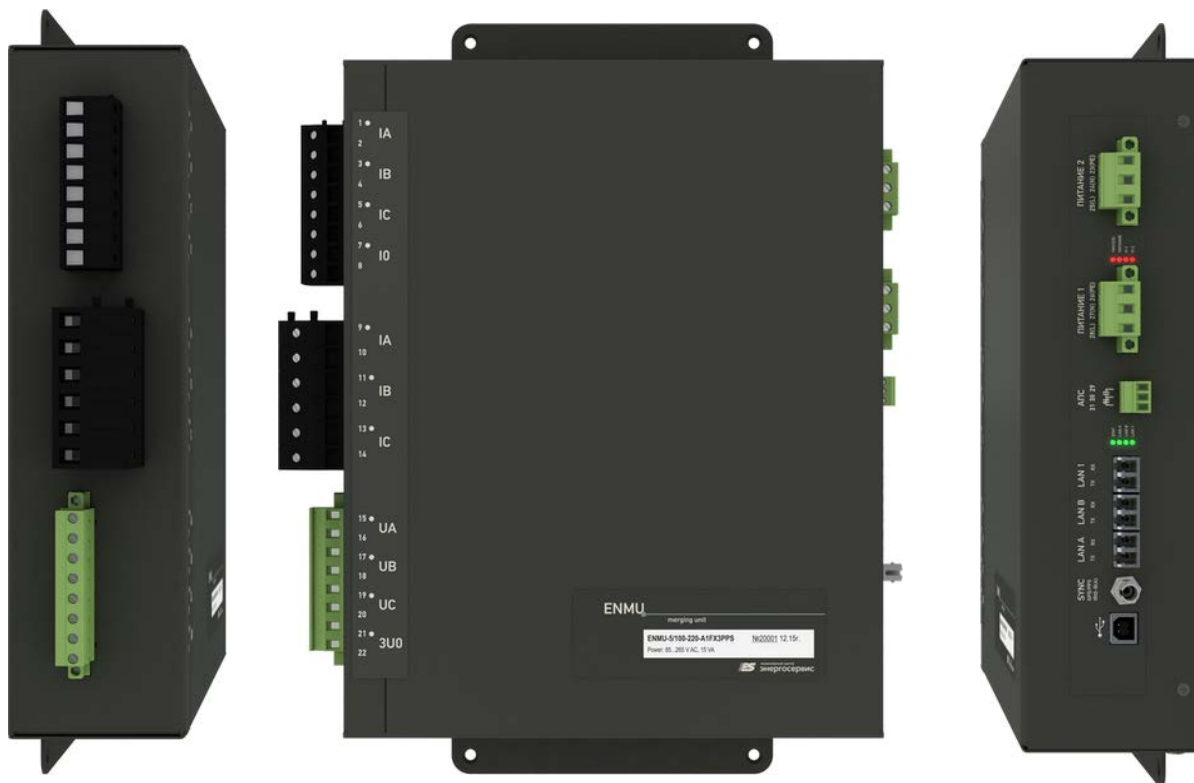


ENMU

Merging Unit



According to IEC 61869 ENMU belongs to SAMU (Stand-Alone Merging Unit) class.

ENMU provides **Sampled Values (SV)** data transmission according to Implementation Guidelines for Digital Interface to Instrument Transformers using IEC 61850-9-2 (**IEC 61850-9-2LE**).

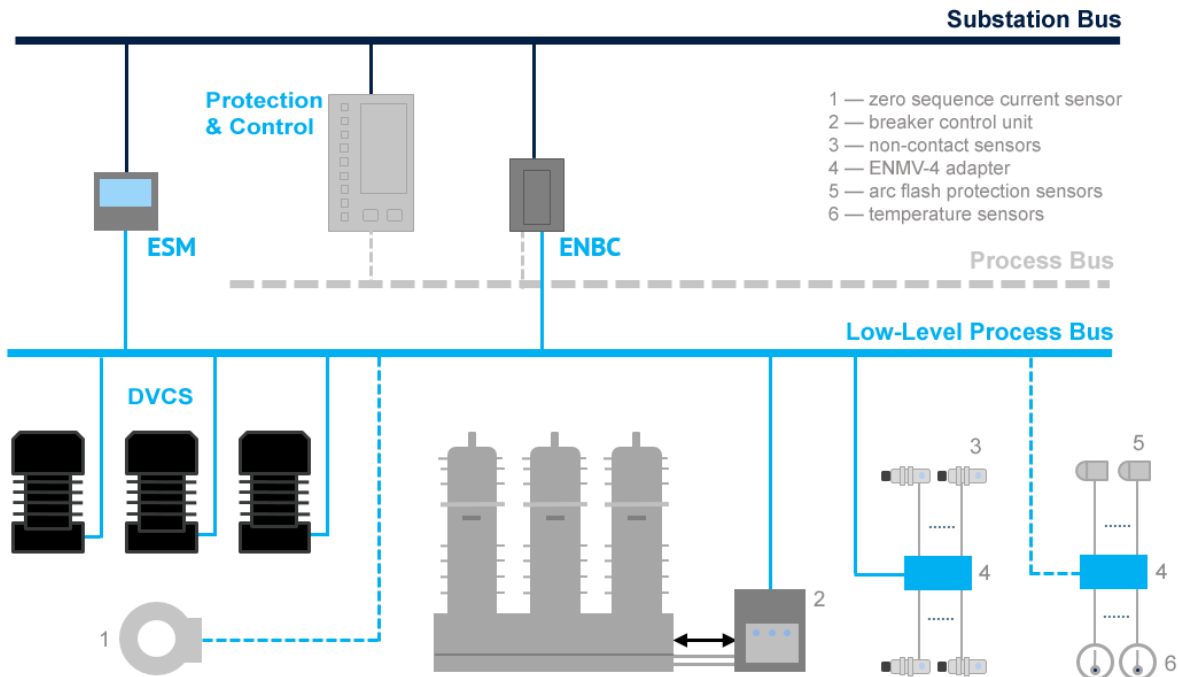
ENMU comes with three optical fiber **Fast Ethernet 100Base-FX interfaces**, two of which can be configured to operate as a PRP node to provide seamless failover.

ENMU is an ultimate combo, transmitting up to **four SV streams** it can serve as a Phasor Measurement Unit (**PMU**) in compliance with IEEE C37.118.2, while IEC 60870-5-104 for legacy systems is supported too.

IRIG-A, IRIG-B or 1PPS can be used for time synchronization.

ESGEAR

Digital Switchgear



Energoservice takes pride in presenting **ESGEAR – the new digital substation technology**. ESGEAR replaces analog and dry signal circuits with digital **low-level process bus** based on FlexRay™ network. FlexRay™ supports data rates up to 10Mbit/s and allows passive, “party line” bus topology with no need of network switches.

ESGEAR satisfies high reliability requirements for substation automation due to FlexRay™ deterministic time-triggered communication and physical channel redundancy. In 2015 the prototypes of digital voltage and current sensor (**DVCS**), **ENBC** bay controller and **ESM** multifunctional meter have been produced. The DVCS is based on TECV.P1-10 combined current and voltage transformer made by Optimetrik company. It contains low power current transformer, capacitive voltage transformer, Rogovsky coil and built-in FlexRay™ merging unit. ENBC bay controller performs grid measurements and works as FlexRay/IEC 61850 converter. ESM multifunctional power meter performs power quality analysis and phasor measurements.

ESGEAR reduces substation build and maintenance costs, improves reliability and decreases startup time.

