

EN
KO

ESU-S

Engine Start Unit



Product Description:

ESU-S control panel is designed for intelligent and safe control of diesel and gasoline engines for a wide range of applications. These control units can be used for power generation applications as well as for a wide range of industrial applications, which desires an engine as prime mover.

Single button cranking function provides safe start of the engine and comprehensive protection is provided during cranking and running period of the engine. The unit is equipped with a magnetic pick-up speed sensor input for accurate detection of engine speed. Also, charging alternator D+/WL connection is used for flexible integration to a wide range of engine types. For engines with ECU, an integrated CAN J1939 bus can be used to read critical engine data and provide secure protection and control.

Oil pressure, coolant temperature and fuel level are measured with analogue inputs and all measured values are displayed on integrated 1.4" colour graphical screen with high visibility, even under strong environment light conditions.

A "Preheat" function is also available to heat the fuel inlet in cold weather conditions. This function is automatic and can be configured by the user.

For integration with generator, ESU-S control panel is also equipped with 2-phase generator voltage measurement inputs and an output to control the GCB. For remote start applications, an external "Remote Start" input is also available to initiate cranking and an output to control the GCB switchgear.

The unit can be configured using the built-in USB2 communication port. A licence-free PC-Tools software is used to configure all the system operating parameters and/or read the existing parameter set from the device.

The units also have additional spare inputs and outputs to control peripheral equipment, if necessary. All auxiliary i/o ports can be configured by the user according to application.

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.

All units comply to CE standards for EMC directives and safety against UL94.

MAIN FEATURES:

- ✓ Smallest size ESU control panel on the market,
- ✓ 1.4" Graphical colour display for indication of all engine and generator parameters and alarms,
- ✓ Automatic LOAD connection (MCB),
- ✓ Fully automatic cranking and protection of the engine,
- ✓ 2-phase generator voltage reading,
- ✓ 3 Analogue inputs
- ✓ D+/WL analogue input
- ✓ 3 Digital inputs
- ✓ 6 Digital solid-state (failsafe) outputs,
- ✓ 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
- ✓ 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: 82mmx94mmx50mm
- ✓ Panel cutout: 68mmx80mm

info@enkoelektronik.com

Technical Specifications	Value	Description
DC Power input voltage:	8Vdc to 32Vdc	Maximum power dissipation is <2.5W
Display:	1.4" LCD Colour graphic	TFT type with high resolution, high brightness,
Keypad:	Silicone rubber	IP65 protection from the front side (with gasket)
Digital inputs:	3 configurable inputs	Active low input connections (sink type)
Analogue inputs:	3 analogue sender inputs	LOP, HET and FUEL gauge
Charge alternator input:	D+/WL input	Charge alternator control
MPU input:	Magnetic pick-up	Engine speed measurement
Digital outputs:	6 digital outputs	Solid-State fail-safe outputs (active sink logic)
Generator voltage measurement:	2-phase	TRUE RMS voltage reading
Communication ports:	USB2.0 Type-B	Parameter configuration
	CAN Bus J1939	Connection to engine ECU module
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:	94 x 82 x 50	Measurements are in mm
Panel cutout:	80 x 68	
Mounting type:	Panel mounting	With screw type retention clamps
Weight:	140gr	Approximate weight



Figure 1: ESU-S Front side view

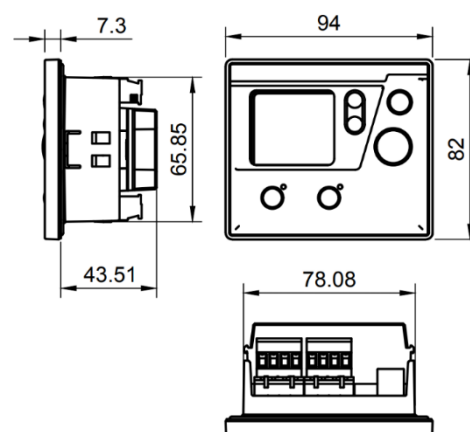
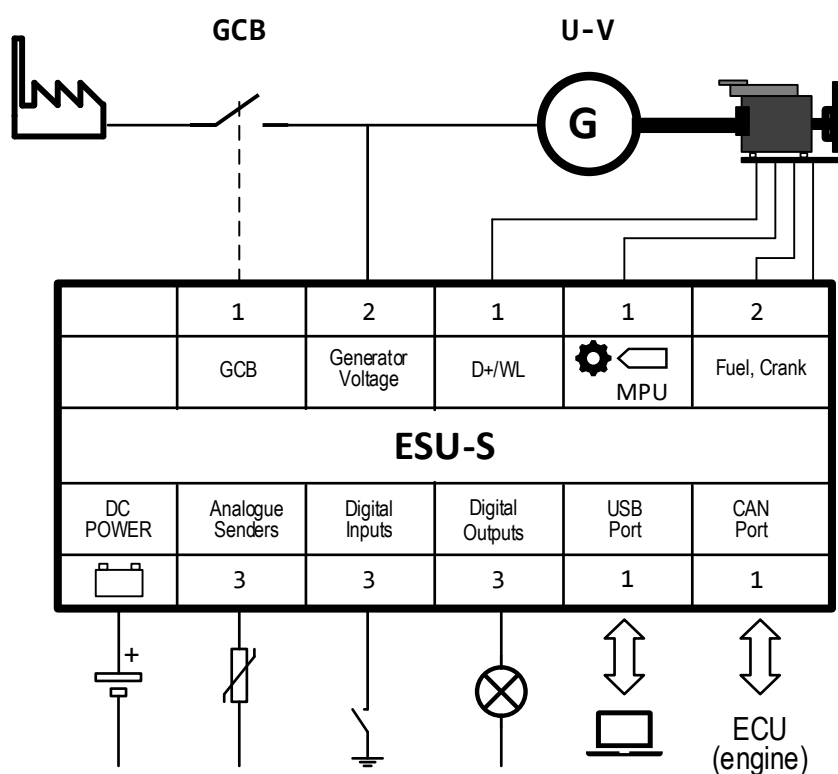


Figure 2: ESU-S Dimensions (mm)



UL94
V-2

Connection Diagram:



Compliance:

ESU-S 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