

REVISIONS:

1997 01 01

1997 01 15

1997 02 19 only German

2003 04 15 English translation by Tony Pemberton

Instruction Manual

TURNTABLE-MODULE MXDS

1. Introduction

The MXDS is principally designed to operate ROCO turntables, but will operate other vendor's turntables if they have bridge/track position contacts. The MXDS controls turntables from ZIMO MX2 handheld controllers or from a computer.

For computer use, an application running under Windows™ software is available (MXDS/SW supplied by: E. Sperrer). This uses the MXDS RS232 Interface. Alternatively, turntable control is built in to STP Version 4.1 or later (Dispatcher panel software also supplied by E. Sperrer). In this case, communication uses the CAN bus.

2. Using the ROCO turntable

?? On the lower surface of the turntable is a switch; this must be set to **position "0"**. This will allow the track position connections to be acknowledged.

?? When the turntable bridge passes active tracks, it is possible that a connection between two neighbouring rails of the opposite polarity may be briefly connected. This presents the danger of a short circuit, which will need to be reset. To prevent this, the turntable bridge rails must be controlled.

3. Using other turntables

The MXDS can only be used if feedback of the current bridge position through contacts is possible.

Position recognition is achieved as follows. The MXDS has 32 pins in two 16-pole IDC connectors that supply a 1 kHz tone. The pins are attached to each track outlet position contacts (not the bridge). The turntable bridge position contact is connected to pin 6 of the 8-pole edge connector of the MXDS, which is the position sensor input.

When the turntable rotates, one of the turntable outlet track contacts will connect to the bridge contact, creating a circuit and providing position feedback.

4. Calibration of the MXDS

After completing installation of the turntable, or after changing the track configuration, and the wiring to the MXDS, a calibration procedure is necessary. This started by **pressing both keys** on the module **simultaneously**. (Subsequently these keys will be used to operate the turntable "manually" to move the bridge a track to the left or right.)

The calibration procedure consists of a revolution of the turntable, where the turntable module registers and records the position of individual track connections in its EEPROM (a non volatile memory element). This information is used for the optimisation of the rotation needed in operation.

Calibration procedures can also be performed through computer operation.

Legends for diagram

Double connector for turntable bridge rails:

In a ZIMO environment, connect this to an output ("KS") of an MX7 (or MX7/3) polarity reversal module, where the input is connected to the power module.

Power supply for turntable motor and internal operation. Max. 15Volts AC only is permitted, e.g. usual accessory outputs from model railway transformers.

CAN-Bus connectors

RS-232 Interface for computer operation only.

Buttons for manual operation of the turntable (either one step forward or back).

8-pole edge-connector for ROCO turntable.

CAUTION: Connector must be attached with numbered side upward.

Pins:-

- 1,8 Track connection to turntable bridge.
- 2,7 Turntable bridge contact to permit track supply (not used by ZIMO)
- 3 Ground
- 4 Output for position detent solenoid
- 5 Output for turntable motor
- 6 Input for turntable bridge position contact

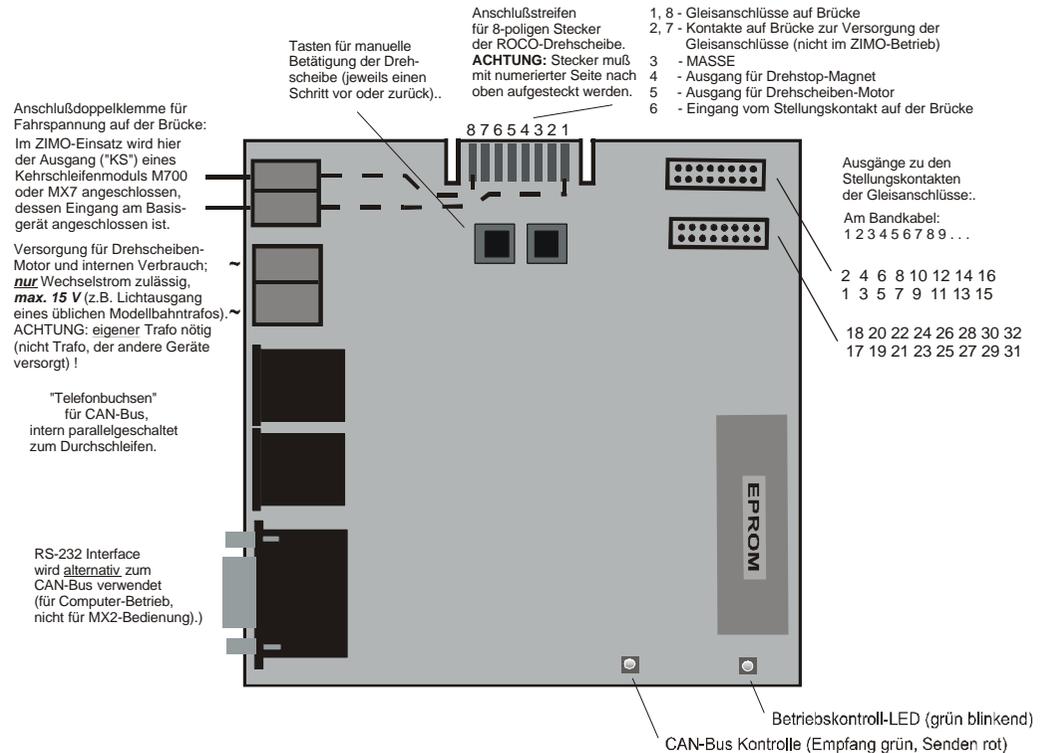
Outputs to track outlet position contacts

By ribbon cable

CAN-bus activity LED (Green = receive, Red = send)

Middle LED – what is this??? Contact sensor indicator LED?

Operation indicator LED (Blinking green)



5. Using an MX2 for turntable control

The **Base address** of the MXDS turntable module **980**; this address corresponds to the first 8 track connections. Each group of 8 further track connections can be addressed using addresses 981, 982, 983.

The address is entered on the MX2 and activated with the "A" key.

All key LEDs (1 to 8) for existing track connections (as determined in the calibration procedure) will be illuminated red, except where the turntable bridge is connected to a track outlet in the group, in which case the key LED will be illuminated green.

- ?? Pressing a key (1-8) will cause movement of the turntable bridge to the target track outlet the shortest possible way. During the rotation, the key LEDs will flash green for each sensed track outlet. When the target track is reached, the flashing LED will change to continuous green.
- ?? Double pressing the key (within ½ second) will make the bridge turn the longer way, i.e. the bridge is turned 180° or more.
- ?? Pressing the key corresponding to the current turntable bridge position, causes the bridge to rotate 180°.
- ?? Pressing a key while rotation is in progress will cause interruption of the current operation and restart toward the new target outlet track.

While the turntable is in operation (when a turntable address is active), the slider control, direction key and MAN-button are available to control a locomotive.