

Operating instructions



Pedestrian signal system type Fü - 12 V



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 cable-controlled construction site traffic signal system
type FÜ 12 V

- 1. Connect up the batteries.** The battery casing can accommodate two batteries 12V/170Ah. (With an additional casing it is possible to connect up four batteries 12V/170Ah).
- 2. Connect up the signal heads,** using the sockets at the bottom of the controller.

A) Use as pedestrian signal system:

For carriageway signals, use the sockets phase 1/traffic signals (see connection diagram on page 6).

For pedestrian signals use the sockets phase 2/pedestrian signal (see connection diagram on page 6).

B) Use as alternating one-way traffic system:

Use the sockets phase 1 / traffic signals and phase 2 / traffic signals (see connection diagram on page 7).

3. Adjusting the red and green times

A) Use as pedestrian signal system:

Use the BCD switch "Phase 1/traffic signals" to adjust the red and green phases for the carriageway signals in seconds, and use the BCD switch "Phase 2/pedestrian signals" to adjust the red and green phases for the pedestrian signals in seconds (see connection diagram on page 6).

B) Use as alternating one-way traffic system:

Use the BCD switch "Phase 1/traffic signals" for adjusting the time for phase 1, and the BCD switch "Phase 2/pedestrian signals" for adjusting the time for phase 2 (see connection diagram on page 7).

Caution: the red phase (phase 1) starts after the green phase (phase 1) and the red phase (phase 2) starts after the green phase (phase 2).

4. Changeover from pedestrian signal to alternating one-way traffic system

Press switch (2) to use the system either as pedestrian signal (pedestrian mode) or as alternating one-way traffic system (carriageway mode). Only press this switch when the system has been switched off.

5. Blanking

Switch (1) (blanking) is switched on if the traffic signals are to be switched off to save energy. The pedestrian signals remain on. The signal head is only switched on again going from "amber" to "red" when there is a pedestrian request (only for use as pedestrian signal system).

6. Starting the system

Once all the required settings have been adjusted in the controller, start the system by pressing switch (3) (ON/OFF). (After approx. 6 seconds the system switches automatically to the program sequence via a switch-on picture).

Note: *To fulfil the requirements of the TL-LSA97, every stand for the pedestrian signal system (FÜ) must be loaded with a total weight of min. 240 kg.*

Note: *The standard signal heads are equipped with halogen lamps 12V/10W. As an option, 12V/20W halogen lamps or our LED technology can also be used.*

Special operating modes

Continuous request

Switch (7) "Continuous request" (only for use as a pedestrian signal system). If the "Continuous request" is switched on, the traffic and pedestrian signals are switched automatically according to the adjusted red and green times alternately in the cycle.

Request counting

All pedestrian requests are made visible by a control lamp and added up on the LCD display. Press "Reset" (8) to reset the display to "0".

Flashing mode

The flashing mode is switched on by changing switch (4) over from "Automatic" to "Flashing". If the system is being used as pedestrian signal system, then all traffic signals flash and the pedestrian signals are blanked. If the signal is being used as an alternating one-way traffic system, then all signal heads flash. On switching back to "Automatic mode", the system switches automatically back to the automatic phase cycle via the switch-on program.

Manual mode

The manual mode is switched on with switch (5). The system now remains in the signal pattern. Press button (6) once to switch on in each case. This gives you the possibility of leaving the system with green for the traffic signals, all red or green for the pedestrian signals. It is not possible to undercut the adjusted red times. This rules out the possibility of an operating error.

Troubleshooting

Changing the battery

When the battery voltage is approx. 10.5 V, the system switches to flashing, then when the voltage is less than 10 V all signal heads are switched off. Replace the "flat" battery with a fully charged battery. (The battery or batteries are accommodated in the bottom of the battery casing). The low voltage is indicated by the flashing red LED "Low voltage". After changing the battery, switch the signal system off and then on again to reset the electronic low voltage protection unit.

Fault red lamp defective

If a monitored red lamp fails, when the system is being used as pedestrian signal system all the traffic signals flash amber and the pedestrian signals are blanked. When used as alternating one-way traffic system, all traffic signals flash amber.

In the controller, the fault "red lamp defective" is shown by an LED. Change the defective red lamp and start the signal system again by pressing on/off briefly (approx. 3 seconds). The "Red lamp monitoring" section on the front panel shows with LEDs which red lamp is defective.

Fault green-green locking

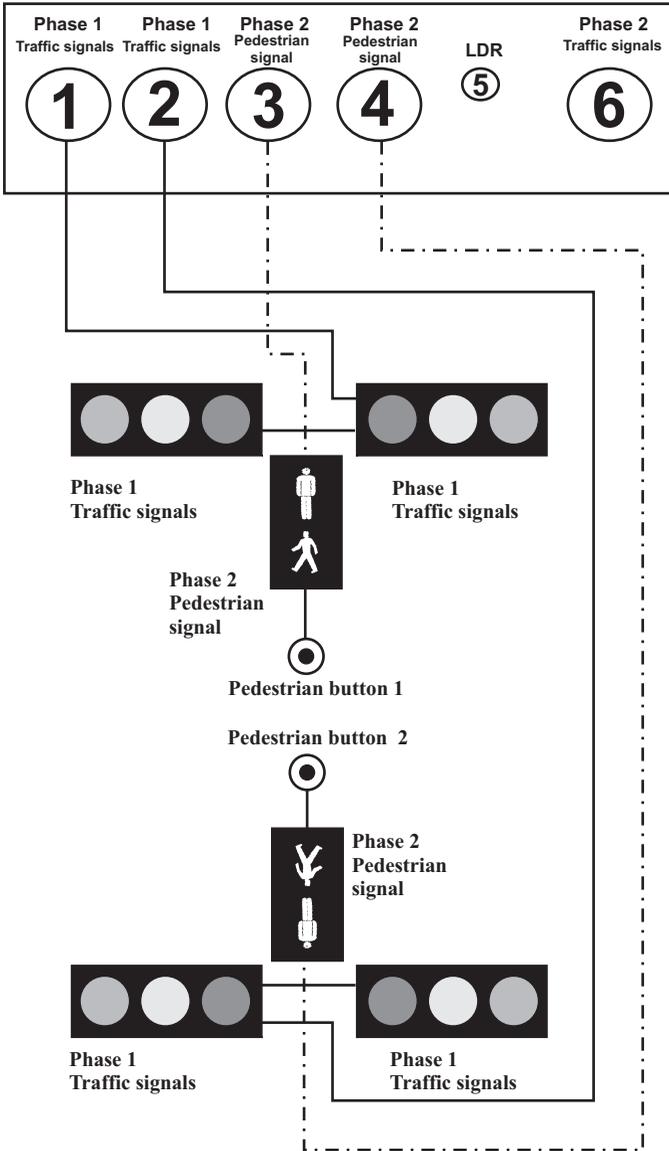
In the case of a failure with the fault "green-green locking", when the system is being used as pedestrian signal system all traffic signals flash amber and the pedestrian signals are blanked. When used as alternating one-way traffic system all traffic signals flash amber. In the controller, the fault "green-green locking" is shown by an LED.

The causes for this fault could be: moisture in the connectors, short-circuit in the cable or a defect in the power stage for actuating the green signal.

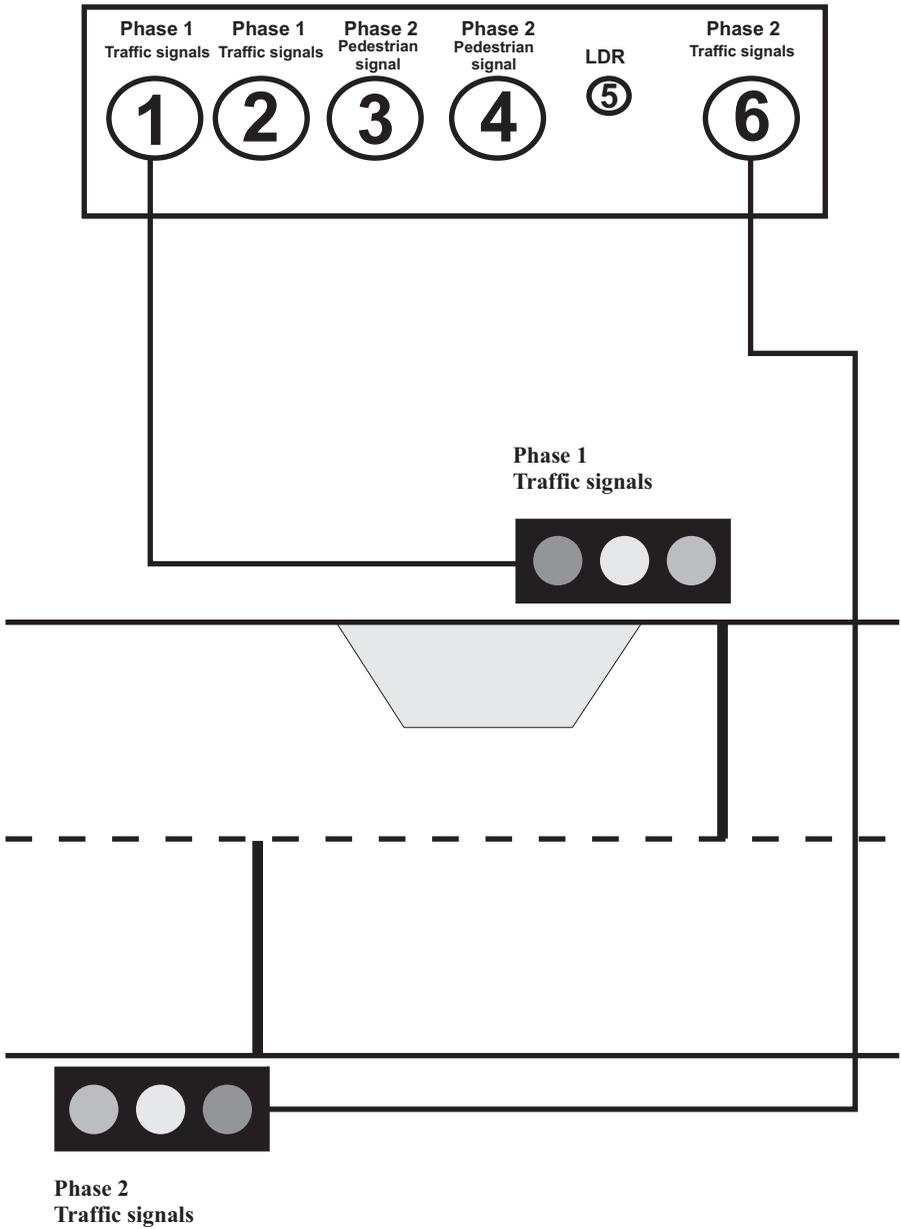
Check the connectors and the cables for damage or moisture.

Try to start the system again by pressing on/off briefly (approx. 3 seconds). If the fault occurs again, please send the controller in to the factory for it to be checked.

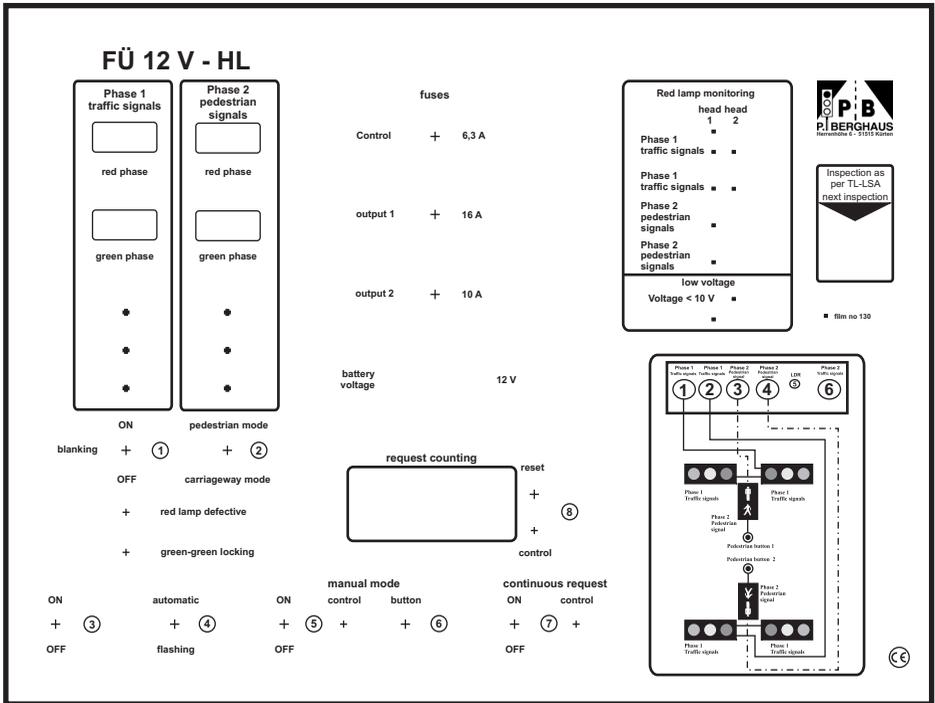
Connection diagram as pedestrian signal system



Connection diagram as alternating one-way traffic system



Front panel



- ① Blanking ON/OFF
- ② Changeover pedestrian/carriageway mode
- ③ Main switch ON/OFF
- ④ Flashing mode ON/OFF
- ⑤ Manual mode ON/OFF
- ⑥ Button for manual mode
- ⑦ Continuous request ON/OFF
- ⑧ Reset for request counting

Technical data

Controller

Material:	Glassfibre-reinforced plastic
Dimensions:	530 x 550 x 280 mm (H x W x D)
Weight:	approx. 14.5 kg
Input voltage	12 V DC
Output voltage	12 V DC
Power consumption	0.3 A (idling mode without signal head)
	Daytime operation: 6 A with 10 W lamps (all red)
	Night-time operation: 3.5 A with 10 W lamps (all red)
	Daytime operation: 10 A with 20 W lamps (all red)
	Night-time operation: 5.5 A with 20 W lamps (all red)

Battery casing

Dimensions:	1050 x 800 x 950 mm (H x W x D)
Weight:	approx. 108 kg battery casing for controller (with button, labelling and controller without power pack) approx. 87 kg battery casing (with button and labelling) approx. 9.5 kg power pack 230 V AC / 12 V DC approx. 124 kg battery casing with controller and accessories packed ready for shipping approx. 128 kg battery casing without controller, with accessories approx. 70 kg 4 poles each 3 m in length
Shipping weight:	approx. 333 kg (complete with power pack)

Accessories

- Request counter with permanent memory
- Request counter with:
 1. Memory of the counted values per time interval with date and time
 2. Time interval can be adjusted between 5 seconds and 12 hours
 3. Evaluation of the data with spreadsheet calculation (e.g. MS Excel)
- Button for requests by the blind
- Signalling for the blind

Spare Parts List



Article: Pedestrian signal system FÜ 12V / 230V

Order No.	Description
FÜE 001	Controller type FÜ 12 volt compl.
FÜE 002	Power PCB FÜ 12 volt (PW 1)
FÜE 004	Control PCB FÜ 12 volt
ES 2055	Plug-in power relay 12 V / 40 A
ES 2010	Microfuse 6.3 x 32 / 10 A
ES 2016	Microfuse 6.3 x 32 / 16 A
EI 0018	Battery clamp +
EI 0019	Battery clamp -
EK 0002	Battery bridging set for parallel connection of two 12V batteries (battery clamps not included)
ES 5011	Three-square socket wrench for controller housing type Himel
FÜE 300	Signal head compl., wired with cable and 2 connectors, 210 mm, 3 aspects
FÜE 301	Signal head compl., wired with cable and 1 connector, 210 mm, 3 aspects
FÜE 302	Signal head compl., wired with cable, plugs and EVG coupling for push buttons, lens 210 mm, 2 aspects with pedestrian symbols
EA 2010	Signal head back part, 1-piece
EA 2030	Lens hood
EA 2012	Cover plug red/yellow/green chamber
EA 2016	Signal head door without lens, 210 mm
EA 2017	Signal head door with red lens, 210 mm
EA 2018	Signal head door with yellow lens, 210 mm
EA 2019	Signal head door with green lens, 210 mm
EA 2020	Lens red, 210 mm
EA 2021	Lens yellow, 210 mm
EA 2022	Lens green, 210 mm
EA 2048	Lens with pedestrian symbol (please choose: red standing or green walking)

EA 2040	Reflector, 210 mm, for socket G4
EA 3041	Socket G4
EG 0041	Halogen bulb 12V / 10W / G4 (standart)
EG 0042	Halogen bulb 12V / 20W / G4
FÜE 320	Pedestrian request push-button with holder, compl. wired, 1 m cable with EVG connector
FÜE 326	Traffic light connection cable for 12 V pedestrian signal system, 30 m long, with coupling and connector
FÜE 400	Battery casing, orange, for 4 batteries without mounting mast with holder for controller
FÜE 401	Battery casing, orange, for 4 batteries without mounting mast
FÜE 402	Door for traffic light stand with 4 batteries
FÜE 405	Cover for cable leadthrough at signal head stand
EE 0027A	Pole 60 x 60 x 3000 mm, Aluminium, plug-in (top of plug-in mast)
EE 0026A	Pole 60 x 60 x 3000 mm, Aluminium, plug-in (bottom of plug-in mast)
EE 0032	Cable wreath for signal mast 60 x 60 mm
EE 0030	Holder for signal head and request push-button 60 x 60 mm with three tubes
EE 0006	Solid rubber wheel 260 mm
MP 4024	Special drawbar for towing battery casing with 4 batteries
FÜE 413	Sticker "Pedestrian please press"
FÜE 414	Warning marking 80 x 800 mm red/white, hatched
A 46000	Battery 12 V / 170 Ah
A 45000	Power adapter N2 / 20-25 A

Warranty for defects

We offer a

24 month guarantee

for the signal systems produced by our company.

The guarantee covers all material and workmanship faults caused by faulty manufacture during this period of time.

Please send systems and parts of systems for replacement to our factory, postage/freight prepaid. We only replace parts showing faults in the material or workmanship. There are no claims to rescission or abatement, unless we are not able to rectify the damage.

No further claims can be fulfilled, in particular claims for damages as a consequence of defects.

The necessary time and opportunity to proceed with guarantee repairs must be made available following previous agreement. The guarantee becomes null and void if the customer or third parties make changes or repairs without prior consent. The guarantee does not cover any wear or damage caused by negligent or incorrect handling.

If in exceptional cases at the customer's request warranty repairs are to be carried out on site, i.e. at the road works where the system causing the complaint has been installed, the service technician's travel expenses and journey times are not covered by the warranty and shall be invoiced separately to the client.

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

General transport instructions for mobile traffic signal systems

Please note!

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

To prevent any water damage, all signal head chambers and the controller housing must always be closed properly and the controller housing should also be locked!

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



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