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# Installation Guide

marinepro

marineplus

## AK-6 Analog Expansion MK-6/14 Relay Expansion



auto  
MASKIN

**Quick Installation Guide**

for

**AK-6 Analog Expansion (Marine Plus)**  
**MK-6 and MK-14 (Marine Pro and Plus)**

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|          |                |
|----------|----------------|
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# Table of Content

**DOCUMENT INFORMATION ..... 1**

    ABOUT THIS MANUAL ..... 1

*Responsibilities* ..... 1

**AK-6 ANALOG EXPANSION ..... 2**

    INTRODUCTION ..... 2

    UNWRAPPING ..... 2

    INSTALLATION ..... 2

**MK-6 AND MK-14 ..... 4**

    INTRODUCTION ..... 4

    UNWRAPPING ..... 4

    INSTALLATION ..... 4



# Document Information

For updated information, please  
contact your local distributor.

## About this manual

This manual has been published primarily for professionals and qualified personnel.

The user of this material is assumed to have basic knowledge in marine systems, and must be able to carry out related electrical work.

Work on the low-voltage circuit should only be carried out by qualified and experienced personnel.

Installation or work on the shore power equipment *must only* be carried out by electricians authorized to work with such installations.

## Responsibilities

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.

# AK-6 Analog Expansion

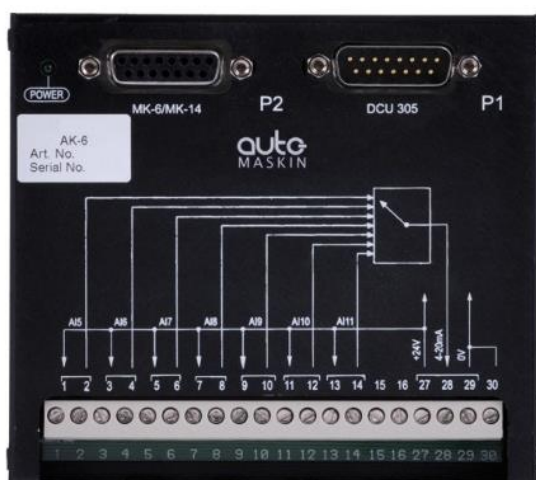
## Introduction

The AK-6 is an analog expansion module for the DCU 305 series of diesel engine control panels. When connected, it increases the number of analog channels from five to 11.

Only one AK-6 module can be connected to a DCU 305 panel.

## Unwrapping

Make sure the unit is not damaged in transportation, and that these parts are in the box:



- The AK-6 module
- Quick Installation Guide

In addition, a 15-pin DSUB cable is necessary to connect between the DCU 305 and the AK-6 module.

This cable either follows the delivery or it must be purchased separately.

The maximum cable length is 2.0 meters.

## Installation

### Power Off

Start by powering off the DCU 305 completely.

### Connect the cable

For the cable to reach, the AK-6 must be placed within two meters of the DCU 305.

Connect the 15-pin DSUB cable between the DCU 305 connector P7 and the AK-6 module connector P1.

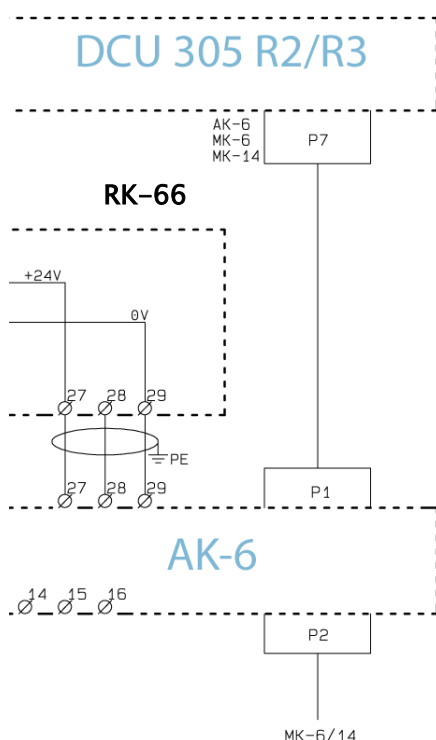
| DCU 305 | AK-6 |
|---------|------|
| P7      | P1   |

### Connect the wires

Connect a three-wire shielded cable of minimum area 0.75mm<sup>2</sup> between the RK-66 wire terminal module and the AK-6 as follows:

| AK-6 | RK-66 | Comment |
|------|-------|---------|
| 27   | 27    | 24 V    |
| 28   | 28    | 4-20 mA |
| 29   | 29    | 0 V     |





These wires provide power and signaling to and from the AK-6 module.

## Power on

Power the DCU 305.

Observe that the AK-6 is now powered, by verifying that its green Power LED is lit.

## Sensor connections

Connect the 4–20mA sensors as shown in the following table.

| Ch. | RK-66 terminals |         | AK-6 terminals |         | On DCU screen |
|-----|-----------------|---------|----------------|---------|---------------|
|     | +24 V           | 4–20 mA | +24 V          | 4–20 mA |               |
| 1   | 19              | 20      |                |         | 1             |
| 2   | 21              | 22      |                |         | 1             |
| 3   | 23              | 24      |                |         | 1             |
| 4   | 25              | 26      |                |         | 1             |
| 5   | 27              | 28      | 1              | 2       | 1             |
| 6   |                 |         | 3              | 4       | 2             |
| 7   |                 |         | 5              | 6       | 2             |

| Ch. | RK-66 terminals |         | AK-6 terminals |         | On DCU screen |
|-----|-----------------|---------|----------------|---------|---------------|
|     | +24 V           | 4–20 mA | +24 V          | 4–20 mA |               |
| 8   |                 |         | 7              | 8       | 2             |
| 9   |                 |         | 9              | 10      | 2             |
| 10  |                 |         | 11             | 12      | 2             |
| 11  |                 |         | 13             | 14      | 2             |

**Note!** Without an AK-6, the wiring for channel 5 is on the RK-66, terminals 27 and 28.

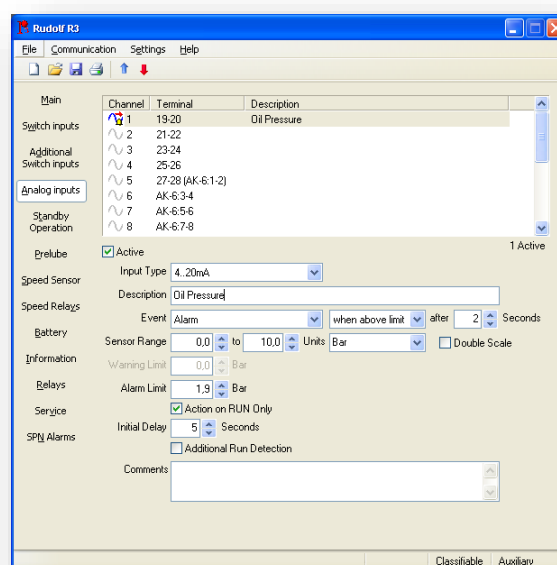
**With an AK-6, channel 5 wiring shall be moved to AK-6, terminals 1 and 2.**

Observe that channels 1–5 are presented on the panel page 1, whereas channels 6–11 are presented on the panel page 2.

**Note!** Channels 5–11 are updating somewhat slower than channels 1–4. It is recommended having pressure sensors at channels 1–4, if possible.

## Sensor configuration

Configure each sensor in the Rudolf configuration software.



# MK-6 and MK-14

## Introduction

The MK-6 and the MK-14 are relay expansion modules.

The relay function is configured in the Rudolf configuration software.

## Unwrapping

Make sure the unit is not damaged in transportation, and that these parts are in the box:



- The MK-6 or MK-14 module
- Quick Installation Guide

In addition, a 15-pin DSUB cable is necessary to connect between the DCU 305 and the AK-6 module.

This cable either follows the delivery or it must be purchased separately.

**Note!** If an AK-6 module is already connected to the DCU 305, then the MK-6/14 cable is to be connected to the AK-6 module, connector P2.

The maximum cable length is 2.0 meters.

## Installation

### Power Off

Start by powering off the DCU 305.

### Connect the cable

Connect the 15-pin DSUB cable between the DCU 305 connector P7 and the MK-6/14 module connector P1.

| DCU 305 | MK-6/14 |
|---------|---------|
| P7      | P1      |

### AK-6 and MK-6/14

If there is an AK-6 module AND an MK-6/14 module in use, then connect the MK-6/14 cable to the AK-6 module, connector P2.

| AK-6 | MK-6/14 |
|------|---------|
| P2   | P1      |

### Power On

Repower the DCU.

## Configuration

Configure the function for each relay in the Rudolf configuration software.

