

Variable traffic signs

LED-technology



Innovative traffic management systems based on LED-variable message signs



Europapark Rust, Germany



BAB A73 Motorway at Nuremberg, Germany



A8 Motorway Stuttgart, Germany

Motorists need to be alerted in good time of road conditions ahead, which requires clear and well-defined messages. Variable LED signs are quick and reliable methods to display such information, which makes them a key factor for ensuring an optimised and safe traffic flow. Core components of traffic and road section control systems, they also relay lane control and rerouting signals. As an additional bonus, motorists get additional information in the form of freely programmable signals and messages. Made as LED boards, variable traffic signs made by Forster guarantee superior quality.



BAB A6 Motorway, at the Nuremberg-South interchange, Germany



BAB A14 Motorway, Magdeburg, Germany



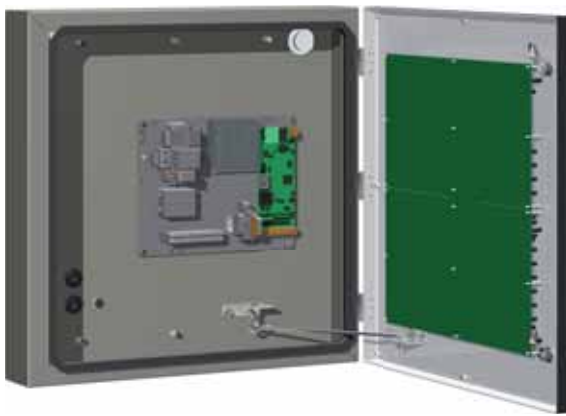
BAB A14 Motorway, Magdeburg, Germany

Considered engineering

Housing of supreme quality

Corrosion-proof aluminium is the metal of choice for the housing that encloses the LED-based variable traffic signs made to the customer's order. In order to maximise their service life, the surface is powder-coated with a double layer by our in-house equipment.

The front panel is also made of high-quality aluminium. The devices, tested pursuant to EN 12966, have IP54 protection for the housings and IP65 protection for the front arrays.

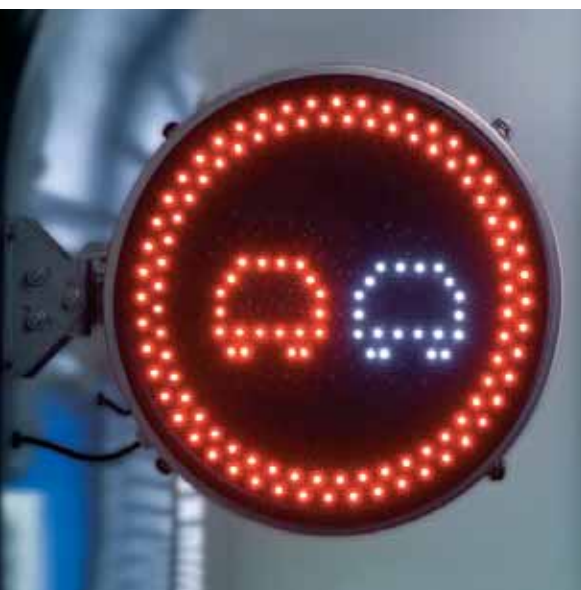


Front panel designed as a swivel cover.



Housing with service opening at the back.

Round LED signs for tunnels

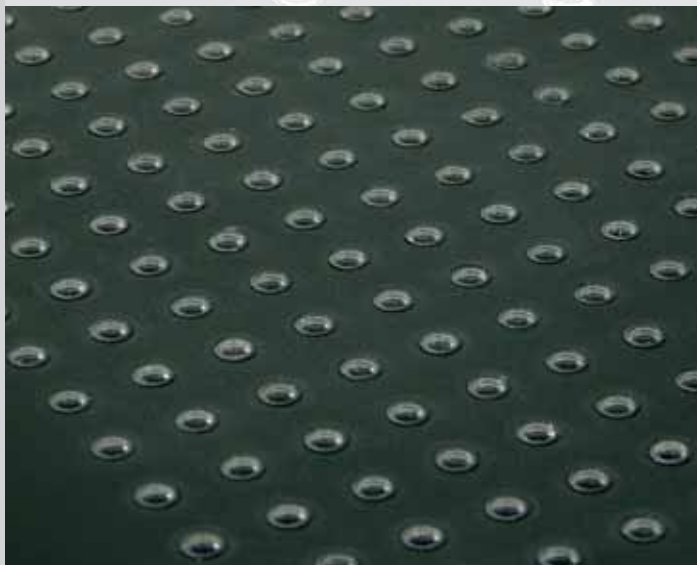


Designed specifically for use in tunnels, this low-maintenance modular system is made up of a housing, cover, electronic system and tested lens system. Optimal alignment and readability of the symbol display are ensured by the flexible pivot bracket. Housing, front panel, bracket and snap closures are made of corrosion-proof special steel. The LED display system is based on a low-maintenance pc board.



Watch out for the front array and lens

The front panel plate is made of aluminium and coated in dull black. The lenses, made of UV-resistant materials, are fitted water-tight into the display face. For stabilisation, the front panel is braced against the back part of the housing.



Two functions - one lens

The lens bundles the light emitted by the LED and at the same time prevents incident sunlight from being reflected by the LED. An accurate lens fit is achieved by boring the front panel with CNC drills. Lenses are chosen to meet customer and territorial requirements.

Front panel also available in high-grade steel design

Alternatively, our customers have the choice of a front panel made of non-corrosive steel and painted in dull black.

Individual LED control and monitoring

The symbol retains its excellent visibility even if one LED should fail because, contrary to traditional signs, the failure affects only a single LED rather than the entire chain. Moreover, all LEDs are individually monitored, even when switched off, and their status can be signalled to the traffic control centre or subcentre.

LED intensity is pulse-width modulated at a frequency of 2 kHz, so that symbols can be recognised even by a camera integrated in the car.

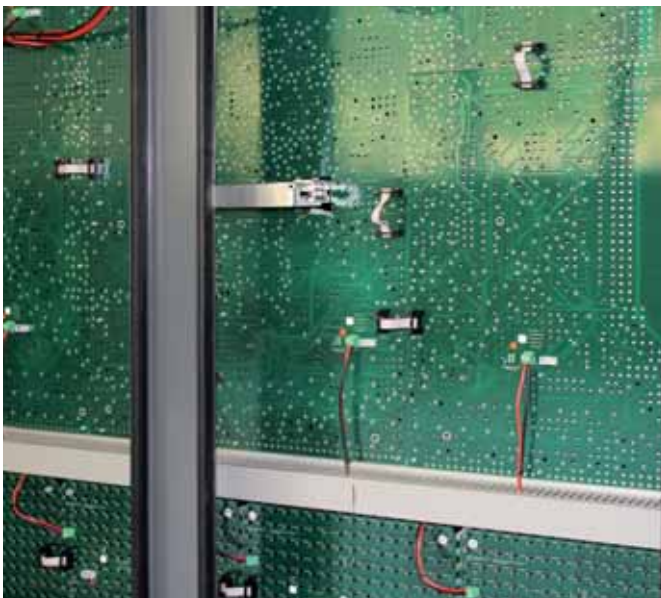
LED boards are low-maintenance



LED boards are installed without the need for tools and offer easy servicing because they are of the plug-in type. For all symbols to be displayed, the boards are fitted with selected high-quality LEDs. The special method used to fit the LED boards ensures that the diodes are aligned exactly to the lens and socket system without any mechanical load, thus warranting their optimal optical properties in the long run. LEDs are fitted, welded in and painted on both sides by a machine, which offers maximum protection to the electronic components. The elements for monitoring and controlling the LED boards are also installed in the display units. All components are installed on a DIN rail to achieve easy maintenance and the control is provided with a service interface. A terminal program parameterises the controls and reads out the status signals. The LED systems are selected through an RS 485 interface or zero-potential contacts.

Benefits at a glance

- Individual LED control
- Long service life
- Low maintenance
- No tools required for replacement
- Optimal heat bleeding through boards
- Exact alignment of the lenses



Time-tested Forster quality

Certification for more safety

Quality always comes first with Forster – our customers can rely on our priorities, as is evidenced by the BAST homologation and conformity certificates. The LED variable traffic signs made by Forster comply with all requirements of EN 12966-1:2005 + A1:2009.

Our products are tested in accordance with the following standards and regulations:

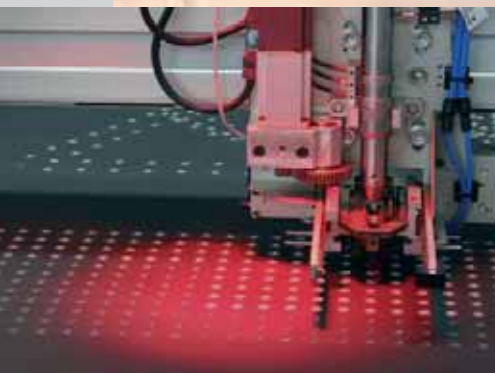


Testing as per EN 12966

- Shock testing as per EN 60598-1
- Vibration testing as per EN 60068-2-64, test Fh, category AJ2
- Climate testing as per EN 60068-2-14 und 2-30
- Protection class testing as per EN 60529
- Environmental testing as per EN 60068-2-42 and 43
- Salt spray testing as per EN ISO 9227
- Electromagnetic compatibility (EMC) testing as per EN 50293
- Optical testing and classification as per EN 12966

Quality LED production

Know-how and quality are emphasised by the extraordinarily high ratio of internal production typical of the Forster Group. From planning to design to manufacturing to installation – we supply maximum technical competence and personal commitment.



Lens placing machine



LED placing machine



In-house climate testing of the boards

Forster range of products

Easily the right decision



Prism signs



Gantries and cantilevers



Traffic signs



Noise control



Forster Verkehrs- und Werbetechnik GmbH
A-3340 Waidhofen/Ybbs, Weyrer Strasse 135, phone +43 7442 501-0, fax +43 7442 501-200
A-1230 Wien, Siebenhirtenstrasse 40-42, phone +43 1 6167585-0, fax +43 1 6167585-33
A-5020 Salzburg, Michael-Walz-Gasse 24, phone +43 662 827544, fax +43 662 827544-44
e-mail: forster@forster.at, www.forster.at

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Products are subject to changes.