

Berghaus-News

Traffic Technology · Mobile Crash Barriers

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New at the trade-fair: crash barrier ProTec 120



Fulfils the containment levels
T3 / W2 and H1 / W5

The new crash barrier ProTec 120 fulfils the containment levels H1/W5 and T3/W2 (unanchored) with an extremely low ASI value "A". ProTec 120 thus offers maximum protection with minimum dimensions: our important contribution to traffic safety!

As demonstrated by the successful impact tests carried out by TÜV Süd in Munich, the new reinforced concrete crash barrier system ProTec 120 combines all the positive advantages of steel and concrete crash barriers in one single system:

The ideal combination of optimum containment level with smallest effective range and low ASI value "A" guarantees maximum protection. Together with the

extremely narrow structural width (concrete width only 12 cm), this opens up many possible applications for ProTec 120 in enhancing safety at road works.

A wide water drainage opening of 8 m in length per 10 m element length together with BAST-tested reflectors protected in the crash barrier provide added safety in road work sites. Thanks to the pre-mounted 10 m elements, the system is assembled very quickly. The relatively

low element weight compared to other concrete systems, together with the reduced space required for storage and transport thanks to the small width of the elements, also makes ProTec 120 very economical to use.

(Please continue reading on page 4!)

25 years of cooperation



René König (left) receives a certificate from Peter Berghaus

It is with great pride that René König (from the firm René König, Oftringen in Switzerland) and Peter Berghaus look back on 25 years of successful business relations. On 1 January 1983, René König's company became General Agent for Berghaus traffic signal systems in Switzerland.

During a small ceremony, Peter Berghaus presented René König with a certificate showing illustrations of the original contract, and thanked him for the successful cooperation between both companies.

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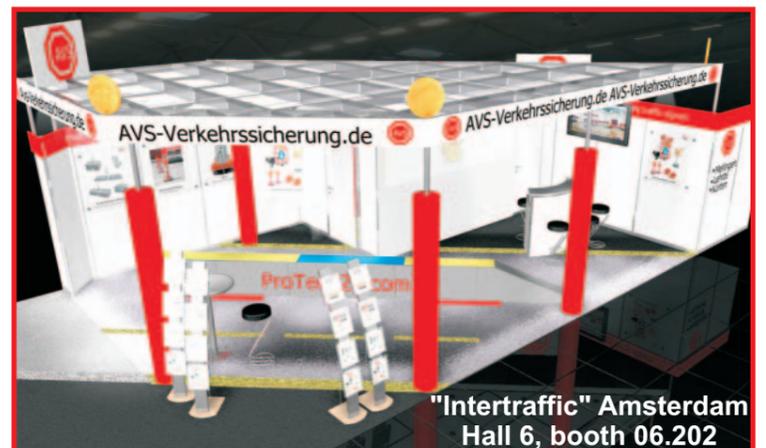
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BERGHAUS + AVS at the INTERTRAFFIC



"Intertraffic" Amsterdam
Hall 6, booth 06.202A



"Intertraffic" Amsterdam
Hall 6, booth 06.202

From 1 to 4 April 2008, the RAI exhibition centre in Amsterdam will once again be home to the "INTERTRAFFIC" international trade fair for planning, management and maintenance of traffic and transport infrastructure. Berghaus Verkehrstechnik has been present at this important trade-fair for many years, always showing innovative new products at the fair. This year for the first time, our service group AVS Verkehrssicherung will also be presenting its product range "Mobile crash barriers" to the trade public, together with its service "Professional traffic protection". We look forward to welcoming you at our neighbouring booths in hall 6 and to holding many interesting talks. Here you can find out all you need to know about our new products.

(Pictures: Chritto international AG)

The "Intertraffic" is a trade-fair taking place in Amsterdam every two years where we present the latest new product developments from Peter Berghaus GmbH to the international trade public – as ever in hall 6.

This year the new products include our latest road works traffic signal **MPB 1400** which takes users through the menu in many optional languages. As quartz-controlled signal system, it can be used for the regulation of alternating one-way traffic, or adapted with the simple addition of further identical signal heads for any required use right through to regulating cross-roads.

A compact hand box takes the user through the menu step by step, querying all the information required to operate the signals. MPB 1400 is erected in a matter of seconds for reliable traffic regulation

We are presenting our new **mobile pre-warner** for early warning about one-day road works and other hazards, as well as protecting the people working in these areas. Practical tests on German motorway A3 in North Rhine-Westphalia have shown that it is in particular the combination of pre-warning lamp measuring 340 mm in diameter together with an illuminated arrow and informative road sign positioned at a suitable height which draws the attention of road users far more clearly to the hazard ahead.

Another new product being presented at the fair is our **controller system EPB 12 multiprocessor**. EPB 12 with its master and slave components connected simply by just one data bus cable is used for direct control of 12 signal groups with up to 32 signal heads (with 24 fully monitored). 40V lamp or LED techno-

logy can be selected separately for every signal group.

(Please continue reading on the inside).

For the first time at an international trade-fair of this kind, one of our service subsidiaries, the AVS traffic safety group, will be represented at its own booth where it will be presenting the world's first **ProTec 120**, together with the crash barrier **Quadro T3/W3**.

This year once again we can offer **100 free entrance tickets** to the trade-fair for our loyal customers. Please contact us straight away by letter, fax or e-mail. The entrance tickets will be issued in the order of requests arriving here, as long as stocks last!

We are looking for partners to assist in the further on-going expansion of our export network please contact us!

New product: crossroads controller EPB 12



Features:
12 signal groups with maximum 6 double power cards for controlling up to 32 signal heads for 40V lamp or LED technology

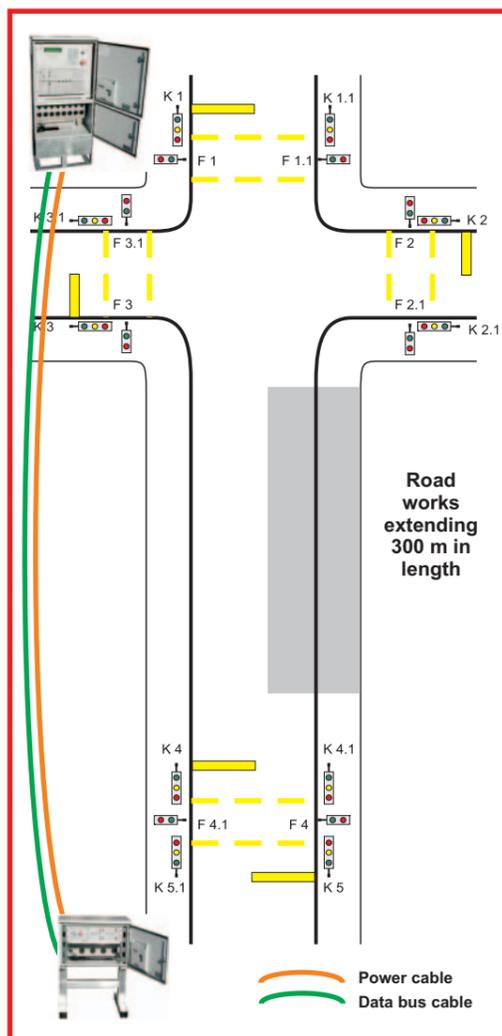


The master controller type EPB 12 (for 8 signal groups) can be used as traffic signal system in combination with a slave distributor unit EPB 12 (for another 4 signal groups) for controlling up to altogether 12 signal groups. Thanks to our convenient and easy-to-use software "Ampel-Win", the controller is easily programmed using a laptop. 12 signal groups with up to 32 signal heads (with 24 fully monitored) can be controlled and supplied directly using the identical plug-in power cards. It is possible to select quite separately for each individual signal group whether the signal heads are controlled with 40V lamp technology or 40V LED technology. Compared to the conventional 40V lamps, there are many advantages to be had from the DBGM-protected 40V LED modules (registered design), which have

been tested by the Federal Highway Research Institute (BAST) with regard to photometric properties according to DIN 67527 Part 1. As they no longer contain a reflector which can irritate road users with reflected sunlight, they produce practically no phantom effect. A special prism system also results in uniform illumination of the whole surface of the lens. Thanks to this special technology, no individual LEDs can be detected behind the lens. This means that even when viewed from an extremely unfavourable side angle, the traffic signal head can still be clearly seen. Compared to previous lamps, the LED technology reduces power consumption by up to 80%. The longer service life of the light diodes also results in less maintenance costs as it is no longer necessary to replace the individual lamps. This will certainly save on various unscheduled service trips to replace defective light bulbs.

But surely the most important advantage of our decentralized controller system EPB 12 multi-processor must be the considerable reduction in wiring when used with one master and one slave unit, as all the cables for the signal head, buttons, radar units and detectors do not have to be wired through to a central control. Instead, one part of the cables is wired quickly and simply to the nearby EPB 12 master and the other part to the slave unit at a corner point of the crossroads – as illustrated by our diagram on the left, where the slave unit is about 300 m away from the crossroads.

With this structure, it is then only necessary to install a data bus cable and possibly a power supply cable between the two controllers. (Distances of up to 1,000 m between master and slave controller are possible). This considerable reduction in cables brings major reductions in the amount of wiring that has to be installed over roadways or to a building site mast some distance away. Smaller and easier overhead systems can be used which are much quicker to assemble, with considerable cost savings in terms of material, transport and labour. Practical facts, which convince simply everyone!



The master/slave controller system brings huge reductions in wiring workload, saving labour, material and money.

Berghaus successfully trains traffic light experts



Technical requirements and regulations for construction site traffic signals (e.g. RiLSA, TL-LSA) were on the curriculum together with creating and implementing signal timetables, as well as how to operate our controllers and effective on-site troubleshooting

Once again this year, traffic light experts were successfully trained in our courses held mid January and February at company headquarters in Kürten near Cologne and at our subsidiary AVS in Mellingen near Weimar. Nearly 80 employees from renowned specialist companies for signal systems and traffic protection from all over the country took up our offer of further training.

Our two initial and advanced courses are ideal both for complete beginners in traffic light systems (training course I) and also as a refresher for those already working with this particular technology and other "old hands" (training course II). The participants were instructed in the various topics by production manager Alfred Wurth and technician Uwe Banischewski, who both offer a wealth of experience in all aspects of mobile signal systems.

Course I provided a brief introduction to the legal and general basics of signal systems (RiLSA, TL-LSA and ZTV-SA), followed by the calculation and implementation of signal phase timetables for signal systems to control

alternating one-way traffic, T-junctions and smaller crossroads also using our software program "Ampel-Plan"

Advanced participants in course II looked at the larger crossroads controllers which can control up to nearly 100 signal heads. The budding and advanced traffic light experts were given an in-depth look at creating and implementing signal timetables (also using our software Ampel-Plan), controlling the program workflow with our controller simulation (Ampel-Sim) and programming the traffic signals (Ampel-Win), illustrated by practical examples.

In addition to the two-day training programme, course participants still found sufficient time to relax together and make the most of the opportunity to swap experiences with colleagues from other companies, covering all possible aspects of mobile traffic signs.

At the end of each two-day course, all participants were pleased to receive the coveted training certificates from course leader Alfred Wurth.

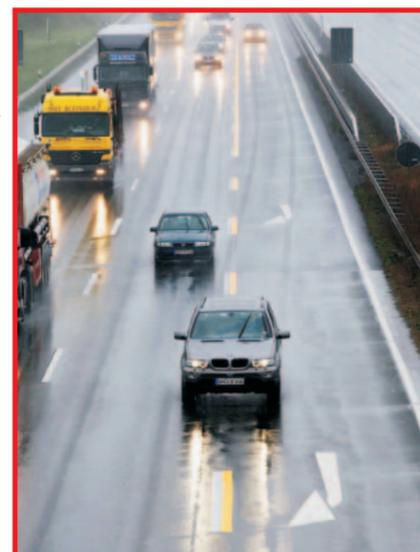
Continuous line marking the approach to road works

In future, a continuous line marking the approach to road works on three-lane motorways in North Rhine-Westphalia will force drivers to wait with their zip merge manoeuvre until only 150 m before the blocked off lane. According to the State Road Maintenance Authority, this should prevent uncoordinated merging way ahead of the road works and help to avoid conflicts between road users when zip merging. The result: better use of the motorway capacities in the immediate approach to the road works. Any congestion resulting from heavy traffic conditions

should not last so long. "We are the first road maintenance authority in Germany to use this method", says Ralf Pagenkopf, Managing Director at Straßen NRW in Gelsenkirchen. "We tried it out last year on the A1 at Westhofen and on the A2 at Hamm. RWTH University Aachen took video recordings of the test and approved of the results", reported Pagenkopf.

Zip merge manoeuvres worked much better.

The 29 motorway road maintenance depots run by Straßen NRW have been instructed to use the new method with immediate effect in consultation with the police at road works on six-lane motorways where the left-hand lane is blocked. The continuous line marking begins 800 metres and ends 150 metres before the road works.



For the first time in Germany: continuous line marking the approach to road works should make zip merge easier (Picture: Straßen.NRW)

The method was suggested by one of the employees at Straßen NRW who received an award as part of the authority's competition "Good ideas to prevent congestion". "Which

makes me all the happier that this idea is now going to become standard practice on our motorways", concluded Straßen NRW's Managing Director.

The competition was one of numerous measures by the State Road Maintenance Authority in 2007 as part of the state government's anti-congestion campaign.

Trade-fair presentation: mobile pre-warner

The worst accidents on motorways are caused in inattentive drivers

Observations show that road users frequently fail to keep within the lane boundaries. Frequently both cars and trucks can be seen travelling down the motorway constantly half a meter onto the hard shoulder. This can be fatal when there are one-day road works and construction workers on the hard shoulder.

In North Rhine-Westphalia alone, since 1993 through to the present the state authority Straßen.NRW has unfortunately registered 390 accidents with injured persons and the same number again with damaged property, all caused by third parties. In the last 15 years, 17 Straßen.NRW employees have been killed by such accidents. The risk of road maintenance crews being killed in occupational accidents is thirteen times higher than in industry, according to a press release recently issued by Straßen.NRW. The authority is giving priority to the on-going development of the personal safety gear for its road maintenance crews and equally to improving the safety of motorway road works.

Practical test for mobile pre-warner

An early, eye-catching and unequivocal warning as the first information about the approaching hazard positioned at an appropriate distance from the mobile warning trailer will surely be able to reduce the number of accidents caused by inattentive road users at (one-day) road works.

In cooperation with the North Rhine-Westphalia Road Maintenance Authority, Berghaus Verkehrstechnik has tested the practical use of the mobile pre-warner at various one-day road works on the busy A3 motorway in the greater Cologne region.

Simple and easy installation

All parts of the mobile pre-warner are stored in a compact mobile casing run on pneumatic tyres. The low weight of 350 kg (including 12V/170Ah battery) means that the mobile pre-warner can be accommodated and transported in the

mobile warning trailer or on another trailer.

Once the mobile warning trailer has been erected ready for operation in position, this protected area can be used by one person to make the mobile pre-warner ready for use in just a few minutes.

The individual components of the pre-warner are connected up and erected with a crank winch. Thanks to the steering drawbar, the pre-warner can be brought exactly to the required position and the worker is still in the area protected by the mobile warning trailer.

The 340 mm LED pre-warning light flashing at a height of five metres clearly attracts the attention of road users. Immediately below it, additional information is provided as to the reason for this striking pre-warning. The LED illuminated cross or arrow with a clear indication of the approaching hazard is positioned at a height of 3 metres above the road surface.

Detected hazard is an averted hazard

In contrast to preliminary warning of road works with non-illuminated signs at a height of only two metres, the mobile pre-warner is not concealed by passing trucks thanks to its overall height of five metres. The striking illuminated signals can be well seen at any time of day or night and even under adverse weather conditions.

The behaviour in particular of truck drivers clearly shows that the lane boundary line is no longer touched or crossed in the radius of action of the pre-warner. The attention of the road user is clearly focused on the approaching hazard.

Increased attention which makes a major contribution to more safety in (one-day) road works.



Trade-fair presentation: traffic signal MPB 1400



- Standard halogen lamps or new LED technology

Compact design, simple handling, uncomplicated operation currently in eleven languages and the possibility of extending the system as required to regulate T-junction or crossroads traffic – those are the key words for the MPB 1400.

All settings are adjusted conveniently using an infrared remote control which is coded to prevent third-party intervention. MPB 1400 is ideal for universal use: with just two traffic signals you can control alternating one-way traffic at various locations on one day, or on another day you can put them together to regulate crossroads traffic, for example. When used for alternating one-way traffic, the signal complies with type class A of the German

Technical Delivery Conditions for Portable Traffic Light Systems (TL-LSA) 97.

All settings for the MPB 1400 are adjusted conveniently using the menu-guided infrared remote control

At our INTERTRAFFIC trade-fair booth in Amsterdam, we will be presenting our latest quartz-controlled mobile traffic signal MPB 1400 to the trade public.

- New low-priced mobile traffic signal for alternating one-way traffic, with quartz control
- Additional identical signal heads can be added to extend the system as required for regulating T-junction or crossroads traffic
- Simple and convenient handling with menu-guided infrared remote control
- On request, menu language in English, German, Spanish, French, Italian, Dutch or Turkish (other languages possible on request)

The necessary parameters are requested in dialogue with the hand box, making the system really easy to use: simply enter the red and green phases separately for each traffic signal for up to 999 seconds, transfer the data and there you are!

It goes without saying that in addition to automatic quartz operation, it is also possible to adjust the system to "manual mode" with "continuous red", "continuous green", "flashing yellow" as warning or also "lamps off" – ideal for example when felling trees or in special traffic situations where manual intervention in the control system is desired.

MPB 1400 – the low-cost traffic signal which is so easy to use for so many different applications!

New product catalogue – send in your request right now!

Our new product catalogue 2008 is being published just in time for the INTERTRAFFIC.

64 coloured pages give an overview of our comprehensive range of products. More than 200 illustrations and detailed explanations once again illustrate the strengths and variety of Peter Berghaus GmbH. Innovative traffic technology from one source – and naturally straight from the manufacturer.

The catalogue is clearly organized according to product groups, including: flashing and pre-warning lights, temporary traffic control systems, illuminated arrows, rotating beacon lights, mobile pre-warning and warning trailers, mobile traffic signs, erection devices for signal systems and signs, lane marking foils, TL beacons, mobile crash barriers and many other products as well.

For purchase / rent / leasing

Fachbetrieb und Mitglied im Verein für Verkehrstechnik und Verkehrsplanung e.V.

Price list 2008

Innovative Traffic technology from one single source

With safety from Berghaus!

www.berghaus-verkehrstechnik.de · mail@berghaus-verkehrstechnik.de

New at the trade-fair: mobile crash barrier ProTec 120

continued from page 1

Narrow crash barrier – high containment level

At the latest by now it is possible to completely invalidate the claim that a crash barrier cannot be erected because the cross section of the road is too narrow.

With a structural width of only 30 cm (and thus a **concrete width** of only **12 cm** which is no wider than a marking nail) our new crash barrier ProTec 120 can be used practically anywhere. Successful tests by TÜV-Süd in Munich with cars and trucks approaching from different angles and at different speeds (TB 21 + TB 41, TB 11 + TB 42) verified that the crash barrier fulfils all the criteria of DIN DN 1317-2 with outstanding results, confirming the containment levels and effective ranges **T3/W2** (without anchoring in the ground) and **H1/W5**. The Federal Highway Research Institute (BAST) conclusively appraised the tests and all results.

Safe, compact, economically efficient

The special construction of the reinforced concrete crash barrier ProTec 120 provides optimum protection. The impact energy, which has such a violent

effect on the people sitting in a crashing vehicle, is clearly absorbed by the crash barrier with **ASI values** of **0.3** resp. **1 (A)**.

The particular design – concrete is enclosed by an all-round sectional steel frame – means that no parts can break out of the crash barrier. The vehicle coming up against the crash barrier is guided in an optimum line and then drives on parallel to the crash barrier.

To preserve the guiding effect of the crash barrier, the reflectors are mounted in such a way that when a vehicle touches them, they do not come away from the wall but are protected in recesses, so that the vehicle cannot shear the reflectors off.

The special design of the rubber-based standing surface results in optimum distribution of the pressure on the road. In addition, with one single stand for ten metres of crash barrier, there is a large opening for water and dirt to drain through over a length of eight metres.

Storage, transport and erection are highly economical. 140 m of finished elements ProTec 120 can be transported to the site by one single truck. A 3-man team will be capable of achieving daily

installation rates of up to 2 km, while the extremely slight concrete width of only 12 cm allows for extremely space-saving storage.

Ideal crash barrier for many areas

Universal possible applications make ProTec 120 the ideal crash barrier for all areas covered by the ZTV-SA 97. Thanks to the good impact test results, the crash barrier can be positioned between the road works and on-coming or parallel flowing traffic, and also between two-way traffic flows, even in the transition zone.

ProTec 120 – the ideal protection for universal use!



The concrete is only 12 cm wide – this is no more than a marking nail. Lane switching and transition zones are therefore no problem with ProTec 120.



Outstanding night visibility and excellent guiding effect: the retractable BAST-tested reflectors recede into the concrete so that they are preserved even if a vehicle should touch them.



Up to 140 m of ProTec 120 can be loaded in a truck and brought to the site.



Special mounting tool for shortest erection times with only one 3-man team.



Storage and transport of ProTec 120 takes up only 1/3 of the space required for previous crash barrier systems.



One stand is always fitted to the element. All it takes is to screw in two bolts every 10 m.



The contact surface of the stands measures 120 x 30 cm with a rubber base – extremely kind to the road surface; wide water drainage opening of 8 m in length for every 10 m element

Re-design: new mobile crash barrier Quadro T3 / W3

Based on our well established crash barrier system "STGW Quadro", we have redesigned this product to bring it in line with technical progress. This resulted in the development of the new "STGW Quadro T3 / W3". Based on the narrow structural width of 40 cm and the planning-relevant width of only 39 cm, the system has been changed by our technical re-designing team in such perfection that when tested in November 2007 by TÜV Süd in Munich, the system successfully passed the small effective range of W3.

Our "new" STGW Quadro T3 / W3 stands out with the following key data:

- The barrier itself was tested without any anchoring (so that there is no

discussion whether the anchoring of a crash barrier had any impact on the test results or whether a crash barrier should have to be anchored at regular intervals).

- The Quadro T3 / W 3 elements are connected every 16 m with a head piece (quick-acting connector) so that there are no joints.
- All stands have a rubber base with optimum protection for the road surface.
- Water can drain along the whole length so that no water or dirt accumulates in front of the crash barrier system.
- The structural width is very narrow, only 40 cm, so that this system can be

erected easily also between the flow of traffic and the actual road works area.

- The low deadweight of the elements means that up to 288 metres of crash barrier can be transported on one truck.
- The newly developed head piece makes it quick and easy to install the STGW Quadro T3 / W3. Daily installation rates of up to 3 km are possible per gang and working day.
- The impact tests by TÜV Süd have clearly illustrated the extremely low effective range of W3.
- Safety first for passengers: the system fulfils the lowest ASI value "A" with only "0.3".



Successful impact test at TÜV Süd in Munich with the new STGW Quadro T3 / W3.



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