

Liquid Monitoring – Detecting Ingress of Oil in Condensate Systems and Marine Installations

Purpose

Continuous monitoring of transparent liquids to detect any ingress of insoluble foreign matter causing turbidity, such as emulsified oils and greases. Measuring of turbidity and signal evaluation for indication, recording and control. Tripping of alarms, control valves etc.

The oil turbidity detector OR 52/ consists of a measuring sensor ORG 12/ORG 22 and the ORT 6, or ORG 12 and the ORT 7.

Application

Condensate monitoring in steam boilers to detect any ingress of oils and greases in accordance with TRD 604, EN 12952/..53.

Monitoring of cooling water, drinking water, condensate, and beverages for turbidity.

Monitoring of cooling water, drinking water, condensate in hazardous areas – zone 1(on request).

Hot-water monitoring in district heating plants.

Filter and cooling-water monitoring on ships.

Continuous monitoring of water for the ingress of oil, in conjunction with oil/water separators as 15 ppm bilge alarm acc. to IMO, MEPC. 107 (49).

Technical Data

Type	Sensor	PN	Connection	Material	Measuring transducer ORT 6 Wall-mounting case, measuring range 0–25 ppm 2 alarm relay outputs (instantaneous/delayed) LED bar chart display 4–20 mA current output
OR 52/5	ORG 12	10	3/8" BSP	GG 25	●
OR 52/6	ORG 22	10	3/8" BSP	1.4580	●
OR 52/5 EX	ORG 12	10	3/8" BSP	GG 25	●
OR 52/6 EX	ORG 22	10	3/8" BSP	1.4580	●
IMO-OR 52/7 Marine application	ORG 12	10	3/8" BSP	GG 25	Measuring transducer ORT 7 Field case, measuring range 0–25 ppm 3 signal outputs for alarm 1, alarm 2, purging valve Limit alarm 1 and 2, adjustment range between 0 and 15 ppm LED and LCD display Current output 4–20 mA 2 signal inputs Data storage Flashcard 8 MB 1 GPS input (optional) 1 PC interface (optional)

Liquid Monitoring – Detecting Ingress of Acids, Alkalies, Raw Water, Dyes, etc.

Purpose

Monitoring conductive liquids for contamination by foreign matter that increases the TDS concentration; conductivity monitoring (TDS control), signalling and display.

Application

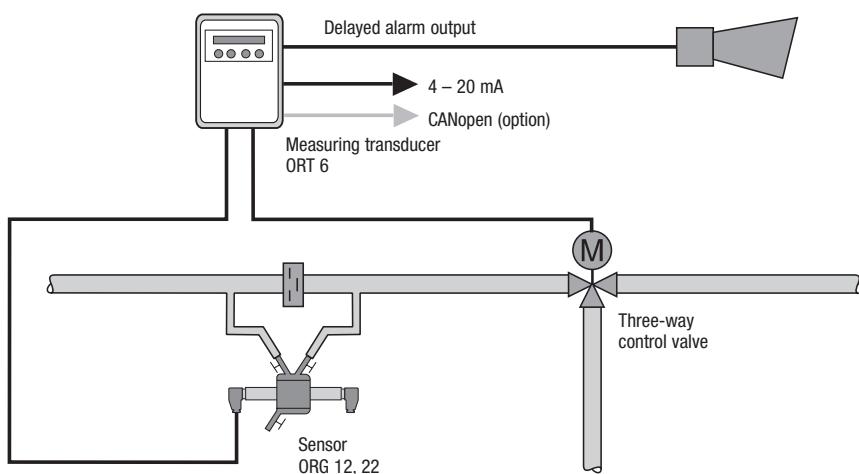
For condensate and feedwater monitoring in steam and (pressurised) hot water plants to detect ingress of acids, alkalies, raw water, dyes, etc.

Technical Data of Conductivity Electrodes

Type	PN	Connection	Service pressure [bar] saturated steam temp.	Integrated temp. sensor	Ambient temperature at terminal	Lengths supplied [mm]	GL	EC
LRG 12-1	10	1 1/4" BSP	10 / 183 °C	●	60 °C	56	–	–
LRGT 16-1 Marine application	40	1" BSP	32 / 238 °C	●	70 °C	200 / 300 / 400	●	–

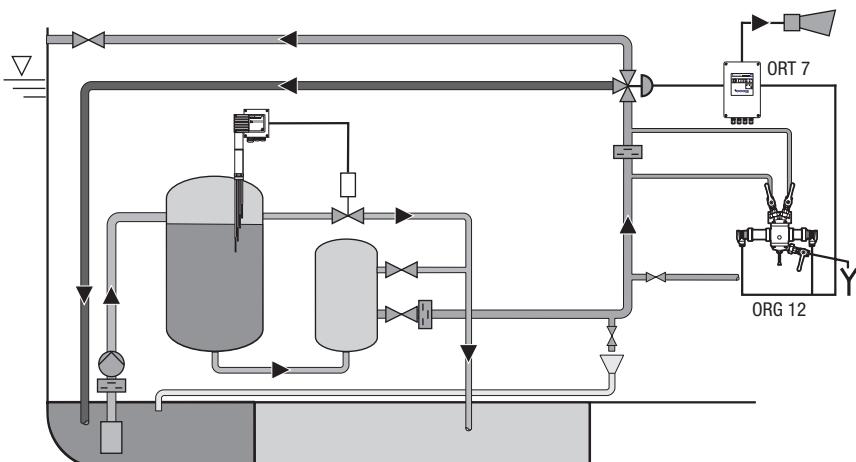
Technical Data of Electronic Control Unit/Controller

Type	Outputs		Mains voltage Standard	Protection	Design				Measuring range	TÜV	EC
	switching	0/4 – 20 mA			a	b	c	e			
LRT 1-5	–	●	230 V	IP 40	–	●	–	–	40 to 10000 µS/cm	–	–
LRT 1-6	–	●	230 V	IP 40	–	●	–	–	0.4 to 100 µS/cm	–	–
URS 2	●	–	230 V	IP 40	–	●	–	–	–	–	–

Condensate monitoring to detect any ingress of oil


Type	Stock code
OR 52/5	4003040
OR 52/6	4003140
Pneumatic three-way control valve PN 16, DN 50 with pilot valve	1500554
Non-return valve DISCO RK 86a, SF 20 mbar PN 40, DN 50	121180182
Optional CANopen interface	.60

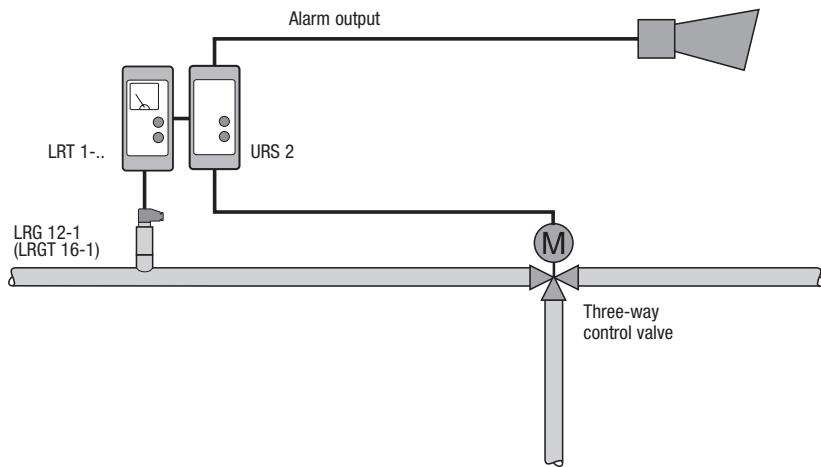
Non-return valve see pages 32 – 41
Type approval
TÜV WÜF 02- 009

Example of a bilge water oil separating system with oil & turbidity detector OR 52 as 15 ppm oil content alarm


Type	Stock code
OR 52-7	400...

Type approval for marine applications
see page 84

Optional
GPS connection
PC interface

Condensate monitoring and conductivity monitoring


Type	Stock code
LRG 12-1	3771040
LRT 1-5	3811441
URS 2	3351041
Pneumatic three-way control valve PN 16, DN 50 with pilot valve	1500554

Purpose and Application of Oil Detector

The oil detector ORGS 11-2 is used for monitoring cooling water to detect any ingress of oil. An alarm and control unit installed downstream of the detector will dump contaminated cooling water, thereby preventing oil contamination of the installation to be cooled.

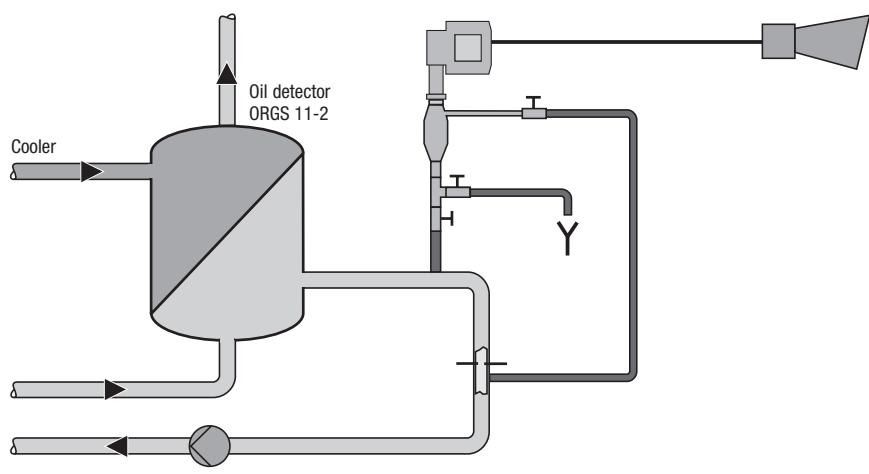
The equipment detects all low-density matter that is insoluble in water, not emulsified, and has a lower electrical conductivity than water. Antirust oils, which emulsify in cooling water, do not trigger an alarm.

The output contact relays of the contamination detector are self-monitoring and of the normally closed type, and will therefore trigger an alarm in the event of a malfunction. Tested and approved by Germanischer Lloyd (GL).

Technical Data

Type	PN	Connection	Material
ORG 11-2	6	Inlet EO-15-L	C 22.8
		Outlet EO-12-L/S	
		Drain EO-15-L	

Cooling-water monitoring with oil detector



Type	Stock code
ORGs 11-2	4041140

Type approval for marine applications
see page 84