



suparule



Flexiclamp Technology

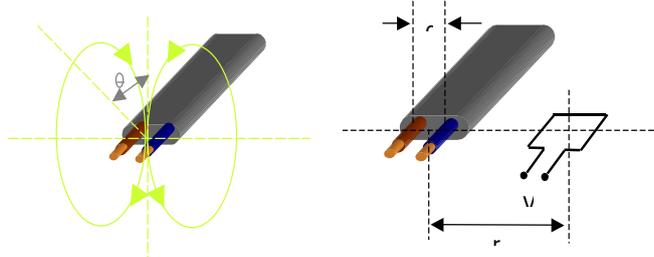
- Measures ac current in multi-core cables
- Non-invasive
- Unique technology
- Accuracy to better than 5% error
- Suitable for wide range of applications

DESCRIPTION

Suparule Systems Ltd. has developed a unique technology for the non-invasive measurement of ac current in multi-core cables, called Flexiclamp.

The image above shows a handheld meter in which the technology can be incorporated, to allow simple measurement of ac current in multi-core cables. Numerous other applications are also possible.

The technology uses a patented methodology which can sense the magnetic field associated with each individual conductor. This magnetic field is proportional to the current flowing, which can then easily be calculated.



THEORY

Existing methods of measuring ac current, e.g. the current transformer, are limited to measuring the current in a single core. If a multi-core cable is passed through the core, the CT will measure zero, as the total magnetic field generated by the cable will be zero. This is because the magnetic field associated with the outward going current will be opposite in polarity, but more or less equal in magnitude to that associated with the return current. Therefore, the total magnetic field picked up by the CT is effectively zero.

In order to be able to determine the individual currents in each conductor, it will be necessary to detect the field associated with each conductor. The Flexiclamp technology does this by sensing the magnetic field at two distinct points, and combining this information with information about the

distance between the conductors, as well as the distance from each sensor to each conductor.

The latter is measured using a potentiometer connected to the jaws of the Flexiclamp head, and the former is determined from the knowledge that two-core and three core cables sizes and physical properties are standard.

Knowing the distance from the sensor to the Conductor, and also the spacing between the conductors, it is possible to extract the magnetic field component of each conductor from the magnetic field sensed at each sensor.

The obvious and unique advantage of the technology is that it enables accurate measurement of current in multi-core cables without the need to strip and separate out the individual conductors within the cable.

APPLICATIONS

The technology can be used in almost any application where multi-core cables carrying ac current need to be measured. Typical applications are as follows:

- Hand-held Meter
- System Automation
- Power Quality Analysis Instrumentation
- Multi-core cable connections

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