

Automatic Programming with the DiMAX-Digital System

Note: The sketches of the Navigator menu shown below correspond to software version 1.4. The former versions show "-->" instead "a" and "<--" instead of "b".

For an easy start two simple examples of automatic operations are shown. A lot of additional functions are possible. The programming of the functions is kept simple on purpose, these functions are meant for basic operating sequences only. They are not meant to substitute a complex PC controlling software. You may program up to 32 automatic functions and you may control up to 8 trains without the use of a PC. LGB track contacts 17100 or Massoth Digital Track Contacts 8420502 are required in the tracks and LGB Loco Magnets 17010 or Massoth Loco Magnets 8420102 are required under the locos. In addition you need a DiMAX Feedback Module 8170001 and a DiMAX Central Station with a Navigator.

At each position in your layout where an action is to be initiated, a track contact must be installed. Mind the stopping distance of your train when installing the track contacts. Stick a loco magnet under the engine that you want to control. Hook up the contacts to the Feedback Module according to the sketch below.

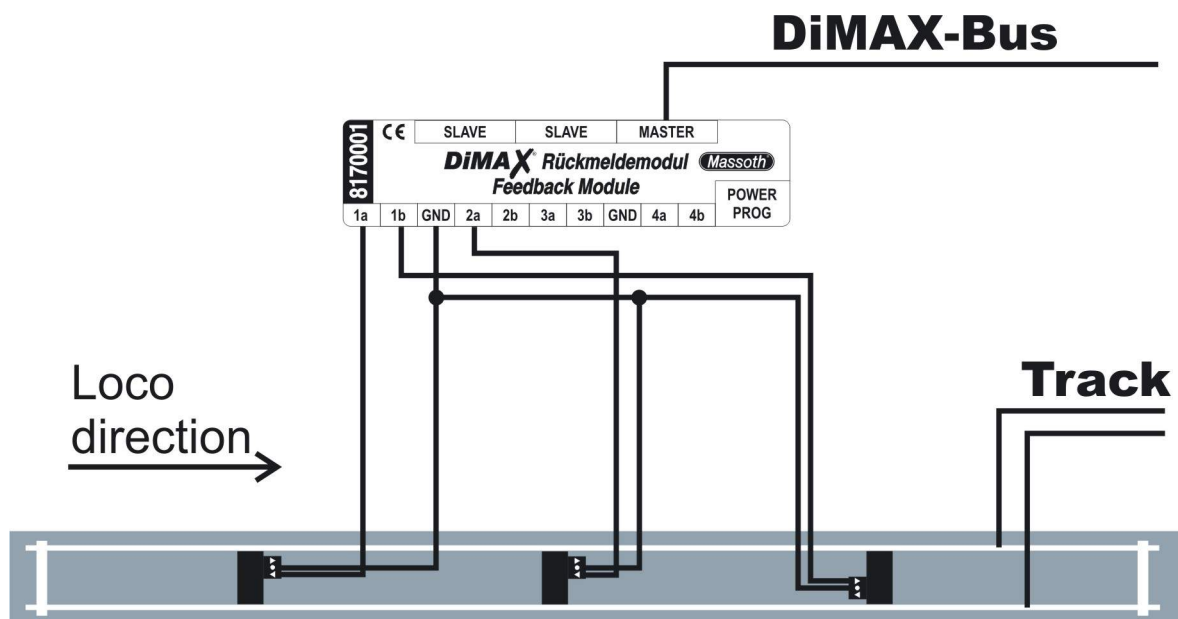


Illustration 2: Wiring Diagram for a shuttle operation with an intermediate stop

Let's program the functions now:

On your Navigator: hit M3 "menu" and scroll to "Automatic Programming". OK this with M2. The menu provides two automatic sub-menus: "Automatic Drive" for controlling driving commands and "Automatic Switch" for controlling switches and signals.

Scroll to "Automatic Drive" with M1 and OK this.



In this menu you have to define the parameters the automatic drive functions:

- 1.) Select a digit between 1 and 16 to number your function. In case this is the first function you are programming the preferred number/digit should be 1. You will be able to recall your functions by inserting this number. You may program up to 16 driving commands and 16 switching commands.
- 2.) Define the contact number that is to be used to trigger the driving command. You may program contact numbers between 1 and 2048. The contacts come in pairs e.g. 1a and 1b which relate to 1--> and 1<--. The "a" and "b" contacts define the operating direction for a switch.
- 3.) Define the loco address to be controlled automatically.
- 4.) Define the command that the loco should execute. For the time being there are 5 commands available:
 - 0 = The loco shall drive forward, if it drives in reverse or if it is standing still.
 - 1 = The loco shall drive in reverse, if it drives in the normal driving direction or if it is standing still.
 - 2 = The loco shall continue in the same direction (makes sense only with a time delay).
 - 3 = The loco shall reverse the driving direction.
 - 4 = The loco shall stop.
- 5.) Define the delay after which a command shall be executed, this ranges from 1 to 255 seconds. Keep in mind that the timer starts running when the switch has been triggered, this also means that acceleration times and deceleration times are included in the delay. In case of command #3 the loco is stopped and started again after the delay time is elapsed.

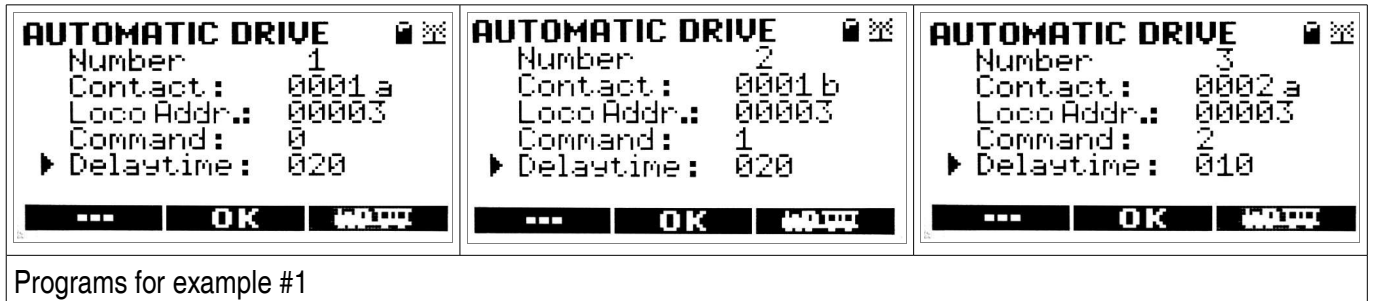
After insertion of all of the parameters the automatic function must be stored in the Navigator. However the function is not yet activated however. Reenter the menu and enter the automatic function number. At this time, all parameters of this function will be displayed. Activate this automatic function with the right hand arrow key. Deactivation will be accomplished with the left hand arrow key.

Note: For technical reasons there is no check mark displayed if the function is activated.

- The automatic Switch functions are handled in the same way. Instead of the loco address you will have to insert the switch address and the switching direction.

Example 1 :

These are the programs for a shuttle operation (see Illustration #1) for loco address 3 with two terminal stops and one intermediate stop with separate stopping times. 3 track contacts and 3 programs are required for this.



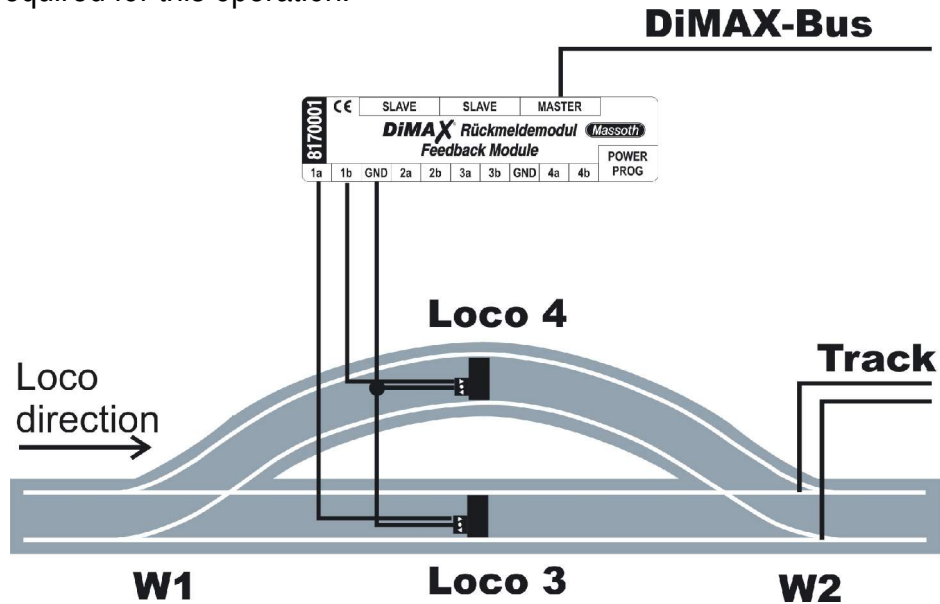
This is how it works if the functions are activated:

The loco must be selected in the Navigator and set to the speed required. The loco will drive forward and approach the right hand contact (1b). After passing this contact the automatic function #2 will start. The loco stops and starts running again after the programmed delay time. Then the loco passes the same contact again without triggering any action because the loco is already running in reverse. The loco now passes the middle contact (2a) triggering a stop with the programmed delay time. Thereafter the loco resumes the preset speed and driving direction again. On the way back the loco will behave the same way: it stops and continues in the same driving direction as before after the waiting time is elapsed. Finally the loco passes the left hand contact (1a) triggering program #1. The loco stops and continues in normal driving direction after the time delay.

This example may be varied with different contact numbers, loco addresses and delay times. You may store these programs with different loco addresses. Then you may change the locos without changing the programs.

Example 2 :

Two locos (addresses 3+4) are standing on an oval shaped layout with a siding (switches 1+2) at the station. The locos shall operate alternatively. 2 contacts and 6 programs (4x driving, 2x switching) are required for this operation.



These are the automatic driving programs:

<p>AUTOMATIC PROGR. <input type="checkbox"/> <input type="checkbox"/></p> <p>Turnout Route Pra. Consisting Pra. ▶ Automatic Drive Automatic Switch</p> <p>▼ OK <input type="checkbox"/></p>	<p>AUTOMATIC DRIVE <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 1 Contact: 0001 a Loco Addr.: 00003 Command: 4 ▶ Delaytime: 010</p> <p>--- OK <input type="checkbox"/></p>	<p>AUTOMATIC DRIVE <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 2 Contact: 0001 a Loco Addr.: 00004 Command: 0 ▶ Delaytime: 015</p> <p>--- OK <input type="checkbox"/></p>
<p>AUTOMATIC DRIVE <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 3 Contact: 0001 b Loco Addr.: 00004 Command: 4 ▶ Delaytime: 000</p> <p>--- OK <input type="checkbox"/></p>	<p>AUTOMATIC DRIVE <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 4 Contact: 0001 b Loco Addr.: 00003 Command: 0 ▶ Delaytime: 015</p> <p>--- OK <input type="checkbox"/></p>	

Programming menus for Automatic Drive for example 2

<p>AUTOMATIC PROGR. <input type="checkbox"/> <input type="checkbox"/></p> <p>Turnout Route Pra. Consisting Pra. ▶ Automatic Drive Automatic Switch</p> <p>▼ OK <input type="checkbox"/></p>	<p>AUTOMATIC SWITCH <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 1 Contact: 0001 a Switchaddr.: 0001 → Command: --- ▶ Delaytime: 005</p> <p>--- OK <input type="checkbox"/></p>	<p>AUTOMATIC SWITCH <input type="checkbox"/> <input type="checkbox"/></p> <p>Number: 2 Contact: 0001 b Switchaddr.: 0001 ← Command: --- ▶ Delaytime: 005</p> <p>--- OK <input type="checkbox"/></p>
--	--	--

Programming menus for Automatic Switch for example 2

This is the course of events in brief:

Loco #3 enters the station via switch #1 and triggers contact # 1a. Loco #3 receives a stop command and stops. After 5 seconds switch #1 is switched to the left. After 15 seconds loco #4 leaves the siding and enters the oval. It returns to the siding and triggers contact #1b. This stops loco #4. After 5 seconds switch #1 is switched back and after another 15 seconds loco #3 starts running again. It is assumed that the locos move switch #2 to the open position.

In case switch #2 can be operated digitally too, you may operate the trains in opposite directions. Have fun playing with your automatic functions.

Your Massoth Team