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SENSOR

SENSOR TECHNOLOGY FOR MARINE INDUSTRY APPLICATIONS

PIONEERING PRECISION AND GROWTH

 **senmatic**





MARINE

ENSURING RELIABLE PERFORMANCE SAILING ANY SEA

Senmatic has more than 40 years of experience manufacturing and delivering highest quality temperature sensors for the MARINE industry. The MARINE industry demands sensor technology that works whether your vessel is operating in the tropics or polar regions, to ensure optimal performance of MARINE applications on board all types of ships – sailing any sea.

For all MARINE applications, Senmatic supplies quality temperature sensors, and continuously-optimized sensor solutions to meet the latest MARINE standards and classification requirements. We offer a comprehensive range of temperature sensors for the reliable and energy-efficient operation of your MARINE application. Our sensor range is used by industry-leading manufacturers who depend on reliable performance.

With integrated industrial sensor solutions for a broad range of industry segments, we draw on a wide range of in-house technologies for the efficient and agile development of customized sensor solutions. The technology areas where we excel include mechanical, electronic and software engineering for low and high-temperature sensors, humidity sensors and gas sensors.

At Senmatic, we work using quality management systems and processes that live up to the requirements of global industry leaders and certification for compliance to standards in, for example MARINE, oil & gas and other industries. A Danish company founded in 1975, Senmatic supports our customers worldwide from sales and production facilities in Denmark and China.

Senmatic sensors on board

Senmatic offers a comprehensive range of quality temperature sensors to the leading manufactures of the MARINE industry, who depend on reliable performance.

**Fuel treatment:**

- Sensors for fuel temperature
- Sensors for sludge oil temperature

Engines:

- Sensors for exhaust gas and turbo charges for large bore propulsion engines, medium/high speed engines
- Sensors for cooling water, fuel oil and lube oil
- Sensors for stern tube and bearings

Gearboxes:

- Sensors for lube temperature
- Sensors for bearing temperature
- Sensors for hydraulic oil temperature

Boilers & incinerators:

- Sensors for exhaust gas temperature
- Sensors for steam control


Power packs:

- Sensors for cooling water temperature
- Sensors for hydraulic oil temperature

Air compressors:

- Sensors for air temperature

Tank systems:

- Sensors for oil tank
- Sensors for LNG/LPG tank
- Sensors for pipelines

Pump systems:

- Sensor for inlet & outlet temperature

Propulsion systems:

- Sensors for lube-oil temperature
- Sensors for bearing temperature

Product examples: Customized sensors are our strengths, just ask !

Thermo Couple Sensors

Type MK – Mineral insulated thermocouple for exhaust gas & Turbo charger



- Process connection compression fitting
- Protection sheath Inconel 600 or AISI316
- Cable junction max 200° C (85° C for PVC cable)
- Cable armoured PTFE, glass flex, silicone or PVC
- Measuring point insulated, grounded or exposed.
- Thermocouple according to IEC 584-2 tolerance Cl.2

Type DML – Thermocouple sensor for exhaust gas



- Process connection compression fitting 1/2" BSP, 3/4" BSP, 1/2" NPT or M18x1.5
- Protection sheath Ø10 x 2 mm or Ø12 x 3 mm AISI316
- Exchangeable mineral insulated insert type-MK
- Cable armoured Teflon or glass flex
- Thermocouple according to IEC 584-2 tolerance Cl.2

Type TDMH – Thermocouple sensor for exhaust gas



- Process connection 1/2" BSP or 3/4" BSP
- Machined protection with Ø15 x 1 extension length AISI316
- Exchangeable insert type TM180 Ø8 mm AISI316
- Thermocouple according to IEC 584-2 tolerance Cl.2
- Connection head aluminium alloy
- Connection head IP65
- M20 cable gland

Type DMK – Thermocouple for Exhaust & cooling-water system



- Process connection 1/2" BSP, 3/4" BSP, M18x1.5 or M33x2
- Machined protection sheath AISI316
- Exchangeable mineral insulated insert type-MK
- Thermocouple according to IEC 584-2 tolerance Cl.2

Type TBJ – Thermometer for measuring on bearings



- Process connection 1/4" BSP or 1/8" BSP
- Protection tube Ø6 x 0.5 mm AISI316
- Thermocouple according to IEC 584-2 tolerance Cl.2
- Insulated measuring point

RTD Sensors

Type PMK – Mineral insulated resistance thermometer for exhaust gas & turbo charger



- Process connection compression fitting
- MgO filled protection sheath AISI316
- Cable junction max 200° C (85° C with PVC cable)
- Cable armoured PTFE, glass flex, silicone or PVC
- Pt100 element according to EN60751
- Temperature range: -50° C to +600° C

Type B – Resistance thermometer for gases, vapours and fluids in pipelines, hydraulics etc.



- Process connection 1/2" BSP
- Protection tube Ø9 x 1 with Ø12 extension length AISI316
- Exchangeable insert type MI60 Ø6 mm AISI316
- Pt100 element according to EN60751
- Connection head aluminium alloy
- Connection head IP65
- M20 cable gland

Type S – Resistance thermometer for gases, vapours and fluids in pipelines, hydraulics etc



- Process connection 1/4" BSP, 1/2" BSP or 1/2" NPT
- Protection tube Ø8 x 1 with Ø12 extension length AISI316
- Platinum RTD element according to EN60751
- Connection 4 pole connector
- 3 poles connected to element
- Temperature range: -50° C to +150° C

Type DMH – Resistance thermometer for fluids, exhaust gas & cooling water in diesel engines and pipelines.



- Process connection 1/2" BSP or 3/4" BSP
- Machined protection with Ø15 x 1 extension length AISI316
- Exchangeable insert type MI80 Ø8 mm AISI316
- Pt100 element according to EN60751
- Connection head aluminium alloy
- Connection head IP65
- M20 cable gland

Type BJ – Thermometer for measuring on bearings



- Process connection 1/4" BSP or 1/8" BSP
- Protection tube Ø6 x 0.5 mm AISI316
- Pt100 element according to EN60751



MARINE

Marine LNG/LPG tanks & pipelines

Type NS - Resistance tank thermometer for pipelines and tank system



- Process connection compression fitting 1/8" NPT
- Protection tube annealed tube Ø3.5 AISI316L
- Sensor tip Ø6 AISI 316L
- Pt100 element according to EN60751
- 3 & 4 wire connection single PTFE insulated wires
- Measuring temperature range: -50° C to 250° C

Type NS Cryo - Resistance tank thermometer for pipelines and tank system down to -200° C



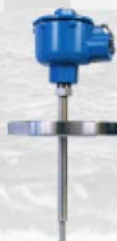
- Process connection compression fitting 1/8" NPT
- Protection tube annealed tube Ø3.5 AISI316L
- Sensor tip Ø6 AISI 316L
- Pt100 element according to EN60751
- 3 & 4 wire connection single PTFE insulated wires
- Measuring temperature range: -200° C to +100° C

Type OPE - Resistance thermometer with Ex-head for hazardous installations



- Process connection 1/2" NPT, 3/4" NPT, 1" NLT, 1/2" BSP or 3/8" BSP
- Protection tube Ø9 x 1 - AISI316
- Exchangeable insert type MMI60 Ø6 mm AISI316
- Pt100 element according to EN60751
- Connection head aluminium alloy - IP65
- Cable gland 1/2" NPT or 1/2" BSP

Type OPX - Resistance thermometer with Ex-head and reduced tip (fast response time) for hazardous installations



- Process connection 1/2" NPT, 3/4" NPT, 1" NLT, 1/2" BSP or 3/8" BSP
- Protection tube Ø12/Ø9 extension length Ø12 AISI316
- Exchangeable insert type MMI60 Ø6 mm AISI316
- Pt100 element according to EN60751
- Connection head aluminium alloy - IP65
- Cable gland 1/2" NPT or 1/2" BSP

Temperature sensor for insulation spaces and double hull in gas tank carriers

- PTFE cable for low temperature
- Simple assembly/installation via welding block.
- Atex approved cable gland for double hull
- Measuring temperature range -200° C to +200° C





ABOUT SENMATIC

Senmatic is a Danish manufacturer specializing in quality integrated industrial sensor solutions, supplying low and high-temperature sensors, humidity sensors and gas sensors for a broad range of industry segments, as well as LED and controller technology for horticulture. We are technology pioneers within mechanical, electronic and software engineering, and we constantly strive to set new standards. With great accuracy, we develop state-of-the-art products and turnkey solutions with superior quality.

Since 1975 we have worked with global industry leaders, delivering sensor solutions tested, certified and compliant to the highest standards. Senmatic employs more than 90 dedicated people and is headquartered in Sønderød on the island of Funen. Senmatic A/S is a company in the Indutrade Group.

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