

# SIPROTEC 6MU85

Merging Unit

[www.siemens.com/6MU85](http://www.siemens.com/6MU85)

## Description

The new SIPROTEC 6MU85 Merging Unit based on the flexible SIPROTEC 5 system has been designed for conventional and non-conventional instrument transformers (LPITs)\* and digitalizes all primary data close to the process. SIPROTEC 5 process bus provides versatile solutions and migration concepts for new and existing systems.

Main function	Merging Unit, Breaker functions, Backup protection functions, Additional functions
Communication	Up to 4 sampled measured value streams according IEC 61850-9-2LE or IEC 61850-9-2 / IEC 61869 flexible streams
Hardware flexibility	Flexibly adjustable and expandable I/O quantity structure within the scope of the modular SIPROTEC 5 system; 1/6 expansion modules can be added.
Housing width	1/3 × 19 inches to 2/1 × 19 inches
As standard	Conformal Coating

## Applications

Merging Unit for

- Analog and digital feeder values
- Central Merging Unit for transformers
- Central protection
- Bay units for distributed busbar protection
- Fault recorder for process bus

Centralized synchrocheck



SIPROTEC 6MU85

## Functions

### Merging Unit

- Per ETH-BD-2FO Ethernet module 1 or 2\*Sampled Measured Value (SMV) streams  
- up to 32 analog values in any combination of CTs and VTs  
or  
- 4x CTs, 4x VTs (IEC 61850-9-2LE)
- Up to 4 ETH-BD-2FO modules possible
- Reliable and redundant data transmission via PRP protocol
- IEC 61869-9, IEC 61869-13 compliant
- IEC 61850-8-1 GOOSE, MMS and Merging Unit protocol on the same Ethernet module
- Sample and date/time synchronization via IEEE 1588v2/PTP
- Redundant power supply
- Extended temperature range (-40 °C to 70 °C)

Merging Unit functionality is also available for all modular SIPROTEC 5 protection devices.

# Efficient and modular

## Breaker functions

- Control with switchgear interlocking
- Circuit-breaker failure protection (50BF)
- Circuit-breaker wear monitoring
- Switching statistics
- Point on wave switching (PoW)
- Trip-circuit supervision (74TC)
- Automatic reclosing (79)
- Synchrocheck (25)

## Backup protection functions

- Non-directional overcurrent protection (50/51, 50N/51N)
- Directional overcurrent protection (67/67N)
- Overvoltage and undervoltage protection (27/59)

## Additional functions

- Phasor Measurement Unit (PMU) for synchrophasor measured values and IEEE C37.118 protocol
- Arc protection
- Auxiliary functions for simple tests and commissioning
- Temperature measurement via Thermobox TR1200 (7XV5662-6AD10 or 7XV5662-8AD10)
- 4-20 mA transducer inputs for various analog process values, e.g. pressure, tap-changer position

## Communication

- Pluggable communication modules, usable for different and redundant protocols (IEC 61850-8-1,

IEC 61850-9-2, IEC 60870-5-103, IEC 60870-5-104, Modbus TCP, DNP3 serial and TCP, PROFINET IO)

- Serial protection data communication via optical fibers, two-wire connections and communication networks (IEEE C37.94, and others), including automatic switchover between ring and chain topology
- Extensive cyber security functionality, such as role-based access control (RBAC), protocolling security-related events or signed firmware
- Simple, quick and secure access to device data via a standard Web browser – without additional software

## Benefits

- Adaptable to multiple CT, VT, LPIT\* inputs
- Scalable number of binary inputs and outputs
- Expandable by a 2nd row
- Direct “high speed” tripping of circuit breaker < 1 ms
- Collection of additional data (temperature, pressure, tap changer positions, ...)
- Cyber security in accordance with NERC CIP and BDEW Whitepaper requirements
- Highest availability even under extreme environmental conditions by “conformal coating” of electronic boards

\*) in preparation

LPIT = Low Power Instrument Transformer



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