

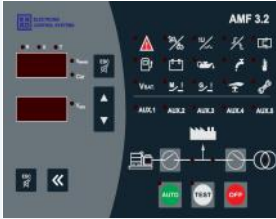
# AMF3.2

ENKO Electronic Control Systems - IZMIR / TURKIYE

www.enkoelektronik.com

## Automatic Mains Failure Controller for Gen-Sets

AMF3.2 offers flexible control functions for single and multiple Gen-Set applications where high number of peripheral controls are required.



### Flexible control of Gen-Sets with intelligent system management

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

AMF3.2 is a full Automatic Mains Failure unit intended to be used for Gen-Set applications where high number of i/o ports are required. The controller can be used with single or three phase mains and generator 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 17 i/o ports available, among which many can be configured by the user.

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.

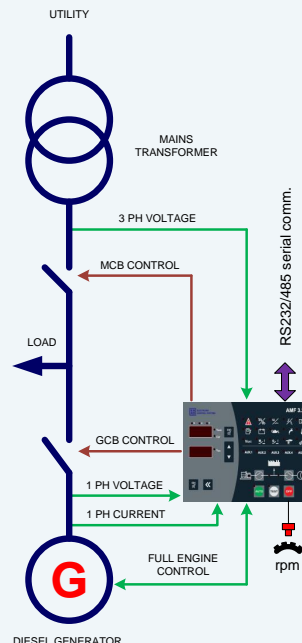
AMF3.2 control module is optimized for enhanced applications, where customer demands are high and allows minimal solutions for all gen-set applications with high reliability.

Magnetic pick-up input is available for reliable and accurate measurement and control of engine speed.

- PC INTERFACE FOR MONITORING AND SYSTEM PROGRAMMING, SCADA CONTROL
- CONFIGURABLE I/O PORTS FOR CUSTOMER SPECIFIC APPLICATIONS
- MEASUREMENT OF KW, KVA, KVAR, KWH AND PF
- MAGNETIC PICK-UP INPUT

## 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, $\pm 0.1$ Hz
Auxiliary i/o:	8 i/p and 5 o/p ports (dry contact)
Charge alternator excitation current:	120mA for 12Vdc systems, 200mA for 24Vdc systems
Measurement accuracy:	Phase voltages: $\pm 2\%$ of scale, Frequency: $\pm 0.1$ Hz
Frequency measurement:	Magnetic pick-up / Alternator phase frequency
Outputs:	Crank and Fuel: 16A/250Vac MCB, GCB: 10A/250Vac AUX: 6A/250Vac
Weight:	440 grams
Mounting:	165mmX117,5mm panel cutout
Protection class:	IP52 (front panel protection)



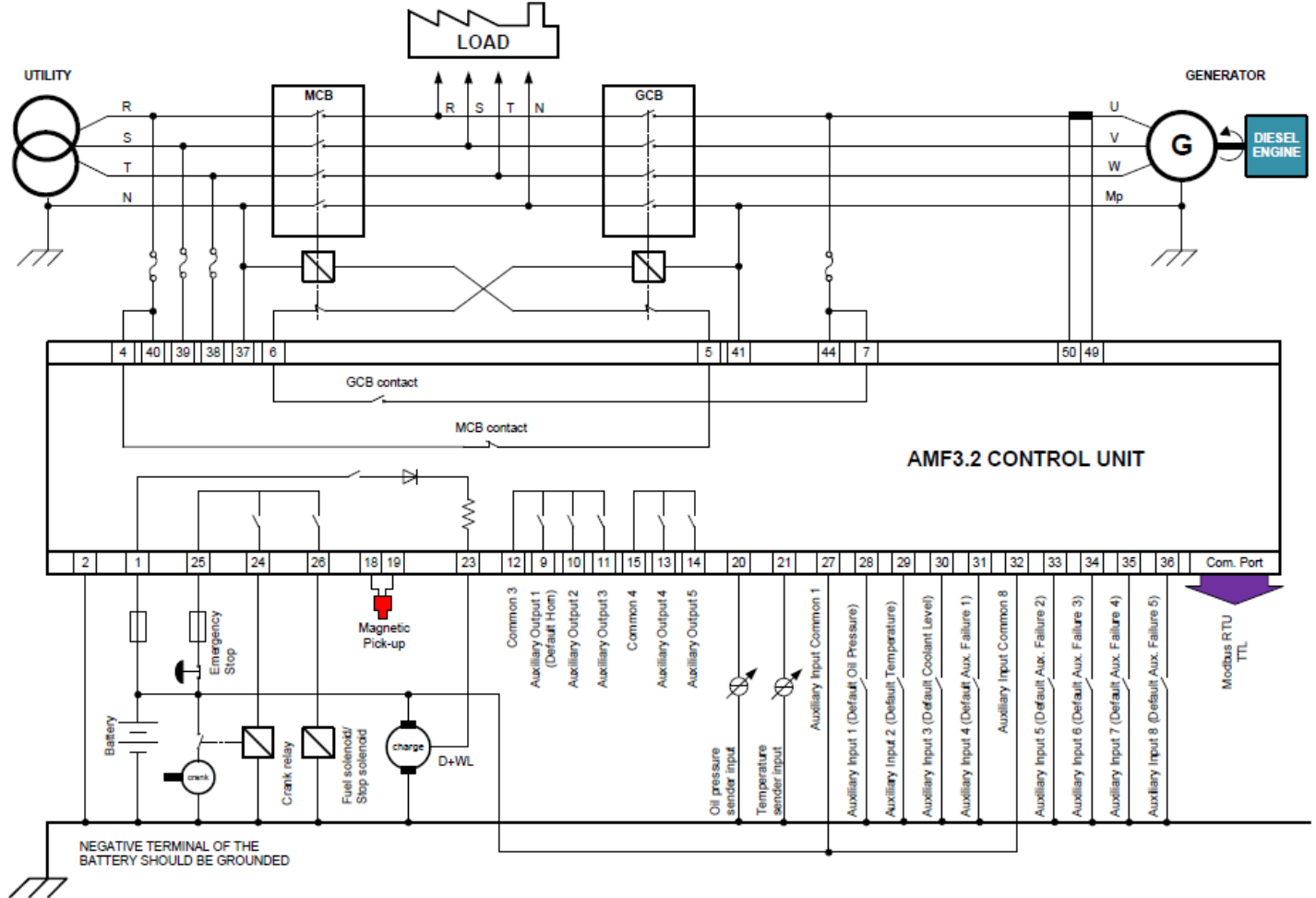
### Main features:

- 3 phase mains voltage single phase generator voltage and current measurement
- 2 LED displays for parameter value readouts
- 13 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

### 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 ✓
- MAGNETIC PICK-UP RPM MEASUREMENT INPUT ✓

## 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. Magnetic pick-up can be used for rpm detection. The controller is suitable for 12/24Vdc systems.

For remote monitoring and programming, RS232/RS485 ModBus RTU protocol can be used. **ENKO PRO-Link** program is available for on-site programming of all configurable parameters

**AMF3.2 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.

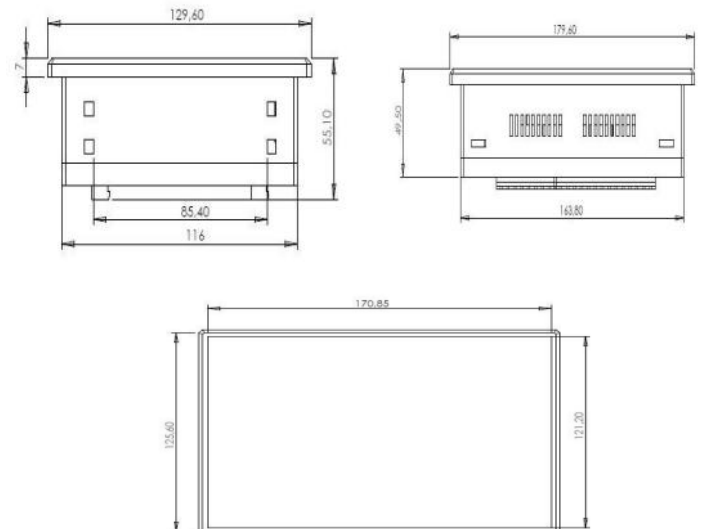
Plastic housing is made of ABS (with added fiber) which provides high temperature resistance and good mechanical stability. The electrical characteristics of the housing is excellent.

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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