Visibility monitor

Features & benefits
- Reliable measurement along the tunnel
- No separate control unit required
- Simple configuration
- Corrosion resistant
- Simple and quick mounting
- Measuring head and reflector can be exchanged without tools in a few seconds
- No tools required
- No additional alignment required
- Signal transmission by analogues and digital signals
- As well as 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 the 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, opacity, extinction, visibility: extinction coefficient VIS K [m-1]
- Components measured: ambient temperature -25 to 55 °C, protection, weight IP 65, ca. 2.7 kg, reflector ca. 1.7 kg
- Response time: minimum 2s can be configured up to 180s
- Output range (analog output): can be configured, typically: VIS K: 0-0,015...0,15 m-1
- Measuring path: 10m
- Orientation of measuring path: parallel to tunnel axis D-R 220T TUBUS material 1.4571/316Ti, fixation at tunnel wall 4x bolt od=8mm
- Signal transmission: 1x 4-20mA, 500 Ohm, isolated material 1.4571/316Ti, location: fixation at tunnel wall 4x bolt od=8mm
- Status contacts: 1x fault contact, 1x limit alarm, 48V, 0.5 A variable assignment power supply (terminal box) 90-264VAC, approx. 30VA (for X1)
- Transfer of values: 1x RS 485 MODBUS RTU bidirectional to control room power supply (terminal box) 90-264VAC, approx. 30VA (for X1)
- Service Interface: USB 1.1 port protection IP 66, 1.5 kg, material polycarbonate, ca. RAL 7035 flammability rating: B1 (UL 94 V0)
- Control cycle: internal automated routines, self test 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
- Power supply (sensor): 24 VDC +/- 10%, ca. 1 A
- Power supply (terminal box): 90-264VAC, approx. 30VA

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