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Page	1 of 2
Document number	MDA/95.E.591
Issue number	3

DESIGN APPRAISAL DOCUMENT

Date	Quote this reference on all future communications
18 August 2000	MDA/00.E.1424/JdB

HIGH LEVEL SENSOR FOR OVERFLOW PROTECTION DIESEL FUEL OIL TANKS ON BOARD I.W.W. VESSELS

This Design Appraisal Document (D.A.D.) supersedes and cancels the previous D.A.D. No. MDA/95.E.591 (Issue No. 2), dated 28 April 1995.

The leaflets, as listed in Appendix A, giving details of the construction and use of an infra red sensor type AF1/S, have been examined and we advise that no objection is seen to its use on Diesel Fuel Oil Tanks on board of Inland Waterways Vessels classed or intended to be classed with the Society, subject to the following comments:-

- In order to prevent discharge of static electricity across the sensor it should be as short as practicable and enter the tank in way of the edge if mounted at top of the tank.

- Consideration has been given also to electric and/or control engineering aspects and we wish to inform you as follows:-

  Aquasant AG, CH-5430, Wettingen CH
  1 Infra red sensor AF1S A-type
  1 Control unit AS-E24
  Certified intrinsically safe EEX 1_a II$_c$
  Observation:- 1. Maximum supply voltage 24 V + 10% on ships DC voltages of 24 V + 30% arise so seperate stabilized power supply shall be fitted and not supplied from ships DC battery network.

  2. Maximum environmental temperature of control unit 55°C so unit shall be fitted in covered area.

  3. Max. capacity of connection cable resp. inductivity C_o 13,5 µf resp. L_o 6 mH shall not be exceeded. So cable length is restricted.

- It is noted that the sensor will be mounted on the tank by means of a 1" threaded coupling. This could be accepted provided a collar and a facing around the hole will be arranged to provide a joint face, alternatively a tapered threaded connection may be used.

- Plate thickness of fuel oil tanks are often relatively thin and threaded connections direct in the tank plating are not acceptable accordingly.

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Continuation:-

- It is further noted that the 1" threaded coupling will be welded on the tank with a single fillet weld which is not favoured but could be accepted provided the fillet weld is of ample size.

- It is recommended to provide the sensor probe with a locking device in order to maintain the adjusted level under all circumstances.

Appendix A

Leaflet No.	Rev.	Title	Appraisal Status
BNK-0011 B	A	Sensor Montage Advies AF1S B-Type with plug connection at top	(N) 18-08-2000
BNK-0011 A	A	Sensor Montage Advies AF1S A-Type without plug connection at top	(N) 18-08-2000

Appraisal Status Key:-

(N) = Noted for information only.

The date is the date with which the document is stamped

J.M. du Bois
Senior Surveyor
Machinery Design Appraisal - Ext. No. 421