NAVITRON SYSTEMS LTD

NT1750 EPR Inclinometer with Escort Tug Mode

MED Type Approved **by Notified Body 2443**

Designed and developed by Navitron Systems Ltd. and fully MED Type Approved in accordance with ISO 19697:2016 by TUV SUD, the NT1750 EPR Electronic Pitch and Roll Inclinometer is a robust and accurate instrument which is fully compliant with IMO recommendations and therefore suitable for installation on all SOLAS vessels.

NT1750 EPR Inclinometer

Dims 260mm (width) x 225mm (height) x 95mm (depth)

Traditional mechanical "pendulum" type of heel measuring devices can provide reasonably accurate indications of angle, but this is largely confined to static situations whereas in a seaway, pendulum mass and inertia will almost invariably result in significant errors.

The Navitron NT1750 EPR Electronic Inclinometer provides real time and historical (last 3 & 30 minute) graphic Pitch & Roll information to the watch crew and serial data to VDR and BAMS etc.

The NT1750 EPR enables watch personnel to monitor vessel performance and are alerted to the development of potentially dangerous situations such as Parametric Roll and associated instability involving increasingly adverse Heel Angles and Roll Periods.

Operator adjustable alarm levels are available via the simple to use Set Up Menu and the Heel Limit Alarm can be visually and / or audibly signaled to remote locations (Masters Cabin etc.) by volt free contacts provided within a Navitron Junction Box. Other Set Up Parameters include Time (UT) Date and Sensor Calibration.

In addition to carrying MED Type Approval, the NT1750 EPR features an alternative display screen which is provided for Escort Tug towing operations in accordance with Bureau Veritas (BV) Classification Rules NR467 January 2025 “Rules for the Classification of Steel Ships / Part E – Service Notations for Offshore Service Vessels and Tugs”.

This display is based on Tug Master adjustable Red (Danger – immediate action required) Amber (Action required) and Green (Safe) Heel Angle Zones (as suited to vessel safety in current towing circumstances) and allows watch personnel to monitor Heel Angles which, in the event that safe levels are exceeded, are visually and audibly alarmed for corrective action to be taken.

The NT1750 EPR Inclinometer system operates on 24Vdc supplies (Main and Back Up) and can be installed in single or multi head display configurations (4 x heads maximum). The system also features a 7” IPS display with 80° viewing angle and remote dimming facility.

The control heads provide installation menu selectable Standard and Reverse Display Formats plus Manual or Auto alarm cancellation options. The standard / single head system comprises Control Unit, Distribution Unit and Sensor Unit. The Distribution Unit contains power supply filtering, remote dimming circuitry, VDR interface and BAMS monitoring and alert interfacing. All power and interface cable connections are routed to the Distribution Unit with a single 4 core cable going to each Control Head. The Sensor Unit is a sealed, factory calibrated unit fitted with 3m of cable for connection to the Distribution Unit via a 2 Entry Junction Box also supplied. (Please note that the Junction Box is not needed if the Sensor Unit is within 3m of the Distribution Unit).

The Inclinometer is supplied suitable for foot bracket or panel mounting as required.

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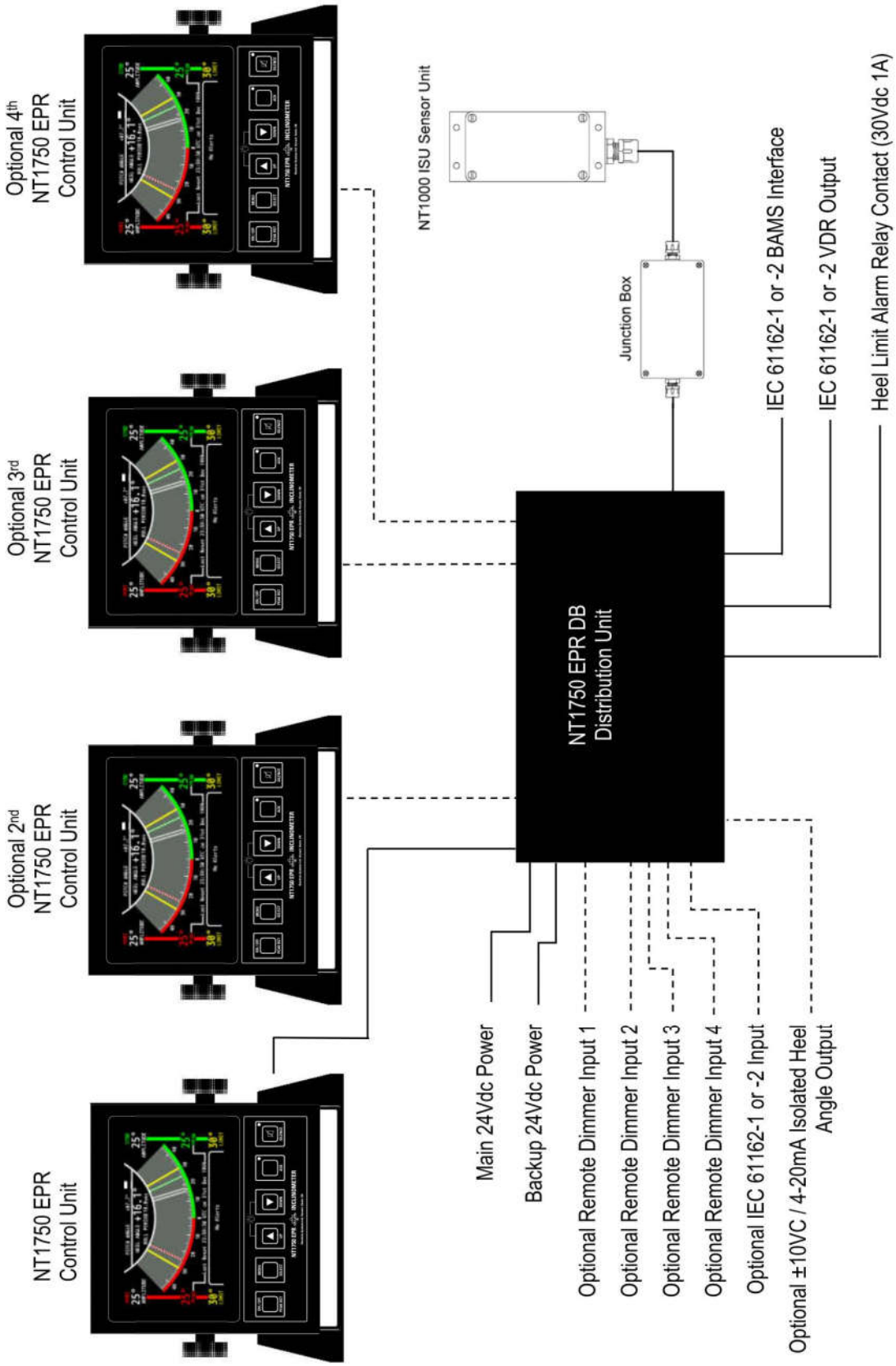
NT1750 EPR Inclinometer

System Configuration Diagram



ISO 9001 SYSTEM CERTIFICATION SGS UKAS MANAGEMENT SYSTEMS 005

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NT1750 EPR Inclinometer System Specification

POWER SUPPLY	
Main Power	18-40Vdc
Backup Power	18-40Vdc
Power Consumption System comprising DB, SENSOR & 1x CU. Additional CUs (up to 3)	 12W max 8W max

BAMS SERIAL DATA INTERFACE	
IEC61162/1 OR IEC61162/2	4800 Baud
	38400 Baud
Output Sentences	$IIALF $IIALC $IIHBT $IITXT $IIACN
Input Sentence	$xxACN $xxTXT

APPLICABLE SPECIFICATIONS
ISO 19697 (2016)
IEC 60945 (2002) inc Cor 1:2008
IEC 61162-1 (2016)
IEC 61162-2 (1998)
IEC 62288 (2022)
IEC 62923-1 (2018)
IEC 62923-2 (2018)

ZDA / DDC SERIAL DATA INPUT	
IEC 61162/1 or IEC 61162/2	4800 baud or 38k4 baud
Sentences	$xxZDA or $xxDDC

MEASUREMENT ACCURACY	
Pitch / Roll Accuracy	±1° or 5% whichever is greater
Roll Period	4 - 40seconds
Roll Period Accuracy	1 second or 5% whichever is greater.

VDR SERIAL DATA INTERFACE	
IEC61162/1 OR IEC61162/2	4800 Baud
	38400 Baud
Output Sentences	$IIHRM $IIHBT $IITXT

HEEL ALARM RELAY CONTACT	
30Vdc	1A

REMOTE DIMMING CONTROL	
Number of analogue input channels (non isolated)	4
Potentiometer resistance range	1-5 kohm
Input voltage range	0-12Vdc

ISOLATED ANALOGUE HEEL ANGLE OUPUT	
Voltage output	±10V
Current Output	4-20mA

MECHANICAL DATA	CONTROL UNIT	DISTRIBUTION UNIT	SENSOR UNIT
Width	260mm	170mm	65mm
Height	225mm	175mm	145mm
Depth	95mm	65mm	55mm
Weight	1.7kg	1.2kg	0.6kg

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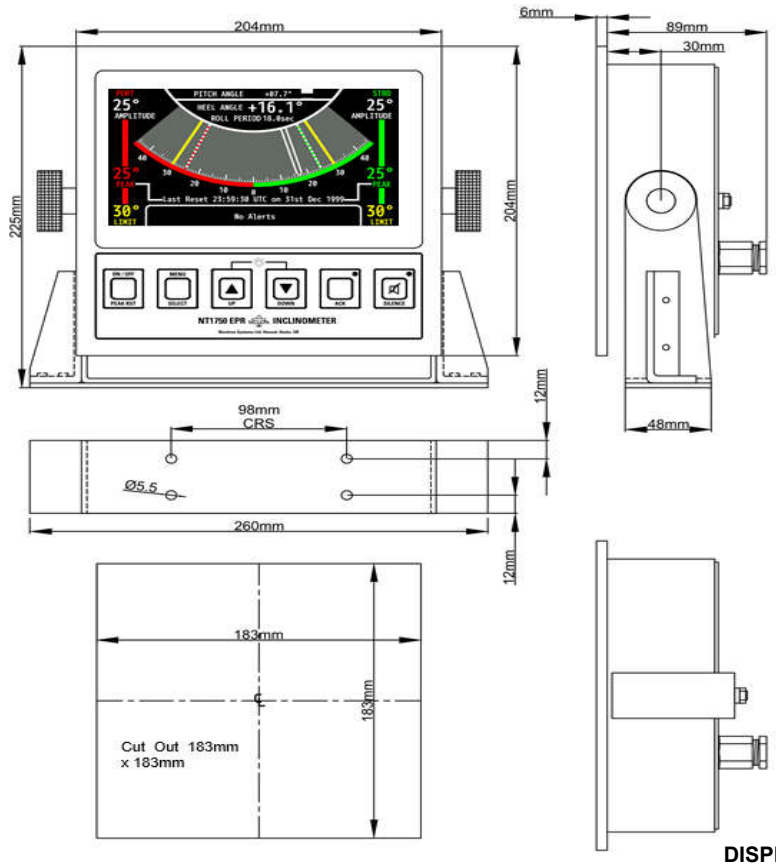
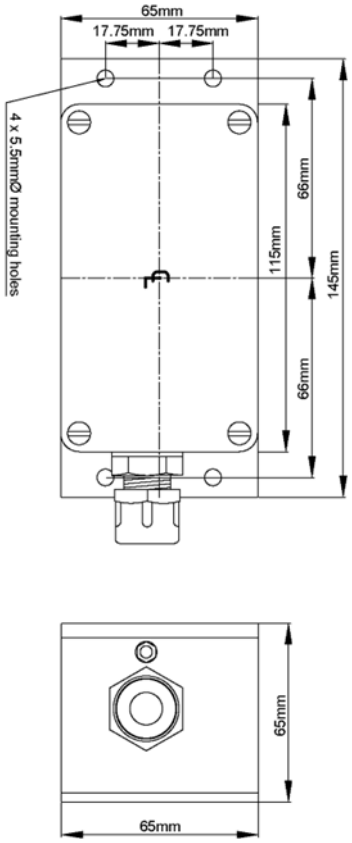
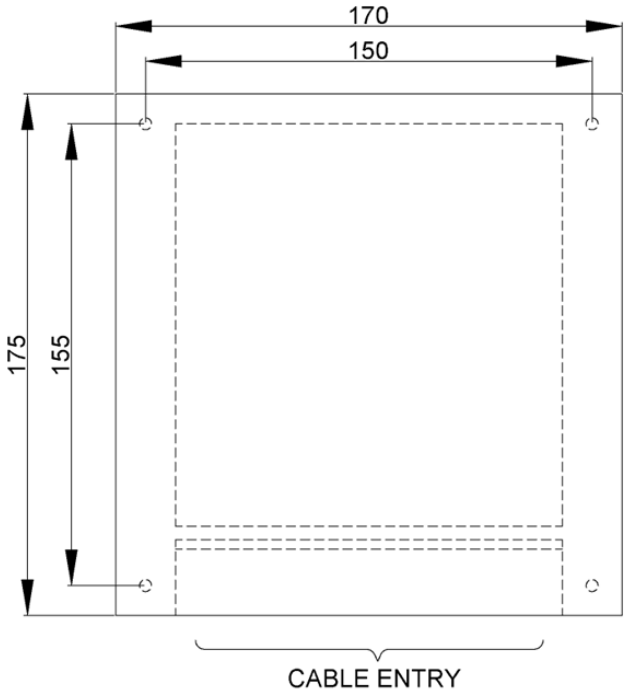
NT1750 EPR Inclinometer (Dimensions)



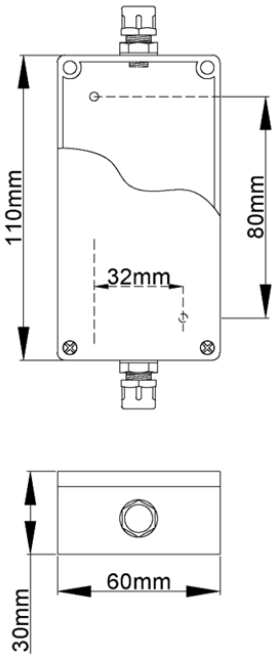
DISPLAY UNIT DIMS (mm)



SENSOR UNIT DIMS (mm)



DISTRIBUTION UNIT DIMS (mm)



JUNCTION BOX DIMS (mm)

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