

CURRENT TRANSFORMERS

1. What rating should be used on CT for CT connected meters?

The below is burden guide:

| Sr.no | Instrument | Burden (VA) |
|-------|---|-------------|
| 1 | Bimetal instruments (5 A) | 3 |
| 2 | Bimetal and Moving iron instruments (5 A) | 3.5 |
| 3 | Moving Iron Instruments | 1 |
| 4 | Watt Meter | 3.5, 5, 5.5 |
| 5 | Power Factor meter | 4 |
| 6 | Current Transducers | 0.5 |
| 7 | Power Transducers | 0.5 |
| 8 | kWh-meter | 2.5 |
| 9 | Trivector meter, Power analysers, Load Managers | 5 |

2. How is the wiring of CT done?

The primary conductor shall be fed (from the fuse) from P1 to P2 through the transformer. The secondary side of the transformer (marked S1 and S2) shall be connected to S1 and S2 on the instrument.

3. What is the ABS moulding? Full form of ABS?

ABS: Acrylonitrile butadiene styrene is a common thermoplastic polymer. They also have electrical properties that are fairly constant over a wide range of frequencies. These properties are little affected by temperature and atmospheric humidity in the acceptable operating range of temperatures.

4. Difference between Resin Cast, ABS and polycarbonate?

- A) Basically resin cast CTs are Epoxy resins (dry resin cast). These CTs are heavy but protect the equipment from weathering due to environment. Polycarbonate is a thermo plastic resin as well, with high insulation and heat resistant properties. It was used for electronic components. But Bayer AG who was the sole manufacturer of capacitor grade poly carbonate film stopped in the year 2000. Thus making it high priced. With all the above properties as well being light in weight ABS moulding stands out.
- B) The nature of ABS Thermoplastic is when exposed to high temperature it will boil and break and wouldn't stick to the equipment. The fumes are environment friendly as well as it can be recycled.

5. What are the limits of temperature rise on windings?

The below is temperature rise guide:

| Insulation Class | Maximum Temperature Rise (°C) |
|--------------------------------------|-------------------------------|
| Oil Immersed Classes | 60 |
| Oil immersed and sealed Hermetically | 65 |
| Bituminous compound immersed classes | 50 |
| Class Y | 45 |
| Class A | 60 |
| Class E | 75 |
| Class B | 85 |
| Class F | 110 |
| Class H | 135 |

Veritek Make CTs are Class E Insulated (maximum temperature 120°C)

6. What is the allowable load Capacity for copper and aluminium bars?

The below guidelines is for maximum current:

| Dimensions (mm) | Maximum Current in A | | | | | |
|--------------------|----------------------|-----------|--------|-----------|--------|-----------|
| | 1 bar | | 2 bars | | 3 bars | |
| | Copper | Aluminium | Copper | Aluminium | Copper | Aluminium |
| 12x2 | 150 | 80 | 232 | 140 | 262 | |
| 15x2 | 180 | 95 | 275 | 170 | 300 | |
| 15x3 | 282 | 115 | 364 | 210 | 440 | |
| 20x2 | 230 | 120 | 348 | 270 | 360 | |
| 20x3 | 290 | 145 | 453 | 350 | 520 | |
| 20x5 | 319 | 254 | 560 | 446 | 728 | 570 |
| 20x10 | 497 | 393 | 924 | 730 | 1320 | 1060 |
| 25x3 | 350 | 180 | 540 | 330 | 600 | |
| 25x5 | 470 | 230 | 760 | 430 | 965 | |
| 30x3 | 410 | 205 | 625 | 385 | 680 | |
| 30x5 | 447 | 356 | 760 | 606 | 944 | 739 |
| 30x10 | 676 | 536 | 1200 | 956 | 1670 | 1340 |
| 40x3 | 530 | 280 | 800 | 500 | 835 | |
| 40x5 | 573 | 456 | 952 | 762 | 1140 | 898 |
| 40x10 | 850 | 677 | 1470 | 1180 | 2000 | 1650 |
| 50x5 | 697 | 556 | 1140 | 916 | 1330 | 1050 |
| 50x10 | 1020 | 815 | 1720 | 1400 | 2320 | 1940 |
| 60x5 | 826 | 655 | 1330 | 1070 | 1510 | 1190 |
| 60x10 | 1180 | 951 | 1960 | 1610 | 2610 | 2200 |
| 80x5 | 1070 | 851 | 1680 | 1360 | 1830 | 1460 |
| 80x10 | 1500 | 1220 | 2410 | 2000 | 3170 | 2660 |
| 100x5 | 1300 | 1050 | 2010 | 1650 | 2150 | 1730 |
| 100x10 | 1810 | 1480 | 2850 | 2390 | 3720 | 3110 |
| 120x10 | 2570 | 1350 | 3780 | 2400 | 4600 | 3250 |
| 160x10 | 3290 | 1750 | 4750 | 3000 | 5800 | 4150 |
| 200x10 | 4000 | 2150 | 5700 | 3650 | 6950 | 4950 |
| 200x15 | | 2250 | | 4200 | | 5600 |