

NH FUSE SWITCH
DISCONNECTOR



THE SAFER AND
SMARTER SOLUTIONS
TO PROTECT AND
DIGITIZE YOUR
LOW VOLTAGE
POWER GRID

PROGRID SMART NH FUSE SWITCH DISCONNECTOR



A NETWORK UNDER CONTROL

MERSEN
IS YOUR
PREFERRED
PARTNER
FOR THE
DEVELOPMENT
OF A SMART
SUBSTATION
PROJECT.

MERSEN, a key player for the energy transition

Electrical substations around the world will require massive upgrades over the next decade to keep the grid manageable in the future renewable energy system. The energy transition is driving the creation of interconnected microgrids with renewable sources and new energy consumption such as EV and heat pumps. That's why smart product offerings and data are critical to meet the needs of the transition to Smart Grid Industry 4.0.

With our ProGrid offer, MERSEN supports the distribution system operators with a tailor-made solution to enhance flexibility in the low voltage networks maintenance, in safety and energy savings, automation, faster power restoration, load and sources management.



Cybersecurity

- All Modular Measuring Devices have a cryptographic chip with HW-based secure key storage.
- Antitamper level 3: equipment opening detection and possibility of programming events.
- CPU crypto/hash HW acceleration.
- "SFI" secure firmware install.
- "SBFU" secure boot secure firmware update.
- AES128, encrypt / decrypt, Galois Field Multiply for GCMnAnd HASH-functions, SHA-1 and SHA-1 (secure HASH algorithms), MD5, HMAC.

THE SAFER AND SMARTER SOLUTIONS TO PROTECT AND DIGITIZE YOUR LOW VOLTAGE POWER GRID



ProGrid Fuse Switch Disconnecter

ProGrid NH Fuse Switch Disconnecter protects your substation from overcurrents with high safety for end-users. Higher performances with a patented switching mechanism in parallel and in rotation ensures IP20 touch protection and prevents any electrical contact during the handling of the handle and of the fuses. It also allows easier installation and maintenance: better visibility and handling of the switch operating covers for easier fuse replacement.

Available in 1-pole or 3-poles switching
Available from size 1 (250A) to size 3 (630A) at 800V AC
Available in versions gTr 910A and 1000A with solid links



Padlocking possibilities in closed and open/parking positions in 1 pole and 3 poles versions.



ProGrid is designed for easier and faster installation thanks to:

- Direct and safe fixation onto live bus bars with appropriate tooling.
- Possibility to mount the device on unscrewed busbars thanks to hooked clamps.
- Kit for double fuse switch disconnecter assembly on-site.
- Full traceability of the stand-alone devices thanks to a QR code in the front, which enables also access to website page with additional technical information.



Upgrade to ProGrid Smart

ProGrid Smart NH Fuse Switch Disconnecter monitors energy flow on low voltage outputs of the substation. ProGrid can be easily upgraded from standard to smart and old installations benefit from the stand alone FSD's advantages.

2 versions of smart modules available:

- Top mounting module for easy installation in new panels and substations.
- Bottom mounting module for easy retrofitting of panels. ProGrid Smart with bottom module has identical footprint as the stand-alone fuse switch disconnecter.

Bottom version :
the most compact smart FSD on the market

- Easy to insert and remove the modules for maintenance operation such as fault location tests in the output cables.
- Possible to replace the fuse protection for voltage measurement easily.
- Efficient daisy chain for communication AND power supply : 24VDC.
- Integrated sensors wiring inside the fuse switch disconnecter with no potential interference with bus bar side mounting.



- Measurement of I, U, P, Q, S, cos Phi.
- Internal temperature and fuse monitoring for increased safety and easier substation maintenance.
- Current transformers 5A, 1A, 333mV compatible to the Smart modules thanks to factory parameterization
- 8-pin DIP switch for addressing.
- Robust connection thanks to standard connections RJ45 for Modbus RTU Up to 24 slaves.



Compatibility to any Modbus RTU master interface and any preferred control system to makes the measured data available to the user.

ProGrid SmartStation: the ultimate solution for monitoring the entire environment and power quality conditions in the substation

A complete, intelligent and flexible solution to monitor, the entire environment (transformer temperature, humidity...) to provide full digitization of substations and distribution cabinets and ensure total control of the network.

This solution allows the combination of the new ProGrid Smart fuse switch disconnecter with additional modular measuring devices and sensors to create a complete intelligent monitoring system for the medium/low voltage transformer substation.

The ProGrid SmartStation includes comprehensive sensors that monitor not only the energy flow of the station's low-voltage outputs, but also the complete status of your installation in the field, including environmental values, external station access and transformer status.

Real time data displayed on the "light" webpage control system.

Totally independent, modular devices to combine at your will.

Perfect for retrofit, no need to replace existing assets on the site.

Reduced installation time, sensors prewired and 2-hours solution.

Cloud computing, all devices come prepared for MQTT and Modbus TCP.

Cybersecurity, outstanding features.

4 MMD (modular measuring devices) to keep your network under total control.

- Smoke level detection
- Opened or closed status of the door
- Outdoor temperature
- Indoor temperature
- Indoor humidity

- Transformer temperature
- Infra-red
- Flood detector
- Indoor temperature
- Indoor humidity
- Ozone detection

- Three phase voltage
- Temperature of feeder switches
- Three-phase current of 4 feeders
- Power
- Frequency
- + Main electrical parameters

- Three phase voltage
- Three-phase current of secondary
- Power
- Harmonics
- Frequency
- + Main electrical parameters

COMPATIBLE WITH ALL MARKET SOLUTIONS

Easy installation

Innovative design:
Patented switching mechanism

2 smart installations:
TOP or BOTTOM

Current measurement:
330mV, 1A or 5A CTs

Online access for direct visualisation of data with a "light" control system

Plug and Play: compatible with all market solutions



GLOBAL EXPERT
IN ELECTRICAL POWER
AND ADVANCED MATERIALS

EUROPE

FRANCE

MERSEN France SB S.A.S.
15 rue Jacques de Vaucanson
F-69720 Saint-Bonnet-de-Mure
+33 4 72 22 66 11
TS.SBM@mersen.com

GERMANY

MERSEN Deutschland Eggolsheim GmbH
In der Büg 12
D-91330 Eggolsheim
+ 49 (0) 9191 7338 - 350
vertrieb.eggolsheim@mersen.com

NEDERLAND

MERSEN BeNeLux
Mercuriusweg 4-6
3113 Ar Schiedam
+31 (0)102 98 30 27
ep.nl@mersen.com

BELGIUM

MERSEN BeNeLux
Heide, 3
1780 Wommel
+32 (0)2 456 80 68
ep.be@mersen.com

AUSTRIA

MERSEN Österreich Wien GmbH
Lienfeldergrasse 31-33
A-1160 Wien
+ 43 (0) 1890 2818
sales.wien@mersen.com

HUNGARY

MERSEN Hungary Kft
Attila utca 31, Budapest 1039
+36-1-240-2000
office.budapest@mersen.com

SWEDEN

MERSEN Nordic A.B.
Elektrogatan 10, 8tr Uma Workspace,
SE-171 54 Solna
+468 629 64 00

CZECH REPUBLIC

MERSEN Czech Republic s.r.o.
Pardubická 437
533 04 Sezemice
+42 0 466 931 580
sezemice@mersen.com

SPAIN

MERSEN Iberica BCN, SAU
Ramón de Trinchería, 39-41
08980 Sant Feliu de Llobregat, Barcelona
+34936327920

