Installation & Operation Manual

courseCOMPARATOR

Course Monitor

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courseCOMPARATOR functions as dual heading alarm, what means that the current heading of two different sources will be compared to each other. courseCOMPARATOR does not compare the current heading with a preselected one (this does SENSOcourse). Inputs are two NMEA heading data sentence independent if magnetic or true. The data protocl reads: "$HCHDG", "$HCHDM", "$HEHDT" and "$GPHDT" according to IEC61162-1 with checksum.

Content

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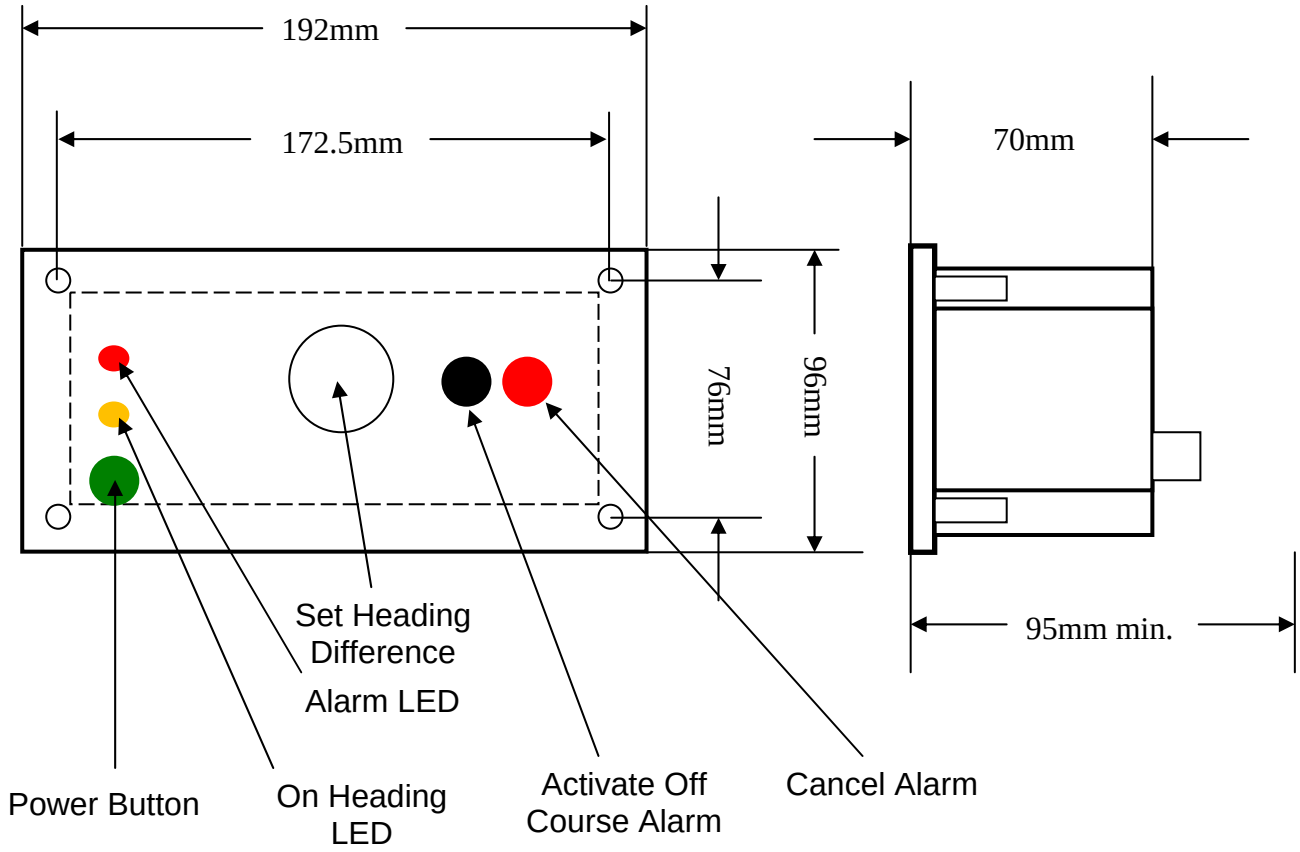
1) Dimensions and Mounting (Front View of Unit)

Flush mounting (cut-out: 182 mm x 85 mm)



Weight: 0.6 Kg
Front IP54, Rear IP22

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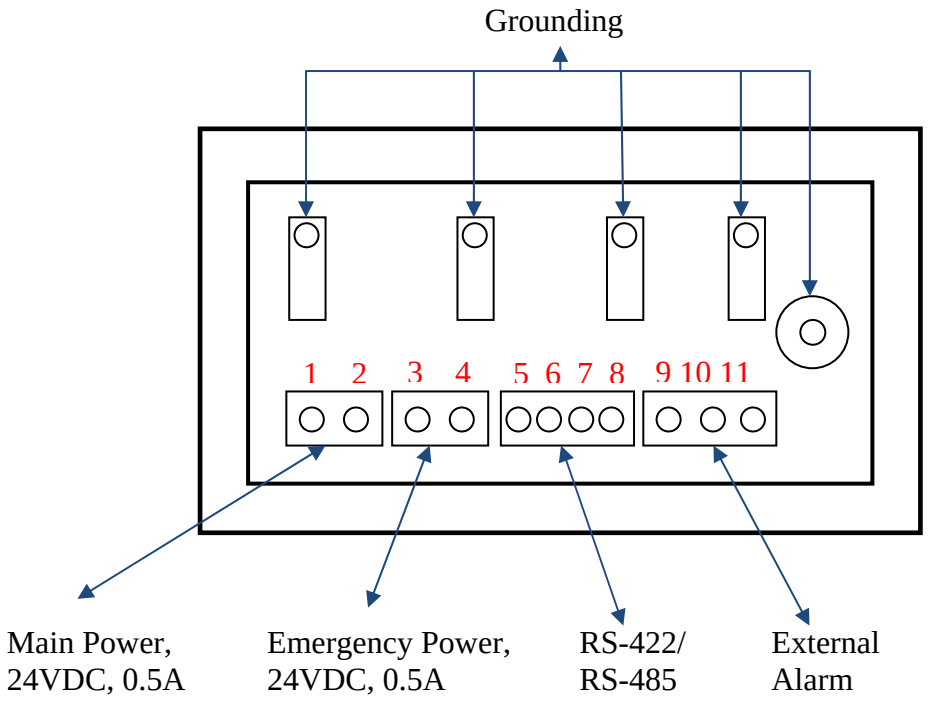
2) Wiring and Pin Connection (Rear View of Unit)



Connections:

1: GND
2: +24V DC
3: GND
4: +24V DC
5: NMEA1 +
6: NMEA1 -
7: NMEA2 +
8: NMEA2 -
9: normal open
10: common
11: normal close

Cables have to been screwed to the terminals.
Screening has to be fixed with clamp at unit.
Grounding has to be connected to the ships superstructure or grounding terminal in ships electric.

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3) Operation of courseCOMPARATOR:

1. Switch on the instrument.
2. Select course tolerance by turning "Set Heading Deviation". The mark shows the current heading difference.
   Push on ”Activate OCA” will fix the heading difference as selected.
3. With this any further alteration of heading width is now impossible. If you want to select a new value switch off the instrument and start from the beginning.

Vessel on desired heading:

1. The yellow ”On Heading” lamp is activated. This indicates that the difference between both heading sources is less the heading deviation as indicated.

Course difference and Alarm Sequence

1. If the current heading difference is more than selected reference heading difference the yellow ”On Heading” lamp dies out. The red ”Alarm” lamp will shine.
2. An acoustic alarm switches on in case the heading condition lasts more than 15 sec.
3. Cancel this by push on ”Cancel Alarm” button.
4. If the heading alarm situation is not cleared within the following 15 sec. the acoustic alarm will be activated again. Again cancel this by push on ”Cancel Alarm” button.
5. No push on ”Cancel Alarm” button will activate the ship´s general alarm (if connected) within the following 15 sec.

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4) Data Formats

All data formats accepted by courseCOMPARATOR have to be RS-422/ RS-485, 4800 or 38400 Baud, 8 databits, 1 stop bit and no parity.
Accepted data sentences are “$HCHDG”, “$HCHDM”, “$HEHDT” and “$GPHDT” according to IEC61162-1 with checksum and without leading zeros.
courseCOMPARATOR will autodetect these data sentences during start up, after changing data sentence courseCOMPARATOR has to be switched off and switched on again.
courseCOMPARATOR will check data sentence by checksum.

5) Error Messages/ Error Removing

No or wrong data sentence:
If courseCOMPARATOR receives no data sentence for more than 5 seconds, red “Alarm” and the yellow “On Heading” lamps will illuminate The same will appear when courseCOMPARATOR receives wrong data sentences for more than 5 sec..
If the error will not be corrected, the acoustic alarm will appear after 15 sec.
In this case check:

- Wiring okay? (Ref. to chapter 2)
- A and B interchanged? (Ref. to chapter 2)
- Is data sentence at transmitting unit properly selected? (Ref. to chapter 3 and manual of transmitting unit)

After removing the failure or changing data sentence courseCOMPARATOR has to be switched off and on again.

Power failure:
If power supply of courseCOMPARATOR drops below 16V the red “Alarm” lamp will illuminate and the green “Power” lamp will die out.
In this case check:

- Is unit turned on?
- Is wiring okay? (Ref. to chapter 2)
- Is power supply okay? (Check with voltmeter that courseCOMPARATOR is supplied with 24VDC)

courseCOMPARATOR will return to normal operation after error is eliminated.

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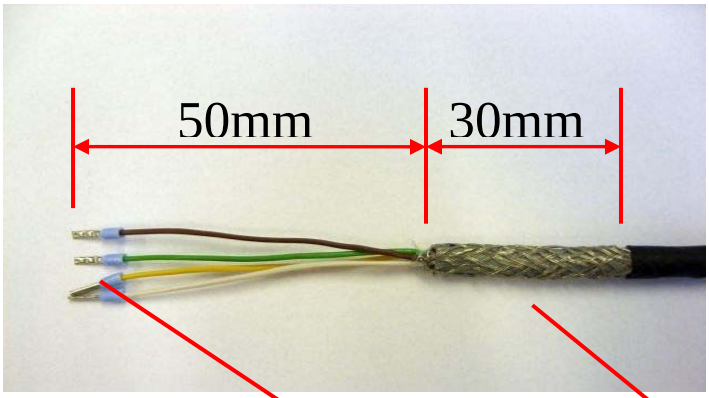
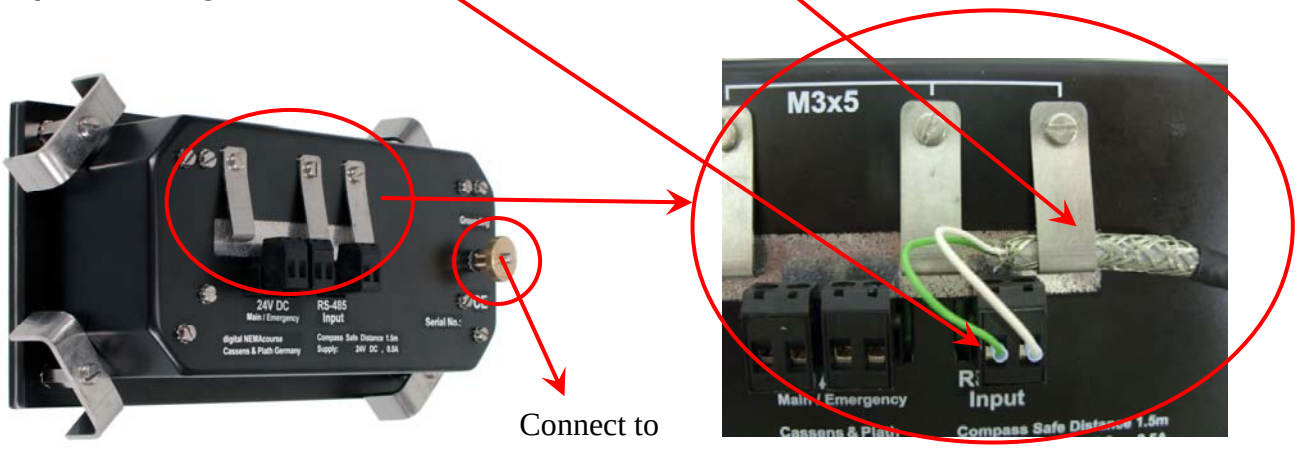
6) Incoming Cables:

Prepare cable as below



7) Grounding



Connect to
ship´s earth

8) Cables, Yard Supply:

2 pieces of data cable:
Min. 2x0.14 mm², twisted pair, screened, max. 100 m

2 pieces of power cable:
Min. 2x0.25 mm², screened, max. 20 m

1 piece of grounding cable:
Min. 1x1 mm², max. 2 m

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