Stand-alone merging unit for measurement and protection with extended functionality

ENMU

Conforms to IEC 61869-13 stand-alone merging unit standard
Connects to instrument transformers and protection circuits
Broadcasts up to four sampled values streams, IEC 61850-9-2LE, 80 and 256 samples per period
Functions as a digital fault recorder

Serves as a phasor measurement units, streaming data via IEEE C37.118
Measures and transmits electric grid parameters via IEC 60870-5-104
Is equipped with onboard digital inputs and outputs for switchgear control
Communicates via IEC 61850-8-1 as MMS server and GOOSE publisher/subscriber

Please visit enip2.com for detailed information
Specifications

Connection
instrument transformers and protection circuits,
4 measurement (M) and 3 protection (P) current inputs, 4 voltage inputs

Rated values/operating range
current (M): 1 or 5 A / 1–200 %, current (P): 1 or 5 A / 10–4000 %,
line voltage: 100 V / 5–200 %, frequency: 50 Hz / 40–60 Hz

Synchronization source
IEEE 1588v2 PTP or IRIG-A/IRIG-B/PPS through ST fiber optic

Accuracy
0.2 DR 1–200, 2TPS, 0.2

Sampling rate
4800 and 12800 Hz (80 and 256 samples per nominal period)

Digital inputs
16 isolated high-voltage (3.75 kV) binary inputs, with programmable
upper and lower input thresholds

Digital outputs
10 relays of which 7 are form A relays (6 A 250 VAC, 10 ms operate, 5 ms
release) and 3 are solid state relays (3.5 A 250 VDC, 5 ms operate, 0.2 ms
release)

Interfaces
up to 4 × Ethernet 100Base-FX LC, up to 2 × Ethernet 100Base-T
2 × RS-485, 1 × CAN

Redundancy
IEC 62439-3 PRP

Communication protocols
IEC 61850-9-2 LE streaming, IEEE C37.118.2, IEC 60870-5-104, FTP,
IEC 61850-8-1 (MMS, GOOSE)

Extension modules
analog inputs and digital inputs/outputs: up to 240 external I/O units;
up to 8192 analog values, 4096 binary signals, 2048 commands

Power supply
120–370 V DC / 100–240 V AC (45–55 Hz), 15 VA

Operating conditions & mounting
from −40 to +70 ºC / 303 × 254 × 94 mm, IP40

Order code

| Rated current: | Interfaces group 1: |
| 1 — 1 A | 2 × Ethernet 100Base-FX, 1 × Ethernet 100Base-T, 1 × fiber ST |
| 5 — 5 A | — NA |

ENMU-X/100-X-220-X-X

| Digital inputs/outputs | Interfaces group 2: |
| 16/10 — 16 DI, 10 DO | 2 × Ethernet 100Base-FX, 1 × Ethernet 100Base-T, 2 × RS-485, 1 × CAN |
| — NA | — NA |

Optional:
PTPv2.enmu — IEEE 1588v2 PTP time sync activation