

**ENMS Energy Network Management Systems – Sales Information.**

11KV Primary Switchboards,  
High Rise Buildings,  
Hospitals, Campus,  
Centralised Generation.



**ENMS Applications.**

The ENMS system is suitable for 11KV primary power switchboards and subordinate 11KV distribution networks which may be spread over considerable distances. The ENMS can control primary 11KV switchgear and interfaces with standby power generation and CHP installations. Segregated busbars are normal and these are usually linked by a bus-tie, these can be operated in three modes; normally open independent, normally closed "flip – flop" or normally closed "solid bus".

In addition to maintaining supply onto main busbars the ENMS manages the 11KV distribution network which can be customised to suit a combination of ring or radial topology; this may be for monitoring only or with full remote control. Typically, with suitable remote instrumentation and motor operators installed, an ENMS can detect and locate an HV cable fault, isolate it and re-configure a ring main to recover load in less than 20 seconds without any operator intervention. In manual or semi-automatic modes the ENMS allows centralised control of ring mains in "closed transition" while open points are moved without losing load.

The design philosophy of the ENMS is rugged and secure, using redundant fibre optic links to remote outstations and two way confirmation switching protocols. For extended systems radio communication links can also be used to connect remote outstations.

The ENMS is often deployed with load management functions, to reduce inductive surges on supplies in "black start" scenarios, or to modulate the static load when operating within supply constraints. When configured with autonomous LV controllers (such as Weirgrove APMS or AMCO) the ENMS will communicate with these to co-ordinate switching and loading patterns across a whole network.

*Weirgrove Power Management Systems*

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**Description.**

The **ENMS** is from the **Weirgrove** family of “off the peg” standard switchgear automation solutions. The controllers are based on rugged industrial PLC technology from Siemens Automation. The ENMS design benefits from an increasing installed base which has been proved to give extremely reliable and stable control in service.

**Features.**

Every Weirgrove ENMS includes many standard features designed to enhance reliability and reduce risk by making the systems easier to operate.

- Reliable, maintenance free automation using PLCs and HMIs with no moving parts or batteries.
- Fast PLC scanning times allow better resolution of cascade events and improved diagnostics.
- Alarms and events logged into non volatile retentive memory with timestamps for accurate diagnostics.
- Maintenance free 12” or 15” Touchscreen HMIs with enhanced diagnostics and status screens.
- High performance HMI allows entire network to be mapped without need for external SCADA systems.
- Simple and reliable hardwired interlocking systems to prevent unsafe switching, in auto or manual.
- Hardwired test facilities for offload and onload testing.
- Duplexed power supplies from batteries giving “black start” capability.
- Pulse on – pulse off state stable control and “bumpless transfer” between operating modes to reduce unwanted switching.
- Robust programming techniques using complementary Boolean logic for better diagnostics and state stable control under fault and transient conditions.
- Fast booting times and rapid synchronising to existing power conditions without unwanted switching.
- Multiple volt sensors checking with programmable stability timers and ride-through of “brown-out” conditions for extra stability.
- Dedicated processors for critical functions and segregated communications processors for “overhead” functions.

**Options.**

ENMS controllers are scalable solutions that can be easily customised without compromising the fundamental design.

- Hardwired mimic option, enhanced animation of LEDs.
- Hardwired manual control mode for local switchgear with hinged, lockable security window.
- Additional monitoring for generator switchboards and load feeder breakers.
- Automatic Load Shedding System (ALSS) bolt-on options, for partial operation under restricted power budgets.
- Generator controller interfaces to allow “G59” parallel operation of generators.
- Remote alarming by GSM text messaging to multiple mobile `phone with automatic escalation.
- Modbus and Profibus communications interfaces to third party devices including energy metering, protection relays, generators, UPS, BMS and SCADA.
- Communications links to other Weirgrove controllers in site-wide installations.
- “Level 4” dual redundant CPU and IO options.
- “Level 5” duplexed A and B side ENMS systems for “N+N” or “Tier 4” architecture.
- Dedicated simulation panels for onsite validation and operator training.

