

LED Variable Message Sign

- Connective to all standard systems
- Intelligent error detection ("20% shut down")
- Outstanding uniformity
- Exceptional longevity



 **Telefon-Gradnja**

Plešivička 3
10431 Sveta Nedelja
Hrvatska / Croatia
tel: +385 (1) 3388 500
fax: +385 (1) 3388 599
www.telefon-gradnja.hr


Telefon-Gradnja
Traffic Management Systems
Your reliable partner.

LED Variable Message Signs

LED Variable Message Signs (LED VMS) can display multiple traffic symbols at low energy consumption. LED VMS's are manufactured with the latest generation of LED's providing high light intensity and long operating life.



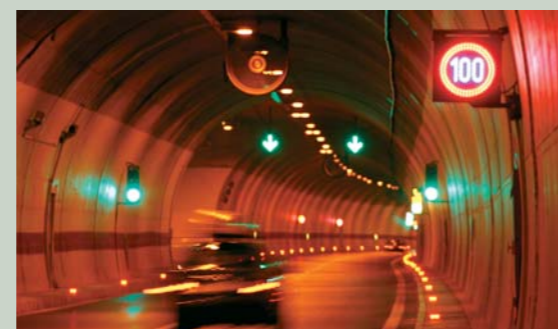
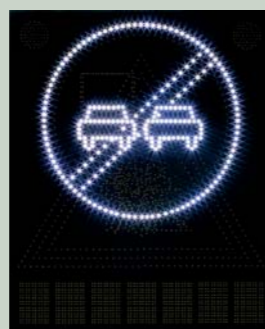
Basic features:

- > independent control of every single pixel
- > error detection in both "off" and "on" state of each pixel
- > programmable current for every single LED
- > outstanding optical properties according to EN 12966
- > light intensity not depending on power supply voltage fluctuations nor displayed symbol
- > long life of LED insured by low current drive without multiplexing
- > modular design
- > serviceability and easy maintenance
- > high recognizability and outstanding uniformity of displayed symbols
- > light intensity adjustable in 5-100% range
- > choice of various communication interfaces
- > operating temperature range from -40 to +60°C
- > power supply: 230 VAC

LED VMS Main Components

LED VMS is made of following main components:

- > Housing designed for outdoor exploitation:
 - back panel service door
 - materials adopted in accordance with EU norms (AlMg3, AlMgSiO,5)
 - IP protection class: IP 55 - IP 66
- > Power Supply Cable Terminals
- > Communication Cable Terminals
- > Electronic Control and Drive Modules
- > Power Supply Modules (AC-DC SMPS)
- > LED's mounted on Printed Circuit Boards (PCB) s LED
- > Temperature Regulation Modules
- > Ambient (External) Light Intensity Measuring Module (option)
- > Circuits and Equipment for Climate Control (thermostat, hydrostat, ventilation system)
- > Communication Modules (RS 485/232, Ethernet, GPS, GPRS) for all Transmission Media (SM and MM OF, Twisted Cu Pairs, Airwaves)



Tehchnical data:

AC Supply:	230V 50Hz (-15% to +10%)		
DC Supply:	Stabilised; 5 V-12V		
Over-voltage/Surge Protection:	5 levels (varistors, fuses, opto-couplers, suppressors, gas dischargers)		
LED Control:	Each LED separately		
Classification according to EN 12966:	LED Intensity (Luminance):	L3	L3T
	Luminance ratio:	R2	R2
	Beam width:	B1 - B5	B7
	Colour Class:	C2	C2
Remote Control:	RS485 / RS422 / RS232 / LAN / fiber-optic		
Communication Protocol:	TLS - FG4 local bus or as requested		
LED Monitoring and Test:	Continuous, for each LED separately, in ON and OFF state		
Ambient Temperature Range:	-40°C to 60°C in accordance with all EN 12966-1 Classes T1, T2 and T3		
IP Protection:	IP 55 - IP 66		

Certified according to following norms:

- > Visual performance according to EN12966-1
- > Electrical features
- > Vibration tests (IEC 60068-2-34, IEC 60068-2-37)
- > Temperature requirements (cold in accordance to IEC 60068-2-1, dry heat in accordance to IEC 60068-2-2, humidity in accordance to IEC 60068-2-30, temperature range in accordance to IEC 60068-2-14)
- > Degrees of protection provided by enclosure in accordance to IEC 60529
- > Environmental standards for shock in accordance to MIL-810C
- > General requirements - information technology equipment - safety in accordance with IEC 60950-1
- > EMC testing in accordance to:
 - HRN EN 55022: Radio disturbance
 - HRN EN 61000-3-2: EMC limits for harmonic current emissions
 - HRN EN 61000-4-2: Electrostatic discharges (EDS) immunity tests
 - HRN EN 61000-4-3: Radiated, radio-frequency, electromagnetic field immunity tests
 - HRN EN 61000-4-4: Electrical fast transients/burst immunity tests
 - HRN EN 61000-4-5: Surge immunity tests
 - HRN EN 61000-4-6: Immunity to conducted disturbances, induced by radio-frequency fields
 - HRN EN 61000-4-11: Voltage drops, short interruptions and voltage variations immunity tests