

Informatie Bulletin MiniatuurA

Battery empty detection with XT module

Prior to

The XT module has the ability to detect an empty car battery. In this document we describe how that works. We assume that the car is filtered out of normal traffic and send to a gas station or parking lot by a turnout servo.

Operation

By means of a XT module and a sensor in or next to the roadway a low battery detection can be made. The low battery detection it self is done in the car by the decoder and you have to setup CVs to activate this.

If the battery voltage has fallen below a certain predefined value, the XT module will activate the turnout servo Ss1 so that the car takes this lane. The car must then be stopped and the anti collision system at the rear must be turned off. We do this with the function module group L, N, O, P, or S. Output 1 is the stop signal for all groups and output 7 switches the anti-collision system off. Both outputs can be connected with diodes 1n4001 and via a series resistor the control command is send to the IR LED.

The DC-Car decoder in the car must be set correctly and the battery alarm must be activated. How to do this can be found in the information bulletin DC-Car Battery Test on the download page of the MiniatuurA website, it can be found here:

<https://miniatuur.nl/wp-content/uploads/2020/10/DC-Car-battery-check.pdf>

The circuit looks like this:

With this circuit, the servo reset is based on time. It is also possible to reset the servo based on a hall sensor signal. For this, a hall sensor is needed in the turning track just after the servo.

