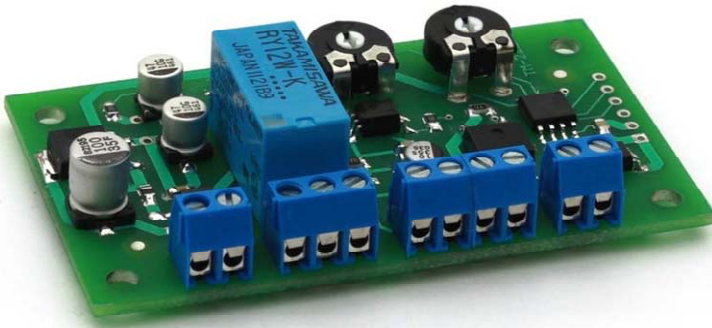
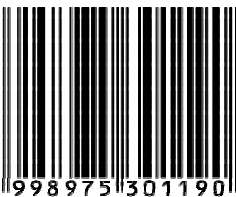


TM-22272



Brake and Station Control Module

User's Manual



519989751301190



© 2012 BioDigit Ltd.

All rights reserved. It is forbidden to reproduce and/or publish the contents of the present document in any form including electronic and mechanical design without the written permission of BioDigit Ltd.



Safety Warnings

During the operation of the device, the specified technical parameters shall always be met. At the installation, the environment shall be fully taken into consideration. The device must not be exposed to moisture and direct sunshine.

A soldering tool may be necessary for the installation and/or mounting of the devices, which requires special care. During the installation it shall be ensured that the bottom of the device should not contact with a conductive (e.g. metal) surface!

Contents

Safety Warnings	1
Features and Properties	2
Technical Parameters	2
Short Description and Operation	2
Automatic Line Following	3
Connection	3
Configuration of waiting time	3
Configuration of Deceleration Rate	4
IN_POS and GO Inputs	4
Guarantee and Legal Statement	5

Features and Properties

- Developed for analog systems
- Delay can be adjusted between 1 second and 4 minutes
- 32 KHz PWM speed control
- Variable deceleration and acceleration time
- Direction dependent operating mode
- Galvanically isolated outputs and inputs
- Controlled by external sensors
- Light signal control contact
- Low stand-by current consumption
- Manual and automatic releasing of trains

Technical Parameters

Input supply voltage: 7-24V AC/DC

Control input supply voltage: 4-24V AC/DC

Stand-by current consumption: 20 mA

Maximum current consumption: 42 mA

Size: 73x40 mm

Short Description and Operation

The circuit can be used to create trains that stop automatically and are released based on a timer (as well as manually). The built-in speed controller results in life-like deceleration and acceleration of the locomotive on a distance set up using the potentiometer.

The circuit is triggered depending on the direction. As a result, only the vehicles moving in one of the directions are stopped, while locomotives moving in the other direction are allowed to pass.

The circuit operates as follows:

1. The locomotive enters the desired section
2. It reaches the rail contact or reflection sensor (TM-73379), starts decelerating at the predetermined speed ("**DISTANCE**" potentiometer), and then stops. At this time, the optional signal turns red.
3. When switched to automatic timer mode, the train starts to accelerate after the time specified has elapsed or when the input "**GO**"

is activated in case of manual mode, and the relay output contact closes (green signal)

4. The relay contact switches off again based on the timer (red signal), and the circuit waits for the next train.

If there is movement in the opposite direction (opposite polarity) on the given section, the module has no effect on the movement of trains.

Automatic following

The circuit can also be used to implement automatic following when the free signal of the next controlled section is connected to the points labeled "GO". As a result, the next train will be launched once the next section has been freed up.

Connection

The input supply voltage is connected to the points labeled "**PWR**". Lights signals and other devices controlled can be connected to the contacts labeled "**LIGHT SIGNAL**". The direct current train transformer used for analog systems is connected to the terminal block labeled "**TRACK IN**", while power is supplied to the separated section isolated on both tracks from the points labeled "**TRACK OUT**".

The external sensor used to decelerate the locomotive from the given point connects to the points "**POS**". In case of manual operation, when power is supplied to the input labeled "**GO**", the train starts to accelerate. See Figure 1 for the complete connection.

Configuration of waiting time

The waiting time is configured using the "**DELAY**" potentiometer in an analog manner between 1 second and 4 minutes. It is recommended that the lowest possible waiting time be set up when testing the correct operation of the sensors (e.g. when the track is constructed).

Should you choose the manual mode for releasing the trains, turn the potentiometer to the lowest value (see Figure 1). In this case, the train is only launched manually, and no waiting time is set up.

Configuration of Deceleration Rate

Use the potentiometer labeled "**DISTANCE**" to configure the degree of train deceleration. Configure the deceleration rate so that all locomotives are able to stop within deceleration distance of the activation sensor ("**POS**").

POS and GO Inputs

The "POS" and "GO" inputs are galvanically isolated. They are activated using AC (alternating) or DC (direct) current. This power may be supplied from any source, be that the rail contacts or the output of a reflection object sensor. (see Figure 2)

The "POS" sensor must be placed a few centimeters from the end of the section. The locomotive will decelerate starting from this point.

Guarantee and Legal Statement

Each parameter of the device has been submitted to extensive testing prior to marketing. The manufacturer undertakes one year guarantee for the product. Defects occurred during this period will be repaired by the manufacturer free of charge against the presentation of the invoice.

The validity of the guarantee will cease in case of improper usage and/or treatment.

Attention! By virtue of the European EMC directives the product can be used solely with devices provided with CE marking.

The mentioned standards and brand names are the trademarks of the firms concerned.

TrainModules – BioDigit Ltd
Kerepesi street 92.
H-1144, Budapest

Made in Hungary.

Tel.: +36 1 46 707 64
<http://www.trainmodules.hu/>

Figure 1 Connection of Braking and Station Control Module

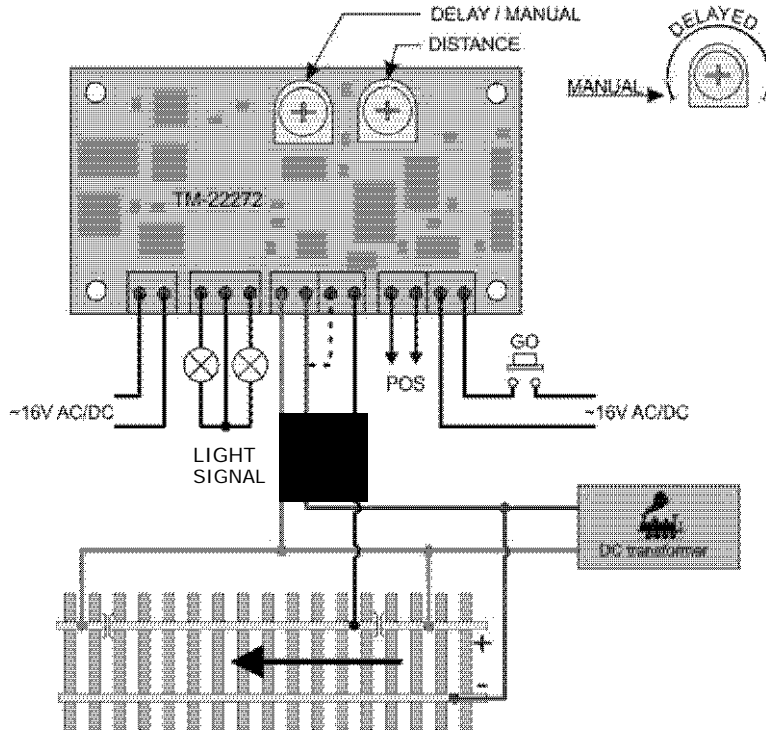


Figure 2. Connection of the Control Input

