

WEMA-SYSTEM™

Tank level sensor, SS-A/20

- *Made of stainless steel, AISI 316*
- *Compatible with WM-2010, WM-2020, WM-2060 and WM-2080*
- *1300-100 ohm resistance range*
- *Can be delivered in lengths according to the customer's needs*



January 2002

Description of the standard tank level sensor SS-A/20

- Stainless steel AISI 316.
- 1 ½” BSP threads for mounting.
- Det Norske Veritas (DNV) approval for use in ships (DNV is a international certification organization).
- NEMKO approval for use in EX-area when using zener-barrier (NEMKO is a certification organization for electrical equipment).
- The sensor is CE marked.
- Cable is approved for ships, and is oil- and weather resistant.
- Adapts to most alarm- and measuring systems concerning characteristics and number of switches.
- Standard resistance range for the sensor is 1300-100 ohm.
- Can be custom made quick and at an affordable price.

The sensor can be produced in different lengths according to the customer’s needs. The maximum length is 3 meters, above that an articulated sensor can be produced.

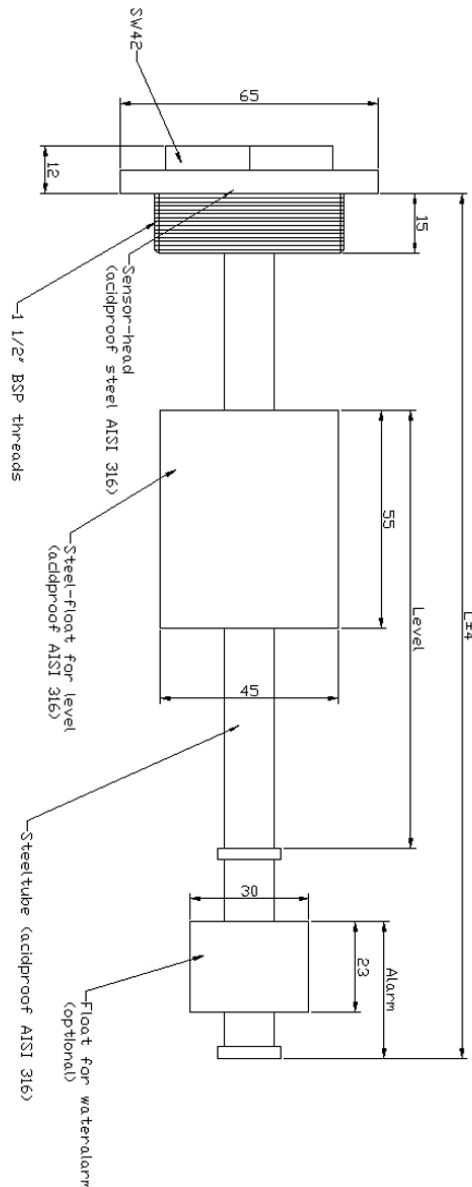
Between the common wire and the sensor conductor the following can be measured:

1. 40 ohm overflow/short circuit in the sensor
2. 100 ohm at 100 % tank level
3. 160 ohm at 95 % ”
4. 220 ohm at 90 % ”
5. 280 ohm at 85 % ”
6. 340 ohm at 80 % ”
7. 400 ohm at 75 % ”
8. 460 ohm at 70 % ”
9. 520 ohm at 65 % ”
10. 580 ohm at 60 % ”
11. 640 ohm at 55 % ”
12. 700 ohm at 50 % ”
13. 760 ohm at 45 % ”
14. 820 ohm at 40 % ”
15. 880 ohm at 35 % ”
16. 940 ohm at 30 % ”
17. 1000 ohm at 25 % ”
18. 1060 ohm at 20 % ”
19. 1120 ohm at 15 % ”
20. 1180 ohm at 10 % ”
21. 1240 ohm at 5 % ”
22. 1300 ohm at 0 % (empty tank).
23. >2000 ohm = disconnection in the sensor.

There are 60 ohm between each 5 % step. 1 % is equivalent to 12 ohm.

When using a zener barrier, POT6 is to be adjusted towards the right, so that a 100 ohm sensor has 6,5V output on J2p3. Zener barrier type: Steel 9001/01-158-150-10. Clamp 2 on zener barrier is connected to the minus input, and clamp 1 is connected to the plus input, clamp 4 is connected to the feeler common wire, and clamp 3 is connected to the feeler sensor conductor.

The sensor can be delivered with water alarm. An extra float is placed on the sensor. There are a normally closed circuit (NC) between the common wire and the water alarm wire when there's no water in the tank.



When connecting the sensor to an instrument in the WM-2000 series, the cables are numerated as follows:

- Cable no. 1 - level - to term. 20
- Cable no. 2 - common - to term. 19
- Cable no. 3 - wateralarm - to term. 18

IMPORTANT

When mounting, the sensor must not be bent, since the electronics inside may be damaged. Check that there's enough space over the tank so that the sensor can be guided straight down into the tank. If the space above the tank is limited, a sensor with a flexi joint is an alternative. Before mounting the sensor, check that the float is undamaged and slides easily. The float has to move unobstructed in the tank without touching bulkheads, support-bars, pipes or similar. Wema cannot be held responsible for damage on the product due to incorrect connection or mounting. If the sensor needs repair, the current payment by the hour will apply.

Wema reserves itself the right to change the specifications of the products.

Products in the WM-2000 series:

- WM-2000 tank alarm
- WM-2010 overflow alarm
- WM-2020 pump automatic
- WM-2060 level control (bar graph display)
- WM-2080 tank level (bar graph display)
- Tank level sensor, stainless steel, 1300-100 ohm

Alternatives for tank level sensor type SS-A

- SS-A level sensor in AISI316 steel.
- 1½" BSP threads.
- PG packing nipple, IP68
- Steel or acrylon-nitril float.
- Output: 1300-100 ohm, 0-180 ohm or other resistance.
- Output: 4-20 mA with use of WM-TRM transmitter
- SS-A sensors are made after customers specifications.
- Available lengths up to 3000 mm. Over 3000 mm when sensor have movable joint.
- The sensor can be delivered with separate switches for level alarms or water-alarm
- Approval from DET NORSKE VERITAS for use in ships.
- Approval from NEMKO for use in EExiallCT4-area.
- Temperature: -40°C to +80°C
- Precision reed placement: ±5 mm
- Max contact effect: 200V, 0,5A, 10W (use of relay is recommended)
- Cable: Polyurethane PUR-S27, RCOP, PFOP or PXXP
- Cable length: 2 meter standard (longer cable on request)

SS-A level sensors:

SS-A/50, 50 measuring levels, 2% accuracy
SS-A/30, 30 measuring levels, 3,3% accuracy
SS-A/20, 20 measuring levels, 5 % accuracy
SS-A/15, 15 measuring levels, 6,7 % accuracy
SS-A/10, 10 measuring levels, 10 % accuracy

QUALITY AND COMMUNICATION

- **WEMA-SYSTEM**™ has since 1994 held a NS-EN ISO 9001 quality system certificate.
- **WEMA-SYSTEM**™'s sensors are tested to function normally at temperatures between -40°C to +85°C.
We perform the tests on our 2 m³ temperature test system continuously.
- *All our sensors are approved for fuels like gasoline/diesel/RME/ethanol or mix of these.*
- *100% final acceptance inspection.*
- *Quick delivery time.*
- *We have our own prototype-section to ensure fast and safe special production.*
- *Documentation, construction, testing and production according to international standards.*

WEMA International AS

JOHAN BERENTSENSVEI 41
NO-5161 LAKSEVÅG
NORWAY

Phone: + 47 55 94 06 66
(head office + 47 55 94 24 00*)
Fax: + 47 55 94 06 67
E-mail: info@wema.no
Homepage: <http://www.wema.no>

