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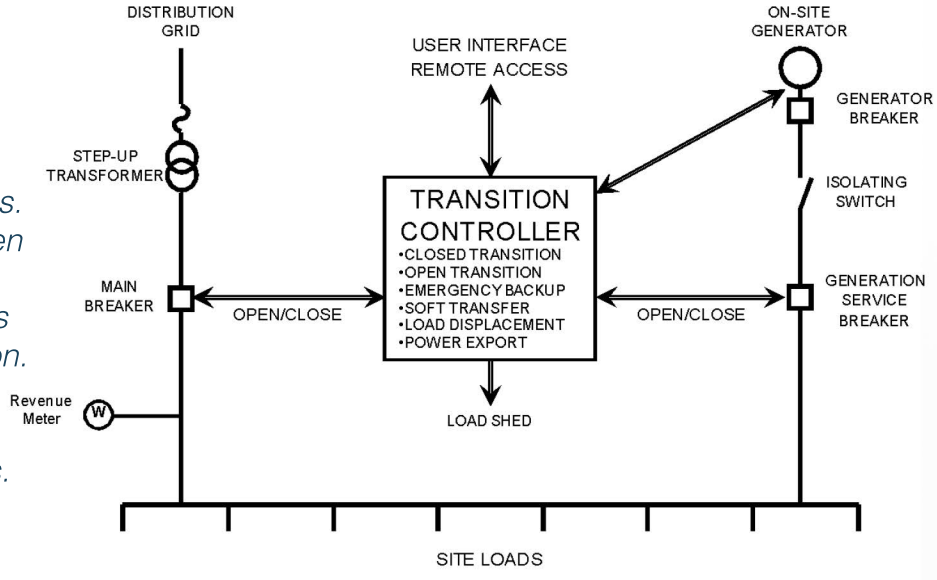
ANF Energy
MTC-1 Transition Controller

The MTC-1 Transition Controller allows for the controlled transition from grid supplied power to on-site supplied power including paralleling.

The MTC-1 Transition Controller provides:

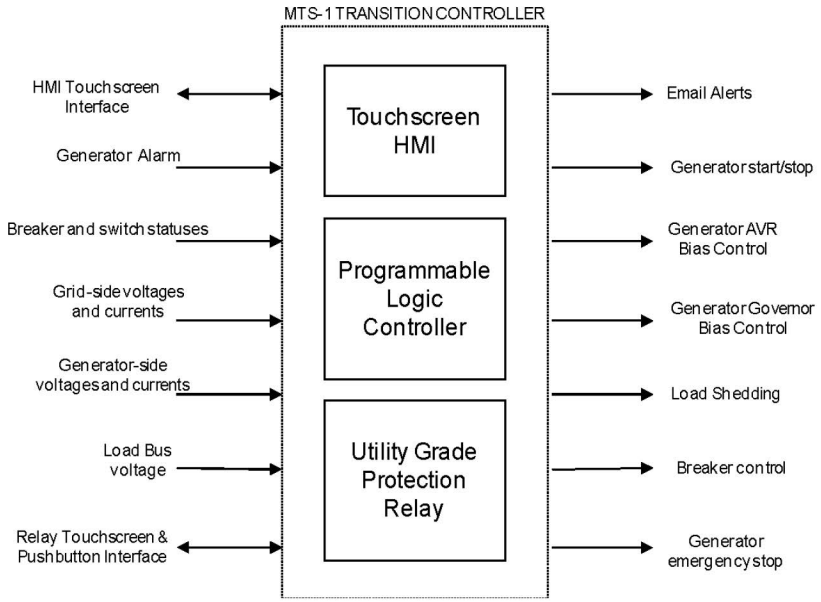
- Closed transition – Transition from grid supply to site supply using **Make-before-Break** with paralleling for less than 100ms. Includes option for load shedding during transfer.
- Open transition – Transition from grid supply to site supply using Break-before-Make with minimal transfer time.
- Emergency Backup – Fast recovery from blackout to either grid supply or site supply.
- Soft transfer – Smooth transitioning from grid supply to site supply with gradual loading and unloading of generation.
- Load Displacement – Transition to parallel operation with no power export.
- Power Export – Transition to parallel operation with power export.

Transition is achieved by controlling grid-side and generator-side breakers. Includes smooth synchronization when required, including a facility to match grid-side and generator-side voltages and frequency prior to synchronization. Transition also involves generator start/stop control, and biasing of generator AVR and governor controls.



Major components of the MTC-1 Transition Controller:

- PLC with software covering all transitions, control laws, alarms and fault detection and response.
- HMI offering real-time display and control, event logging and email alerts.
- Local, or remote access via internet and smartphone.
- Utility-grade Protection relay able to provide inter-tie protection, enhanced generator protection, over-current protection and synchronization.



- Bias input to generator governor allows for power export control, controlled loading/unloading of generation, and frequency matching before synchronization.
- Bias input to generator AVR allows for unity power factor regulation, and voltage matching before synchronization.
- Three outputs for load shedding during transitioning.
- Controls main breaker, generation service breaker and generator breaker.
- Email alert of fault conditions.
- User configurable parameters.
- Event display.
- Uses cUL/CSA approved off-the-shelf components.
- Contains an embedded plant simulator allowing operator training and ‘what if’ studies.