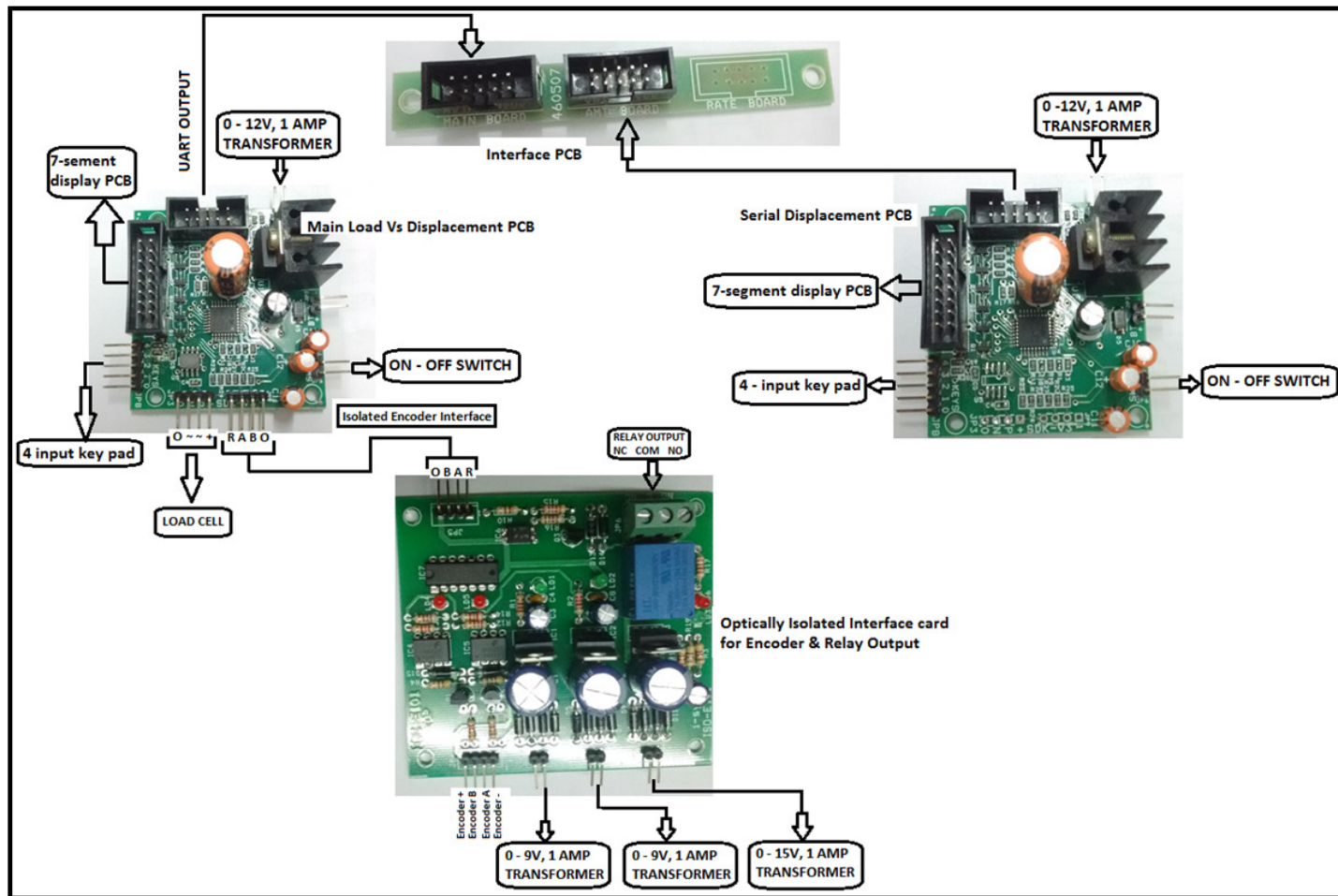


Peak Load & Displacement Indicator PCB for universal Testing Machines



Block Schematic Diagram for Peak Load & Displacement Indicator

Calibration of Main Load Vs Displacement Board

To configure the machine, connect the power supply. Now press TARE key(K4) and with the TARE key(K4) pressed power on the Machine (switch connected to the Main Load Vs Displacement PCB).

It shows

P	0	0	0	0	0.
---	---	---	---	---	----

Now use the INCREMENT key(K2) & SHIFT key(K3) to enter the Password given to you & then press the ENTER key(K1). If your Password is wrong it will display "Sorry".

If you have entered the right Password it shows

P	A	R	A		
---	---	---	---	--	--

Now press ENTER key(K1) to go to parameters (PARA) settings

Or press Increment (INC) key(K2) to change to (LCAL)

calibration settings.

To configure PARA press enter key when it displays "PARA".

L	0	0	0	0	0.
---	---	---	---	---	----

To set maximum Capacity use INC key(K2) and SHIFT key(K3).

Ex: for 30kgs

L	0	0	0	3	0.
---	---	---	---	---	----

Enter the maximum Load & then Press ENTER key(K1).

The next setting is the ADC Filter setting.

Digital Filter options:

F	I	L			0.
---	---	---	--	--	----

Now you can select the filter options "FIL". Use default "0" for fast response. Higher values of filter can be used for low data output rates.

Now we have completed configuring all the setting in the "PARA" menu.

Once all the settings in PARA menu is completed it will again return back to the main menu "PARA".

When PARA appears as below you are ready to calibrate the machine.

P	A	R	A		
---	---	---	---	--	--

To enter into calibration mode press INC key(K2).

L	C	A	L		
---	---	---	---	--	--

It will appear as shown. This means Load Calibration.

Now press Enter key(K1).

Next "rAnGEx" will appear. This selection decides the decimal point position.

RANGE 0-4 (range selection)

Displayed output

R	A	N	G	E	0.
R	A	N	G	E	1.
R	A	N	G	E	2.
R	A	N	G	E	3.
R	A	N	G	E	4.

-	0.	0	0	0	0
-	0	0.	0	0	0
-	0	0	0.	0	0
-	0	0	0	0.	0
-	0	0	0	0	0

Use the INC key(K2) to change the range value.

Select and press ENTER key(K1).

Next it shows **No-Load count** value.

	X	X	X	X	X
--	---	---	---	---	---

Now press the Enter key(K1) to accept the **No-load count value**.

Next it will display "**LOAD**" briefly as below.

L	O	A	D		
---	---	---	---	--	--

And then it will again display the No-load count value.

Now you need to apply a **known-load** (Standard calibration Load) on the load-cell.

It will now show the **known-load count value**.

	Y	Y	Y	Y	Y
--	---	---	---	---	---

Press the Enter key(K1) to accept the known-load count value.

The display will now display the span value (known-load count value – no-load count value) for a brief period & then it will display as below...

	0	0.	0	0	0
--	---	----	---	---	---

The decimal point position will depend on your range value selected earlier.

Using the INC key(K2) & SHIFT key(K3) enter the known-Load (Calibrating Load) you had applied on the load-cell just now to calibrate. Example...

	0	2.	0	0	0
--	---	----	---	---	---

Enter the value for the known load and press ENTER key(K1).

It will now show "CAL" again. Now your Load calibration procedure is completed.

Next Use the INC key(K2).

It will display as shown below...

d	C	A	L		
---	---	---	---	--	--

This means Displacement calibration.

Press ENTER key(K1).

Next it shows **initial travel count** value.

	X	X	X	X	X
--	---	---	---	---	---

Now press the Enter key(K1) to accept the **Initial Travel count value**.

Next it will display "**dist**" briefly as below.

d	i	S	t		
---	---	---	---	--	--

And then it will again display the Initial travel count value.

Now you need to run the UTM motor for some known displacement or travel value (Standard travel distance in millimeters).

It will now show the encoder counts for the **known Travel displacement count value**.

	Y	Y	Y	Y	Y
--	---	---	---	---	---

Press the Enter key(K1) to accept the known-load count value.

The display will now display the span value (known-travel displacement count value – initial travel count value) for a brief period & then it will display as below...

	0	0	0.	0	0
--	---	---	----	---	---

The default decimal point position will "0.00" and can't be changed.

Using the INC key(K2) & SHIFT key(K3) enter the known-length (Calibrating travel distance)you had traversed by running the UTM motor. Example...

	0	2	0.	0	0
--	---	---	----	---	---

Enter the value for the known distance and press ENTER key(K1).

It will again display "dCAL".

Now please switch OFF the power to the PCB & then switch it ON.

Your machine is calibrated & ready to use.

In the measuring mode, pressing the INC key(K2) will start the measurement cycle by switching on the relay. The relay can be connected to run the UTM motor. Simultaneous reading of Load & Displacement can be monitored & can also be recorded via RS232 interface. The system will switch off the relay once the material under test breaks. The system also captures the Peak-Load & Peak- Displacement value for the material which was subjected to test in the UTM.

Pressing the ENTER key(K1) will cause the program to exit from the peak display indication mode.

Pressing the TARE key(K4) & SHIFT key(K3) simultaneously will display the last test result of Peak values measured.

This board can be interfaced for serial communication with PC. PC software is also available for real time plotting & printing of graphs.

For more information regarding calibration & settings please call the manufacturer.

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