

GoPal[®] System

Application Note
Dispatcher - How to Configure ROEQ



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REVISION HISTORY				
Rev.	Date	Author	Section	Notes
A	13.03.2023	HM	All	Initial release of the document
B	30.09.2024	HM		Top Module files must be requested from ROEQ. Update laser safety scripts with ROEQ scripts.

1 Introduction

This application note provides detailed guidance on configuring the Dispatcher and P35 robot to seamlessly integrate with and support the ROEQ cart and its associated load. By following the steps outlined in this document, you will ensure optimal performance and compatibility between the Dispatcher system and the P35 robot, allowing for efficient and reliable handling of the ROEQ cart in your operations.

2 Prerequisites

Before deploying the P35 robot with the ROEQ top module, it is essential to update the laser safety scripts to ensure full compatibility with the ROEQ system. To do this, please replace the existing laser safety scripts with the ones provided by ROEQ. You can follow the step-by-step procedure outlined in Robotize document 011616 to complete this update.

3 ROEQ top module configuration

To ensure seamless integration and optimal performance when using the ROEQ top module with the P35 robots, it is necessary to upload the ROEQ top module configuration to both the Dispatcher and each individual P35 robot that will be operating with the ROEQ top module. This step is crucial for aligning the Dispatcher's control system with the specific requirements of the ROEQ top module, allowing for precise coordination and efficient operation across all involved robots.

3.1 Upload ROEQ config to P35 robot

Access the robot web interface to upload the top module config file. See example in Figure 1.

1. Get the ROEQ top module file from ROEQ (<https://roeq.dk>).
2. Set robot in LOCAL mode
3. Connect to robot Wi-Fi access point. Password: 12345678
4. Direct a web browser to the robot web MMI: <http://192.168.8.1:8080>
5. Navigate to WRENCH > TOP MODULE CONFIG to upload the top module config file.
6. Username: admin, Password: GoPal400

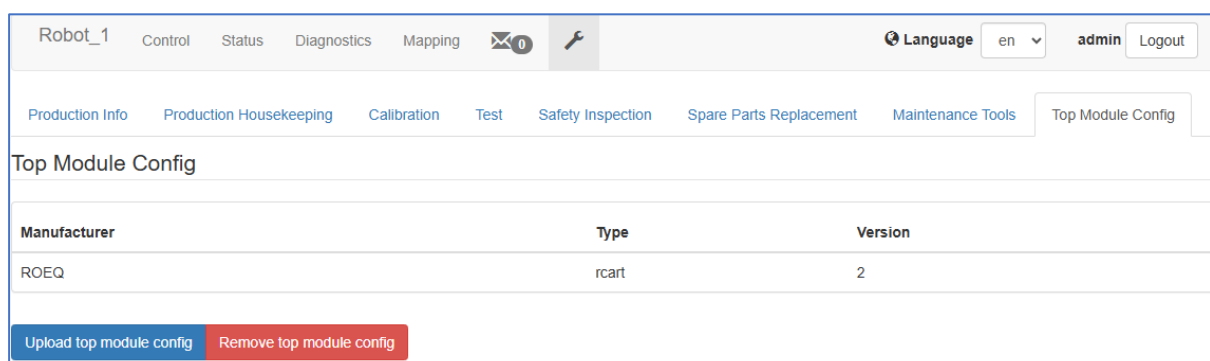


Figure 1: P35 Top Module Config

3.2 Upload ROEQ config to Dispatcher

Access the Dispatcher web interface to upload the ROEQ top module config file.

Navigate to SETTINGS > SITE > EDIT > TOP MODULES. See Figure 2.

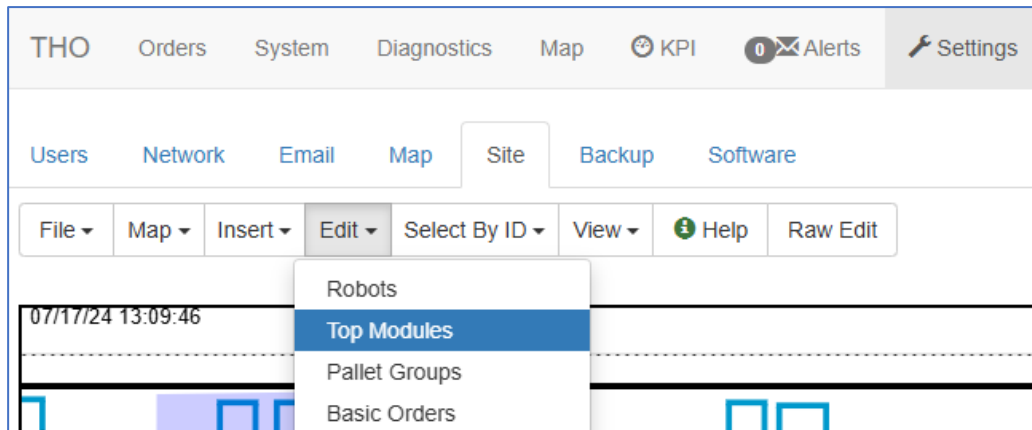


Figure 2: Dispatcher Top Modules

Press UPLOAD CONFIG button and select the top module config file. See Figure 3.

 The screenshot shows a form titled 'Edit Top Modules'. It has two columns: 'Top module ID' and 'Include in site config'. Below the columns is a green button labeled 'Upload config' and a 'Close' button.

Figure 3: Dispatcher Upload Top Module Config

Select the top module to be included in the Dispatcher site config. See Figure 4.

 The screenshot shows the same 'Edit Top Modules' form. In the 'Top module ID' column, the text 'ROEQ/rcart ver. 2' is entered. In the 'Include in site config' column, the checkbox is checked. The 'Upload config' and 'Close' buttons are still present at the bottom.

Figure 4: Include Top Module in Site Config

5 ROEQ Load

For optimal performance and safety, it is essential that the P35 robot is equipped with the necessary knowledge of the ROEQ load data. To achieve this, the specific load type must be accurately configured within the Dispatcher. Properly setting up this data ensures that the P35 robot can effectively handle and transport the ROEQ load, allowing for smooth and efficient operations.

To configure this, navigate to SETTINGS > SITE > EDIT > LOADS > ADD LOAD. See Figure 6.

Create Load


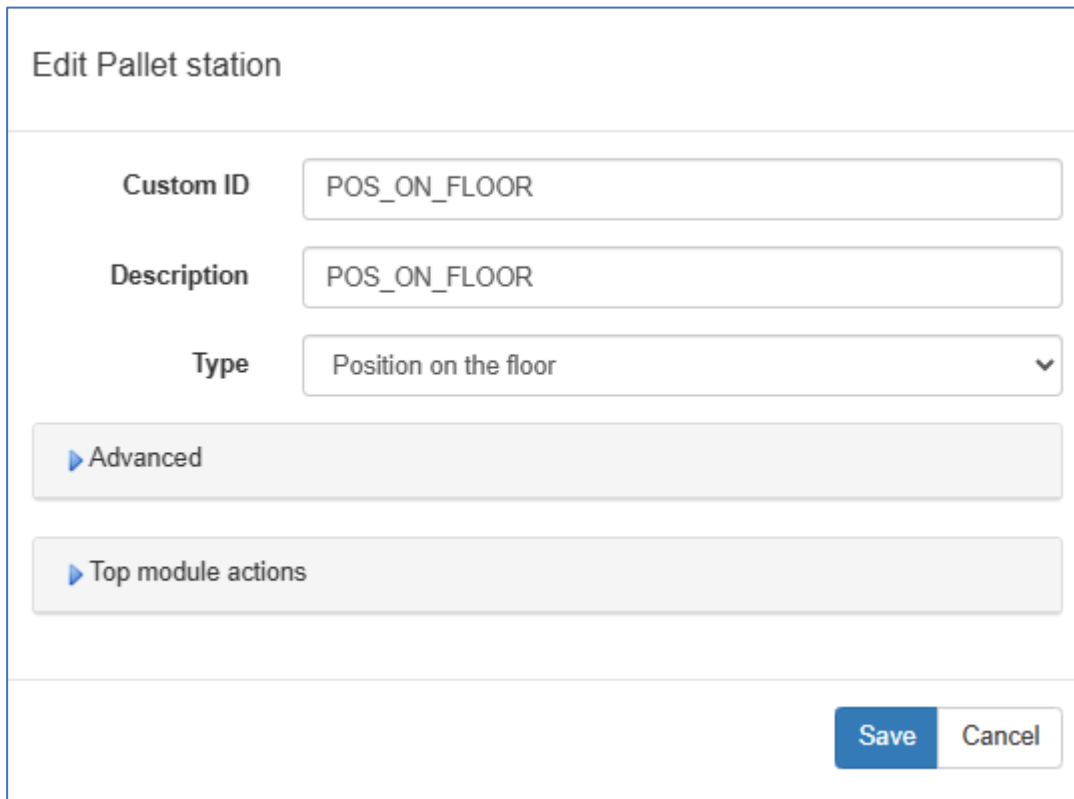
ID:	<input type="text" value="ROEQ_LOAD"/>
Description:	<input type="text" value="ROEQ_LOAD"/>
Type:	<input type="text" value="Cargo"/>
Width:	<input type="text" value="0,80"/>
Length:	<input type="text" value="0,80"/>
Length Offset:	<input type="text" value="0,00"/>
Speed Limit:	<input type="text" value="2,40"/>
Oversize Type:	<input type="text" value="Load"/>
Navigation geometry on floor:	<input type="text" value="ROEQ_CART"/>
Visualization:	

Figure 6: ROEQ Load data

6 ROEQ Position on the Floor

To ensure efficient and accurate handling of the ROEQ cart across your site, it is crucial that the Dispatcher is informed of the designated areas where the carts can be placed. This allows the Dispatcher to create and assign jobs for the P35 robots to move the ROEQ cart to these specified positions. This configuration is achieved by setting up the relevant locations in the Dispatcher as a pallet station type, specifically set to “position on the floor.” By properly configuring these settings, you enable precise and coordinated movement of the ROEQ cart within your facility.

To configure this, navigate to SETTINGS > SITE > INSERT > PALLET STATION. See Figure 7.



Edit Pallet station

Custom ID POS_ON_FLOOR

Description POS_ON_FLOOR

Type Position on the floor ▼

▶ Advanced

▶ Top module actions

Save Cancel

Figure 7: Pallet Station Type Position on the Floor

Select the "Advanced" tab to specify the load associated with this pallet station. See Figure 8.

▼ Advanced

Position

0,32

0,42

0.00

▲ ▼

 rad ▼

☒ Disable 3D Camera Obstacle Detection

☒ Disable Pre-docking Pallet Presence Check

☒ Disable Post-docking Pallet Presence Check

☐ Tight

☐ Mute Laser Safety

☐ Require Load Status Ok

☐ Enforce Order Priority On Pickup

Pallet Type

Default ▼

Allow Oversized Loads

☐ Enabled

Load Type

ROEQ_LOAD ▼

Max. Load (kg)

250 ▼

Max. Undocking Velocity (m/s)

☐

Load Status Alarm

No alarm ▼

Pallet Clearance

10,00

Figure 8: Load for Pallet Station

Select the "Top module actions" tab and "ROEQ cart" tab to specify the top module commands associated. See Figure 9.

The screenshot displays a web-based configuration interface for the 'ROEQ: rcart' module. The interface is organized into a main container with a header 'Top module actions' and a sub-section 'ROEQ: rcart'. Within this sub-section, there is a checkbox labeled 'Use with this top module' which is checked. Below this, there are four distinct action configuration blocks: 'PREP_PICKUP', 'EXEC_PICKUP', 'PREP_DELIVER', and 'EXEC_DELIVER'. Each block contains an 'action_name' field with a dropdown menu. The 'EXEC_PICKUP' and 'EXEC_DELIVER' blocks also include 'speed' and 'current' input fields. The 'EXEC_PICKUP' block has 'pickup' selected in its dropdown, while the 'EXEC_DELIVER' block has 'deliver' selected. The other two blocks ('PREP_PICKUP' and 'PREP_DELIVER') have empty dropdowns.

Top module actions

ROEQ: rcart

☒ Use with this top module

PREP_PICKUP

action_name

EXEC_PICKUP

action_name pickup

speed

current

PREP_DELIVER

action_name

EXEC_DELIVER

action_name deliver

speed

current

Figure 9: Top module actions

7 Enable ROEQ top module with robot

Enable the ROEQ top module and load for the robot by navigating to SETTINGS > SITE > EDIT > ROBOTS > EDIT COMPATIBILITY. See Figure 10.

Type	Serial no.	ID	Top module	Description
GoPal P35	3509	PR6@3509	None	ROB3509
GoPal P35	Serial no.		None	Description

Figure 10: Edit robot compatibility

De-select the default load and select the ROEQ load for the robot. See Figure 11.

Use default load compatibility: ☐

Compatible load types:

- normal
- ROEQ_LOAD

Figure 11: Enable ROEQ Load

Select the ROEQ Top module for the robot. See Figure 12.

Type	Serial no.	ID	Top module	Description
GoPal P35	3509	PR6@3509	ROEQ/rcart ver. 2	ROB3509
GoPal P35	Serial no.		None	Description

Figure 12: Select ROEQ Top Module

Activate configuration to save the new configuration.

8 Configure P35 lasers

When the P35 robot is used together with a ROEQ top module it is required to configure the laser scanners with laser scripts provided by ROEQ.

Contact ROEQ to get the correct laser safety script for the P35 front and rear lasers.

Update the laser scanners using the procedure described in Robotize Doc.: 011616.