AMF5.2 *(With LCD Graphic Display)*

ENKO Electronic Control Systems - IZMIR / TURKIYE   www.enkoelektronik.com

Automatic Mains Failure Controller for Gen-Sets

AMF5.2 is equipped with *Graphical LCD Display* and provides embedded intelligence for Gen-Set control applications, where high integration flexibility and "on-site" system monitoring is required.

High performance with friendly user interface...

Powerful program menu for enhanced control applications

Carefully designed front panel can allow *single instrument* control of diesel generator systems. The unit is compatible with Diesel engine powered Gen-Set applications.

AMF5.2 is designed with enhanced applications in mind and equipped with all the necessary hardware and software to fulfill this demand.

The unit is equipped with LCD Graphic Display, where user interface is simple and efficient. The user can choose what to display and all the alarm events are described in words. User can select the active display language from the menu. All system parameters can be set very easily.

System hardware allows the user to interface with high demanding applications, where high number of peripheral control is required. The system software also carefully designed in order to allow dedicated functions to be characterized for a particular application. Simple logic functions can also be executed on the auxiliary inputs and outputs, hence reducing the number of peripheral components.

The controller has built-in multiple communication ports for enhanced interface with external control systems. RS232/485 can be used for on-site system configuration as well as remote control and monitoring of the system while integrated CAN Bus can communicate with engine ECU module. The system can also be interfaced with ENKO external i/o expansion modules for applications where specific dedicated hardware control is needed.
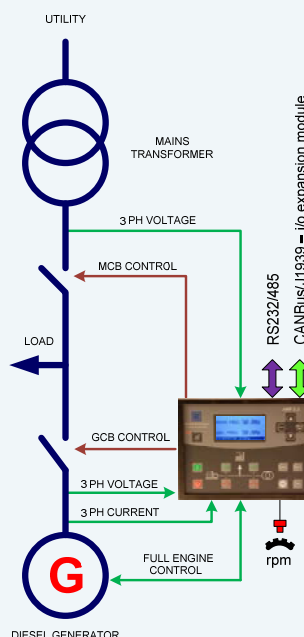
Three analog variables can be measured and controlled and functions can be made to operate on these measured analog values. In the standby mode, the unit can also *measure and control* the engine body temperature. The load can be controlled both manual and automatic, where both MCB and GCB contactors can be controlled from the front panel.

The system can be used for dual Gen-Set applications, where one can be selected to be master and allow to control the others as slave units. AMF5.1 allows remote programming, monitoring and GSM interface with any external control system.

- **INTELLIGENT DESIGN FOR ENHANCED APPLICATIONS**
- **MULTIPLE COMMUNICATION PORT FOR PC AND J1939 INTERFACE**
- **FULL GRAPHICAL LCD DISLPAY FOR EASY READING AND OPTIONAL DISPLAY FORMATS**
- **FULLY CONFIGURABLE AUXILIARY INPUTS AND OUTPUTS AND LOGICAL FUNCTIONS ON I/O PORTS**

Main features:

- Full automatic mains failure control functions
- Graphical LCD display with white LED backlight
- Power control and metering function (KW, KVA, KVAr, KWh, CosΦ)
- Fully configurable inputs and outputs
- Real time clock, weekly and monthly system programming
- Time stamped alarm logging for the last 50 events
- 6 periodic and 6 motor service timers
- Earth current measurement
- RS232/485 com port with MODBUS/RTU protocol and CAN bus/J1939 interface
- Standard TTL port for PC or GSM modem application
- Automatic alarm reset (auto-acknowledge) function via menu programming
- Digital calibration on all analog input ports

Technical specifications:

DC power supply:	9-35Vdc@140mA (relays off position)
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
Current measurement:	x/5A current transformer
Charge alternator excitation current:	80mA for 12Vdc systems, 160mA for 24Vdc systems
Measurement accuracy:	Phase voltages: ±2% of scale, Frequency: ±0.1Hz
Auxiliary i/o:	8 configurable inputs 6 configurable outputs (dry contact) 3 Analog inputs
Communication:	RS232/485 Mod Bus RTU (galvanic isolation) CAN Bus 2.0b (J1939 and expansion)
Weight:	600 grams
Mounting:	186x138 panel cutout
Protection class:	IP52 (front panel protection)

UTILITY

MAINS TRANSFORMER

3 PH VOLTAGE

MCB CONTROL

LOAD

RS232/485

CANBus/J1939 – i/o expansion module

GCB CONTROL

3 PH VOLTAGE

3 PH CURRENT

rpm

FULL ENGINE CONTROL

G

DIESEL GENERATOR

Additional features:

- 3 PH TRUE RMS VOLTAGE AND CURRNET FOR GENERATOR AND 3 PH VOLTAGE FOR MAINS ✓
- AUTOMATIC, MANUAL, TEST AND REMOTE START OPERATION MODES ✓
- OPTION FOR EXPANSION I/O MODULE CONNECTION FOR MORE I/O PORTS ✓
- WIDE OPERATING TEMP RANGE (-25°C to +70°C) ✓
- IP52 PROTECTION CLASS (front panel protection) ✓
- SELECTION OF DISPLAY LANGUAGE AND DISPLAY PARAMETER FORMAT ✓
- ✓
- PC AND SCADA INTERFACE FOR REMOTE MANAGEMENT ✓

APPLICATION CONNECTION DIAGRAM
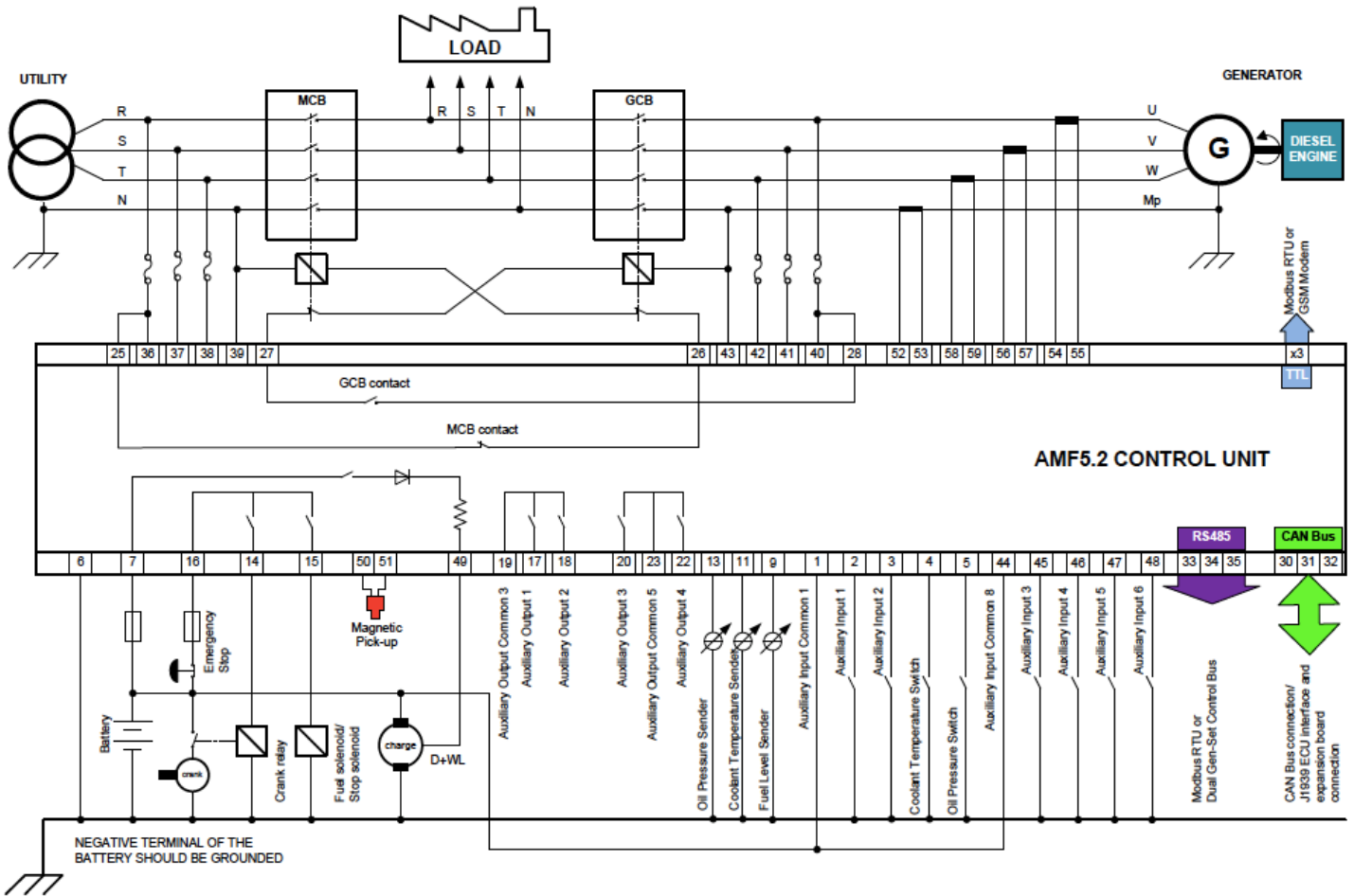
Typical connection diagram is shown above. Module can be wired in many different ways, depending on the application. System can be implemented as 3 phase 3 or 4 wire or single phase concept.

All system i/o ports can be configured with **ENKO PRO-***Link* software or from the front panel. CAN bus port can also be used for connection with specific i/o expansion modules, where more interface is required.

RS232/485 ports can be used with SCADA systems or GSM modems for remote programming and monitoring.

Flexible connection capability allows AMF5.2 to be used in many applications, efficiently...

SCADA implementation / remote monitoring / remote programming...

AMF5.2 controller plastic housing is designed according to DIN norms. Mechanical dimensions are shown in the drawing.

Plastic housing is made of NORYL (PPO) 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 membrane, which provides easy control of the buttons and clear reading of the digital values. It also provides long operation life time.

All components are SMD mounted, including the buttons. 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. Rear terminals are screw type sockets, which provides secure connection and easy maintenance.

Mechanical dimensions
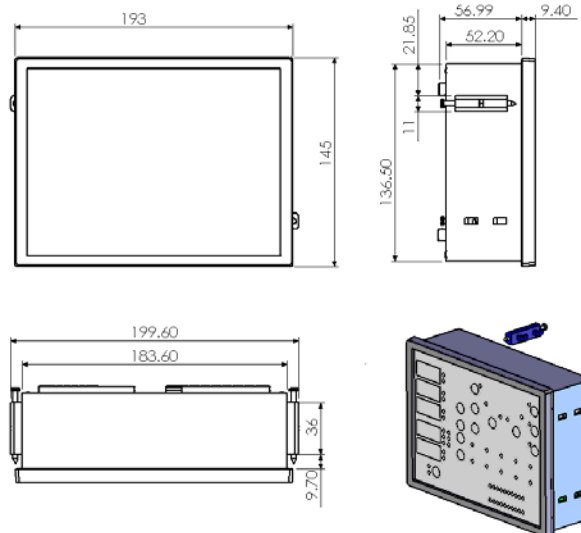
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