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# AMF-M

## Automatic Mains Failure Control Panels



## Product Description:

AMF-M "Automatic Start Control" units are designed and manufactured for a wide range of generator applications, where comprehensive control functions are required. These modules can monitor and measure an extensive range of engine and alternator parameters and display generator status and alarm warnings on its 2.8" colour graphical display.

These modules can be configured easily via on-board USB port and all system parameters and operating limits can be set in a graphical manner. Specific user parameter data can be stored and uploaded on the factory floor for wide range of custom applications.

"M" series AMF Modules have integrated USB port for system configuration and parameter settings and a CAN J1939 bus for connection to engine ECU to get all engine data during operation. If MPU input is used for engine speed sensing, then CAN Bus can be used for interfacing to other peripheral devices.

3-phase Mains and 3-phase Generator voltages are measured for automatic start of the generator if the mains voltage falls outside set limits. Engine cranking is fully automatic, and all engine parameters are controlled during cranking and running period. Load is automatically transferred back to Mains once it is restored within the safe limits.

Remote start input is also available to control the genset operation from an external remote point. All auto start and engine protection functions are active during remote start operation.

Monitoring engine speed, coolant temperature and oil pressure continuously provide safe protection and operation of the engine during power generation phase. Using integrated hours counter makes it easy for service and maintenance of the generator.

AMF-M control module measures 3-phase generator load current for precise control of the load side during operation. Extensive protection functions can be used to monitor and/or protect the generator during operation. A wide range of AC bus parameters are measured, including KW, kvar, kVA, pF actions can be programmed based on measured values.

Licence-free PC Tools S/W package is available for the customer to set up device configuration via USB port connection. Multi-level password protection allows safe servicing in the field.

Module front panel is manufactured with silicone rubber keypad for harsh environmental conditions and high IP protection. Plastic frame has built-in sealing gasket to ensure IP65 protection class on the front side of the module.

Unit can operate over a wide range of temperature and humidity conditions. Plug-in type connectors on the back side of the panel reduces the installation and servicing time.

### MAIN FEATURES:

- ✓ 2.8" Colour graphic display,
- ✓ Alphanumeric and graphical presentation of all variables and alarm warnings,
- ✓ Multiple language selection from menu,
- ✓ Automatic transfer of LOAD between Mains and Generator,
- ✓ 3-phase Mains and 3-phase Generator voltage measurement,
- ✓ 3-phase Generator load current,
- ✓ Fully automatic cranking and protection of the engine,
- ✓ 3 Analogue sender signal inputs
- ✓ 6 Configurable Digital signal inputs
- ✓ 7 Digital outputs (4 relay, 3 Solid state),
- ✓ Magnetic Pick-up sensor input
- ✓ D+/WL sensing input,
- ✓ 8-32Vdc wide range DC power input
- ✓ CAN Bus J1939 com port for connection to engine ECU or peripheral controllers
- ✓ USB2.0 type-B configuration port
- ✓ Plug-in type signal connectors
- ✓ Remote-start function input
- ✓ Hours counter for easy maintenance,
- ✓ Alarms & Events log memory,
- ✓ Silicone rubber keypad with IP65 protection class from the front side, with sealing gasket,
- ✓ EMC immunity and emissions compatibility: EN61000-6-2 EN61000-6-4
- ✓ Electrical Safety: EN60950
- ✓ Temp. and Humidity: EN60068-2-30
- ✓ Flammability: UL94
- ✓ Overall dimensions: 165x129x45 (mm)
- ✓ Panel cutout: 151x113 (mm)

Technical Specifications	Value	Description
DC Power input voltage:	8Vdc to 32Vdc	Maximum power dissipation is <3.0W
Display:	2.8" LCD Colour graphic	TFT type with high resolution, high brightness,
Keypad:	Silicone rubber	IP65 protection from the front side (with gasket)
Mains voltage:	3-phase	TRUE RMS, high accuracy
Generator voltage:	3-phase	
Generator Load current:	3-phase load current	
Digital inputs:	6 configurable inputs	Active low input connections (sink type)
Magnetic pick-up input:	1 input	MPU connection for speed detection
Analogue inputs:	3 analogue sender inputs	Temperature (NTC, KTY) and Pressure (resistive)
Charge alternator input:	1 analogue input	D+/WL signal measurement
Digital outputs:	7 digital outputs	3-solid-state o/p and 4-Relay o/p (dry-contact, 5A/250Vac AC2)
Communication ports:	USB2.0 Type-B	Parameter configuration
	CAN Bus J1939	Peripheral control network connection
Operating temperature:	-10°C to +60°C	UV resistant keypad and enclosure
Storage temperature:	-25°C to +85°C	
Operating humidity:	10%RH to 97%RH	Non-condensing
EMC compatibility:	EN61000-1-2/3/4	Industrial level
Safety:	CATIII, 300V	
Vibration & shock:	MIL810G	Transportation
Protection class:	IP65	From front side (with gasket)
	IP00	From back side
Overall dimensions:	165 x 129 x 45	Measurements are in mm
Panel cutout:	151 x 113	
Mounting type:	Panel mounting	With screw type retention clamps
Weight:	180gr	Approximate weight



Figure 1: AMF-M Front side view

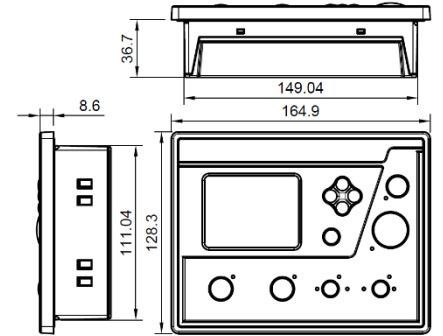


Figure 2: AMF-M Dimensions (mm)



#### Compliance:

AMF-M series control panels are tested and compliant to CE regulations for emitted and conducted RFI interference, according to EN61000-6-4 class-A. Immunity is tested against EN61000-6-2. Vibration: EN60068-6-2 Dielectric strength: IEC255, Flammability: UL94, Safety: UL508

#### Connection Diagram and System configuration :

