



# Reason MU320

## Fully-Integrated Merging Unit for Process Bus Applications

A MU320 is the IEC 61850-9-2LE Sampled Values interface with conventional current and voltage transformers, integrating GOOSE control for switchgear and report control clock for communication with the supervisory systems.

Intelligent technologies have brought many benefits in the field of transmission and distribution networks. Digital technology at the station bus level is today widely spread, to provide a cost-effective system to meet the increasing demands for higher standards in power systems automation. The Reason MU320 merging unit goes one step further to complete the digital substation; facilitating the connection of conventional current and voltage transformers to modern substation automation solutions through IEC 61850-9-2LE.

### A safer place to work

Transmitting the instrument transformers measurements digitally through optical fibres eliminates the risk of wrong handling the current and voltage circuits and makes the relay room a safer work environment, eliminating hazards and reducing the risk of personnel injury.

### Reduce the engineering costs

The use of Process Bus with the MU320 drastically reduces the need for trenches, ducts, glands, cable trays and copper hardwiring. As the information is exchanged among the IEDs using fiber optic cables and Ethernet switches.

Fewer cables to manage also means reduced engineering complexity, as extensive wiring schematics are replaced by version-controlled and standardised engineering in software. Future changes to the functionality of a scheme are achieved by software reconfiguration, without needing to perform on-site rewiring.

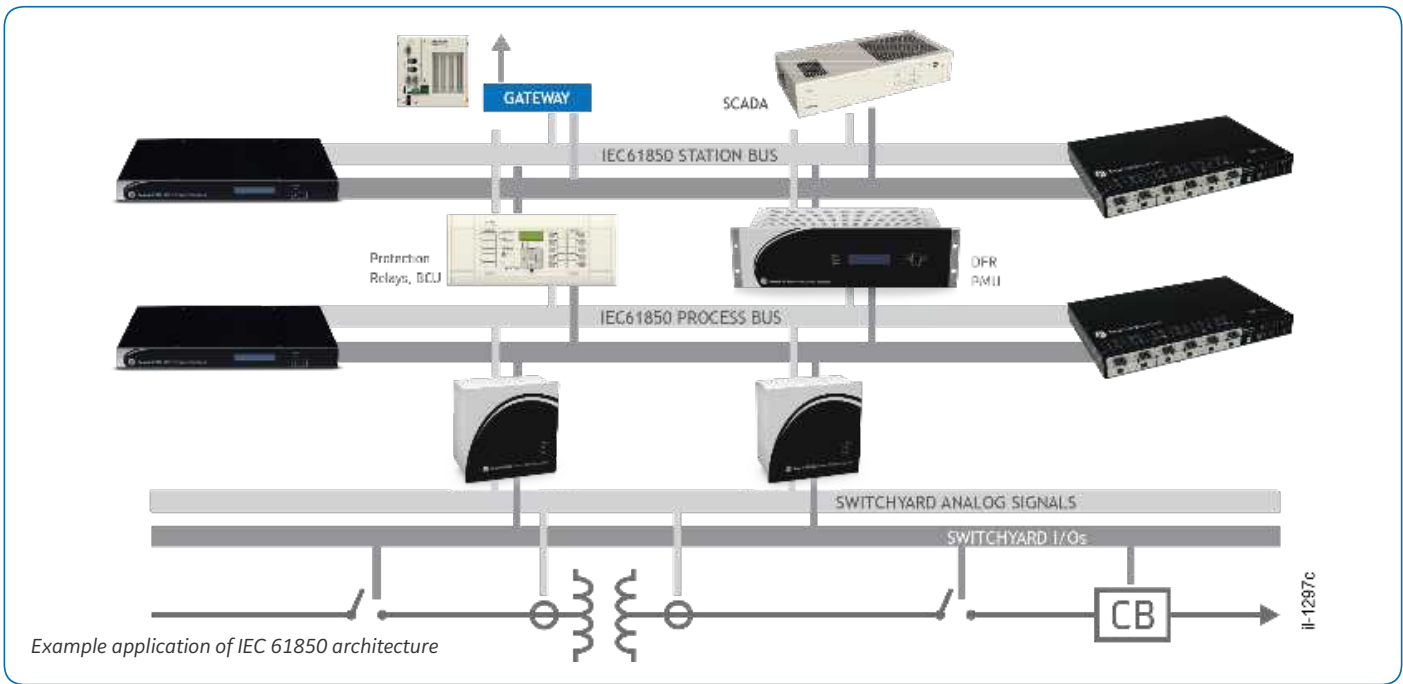
### Efficient maintenance and reduced cost-of-ownership

Full compliance to IEC 61850 communication protocols ensure that all Ethernet links are continually supervised. Any failure will be signalled to operators in real-time, such that availability and performance are never compromised, and condition-based maintenance can be used.

## Main Features

- Supports Protection (80 s/c) and Measurement (256 s/c) profiles
- Able to monitor up to two bays per unit with 16 analogue inputs
- IEC 62439-3 PRP network redundancy
- Up to 32 binary inputs or 12 inputs / 16 outputs
- GOOSE publisher
- Up to 32 binary GOOSE inputs
- High Speed High Break outputs
- Holdover mode as per IEC 61869
- Mode/behaviors according to IEC 61850 including test mode
- MMS Report control block
- Operating temperature -40°C to +85°C
- Synchronisation IRIG-B or IEEE 1588 PTPv2
- IEC 61850-9-2LE conformity attested by the international lab TÜV SÜD





## Improved Reliability

Power systems applications are mission critical systems, where the industry standard is to offer inherent redundancy in the schemes applied. The Reason MU320 provides unsurpassed reliability with flexible redundant solution. The Ethernet connections support the IEC standard Parallel Redundancy Protocol (PRP), where a redundant star-connected topology allows for zero-time – or bumpless – recovery. Alternatively, the shallow case design makes it easy to deploy MU320 in main and backup, or dual main applications, each connected to different cores of the line CTs and individual protection.

MU320 is the first of its class to manage both PRP redundancy and IEEE 1588 PTP operating together in the substation architecture. Profit from a single redundant network for higher reliability in communication and synchronization simultaneously.

## IEC 61850-9-2LE Sampled Values Publisher Conformity

The MU320 was tested and approved by the global testing and certification company TÜV SÜD according to the Implementation Guideline for Digital Interface to Instrument Transformers (IEC 61850-9-2LE).

## Flexibility

By integrating binary inputs, outputs and analogue connections into one box, the MU320 offers a cost-effective solution for the most diverse bay configurations. Up to two buses and two lines may be monitored per box with a flexible configuration of up to 32 binary inputs and 12 binary outputs. Optionally, high-speed high break contacts may be used featuring a closing time of less than a millisecond from GOOSE trip message reception, plus the ability to rupture trip or close coil currents. Make use of the MU320 fast and reliable GOOSE interface, fully implemented in hardware, to control your switchgear digitally. Results are up to 10 times faster than the conventional implementation, on the range of a hundred of microseconds.

## Future Proof and Interoperable

The MU320 complies with the Light Edition implementation guideline, which guarantees its interoperability with other vendors. Furthermore, measurements of each CT/VT set may be broadcast in protection and measurement profile, allowing multiple protection, automation and control applications. Bridge the gap between you the conventional and digital substation to benefit from future-proof technology and the complete portfolio of digital solutions GE has to offer.

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Grid-GA-L3-MU320-0882-2017\_02-EN

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