MARITIME APPLICATION QUESTIONNAIRE

The details of the questionnaire serve as a basis of the quotation, the project planning and the order confirmation.
Please fill in the following questions completely

Customer

Company: Company name Date: 01/01/2015

Address: Address

Address:

ZIP code: Location:

Country:

Web site: www.

Name:

E-mail:

Phone:

Function: ☐ Engineer ☐ Sales ☐ Purchasing ☐ Other:

Cluster: ☐ Scrubber ☐ SCR ☐ Engine ☐ Integrator ☐ Shipyard ☐ Operator
☐ Owner ☐ Other:

Project

Vessel: Name: IMO no: Gross-Tonnage (GT):
Building no: Yard: Flag state: Class:

Type of vessel: ☐ Ferry ☐ Cruise-ship ☐ Bulker ☐ Container ☐ Tanker ☐ LNG Tanker
☐ Multi-Purpose-Vessel (MPV) ☐ Other:

Operating area: ☐ ECA ☐ Non ECA ☐ Detail:

MARPOL Compliance

Compliance: ☐ LSF (<0.1% S) ☐ Fuel switching ☐ LNG ☐ Exhaust Gas Cleaning system (EGCS)

Applied Reg.: ☐ MEPC.184(59) scheme A ☐ MEPC.184(59) scheme B ☐ NO_x monitoring acc. to NTC 2008
☐ Other:

EGCS aboard: ☐ No scrubber ☐ Dry scrubber ☐ Wet scrubber ☐ Open loop ☐ Closed loop ☐ Hybrid
☐ SCR ☐ Other:

Type and brand of EGCS:

Application

Sample point(s): ☐ Before scrubber ☐ After scrubber ☐ Before SCR ☐ After SCR ☐ No EGCS

Gas components: ☐ $SO_{2,low}$ ☐ $SO_{2,high}$ ☐ CO_2 ☐ NO ☐ NO_2 ☐ O_2 ☐ CO ☐ CH_4 ☐ NH_3 (Note: $SO_{2,high}$, NH_3 and CH_4 only MARSIC300)

Others: ☐ PM ☐ Gas fuel flow ☐ Exhaust flow ☐ Other:

Measuring points: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8

Preferred no. of analyzers: ☐ 1 ☐ 2 ☐ 3 ☐ 4

Notes:

(e.g.: two analyzers needed because of distance of stacks ... located at gallery after scrubber beside engine room ...)

SICK
Sensor Intelligence.

Power and auxiliaries supplies

Power Supply: ☐ 115 V AC ☐ 230 V AC ☐ 400 V AC ☐Other:

☐ 1 Phase ☐ 2 Phases ☐ 3 Phases

☐ N available ☐ PE available

☐ 50 Hz ☐ 60 Hz

I-air supply: ☐ Not available ☐ Available, flow >100 l/h ☐ Available, flow >1.300 l/h Pressure: bar

I-air quality: ☐ P. -size < 1 µm ☐ Content of oil max. 0.1 mg/m^3 ☐ Pressure condensation point below –30 °C

☐ Unknown ☐ Instrument air conditioning unit (option) needed (strongly recommended, in MARSIC300 included)

Site of Equipment Installation (Analyzer)

Location: ☐ Engine room ☐ Stack ☐ Other:

Amb. conditions: ☐ Indoor ☐ Outdoor ☒ Air conditioned location

Amb. temp: Min.: °C Max.: °C Typical: °C
(Use certified range 5 °C ... 45 °C)

Weather proof required: ☐ No ☐ Yes

Description of location:
(e.g.: gallery after scrubber on D-deck beside the SCR (distance to measuring point A~15 m, to measuring point B: 5 m; within starboard exhaust stack ...)

Sampling points

	Point 1	Point 2	Point 3	Point 4.
Location:				
Weather proof required:	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes
Ambient air temp (min-max): (Use certified Range 5 °C ... 45 °C)	°C	°C	°C	°C
Inner stack diameter at sampl. point:	mm	mm	mm	mm
Wall thickness	mm	mm	mm	mm
Insulation width	mm	mm	mm	mm
Sample probe length required:	mm	mm	mm	mm

Sampling transport

Distance sample probe to analyzer: (Including at least 2 m additionally length for bending)	m	m	m	m For MARSIC200 both lengths: (hot / cold)
Measuring gas return:	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes
Length of return path: (Including at least 2 m additionally length for bending)	m	m	m	m
Backpressure:	hPa	hPa	hPa	hPa

Sample Gas Conditions

Gas/operating temperature:	°C	°C	°C	°C
Gas/operating pressure:	hPa	hPa	hPa	hPa
Max. expected humidity:	%-rel.	%-rel.	%-rel.	%-rel.
Dust/solid content:	mg/m^3	mg/m^3		mg/m^3

Measuring system

Preferred technology: ☐ Hot/wet ☐ Cold/dry ☐ No preferences

Preferred modularity: (For details see sketches on page 3) ☐ Compact (1 housing, MARSIC300) ☐ Modular (3 housings, MARSIC200) ☐ No preferences

Adjustment: ☐ Calibration-gas prefer. ☐ Calibration check tool preferred ☐ No preferences

Additonal options (future): ☐ NH_3 ☐ CH_4 ☐ $SO_{2,\ high}$ ☐ Additional sampling points ☐ No preferences

Redundancy needed: ☐ No ☐ Yes

Sampling line: (For details see sketches on page 3)
☐ Long distance line should be **"cold"** (sampl. point --> short heated line -->sampling preparation unit --> long cold line to analyzer)
☐ Complete line from sampling point to analyzer should be **"hot"** (sampling point --> heated line to analyzer)
☐ No preferences

Halogens reduced set up needed: ☐ No ☐ Yes

Data Handling

Interface used: ☐ AO ☐ DO ☐ Modbus TCP ☐ Modbus RTU ☐ PROFIBUS ☐ OPC ☐ Other:

Connectivity to board systems: ☐ No ☐ Yes, using:

Data Acquisition required ☐ No ☐ Yes, main specs:

Maintenance

Maintenance performed: ☐ During sailing ☐ In port ☐ In yard

Maintenance performed: ☐ Crew/engineer ☐ Scrubber manufacturer ☐ Engine manufacturer ☐ Service organization

☐ Other:

Preferred Berth for installation / service: ☐ No ☐ Yes:

Interested in SICK Service: ☐ No ☐ Yes, extent of services:

Interested in installation/ commissioning: ☐ No ☐ Yes

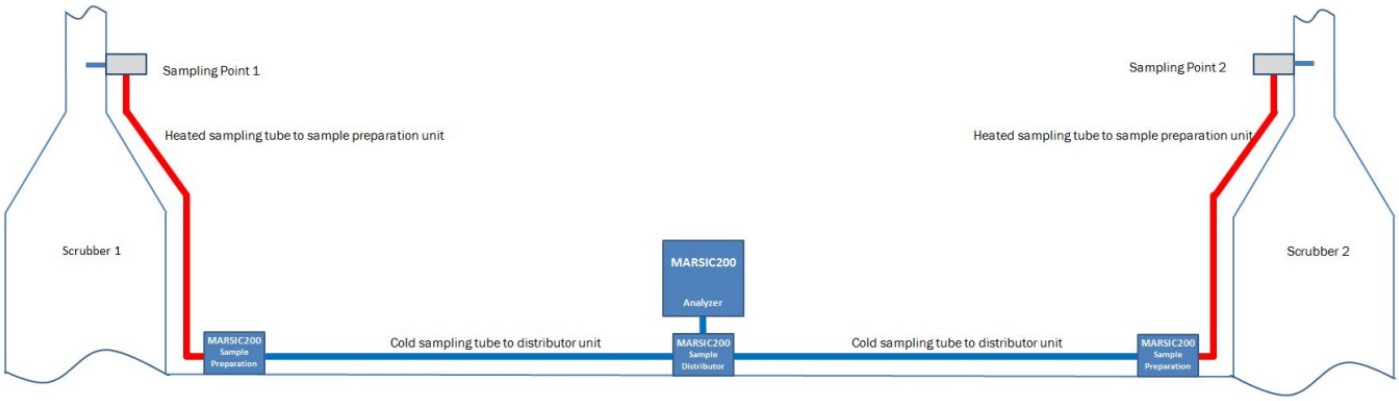
Service Package & Spare

Service kits needed: ☐ “Standard” (includes everything for the "first aid" aboard (fuses, filters, water trap, leak test kit, etc.)

☐ “Advanced” (includes "Standard" as well as measuring modules (DeNO$_x$ /DeSO$_x$, etc.)

Notes

Sketches MARSIC200 + MARSIC300



Cable Configuration MARSIC200