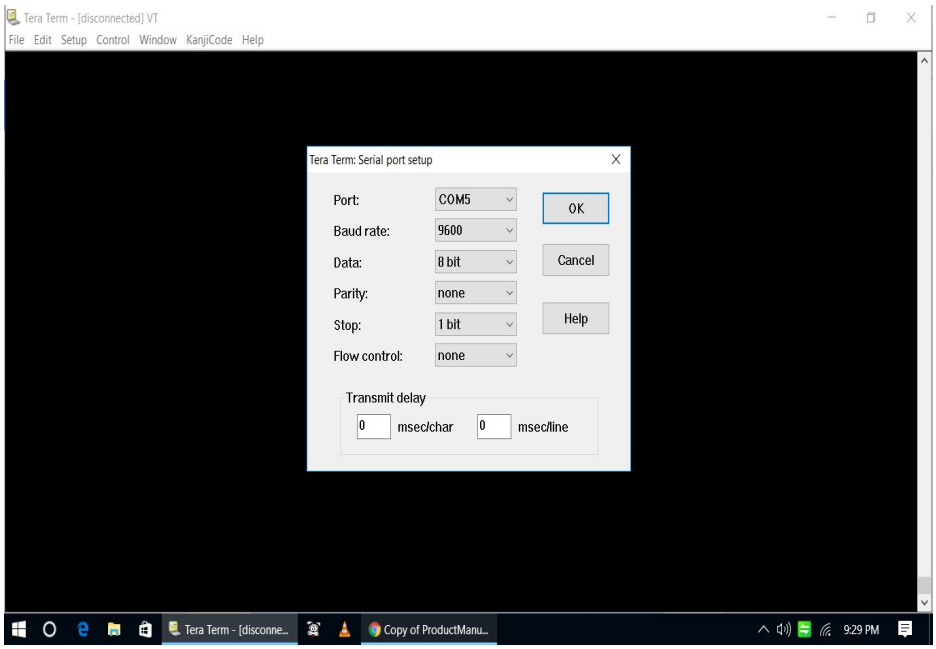
3)In order to connect in RS485 communication use an appropriate RS232 to RS485 or USB to RS485 adapter on PC side.

4) Use 2 core twisted pair cable with shield for better performance or Communication Cable CAT5 or CAT6 with shield and Ground one End of shield

5)Use the terminal programs like Hyperterminal,TeraTerm,RealTerm or Putty software to send the ASCII protocol setting to the board via RS232/RS485 communication.

In the terminal program set 9600,8,n,1 setting for RS232/RS485

Set your communication port no
Set Baud rate as 9600 Baud
Set Data as 8 Bit
Set Parity as none
Set Stop bit as 1 Bit



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Packet Format

Start of Packet SOP => [
End Of Packet EOP =>]

[ID Command Data CRC]

ID (2 chars) is the ID of the board default is 01
Command (1 char) is the command character which defines the function.
Data (n chars) is the data associated with the command.
CRC (2 chars) is the CRC for the data packet. To ignore CRC provide XX.

Command	Description	Example
Set Device ID	This command sets the device ID when multiple devices are connected. Default device will be 01.	**[ID ZD DD CRC]** DD-01234567890123456789 Ex: **[01ZD02XX]**
Set Brightness	This command is used to set the brightness of the led display.Where Brightness can be from 0-9.	**[ID ZH N CRC]** Ex: To set minimum brightness **[01ZH1XX]**
Set TEXT to GPIO	This command set message to respective GPIO and it will be displayed when that respective GPIO is triggered.When No GPIOS are triggered then IDLE Message is displayed.	**[ID GPIO(1-6) Font(1-9) Effect(A-Z) Speed(00-FF) Stay(00-FF) Align(0-F) ttttttttttt CRC]** Ex: **[0113A0F1F8Gbox Message1XX]** **[0123A0F1F8Gbox Message2XX]** **[0133A0F1F8Gbox Message3XX]** **[0143A0F1F8Gbox Message4XX]** **[0153A0F1F8Gbox Message5XX]** **[0163A0F1F8Gbox Message6XX]**
Set IDLE message	This command set IDLE message to display When No GPIOS are triggered	**[ID U Font(1-9) Effect(A-Z) Speed(00-FF) Stay(00-FF) Align(0-F) ttttttttttt CRC]** Ex: **[01U3A0F1F8Gbox Idle MessageXX]**

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Effect	ASCII Value	Example Command
SCROLL_ANIM_STAY	A	[0123A0F1F8Message2XX]
SCROLL_ANIM_SCROLL_LEFT	B	[0123B0F1F8Message2XX]
SCROLL_ANIM_SCROLL_CONT_LEFT	C	[0123C0F1F8Message2XX]
SCROLL_ANIM_SCROLL_BLINK_LEFT	D	[0123D0F1F8Message2XX]
SCROLL_ANIM_BLINK	E	[0123E0F1F8Message2XX]
SCROLL_ANIM_BOT2TOP	F	[0123F0F1F8Message2XX]
SCROLL_ANIM_CONT_BOT2TOP	G	[0123G0F1F8Message2XX]
SCROLL_ANIM_BLINK_BOT2TOP	H	[0123H0F1F8Message2XX]
SCROLL_ANIM_WIPE_TOP2BOT	I	[0123I0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_TOP2BOT	J	[0123J0F1F8Message2XX]
SCROLL_ANIM_WIPE_BOT2TOP	K	[0133K0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_BOT2TOP	L	[0123L0F1F8Message2XX]
SCROLL_ANIM_WIPE_L2R	M	[0123M0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_L2R	N	[0123N0F1F8Message2XX]
SCROLL_ANIM_WIPE_R2L	O	[0123O0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_R2L	P	[0123P0F1F8Message2XX]
SCROLL_ANIM_WIPE_TOP2BOT_ FULL	Q	[0123Q0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_TOP2BOT_FULL	R	[0123R0F1F8Message2XX]
SCROLL_ANIM_WIPE_BOT2TOP_FULL	S	[0123S0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_BOT2TOP_FULL	T	[0123T0F1F8Message2XX]
SCROLL_ANIM_WIPE_L2R_FULL	U	[0123U0F1F8Message2XX]
SCROLL_ANIM_WIPE_BLINK_L2R_FULL	V	[0123V0F1F8Message2XX]
SCROLL_ANIM_WIPE_R2L_FULL	W	[0123W0F1F8Message2XX]

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SCROLL_ANIM_WIPE_BLINK_R2L_FULL	X	[0123X0F1F8Message2XX]
SCROLL_FIXED_MESSAGE	Y	[0123Y0F1F8Message2XX]
SCROLL_FIXED_BLINK	Z	[0123Z0F1F8Message2XX]

SCROLL_FIXED_MESSAGE and SCROLL_FIXED_BLINK are special since they display text messages directly without textwrapping etc. Special Characters in the string can be used to position text.

Char = 0x0A => Will move the text cursor to the next line ex "Line1""\x0A""Line2"
Char = 0x0D => Will move the text cursor to the X start.(Will make X=0).
Char = 0x0E => Will move the text cursor to the Y start.(Will make Y=0).

Char = 0x0C => Will Switch the font between 16 and 5x7

Char = 0x0B => Will move the text cursor to the starting of the current module.

Char = 0x01 - 0x07 => Will move the text cursor by 1 - 7 pixels So if you want two pixel gap between Two words then you can specify "Test1""0x02""Text2".

Char = 0x08 '\t' => Will move the text cursor to the starting of the next module.

Font	ASCII Value	Example Command
FONT_GBOX_5X7 (included)	1	[0121A0F1F8Gbox Message2XX]
FONT_GBOX_8	2	[0132A0F1F8Gbox Message3XX]
FONT_GBOX_16(included)	3	[0123A0F1F8Gbox Message2XX]
FONT_GBOX_16_WIDE	4	[0134A0F1F8Gbox Message3XX]
FONT_GBOX_24	5	[0145A0F1F8Gbox Message4XX]
FONT_GBOX_16_LARGE_NUM	6	[0156A0F1F8Gbox Message5XX]
FONT_GBOX_28	7	[0167A0F1F8Gbox Message6XX]
FONT_GBOX_32	8	[0128A0F1F8Gbox Message2XX]
FONT_GBOX_32N	9	[0139A0F1F8Gbox Message3XX]

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Alignment	ASCII Value	Example Command
No Alignment (Default)	0	[0121A0F0F0Gbox Message2XX
Top Left	1	[0121A0F0F1Gbox Message2XX
Center Left	2	[0121A0F0F2Gbox Message2XX
Bottom Left	3	[0121A0F0F3Gbox Message2XX
Top Center	8	[0121A0F0F8Gbox Message2XX
Center Center	A	[0121A0F0FAGbox Message2XX
Bottom Center	B	[0121A0F0FBGbox Message2XX
Top Right	C	[0121A0F0FCGbox Message2XX
Center Right	E	[0121A0F0FEGbox Message2XX
Bottom Right	F	[0121A0F0FFGbox Message2XX

Speed	00-FF	**Ex:For Min speed** [0121A001F8Gbox Message2XX] **Ex:For Max speed** [0121AFF1F8Gbox Message2XX
Stay Time	00-FF	**Ex:For Min stay time** [0121A00008Gbox Message2XX] **Ex:For Max stay time** [0121AFFFF8Gbox Message2XX

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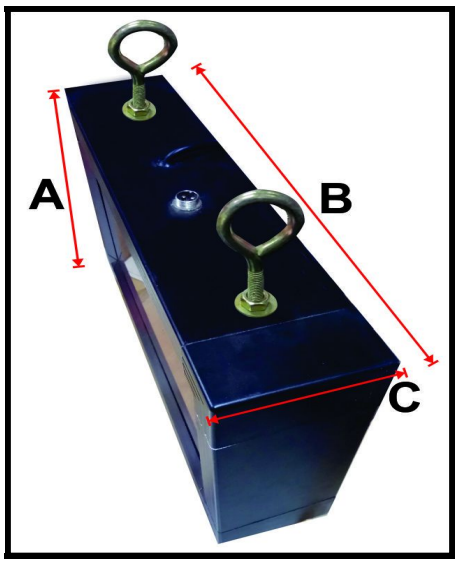
Dimensions



All Units in mm

Model No	A	B	C
ECON-IC-GPIO-11	250	410	93
ECON-IC-GPIO-12	250	730	93
ECON-IC-GPIO-13	250	1050	93
ECON-IC-GPIO-14	250	1370	93

Heavy Duty Cabinet

- The Heavy Duty Cabinets make the LED board more durable and robust.
- The cabinets are made from extruded aluminium profiles and moulded corners for better appearance.
- The front filter used is Perspex / LEXAN ® sheets for UV and robust.
- The hanging hooks are also heavy and suited for mounting from your support structure.

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Important Notice