

# lilaas<sup>®</sup>

Lilaas AS is a technology company, and experts  
on joysticks, control levers, control systems  
and precision mechanics



Thruster  
Control  
System

# Lilaas Thruster Control (LTC01) System

The Lilaas thruster control (LTC) system is a reliable system to remotely operate the thrusters from various control positions, such as forward bridge, aft bridge, bridge wings etc. The control can be taken bumpless from any control position at any time.

Lilaas thruster control is modular built. It is designed to work with any levers of choice and is capable of handling as many control positions as requested as well as being able to handle as many propulsion and thrusters units as needed.

- Modular
- Adaptable
- High-quality parts
- Compatible with future software functions
- Redundant network
- Interface to existing automation system
- Interface to engine control



Compact modular IO units addresses extended need for IO. Optionally, the IO Units can be equipped with local touch screens for emergency control of thruster/propulsion and fault detection.



LTC utilizes off the shelf certified products for automation. Easy installation and short commissioning time.



LTC may be installed in our slim-line console or in any standard or customized consoles.

- Easy to install.
- Technical support all the way from idea to sailing ship.
- The market's largest selection of quality control levers.

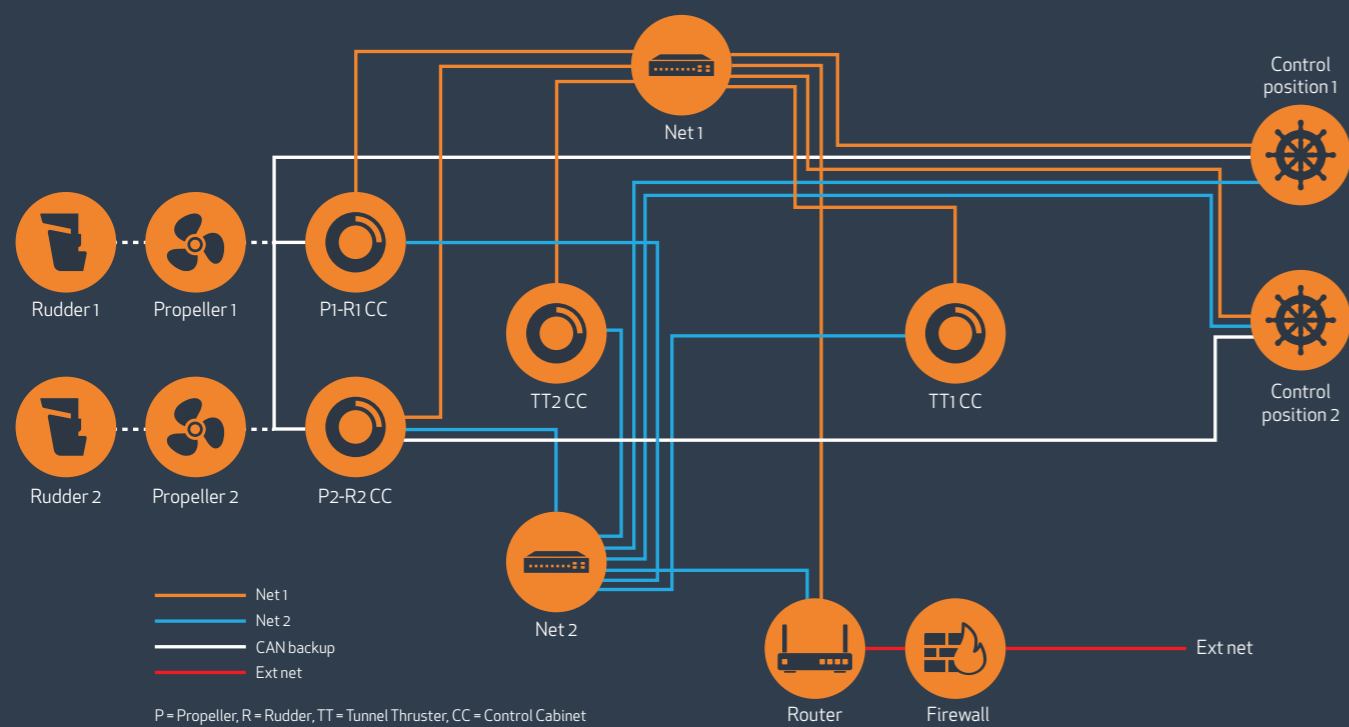


Lilaas LTC01 is a flexible modular thruster control system



# LTC Features

- LTC will display feedback information from the thruster/propulsion unit and the setpoint of the control lever.
- Analogue/serial line interface to any thruster/automation system.
- The setpoint of the Lever corresponds with the thruster power curve.
- LTC can be delivered with the following modes: Joystick mode with auto-heading and dynamic positioning mode\* (\*future option).
- Programmable button panels for trolling, warm-up, synchro-mode etc available as options.



## NAVIGATION

Interface to navigation equipment available.

Echosounder, Log, VHF/UHF radio, Radar(s), Satellite navigation, Gyro, MRU, Nav lights etc. to be displayed on conning display.

## VDR OUTPUT

LTC may output all data in Ascii to VDR, included Lever set-point as well as Thruster/Propulsion feedback.

Communication with 3rd party equipment is available in any open serial line protocol or Ethernet.

## REMOTE ACCESS SECURITY

Remote access available using cyber secure solutions like Open VPN, SSL/TLS firewall, IPSec, SSH etc.

Optional Remote operations from app.

## DESIGN

LTC01 may be customized for any vessel configuration. A selection of Lilaas control levers to be used.

LTC are able to interface any thruster configuration and any numbers of control positions.

## COMMISSIONING

LTC will be installed by experienced engineers, ensuring all aspects of the system are installed and tested according to high quality standards.

A Lilaas Project Manager will ensure that the proper equipment will be installed as agreed upon.

## REDUNDANCY

LTC utilizes dual ethernet as a standard. CAN-bus between back-up sensor on each lever to thruster control as option. CAN-bus for simple and small systems available as option.

All controllers with dual power supplies including alarm for power failure.

## INTERFACE

LTC includes a multitude of interface protocols. All thruster, propulsion and rudder units on the market may be interfaced. Open serial line standards to be used. This enable interfacing of all analogue standards including our own actuators.

## ALARM HANDLING

Alarm interface on serial line.  
Alarm interface on analogue signals.  
LED output for severity of alarm.  
Alarms available on separate alarm view.  
Alarms be displayed only when active.

## AUTOMATION

LTC is able to interact with various automation systems, displaying data on the bridge screen. Data will be transferred between LTC and the automation system using serial line, analogue signals or ethernet.

# Lilaas Center Console

The LTC can be installed in our slim-line center console with alarm LED RGB edge. Edge will change color after severity of active alarms. Panel can be used with or without large screen.

Installing Lilaas new L01 control lever series and Lilaas new LED consoles will result in no parts below surface of the consoles.

Lilaas LED Console may be customized to fit any bridge and bridge wing layout. Additional consoles to be installed according to need.

## Large touch screen

This screen will show information chosen by user and can have a number of pre-defined user set-ups. It is customizable to show any preferred information.

## Flush mounted handles

Lilaas series of flush mounted handles can be mounted on a flat desk. This range of flat mounted levers consists of single/dual thruster and propulsion control levers.



## Compatible levers



L01 with display single/double thruster/propulsion/azimuth



L01 flush-mounted single/double modular control levers.



LF90 & LF120 - New design! Single/double thruster and propulsion control levers.



L01 mechanical version. Single/doble thruster/propulsion/azimuth.



LF70 azimuth control lever. Various options.



L04 1, 2 or 3 axis joystick with hall effect sensors.



LF80 mini wheel + LF150 for rudder control. Various options.



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