RAM METER INC.®
Instrument Sales & Service Center
Electronic Development & Manufacturing
FOUNDED 1936

Electrical Testing and Safety Standard Definitions

UL LISTED	UL (Underwriters Laboratories) is an independent product safety certification organization that has been testing products and writing standards for safety for more than a century. The UL Mark on a product means that UL has tested and evaluated representative samples of that product and determined that they meet UL requirements. Products are often re-checked by UL at the manufacturing facility to make sure they continue to meet UL requirements.
CSA	The Canadian Standards Association (CSA) Mark indicates that a product, process or service has been tested to a Canadian or U.S. standard and meets the requirements of an applicable CSA standard or another recognized document used as a basis for certification. For consumers, the CSA Mark provides increased assurance of quality and safety.
CE	A product is marked CE (Conformité Européenne) to show that it conforms to health, safety, environment and consumer protection requirements established by the European Commission.
INTERTEK ETL LISTED C US	The ETL Listed Mark is an alternative to the UL and CSA Marks. ETL testing is conducted by Intertek Testing Services (ITS) and is recognized by OSHA as a Nationally Recognized Testing Laboratory, just as Underwriters Laboratories (UL) and Canadian Standards Association (CSA) are. The ETL Mark indicates compliance with over 200 safety and performance standards of both U.S. and Canada.
ISO	The International Organization for Standardization (ISO) is the world's largest developer and publisher of International Standards. ISO Standards add value to all types of business operations, contributing to make the development, manufacturing and supply of products and services more efficient, safer and cleaner. ISO 9001 is an international standard that gives requirements for an organization's quality management system. The objective of ISO 9001 is to provide a set of requirements that, if effectively implemented, will provide the consumer with confidence that a supplier can consistently provide goods and services that meet needs and expectations and comply with applicable regulations.
IEC	The International Electrotechnical Commission (IEC) is the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies. The IEC also manages conformity assessment systems that certify that equipment, systems and components conform to its international standards.
ANSI American National Standards Institute	The American National Standards Institute (ANSI) is a private, non-profit organization which administers and coordinates the U.S. voluntary standardization and conformity assessment system. ANSI represents the U.S. in international standards organizations, such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).
IEEE	The Institute of Electrical and Electronics Engineers (IEEE) is an international, non-profit, professional organization for the advancement of technology related to electricity. The IEEE is one of the world's leading standards-making organizations and performs its standards making and maintaining functions through the IEEE Standards Association. IEEE Standards affect a wide range of industries including: power and energy, biomedical and healthcare, information technology, telecommunications, transportation, nanotechnology, information assurance and many more.

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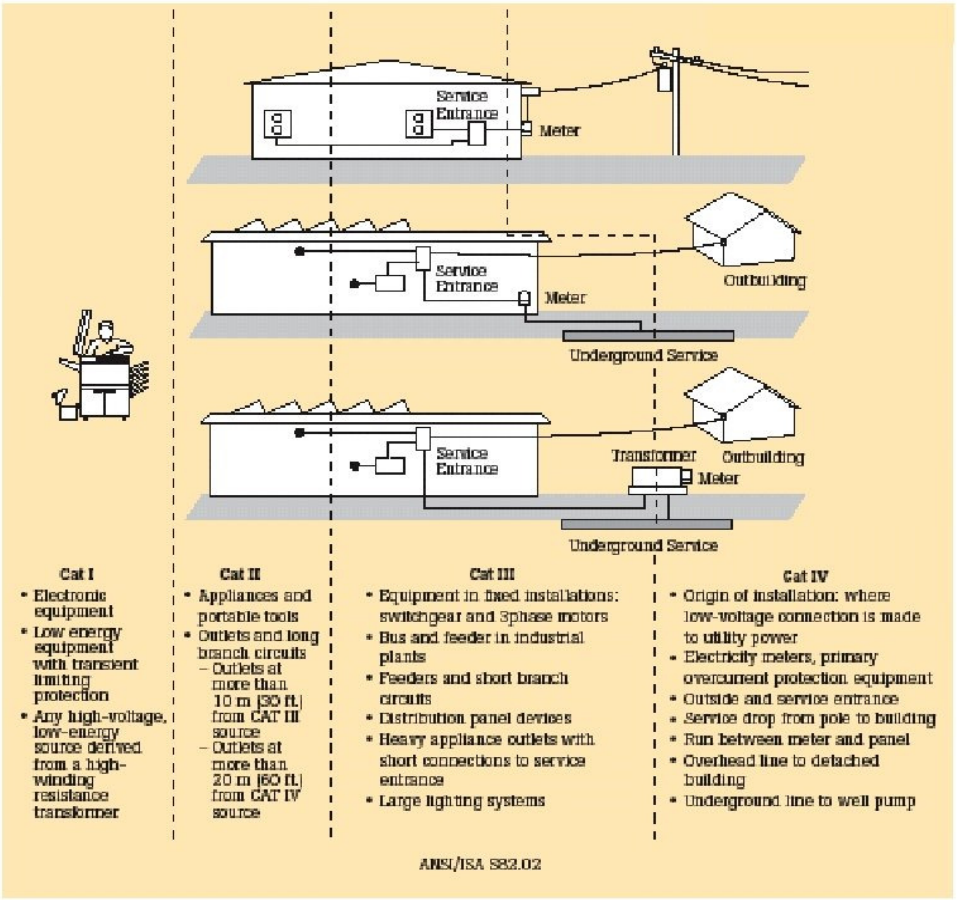
ANSI, CSA and IEC define 4 measurement categories of over-voltage transient impulses (voltage spikes). The rule of thumb is that the closer the technician is working to the power source, the greater the danger and the higher the measurement category number. Lower category installations usually have greater impedance, which dampens transients and helps limit the fault current that can feed an arc.

CAT I	CAT I refers to protected, electronic circuits.
CAT II	CAT II covers the receptacle circuit level and plug-in loads.
CAT III	CAT III covers distribution level wiring. This includes 480-volt and 600-volt circuits such as 3-phase bus and feeder circuits, motor control centers, load centers and distribution panels. Permanently installed loads are also classified as CAT III. CAT III includes large loads that can generate their own transients. At this level, the trend to using higher voltage levels in modern buildings has changed the picture and increased the potential hazards.
CAT IV	CAT IV is associated with the origin of installation. This refers to power lines at the utility connection, as well as the service entrance. It also includes overhead and underground cable runs outdoors, since lightning may affect both of these.



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