The Level 1 field units shall be microprocessor based providing protection, control, monitoring, metering, and complete register functionality for a substation bay. Separate CPU boards shall handle protection, control, and communication tasks, thus increasing system dependability and security. A redundant power supply shall be optionally available for each unit. Unit architecture shall be a PLC-like modular architecture allowing a flexible number of analog and digital I/O by the addition of single card modules.

Minimum functionality included in Level 1 field units shall be as follows:

**Protection:**
- Available units for different bay applications (feeder, transformer, busbar, bus coupler, auxiliary services...) including selected combinations of protection functions: 50/50N, 51/51N, 67/67N, 46, 27, 59, 59N, 81U, 81O, 87T, 64, 25, 79
- Cold load pickup

**Register and Analysis Functions:**
- Event register
- Oscillographic register

**ORDERING**

DDS system is composed of DMS modules. To order select the basic model and the desired features from the Selection Guide below.

<table>
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**Control Functions:**
- Programmable operations for up to 7 elements (programmable operate, fail and success conditions and operation timers)
- Programmable interlockings
- Configurable inputs and outputs
- Configurable one line diagram for the substation bay

**HMI and Communications**
- Local alphanumeric LCD for protection operation
- Local graphical LCD for bay information shall include as a minimum user programmable screens for:
  - One line diagram displaying
  - Switchgear operation
  - Access to metering information
  - Alarm panel display
  - I/O status display
- Front (RS232) and rear (RS232, Fiber optic or RS485 selectable) communication ports with 115kb maximum communication speed

**Digital distribution system**
- Control functionality
- Protection and control functionality
- Line application (only model 3)
- Auxiliary services application (only model 2)
- Application variant (see table 1)
- Ranges depend on model
- RS232 communication
- 1 mm plastic fiber optic communication
- 62.5/125 glass fiber optic communication
- Point to point RS485 communication
- Protection inputs and outputs depend on model
- Control inputs and outputs depend on model
- 48-125 VDC single source auxiliary voltage
- 110-250 VDC single source auxiliary voltage
- 48-125 VDC redundant source auxiliary voltage
- 110-250 VDC redundant source auxiliary voltage
- Power measurement by pulse count
- Direct power measurement (1%/error in V, I, and 2%/error in P, Q, Power)
- M-Link communications protocol
- M-Link and ModBus® RTU communications protocol
- Spanish language
- English language

**Protection**
- Ground current
- Phase voltage
- Busbar 1 voltage
- Negative sequence
- Power
- Cos φ
- Frequency

**Monitoring**
- Breaker status
- Coupler status
- Events
- Breaker maintenance
- Coil supervision

**Analysis**
- Events
- Oscillography

**Others**
- Multiple tables
- Cold load pick-up
- Time synchron.