



HERIANA

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HERIANA
(주)해리انا

Company History

- 2013. 03 Hwajeonsandan Move
- 2010. 04 HERIANA R&D Center Founded.
- 2009. 04 Certified as "INNO-BIZ" company by Small and Medium Business Administration in Korea.
- 2009. 01 Selected as 'Military service appointed company' by 'Military manpower administration'
- 2007. 10 Selected as "A PROMISING COMPANY" by "Industrial bank of Korea".
- 2006. 06 Selected as "Clean Factory" by "Minister of Labor".
- 2005. 05 Selected as "Specialization Company of machinery and Materials" by "Minister of Knowledge Economy".
- 2003. 03 Obtained ISO 9001:2000 certification.
- 2001. 05 Certified by "Ministry of Land, Transport and Maritime Affairs" for "Rudder Angle Indicator".
- 2000. 06 HERIANA Co., Ltd. Founded



Cooperating with us

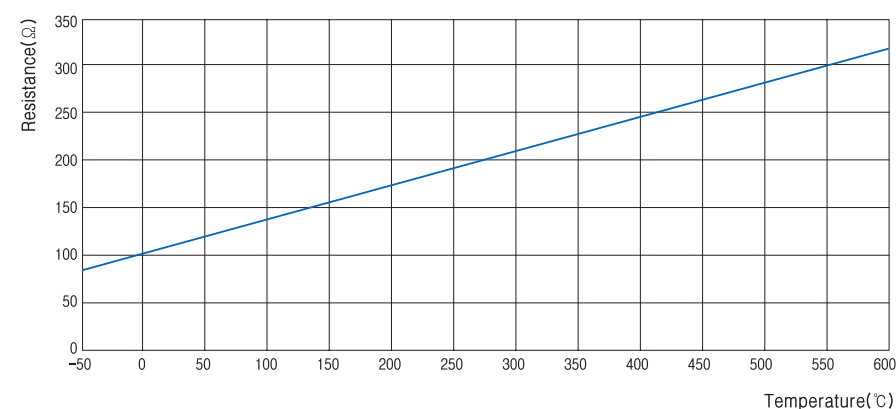
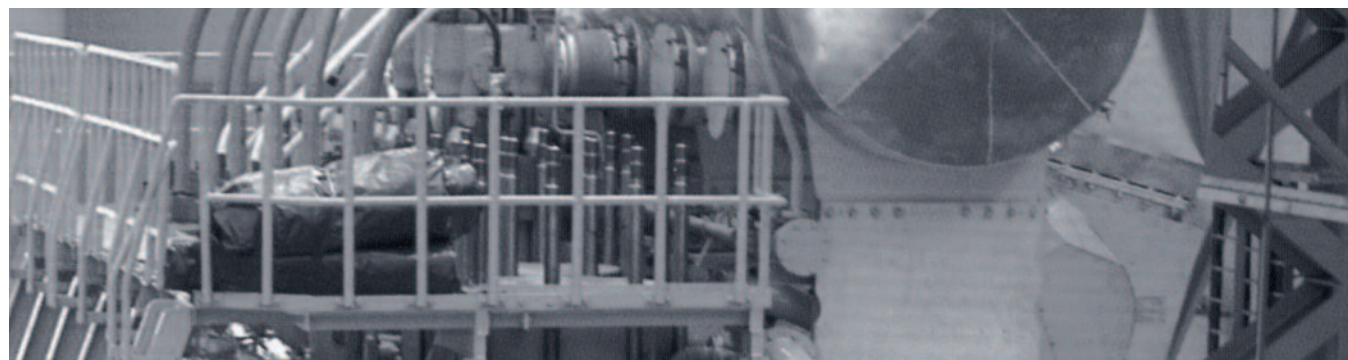


Manufacture Item

- ANEMOMETER & ANEMOSCOPE
- RUDDER ANGLE INDICATOR
- TEMPERATURE SENSOR
- TEMPERATURE TRANSMITTER
- THERMOMETER
- PISTON COOLING OIL DETECTOR
- WATER IN OIL SENSOR
- INDUCTIVE CONDUCTIVITY SENSOR



RESISTANCE BULB TYPE



Resistance bulb offer excellent accuracy over a wide temperature range (from -200 to +850°C). Standard sensors are available from many manufacturers with various accuracy specifications and numerous packaging options to suit most applications. Unlike thermocouples, it is not necessary to use special cables to connect to the sensor.

The principle of operation is to measure the resistance of a platinum element. The most common type (Pt100) has a resistance of 100 ohms at 0°C and 138.5 ohms at 100°C.

The relationship between temperature and resistance is approximately linear over a small temperature range.



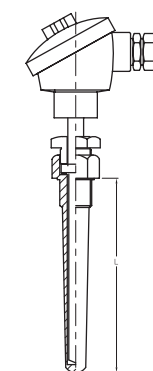
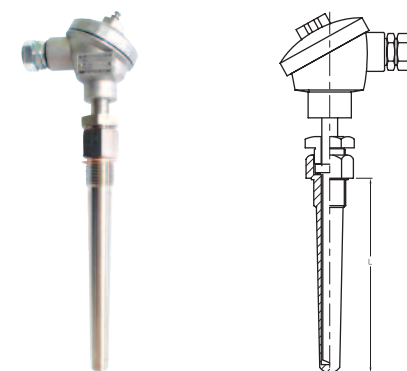
HR101-H

Application

- ▶ For measuring and regulating temperature at any point
 - Gaseous or liquid media

Features

- ▶ Measuring range : 0~600°C
- ▶ Pt100 Resistance element
- ▶ Standard length "L" : 80~300mm



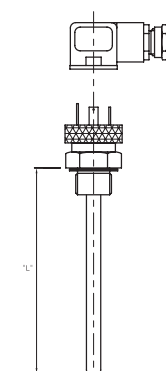
HR101-P

Application

- ▶ For measuring Generator engine
 - Jacket cooling fresh water
 - Fuel oil
 - Lubricating oil

Features

- ▶ Measuring range : 0~200°C
- ▶ Pt100 Resistance element
- ▶ Standard length "L" : 60~80mm



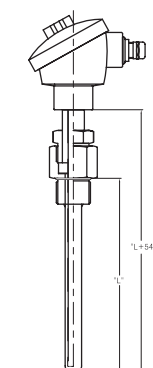
HR101

Application

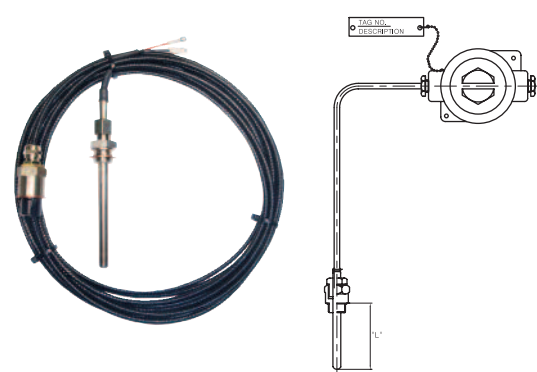
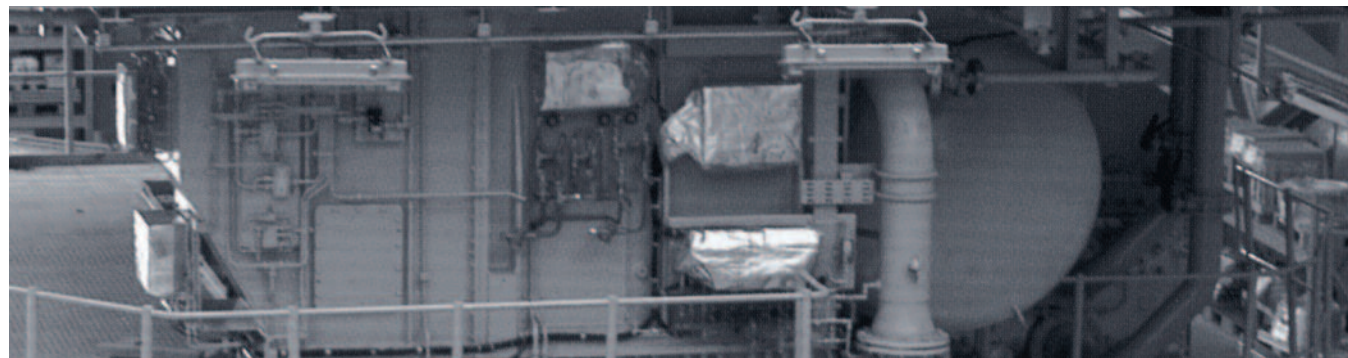
- ▶ For measuring Main engine
 - Jacket cooling fresh water
 - Piston cooling oil
 - Fuel oil
 - Lubricating oil
 - Scavenge Air

Features

- ▶ Measuring range : 0~200°C
- ▶ Pt100 Resistance element
- ▶ Standard length "L" : 80~300mm



RESISTANCE BULB TYPE



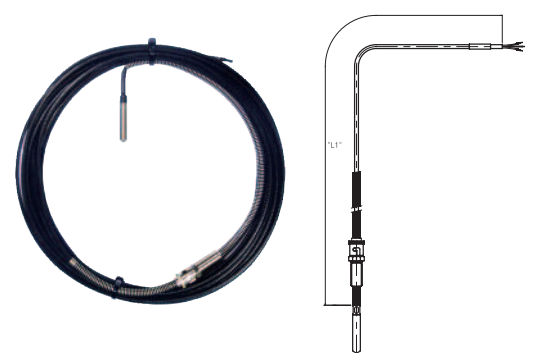
HC301-I/T/P

Application

- ▶ For measuring Inter shaft bearing, Thrust pad, Piston cooling oil

Features

- ▶ Measuring range : 0~200°C
- ▶ Pt100 Resistance element
- ▶ Standard length "L" : 80~200mm



HC301-C

Application

- ▶ For measuring Cam shaft bearing

Features

- ▶ Measuring range : 0~200°C
- ▶ Pt100 Resistance element
- ▶ Standard length "L1" : 4000~12000mm



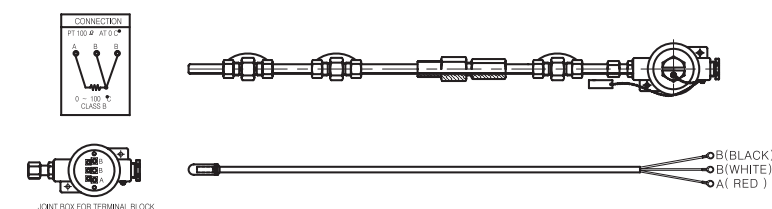
HC301-S

Application

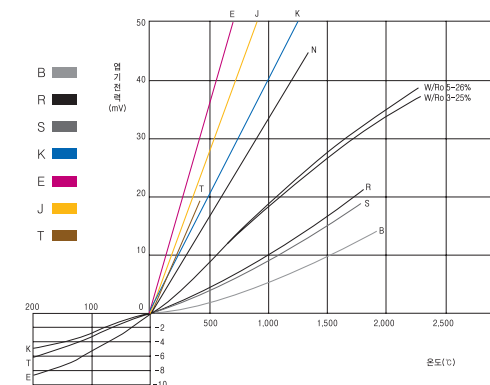
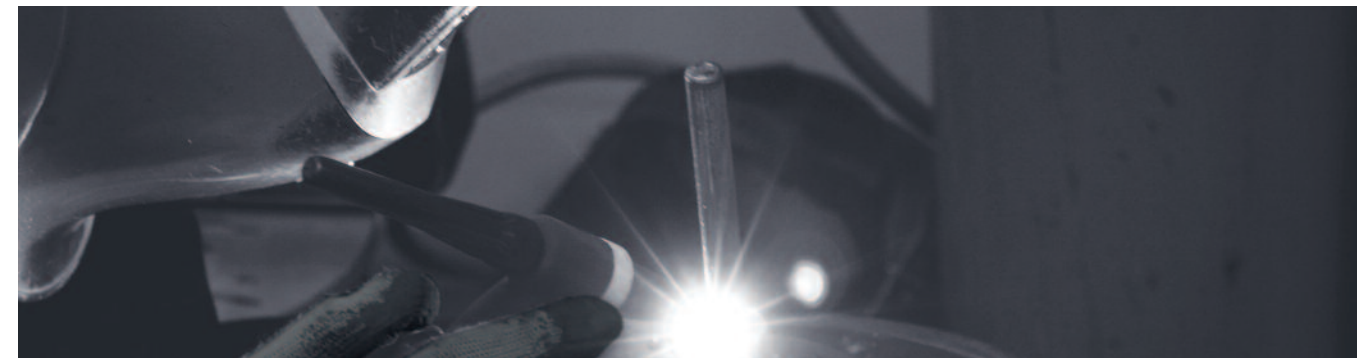
- ▶ For measuring Stern tube sensor

Features

- ▶ Measuring range : 0~150°C
- ▶ Pt100 Resistance element



THERMOCOUPLE

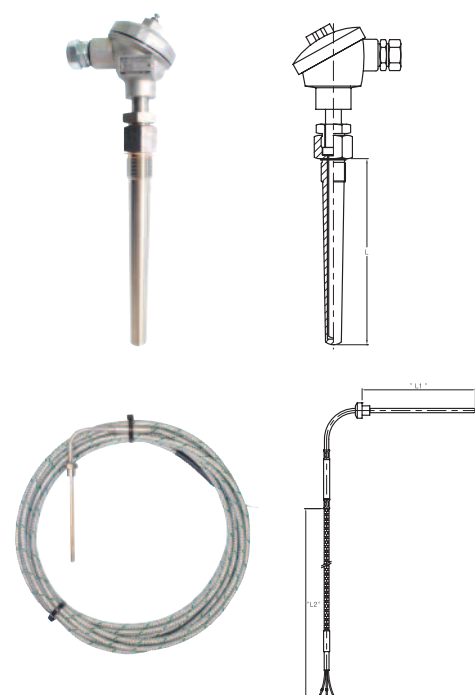
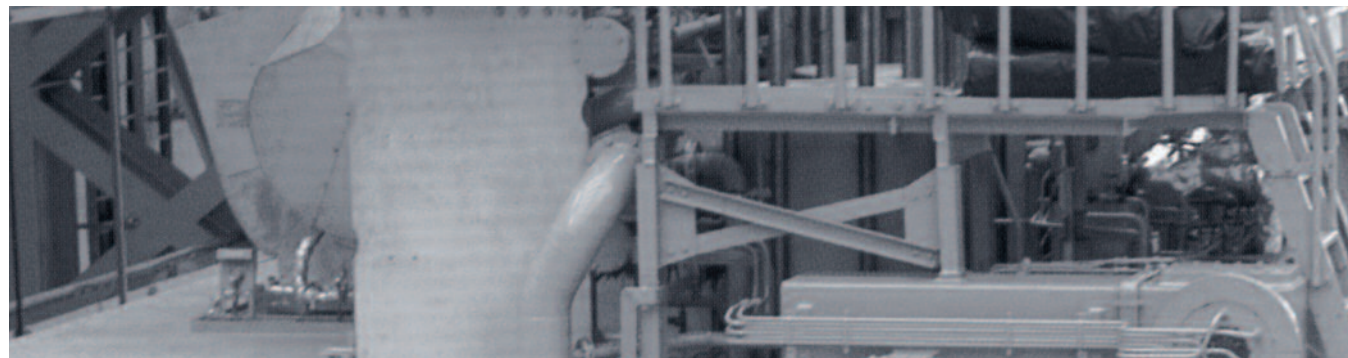


Thermocouple consist of two wires of different metal alloys which are welded together. When heating the welded point, an thermoelectromotive force is obtained. This voltage will increase when the ambient temperature increases. In our company recommends this type where high temperature, combined with considerable stress from vibration are to be measured.

Thermocouple type is named Chromel-Alumel and is equal to type K. The thermoelectric voltage is approximately 40 μ V /°C. Thermocouple is delivered with different amplifier which convert this μ V-signal to 4to 20 mA. Between sensor and amplifier a compensation cable has to be used.

Compensation cable is a flexible cable with the same thermo-electrical characteristics as the element wires. The cable can be used in temperature up to 200°C. Thermocouple elements can be applied for temperature from 0°C to 1000°C.

THERMOCOUPLE



HT201

Application

- ▶ For measuring Main engine exhaust gas stationary and marine

Features

- ▶ Type : K type thermocouple
- ▶ Measuring range : 0~600°C
- ▶ Standard length "L" : 80~300mm

HT201-K-I

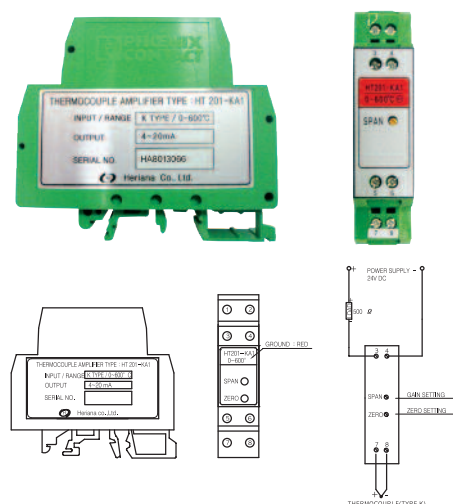
Application

- ▶ For measuring Generator engine exhaust gas

Features

- ▶ Type : K type thermocouple
- ▶ Measuring range : 0~600°C
- ▶ Standard length : L1=45~220mm
L2=4000~12000mm

AMPLIFIER



HT201-KA

Application

- ▶ For measuring Generator engine exhaust gas

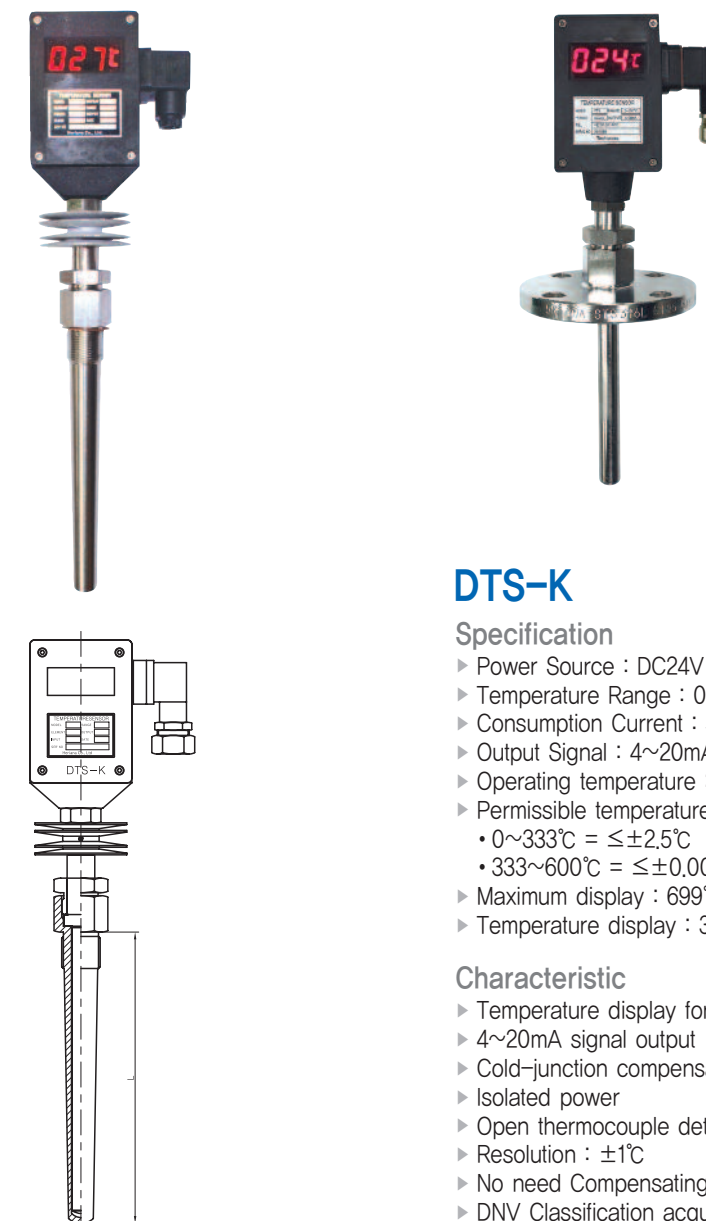
Features

- ▶ Converter thermocouple : type K
- ▶ Signal output : 4~20mA
500Ω on series with 24V DC power supply
- ▶ Power range : DC 19V~31V
- ▶ Operation temperature : 0 to 200°C/ 0 to 600°C
- ▶ Self monitoring : failure and closed circuit
- ▶ Temperature is not display more than setting temperature

DIGITAL TEMPERATURE SENSOR



Digital temperature sensor displays real time temperature. Also This sensor outputs from 4mA to 20mA current. The crew can observe actual temperature at local position. Digital temperature sensor is based on thermocouple K type.



DTS-K

Specification

- ▶ Power Source : DC24V
- ▶ Temperature Range : 0~600°C
- ▶ Consumption Current : 50mA
- ▶ Output Signal : 4~20mA
- ▶ Operating temperature : 0~120°C
- ▶ Permissible temperature error range(IEC60584)
 - 0~333°C = $\leq \pm 2.5^\circ\text{C}$
 - 333~600°C = $\leq \pm 0.0075 \times T [^\circ\text{C}]$
- ▶ Maximum display : 699°C
- ▶ Temperature display : 3-digit

Characteristic

- ▶ Temperature display for Local position
- ▶ 4~20mA signal output
- ▶ Cold-junction compensation
- ▶ Isolated power
- ▶ Open thermocouple detection
- ▶ Resolution : $\pm 1^\circ\text{C}$
- ▶ No need Compensating wire and Amplifier
- ▶ DNV Classification acquisition

TEMPERATURE TRANSMITTER

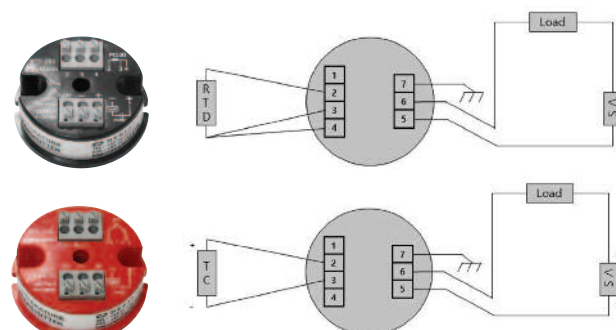


Specifications

- ▶ Power supply : 24 (10~30) Vdc (loop powered)

Element

- ▶ 2-wire/3-wire/4-wire Pt100 at 0°C
- ▶ Thermocouple (K-type)



ELECTRIC PANEL



▲ Fresh Water Generator Panel



▲ Auto Control Panel



▲ Venting Control Panel

SOLAR TEMPERATURE SENSOR



Specifications

Measurement

- ▶ Measurement input : Pt1000 · wire x 2
- ▶ Measuring cycle : 3 s
- ▶ Resolution : 1 °C
- ▶ Current Output Linearity deviation : < 0.1% FS for Transmitter
- ▶ Load $R_a = (U_b - 15V) / 21 \text{ mA}$ for Transmitter

Output Parameter

- ▶ $3\frac{1}{2}$ digits · 7 segments for Display
- ▶ Current loop 4mA~20mA (Default) for Transmitter

Electrical Power

- ▶ Power Supply : Solar cell for Display
- ▶ Power Supply Voltage : DC 24V (18V~30V) for Transmitter



▲ Heater Control Panel



▲ Pump Control Panel

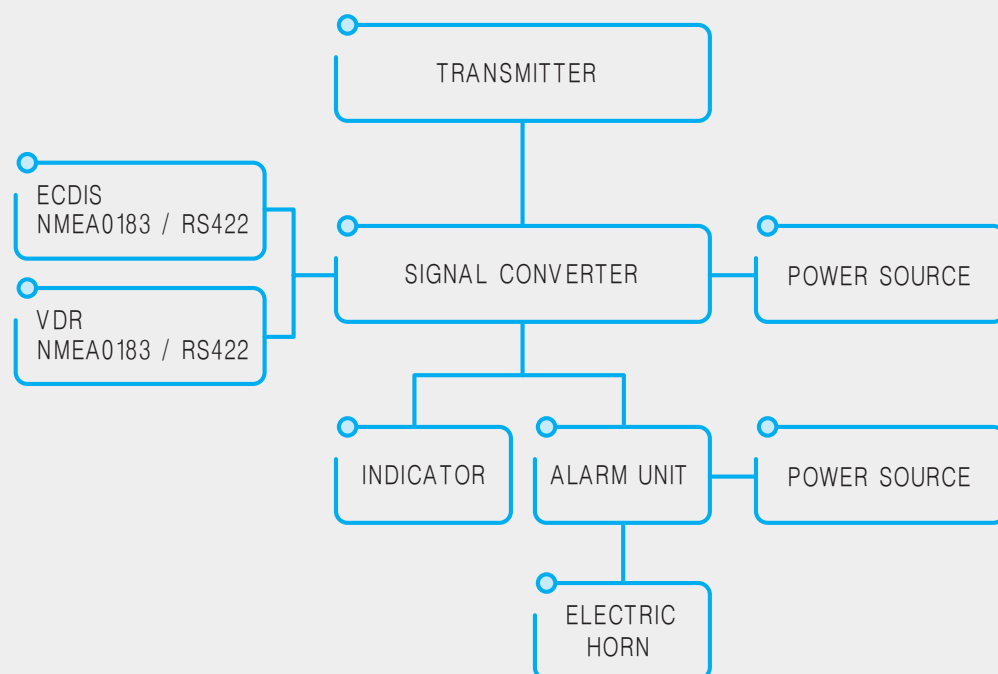


▲ Air Cannon Control Panel

ANEMOMETER & ANEMOSCOPE

Anemometer equipment provides wind direction and speed signal simultaneously from a signal transmitter to the remote indicator observation. Wind speed and direction communication signal is interfaced to VDR, ECDIS, etc.

- Signal interface(option)output signal : NMEA0183(RS422) / 4-20mA / $\pm 10V$
- Interfaced equipment : VDR, ECDIS, etc.



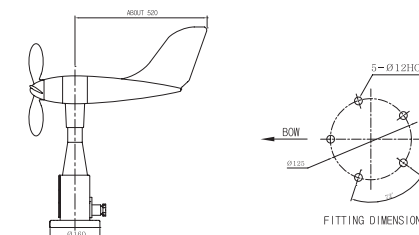
Anemometer & Anemoscope equipment provides wind direction and speed signal simultaneously from a signal transmitter to the remote indicator observation. Anemometer & Anemoscope equipment is divided into transmitter part and indicator part. Transmitter is installed on Radar mast and indicator is installed in Wheel House. The measured Wind speed & Direction are not only displayed on indicator and ECDIS but also stored in VDR. This time, analog signals are converted to NMEA0183/RS422 signal for display or store by Signal converter. Alarm panel is adopted for Exxon-mobil 2010 rule.

TRANSMITTER



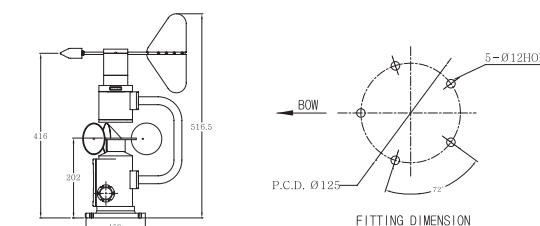
AT-200 [VANE TYPE]

- ▶ Start of wind direction axis : Wind speed more than 1.0% at 90°
- ▶ Power source : AC110V / 220V 50Hz or 60Hz / DC24V
- ▶ Wind speed
Starting wind speed : 1.0% Maximum permissible wind speed : 70%
- ▶ Installation position : Radar mast



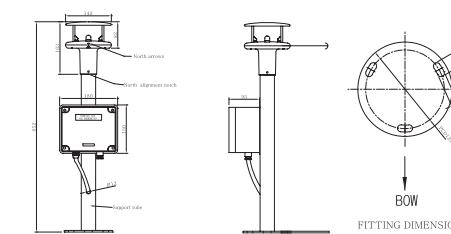
AT-130 [3-CUP TYPE]

- ▶ Start of wind direction axis : Wind speed more than 1.0% at 90°
- ▶ Power source : AC110V / 220V 50Hz or 60Hz / DC24V
- ▶ Wind speed
Starting wind speed : 1.0% Maximum permissible wind speed : 70%
- ▶ Installation position : Radar mast



AT-300 [ULTRA-SONIC TYPE]

- Ultra-sonic type transmitter need not rotation-Part . And Ultra-sonic is used navigation for the Polar regions.
- ▶ Start of wind direction axis : Wind speed more than 0.1%
- ▶ Power source : DC24V
- ▶ Wind speed Range : 0~70% / Communication signal type RS422
- ▶ Starting wind speed : 1.0%
- ▶ Operation Temp Range : -35°C to +70°C
- ▶ Installation position : Radar mast



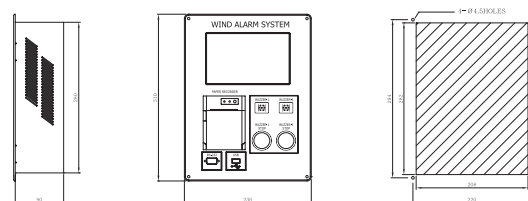
ALARM UNIT & INDICATOR

ALARM UNIT



AC-WAS100

- ▶ Power Supply : DC24V
- ▶ Wind direction : Screen(PORT 0-180°, STBD 0-180°)
- ▶ Wind speed : Screen(0-60% or 0-115Knot)
- ▶ Installation position : Cargo Control Room
- ▶ Alarm : Visual(Screen), Audible(Buzzer)
- ▶ Relay Contact : Two output(Power DC24V / 1.5A)
- ▶ Recoder : Paper(Printer) / Digital(Memory)
- ▶ Accessories : Electric Horn

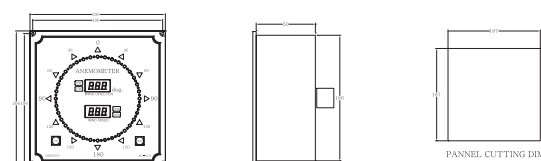


INDICATOR



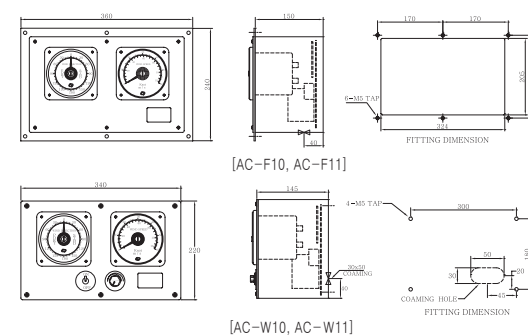
AC-D10

- ▶ Power Supply : DC24V
- ▶ Wind direction : 7 Segment 3 Digits LED Lighting PORT-0-180° STBD-0-180°
- ▶ Wind speed : 7 Segment 3 Digits(0-60% or 0-115Knot)
- ▶ Installation position : Wheel House Gauge Board



AC-W/F [ANALOG TYPE]

- ▶ Wind direction : Synchro motor type(AC110V / 220V 50Hz or 60Hz) / PORT 0-180°, STBD 0-180°
- ▶ Wind speed : Moving-coil voltmeter type / 0-60% or 0-115knot
- ▶ Installation position : Wheel House Gauge Board



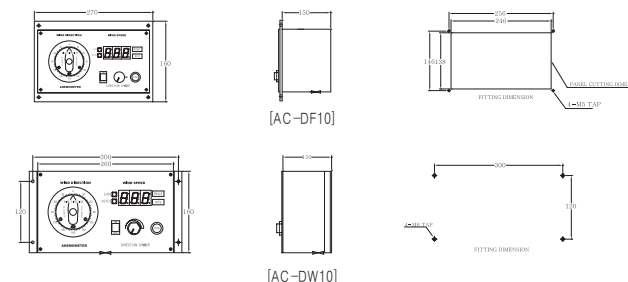
MODEL	DESCRIPTION	WEIGHT
AC-W10	INCLUDED DIMMER & POWER S/W	9.0Kg
AC-W11	SEPARATED DIMMER & POWER S/W	9.0Kg
AC-F10	INCLUDED DIMMER & POWER S/W	9.0Kg
AC-F11	SEPARATED DIMMER & POWER S/W	9.0Kg

INDICATOR

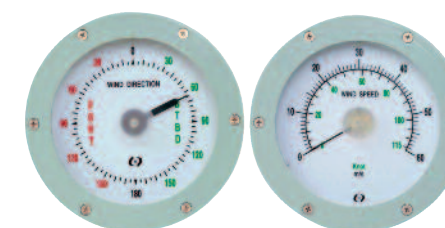


AC-DF/DW 10 [ANALOG AND DIGITAL COMBINED TYPE]

- ▶ Wind direction : Synchro motor type(AC110V / 220V 50Hz or 60Hz) / PORT 0-180°, STBD 0-180°
- ▶ Wind speed : 7Segment 3Digits(0-60% or 0-115Knot)
- ▶ Installation position : Wheel House Gauge Board

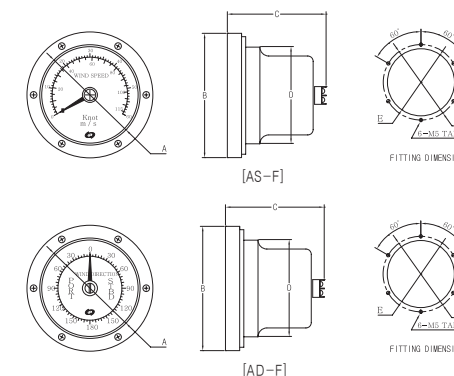


MODEL	DESCRIPTION	WEIGHT
AC-DW10	INCLUDED DIMMER & POWER S/W	9.0Kg
AC-DF10	INCLUDED DIMMER & POWER S/W	9.0Kg



AS-F, AD-F

- ▶ Wind direction : AC110V / 220V 50Hz or 60Hz / DC24V / PORT 0-180°, STBD:0-180°
- ▶ Wind speed : Moving-coil voltmeter type(0-60% or 115knot)
- ▶ Installation position : Wheel House Gauge Board

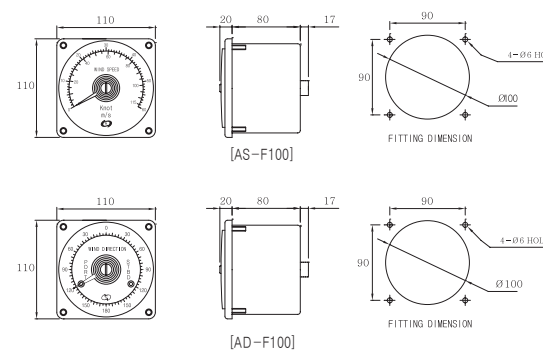


MODEL (AS-F)	DESCRIPTION						WEIGHT
	A	B	C	D	E	F	
150R	ø150	ø200	155	ø166	ø168	ø182	3.5Kg
200R	ø200	ø250	158	ø210	ø212	ø232	4.5Kg

MODEL (AD-F)	DESCRIPTION						WEIGHT
	A	B	C	D	E	F	
150R	ø150	ø200	155	ø166	ø168	ø182	3.5Kg
200R	ø200	ø250	158	ø210	ø212	ø232	4.5Kg

AS-F100, AD-F100

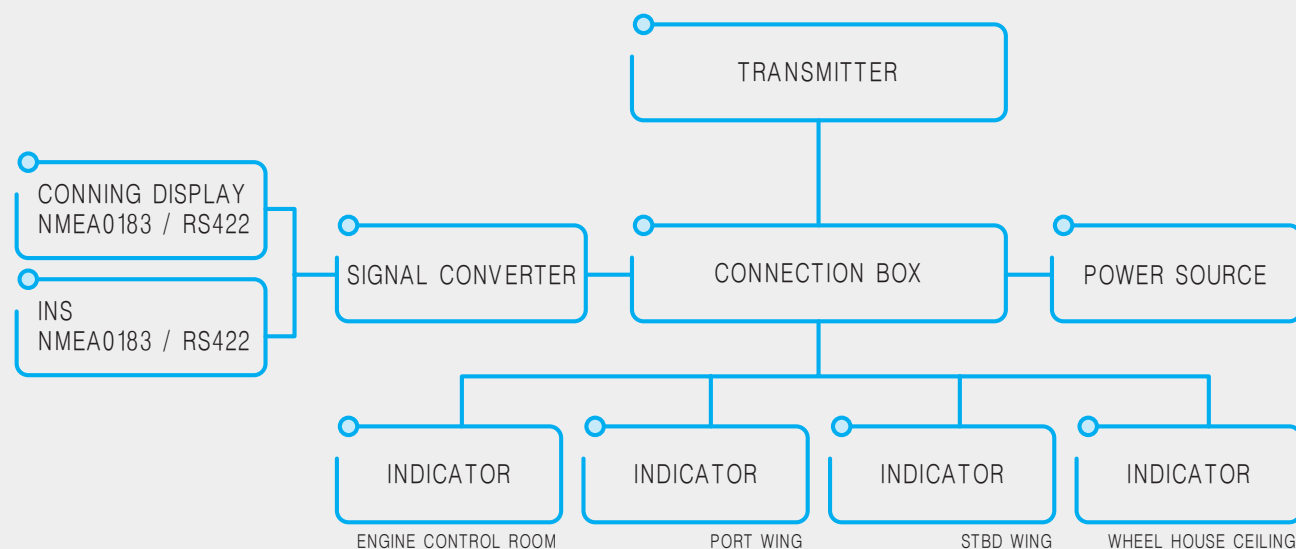
- ▶ Wind direction : Synchro motor type(AC110V / 220V 50Hz or 60Hz) / PORT 0-180°, STBD 0-180°
- ▶ Wind speed : Moving-coil voltmeter type 0-60% or 0-115knot
- ▶ Installation position : Wheel House Gauge Board



RUDDER ANGLE INDICATOR

The electric rudder angle indicating system make use for easily measuring and monitoring the actual angle of rudder-rotation easily. Actually, The rudder angle indicator system is composed of transmitter and indicator. Signal output of Rudder angle indicator is interfaced to VDR, CONNING DISPLAY, etc.

- Signal interface(option)output signal : NMEA0183(RS422) / 4-20mA / $\pm 10V$
- Interfaced equipment : VDR, ECDIS, CONNING DISPLAY, etc.



RUDDER System is installed on ship's bottom-back. This equipment is adjusted the direction of the ship by moving from side to side. When move RUDDER, this moving is showed on a equipment that called RUDDER ANGLE INDICATOR. RUDDER ANGLE INDICATOR are installed on Wheel house, Bridge wing, Engine control room and Steering gear room, etc. By adjusting Autopilot's Wheel in Wheel house, the angle of RUDDER and Connection rod connected RUDDER are rotated. Then RUDDER ANGLE Transmitter also move. Each indicators are moving in these movement. The measured angle values are not only displayed on indicator and ECDIS but also stored in VDR. This time, analog signals are converted to NMEA0183/RS422 signal for display or store by signal converter.

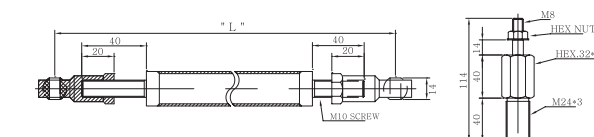
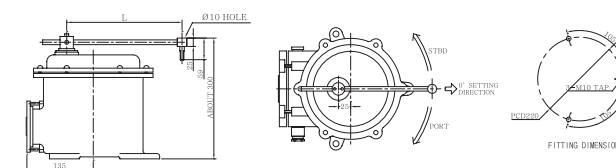
TRANSMITTER & INDICATOR

TRANSMITTER



RT-472

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz / DC24V
- ▶ Accessories : Lever arm, Connection Rod
- ▶ Installation position : Steering gear room

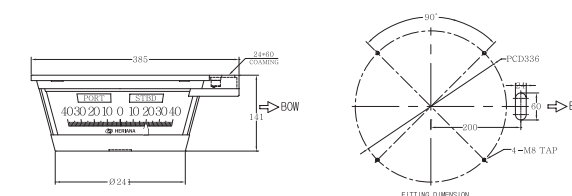


INDICATOR



3C-200

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz / DC24V
- ▶ Accessories : Illumination Lamp, Dimmer S/W
- ▶ Installation position : Wheel House Ceiling

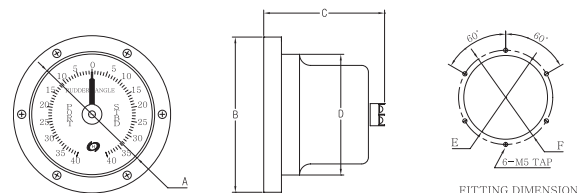


INDICATOR



FE/FL-150, 200 [FLUSH TYPE]

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz / DC24V
- ▶ Accessories : Illumination Lamp, Dimmer S/W
- ▶ Installation position
Wheel House Gauge Board, Bridge Wing console



MODEL	DESCRIPTION						WEIGHT
	A	B	C	D	E	F	
FE200	ø200	ø250	158	ø210	ø212	ø232	3.5Kg
FL200	ø200	ø250	158	ø210	ø212	ø232	3.5Kg
FE150	ø150	ø200	155	ø166	ø168	ø182	2.5Kg
FL150	ø150	ø200	155	ø166	ø168	ø182	2.5Kg

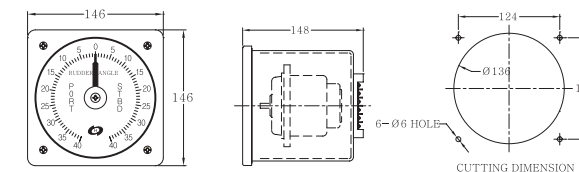
INDICATOR



MODEL	DESCRIPTION	WEIGHT
FL-130	SEPERATED DIMMER S/W	2.0Kg
FE-130	NOT INCLUDED DIMMER S/W	2.0Kg

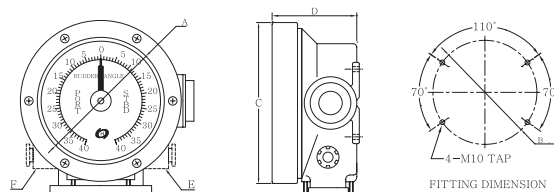
FL/FE-130 [FLUSH TYPE]

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz / DC24V
- ▶ Accessories : Illumination Lamp, Dimmer S/W
- ▶ Installation position : Engine Control Room, etc.



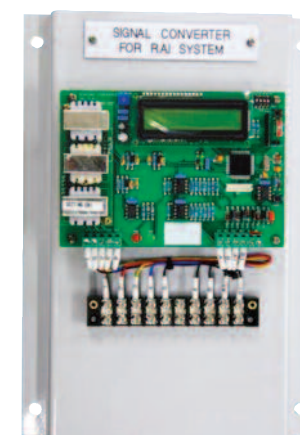
SD-200 [SURFACE TYPE]

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz / DC24V
- ▶ Accessories : Illumination Lamp, Dimmer S/W
- ▶ Installation position : Bridge Wing, Steering Gear Room



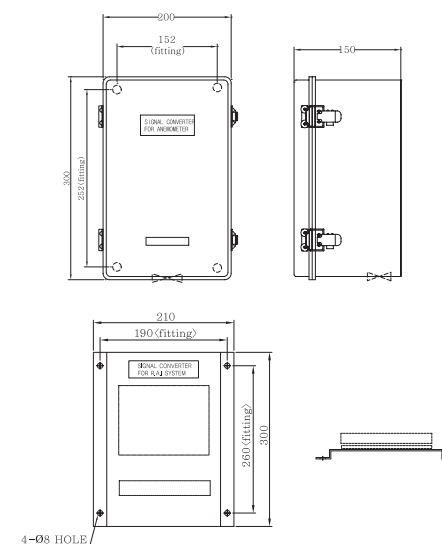
MODEL	DESCRIPTION						WEIGHT
	A	B	C	D	E	F	
SD200	ø200	ø220	ø254	142	20c	20c	4.0Kg

SIGNAL CONVERTER



SC-230 / SC-P230

- ▶ Power Source : AC110V / 220V 60Hz or 50Hz
- ▶ Output Signal : NMEA0183(RS422)
- ▶ Installation position : Wheel House Console



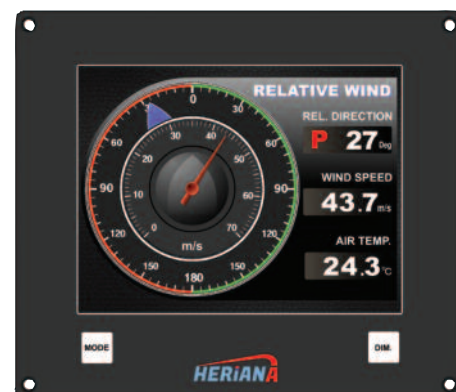
DIGITAL INDICATOR

WIND SPEED & DIRECTION INDICATOR



8 inch LCD Indicator

- ▶ Size : 230×195
- ▶ LCD display : 8 inch
- ▶ Power : DC24V/400mA



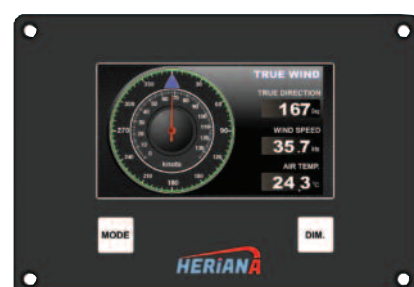
8 inch LCD Indicator

- ▶ Size : 230×195
- ▶ LCD display : 8 inch
- ▶ Power : DC24V/400mA



4.3 inch LCD Indicator

- ▶ Size : 170×122
- ▶ LCD display : 4.3 inch
- ▶ Power : DC24V/300mA



4.3 inch LCD Indicator

- ▶ Size : 170×122
- ▶ LCD display : 4.3 inch
- ▶ Power : DC24V/300mA

DIGITAL INDICATOR

RUDDER ANGLE INDICATOR



8 inch LCD Indicator

- ▶ Size : 230×195
- ▶ LCD display : 8 inch
- ▶ Power : DC24V/400mA



4.3 inch LCD Indicator

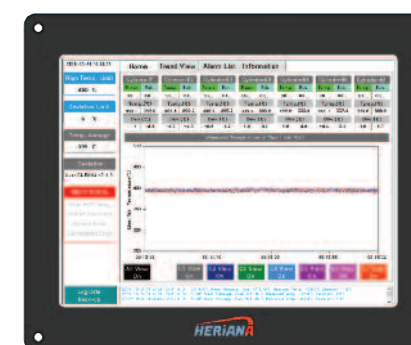
- ▶ Size : 170×122
- ▶ LCD display : 4.3 inch
- ▶ Power : DC24V/300mA



7 inch Panorama LCD Indicator

- ▶ Size : 320×320×155
- ▶ LCD display : 7 inch×3
- ▶ Power : DC24V/900mA

OTHER MONITORING



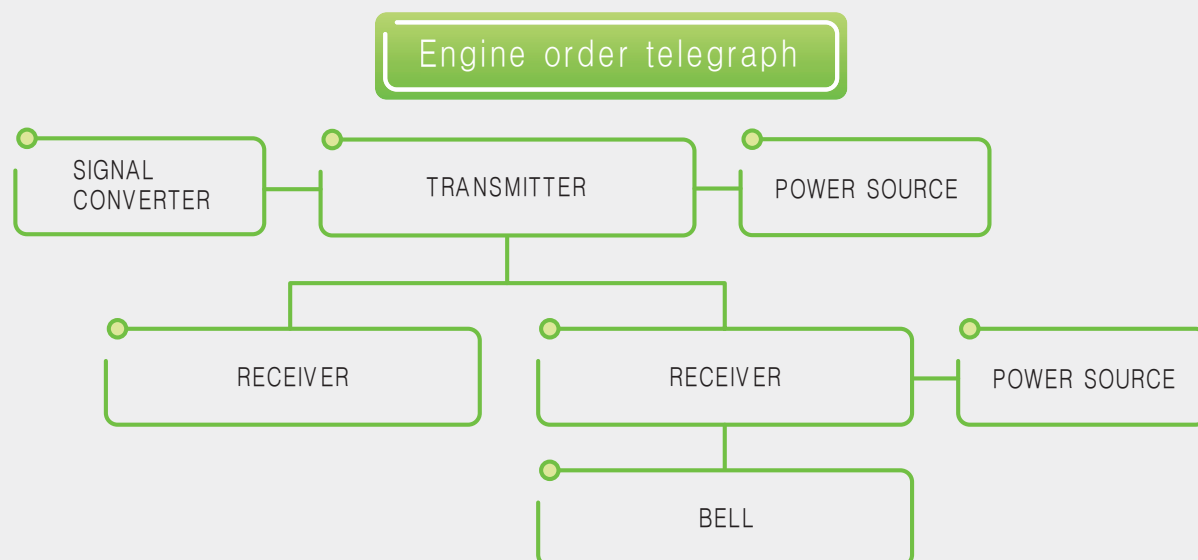
- ▶ Size : 300×257
- ▶ LCD display : 12.1 inch
- ▶ Power : DC24V/1A



- ▶ Size : 300×257
- ▶ LCD display : 12.1 inch
- ▶ Power : DC24V/1A

ENGINE ORDER TELEGRAPH

Engine telegraph provides a communication order for main engine driving among other positions.

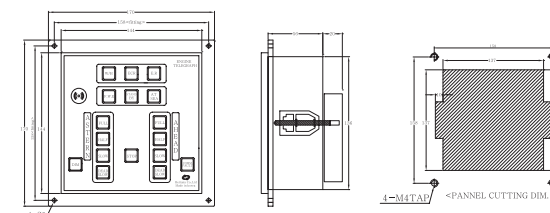


Engine order telegraph is used in engine driving, provides a communication between Bridge and other control positions, ordering engine velocity and motions. Engine order telegraph does not directly drive engine but communicate orders for further operating engine. Engine order telegraph system can be divided in two parts, transmitter and receiver and has two way communication operated by changeover switches.

PUSH BUTTON TYPE

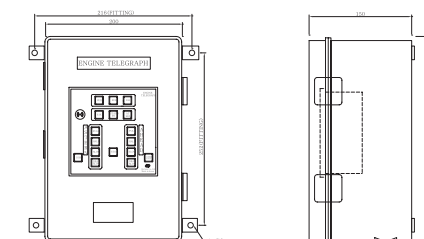
EP-040/041 [FLUSH TYPE]

- ▶ Communication : One-way system(optional : Two - way)
- ▶ Input Source : DC24V
- ▶ Output Signal : NMEA0183(RS422)
- ▶ State Alarm Device : Buzzer
- ▶ Installation position :
Wheel House Console / Engine Control Room



EP-042 [WALL MOUNT TYPE]

- ▶ Communication : One-way type system(optional : Two - way)
- ▶ Input Source : DC24V
- ▶ Output Signal : NMEA0183(RS422)
- ▶ State Alarm Device : Bell
- ▶ Installation position : Engine Machinery Side

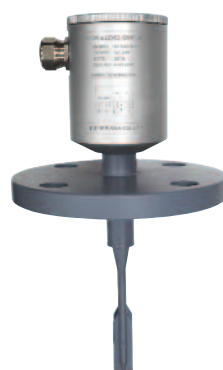


FLOW & LEVEL SWITCH



HF-501 Flow Switch

HF-501 can detect Piston Cooling Oil's flow condition and level status. Capacitance will fluctuate with level condition.



HF-503 Flow Switch

HF-503 can detect Piston Cooling Oil's flow condition and level status. Vibration will fluctuate with level condition.



HF-502 Combined Flow Switch & Temperature Sensor

HF-502 is integrated with Oil flow sensor and oil temperature sensor, can detect oil flow condition and level, also can transmit fluid state and level control signals to outside and display oil flow conditions as LED lights on the Junction Box.



HF-504 Level Switch

HF-504 can detect Lubrication Oil's flow condition and level status. capacitance will fluctuate with level condition.



HF-505 Floating type Level Switch

WATER IN OIL DETECTOR INDUCTIVE CONDUCTIVITY SENSOR

WATER IN OIL DETECTOR



SENSOR



INDICATOR

Water In Oil Detector

This Water In Oil (HW-2100) is the equipment to measure the Relative Content of Water in Fuel Oils and Lubricant Oils used in Maritime Engines. HW-2100 is installed at the outlet pipe of a purifier (Separator) and measure relative content of water in purified oil. The measured relative content of water is displayed on the indicator in real time. HW-2100 is composed of a sensor module, an indicator and a cable assembly.

The measured result by the sensor module is transferred to the indicator by RS485.

Specification

- ▶ Measuring Range : 0 ~ 1.60% (Relative Content of Water)
- ▶ Measuring Error : 2.5% Full Scale
- ▶ Display Resolution : 0.01%
- ▶ Response time : 5 sec.
- ▶ Output Signal : 4~20mA / Alarm (Dry-contact, COM-NO, 32V/1A) / RS485, RS422, CAN Communication (Option)
- ▶ Sensor Module Operating Temperature Range : 0°C ~ 110°C
- ▶ Power Supply : DC 24V
- ▶ Alarm Limit : Default 0.3%, User-settable
- ▶ Operating Temperature : 0°C ~ 110°C
- ▶ Ingress Protection : IP 65

INDUCTIVE CONDUCTIVITY SENSOR



ICS-1000



ICS-2000

Inductive Conductivity Sensor

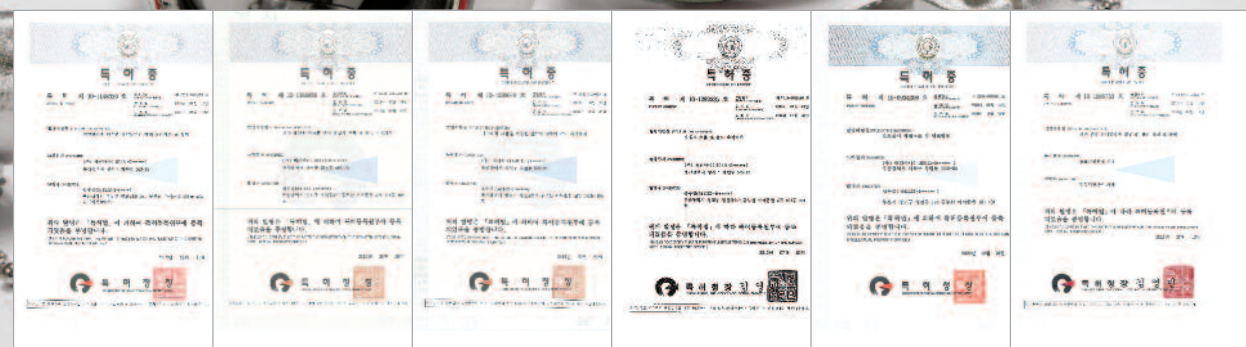
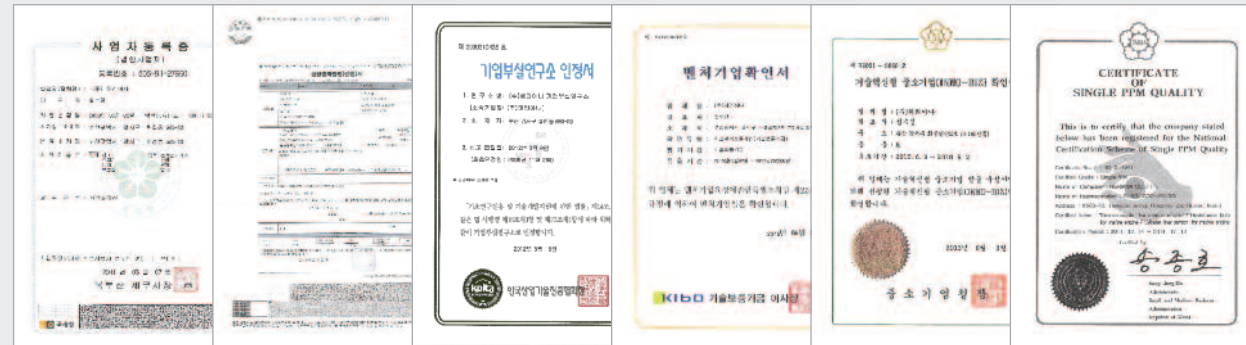
This Inductive Conductivity Sensor is the equipment specially designed to measure the conductivity in the solution. Inductive Conductivity sensor measures conductivity of seawater flowed through the certain pipe. The result of measurement(Conductivity and Temperature) is indicated on the indicator. The indicator outputs conductivity and temperature as the Current of 4mA~20mA.

Data Communication is using RS485(NMEA0183) between ICS-1000 sensor and ICS-1000M indicator.

Specification

- ▶ Measurement Range : 0 mS/cm ~ 100 mS/cm
- ▶ Measurement Error : ≤ 5% Max of measured value including Temperature Compensation
- ▶ Current Output Error : ≤ 2% of full measured range
- ▶ Repeatability : ≤ 1% of measurable full scale
- ▶ Arrival Time for Target Temp : ≤ 10 minutes
- ▶ Output Signal : Current 4mA ~ 20mA (Default) / RS485 Communication (Option)
- ▶ Operating Temperature : -10°C ~ 70°C
- ▶ Operating Pressure range : 10 bar Max.
- ▶ Ingress Protection : IP65
- ▶ Electromagnetic Compatibility : Satisfied EN61326 rule

Certificate



Work Procedure Diagram

