

## ABBS 41 200

N TT HO =DC ~AC JLL DIG

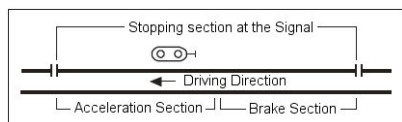
## Acceleration-Brake Module

Slow start-up and braking at signals showing halt

### Function

The Acceleration-Brake module ABBS makes it possible to have realistic stopping at signals. At a stop signal the train will brake to slow down and then stop at the signal. When the "clear" signal is given, the train slowly accelerates back to its set speed. The acceleration and braking distances can be set with the potentiometer in a large range.

With a "clear" signal the train passes the section without stopping.



### Faulhaber motors

Faulhaber motors already run with the lowest of track power. Since the holding component monitors the stop section during the stop phase with a small voltage, it can happen that a vehicle will slowly creep ahead.

The Faulhaber motors give no problems if they are electronically controlled (e.g. with an electronic change over switch and digital decoders from Märklin) which compensate for the sensitivity of the motor to minimum voltage.

A mixed operation with conventional motors is not recommended, since there is no setting of the module with which all vehicles will have approximately the same stopping distance. Small vehicles with Faulhaber motors may possibly not come to a stop.

### Protection

The module is fully electronically constructed and equipped with short circuit and overload protection. The track power is limited to 1.4A in the stop section so that during a short circuit there is no danger of damage to the module, wiring or the track.

With high load, as, for example, during a long and constant short circuit, the module will reduce the output capacity. It warms up and lastly switches the track power off.

When the overload is removed and the module has cooled down again it will resume normal operation.

### Technical Data

Track Power: 0-16 V  
Track current max: 1.4 A

### Additional Components

Part No. 40 111	10 Diodes 1N4001
Part No. 40 311	20 Coupling resistors 1.5 K $\Omega$
Part No. 40 210	1 Rectifier B40C1500

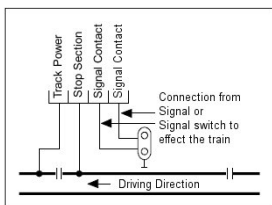
## Installing the Stop section

Install an isolated section in which the signal will be located at the mid. It can be placed in the left, right or centre rail.

Before installation of the module you can determine the length of the track sections by setting up a test track on your workbench to your satisfaction. It should allow for sufficient braking and acceleration distances for normal heavy and fast vehicles. As a good measure use 1 m for H0 scale and 0.5 m for N scale. The characteristics of the module are better the longer the isolated sections are. In a Märklin 3-Rail System the isolation and connections are done in the centre rail.

## Connection with stopping in both directions

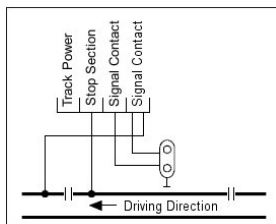
Connect the track power, the isolation section and both wires from the signal to the module as shown in the diagram.



On existing layouts the two red wires from the signal to the track must be cut and the module inserted between them. All trains, whether DC or AC powered stop at the red signal in either direction.

## Connection for stopping in one direction

In conventional DC operation it is possible to have the vehicle stop in only one direction. In the reverse direction the isolated section can be driven through.



For this you connect the module as normal. Only the track power is connected via the clamp for signal contact.

If the train is to stop in the opposite direction you need only to swap the two wires coming from the track.

# Tips and Application Example

## Starting power when turning the layout on

It is disconcerting when the layout is switched on and a train that is stopped in an isolation section with a red signal drives off for a short distance before it stops again.

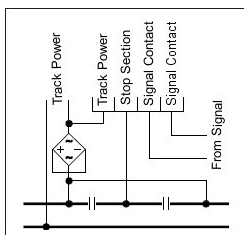
The cause of this is that the module normally reacts to the voltage increase which is caused by the vehicle when it enters the isolated section. The same voltage increase occurs when the track power is switched. This can lead to problems, particularly in short stop sections and automatic operation.

Such disturbing voltage peaks are avoided if the track power is only increased slowly. The simplest way of doing this is to turn up the speed regulator slowly. On layouts with fixed speed setting this is easy to achieve by connecting all transformers that are used to provide track power via a standard lighting dimmer.

## Driving Voltage reduction with the ABBS

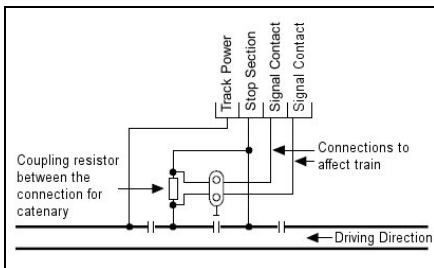
Since the component receives its supply from the track, running voltage will be slightly reduced within the isolated section. A train therefore drives a little slower in that section even when the signal is green.

This effect can be eliminated by supplying the device from a separate higher set transformer, or by reducing the driving voltage in the other sections or with an accordingly switched diode by about 1.4 V.



## Over shooting of fast locomotives

Although most vehicles stop correctly at the signal, fast trains drive past the stop point. This happens because the train drives through the stop section before the electronics have been able to turn the voltage to zero.



You can still bring trains to a halt at the signal if you divide the stopping section into further segments such as a braking segment and an acceleration segment. The acceleration segment starts about a locomotive length before the signal and its power is switched off when the signal is on stop. A vehicle which overshoots the braking segments will stop safely after the isolation point.

In Märklin systems an additional stop section can be added to the segments with isolation of the catenary which can be switched by a Märklin signal. With other signals an additional relay may be needed.

Another possibility is to fit an electronic transmission into fast locomotives. It reduces the locomotive's top speed and improves its power at low speeds. We sell this component under the number EGB 52200. In addition the reversing switch FRU 55700 for AC locomotives can be combined with the electronic transmission.

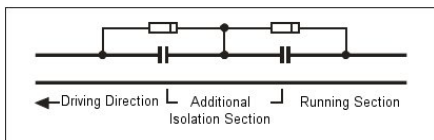
## Illuminated coach

### Characteristics with Märklin track

Illuminated coaches with a pickup on a Märklin track or with bogie on which power is picked up on both axels, bridge the isolation point for a short time while crossing it. During this time the locomotive gets a short burst of full power and does a little leap.

To eliminate this effect you can convert the power pickup in the particular coach. When using Märklin tracks it is preferable to do that rather than using insulators No. 38555 for M-track or 38558 for K-track.

If you are running the layout with DC power, you can add a further short isolated section in front of the slow section, which is slightly longer than the distance across the bogies. Like the other isolated section, it must be cut on the right - as seen from the travel direction, and as shown in the diagram, bridged with two diodes 1N4001 as shown in the diagram. When installed in the left rail as seen from the driving direction the diodes must be connected the other way around.

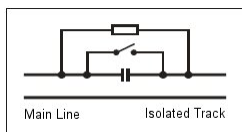


### Switched off tracks in the Stop segment

If power is to be switched off to tracks in the stop segment, a switching contact, bridged by a 1.5K resistor, which cuts the power, must be installed to bridge an isolation point.

*Thus it guarantees that the module also registers a train on the switched off segment.*

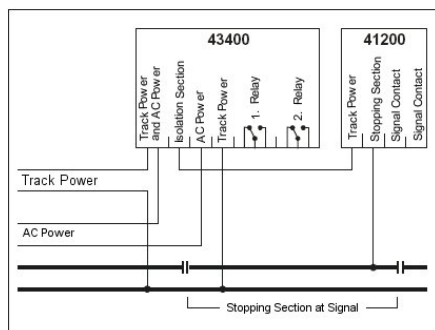
### ABBS in a Terminus Station



If the Acceleration-Brake module is connected for one sided DC operation it is highly suitable for use in Terminus stations and sidings. The trains come to a slow stop and can reverse out of the isolated section. That does not, however, work with audio frequency controlled trains like for example Trix EMS.

### Acceleration-Brake and Track Occupation Sensor

As long as isolation section of the track occupation sensor is connected to the chassis side for the Acceleration-Brake module they should be connected as shown in the diagram. The modules do not affect each other.



However if the interface of both modules are to be used together, then the Acceleration-Brake module is inserted into the track occupied line of the track occupation sensor. The diagram shows the ABBS 41200 with the 2-way track occupation sensor 43 300. The 1<sup>st</sup> output of the occupation sensor monitors the running segment and the 2<sup>nd</sup> output monitors the stopping segment.

## Uhlenbrock Elektronik

### Our contact Details: Service

In the event of a defect or failure send the unit together with the invoice and a short description of the fault back to us for repair.

### Hotline

We are available if you have any questions!

Your direct line to a technician: **0 20 45 - 85 83 27**

Mon - Tue - Thu - Fri, 14:00~16:00 and Wed 16:00~18:00



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belong in household rubbish*



**Part No. 41 200**