

A Comparison between IEC and ANSI Type Test Switches

(1) IEC switches are built of the best materials (copper and silver) and therefore have the least internal resistance

IEC switches can be used without any risk with 1A current transformers (CT's). ANSI switches, however, have a high internal resistance that can cause CT saturation. Current transformer (CT) saturation leads to malfunction of electronic relays and can be a danger for operators and system.

The high internal electrical resistance of ANSI switches is determined by their construction principle and the building materials used.

(2) IEC switches provide the best protection against contact erosion and mechanical wear

Silver contacts are equipped with a special protective coating. Special springs guarantee constant spring pressure and less mechanical wear. ANSI-switches cannot provide this due to their construction principle.

(3) IEC switches are the safest system for current measurement

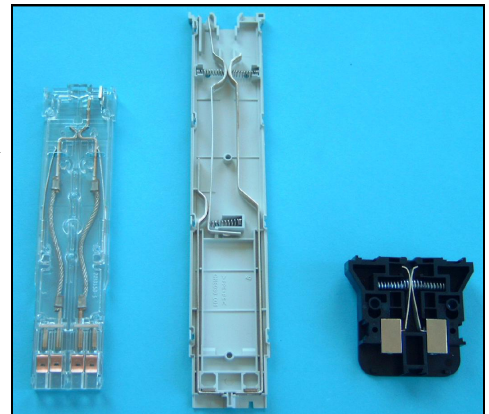
IEC switches use built-in shunts and do not allow open CT circuits. The keying system prevents human application errors, because non-CT testplugs (without shunt) cannot be entered in current testblock openings.

(4) IEC switches provide the best and safest *make-before-break* operation because of their built-in *make-shortening-break* function

Their design and the way in which the contact break is established with IEC switches make arcing an impossibility of physics. There is no open air distance which could be ionized, unlike it is the case with ANSI switches.

Arcing is not possible in this product design, because of the *make-shortening-break* function. Therefore, contact erosion from arcing cannot occur, and the high voltages needed to produce arcing cannot develop.

**IEC Test Switches:
ABB combiflex system, Areva, SecuControl**



(5) IEC switches prevent human application errors and are therefore allowed to be used in nuclear power plants

(6) IEC switches are safer, more economical and have more functions than ANSI switches

They offer superior user protection, since all contacts are covered by plastic parts and prevent erroneous touching and hand burns during use. These advantages are the reason why IEC switches are European standard and widely used around the world (compare VDE standard at: <http://www.vde.com/VDE/Fachgesellschaften/ETG/Arbeitsgebiete/sua/2007-oeffentlich/Pruefstecksysteme.htm>).

One major ANSI-switch manufacturer itself offers IEC switches as well (Combiflex system). IEC switches help customers standardize test procedures and allow secondary injection for test purposes.

Tennessee Valley Authority (TVA), among other US-utilities, has successfully been using IEC switches for years.