

# Distributed Processing Units

## Engine Safety Unit (ESU)



KONGSBERG

### Description

The ESU is an engine safety-monitoring and emergency shut down unit.

Main input groups are:

- Engine sensor monitoring
- RPM monitoring
- Manual emergency stop

All parameters and line definitions preset to engine supplier's specifications.

The ESU module uses several digital inputs and outputs. It has two independent power-supply inputs with a built in automatic changeover function between inputs.

Digital input channels 14 to 19 have a direct connection to output channels 5 to 13. If the modules CPU should fail, the digital input channels 20 to 22 connect directly to the output channels 5 to 13.

The module is equipped with a dual CAN-bus interface as its main communications line.

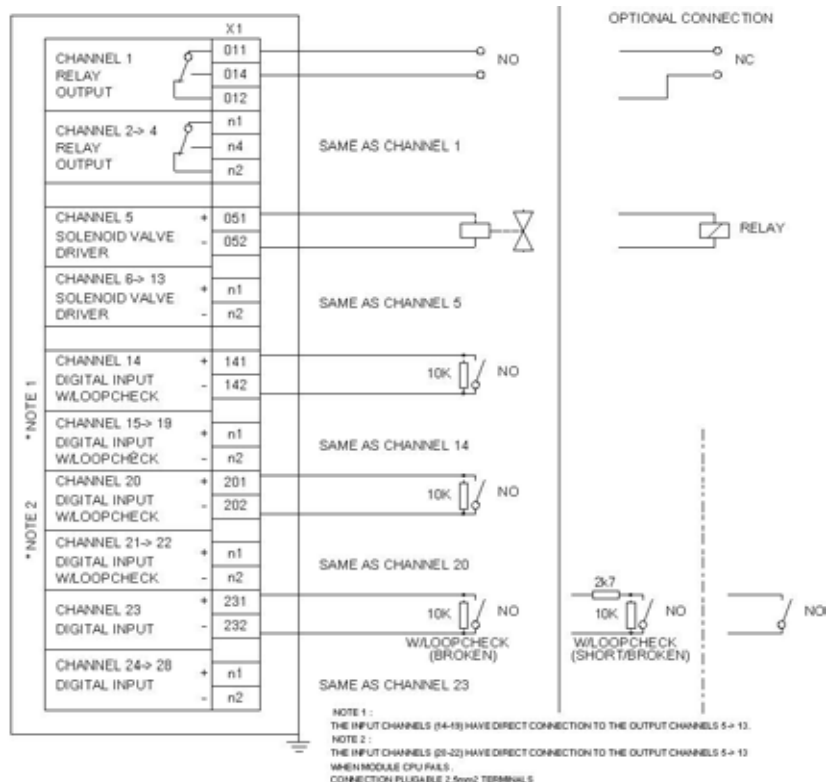
Power, watchdog and CAN-bus status can be monitored directly through a built in light emitting diode (LED).

- Multiple built-in redundancy
- Extensive internal self-check features on most lines



### Features

- Four channels Relay output, changeover contacts
- Nine channel digital input (shut down) with line check
- Six channel digital input with line check
- Three channel digital input with line check (broken only)
- Six channel digital input with line check
- Dual redundant 24 VDC power input
- Solenoid driver with line check
- Alarm and monitoring for all channels
- Time stamp of alarms and events (0.001 seconds)
- Self-checking
- Power overload detection
- CAN-bus status detection and error handling



## Technical Specifications

### Supply voltage

- 18 to 32 VDC

### Power consumption

- Nominal 7.5W
- Max. 10W + solenoid power

### Ambient operating

- -15°C to +70°C

### Ambient storage

- -25°C to +70°C

### Humidity

- RH set at 96% no condensation

### IP Code

- IP20

### Mechanical environment

- IACS E10 (direct mounting)

### EMC properties

- IACS E10
- IEC 60945

### Communication

- 2 x CAN-bus

### Signal types

- Four channel relay output, changeover contacts 3 A at 230 VAC inductive load.
- Nine channel solenoid driver with line check (broken only). +18 to -32 VDC out, max 500mA.
- Six channel digital input with line check (broken only). Dry switch or optical coupler required. Inputs hard wired to solenoid outputs.
- Three channel digital input with line check (broken only). Dry switch or optical coupler required. If the micro controller stops, internal logic automatically hardwires these inputs to the solenoid outputs.
- Six channel digital input with line check. Dry switch or optical coupler required

### Terminal opening

- Max. 2.5 mm<sup>2</sup>

### Weight of unit

- 1.7 kg

### Isolation

- Power: Non-isolated
- Digital input: Non-isolated
- Relay output: Isolated
- Solenoid output: Non-isolated

### CAN

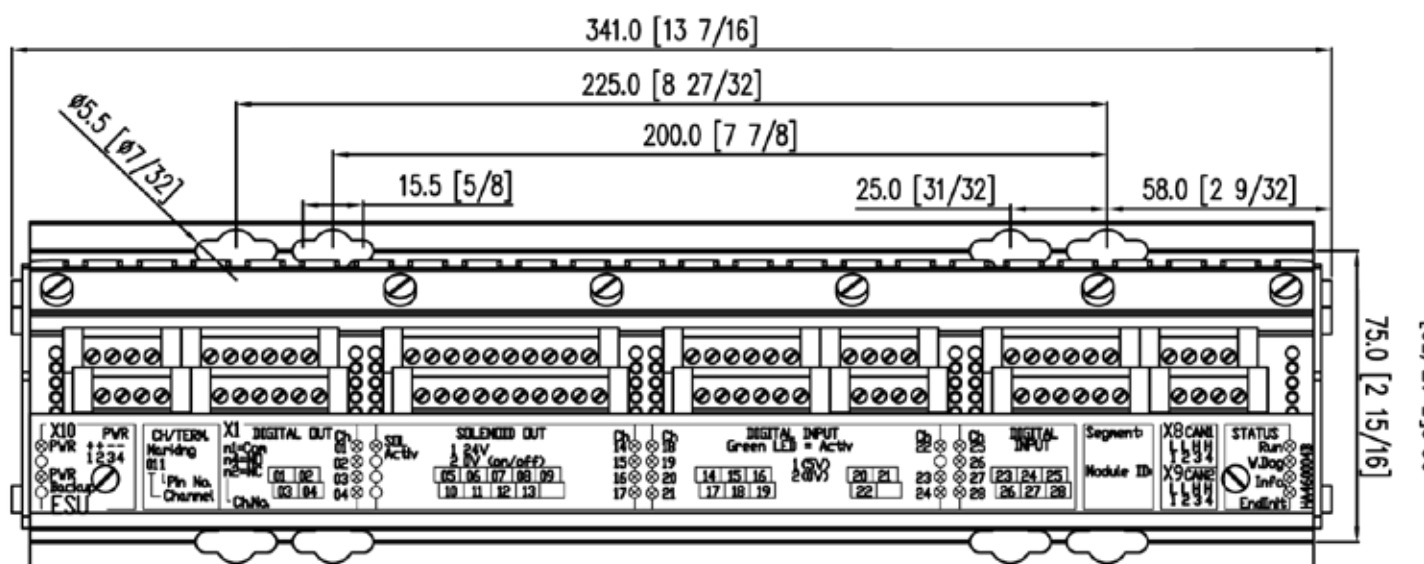
- Isolated-galvanic coupler (Optical)

### BIST (built in self-test)

- Module temperature

### Type approval

- DNV, LRS, BV, GL, RINA, NK, ABS, KR, PRS, MRS (Russia), CCS (China)  
(allows direct mounting on engines, compressors, etc. in suitable cabinets)



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