

Visibility monitor

Features & benefits

- reliable measurement along the tunnel
- no separate control unit required
- simple configuration
- corrosion resistant
- simple and quick mounting
- simple alignment
- Measuring head and reflector can be exchanged in a few seconds.
- no tools required
- no additional alignment required
- signal transmission by analogues and digital signals.

and also by RS 485 bidirectional MODBUS RTU
reduced spare requirements
extremely low maintenance

Description

D-R 220T consists of a light emitting and receiving measuring head and an optical reflector.

The device determines the light transmission along a 10m measuring path. The determined transmission allows calculation of visibility which is indicated by its extinction coefficient VIS k in units 1/m.

The influence of contamination of optical windows on the measuring results is compensated. The system can be checked and set by access to measuring head, either through local USB port or remotely using RS 485 bidirectional MODBUS RTU interface.

This prevents necessity of blocking traffic. LED status indicators allow to inspect the status of the measuring head. The LED can be inspected from outside D-R 220T executes internal self testing routines automatically and requires extremely low maintenance.



D-R 220T M sensor (A1)			
measuring principle	determination of optical transmission	ambient temperature	-25 to 55 °C
components measured (access via RS485 MODBUS RTU)	transmission, opacity, extinction, visibility : extinction coefficient VIS K [m-1]	protection, weight	IP 65, ca. 2.7 kg reflector ca 1.7 kg
measuring range:	VIS K: 0-15...150 km-1 VIS K: 0-0,015...0,15 m-1	Sensor material	stainless steel 1.4571/316Ti polyamide, ca. RAL5017 flammability rating: B1 (UL 94 V0),
response time:	minimum 2s can be configured up to 180s	conformity:	2004/108 EC (EMV directive) 2006/95 EC (Low voltage directive)
output range (analog output):	can be configured, typically: VIS K: 0-15 km-1	EN 61 326-1 (2006), industrial environment	EN 61 010-1 (2001)
measuring path	10m	D-R 220T TUBUS	
orientation of measuring path:	parallel to tunnel axis	material	1.4571/316Ti
signal transmission	1x 4-20mA, 500 Ohm, isolated	fixation at tunnel wall	4x bolt od=8mm
status contacts	1x fault contact 1x limit alarm rating 48V, 0.5 A variable assignment	D-TB 100T terminal box (X1)	
transfer of values:	1x RS 485 MODBUS RTU bi directional to control room	power supply (terminal box)	90-264VAC, approx. 30VA (for X1)
Service Interface:	USB 1.1 port	fixation at tunnel wall	4x bolt od=8mm
Service tool:	software D-ESI 100 requires netbook / laptop and Windows XP™ OS	protection	IP 66, 1.5 kg
control cycle	internal automated routines, self test	material	polycarbonate, ca. RAL 7035 flammability rating: B1 (UL 94 V0)
power supply (sensor)	24 VDC +- 10%, ca. 1 A	system components:	1x D-R 220T M measuring head incl. 1.5m cable with plug 1x D-R 220 R3 reflector 2x D-R 220T Tubus 1.4571/316Ti 2x D-RV 290 BW mounting bracket 2x D-R 220 CLP 1x D-TB 100T terminal box

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