

# Operating Instructions



## Construction Site Traffic Signal System MPB 1/1 H



## **General explanation for construction site traffic signal systems**

### **SIGNAL SAFETY FEATURE**

The regulations of VDE, TL-LSA 97 and RiLSA describe among others the use of portable construction site traffic signal systems.

The above regulations stipulate that no signal safety feature as per RiLSA and VDE 0832 is necessary e.g. for construction sites with alternating one-way traffic control and a clearance speed of up to 30 km/h, insofar as the corresponding authorities have not imposed any stricter conditions or requirements.

All other construction site traffic signal systems used for controlling traffic at T-junctions, crossroads or pedestrian crossings must be equipped with a signal safety feature as per RiLSA and VDE 0832, and fulfil TL-LSA 97.

This safety feature requires a feedback message which can be transmitted by radio or cable. Radio-controlled traffic signals use top-quality radio modules which have been given an approval number by the German Federal Network Agency for electricity, gas, telecommunications, postal and railway markets (formerly RegTP).

Peter Berghaus GmbH produces and supplies construction site traffic signal systems with and without signal safety feature.

## Operating Instructions for the Quartz-Operated Road Works Signal Device Type MPB 1/1 - H

Single-lane traffic control at road works up to 1000 meters in length can be regulated using the Type MPB 1/1-H quartz-operated signal device. Because the duration of the green-light period must be set identically for both traffic lights, the use of this signal device is particularly recommended for situations where traffic volume from both directions is expected to be approximately the same.

For initiating operation, first place the two signal devices next to one another:

- 1.) Open the green-coloured lower signal transmitter of each device. The control systems and the front plates with the operational controls are built into the lower signal transmitter chambers.
- 2.) Switch the main switches in both devices to "Switch OFF".
- 3.) Connect both devices to a line voltage of 12 V DC by clamping onto storage batteries or power packs of the N1 series type. Be sure polarity is correct!
- 4.) Turn both main switches over to "Automatic". Both devices must begin blinking yellow and the "Synchron-LED's" of both devices should be glowing green.
- 5.) Now set **- identically for each traffic light -** the desired green-light period in seconds and the road works length in meters.
- 6.) Push the "Synchronization Button" on **one** traffic light. This traffic light now initiates the installed programme sequence automatically.
- 7.) Wait until this traffic light switches from green to yellow. The instant this happens, push the "Synchronization Button" of the other traffic light.

Both devices are now synchronized and ready for operation. Mount the two traffic signals so that the distance between them corresponds to the road works length that you have entered.

ATTENTION! The times that have been entered cannot be altered again during operation.

NOTE! It is recommended, in the interests of precise synchronization, to re-synchronize the devices after an operating period of 3 - 4 weeks.

# Special operating modes

## **Flashing mode:**

Switch the operating mode switches on both traffic lights to "amber flashing" (e.g. at night). Both signal transmission chambers in the middle flash yellow. If you switch back to "Automatic" the normal program flow will start after the turn-on screen has ended without the synchronization and the program flow being lost.

## **Lamps OFF:**

Switch the operating switches on both traffic lights to "Lamps Off" (e.g. at night). All lamps of the signal transmitter go out or do not light up. If you switch back to "Automatic" the normal program flow will start after the turn-on screen has ended without the synchronization and the program flow being lost.

## **Red:**

Switch the operating mode switch to "Red" (e.g. to divert a vehicle on the building site). The upper signal transmission chamber of the traffic light which you have switched to "Red" will now be lit up red continuously.

**WARNING!** You must switch on a defined status on both signal transmitters so that there are no misunderstandings with the building site traffic! If, for instance, you switch traffic light 1 to "Red", you must switch traffic light 2 also to "Red" or to "Green".

If you switch back to "Automatic" the normal program flow will start without the synchronization and the program flow being lost.

## **Green:**

Switch the operating switch to "Green" (e.g. to ease traffic congestion). The lower signal transmission chamber of the traffic light you have switched to "Green" will now be lit up green continuously.

**WARNING!** You must switch on a defined status on both signal transmitters so that there are no misunderstandings with the building site traffic! If, for instance, you want to switch traffic light 1 to "Green", traffic light 2 must be set to "Red" beforehand. If you switch back to "Automatic" the normal program flow will start without the synchronization and the program flow being lost.

## Changing the battery

With battery power of approx. 8 Volts, the relevant signal transmitter will switch the lamps off. Replace the "dead" battery with a fully charged one. (The battery or batteries are at the bottom of the battery case.)

The systems will continue to work as normal after a battery has been changed. Changing a battery must not last longer than 15 minutes per signal transmitter so that the systems do not have to be re-synchronized!

## WARNING:

The timing on **both control units (signals)** for green-phase in seconds and road works length in metres must be set-up identical by means of the rotating switches.

## Temporary interruption of operation

If the systems are temporarily out of operation without the program flow having been reset, the operating mode switches must be switched to "Lamps off" or "Amber Flashing" on both systems. The batteries **must not** be disconnected. The program flow continues to run internally via the connected power supply.

## Lengthy interruption of operation

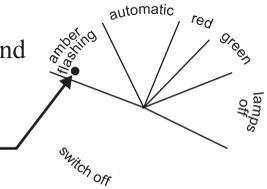
If the systems are out of operation for a long time, both main switches should be switched to "Off" and the batteries should be disconnected.

When being used again, the systems must be started up according to Section 1 - 6 and re-synchronized.

The MPB 1/1-H type signalling equipment is equipped as standard with a light detecting resistor (LDR) which automatically adjusts the light intensity of the signal transmitter according to the surrounding brightness level. This means the interval of

## Directions for Installation of the Type MPB 1/1 - H Control Board

1. Insert the plug into the board.
2. Screw the plate into the operating chamber (green chamber).
3. Connect 12 Volt direct current (clamp onto storage battery).
4. Insert the front plate over the control board.
5. Place the rotary switch onto the axis of the operating monitor switch - it does not matter which way the arrow is pointing -(see Fig. 5a) and then turn it on the axis using the recessed head screw until it is tight. Then turn the operating switch slowly in a clockwise direction until the LED "Syn" begins to glow. The signal transmitter blinks for the first time "Yellow". Leave the switch set to this position.
- 5a. Loosen the operating monitor switch once again and set the rotary button using the arrow switch to the adjustment point as shown in the illustration (1<sup>st</sup> blinking position). Turn it on the axis using the recessed head screw until it is tight.
6. Now turn the operating switch in anticlockwise direction until the LED "Syn" starts to glow. The first grid setting of the operating switch "Lamps OFF" has been reached. (ATTENTION: the signal transmitter should not "blink yellow". Leave the switch at this position.



### Now check to see which condition is indicated by the LED "Syn":

- If the LED glows orange (mixed red + green), proceed to Point 6a. and continue.
- If the LED glows green, proceed to Point 6b. and continue.
- If the LED glows red, proceed to Point 6c. and continue.
- If the LED does not glow (flickers only a very little), then the shortest basic setting has been set for the road works length and the green-light period; proceed to Point 7. and continue.

- 6a. The LED glows orange (mixed red + green). The switches for the green-light period and the road works length are not set in the basic setting (shortest green-light period and road works length). Rotate the switch for the green-light period (lower right) until the LED changes from orange to red. Now rotate the switch for the road works length (lower left) until the LED goes out (flickers only a very little). Now tighten the rotary buttons in accordance with Point 7.
- 6b. The LED glows green. Rotate the switch for the green-light period until the LED goes out (flickers only a very little). Now carry out the setting in accordance with Point 7.
- 6c. The LED glows red. Rotate the switch for the road works length until the LED goes out (flickers only a very little). Now carry out the setting in accordance with Point 7.
7. Mount the rotary switches with the arrow plates for road works length and green-light period as follows:

**ATTENTION!**

It is important to ensure when mounting the rotary buttons that the axes of the switches not be warped while the recessed head screw is being tightened. (LED "Syn" must remain off).

**Switch for road works length:**

- ➔ Mount rotary button with arrow plate onto the axis. Arrow plate must be set with the arrow point at the shortest road works length (30 m). Tighten the switch on the axis using the recessed head screw.

**Switch for green-light period:**

- ➔ Mount rotary button with arrow plate onto the axis. Arrow plate must be set with the arrow point at the shortest green-light period (5 sec.). Tighten the switch on the axis using the recessed head screw.
- ➔ Mount push button onto the synchronization button, place the cover over the rotary switch.

**Note!**

After assembling the control board and establishing settings as described, please carry

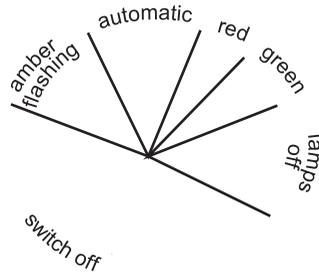
# Frontpanel

# MPB 1/1 - H



Traffic lights are amber flashing.  
By pressing push button "syn"  
the program is started.  
LED "syn" goes out.

At the second traffic light, press  
push button "syn" the moment  
the first traffic light is switching  
over from "Green" to "Amber".  
LED "syn" goes out.



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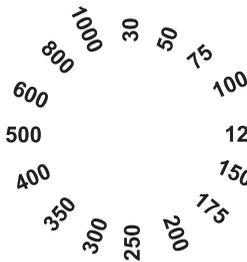
## syn-button

Set here  
required road  
works length.

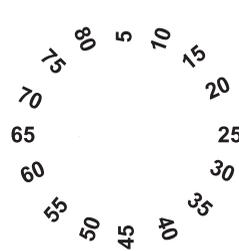


**Important !**  
The timings on both  
control units must be  
identical !

Set here the  
desired duration  
of the green phase.



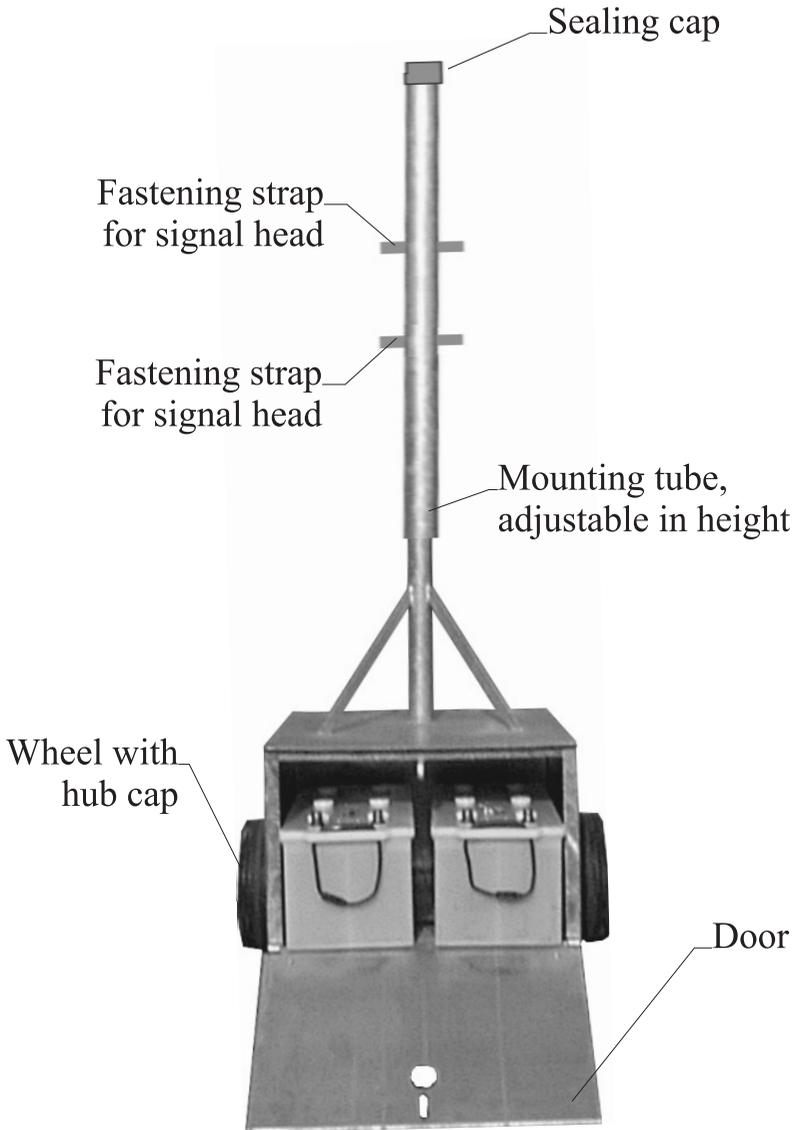
**road works length  
construction in metre**



**green-phase  
in seconds**

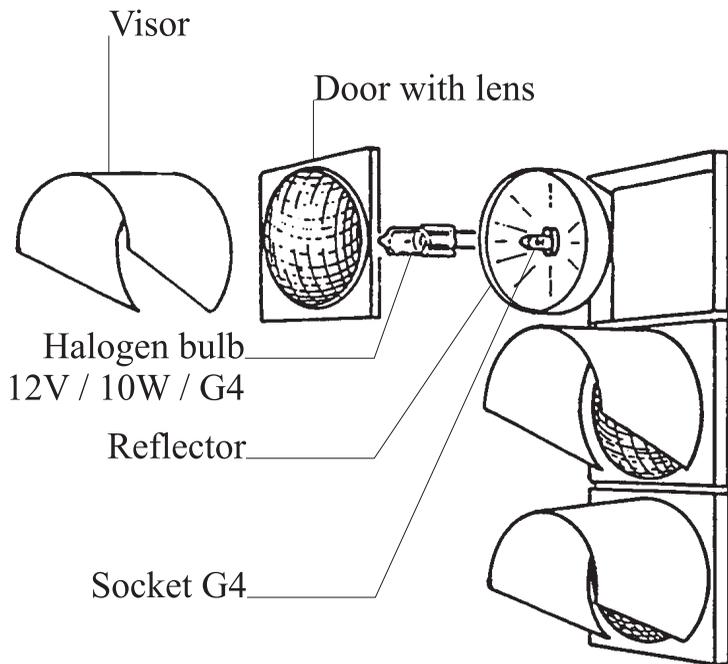


**Aluminium traffic signal stand**



similar illustration

## Signal head



Signal head, 3 parts,  
with halogen lens  
red – yellow – green

similar illustration

# Spare part list:



**Article: Traffic light type MPB 1/1-H**

Order-No.:	Description
MPB 100	Signalhead compl. 3-aspect prepared for circuit type MPB 1/1-H
EI 0013	Signalhead door, 210 mm, red, for MPB 1/1-H, type Italy
EI 0014	Signalhead door, 210 mm, yellow, for MPB 1/1-H, type Italy
EI 0015	Signalhead door, 210 mm, green, for MPB 1/1-H, type Italy
MPB 101	Signalhead backpart 1-aspect with holes for MPB 1/1-H redchamber
MPB 102	Signalhead backpart 1-aspect with holes for MPB 1/1-H yellowchamber
MPB 103	Signalhead backpart 1-aspect with holes for MPB 1/1-H greenchamber
EI 0029	Doorsealing for red, yellow, green
EI 0010	Closure for green/controlchamber
EI 0012	Coverstuff for red-, yellow- or green chamber, K 33
EI 0035	Sealingstuff for control chamber, K 8,5
EI 0036	Sealingstuff for the holes of the suncovers, RK 10
EI 0016	Suncover type Italy
EI 0023	Reflector, 210 mm, for halogen bulbholder G4
EI 0026	Clamp for reflector type Italy, design halogen
EG 0084	Halogen bulbholder G 4
EG 0041	Halogen bulb 12 V / 10 W / G 4
ESP 000	Circuit for MPB 1/1-H
ESP 007	Circuit with 3,6 V accu for MPB 1/1-H
MPB 112	Front panel for MPB 1/1-H
ES 2004	Fuse 5 x 20, 4 A
ES 2031	Fuse cap 5 x 20
MPB 110	Knob for rotating switch
MPB 111	Knob for push button
MPB 113	Metal ring for push button
EK 0011	Cableset for MPB 1/1-H
EI 0050	Battery cable with battery clamps, 4 m
EI 0018	Battery clamp metal ( + )
EI 0019	Battery clamp metal ( - )
A 49000	Battery security box for one battery
EE 0002	Wheel for air filling, 260 mm diameter
EE 0003	Covercap for wheel
EE 0004	Hot-galvanised pole for MPB 1/1-H
EE 0014	Cap for pole
EE 0005	Wing bolt M 10 x 30 mm
EE 0007	Transport handle with rubber cap for battery security box
EE 0008	Rubber cap for transport handle
EE 0009	Clapplug for battery security box
ES 2666	Rubberbuffer with thread M6 on both sides

## Technical Data

Optional accessory:	LED-modules
Operating voltage:	approx. 9 - 14 V DC
Voltage use	
Daytime operation:	approx. 0,90 A per signal head (halogen)
Daytime operation:	approx. 0,29 A per signal head (LED)
Night-time operation:	approx. 0,61 A per signal head (halogen)
Night-time operation:	approx. 0,19 A per signal head (LED)
Light sources:	12 V / 10 W / G4 halogen bulb (industry standard) Optional the traffic light could be fitted with LED-modules
Fuse:	4 A, 5x20, semi-time lag (industry standard) located on the circuit behind the front panel
Operating modes:	Automatic, Manual operation Amber flashing Lamps-Off
Controler type:	Quartz-controlled

## **Warranty for defects**

We offer a

**24-month warranty period**

for traffic signal systems produced in our factory.

During this period we are liable for all material and workmanship faults caused by faulty manufacturing.

Please send any systems and parts for replacement to our factory postage or carriage paid. We only replace parts with faults in material or workmanship. You have no claims to redhibitory action or reduction, unless we are not in a position to remedy the damage.

No further claims can be fulfilled, particularly claims for damages consequential to defects.

We must be given the necessary time and opportunity to proceed with warranty repairs following corresponding agreement. The warranty becomes null and void if any changes or repairs were carried out by the purchaser or a third party without obtaining our prior consent. The warranty does not cover normal wear or damaged caused by negligent or incorrect use.

Bergisch Gladbach is the place of jurisdiction for all claims resulting from the

### **General transport instructions for portable traffic signal systems**

Please note!

Our construction site traffic signal systems must always be transported standing upright on open vehicles with the visor pointing in the opposite direction.

All signal head chambers and the control housings must always be closed correctly to prevent any water damage!

Failure to comply with these instructions automatically renders the warranty null and void!





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