

Benefits of Installing **DelSmart** Device

- Electrical Utilities or Industries to know the Energy Consumption/load graph by continuous monitoring (Every Minute).
- Over Loading alert at 80% load
- Capacitor Degradation forecasting will help to replace the Capacitor banks
- By improving the PF, Efficiency also improves
- Forecasting the Load failure is possible and can reduce the Outage time.

Comparison of Pre & Post installation of 25 kVAr in 100 kVA - DT (Distribution Transformer)

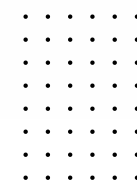
Pre-Installation of DRCU/iRCU Unit	Post-Installation of DRCU/iRCU Unit
Online Monitoring and Control is not available	Online Monitoring and Control is possible
Power Factor values were varied between 0.65 and 0.85	PF values were improved above 0.95 by Dynamically including and excluding Capacitor Banks, resulting current reduction (~15%) graph text
Over Load detection is not Possible, resulting transformer damage can occur	Over Load detection is done and due to current reduction maximum capacity of the Transformer can be utilized
Line Loss and Transmission loss values are not available	Line Loss and Transmission loss values reports can be downloaded from Software In terms of Loss reduction ~Rs.4,300/ Month (~5%) is saved
DT Failure cannot be predicted	Forecasting of DT Failure can be possible

About Us

Delving Research and Development Pvt. Ltd., commenced in October 2015, with the vision "To create and provide a research ecosystem and develop products and processes that will help transform society". Delving R&D has Implemented **Software and IoT-based Devices/Systems** for industries and electrical utilities.

Achievements

- **Delving Team** emerged as the winner in Hack2Skill-Instinct 3.0 in 2023 under the **Energy Community Trading Platform** - "Smart Energy Bharat" for the developed prototype by **Intellismart and Startup India**.
- Under **Powerthon 2022**, Delving emerged as a **Technology Service Provider** by implementing DRCU in DTs of Indore Electrical Utility Madhya Pradesh, First time in the Nation.
- **Finalist** in National Start-up Award 2023.
- Smart Startup of the Year 2022 - **Order of Merit** awarded by ISGF.



Delving Research & Development Private Limited



DelSmartIoT - DRCU/iRCU Online APFC



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DelSmartIoT - DRCU / iRCU

Features

It is an Intelligent Device for measurements of 3-phase Electrical parameters and dynamically includes capacitors for Power Factor improvements. Measured data are pushed to a dedicated software package through the GSM/WiFi Module.

DRCU/iRCU can be used as single/two steps for individual Load monitoring and 2 to 12 steps for overall loads in Industries, Electrical Utilities DTs, Educational Institutions, and Commercial buildings.

DelSmart - DRCU/iRCU Consists of Major Five Functional Units

- DelSmartIoT Device with Time of Day and MD value Alert (External CT cost Extra)
- DRCU/iRCU - Online APFC (Cost per kVAr rate)
- Maximum Demand Controller (Load Control Contactor cost extra)
- Individual Load Monitoring Device with Power Supply Trip Control, PF Improvement and Sensors (For Physical parameter (temperature & Speed measurement).

- **Electrical Parameter** Measurement
- **Physical Parameter** Measurement
- Intelligent **Dynamic switching** of capacitor Banks for **Power Factor Improvement**.
- **Fault detection** (Over Voltage, Over Current, Over-compensation, Under-compensation)
- Set **Abnormality value limits** from Software.
- **Degradation** of capacitor alert
- **Theft detection** is possible
- **MD value** alert
- **Load Cut-off/Trip control** against Abnormal values in Voltage & Current and **SMS/Mail Alert** will be sent to concerned person.
- It will be used as an effective tool for loss minimization of the Distribution Network.



Following details can be viewed in Dedicated Software package:

- Following Charts can be viewed for the selected day:
 - Voltage and Current
 - PF Chart
 - Required Capacitor Value Chart
 - Unit consumption Chart as per Time of Day
 - Injected kVAr Analysis Chart
- Total Unit Consumption value
- Total Injected kVAr value
- Individual Capacitor Active and Inactive Time in a Day
- Energy Report table with electrical parameters and corresponding capacitor ON/OFF details
- Individual Capacitor ON/OFF Log details