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Arc flash protection is now faster and more reliable than ever thanks to ABB

New CSU-2 current sensing unit offers improved precision, monitoring, and control with addition of Rogowski coil current sensors, touchscreen interface and Modbus RTU communication

ABB has upgraded its innovative TVOC-2 Arc Guard SystemTM with the new CSU-2 current sensing unit, which uses Rogowski coil sensors, a touchscreen interface and connectivity to make arc flash protection systems more precise, reliable, easier to monitor and control. The upgrades make it even simpler to improve arc protection levels for low and medium voltage distribution systems – and enables intelligent adjustment of settings via a facility’s central control systems.

[Local ABB spokesperson], said: “These latest innovations and upgrades highlight ABB’s commitment to making power distribution safer, more reliable and easier to control. The CSU-2 is a brilliantly simple device that provides additional protection against downtime for main- and sub-distribution switchboards. Adding an intuitive touch-screen interface and connectivity ensures precision and makes it ideal for more complex distribution systems and those with load variations.”

ABB’s Arc Guard System is already among the most advanced on the market. Its innovative TVOC-2 detection system uses optical sensors to detect and, in combination with breaker, extinguish arcs faster than conventional systems; tripping takes less than 1 milliseconds, minimizing any risk to staff and switchgear.

The CSU-2 and TVOC-2 work together to raise protection levels for the switchgear and to reduce time lost to maintenance in the event of an arc. When an arc occurs, damage to the switchgear is proportional to the energy released. By minimizing the reaction time with the arc protection relay down to 2 milliseconds, significantly less energy is released than if a circuit breaker is the only protection.

In critical power applications such as hospitals and data centers, system availability is vital: lives and livelihoods depend on keeping systems up and running. The CSU-2 prevents unnecessary stops that can occur when the Arc Guard System’s sensors are exposed to otherwise harmless light flashes, keeping processes at data centers, hospitals and industrial facilities online.

The CSU-2’s robust Rogowski coil sensors provide the precise current measurement needed to ensure the ABB TVOC-2 Arc Guard System only trips when an arc occurs. Dual conditioning uses both the light from the arc and circuit’s current increase to ensure the Arc Guard TVOC-2 functions reliably.

The unit's Rogowski coil sensors make current measuring simpler and more reliable than ever, providing fast and safe tripping at low as well as high current levels. The light weight of these open loop sensors make installation and retrofitting quick, easy and reliable. They also provide significant space savings compared to standard current sensors.

The CSU-2’s new touch screen makes configuration and setting adjustments faster and more precise. Usually, when production requirements change, the operator must manually update settings with a potentiometer in the control panel. The new CSU-2 makes it possible to update the settings for nominal current, over current and warning current remotely while continuously monitoring the current level in the system, making the trip protection faster and more reliable.

“With the design of the new CSU-2, our mission was to make it as easy as possible for arc-protected main- and sub-distribution switchboards to protect effectively against downtime,” [local ABB spokesperson], added. “The sensors compact dimensions and open loop design makes retrofitting and installation simple on both bus bars and cables. A green light signals when the proper connection is made and the unit continuously monitors if the sensors are not connected properly.”

The CSU-2 is available worldwide, complying with IEC and UL standards, in two versions.

* The **CSU-2LV** for low voltage applications has 4 current inputs, maximum nominal current of IN = 4 kA, and a maximum over current setting of 3 x IN = 12 kA – tested and configured to fit with RC current sensors types
* The **CSU-2MV** for medium voltage applications has 4 current inputs, maximum nominal current of IN = 4 kA, and a maximum over current setting of 3 x IN = 12 kA – tested and configured to fit with KECA and KEVCD current sensors types

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