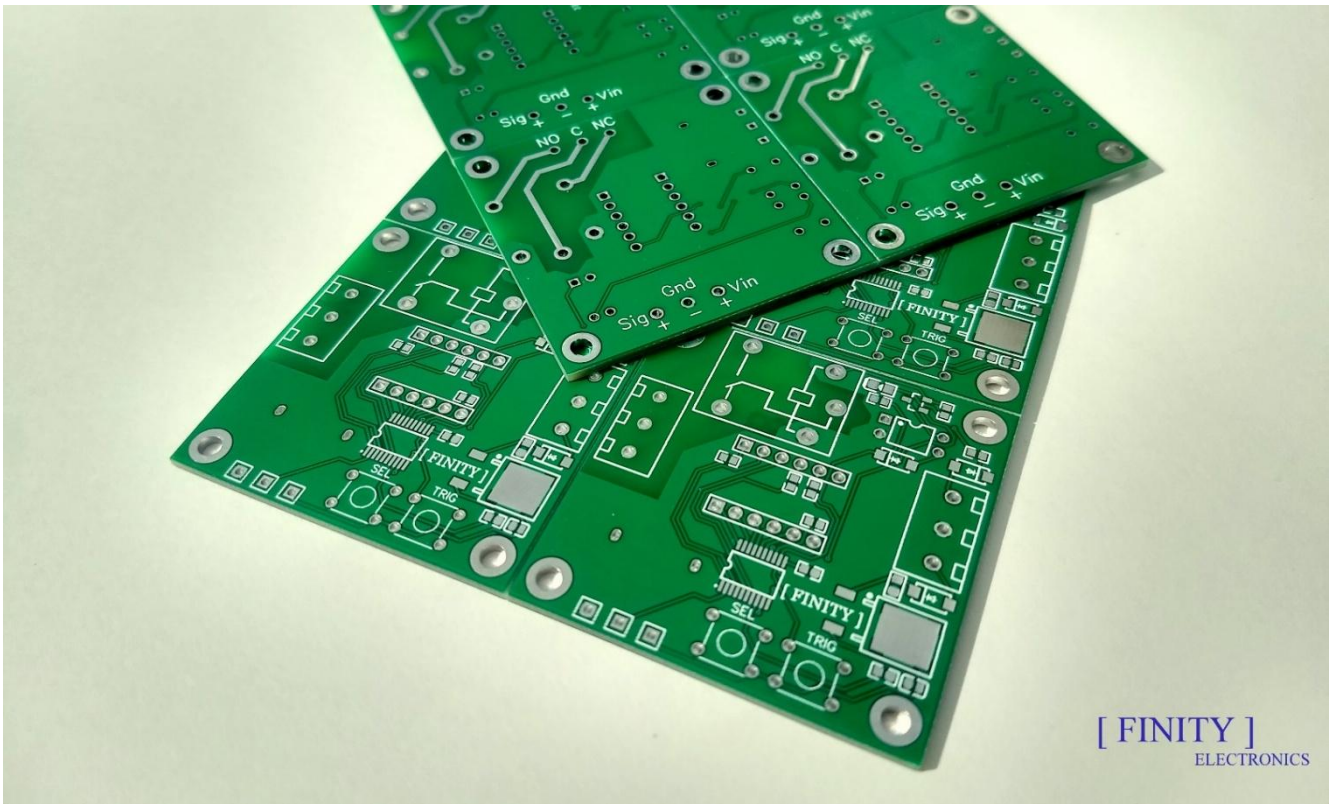


About Us:

Finity Electronics was founded in 2019 with aim of designing and developing industrial grade electronic products for electric panel control and timer-based automation systems. Apart from designing, we also aim at giving technical solutions to our customers and develop products as per their needs. We have fresh minds for designing our products which are proudly **Made in India**.

Our Fields of Technicality:

Currently, we cater following:

- Empowering system control with microcontroller or microprocessor functionality.
- PCB designing as per product requirements.
- Embedding digital display for the systems requiring voltage, current, temperature, time and count displays.
- Measurement instruments for electric panel including voltmeter, ammeter both AC & DC.
- Designing outer case or shell required for enclosing the product.

Our Products:

- **TAP POSITION INDICATOR : FE-2201**

TPI's (Tap position indicator) purpose is to read, indicate, count and transmit the present tap which transformer is working on. From OLTC three output terminals are extended up to TPI named as Max, Com and Min.

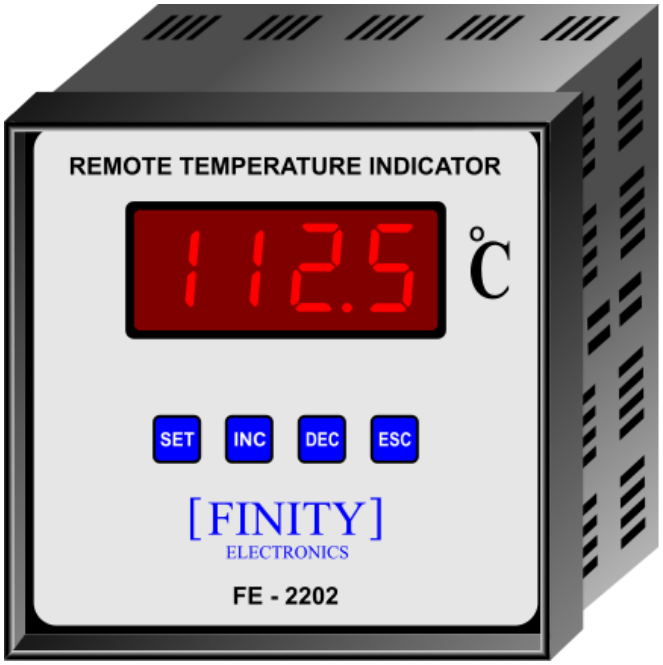
Features :

- Automatic maximum tap detection.
- In-built compatibility for different step resistances including 10E, 12.5E, 100E, 300E and 1K which can be selected in control settings.
- Bright red 0.56-inch 2-character 7 segment LED display.
- User settable Time Delay. 2-99 secs.
- Up to 4 opto-isolated 4-20 mA outputs, programable for digital calibration of zero and span settings.
- Reverse polarity protected outputs with ESD and EFT protection. I/P protected from static discharge and EFT surge by TVS diode.
- Digital Calibration for both present and maximum tap positions is given. The user can calibrate taps in the control settings.
- Embedded with a powerful microcontroller for fast & enhanced processing. Easy and flawless control settings for setting parameters by user.
- Robust, rugged and compact design

Technicalities :

- Maximum tap positions : 35 or user specified
- Input type : Tap Resistance chain or 4-20 mA I/P
- Step / Tap Resistance : 10E, 12.5E, 100E, 300E, 1KE (In module programmable by user)
- Display : 2-character, 0.56-inch, Bright Red, 7 Segment LED Display
- Supply : Universal Supply, 85-265V AC/DC
- Power consumption : 5W
- Number of Outputs : 4 / 2 / None
- Type of Outputs : 4-20 mA current loop O/P, optically isolated from measurement system
- Max Burden : 700 ohms
- RS 485 Output : Available as per user need.
- Panel Cut-Out : 92 X 92 mm
- Enclosure Dimensions : 96 X 96 X 85 mm (H x W x D)
- Mounting style : Panel Mount
- Working Temperature : 0 - 60° C
- Weight : 300 grams approx.
- Download Detailed User Manual:

- **REMOTE TEMPERATURE INDICATOR : FE-2202**



RTI's (Remote Temperature Indicator) purpose is to read, indicate and transmit the temperature, which transformer winding or oil is at. From the local WTI or OTI three output terminals are extended up to RTI named as Max, Com and Min.

Features :

- Accurate temperature sensing across wide range with 0.1°C resolution.
- In-built compatibility for different resistive potentiometers be it 0 to 440Ω or 2,8kΩ or as specified by user.
- Bright red 0.56-inch 4-character 7 segment LED display.
- User settable Temperature range 0 to 180.0°C, settable in control settings.
- Up to 4 opto-isolated 4-20 mA O/P, programable for digital calibration of zero and span settings.
- Reverse polarity protected outputs with ESD and EFT protection. I/P protected from static discharge and EFT surge by TVS diode.
- Digital Calibration for input to RTI. The calibration can be done in control settings. This calibration will result change in the temperature displayed.
- Embedded with a powerful microcontroller for fast & enhanced processing.
- Easy and flawless control settings for setting parameters by user.
- Robust, rugged and compact design.

Technicalities :

- Input type : 1) Resistive Potentiometer I/P
  2) 4-20 mA current loop I/P (not powered)
  3) 4-20 mA current loop I/P self-powered at 24V
  4) Pt-100 Sensor I/P
- Resistive Potentiometer : Compatible for 440Ω to 2.8kΩ, or user specified
- Display : 4-character, 0.56-inch, 7 Segment LED Display
- Display Resolution : 0.1°C
- Display Temperature Range : 0 to 180.0°C programmable by user in control settings
- Supply : Universal Supply, 85-265V AC/DC
- Power consumption : 5W
- Number of Outputs : 4 / 2 / None, 4-20mA O/P, optically isolated from measurement system
  Maximum Burden : 700 ohms max burden.
- RS 485 Output : Available as per user need.
- Panel Cut-Out : 92 X 92 mm
- Enclosure Dimensions : 96 X 96 X 85 mm (H x W x D)
- Working Temperature : 0 - 60° C
- Weight : 300 grams approx.
- Download Detailed User Manual:

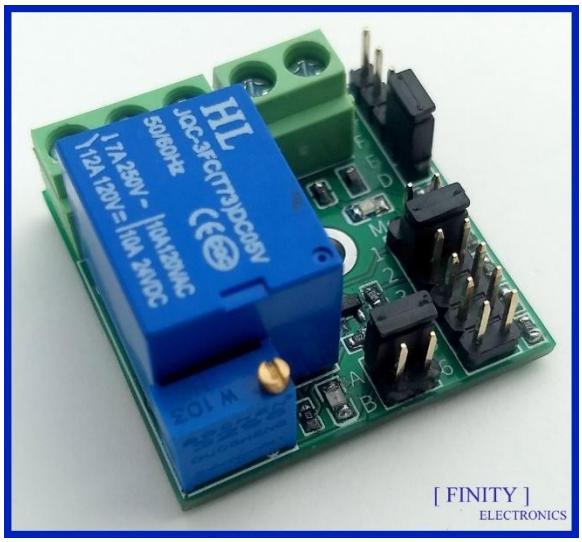
- **CURRENT DIP GENERATOR : FE – 25500**

The **Current Dip Generator** is a specialized device, used to test the ability of EUT to withstand temporary and short interruptions in the supply. This generator is designed to simulate conditions found in the power grid due to faults or large load switching, helping to ensure the reliability of EUT in worst case scenarios. The generator creates controlled current dips and short interruptions to mimic real – world scenarios that can occur in an electrical grid. The generator outputs a specific AC sine wave, with controlled current dip as per user specified time period, for a user specified test duration.

Features:

- Controlled sine wave profile generation of dip as per **IEC 60947-2**.
- Maximum rated current output up-to **500 A**.
- User settable **Dip current**, in fractions **0**, **0.4** and **0.7** of rated current.
- Dip transition period measured **up-to 400µs**, less than required time frame of 1ms.
- User settable Dip duration from **10ms** to **1s**.
- User settable test duration up-to **999s**.
- **In-boxed** output current transformer. Easy to carry.
- **70 sq mm** heavy duty **stranded copper conductors** with heat resistant rubber insulation, crimped with copper cable lugs. Easy to screw-in at terminals.
- In-built **thermal protection** and fans, for power stage amplifier.
- **Power line filter** embedded in supply for interference protection.
- Input **AC mains supply** : 1Ø, 50 Hz/60 Hz, 230-250 Vac, 6 A.
- Signal output from CT terminals for observation on **oscilloscope**.
- In-built **class-0.3(B-0.5) measurement CT** for measurement of output current displayed on LCD.
- Easy push button configuration for setting the parameters, commencement of the test and end the test.
- Has a **dedicated memory** to remember last configured settings.
- Download Detailed User Manual:

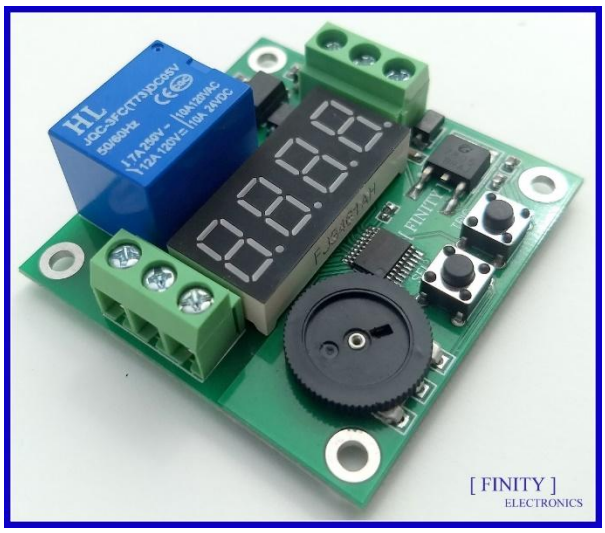
- **MK1 ON Delay Timer:**



- **Features:**

- Embedded with a dedicated microcontroller for powerful processing.
- Six different delay adjustment modes for timing from 5ms to 24hrs.
- System clock very precisely adjusted with real time. 0.1% error measured.
- Four Single Pulse modes and two Continuous Pulse modes.
- Precision Resistor available with 30±1 turns for precise delay adjustment.
- Wide operating voltage range: 5.5V to 30V DC.
- Relay Contact Ratings:
  - 7A @ 250V AC
  - 10A @ 24V DC
- Low power consumption:
  - While in delay or when relay not latched:
    - 4.2mA @ 5.5V DC
  - While active or when relay latched:
    - 42.5mA @ 5.5V DC
- Heavy solder covered PCB traces for relay, ensuring safe conduction of current up to 10A.
- Compact, crisp and easy to use design.
- Length : Width : Height : 33.3 mm : 33.3 mm : 20±2 mm
- 3.5 mm dia screw hole. Perfect for M3 screws.
- Operating Range: 0°C to +55°C.
- Download Detailed User Manual:

- **MK2 Digital Multifunction Timer:**



- **Features:**

- Embedded with a powerful microcontroller for fast & enhanced processing.
- 24 different modes of operations including:3 status modes, 14 timer modes, 4 Up-counter modes, 2 Up-counter timer modes, 1 continuous variable pulse mode
- Equipped with first in class dial and switch (SEL) arrangement for easy and flawless selection of modes.
- System clock very precisely adjusted with real time. 0.1% error measured.
- Has an on-board trigger switch in parallel with the external trigger terminal. Means, mode can be triggered by user from board as well as from any external actuating signal.
- Has ability to remember the last used mode with its time setting for all 24 modes. So, no need to set the mode every time you use.
- Wide operating voltage range: 5.5V to 30V DC.
- Input signal voltage range: 3V to 30 V DC.
- Relay Contact Ratings:
  - 7A @ 250V AC
  - 10A @ 24V DC
- Low power consumption:
  - While in delay or when relay not latched:
    - 4.2mA @ 5.5V DC
  - While active or when relay latched:
    - 42.5mA @ 5.5V DC
- Got reverse polarity protection on both source and trigger terminals.
- Length : Width : Height : 50 mm : 50 mm : 20±2 mm
- Opto-coupled trigger input.
- Download Detailed User Manual:

- **Digital DC Voltmeter:**

- **Features:**

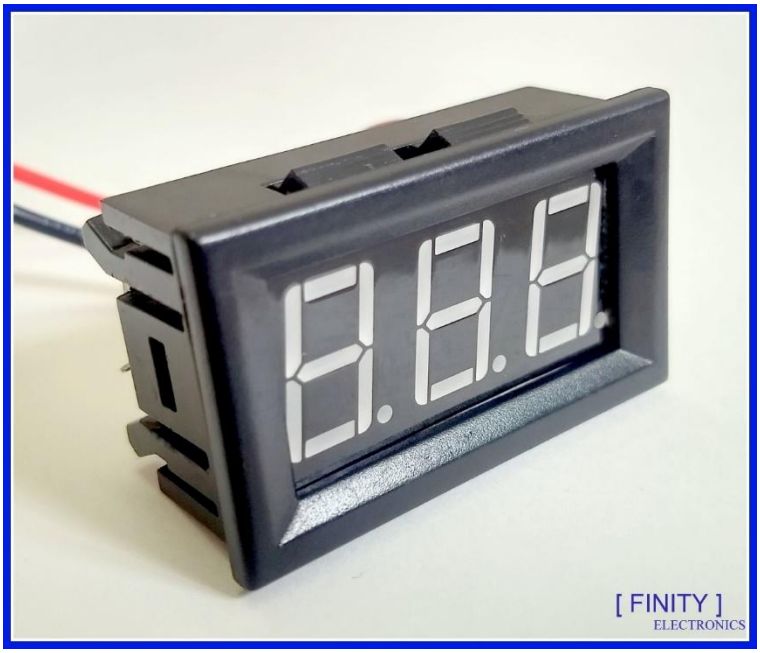
- **3-digit** digital seven segment numeric **0.56-inch** display.
- Display refresh rate: **4** times per second.
- **2880** samples taken per second for measurement.
- Potentiometer dial is given for **calibrating** the voltage measurement.
- Power Supply: **5.5V to 30V DC.**
- Has three inbuilt user selectable voltage measurement ranges:
  - **0.01 to 9.99 V DC**
  - **0.1 to 99.9 V DC**
  - **1 to 500 V DC**
- Display color: **Red**
- Error: **±1 %** of actual value.
- Terminal wire length: **10cm or 0.1m.**
- Terminal wire standard: **IS 694.**
- Has reverse polarity protection. Reverse voltage doesn't burn it.
- **Push to fit** installation design. No screws required.
- Outer case dimensions: **48 X 29 X 22 mm** or **1.89 X 1.15 X 0.87 inch**.
- Installing cut dimensions: **46 X 27 mm** or **1.81 X1.06 inch**.
- Weight: approx. **20 grams**.
- Operating Range: **0°C to +55°C**
- Download Detailed User Manual:

- **Digital DC Mini Voltmeter:**

- **Features:**

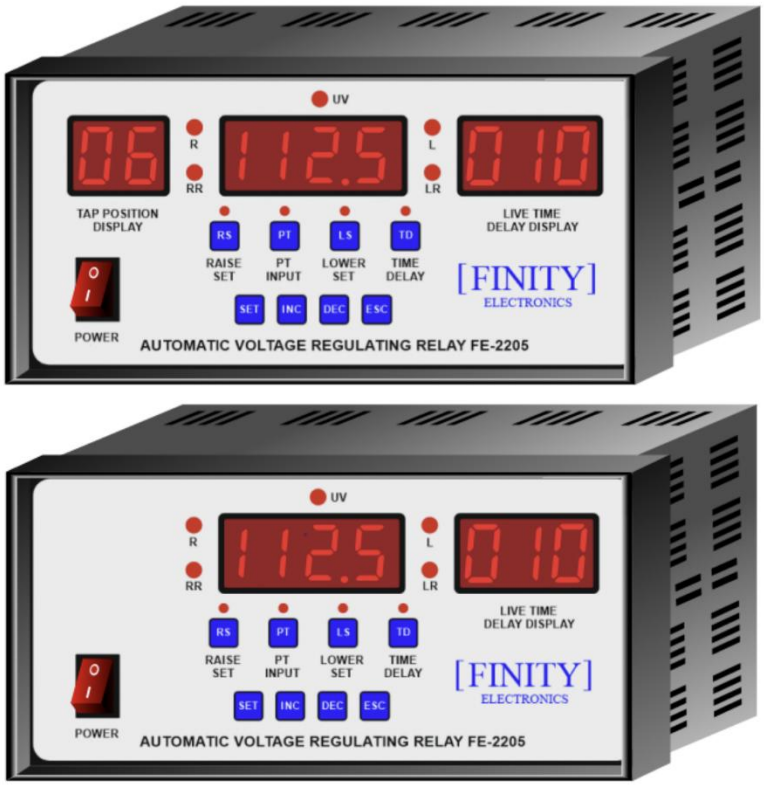
- Embedded with a dedicated **microcontroller** for powerful processing.
- **3-digit** digital seven segment numeric **0.28-inch** display.
- **2880** samples taken per second for measurement.
- Display refresh rate: **4** times per second.
- Display color: **Red**
- Potentiometer is given for **calibrating** the voltage measurement.
- Voltage measurement range: **0 to 99.9V DC**
- Power Supply: **5.5V to 30V DC**
- Has **reverse polarity protection**. Reverse voltage doesn't burn it.
- Error: **±1 %** of actual value.
- Terminal wire standard: **IS 694**
- Approx. dimensions: **33 X 12 mm** or **1.3 X 0.47 inch**.
- Hole diameter: **2mm**. Perfect for **M2** screws.
- Weight: approx. **5 grams**.
- Operating Range: **0°C to +55°C**.
- Download Detailed User Manual:

- **Digital AC Voltmeter:**



- **Features:**
- **3-digit** digital seven segment numeric **0.56-inch** display.
- **2880** samples taken per second for measurement, which results to approximately **58** samples per AC cycle.
- Display refresh rate: **4** times per second.
- Potentiometer dial is given for **calibrating** the voltage measurement.
- Measuring range: **AC 70V – AC 500V**
- Power Supply: Direct use of measured voltage as supply. Just connect the two terminal wires across the terminals where voltage is to be measured.
- Display color: **Red**
- Error: **±1 %** of actual value.
- Measurement resolution: **1V**.
- Terminal wire standard: **IS 694**
- **Push to fit** installation design. No screws required.
- Outer case dimensions: **48 X 29 X 22 mm** or **1.89 X 1.15 X 0.87 inch**.
- Installing cut dimensions: **46 X 27 mm** or **1.81 X1.06 inch**.
- Weight: approx. **20 grams**.
- Operating Temperature: **0°C to +55°C.**
- Download Detailed User Manual:

- **Products to be launched soon :**



Automatic Voltage Regulating Relay FE - 2205

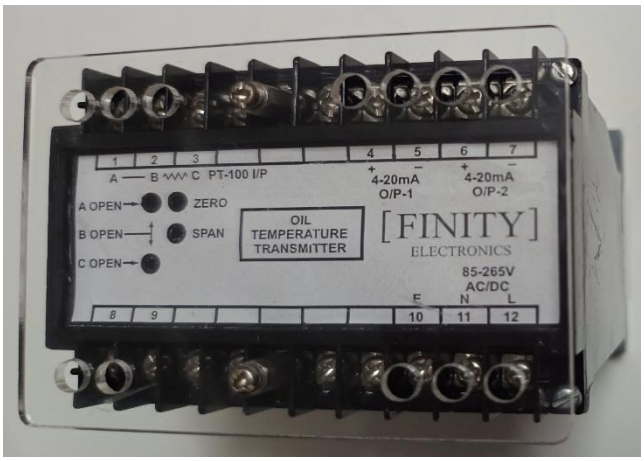
Automatic Voltage Regulating Relay (AVR) is a device which is placed in remote control cubical panel (RCC) for controlling voltage at secondary side of utility transformer.

As the load changes at distribution end, line voltage changes accordingly. To keep utility voltage within limits AVR will generate control signal in the form of control pulses in the form raise or lower pulse.

The AVR delivers control signal to OLTC, which changes the tap accordingly.

This AVR will be equipped with in-built Tap Position Display and Live Time Delay Display (time delay between tap transitions, from 10s to 120s).

Winding Temperature Transmitter (WTT) and Oil Temperature Transmitter (OTT)

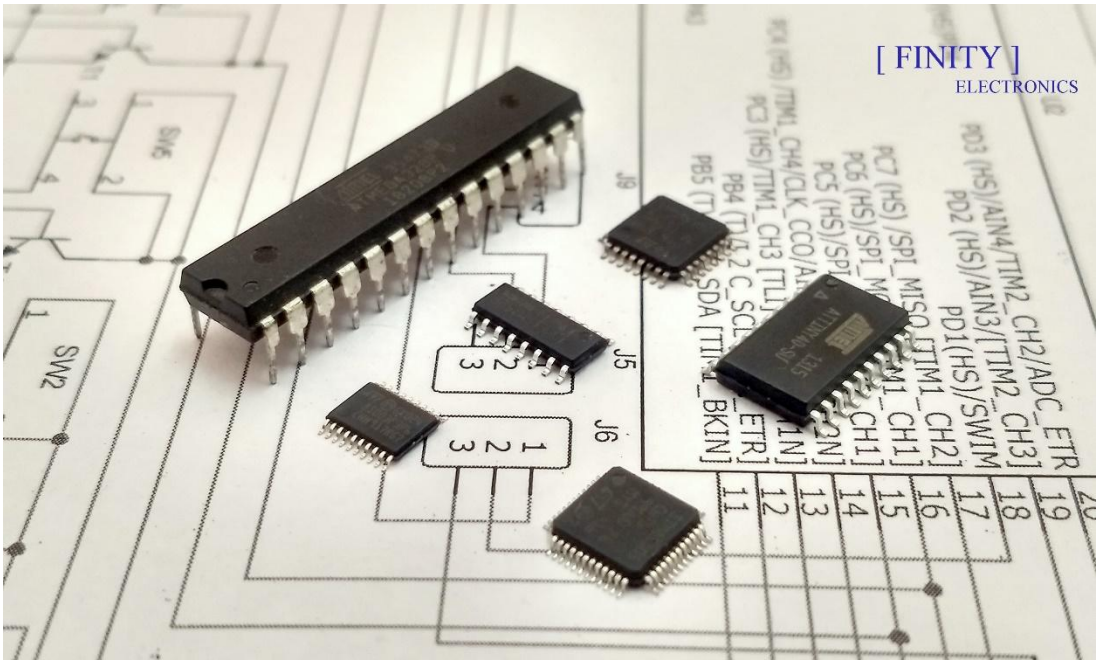


WTT and OTT are a type of CCU (Current Control Unit) which transmits the temperature of respective winding or oil of a transformer, in the form of a 4-20 mA current loop. This current is then measured at remote terminal unit (RTU) and respective temperature is displayed. These devices are equipped with two separate pairs of current outputs with PT-100 and CT sec. inputs for measuring temperature. Also for calibration zero, span and gradient settings have precision trim pots for calibration.

Technical Solutions:

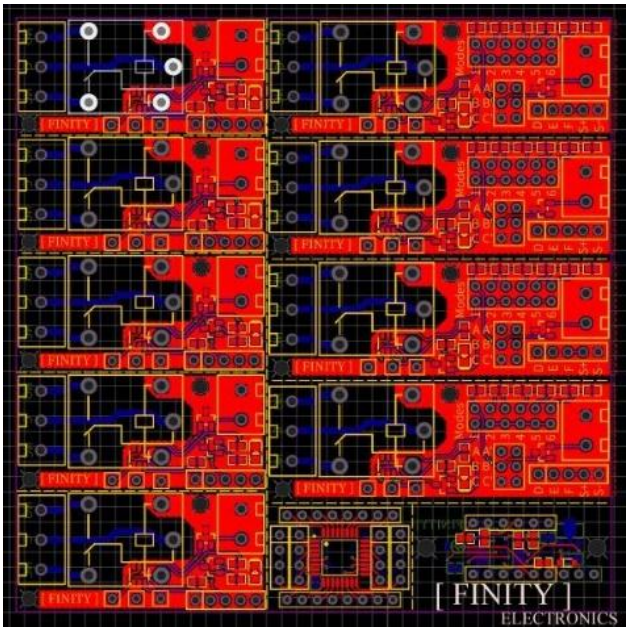
We also facilitate at providing solutions for following technicalities:

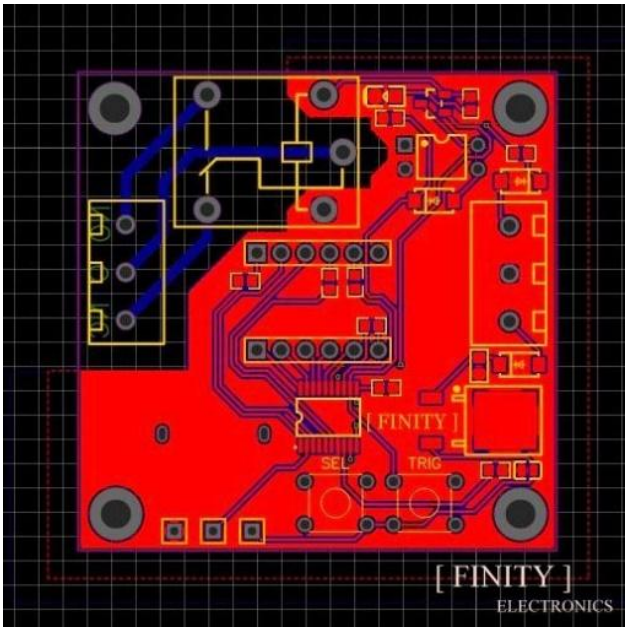
- **Microcontroller Functionality:**



- To enhance the system processing with limited space and cost, embedding microcontrollers or microprocessors is always a better choice.
- We are skilled at programming peripherals for STM8S series, PIC, Atmega, Geehy, Nuvoton, Megawin, Teensy and 8051 based controllers.
- We can code them for following processes:
  - Minimal or large input/output requirement.
  - UART, Bluetooth, RS 485 communication interfacing.
  - Interrupt driven critical processes.
  - Timer based precise delays and variable pulse generation.
  - Accurate ADC measurement for converting various physical, electrical and thermal quantities to digital form.
  - PWM techniques used in motor speed control, stepper and servo motor control.
  - Actuating relays or contactors on trigger signals, raise alarms, PIR sensing, keypad input, etc functionalities.

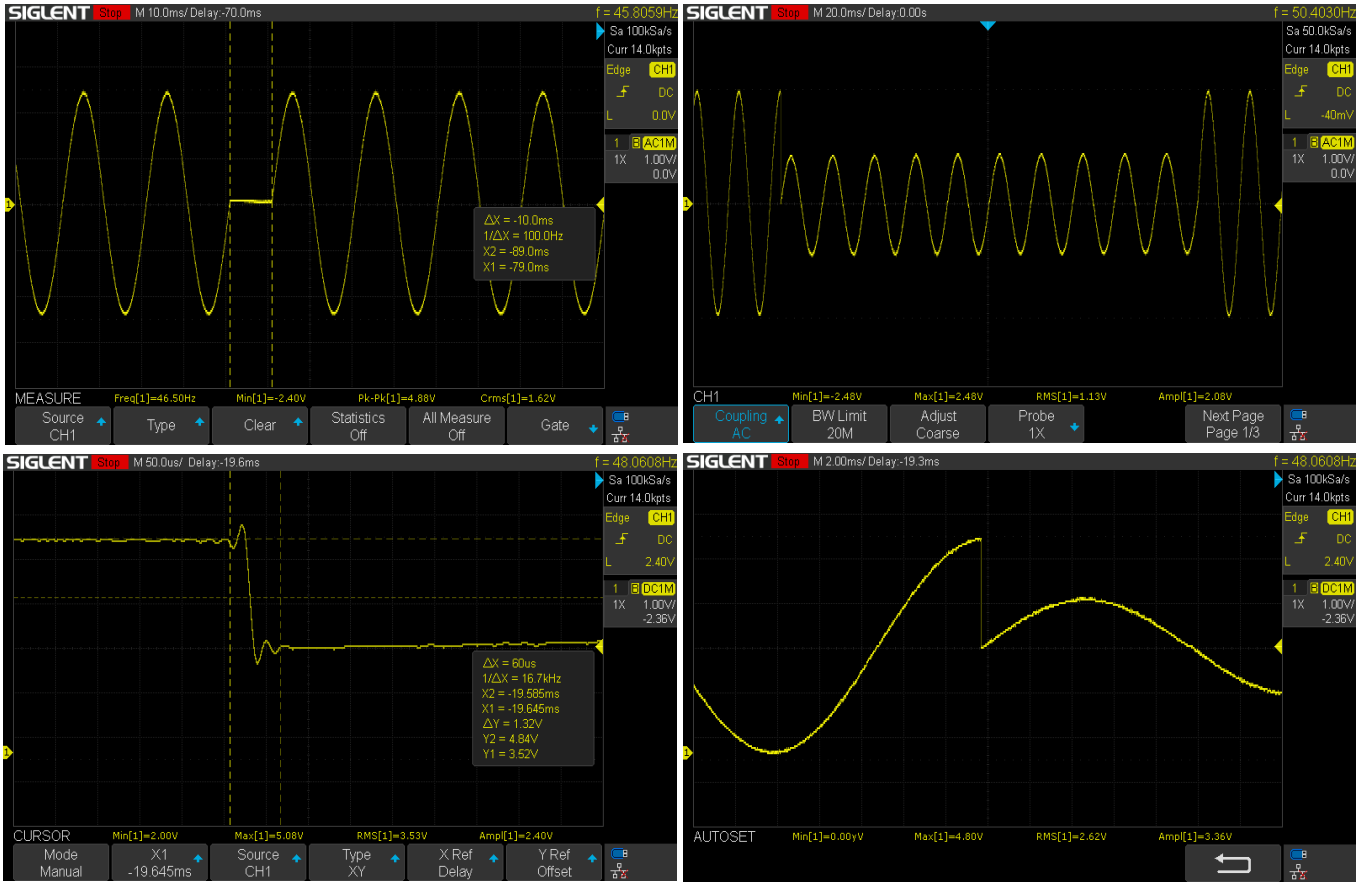
- **Custom PCB Designing:**





- For a miniature product design with many functionalities a compact PCB is essential.
- We can design PCB with following specifications:
  - Both single and double layered as per need.
  - Of any required package size of components like SMD (Surface Mount Device), through hole, DIP (Dual In-Line Package), QFP (Quad Flat Package), TSSOP (Thin Shrink Small Outline Package) and SOIC (Small Outline Integrated Circuit).
  - For both control as well as power circuitry with enough isolation using board cut-outs.
  - Use copper-pour techniques including hatched and solid copper pour for reducing ground impedance, pressure drop and improve power efficiency and anti-interference ability.
  - Testing the designed PCB for required functionality of the electronic circuit embedded.
- We can also provide SMT/SMD stencil for your PCB if needed for mass production.
- Apart from designing, we can also handle PCB's manufacturing and component assembling using our third parties.

- **Wave-Profile Generation and Amplification :**



For any problem specific device like dip generators, harmonics generators, surge generators, etc, wave profile with power is required. We are experienced enough to generate user specific wave profile for indigenous control or testing equipment.

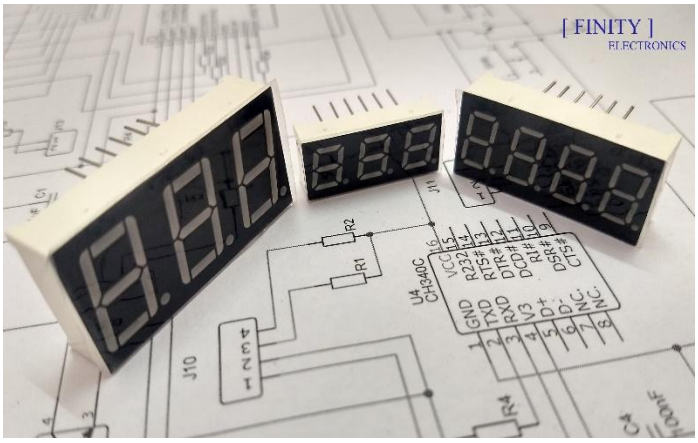
Any desired signal waveshape including sinusoidal, ramp, dip, pulsed, triangle, sequential, surge, harmonic etc can be configured and generated.

Employing R2R DAC along with controller for 8,10,12 bit resolution accuracy and high sample rate to perfectly output the required wave profile. Apart from that various analog oscillators along-with single or multistage filters can be used for generation too.

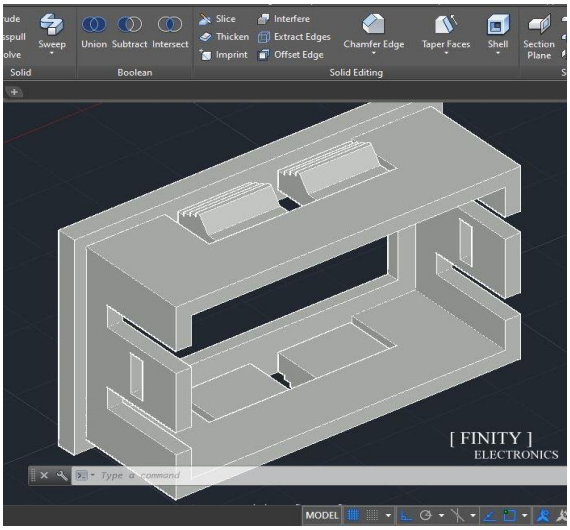
This wave profile can be further staged to be outputted with power and amplification using power amplifiers (Class A, AB, D). These amplifiers incorporate high voltage transistors and MOSFETs to deliver the power with fast switching speeds.

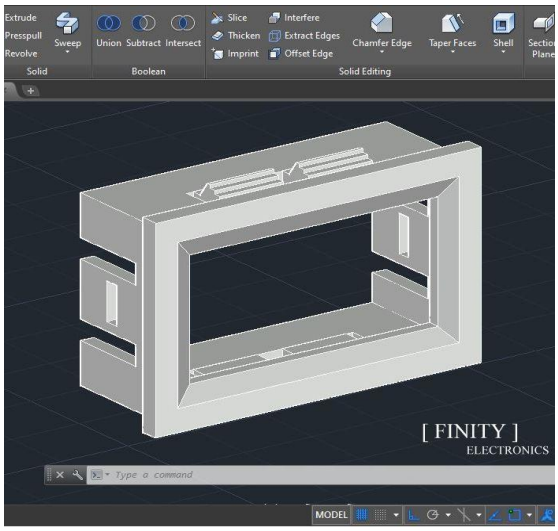
This particular field finds wide application in EMI / EMC compliance testing and wideband radio frequency applications.

- **Embedding Digital Display:**



- For any system requiring a good user interface, a display for outputting the result is necessary.
- We can embed display with 0.28”, 0.36” and 0.56” SSD and 16 x 2 LCD with as much characters required.
- These displays are perfect for displaying voltage, current, temperature, tap position, counts, delay time, etc. We mainly focus on electric panel instruments for display.
- **Enclosure Design:**





- For any electronic product an enclosure is mandatory for easy and safe use of the product by customer.
- Using latest CAD techniques, we can design a customer proposed enclosure.
- Along with designing we offer facility of a testing enclosure which can be 3D printed at our premises for testing purpose.

Contact Us:

For any proposed ideas for an electronic product or for using any of our above-mentioned facility, please contact us. We can aid you in designing and manufacturing your product.

Visit our technical solutions page and submit your proposed idea and requirements. We would definitely contact you with an appropriate solution for your proposed idea.

Also visit our products page to view our full product range and get a quote.

Our Contact Information:

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E-mail: finityelectronics@gmail.com

Mobile number: +91- 8140579445, 7990457165

Work timings: Mon-Sat: 10:00 am to 6:30 pm

*We proudly say that all of our products are designed and **Made in India.***

*We also support **Make in India** initiative by Govt of India.*