

# TOUCH SCREEN TYPE CARGO PUMP TEMPERATURE MONITORING SYSTEM

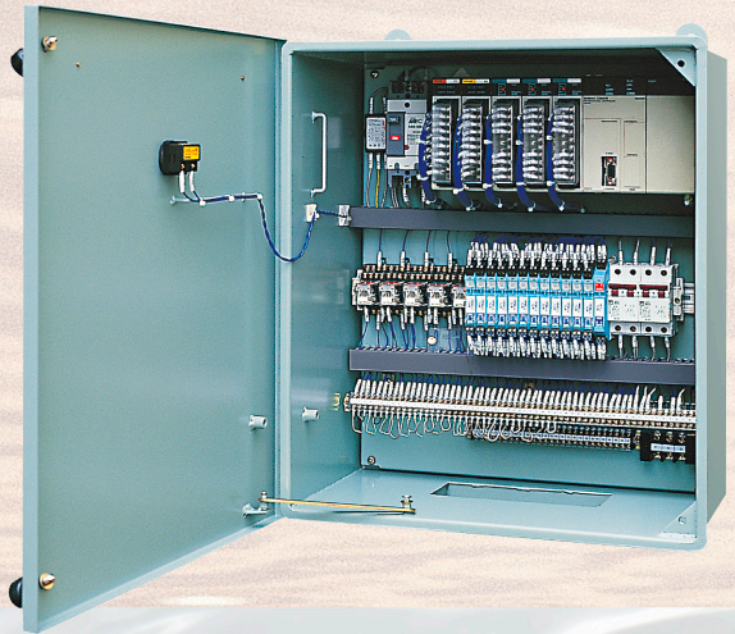
TOCAS - 2000S



**TOTAL CONTROL CO.**

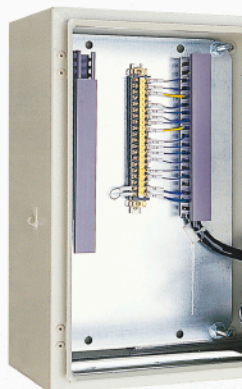
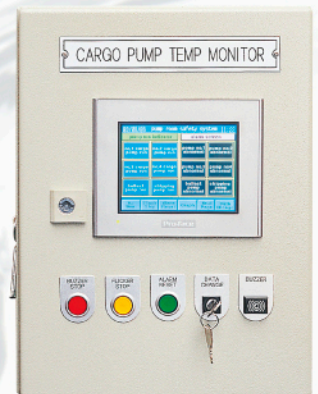
Marine Automation Control System & Electric System Repairs

# CARGO PUMP TEMPERATURE MONITORING SYSTEM TOCAS-2000S



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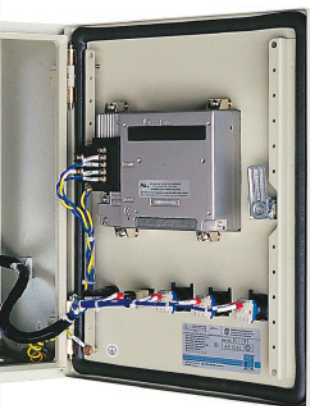


## General Description

On the basis of the new IMO REGULATION(SOLAS CHAPTER II-2/REG. II-2/1.6.7 & 4.5.10), the pump room protection devices should be installed tankers and oil/chemical tankers constructed before July. 2002 which convey liquid freight and in which the oil tank weighs more than 500 tons and has a flash point below 60 degrees celsius. This applies until dry docking July.1.2002, but installation should be completed by July.1.2005, at least. Therefore in order to comply with new IMO ruling, we are in the process of manufacturing and installing the pump room protection devices. The touch screen type cargo pump temperature monitoring system is designed to monitor temperature for all the required monitoring points of the cargo pumps including ballast pump and stripping pumps to meet new IMO REGULATION pertaining to pump room provisions for tankers. RTD sensors will be fitted to the cargo pumps, stripping pumps and ballast pumps for monitoring FWD bearing, AFT bearing, casing, intermediate shaft bearing and bulkhead shaft gland.

## Specification

Model	TOCAS-2000S-n (n means the number of monitoring point)
Sensor	RTD, TC
Measuring Range	0°C ~ 100°C
Accuracy	±1°C
Display	Touch screen LCD display unit with multipages.
Function	Multiple pages on the touch screen Temperature indication and location Audible and visual alarm External alarm and trip relay output
Operating Condition	Temp sensors : -50°C ~ +150°C Monitor Panel Interface unit : -10°C ~ +55°C
Power Source	24, 110, 220V
Ambient Temp	0°C ~ 55°C
Maximum Humidity	90%
Bearable Vibration	2 ~ 14.5Hz Amplitude ±1.0mm 14.5 ~ 80Hz Acceleration
Power Demand	Less than 400W
Weight	Touch screen monitor panel : 10Kg Interface unit panel : 30Kg
Dimension	Touch screen monitor panel : 300×400×170(mm) Interface unit panel : 485×545×250(mm)



## Principle of Operation

TOCAS-2000S Touch screen type temperature monitoring and alarming system is design for continuous temperature monitoring for heat producing equipments(i.e cargo pumps). The temperature sensors send signal to the PLC(programmable logic controller) directly and communication between LCD display and PLC is carried out by RS422 cable. The touch screen LCD display unit worked as a gateway to send the data to a programmable logic controller which function as alarm annunciation and pump tripping. If the temperatures exceeds preset temperatures(high alarm), high temp alarm lamp flickers and common buzzer & external control circuit will be activated. Acknowledgement on the unit causes the alarm lamp to remain lighted and will return to normal dark when the temperatures returns below the set point.

## Features

- A user friendly touch screen LCD display unit with multi-window
- Using programmable controllers for data pooling, monitoring, alarming and tripping function.
- Easy installation and maintenance
- Intrinsically safe to BASEEFA
- Low cost
- Easy exchange of data

## The touch screen type Cargo pump temp monitoring system



## Application

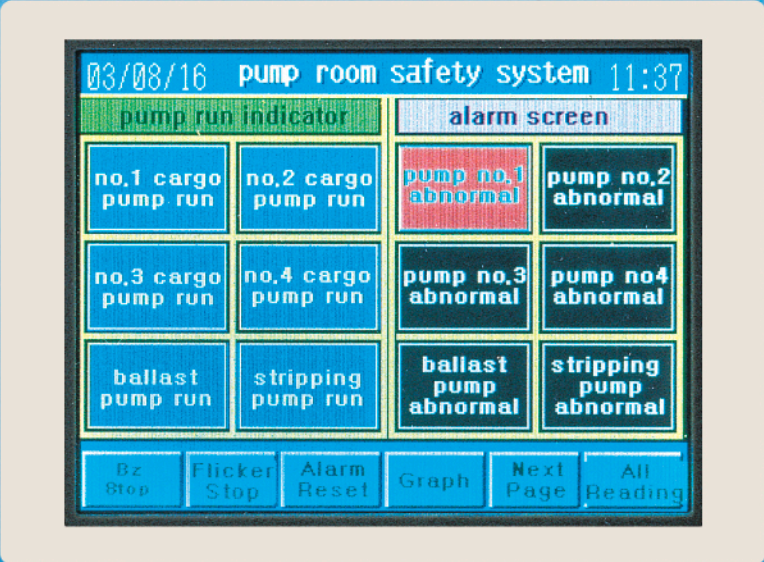
Touch screen type temperature monitor is used in marine and offshore installation especially for pumps in the cargo pump room. Temperature monitoring and alarming in a hazardous location is necessary on heat-producing equipment so as to reduce the possibility of combustion

# DISPLAY OF TOUCH SCREEN LCD

## Main Page

Upon turning on the panel, the touch screen monitor will show the main page. The main page consists of the following information.

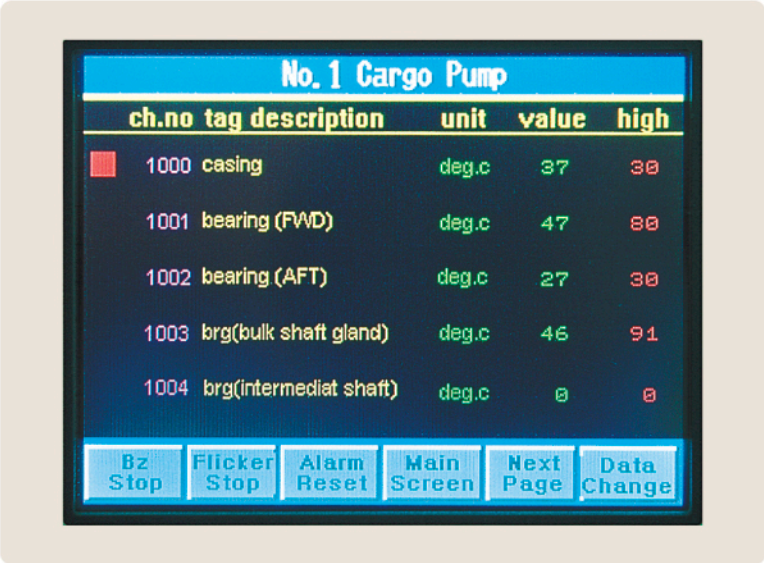
- Status of individual pump
- Button for buzzer stop
- Button for flicker stop
- Button for alarm reset
- Button for graph
- Button for next page
- Button for all readings



## Pump Page

When the individual pump button is pressed, the touch screen will show individual pump page. This pump page will show the location and reading of all the sensors on this particular pump and status of alarm for individual sensors. The pump page consists of following information.

- Readings of individual pumps
- Button for buzzer stop
- Button for flicker stop
- Button for alarm reset
- Button for main screen
- Button for next page
- Button for data change

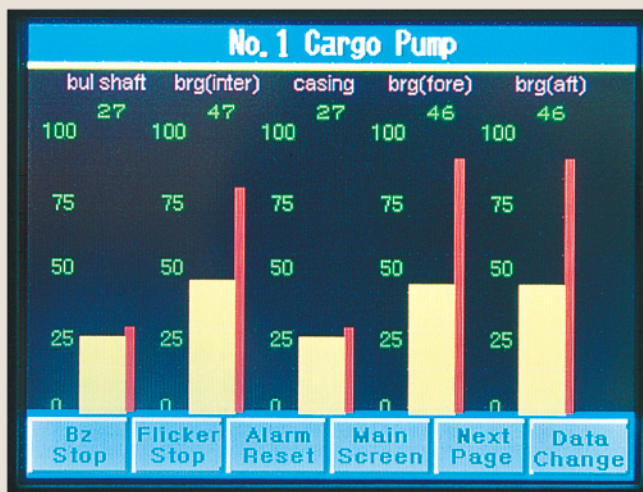


- 1) When the button for main screen is pressed on the pump pages, graph pages and data change pages, the screen will return to main page.
- 2) When the button for next page is pressed on the each pages, the screen will show the next page.

## All Page

When the button for all readings is pressed on the main page, the touch screen will show all the readings of individual pumps.

	COP#1	COP#2	COP#3	BALLAST
BRG(FWD)	39	70	117	39
BRG(AFT)	71	116	118	71
CASING	101	40	70	101
INT.SHA	70	39	71	70
BULSHA	70	39	71	70



## Graph page

When the button for graph page on the main page, the touch screen will show bar graph readings of individual pump.

## Data change page

When the button for data change is pressed on the main page, pump page, graph page and all page, the touch screen will show data change page. High, Low alarm setting and alarm repose are available on the data change page.

03/08/16      Data Change      11:36

CHANNEL NO : 1000      NORMAL

NAME OF MEASURING POINT : casing sensor

ALARM LIMIT LOW : High Up/Down

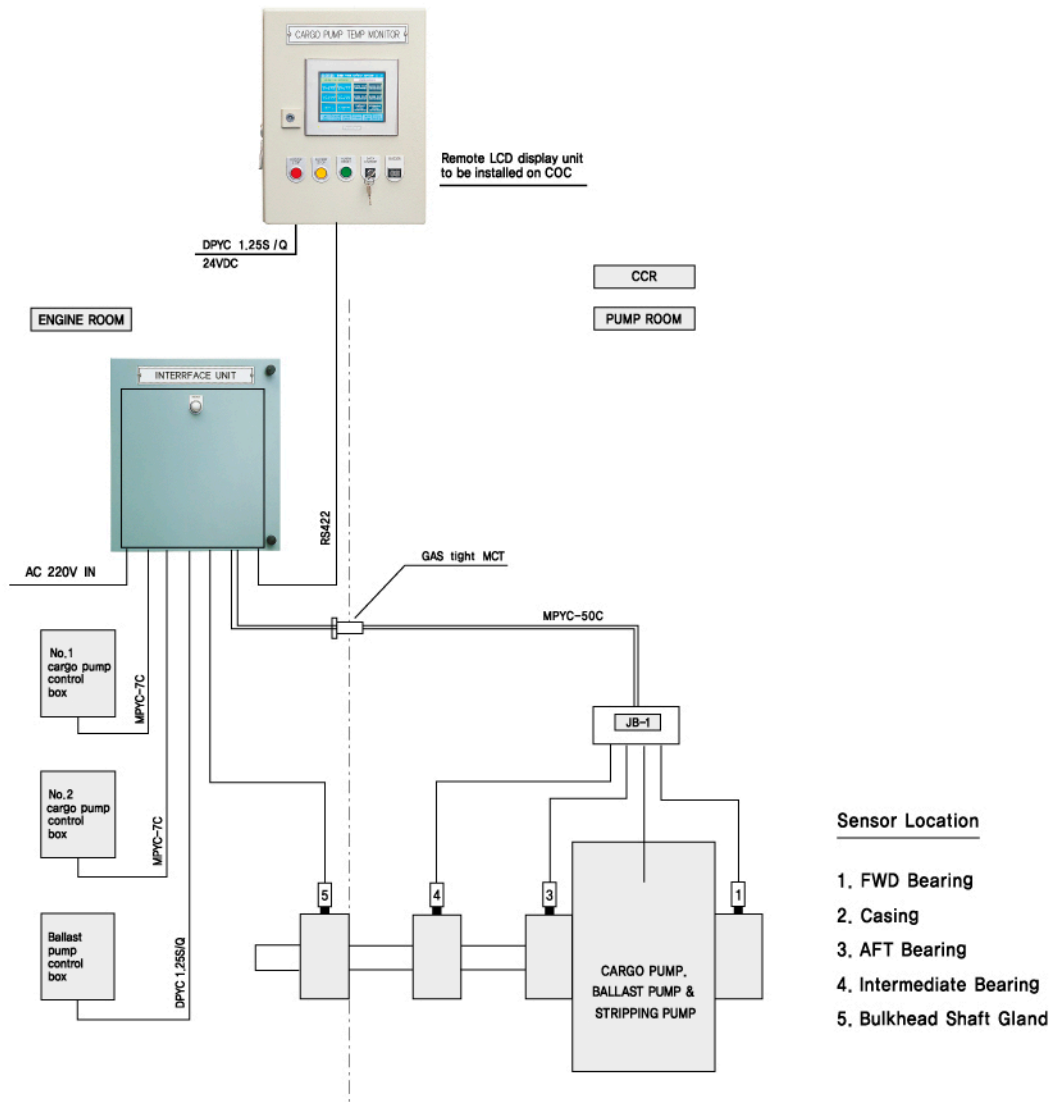
ALARM LIMIT HIGH : 30     

TIME DELAY : - - - -

MEASURING : 27           

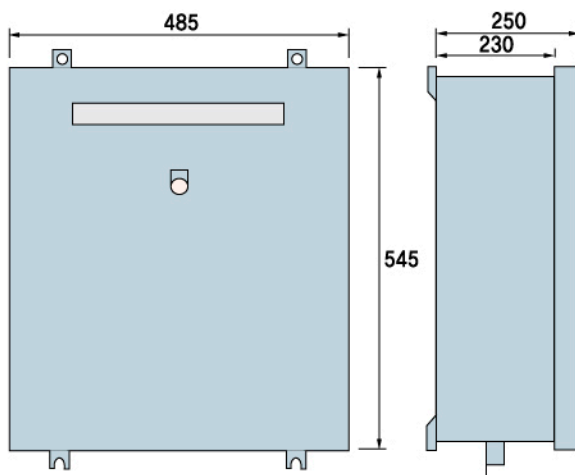
ERROR COMP : - - - -      (+) UP      (-)DOWN

# System Layout

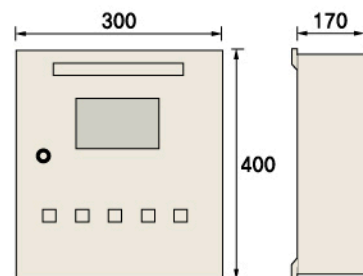


# Dimension

1) Interface Unit



2) Temp Monitor



# TOUCH SCREEN TYPE CARGO PUMP TEMP MONITOR



## ⚠ Warning

- High voltage runs through the GP. Except for replacing backlight, never disassemble the GP, otherwise an electric shock can occur.
- Do not modify GP unit. Doing so may causes a fire or an electric shock.
- Do not use power beyond the GP's specified voltage range. Doing so may causes a fire or an electric shock.



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