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 configurated up to 180s
output range (analog output): can be configurated, typically: VIS K: 0-15 km-1
measuring path 10m
orientation of measuring path: parallel to tunnel axis
signal transmission 1x 4-20mA, 500 Ohm, isolated
status contacts 1x fault contact 1x limit alarm rating 48V, 0.5 A variable assignment
transfer of values: 1x RS 485 MODBUS RTU bi directional to control room Service Interface: USB 1.1 port Service tool: software D-ESI 100 requires netbook / laptop and Windows XP ™ OS
control cycle internal automated routines, self test

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

D-R 220T TUBUS

orientation of measuring path: parallel to tunnel axis
material 1.4571/316Ti
fixation at tunnel wall 4x bolt od=8mm
power supply (terminal box) 90-264VAC, approx. 30VA (for X1)

D-TB 100T terminal box (X1)

material polycarbonate, ca. RAL 7035 flammability rating: B1 (UL 94 V0)
fixation at tunnel wall 4x bolt od=8mm
power supply (terminal box) IP 66, 1.5 kg

Viscosity 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 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 recieving 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 it's 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

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