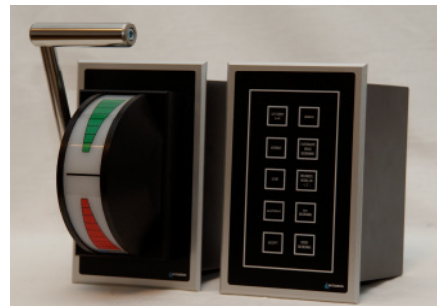
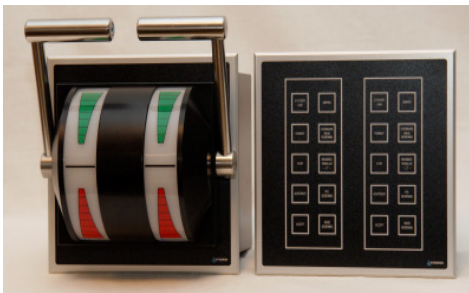
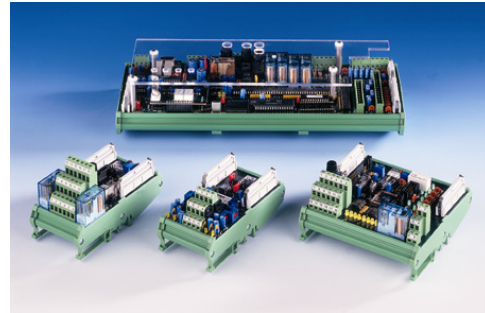


## MiniSem 1E - 1E/P - Electronic remote control for ship engines



### Functionality

The MiniSem 1 is a modular microprocessor controlled system for the remote control of propulsion engines and clutches.

### Characteristics

The **MiniSem 1E – 1E/P** is a reliable, modular microprocessor-actuated system, and is standard suitable for remote controls of electronically actuated ship engines with a reversing-clutch (1E). With the addition of pneumatic components and by choosing the right software, it is possible to apply the system to engines with a pneumatic system (1E/P).

The MiniSem 1 is user-friendly and easy to install. The modular structure gives the system a great flexibility. The system can be adapted to client specifications making the system suitable for many applications.

The standard configuration of the system consists of the MiniSem basic module, provided with a display and input-unit and equipped with an engine room control panel. This standard configuration is suitable for one bridge control station. Adding features can easily expand the system functionality (see options).

### Applications

The MiniSem 1 remote control is applicable for electronic controlled propulsion engines with clutch. By adding features such as E/P converters and choice of software, the MiniSem 1 becomes applicable for propulsion engines with pneumatic governor.

## General features

- Modern control panel; aluminium panel with short-travel-switches including LED lights and a waterproof foil overlay
- Modular, flexible placing of controller and control panel
- 'Custom-made' foils, available in different styles, colours and imprints.  
(For instance: your company logo can be printed on the overlay)
- Available in several languages
- Available in single or double actuation
- Other brand controllers possible

The MiniSem 1 is suitable for applications on:

**Seagoing vessels:**

- fishing boats	- coasters
- tankers	- tug boats
- (super) yachts	

**Inland vessels:**

- container carriers	- inland tankers
- tug boats	- push boats
- dry cargo vessels	- passenger vessels

## Standard technical features

- Speed of revolutions increase and decrease is adjustable.
- Protection of clutch by oil pressure monitoring.
- Crash-stop security.
- Provided with internal alarm functions.
- Provided with connections for main and emergency supply (24VDC).  
The system automatically switches to emergency supply in case of main supply failure.
- Potential free alarm outputs.
  - one change over contact for "system failure".
  - one change over contact for "power failure".
- Standard provided with an easy to use display and input-unit for read-out and input of system parameters and display of failures.
- Control of various electronic governors by means of an adjustable control signal.  
Output: 0(4) - 20mA / 0 - 10 V (minimum and maximum signals are adjustable).
- Possibility for processing external signals such as: trolling, Marelec, additional protection devices, revolution fine-tuning, etc.

## Basic configuration

The basic system contains:

- **A Control cabinet including:**
  - **Basic module**  
A microprocessor control unit provided with a display and input-unit for the read-out and input of the operating parameters.
  - **Engine-room control unit**  
Panel mounted in the front of the control cabinet. Together with the Engine-room module, this unit provides the local control of the engine and clutch.
- **A Bridge control panel**, provided with a servo controller, short-travel-switches including waterproof foil overlay, indicating LED lights and dimmer.

## Main models

- **MiniSem 1-E**  
Remote control system applicable for propulsion engines with an electronic controlled governor and an electrical operated clutch.
- **MiniSem 1-E/P**  
Remote control system applicable for propulsion engines with an air operated governor and a electrical or air operated clutch.

## Options

- **Signal converter module**  
This module converts the controller output signal into the necessary, non-standard, control signal for the governor. This signal may be: deviating voltage or current, pulse-width modulation signal (PWM) or any other specific control signal.
- **Emergency operation module**  
In case of a failure in the basic module microprocessor, the governor and clutch can still be operated from the bridge control panel. Switching from normal to emergency operation can be realised automatically or manually.
- **Electronic-pneumatic system**  
It is possible to control an engine with an air-operated governor and/or clutch, using the electronic control system in combination with an E/P converter. The E/P converter will be mounted in a separate cabinet.

## Technical data:

- Supply voltage : 24 VDC
- Voltage tolerance : +30% / -25%
- Operating temperature : 0° to 60° Celsius
- Dimensions control cabinet : 620 x 320 x 155 mm (WxHxD)
  - enclosure rating : IP 50
- Dimensions bridge panel : depending configuration
  - enclosure rating : IP 50
- Output revolutions signal : 0 – 10 V or 0(4) – 20mA
- Input revolutions signal
  - standard : 0 – 10 V or 0(4) – 20mA
  - engine controller : potentiometer 10 K
- Microprocessor unit : CPU 80592 – 16 MHz
- Program storage : EPROM
- Parameter storage : EEPROM
- Digital inputs : galvanic isolated
- Digital outputs : transistor outputs, max. load 0.2 A.  
: relay outputs, max. load 8 A.
- Analogue input : 0 – 10 V or 0(4) – 20mA, 10 bit resolution
- Analogue outputs : 0 – 10 V or 0(4) – 20mA, 10 bit resolution
- Communication : Hardware layer - V2.0A  
: Software layer
- CE – EMC approval : EMC approved

## For pneumatic system (1E/P):

- Supply pressure : 8 – 10 bar
- Output pressure E/P converter : IP 50; 0 – 7.5 bar, minimum and maximum pressure adjustable
- Dimensions pneumatic cabinet : 300 x 300 x 210 mm (WxHxD)
- IP-rating : IP 50