AMF3.4L *(With LCD Graphic Display)*

ENKO Electronic Control Systems - IZMIR / TURKIYE

www.enkoelektronik.com

Automatic Mains Failure Controller for Gen-Sets

AMF3.4L is designed with high demanding applications in mind. The unit is equipped with LCD Graphic display for simple and efficient user interface. User can select the display language.

Flexible control of Gen-Sets with intelligent system management and Real-Time clock

Real time clock function allows the user to program weekly patterns for the generator operation. Time stamped alarm logging is also available for professional user.

AMF3.4L is a full Automatic Mains Failure unit intended to be used for Mains and Gen-Set control, where high process power is required. The controller can be used with single or three phase mains and generator systems.

3 phase mains and 3 phase generator voltages are measured in true RMS and also 3 phase generator load current is measured. Phase sequence and Reverse Power Protection is provided for the Generator.

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. The unit can be programmed from remote distance.

Built-in graphical display offers easy reading of all the parameters during run time and programming. There are 3 analog sensor inputs available and characteristics can be adjusted from the menu to fit any type of sensor. There are altogether 13 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 active/reactive power is also measured and recorded.

The real-time clock allows weekly and/or monthly generator control programs to be made, which can manage periodic test run and /or disabling the generator at certain hours or on specific days.

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

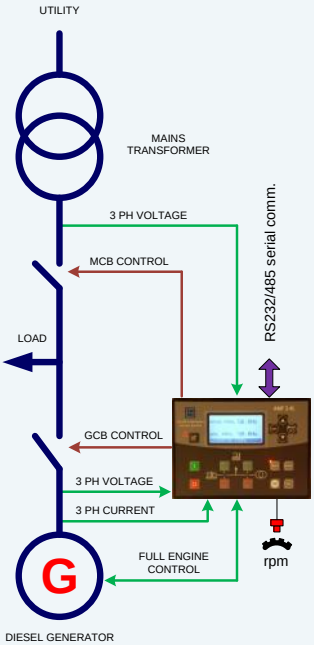
Main features:

- 3 ph mains voltage, 3 ph generator voltage and current measurement
- Graphical LCD display with white LED backlight
- 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
- Phase sequence and Reverse Power protection for Gen-Set
- Full digital calibration of all analog measuring inputs
- Characteristic adaptation table for temperature and pressure sensors
- Daily or weekly control patterns for the generator, Automatic test run mode
- SMS message option for alarms

- **PC INTERFACE FOR MONITORING AND SYSTEM PROGRAMMING, SCADA CONTROL**
- **REAL TIME CLOCK AND TIME STAMPED ALARM LOGGING**
- **PHASE SEQUENCE DETECTION AND REVERSE POWER PROTECTION**
- **MEASUREMENT OF KW, KVA, KVAr, KWh AND POWER PACTOR**
- **MAGNETIC PICK-UP INPUT FOR RPM MEASUREMENT**

Technical specifications:

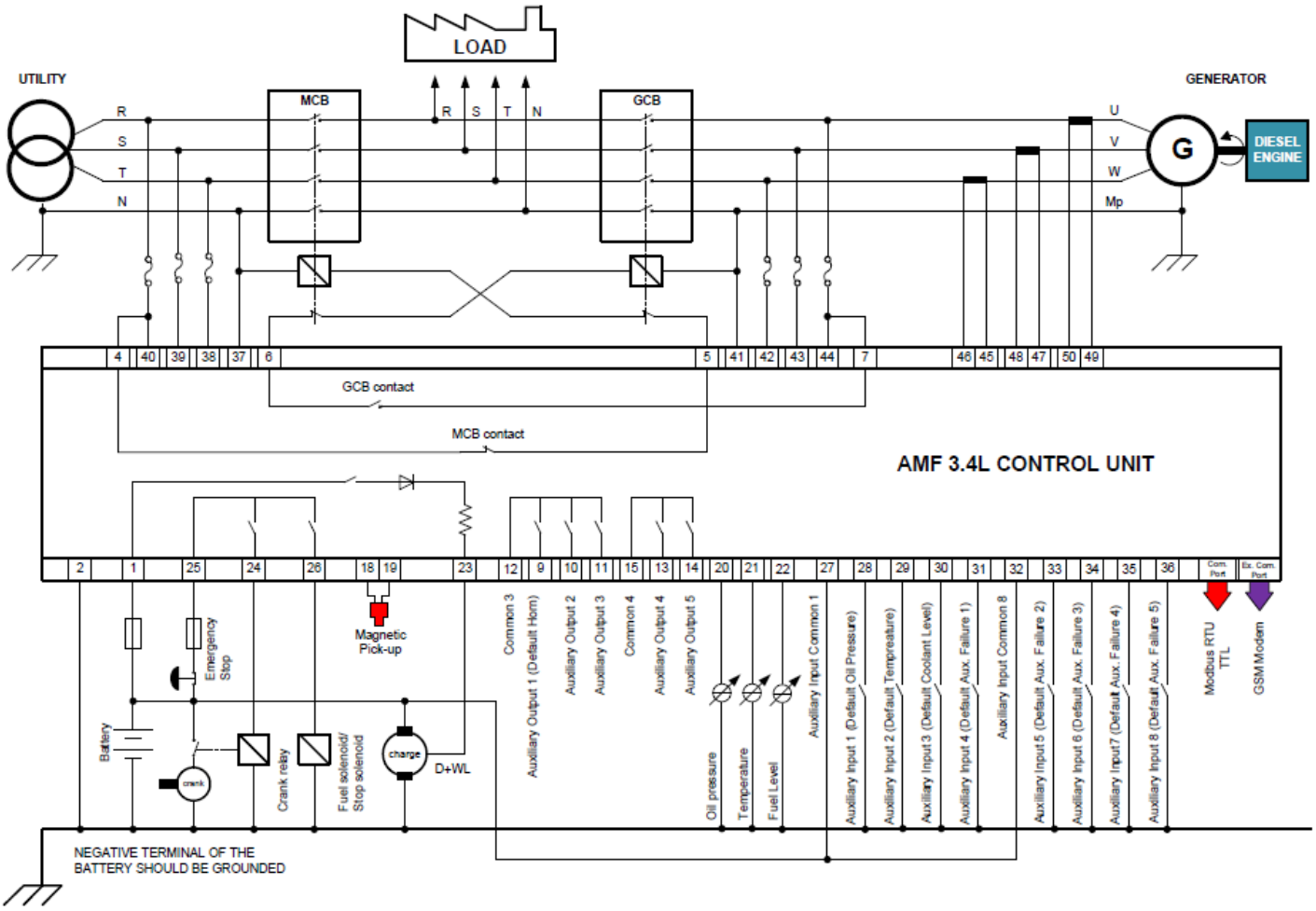
DC power supply:	9-35Vdc @ 1W maximum power dissipation (12Vdc, relays off)
Operating temperature:	-25°C to +70°C
Relative humidity:	20%rH to 99%rH, non condensing
AC voltage measurement:	20Vac to 500Vac phase to phase
Frequency measurement:	1.0Hz to 99.9Hz, ±0.1Hz
Auxiliary i/o:	8 i/p and 5 o/p ports (dry contact)
Charge alternator excitation current:	120mA for 12Vdc systems, 200mA for 24Vdc systems
Measurement accuracy:	Phase voltages: ±2% of scale, Frequency: ±0.1Hz
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)



Additional features:

TRUE RMS VOLTAGE AND CURRENT MEASUREMENT	√
SCADA INTERFACE FOR MONITORING AND REMOTE SYSTEM PROGRAMMING	√
MODBUS/RTU COMMUNICATION INTERFACE PORT	√
WIDE OPERATING TEMP. RANGE (-25°C to +70°C)	√
AT+T COMPATIBLE GSM MODEM INTERFACE	√
ENGINE WORKING HOUR METER AND SERVICE TIMER	√
ALARM LOGGING FOR THE LAST 15 INCIDENTS	√
REAL TIME CLOCK AND TIME STAMPED ALARM LOGGING	√
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

Built-in calendar can be used for weekly run program of the Generator.

Can be configured and monitored from remote distance via serial com port.

AMF3.4L controller plastic housing is designed according to DIN norms. Mechanical dimensions are shown in the drawing.

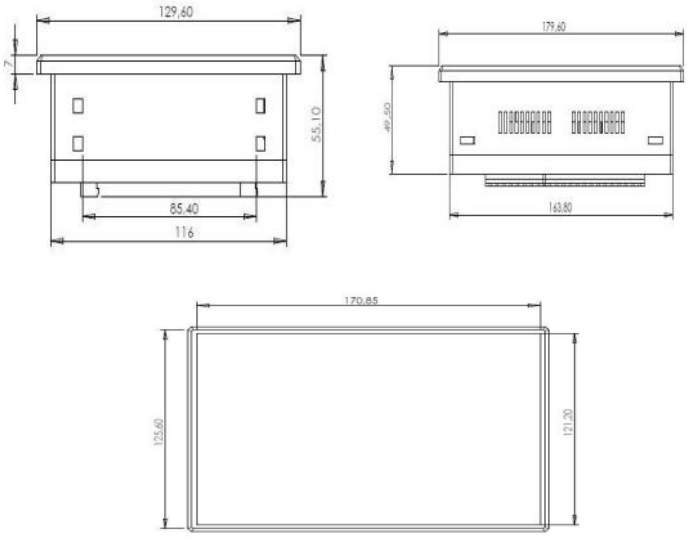
Plastic housing is made of ABS (with added fiber) which provides high temperature resistance and good mechanical stability. The electrical characteristics of the housing is excellent.

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 and rear connection sockets.

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, conformal chemical coating ensures reliable operation in high humidity environments.

Mechanical dimensions



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