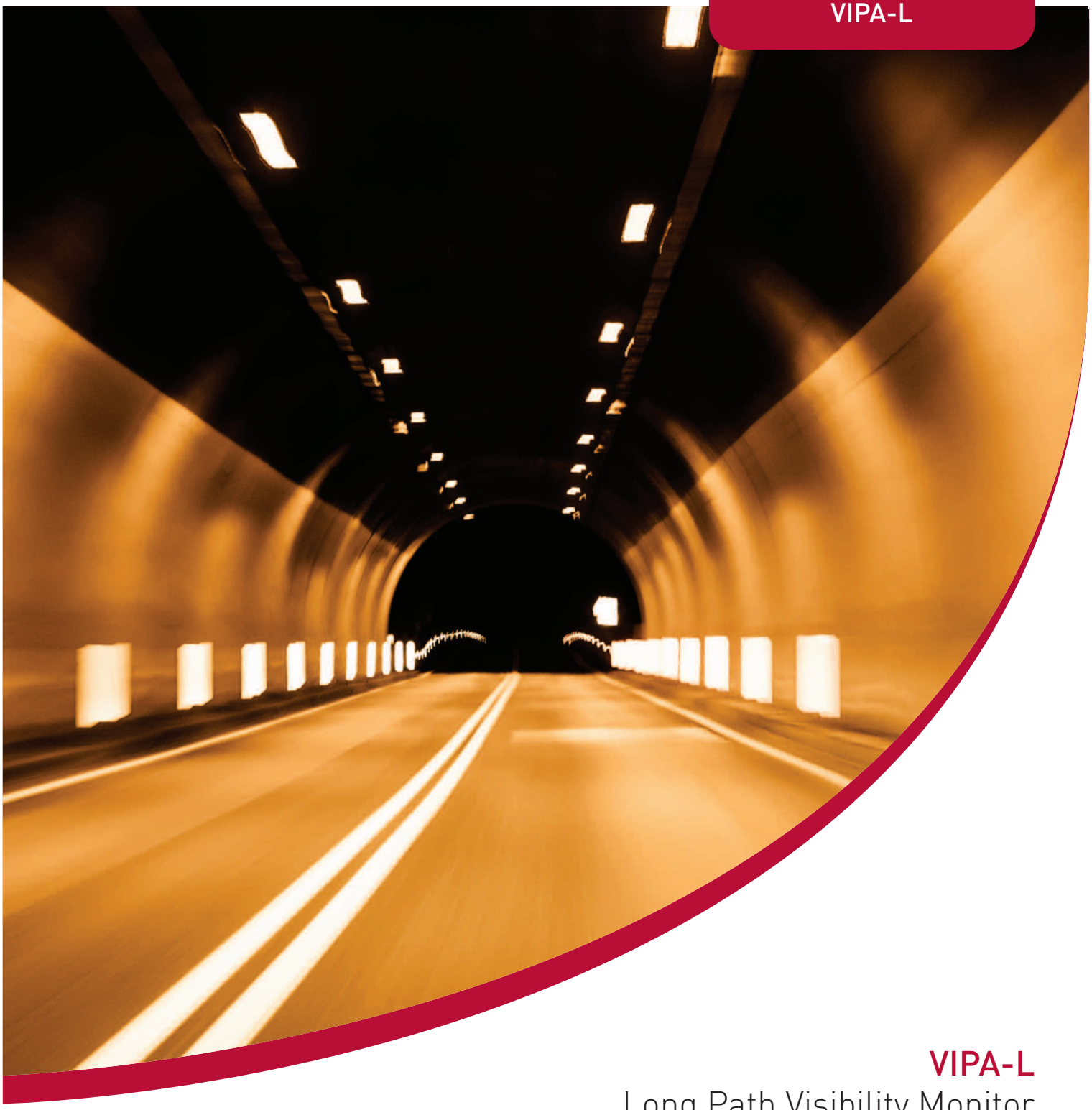


VIPA-L

Long Path Visibility Monitor

TUNNEL SENSORS

VIPA-L
Long Path Visibility Monitor

FEATURES

- Designed for in-situ monitoring of ambient environments
- Visibility measurement using the widely accepted single pass light transmission opacity technique, over a path length of up to 20m
- User selected unit display options of Opacity (%), Extinction Coefficient (k), Meteorological Optical Range (MOR) or Transmission
- Low detection limits for dust and particulate
- Integrated temperature and humidity monitoring
- Intelligent analyser with optional TSCU operator interface

BENEFITS

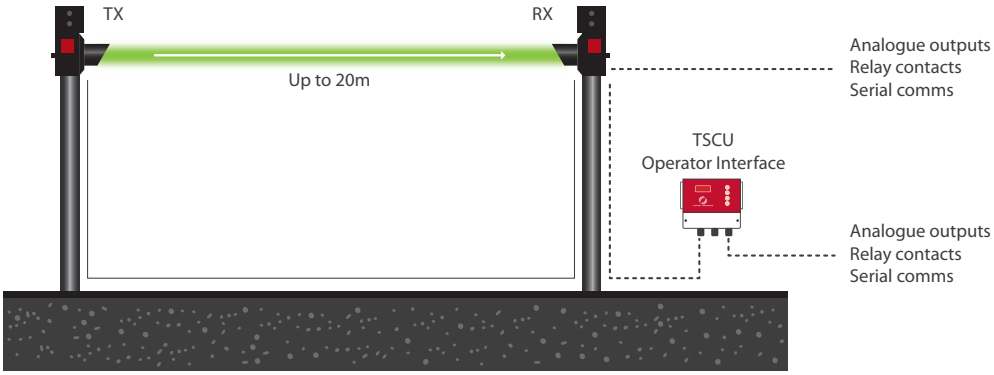
- Rugged design to withstand ambient and atmospheric weather conditions
- IP65 / NEMA 4X rated external enclosure supplied with quick release site tubes and integrated mounting brackets
- Plug and socket cable connection enabling simple installation
- No moving parts and low maintenance requirements
- Choice of interface options enabling easy integration into any data monitoring or control system

APPLICATIONS

The VIPA-L Long Path Visibility Monitor makes a visible opacity measurement to determine the average visibility along the sight path of the instrument, within an ambient environment such as road, rail, meteorological or other industrial application. These measurements can be used as part of an air quality management system.

OPERATION

The VIPA-L uses the standard single pass light transmission measurement technique, with Transmitter / Receiver arrangement, to measure dust, smoke and particulate present in the atmosphere. The Transmitter (TX) and Receiver (RX) are mounted “facing” each other over a fixed path length. The TX emits a visible (green) optical beam which is received by the RX. Any dust or smoke particles present will attenuate the light beam and cause the intensity of the light received by the RX to fall. This reduction in light intensity is used to determine visibility along the sight path of the instrument.



SYSTEM COMPONENTS

- VIPA-L sensor consisting of Transmitter (TX) and Receiver (RX)
- LSZH cable with connectors for connecting between the RX and TX
- Power-Comms cable for RX, made to suitable length (required accessory)
- Integrated wall mounting brackets with optional pole mounting bracket attachment
- PC based utility software package for set-up and control of the instrument
- Optional TSCU operator interface with remote or local mounting configurations
- Optional sun shields
- Optional reference filters for routine calibration check of the instrument

TUNNEL SENSORS

TECHNICAL SPECIFICATION

VISIBILITY MEASUREMENT PERFORMANCE

Parameter	Comment
Measuring Principle	Light transmission
Measurement Reading	Transmission Extinction Coefficient (k) Meteorological Optical Range (MOR) Opacity
Measuring Range Transmission Extinction Coefficient (k) Meteorological Optical Range (MOR) Opacity	 0 – 1.000 0 – 0.1000 m^{-1} 0 – 15,000 m 0 – 100 %
Path Length	5 – 20 m
Accuracy	+/- 1 % as opacity

POWER REQUIREMENTS

Voltage	+24 Vdc
Nominal Current Consumption	500 mA
Power Up Current Consumption	500 mA

INTERFACE OPTIONS

Serial Comms	ModBus RTU via RS485 External USB
Analogue Outputs	0 / 2 / 4 – 20 mA (isolated and scalable)
Digital Relay Contacts	3A @ 30 Vdc (level alarms and data valid alarm)

PHYSICAL

Ambient Operating Temperature	-20 – +55 °C
Ambient Operating Humidity	5 – 100 %
Ingress Protection	IP65 for external use
Materials	Powder coated stainless steel
Dimensions (incl. dust tubes)	499 x 158 x 197 mm (each measuring head)
Weight TX Head (excl. dust tube) RX Head (excl. dust tube)	 2.3 kg 2.5 kg

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