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<td>April 2004</td>
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Revision: April 2010

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Related articles and documents
- RSP 305 Communication Interface
- DCU 305 R2 Installation Manual
- DCU 305 R3 Installation Manual
- DCU 305 R2 Communication Interface

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About this Manual

Installation

This manual has been published primarily for professionals and qualified personnel. A person using this material is assumed to have basic knowledge in marine systems, and be able to carry out related electrical work.

Work on the boats low-tension circuit should only be carried out by qualified and experienced persons. Installation or work on the shore power equipment must only be carried out by electricians authorised to work with such installations.

It is the sole responsibility of the installer to ensure that the installation work is carried out in a satisfactorily manner, that it is operationally in good order, that the approved material and accessories are used and that the installation meet all applicable rules and regulations.

Note: Auto-Maskin continuously upgrades its products and reserves the right to make changes and improvements without prior notice. All information in this manual is based upon information at the time of printing. For updated information, please contact your dealer.

Assumptions

Control units

This document describes the RSP 305 remote control unit, intended for remote control of the DCU 305 series of engine control panels. It is assumed that the installer have a basic knowledge of these control panels.

Voltages

When referring to voltages, always assume DC-voltage. When referring to AC-voltages it will be mentioned explicitly.
Introduction

What is the RSP 305?

The RSP 305 is a remote slave panel for the DCU 305 R2 and DCU 305 R3 engine control panels. It grants the user full remote control of the DCU 305 R2 and DCU 305 R3 (hereafter referred to as DCU 305 only) panels.

The RSP 305 can be used towards 1-4 DCU 305 panels. The DCU 305 panels can be a mixture of R1 and R2 variants, and a mixture of A and P types (Auxiliary/Emergency and Propulsion types).

Typical Configuration

A typical configuration, where the RSP 305 is connected to three DCU 305 units:

A mixture of DCU 305 R2, DCU 305 R3 units is possible.
Up to four DCU 305 units can be connected to one RSP 305.
Installation

Location
The RSP 305 can be placed in the engine room, the engine control room, in the wheelhouse or any other suitable location.
Make sure to reference the current certificates, to verify the validity of the installation.

Assembly instructions
Cut out dimension for the RSP 305 is 146 x 230mm (H x W). Four holes must be drilled on the mounting surface for the 3 x 12mm screws accompanying the package. Please use the mechanical drawing on page 9 as reference.

Power supply
The RSP 305 must be powered with 24VDC. Please use the RSP 305 standard power cable found in the package.
We recommend using the ships UPS.

- Voltage: 24VDC
- Max power consumption: 700mA

Cable connections
The RSP 305 needs only two cables connected to operate which simplifies the installation.

1. Power Cable.
2. Communication cable.

Note: Please refer to cable specifications and installation drawing in chapter: “Technical Documents”
**Power cable**

Use the power cable included in the package with RSP 305. The cable has reverse polarity protection.

- Connect the terminated wires to your 24VDC source – observe polarity.

- Connect the 25 pin D-Sub to port P1 on the RSP 305.
Communication Cables

Connect the communication cable between port P3, on the RSP 305, and a RS422/RS232 converter. A complete kit including RSP 305, communication cable and RS422/RS232 converter can be ordered from Auto-Maskin AS, article 06501. Communication cable between the RS422/RS232 converter and the network is normally yard supply. Auto-Maskin AS can supply custom made cables on request.

Connect a communication cable between your network and the RS422/RS232 Converter. Refer to next chapter, communication interface and installation drawing.

Connect the 9-pin female D-Sub to port P3 on the RSP 305. Connect the opposite end to the RS422/RS232 Converter.

Note: Please refer to cable specifications and installation drawing in chapter: “Technical Documents”
Communication Interface

The RSP 305 can be connected to one DCU 305 unit or in a network with two, three or four DCU 305 units.

System overview

The communication interface in the RSP 305 – and in the DCU 305 – is RS-232. RS-232 can be used only when the distance between RSP 305 and DCU 305 is 15m or less, and only when the RSP 305 is to communicate with just one DCU 305 unit.

In all other settings, signal converters must be used to change the RS-232 signals to RS-422.

Signal Converters

A signal converter in our setting is a unit that changes the RS-232 signals to RS-422 signals. RS-422 has the advantage over RS-232 that it can be used for distances up to 1200 meters (at 9600 baud) and that multiple units can be connected in the same network.

We will make use of this feature in our configuration of the communication network.

RS232/RS422 converters can be ordered separately from Auto-Maskin AS, article 08335.
Configuration of RSP 305

Make sure the RSP 305 is connected correct and is powered. The DCU 305 units in the network must also be powered.

- Press and hold the enter button to access the menu.
- Select DCU Scan by pressing the up/down arrow buttons – press enter to confirm.
- Please wait while the RSP 305 is reading data from the DCU 305’s connected to the network.
- The RSP 305 is ready for use.

Limitations

- J1939 Analogue channels 13 and 14 on DCU 305 R2 will not be displayed on the RSP 305.
## Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall dimensions</td>
<td>160x260 mm (6.3x1.4 inch) [HxWxD]</td>
</tr>
<tr>
<td>Cut-out dimensions</td>
<td>146x230 mm (5.8x9.1 inch) [WxH]</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>24V smoothed, (20-30VDC)</td>
</tr>
<tr>
<td>Number of DCU 305 units that can be connected</td>
<td>1-4</td>
</tr>
<tr>
<td>Compatibility</td>
<td>DCU 305 R1/R2/R3 (R1 ver ≥2.1)</td>
</tr>
<tr>
<td>Communication cable max length (yard supply)</td>
<td>1200 meter (3900 feet)</td>
</tr>
<tr>
<td>Communication speed</td>
<td>9600 baud</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>&lt;400mA</td>
</tr>
<tr>
<td>Automatic configuration</td>
<td>&lt;60 sec</td>
</tr>
<tr>
<td>Power-on to Ready (when configured)</td>
<td>&lt;5 sec/DCU 305</td>
</tr>
<tr>
<td>Weight</td>
<td>1250g (2.75 pounds)</td>
</tr>
<tr>
<td>Ambient temperature in operation</td>
<td>&lt;0-70°C (32-158°F)</td>
</tr>
<tr>
<td>Air humidity in operation</td>
<td>&lt;90%</td>
</tr>
<tr>
<td>Backlight off – day mode setting</td>
<td>30 min</td>
</tr>
<tr>
<td>Backlight off – half setting</td>
<td>30 min</td>
</tr>
<tr>
<td>Backlight off – night mode setting</td>
<td>5 sek</td>
</tr>
</tbody>
</table>
Cut-out dimensions

RSP 305 panel cut out
# Cable specifications

## RSP 305 – 232/422 converter

<table>
<thead>
<tr>
<th>Cable: 08227</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use:</strong></td>
<td>From RS-232/RS-422 Converter to RSP 305</td>
</tr>
<tr>
<td></td>
<td>From DCU 305 to RS-232/RS-422 Converter</td>
</tr>
<tr>
<td><strong>Length:</strong></td>
<td>60cm (23.62”)</td>
</tr>
<tr>
<td><strong>Primary:</strong></td>
<td>DSUB 9Pin Female Metal housing</td>
</tr>
<tr>
<td><strong>Secondary:</strong></td>
<td>DSUB 9Pin Male Metal housing</td>
</tr>
<tr>
<td><strong>Cable quality:</strong></td>
<td>&gt;0.22mm² (0.000341 inch²) braided shield</td>
</tr>
</tbody>
</table>

**Pin configuration:**
- **Primary – 9p Female:**
  - 2
  - 3
  - 5
- **Secondary – 9p Male:**
  - 2
  - 3
  - 5
- **Shield:**
  - Connected
  - NOT CONNECTED

## Network Cable

<table>
<thead>
<tr>
<th>Cable: Network cable</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use:</strong></td>
<td>From RS-232/422 Converter (DCU 305) to RS-422/232 Converter (RSP 305)</td>
</tr>
<tr>
<td><strong>Length:</strong></td>
<td>&gt;1200m (1300 Yards)</td>
</tr>
<tr>
<td><strong>Primary:</strong></td>
<td>Bootlace ferrule on each wire</td>
</tr>
<tr>
<td></td>
<td>For terminal connection</td>
</tr>
<tr>
<td><strong>Secondary:</strong></td>
<td>Bootlace ferrule on each wire</td>
</tr>
<tr>
<td></td>
<td>For terminal connection</td>
</tr>
<tr>
<td><strong>Cable quality:</strong></td>
<td>&gt;0.22mm² (0.000341 inch²) twisted pair, braided shield</td>
</tr>
</tbody>
</table>

**Wire marking:**
- **Primary:**
  - Tx+  Rx+
  - Tx-  Rx-
  - Rx+  Tx+
  - Rx-  Tx-
- **Secondary:**
  - Connect to earth
  - NOT CONNECTED

**Shield:**
- Connect to earth
- NOT CONNECTED
Installation drawing