triplesign.com
Innovation and ECO Technology

TRIPLESIGN VMS

Triplesign Variable Message Signs (VMS)

Average operating power consumption 0,14W/hour

No external power source is necessary to convey messages on a Triplesign. In the case of a standard, wirelessly controlled sign, power consumption can be as low as 0,14W/hour. The power consumption for displaying a message is 0W/hour.

24/7 Readability

Reflective foil is employed to showcase the message, always ensuring its readability.

Reduce your expenses by 70-90%

The cost savings of opting for a Triplesign instead of an LED sign are substantial throughout the sign's lifetime.

Suitable for any environment (-40C - +60C)

The Triplesign is certified and used in extreme cold conditions as well as the hottest desert environments. The integrated ice-breaking feature, achieved through regular small rotations, also effectively clears away sand, ensuring the sign's free rotation.

+20 years lifetime

The Triplesign is designed for long-lasting durability. After two decades, the drive mechanism can be easily replaced, restoring the sign to a like-new condition. This process is remarkably swift and efficient thanks to our patented procedure.

Extremely Low Maintenance

The Triplesign maintenance is limited to an annual visual inspection and occasional cleaing of the sign faces.

IoT Ready

The Triplesign is ready for immediate use and can seamlessly integrate with other systems. Additionally, Triplesign can provide a range of traffic management solutions.

Installation time – 1-2 hours

The stand-alone Triplesign comes ready to install. No digging for cables is necessary, preventing traffic disruptions and the need for complicated road detours.

Sustainability

Triplesign Solar Powered signs offer a sustainable solution that leave no carbon footprint.

The urgent global focus on combating climate change and reducing CO^2 emissions has spurred a search for eco-friendly traffic guidance systems to enhance safety in local communities and cities.

Using a Triplesign Variable Message Sign (VMS) for displaying messages incurs zero power consumption, employing reflective foil to convey information. In contrast to LED VMS, which requires continuous power for display, Triplesign VMS stands out as the more sustainable choice.

The energy usage of a standard Triplesign VMS, when connected online and operated via Wi-Fi or SIM card, amounts to merely **0,14W/hour,** which is significantly lower than that of an LED VMS.

With an expected lifespan of at least **20 years** and straightforward maintenance, the lifetime of a Triplesign far exceeds that of an LED VMS. Moreover, a patented procedure allows for the exchange of active components, extending its service life by another 20 years.

Installing the Triplesign standalone solar sign is hassle-free, requiring **no heavy machinery for cable** excavation due to its wireless control and self-sufficient power supply. This reduces the carbon footprint substantially. Additionally, the installation process is swift, taking only a matter of hours, resulting in minimal disruption to traffic flow and avoiding significant roadblocks or costly safety measures associated with LED VMS installation.

In conclusion, the overall carbon footprint associated with the installation and operation of a Triplesign VMS is exceedingly low, particularly when compared to the environmental impact of an LED VMS.

Applications

Warning signs

Warning signs serve diverse purposes, from indicating variable speed limits to highlighting hazardous road conditions or impending traffic congestion. Environmental factors like ice, flooding, rain, snow, and wind can significantly impact driving conditions. The Triplesign, a versatile solution, proves invaluable in alerting road users to potential risks. Its activation seamlessly responds to evolving conditions, achieved through sensor-based detection or other advanced technologies.

A portable Triplesign can be employed in temporarily unsafe zones, like road damage or brief traffic halts due to imminent hazards. When a Triplesign Solar VMS is placed in an appropriate location and activated at the right moment, it can save lives.

Cycle Lane

Flood warning

Construction site

Queue Warning

Slippery road warning

Unattended Railway

Variable Speed

The current road system is not fully efficient due to its lack of flexibility.

Incorporating variable speed signs can enhance both safety and traffic flow. By reducing speed during adverse driving conditions or heavy traffic and increasing speed in low-traffic scenarios with favourable road conditions, traffic flow can be significantly improved.

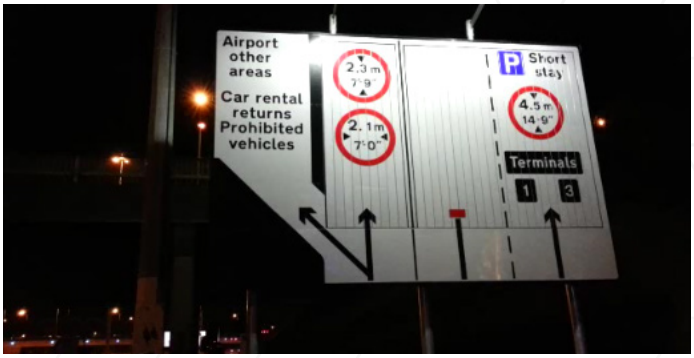
Traffic Flow

Managing traffic flow is simplified with the use of a 3-in-1 sign. This sign allows for the closure of one lane or open the hard shoulder for traffic using it as an additional traffic lane. Additionally, reversible lanes can be employed during peak hours. The Triplesign VMS proves to be an ideal solution for these scenarios.

Traffic Redirection

Redirection of traffic flow is crucial to create a safer traffic environment.

Using a Triplesign, exits can be opened or closed and alternative routes can be opened temporarily in order to manage the traffic flow.



Urban Safety

Urban traffic environments pose numerous hazards to road users. Especially dangerous locations include unattended railway crossings, school zones, pedestrian, and bicycle lane crossings, as well as entrances and exits to construction sites.

Employing a Triplesign equipped with adaptable traffic information will enhance safety in these areas. Additionally, portable warning signs are valuable for temporary work zones, traffic redirection in the vicinity of accidents, or facilitating the passage of emergency vehicles.

Vehicle VMS

Flexible traffic guidance and information during road work or incidents may sometimes be displayed using moving equipment or vehicles.

The Triplesign is tested and approved according to TR2130C (including vibration and shock resistance), which makes it qualified for installation on moving traffic control equipment.

Road Work signs

Road work signs are essential in situations where road work has a significant impact on traffic flow and redirection is necessary. Flexibility in traffic information is crucial, allowing for frequent changes without endangering road workers. The Triplesign can be controlled wirelessly at a safe distance and activated when there are road workers on site. By activating the signs and lower the speed limit only when there are workers on site, will increase the adherence to speed restrictions.

Tunnels & Bridges

It is mandatory to inform road users of a tunnel or bridge closure. It can cause major problems for traffic flow if this is not done in a timely and efficient manner. Triplesign has the perfect solution for this.

Toll- & Customs stations

Routing traffic to the appropriate station based on the vehicle type and payment method.

Ports & Terminals

Traffic volume varies considerably both entering and exiting major terminals. The utilization of a Triplesign can effectively steer traffic flow in real-time to prevent long queues and traffic congestion.

Technology

The technology behind the Triplesign has been developed and fine-tuned for decades.

That doesn't mean that we stop evolving! The Triplesign technology is constantly being developed to encompass even more functions and features.

The Triplesign is designed as a modular system which makes it possible to build almost any size of sign. Due to this construction, substantial transportation cost savings can be achieved for large units as the signs can be sent partly or fully disassembled, with the final assembly taking place near the installation point.

Standard Features

- Frame and prisms in aluminium
- Operated by PLC with display
- Parallel drive
- Bi-directional mechanism (closest path rotation)

Functions

- I/O Confirmation – Ensuring the correct face is being displayed
- Customised Programming
- Ice breaking function – Programmed movement to prevent build-up of ice, snow or sand.
- Time lapse between sign face change <3 seconds
- IoT Ready – Connect to any system
- API-enabled

Technical Specifications

- EN-12996 certified
- IP 68 connections
- IP68 proximity sensors PNP
- Operating voltage 24VDC/12VDC
- Self-lubricating bearings

Options

Manual Rotation

Push Button or Turn Switch

Anti-freeze heating system

Ready for pole mounting

Self-carrying back structure for gantry installation

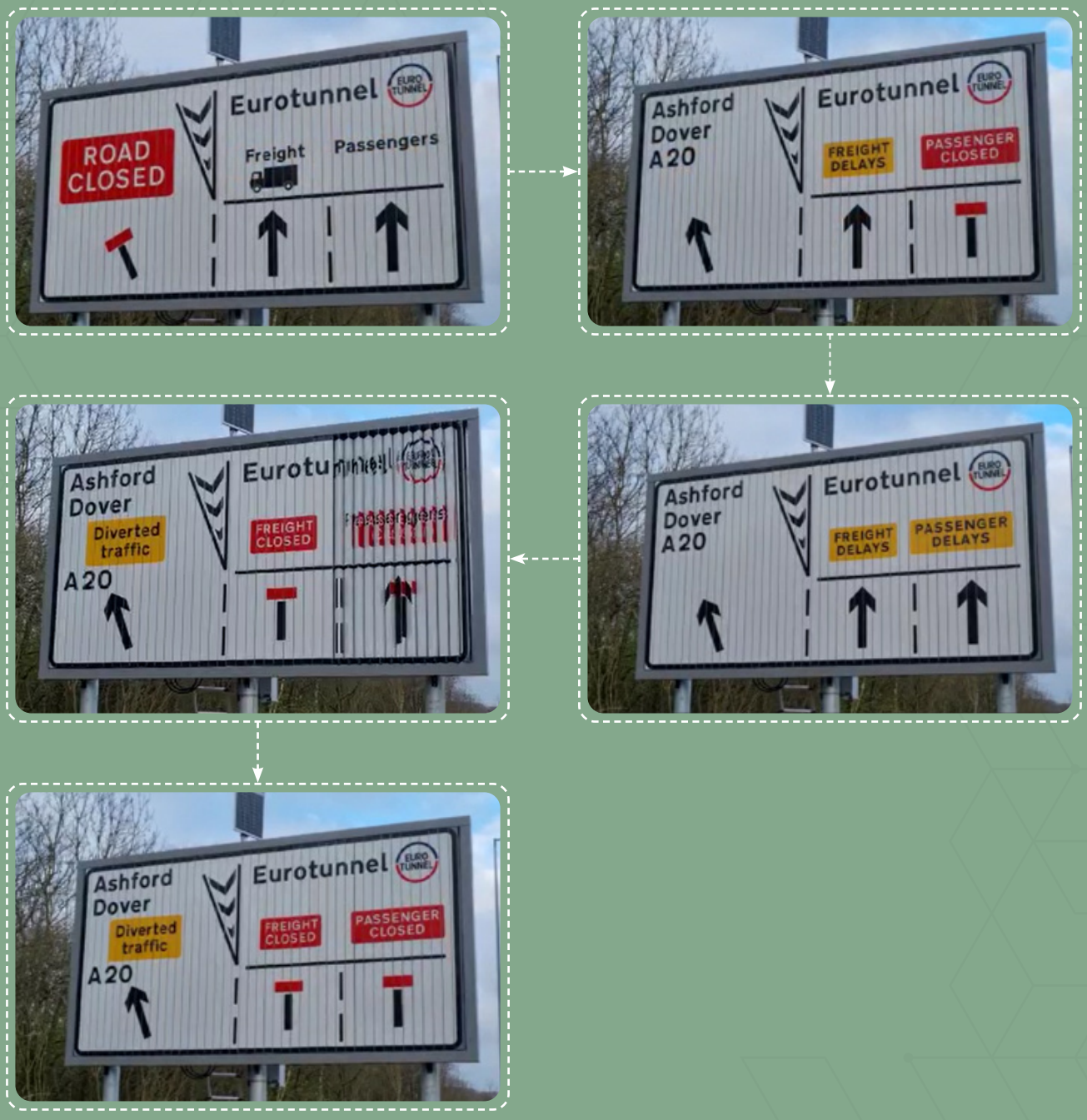
Powder Coating

Service Tool Kit

Flexible Solution

Having a name such as “Triplesign” might suggest a restriction to only 3 messages, but in reality, the Triplesign can be segmented, opening up opportunities to display various sets of information. A Triplesign can be divided into independent sections, both horizontal and vertical.

The Triplesign VMS can also be integrated with a static sign to create a so-called hybrid sign.



Communication

❒ Communication Options

Wireless Communication:

- 3G/4G/5G
- WiFi
- Bluetooth

Wire Communication:

- Ethernet Cable (Modbus TCP/IP)
- Cable RS485 (Modbus RTU)
- Dry Contacts (standard)

While dry contact control is standard, the sign can be operated via various means of communication. Apart from controlling the sign directly on the PLC, or manually rotate it using a crank, it can also be controlled remotely.

On site control can be programmed to override remote control or vice versa.

❒ System Integration

The Triplesign is API enabled and IoT Ready. Connect the sign to any system, sensors, cameras, counters – the list goes on!

❒ Web Portal

By using a secure, online web portal for Triplesign management, you gain complete access to monitor the sign's status and exercise control over it.

Together with our trusted partners, we offer portals for complete Traffic Management Systems with a variety of integrations to control a large range of traffic equipment, down to standalone management of a single Triplesign.

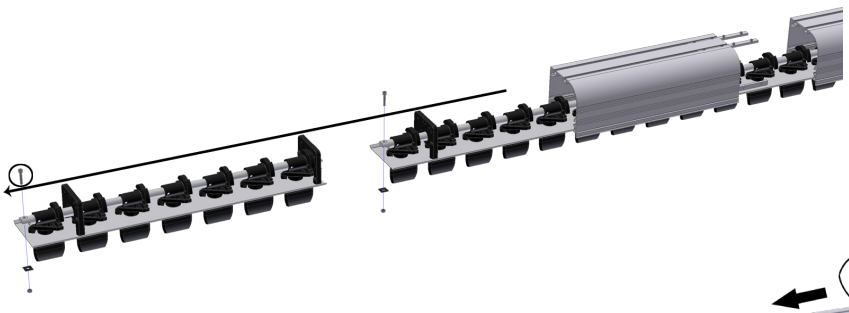
Certification and Approvals

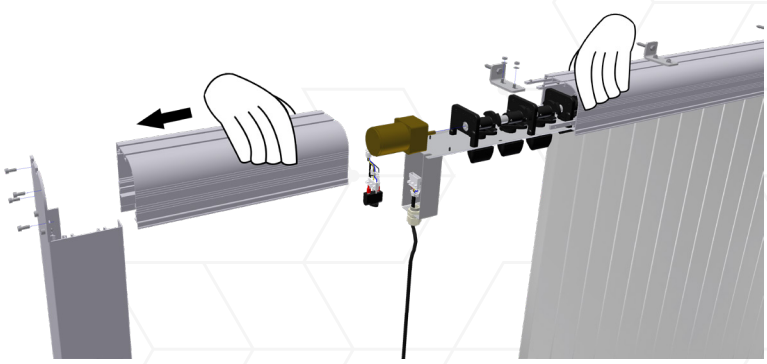
- Certified according to EN-12966
- Tested and approved for TR2130C (shock test and vibration test)
- Great Britain Highway Approved

Maintenance

The Triplesign VMS framework is made by anodized aluminium, ensuring the main structure of the sign is built to last for decades. Triplesign has developed an innovative and patented system that facilitates easy servicing and complete replacement of mechanical and electrical components without the need to disassemble the frame. This process is efficient and timesaving. It is advised to replace the drive sections every 20 years to ensure the continued function of the sign.

As time goes on, the Triplesign remains, standing the test of time.





Traffic Safety

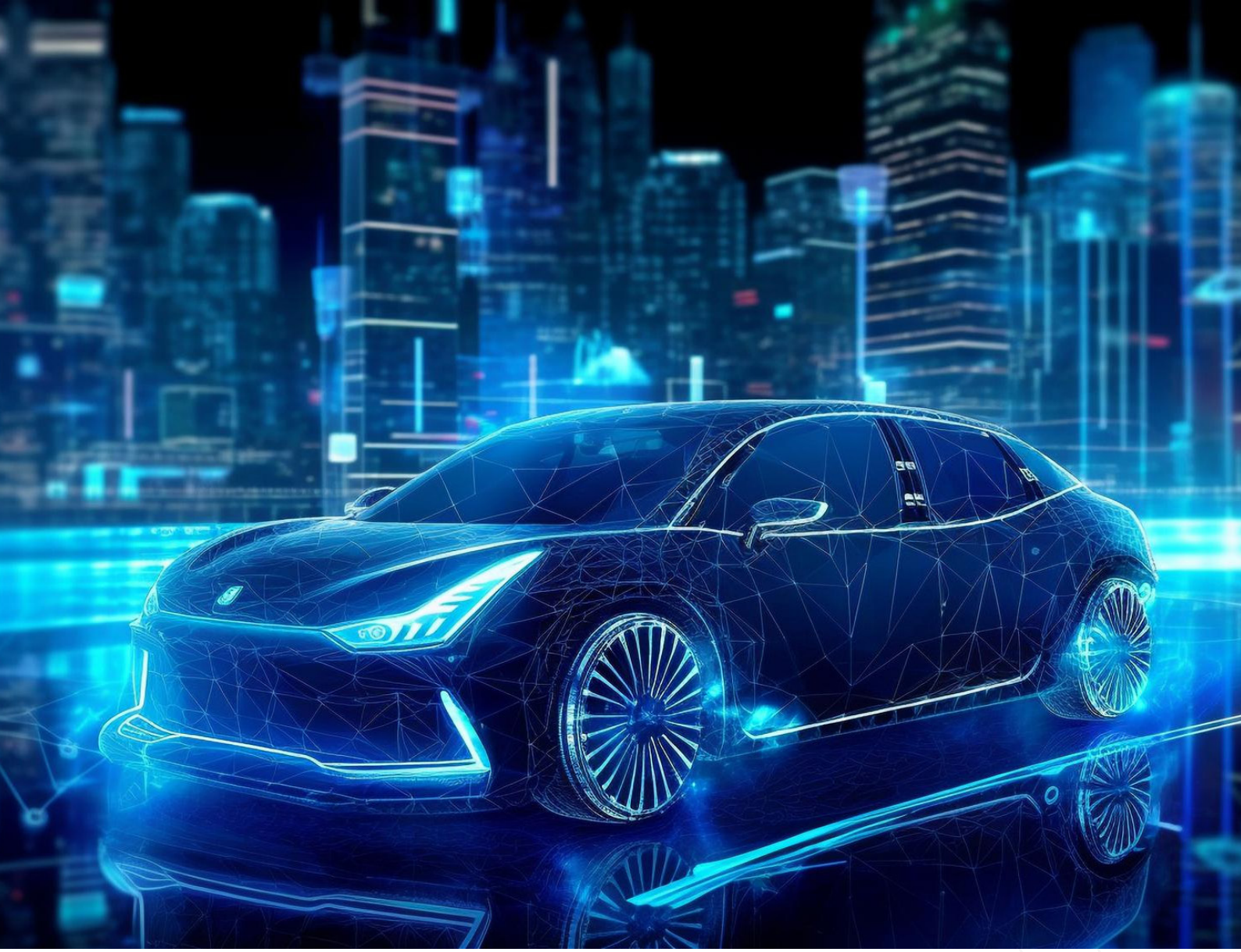
Where a typical illuminated sign will stop displaying messages during a power outage, a Triplesign will always maintain message readability, 24/7.

The resilience of a Triplesign to power interruptions is attributed to its integrated battery and solar power solution. Additionally, the Triplesign's energy-efficient design ensures minimal operating costs. In contrast, a conventional visual message system like an LED VMS, consumes significantly more power to convey the same information, leading to higher expenses. Furthermore, as the size of the sign grows, the power consumption costs for an LED VMS increase linearly, while those for a Triplesign system remain constant.

This significant cost advantage (savings in the range of 70 to 90%) compared to traditional LED VMS facilitates the widespread adoption of affordable traffic information solutions.

The standalone wireless Triplesign solar system operates independently of cable connections, enabling flexible placement to enhance traffic safety precisely where needed.

Moreover, a Triplesign VMS can be autonomous, as it can be activated by sensors designed to alert road users to various conditions such as slippery roads, reduced speed zones, approaching trains at unattended railway crossings, or the presence of heavy vehicles at construction site entrances/exits.



❒ Future Proof - Traffic Sign Recognition (TSR)

The Triplesign VMS is by default designed to be future proof, especially in light of the Advanced Driver Assistance Systems (ADAS) as the system is 100% readable and compatible with standard requirements* of Traffic Sign Recognition (TSR) technology used by automotive manufacturers.

Due to high speeding cars, the exposure time of a car camera must be less than 1/1000 of a second. This means that the flickering frequency of an LED sign needs to be at least 1000 Hz.

The EN standard for LED VMS (EN-12966) only require a frequency of 90 Hz.

There is a high risk that the car camera will not receive the information displayed on the LED sign, therefore compromising the safety system of the vehicle.

A Triplesign ensures driver safety as the message can be read at all times.

Secondly (TSR) systems in vehicles can also have difficulty deciphering long text messages used on LED VMS. Triplesign VMS are coherent with normal static road signs and use mainly symbol-based messages ensuring safe readability.

* CDR (EU) 2021/1958

In 1998, the founders of the prominent prismatic sign manufacturer, World Sign International, established Triplesign. This family-owned venture aimed to spearhead advancements in prismatic sign technology. Presently, Triplesign remains under the same family ownership and management, committed to ongoing innovation.

Their latest achievement is the revolutionary VMS system, boasting an incredibly low energy consumption of just 0.14W/h.

Contact Us

Källebergsvägen 11, 576 96
Vrigstad, Sweden

+46 (0)8 626 7350

info@triplesign.com

triplesign.com
Innovation and ECO Technology