AMF3.1

ENKO Electronic Control Systems - IZMIR / TURKIYE

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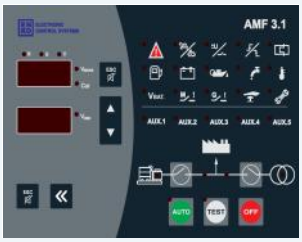
Automatic Mains Failure Controller for Gen-Sets

AMF3.1 offers versatile control functions for single or multiple Generator/Mains applications.



Efficient and Versatile control for all GenSet applications

The controller has intelligent built-in functions for many applications and also provides economical solutions for Diesel Generator control.

AMF3.1 is a full Automatic Mains Failure unit intended to be used for Gen-Set applications. The controller can be used with single or three phase mains systems.

The unit is designed with high process power for versatile and accurate control of all Gen-Set functions. It controls 3 phase mains and single phase generator voltage and also monitors generator load current.

User can program any of the auxiliary i/o ports for custom applications. The menu offers extensive control for each i/o and all the parameters can be configured via PC, using the **ENKO PRO-*Link*** configuration program. All the parameters can also be configured from the front panel controls. SMS messages can be sent, using optional GSM interface module.

Many of the control variables can be displayed as required. The analog sensor characteristics can be adjusted from the menu to fit any kind of sensor. There are altogether 10 i/o ports available, where each one can be independently configured via program menu.

Load power is also measured and can be used with dedicated functions in the menu. Decisions can be made depending on active and/or reactive power of the load. Total accumulated power is also measured and recorded.

AMF3.1 control module is optimized for enhanced applications, where customer demands are high and allows minimal solutions for all genset applications with high reliability.

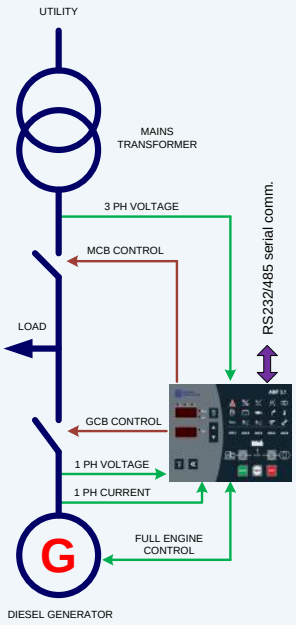
- **PC INTERFACE FOR MONITORING AND SYSTEM PROGRAMMING**
- **CONFIGURABLE I/O PORTS FOR CUSTOMER SPECIFIC APPLICATIONS**
- **MEASUREMENT OF KW, KVA, KVAr, KWh AND PF**

Main features:

- 3 phase mains voltage single phase generator voltage and current measurement
- 2 LED displays for parameter value readouts
- 10 configurable i/o ports for engine and system controls
- Measurement of active/ reactive load power and PF
- Full LED indicators for alarm and status conditions
- Independent control of MCB and GCB from front panel
- Automatic, Manual and Test operation modes
- Full digital calibration of all analog measuring inputs
- Characteristic adaptation table for temperature and pressure sensors
- Small mechanical outline for minimal control applications

Technical specifications:

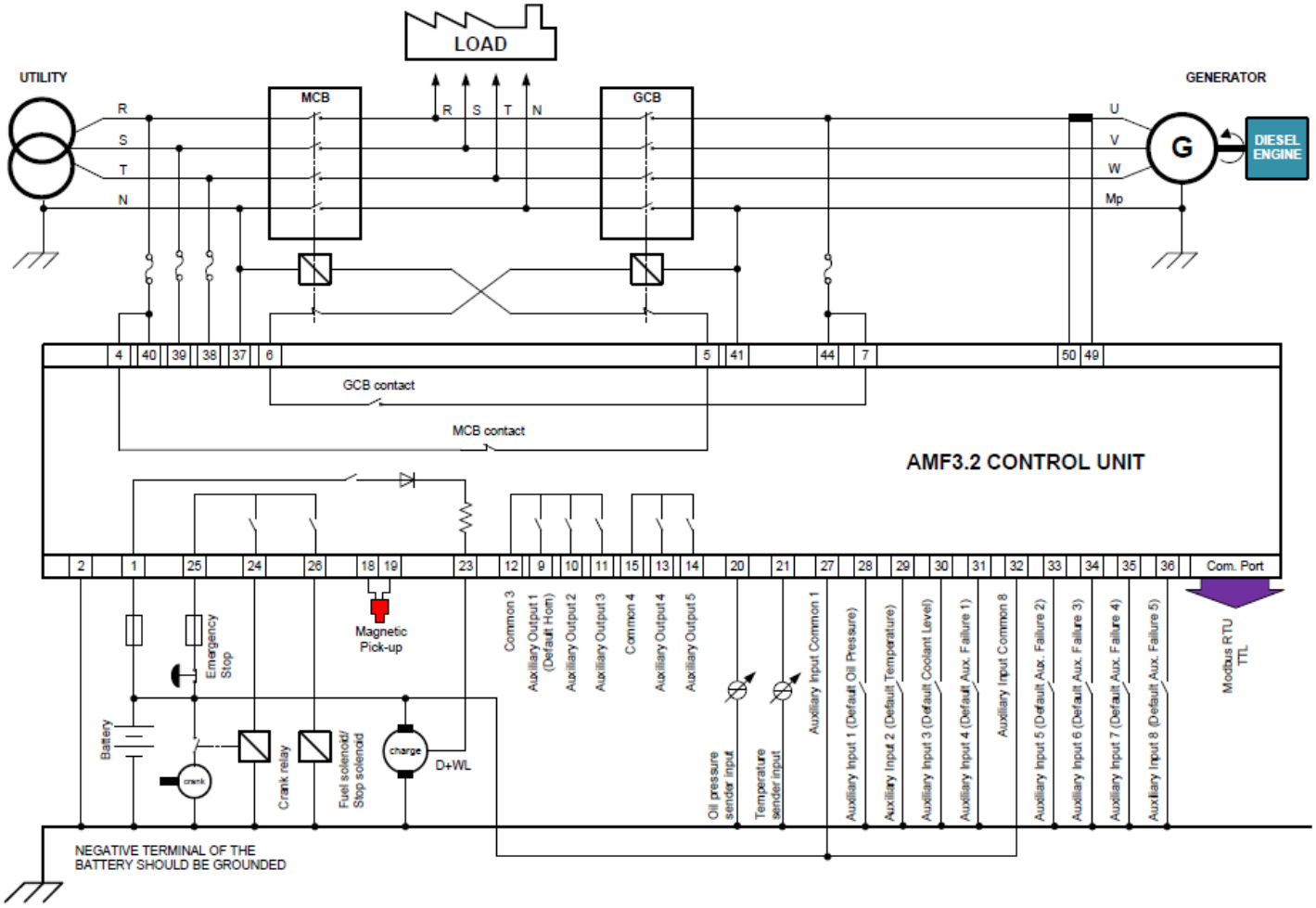
DC power supply:	9-35Vdc @ 1W maximum power dissipation (12Vdc, relays off)
Operating temperature:	-35°C to +70°C
Relative humidity:	20%rH to 99%rH, non condensing
AC voltage measurement:	20Vac to 500Vac phase to phase
Frequency measurement:	1.0Hz to 99.9Hz, ±0.1Hz
Auxiliary i/o:	7 i/p and 3 o/p ports with relay contact (dry contact)
Charge alternator excitation current:	120mA for 12Vdc systems, 200mA for 24Vdc systems
Measurement accuracy:	Phase voltages: ±2% of scale, Frequency: ±0.1Hz
System Outputs:	Crank and Fuel: 16A/250Vac MCB, GCB: 10A/250Vac AUX: 6A/250Vac
Weight:	440 grams
Mounting:	165mmX117,5mm front panel
Protection class:	IP52 (front panel protection)



Additional features:

TRUE RMS VOLTAGE AND CURRENT MEASUREMENTS	√
SCADA INTERFACE FOR MONITORING AND SYSTEM PROGRAMMING	√
MODBUS/RTU COMMUNICATION INTERFACE PORT	√
WIDE OPERATING TEMP. RANGE (-35°C to +70°C)	√
AT+T COMPATIBLE GSM MODEM INTERFACE	√
ENGINE WORKING HOUR METER AND SERVICE TIMER	√
ALARM LOGGING FOR THE LAST 15 INCIDENTS	√
IP52 PROTECTION CLASS (front panel protection)	√
REMOTE START AND STOP OPERATION INTERFACE	√

APPLICATION CONNECTION DIAGRAM



Typical connection diagram is shown and this is one of possible applications among many. The system is shown in 3 phase connection but can also be applied for single phase systems.

The configurable inputs and outputs can be programmed in order to adopt the controller to more specific applications. The controller is suitable for 12/24Vdc systems.

For remote monitoring and programming, RS232/485 ModBus RTU protocol can be used. **ENKO PRO-*Link*** program is available for on-site programming of all configurable parameters

AMF3.1 can be connected to suit many applications.

PC communication makes it possible to be programmed from remote distance.

AMF3.1 controller plastic housing is designed according to DIN norms. Mechanical dimensions are shown in the drawing.

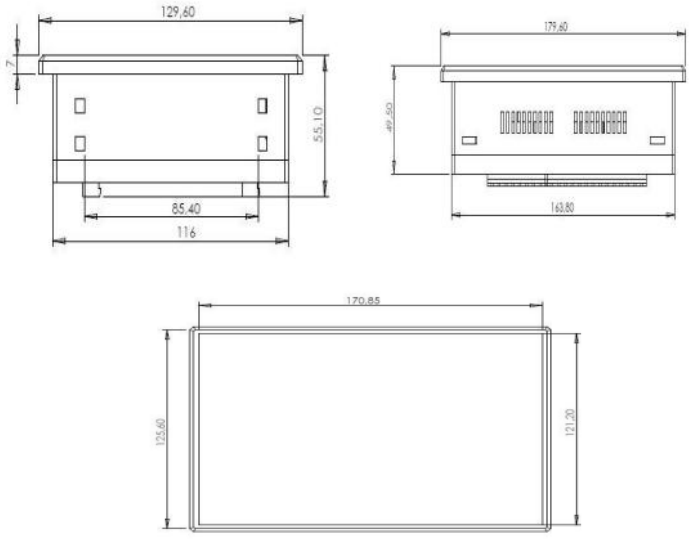
Plastic housing is made of ABS (with added fiber) which provides high temperature resistance and good mechanical stability. The electrical characteristics of the housing is excellent.

The front panel is designed to comply with IP52 protection class. Embossed *Lexan* is used for front panel, which provides easy control of the buttons and clear reading of the digital values. ESD protection is provided for front panel.

All components are SMD mounted, including the buttons and LED indicators. The use of mechanical switches for control buttons ensures reliable operation over long periods.

Inner construction is specially tailored for resistance against vibration . Also, special chemical treatment ensures reliable operation in high humidity environments.

Mechanical dimensions



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