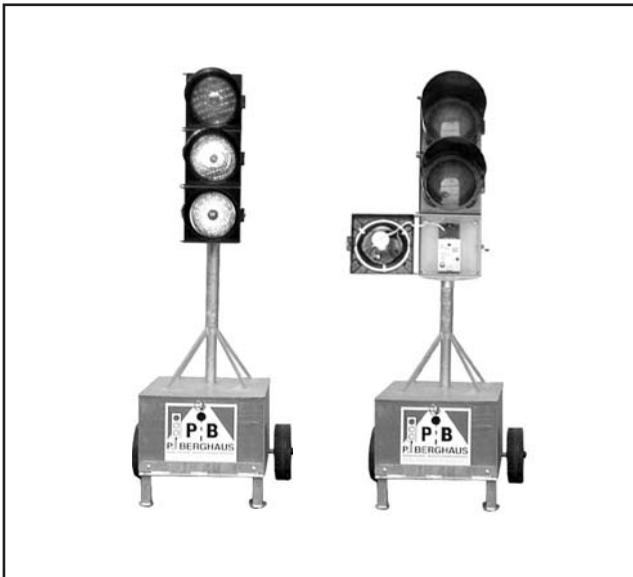


## Operating Manual



## Building Site Signalling Equipment MPB 2000 model range

# General explanation of building site signalling equipment

## Signal safety

The use of transportable building site signalling equipment, among other things, is described in the regulations of the VDE and the RiLSA.

The above regulations determine that on building sites with one-way traffic regulations and a speed limit of 30 km/h, for example, signal protection in accordance with RiLSA and VDE 0832 is unnecessary as long as the responsible authorities do not change their conditions or increase their requirements.

All other building site signalling equipment for controlling traffic at junctions or crossings or, for example, pedestrian crossings must have signal protection in accordance with RiLSA and VDE 0832.

An acknowledgement that can be given via radio or cable is required for this signal protection. With radio-controlled signalling equipment, high-quality radio components which have a RegTP (Federal Office for Telecommunication Licenses) approval number are used. The radio signals have a range of up to 1000 metres.

The company Peter Berghaus GmbH manufactures and delivers building site signalling equipment with or without signal protection.

### **Transport information - please observe!**

**Our building site signalling equipment must be standing when being transported. All signal transmission chambers and the control housing must always be closed properly and the control chamber must be locked to prevent damage from water!**

**If you do not observe this advice, you will automatically lose your guarantee!**

## **Operating manual**

for the **quartz-controlled** building site signalling device type MPB 2000

One way traffic regulations for building sites with lengths of up to 1000 m can be ensured with the quartz-controlled MPB 2000 type signalling device. As the duration of the red/green times is set by means of fixed preset programs, it is advisable to use this signalling equipment everywhere where alternating one-way traffic should be regulated without signal protection.

Proceed as follows to start up:

1. Open the lower signal transmitter with the green optic on both traffic lights. The controls and the front panels with the operating elements are installed here. The signal transmitter with the attached front panel is traffic light 1, the signal transmitter with the removable control system is traffic light 2.
2. Turn the main switch on both signal transmitters to "Off"
3. Set an operating voltage of 12 V DC on both signal transmitters by connecting batteries or power packs from the N1 model range. Make sure the polarity is correct!
4. Turn both operating mode switches to "Automatic".
5. Now set the desired time program on traffic light 1, e.g. Table A1, with the program switch.
6. Now switch the main switch of traffic light 1 to the desired table (Table A or Table B). Switch the main switch of traffic light 2 to "On". Both systems will remain unlit but the "function LEDs" in both control systems will flash green.

### **There are now two possibilities for synchronisation:**

7.a) Both signal transmitters are close together side by side:

Take the synchronising cable out of traffic light 1 and insert it in the synchron socket in traffic light 2. Both "function LEDs" switch to the continuous green light and the signalling equipment starts its program via the turn on screen. You can now remove the synchronising cable and attach it to traffic light 1 again.

7.b) Both signal transmitters are in the correct position on the building site:

Now remove the control device from traffic light 2 and take it up to traffic light 1. Move the locking lever underneath the control device to the left or right and remove the control system by pulling it downwards. When at traffic light 1, carry out the synchronisation process as described in 7.a). Now insert the control system back in traffic light 2.

Both systems are now synchronised and ready for use. After the synchronising process, both signal transmitters start with the program flow by switching to programmed circulation via a turn on screen.

NOTE! For exact synchronisation, it is recommended that the systems are re-synchronized after 3–4 weeks of operation.

## **Special operating modes**

### **Flashing mode:**

Switch the operating mode switches on both traffic lights to "flash" (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.

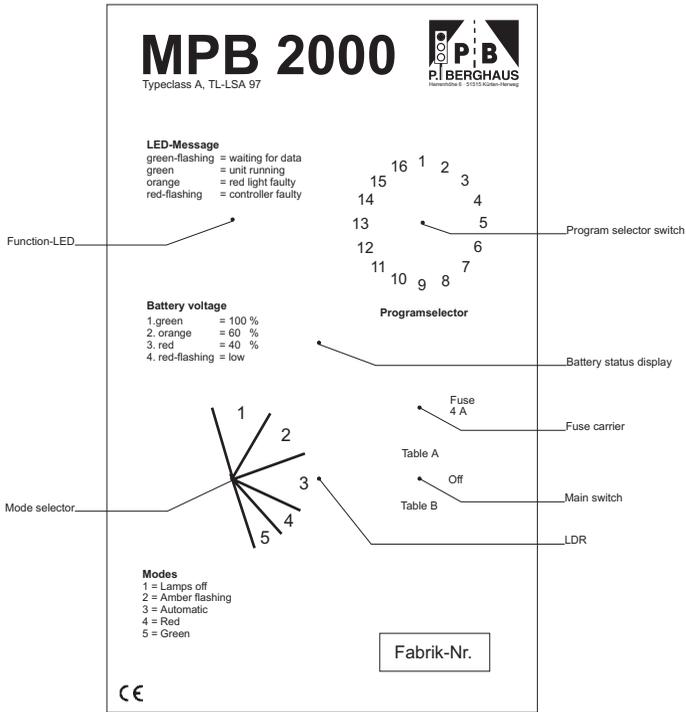
### **Green:**

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.

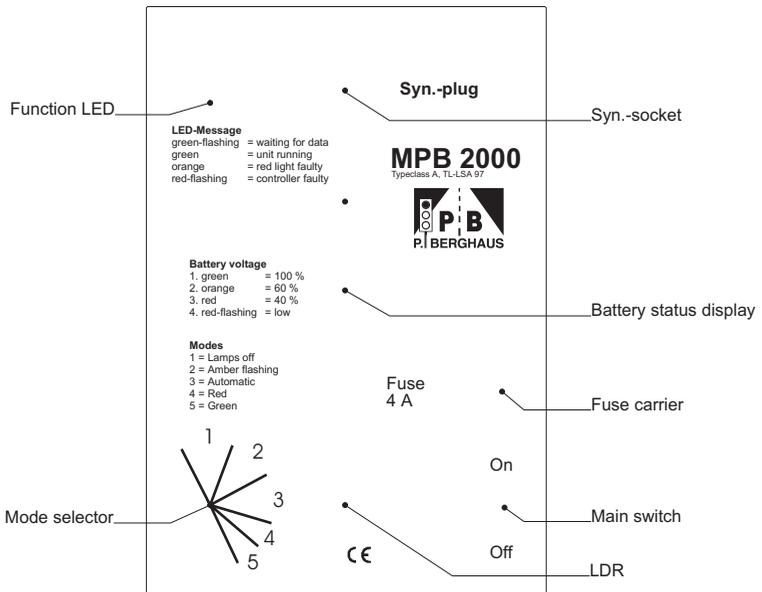
**WARNING!** You must switch on a defined status on both signal transmitters so that there are no misunderstandings with the building site traffic! If, for instance, you want to switch traffic light 1 to "Green", traffic light 2 must be set to "Red" beforehand.

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

# Front panel of traffic light 1



# Front panel of traffic light 2



## **Function of the two-colour "Function LED"**

LED flashing green

The signalling equipment has no data and is waiting for synchronization.

LED green

The signalling equipment is in program flow and is synchronized.

LED orange

The red light of the relevant signal transmitter is defective. Please replace with a halogen light (12V / 10W / G4, Order no. EG 0041). The system starts operating again automatically.

LED flashing red

The control system of the relevant signal transmitter has broken down. Please disassemble this control board and send it to us for inspection. You may also send us the complete signal transmitter for inspection. Please observe the information on warranty on the previous page.

## **Function of the two-colour battery status display**

LED green

The connected battery has 100 % of its maximum possible capacity.

LED orange

The connected battery has approximately 60 % of its maximum possible capacity.

LED red

The connected battery has only approximately 40 % of its maximum possible capacity and should be replaced. **The signalling equipment flashes yellow.**

LED flashing red

The connected battery is flat. The signalling equipment has switched itself off so that the battery is not destroyed. The connected battery needs to be replaced urgently.

## **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 20 minutes per signal transmitter so that the systems do not have to be re-synchronized!

## **WARNING:**

If several batteries are parallel connected, all batteries must be disconnected during a battery change (if the system is flashing yellow or has switched off completely) so that the signalling equipment recognizes a battery change and can restart.

## **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 "Lamp off" or "Flashing yellow" on both systems. The batteries **must not** be disconnected. The program flow continues to run internally via the connected power supply, the signal screen of the signal transmitter is either unlit or flashes green.

## **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 - 7 and re-synchronized.

## **Automatic night dimming**

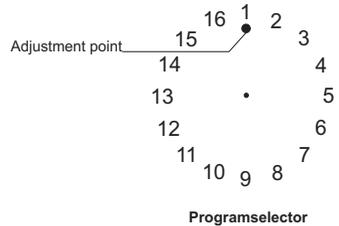
The MPB 2000 type signalling equipment is equipped as standard with a light detecting resistor (LDR) which automatically adjusts the light intensity of the signal transmitter according to the surrounding brightness level. This means the interval of the battery change is considerably extended.

## **Instructions for installing the MPB 2000 type control board in traffic lightÉ1**

1. Put the plug on the circuit board.
2. Screw the circuit board into the control chamber (green chamber).
3. Establish a 12 Volt direct voltage (connect battery). The battery status display lights up green when the battery is fully charged.
4. Insert the front panel above the control board.
5. Switch the main switch to "Off".
6. Put the rotary knob with the herringbone disk in the desired position on the axle of the operating mode switch and turn it with the recessed head screw until it is tight on the axle.
7. Put the rotary knob with the herringbone disk in the desired position on the axle of the program selector switch and turn it with the recessed head screw until it is tight on the axle.
8. Turn the operating mode switch clockwise until the function LED lights up red.

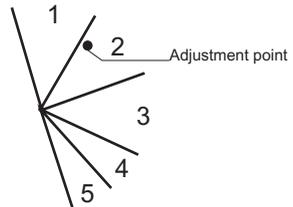
9. Switch the main switch to "Table A"

10.a) If the function LED lights up green, the program selector switch is in the smallest position. Now loosen the rotary knob of the program selector switch and use the herringbone disk to adjust the rotary knob to the adjusting point according to the diagram. Turn the switch tight on the axle with the recessed head screw.



10.b) If the function LED lights up orange, turn the program selector switch in a clockwise direction until the function LED lights up green. Now loosen the rotary knob of the program selector switch and use the herringbone disk to adjust the rotary knob to the adjusting point according to the diagram. Turn the switch tight on the axis with the recessed head screw.

11. Turn the operating mode switch in a clockwise direction until the function LED goes out. The first position for "flashing" has been reached. Leave the switch in this position. Now loosen the rotary knob of the operating mode switch and use the herringbone disk to adjust the rotary knob to the adjusting point according to the diagram. Turn the switch tight on the axle with the recessed head screw.



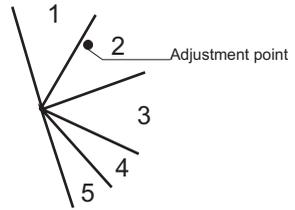
12. Now **switch off** the system with the main switch.

The signal transmitter is now ready for use.

### **Instructions for installing the MPB 2000 type control board in traffic light 2**

1. Screw the circuit board in the control housing.
2. Close and screw together the control housing.
3. Insert control device in traffic light 2 and then lock.
4. Establish a 12 Volt direct voltage (connect battery). The battery status display lights up green when the battery is fully charged.
5. Switch the main switch to "Off".
6. Put the rotary knob with the herringbone disk in the desired position on the axle of the operating mode switch and turn it with the recessed head screw until it is tight on the axle.
7. Turn the operating mode switch until the function LED lights up red.
8. Switch the main switch to "On". The function LED flashes green.

9. Turn the operating mode switch in a clockwise direction until the function LED goes out. The first position for "flashing" has been reached. Leave the switch in this position. Now loosen the rotary knob of the operating mode switch and use the herringbone disk to adjust the rotary knob to the adjusting point according to the diagram. Turn the switch tight on the axle with the recessed head screw.



10. Now **switch off** the system with the main switch.

The signal transmitter is now ready for use.

**Note!**

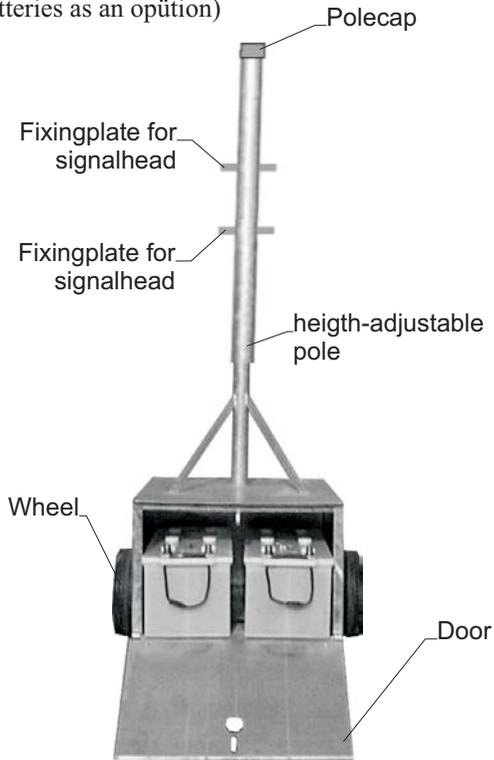
After installing the control board and making adjustments as described previously, carry out a trial run in accordance with our operating manual.

**Program table**

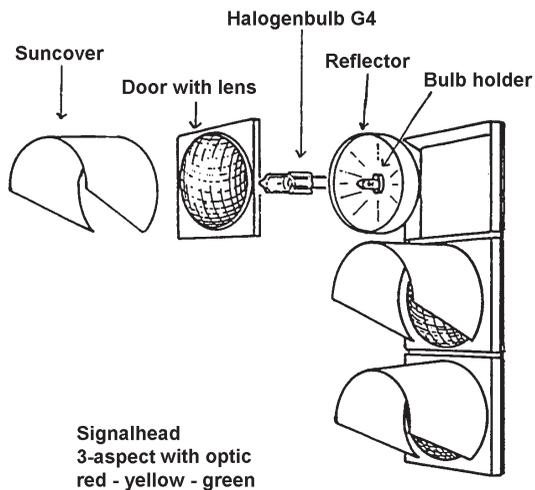
Table	Setting	Length (m)	Times (sec)	
			Green 1	Green 2
A	1	30	25	25
	2	50	30	30
	3	75	25	25
	4	100	25	25
	5	125	30	30
	6	150	30	30
	7	175	35	35
	8	200	35	35
	9	250	30	30
	10	300	30	30
	11	350	35	35
	12	400	40	40
	13	500	40	40
	14	600	45	45
	15	800	50	50
	16	1000	50	50
B	1	30	25	15
	2	50	30	20
	3	100	35	25
	4	200	40	25
	5	400	40	30
	6	600	50	35
	7	800	55	45
	8	1000	60	50
	9	30	15	25
	10	50	20	30
	11	100	25	35
	12	200	25	40
	13	400	30	40
	14	600	35	50
	15	800	45	55
	16	1000	50	60

## Traffic light stands made of galvanized steel

(Stand for two batteries as an option)



## Explosion sign of the signal transmitter



# Spare part list for MPB 2000



Order-ref.	Article description
MPB 120	Signalhead compl. 3-aspect prepared for master of MPB 2000
MPB 121	Signalhead compl. 3-aspect prepared for slave of MPB 2000
EI 0013	Signalhead door, 210 mm, red, for MPB 2000, type Italy
EI 0014	Signalhead door, 210 mm, yellow, for MPB 2000, type Italy
EI 0015	Signalhead door, 210 mm, green, for MPB 2000, type Italy
MPB 201	Signalhead backpart 1-aspect with holes for MPB 2000 red chamber (master)
MPB 202	Signalhead backpart 1-aspect with holes for MPB 2000 yellow chamber (master)
MPB 203	Signalhead backpart 1-aspect with holes and closure for MPB 2000 green chamber (master)
MPB 204	Signalhead backpart 1-aspect with holes for MPB 2000 red chamber (slave)
MPB 205	Signalhead backpart 1-aspect with holes for MPB 2000 yellow chamber (slave)
MPB 206	Signalhead backpart 1-aspect with holes and closure for MPB 2000 green chamber (slave)
EI 0029	Sealing for the doors of red, yellow and green
EI 0010	Closure for green/controler chamber
EI 0012	Coverstuff for red-, yellow- or green chamber, K 33
EI 0035	Sealing stuff for controler chamber, K 8,5
EI 0036	Sealing stuff for the holes of the suncovers, RK 10
EI 0016	Suncover type Italy
EI 0023	Reflector, 210 mm, for halogen bulb holder G4
EI 0026	Clamp for reflector type Italy, design halogen
EG 0084	Halogen bulb holder G 4
EG 0041	Halogen bulb 12 V / 10 W / G 4
ESP 050	Circuit for MPB 2000 master
ESP 500	Circuit for MPB 2000 master in exchange
ESP 051	Circuit for MPB 2000 slave (Box)
ESP 510	Circuit for MPB 2000 slave (Box) in exchange
MPB 140	Front panel of MPB 2000 master
MPB 141	Housing (Box) for circuit MPB 2000 slave
ES 2004	Fuse 5 x 20, 4 A
ES 2031	Fusecap for fuse 5 x 20
MPB 110	Knob for switch master
MPB 115	Knob for switch slave
ES 2200	Syn.-cable with plug for master MPB 2000

## Spare part list for MPB 2000



EK 0200	Cableset for master MPB 2000
EK 0201	Assemblyplate and cableset for slave MPB 2000
EI 0050	Battery cable with battery clamps, 4 m
EI 0018	Battery clamp metal ( + )
EI 0019	Battery clamp metal ( - )
A49000	Battery security box for one battery
EE 0002	Wheel for air filling, 260 mm diameter
EE 0003	Covercap for wheel
EE 0065	Mounting post hot-galvanized for master MPB 2000
EE 0061	Mounting post hot-galvanized for slave MPB 2000
EE 0005	Wing bolt M 10 x 30 mm
EE 0007	Transport handle with rubber cap for battery security
EE 0008	Rubber cap for transport handle
EE 0009	Clapplug for battery security box
ES 2666	Rubberbuffer with thread M6 on both sides

## **Warranty against defects**

For the signalling equipment manufactured in our company

**the period of warranty lasts for 24 months.**

During this period we are liable for all material and processing errors which are the result of defective manufacturing.

Please send systems or sections of the equipment which need to be replaced post-free or carriage paid to our works. Only those parts with errors in the material or in the finishing will be replaced. There can be no demand for cancellation of sale or for lowering the purchase price unless the damage can not be repaired by us.

The occasion and time required for repairs under the warranty are to be given after a prior agreement has been made. The warranty expires if modifications or repair work are carried out by the customer or a third party without prior permission. Normal wear or damage which are the result of negligent or improper handling are not included under the warranty.

The place of jurisdiction for all claims from the business relationship is Bergisch Gladbach.



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