

# How to avoid max demand penalty in your **electricity bill?**





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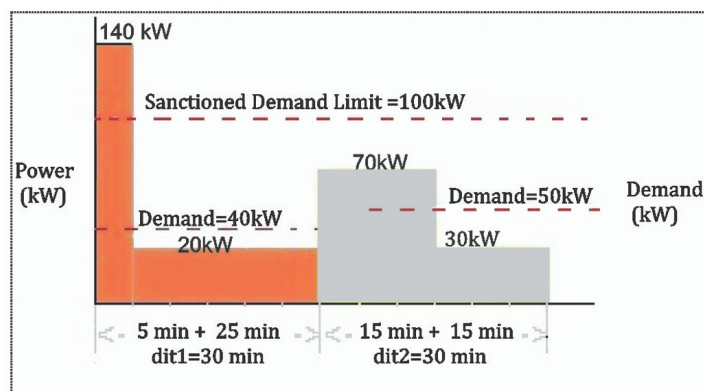
In this article, we will discuss about what is Max Demand penalty and how to avoid it.

## What is Demand and Maximum demand ?

**Demand** is nothing but power (kW, kVA or kVAr) averaged over a predefined time interval in minutes. This interval is called as **demand integration time(dit)**. Thus Demand is the average power value at the end of each **dit**. Its unit is same as Power that is kW, kVA or kVar. The **dit** interval may vary depending on the Utilities. Most common values of dit are 8 min, 15 min, 20 min and 30 min although you will find this time interval is programable from 5 min to 60 min in 1 min step.

Let us understand with simple a example: An Utility has defined dit=30 minutes and the Sanctioned limit=100kW demand. In the first dit, Load is 140kW for first 5 minutes and 20kW for last 25 minutes, then

$$\text{Demand (kW)} = (140\text{kW} \times 5\text{min}) + (20\text{kW} \times 25\text{min}) = 40\text{kW for dit1}$$



For second dit interval (dit2)

$$\text{Demand (kW)} = \frac{(70\text{kW} \times 15\text{min}) + (30\text{kW} \times 15\text{min})}{30 \text{ min}} = 50\text{kW for dit2}$$





Therefore, Max Demand at the end of Two dit, that is after 60 Min is 50kW. In this example if your demand exceeds the sanctioned limit of 100kW by Utility, you will be charged heavy penalty by Utility in your next bill.

### **Why Penalty if Max Demand is exceeded?**

When we exceed the sanctioned Demand, we overburden the Utility infrastructure, reducing the life of transformers and cables. Excess power consumption at your end also disrupts the load distribution of Utility. Now, the Utility cannot meet other planned demands of other Customers.

### **REPEATED PAGE How to avoid Maximum demand Penalty?**

By installing Demand controller in your premises you can avoid penalty by not allowing your Max Demand to exceed the Sanctioned limit of Utility.

For this a Demand Controller with at least 2 relays is essential. In the above example

#### **Demand Controller**



First relay might be programmed to 90% of kW Demand so that it will be used to drive an Alarm circuit. When Alarm is activated, manually some non critical load can be turned off to bring the Demand below 90%.



If no action is taken, second relay which is programmed for Final trip at 95% of kW Demand will automatically trip the part or whole of the load depending on how the load is distributed between the two relays thereby saving you from the penalty.

## Comprehensive Range of CT/PTs and Multi-Function Meters (MFMs)

### Current Transformer Nylon Casing



#### Metering Type CT'S

- Window Type CT'S (Bus Bar)
- WPL Type
- Round ID Type CT'S

#### Protection Type CT'S

- Nylon Casing-Protective Type Bus Bar

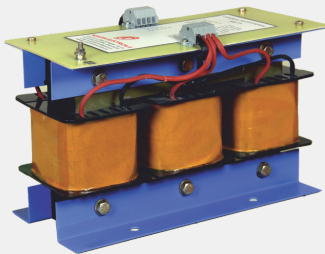
### Resin Cast-Round ID



#### Metering Type CT'S

- Resin Cast - WPL
- Resin Cast - Bus Bar
- Resin Cast - Round ID

### Control Transformer



- Single-phase Resin Cast
- Three-phase Resin Cast

### Digital Meter



- Energy Meter
- MFM Meter
- VAF Meter
- DPM Meter

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