

RELEASE NOTE 1MRG040293 | 2021-08-12

# Release of Relion<sup>®</sup> SAM600-IO series Version 2.2

The evolution of Relion SAM600-IO series continues with this update. The designation of this update is revision 2.2.5

**Release authorized by:**

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# Introduction



We are pleased to announce an update of the Relion SAM600-IO series version 2.2. With this update, we bring several new features and enhancements.

SAM600-IO switchgear control unit enhances system functionality and flexibility for digital substation applications, providing means to interface primary apparatus in the switchyard. SAM600-IO complements SAM600 merging units for a complete offering for digital substations.

Key system features such as support for several Ethernet communication ports, HSR redundancy method and precision time synchronization following IEC/IEEE 61850-9-3 profile have been introduced and are in place since the launch of version 2.2.1. A number of system and cybersecurity features bring enhancements to these already available features.

## New features and benefits



The following new features and their benefits are introduced in this update:

### Hardware related

- Introducing an enhanced revision of the Static Output Module (SOM), article number 1MRK002614-CA with six relay outputs and six heavy duty outputs for fast and direct circuit breaker operation without the need for intermediate auxiliary relays. The enhanced breaking capability is as shown in the technical data in product guides and technical manuals.
- With this release, it will now be possible to have a maximum of 6 Milliamp-Input-Modules (MIM) depending on the IED size and the total amount of ordered hardware. This increase from the present maximum 4 MIM modules, supports applications where larger amount of transducer inputs are connected to the IED for monitoring purposes.

### Application related

- Several math and logic functions are added to the existing library which help users to develop advanced application logics. The entire list can be found in the product documentation like product guide and technical manuals.

### System and cyber-security related

- Rapid Spanning Tree Protocol (RSTP) according IEEE 802.1D is now available as a communication redundancy method in addition to the existing PRP and HSR. The RSTP offers a cost-effective station communication redundancy. The IED supports multiple redundancy methods and can be ordered. All communication redundancy

protocols require 2 SFP communication ports and is configured using Ethernet Configuration Tool (ECT) in PCM600.

- The built-in disturbance recorder in SAM600-IO has been extended to support IEC 60255-24 (COMTRADE-2013) format. For backward compatibility purposes, a setting is available to record disturbances in earlier COMTRADE-1999 or the new COMTRADE-2013 format.

COMTRADE-2013 format provides several benefits like higher signal resolution, indication of time quality at recording and a single file (extension .CFF) containing all parts of the recording. PCM600 2.10 with PCM600 2.10 Hotfix Rollup 20210622 and SDM600 version 1.2 FP2 HF5 handle upload and analysis of both COMTRADE-1999 and COMTRADE-2013 formats as supported by 670 series. Also, the total number of disturbance records stored in the 670 series IED has been increased from the present 100 to 200 records.

- The LPHD PhyNam (Physical Name) is now modeled to include several attributes for the device name plate. These attributes can be configured with accurate data of the installed IED. When using a higher-level asset management system, Utilities can benefit by having high quality data on these IEDs which can further help to monitor and manage the installed assets.
- SAM600-IO already support user accounts that are managed locally or centrally via ABB's SDM600. Central account management has been further enhanced to support Microsoft® Active Directory service for user management. This enhancement allows user account management and authorization via a third-party Active Directory domain server.
- SAM600-IO communication to central account management servers has been enhanced to support Lightweight Directory Access Protocol over SSL (LDAPS) also called secure LDAP.
- Default password and PIN code for the IED while being fixed in earlier versions can now be changed by user thereby meeting requirements of cyber-security standards.
- The communication to/from SAM600-IO devices uses data encryption via Transport Layer Security (TLS). While TLS versions 1.2, 1.1, 1.0 are supported, these are also settable by the user in terms of allowed Min/Max versions. This provides the flexibility for users to raise the cyber security data encryption levels and when needed for specific cases/clients allow a lower encryption level.
- The United States Federal Information Processing Standard (FIPS) defines security and interoperability requirements for computer systems that are used in governmental organizations. The 670 series version 2.2.4 together with PCM600 version 2.10 and connectivity package version 3.4 now uses SHA-256 encryption algorithm to meet the FIPS 140 standard. This enhancement ensures that the IED and tools environment work seamlessly in a FIPS or non-FIPS system.
- IEC 61850 communication supervision now covers GOOSE via logical node ALGOS and sample value supervision via logical node ALSVS.
- IEC 61850 supports a powerful feature of simulation and testing of GOOSE data. While SAM600-IO devices have supported this simulation mode, it is further enhanced with a function block output which can be used in application configurations.
- User Defined Name (UDN) is a simple yet powerful way to identify signals in a configuration. From the present 13-character limit, it is now increased to 16-characters and complies with IEC/IEEE C37.118.2, with 16 bytes for station, channel names.

- The total storage of process events has been increased from present 1000 to 5000 events.
- OpenSSL updated to version 1.1.1j (<http://www.openssl.org>).

## **PCM600 and IED connectivity package for 670 series products version 2.2**

PCM600 version 2.10 together with PCM600 2.10 Hotfix 20210804 or later and SAM600-IO connectivity package version 1.2 will be required.

The version 1.2 of the IED Connectivity package for SAM600-IO supports version 2.2 products.

For further details about the connectivity package and its installation, please refer to the release note 1MRG040294.

## Documentation and marketing material

The product guides, technical manuals, technical summary sheets and brochures are available via [abb.com/protection-control](http://abb.com/protection-control).

## Ordering and delivery

All new orders on the Relion SAM600-IO series version 2.2 products will be delivered with this latest version. Existing orders will be processed with the version/revision as acknowledged at order. If existing order shall be upgraded to this latest version, a request shall be made to **SA-T sales**.

For current delivery time, please get in touch with our sales contact at ABB Power Grids, Grid Automation Products.

Kind regards,

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