

GBM 43 400

Track occupancy detector with Relay

For reliable indication of stationary and driving trains on the track and for use as an electronic switch.

Operation

The occupation detector reports any driving current above and including 1mA in the isolated section which it monitors. It reacts this way to stationary and driving locomotives and cars with lighting. It is possible with connected lamps of all types, LEDs, relays, switches and signals with current switching of high output current of up to 1 A, or other components, e.g. sound modules.

The integrated relay with two floating change-over contacts, which may be loaded with 1A, permits many switching possibilities without additional components.

Apart from use for reliable reporting on the track plan desk, the occupation detector is suitable for the triggering switching sequences, timers or other components - and all this without visible logic elements in the track.

When using lit end cars the device also reliably reports uncoupled railroad cars. Any other car is detected if the isolation of the axles is bridged with graphitic or resistance lacquer.

Fuse

The device can tolerate a continuous driving current of 1.5A and is normally protected by the controlling equipment, e.g. Transformer or speed controller with overload protection. Should this not be the case should on your layout we recommend the installation of a 1.25mA_T micro fuse.

Compatibility

The GBM can be installed with continuously lit trains and digital systems, as well as with all kinds of control desks and electronic components.

Technical Data

max. Output current:	1A
min. Detected current:	1mA
Power supply:	12-16V
Driving power loss:	0.6V

Accessories

Part No. 40 111	10 Diodes 1N4001
Part No. 40 311	20 coupling resistors 1.5 KOhm
Part No. 40 410	10 ml Resistance lacquer

Guarantee declaration

Each component is tested for its complete functionality before distribution. If a fault should arise within the guarantee period of 2 years, we will repair the component free of charge upon production of proof of purchase. The warranty claim is void if the damage was caused by inappropriate treatment.

Connection

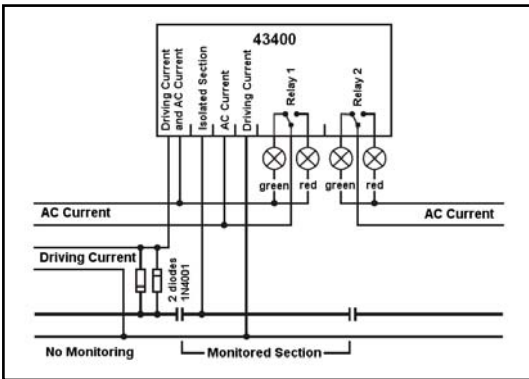
The track is divided into sections which can be monitored. We recommend with DC isolation sections to the common return side. Hence short-circuits are not only avoided but the individual sections are also independent of the power feed.

The component is connected to the rail to be monitored, the AC output of a transformer and to the device which is to be switched.

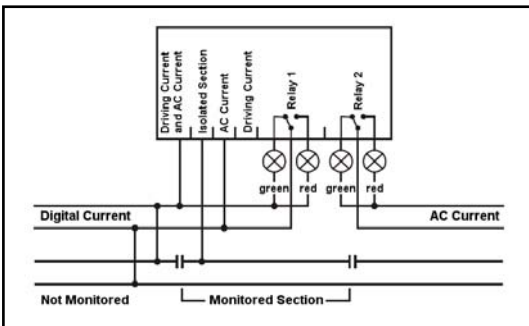
The driving power sections which have no occupation detector connected must be decoupled with the two provided diodes 1N4001 so that a normal monitoring takes place even while the driving power is switched off.

The loads that are to be switched by the relays can be connected to AC, DC or digital power. That can be the power which supplies the device (as with relay 1 in the sketch) or a separate power supply, e.g. the lighting or the turnouts are attached (as with relay 2).

The relays can be used to switch e.g. red/green indication on the control desk, or the turnouts and signals with switches or other components such as sound modules or lighting.



Connection for analog DC operated trains



Connection in Digital Systems

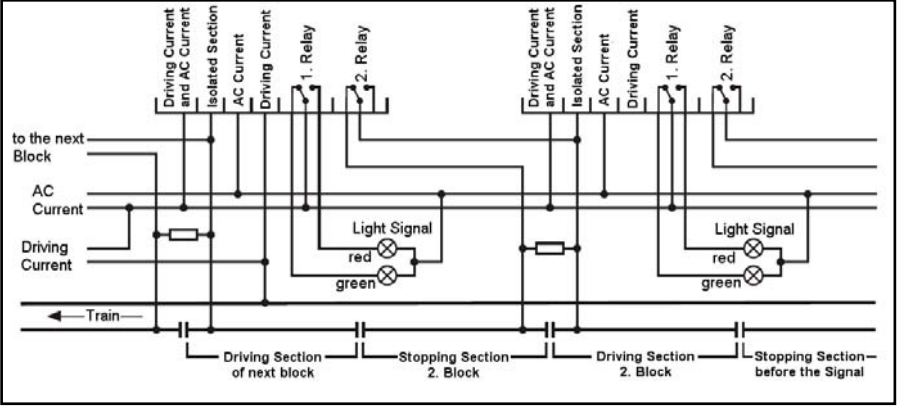
Note

All isolations which lie within a monitored section must be bridged with a 1.5K resistor. This supplies the rail with a quiescent voltage, so that a correct report is given even in the absence of a driving current.

Application Examples

Simple Block System

A simple electronic block system can be quickly developed with the occupation detector 43400. Each occupation detector monitors the driving and the stopping section of a block. If a vehicle is on this section a relay contact switches the block signal in the preceding section to stop, the other switches the driving power of the Signal section off.



To individual blocking section are installed. Each section is divided into a driving and a stopping section.

The occupation detectors are connected to the driving and to the AC voltage.

The isolation section (terminal 2) connects directly with the driving section. The stopping section is connected via a 1.5K coupling resistor so that it can also be monitored in the switched off state.

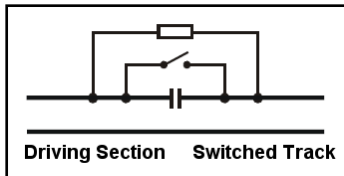
The block signal for this section is connected to the 1st relay contact of the occupation detector. The 2nd relay contact is connected with driving and stopping section of the preceding occupation detector. In this way the block signal before block 2 is switched to stop and the stopping section before it is switched off, as long as a vehicle is in block 2. A following train would come to a halt, at the latest, in the stopping section prior to block 2.

Any further track occupation detectors are connected like the component for block 2. The connection rail - driving power (terminal 4 of the left component) needs to be done only once per block system.

The occupation detector can be combined with the start/brake component 41 200 for model accelerating and deceleration.

Track occupation detector in switched tracks

if the driving power is to be switched off in track sections which are monitored by the occupation detector, then either the disconnection can be made in the opposite rail or as shown the following sketch.

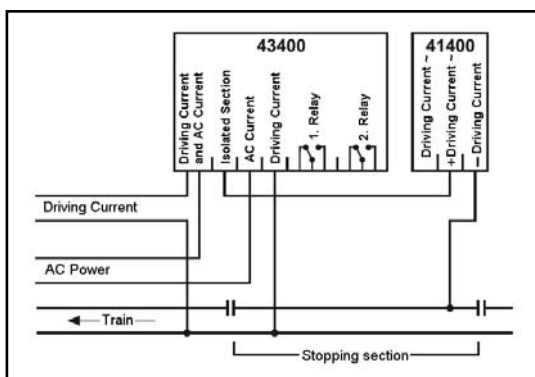


The switch contact must be bridged with a 1.5K resistance. This supplies the rail with a quiescent voltage so that the correct report will be given even without driving power.

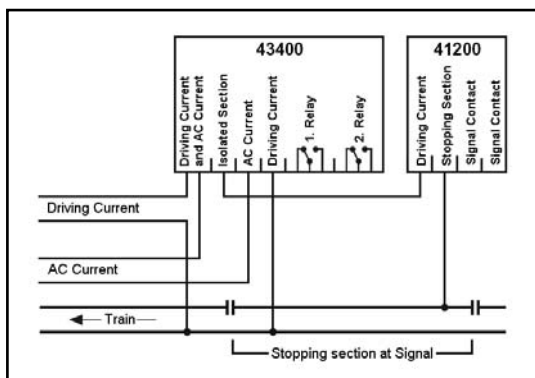
Occupation detector and delay or starting brake component

As long as the interfaces of the track occupation detector is connected to the common side and the delay or starting brake device on the opposite side, the circuit diagram provided applies for each component. The components do not interfere with each other.

However if both components is to be used together the delay or starting brake device is inserted into the connecting cable of the occupation detector.



Track occupation detectors 43 400 and delay device 41 400



Track occupation detectors 43 400 and starting brake device 41 200

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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Electronic devices do not belong in household rubbish
Not suitable for children under age 10.



Part No. 43 400