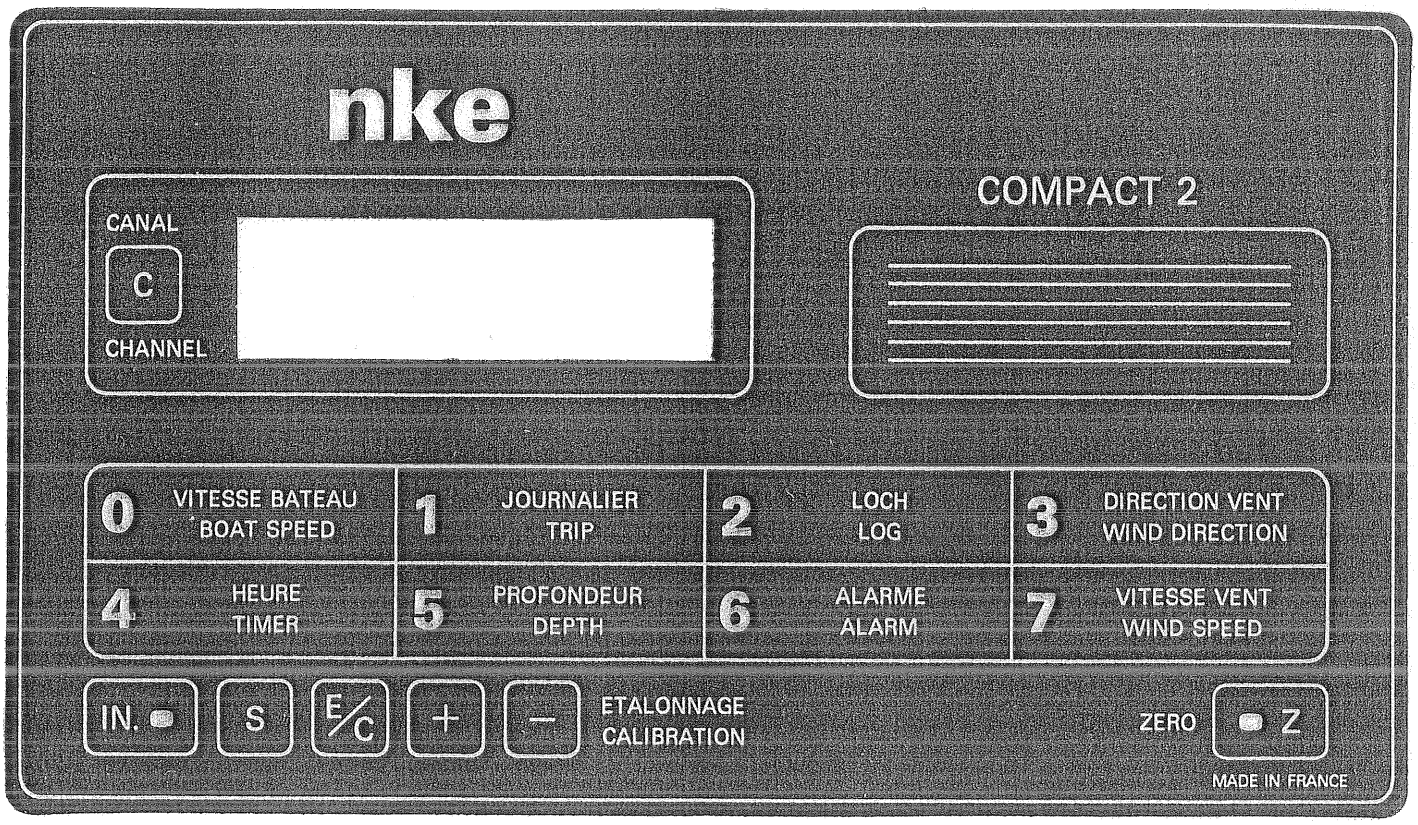
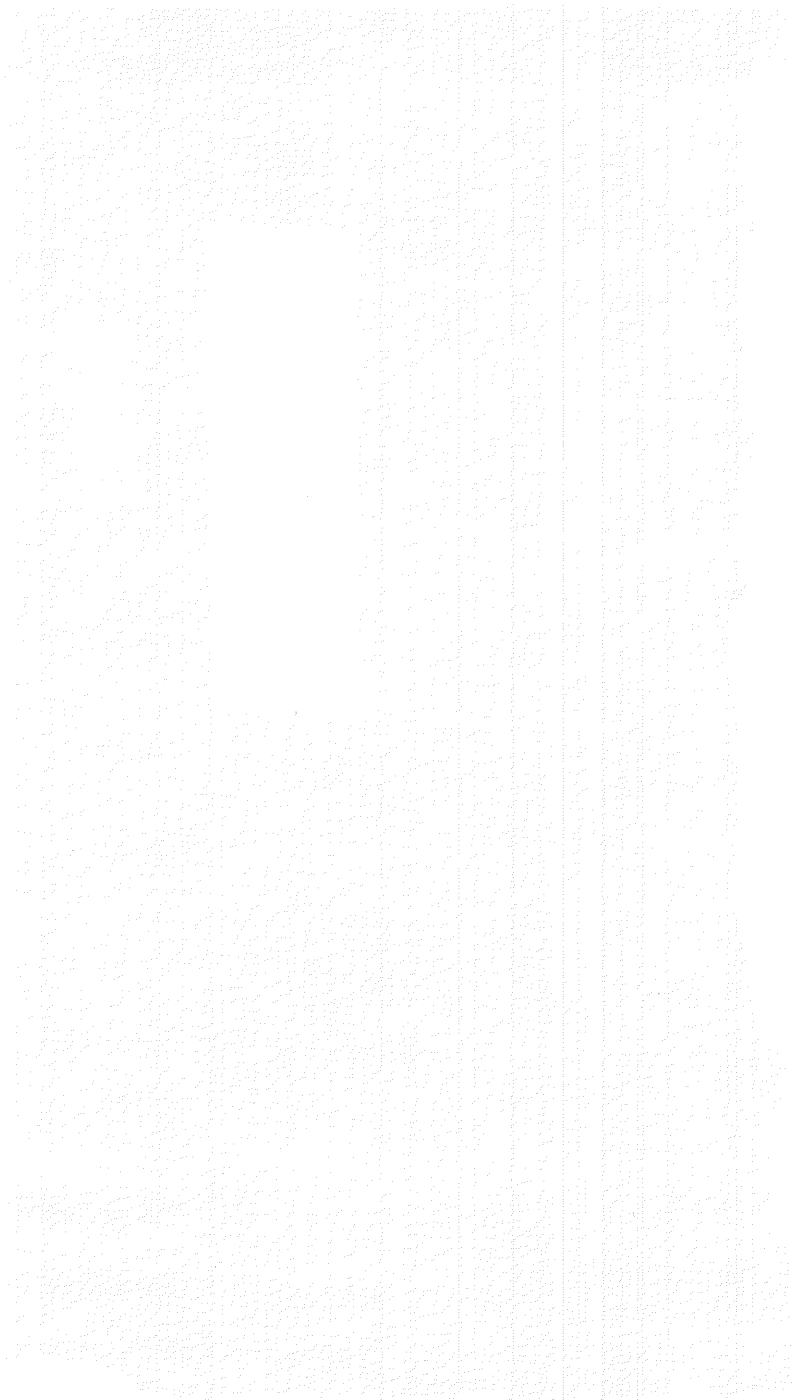
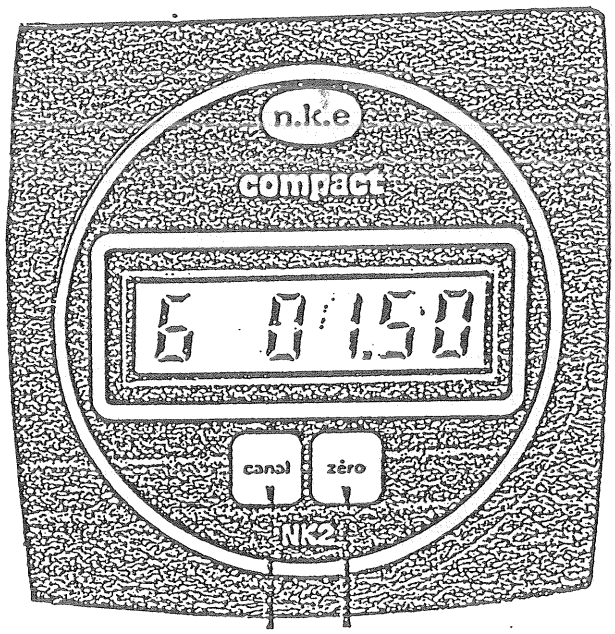
NOTICE D'UTILISATION
CENTRALE COMPACT 2





INDEX



Multimeter cockpit
==========

One short touch on the "Z" key (less than 1 second) changes the information shown on channel "1" from minutes/seconds to regatta chronometer or from regatta chronometer to minutes/seconds.

A depression on the "Z" key for 3-5 seconds sets the daytimer to 0.

When an alarm sounds, a short touch on the "Z" key disables the alarm for 10 minutes.

FUNCTIONS and QUICK REFERENCE CHART

"C" (Channel) key

0 - Boatspeed from 0.01 Kt. to 30 Kts.

1 - Trip log up to 99.99 Miles

2 - Log up to 9999 Miles

3 - Apparent wind angle
displays in 1 degr. increments from 25 degr.
to 180 degr. Port or starboard.

4 - Hours - minutes or
stopwatch

5 - Depth from 5 feet to 300 feet.
adjustable to show water under keel or transducer

6 - Depth alarm from 5 to 99 feet

7 - Apparent windspeed, accuracy 0.1 Kt.
updates display every second

"Z" (Zero) key

Display on Channel 1: Depressing "Z" for about 2 seconds will return the trip log to 00.00.

4: A touch on "Z" will activate the 5 minutes countdown clock.
Another touch on "Z" cancels the countdown and returns the display to the Hours - Minutes clock.

6: Depressing "Z" and holding it will display the alarm settings of the depthsounder. (the first digit will appear after 3 - 5 seconds).

The instruments can be switched off without loosing the alarm setting as this is stored in the memory.

THE SYSTEM

The basic COMPACT 2 system consists of:

- Computing Unit NK2 with microprocessor
  The microprocessor has 9 functions.
- MultiFunctionDisplay (MFD) on computing unit
- 4 sensors
- Mounting material.

Computing Unit

Box is made of black polycarbonate reinforced with fiberglass
dimensions 8" x 5" x 2"
It has a 3 pin receptacle which connects the wiring from the battery
a 4 pin receptable which connects the sensor for windspeed/direction (masthead unit)
a 5 pin receptacle which connects the wiring to/from the displays
2 coaxial connectors for sensors of log and depth

This connection system simplifies an eventual repair, the wiring is not touched at all.
A nickel cadmium battery as a back-up to store the input in the memory.

MultiFunctionDisplay

The MFD of the COMPACT2 is integrated in the computing unit
The "C" key gives access to:
The 9 functions which are analyzed by the computing unit.
The "Z" key gives access to:
Setting the trip log to Zero.
Setting the alarm for depth.
The temporary switch-off of an occurring alarm.

Sensors

Log - Speedo
With paddle wheel, operates outside the boundary layer of water, is retractable via a thru hull fitting and comes with 21 ft coaxial cable and coaxial plug.
A cap is provided to close the thru hull fitting when the sensor has been removed.

Depthsounder
Is retractable by means of a thru hull fitting and comes with 21 ft coaxial cable and plug.
A cap is provided to close the thru hull fitting when the sensor has been removed.

Anemometer - Windvane (Masthead unit)

Comes with a waterproof potentiometer (with nylon cups) and a bearing of nylon with glass ball bearings, the mounting is secure yet simple and quick to install. A cap is provided to close the connector when the masthead unit has been removed. It is supplied with 75 ft of cable with a 4 pin plug.

Mounting Materials

One soft pvc connection box to splice the masthead cable at the foot of the mast.
one soft pvc connection box to connect the various (optional) displays.
2 connector terminals.
6 s/s screws.

BEFORE INSTALLATION

Careful installation!

The NKE instruments were designed for easy installation.
A couple of basic guidelines will help you avoid any mistakes and enable you to get reliable information from your NKE instruments.
Operating problems usually arise due to bad installation.

Computing Unit NK2

You must
- have access to the connections
- have access for calibration
- be able to hear the internal alarm
- be as far away as possible from any source of interference
- be as far away as possible from the radio receiver/ transmitter

Sensor for the depthsounder and for log/speedo

You must
- keep the sensors under water at all angles of heel
- keep them as vertical as possible
- fit them in an area that is turbulence free
- be able to retract and completely remove the sensors
- install them as close as possible to the axis of the boat
- stay as far as possible from electric interference

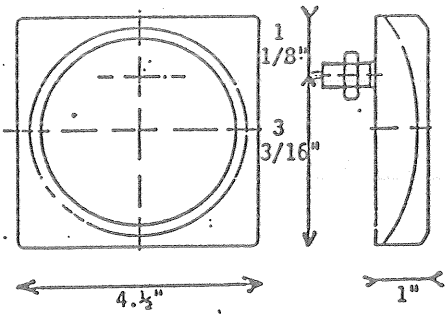
You must not
- place them too close to the keel which could result in a false echo
- place them near the stern of the boat as interference from the propeller and turbulent water coming off the keel may cause incorrect readings
- cut the cable which should be led through the cabin avoiding any forms of interference e.g. engine, radio, etc.

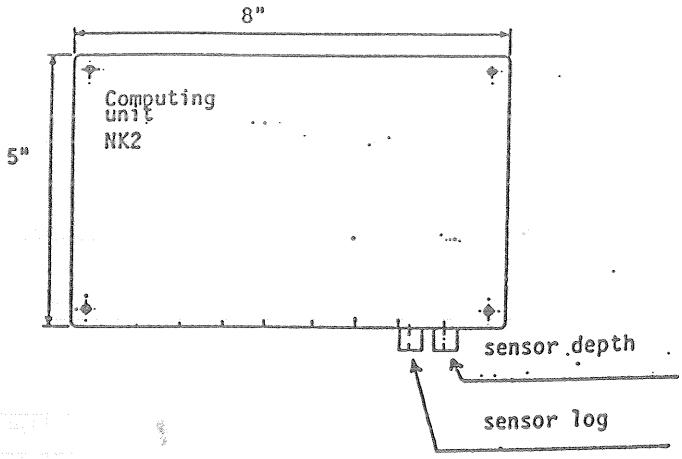
Sensor for windspeed/direction

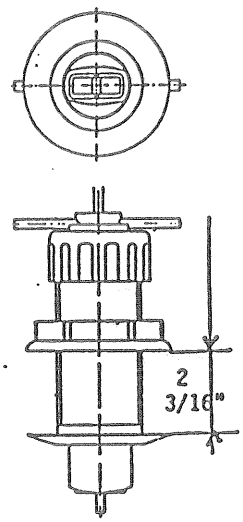
To be secured at the top of the mast free of any interference of antennas and other masthead equipment.
This unit is designed to face forward.

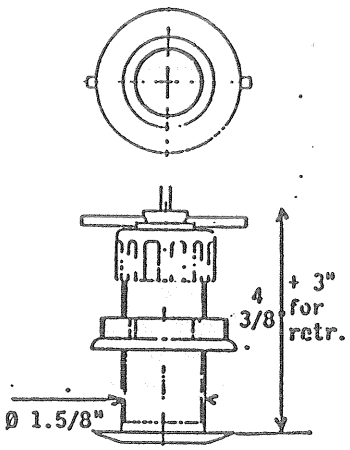
Displays (optional)

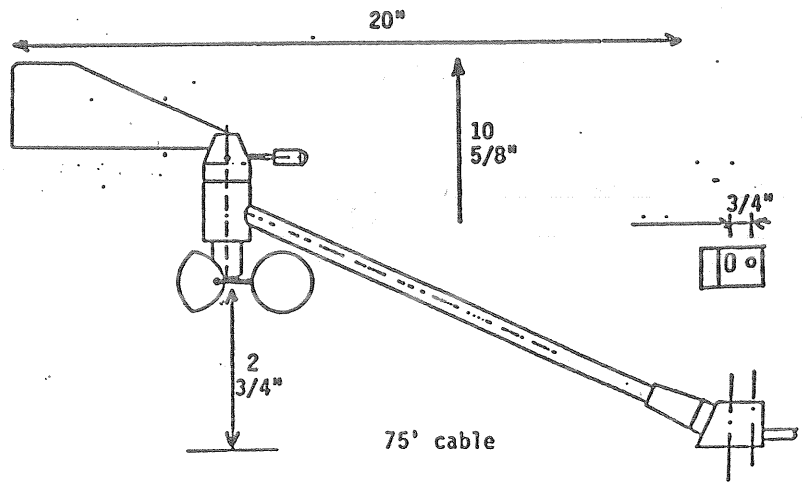
Must be placed at least 8° from the magnetic compass
A MFD must be accessible to operate the key pads.


1
1/8"
3
3/16"
4.½"
1"


8"
Computing
unit
NK2
5"
sensor depth
sensor log


2
3/16"


4
3/8
+ 3"
for
retr.
Ø 1.5/8"


20"
10
5/8"
3/4"
2
3/4"
75' cable

MOUNTING

Computing unit NK2

This box, where all the connections join, must be placed as far as possible from the engine and electrical interference. The unit must be mounted in a place which is easily accessible for calibration,and functions display. Fasten the box by way of four selftapping screws (which are supplied).

Thru hull fitting

Once the position is established, drill a pilot hole from the inside out, then from the outside drill a 1.5/8" hole (preferably with a hole saw).
Check the size by sliding the fitting in the hole.
Remove the fitting, put sealant under the collar (we suggest to use a clear silicon based sealant) and fit it in the hole.
Apply more sealant to the outside of the fitting and the edges of the hole and then tighten the the nut down lightly.

Fitting the sensors of log and depthsounder into the thru hull fitting

Before the sealant is dry, place the sensors into the thru hull fitting and tighten the nut down firmly.
Depress the sensor, turn the stainless handle until it is in the correct for and aft position, then fasten the locking nut on the sensor.

The masthead unit

While these units are unmounted they are very fragile and should never be hoisted on a halyard or wire, but placed securely in a bucket and then hoisted aloft.

a. Fix the masthead unit bracket to the top of the mast by way of 4 tapped screws, for alignment with the axis of the boat loosen the two nuts in the middle of the secondary mounting plate, when alignment is complete, tighten the two nuts again.
b. Run the wire for the masthead unit thru the inside of the mast, preferably in conduit, and leave the mast thru an exit protected against chafe.
c. A thru deck fitting should be applied by deck step masts.
d. Place the connector box (which is supplied) inside the boat on the cabin roof next to the mast.
e. Cut the cable from the masthead unit to the connector box to the desired length (keep a loop of approx. 1 ft. spare).
f. Cut the cable (with the 4 pin plug) between the connector box and the computing unit to the desired length.

When the mast is removed, you must remove the masthead unit first. The holes in the connector box are for one wire only, these holes should be sealed after installation as any moist entering this box could have a bad effect on the operation of your instruments.

Cockpit displays (optional)

As these are completely sealed they can be mounted anywhere on a flat surface

These aere fastened by a single nut

a. Decide the position of mounting and drill a hole of 9/16"
b. Put some sealant on the inside of the hole
c. Remove the protective covering of the self adhesive strip
d. Turn the display until it is straight and lined up, then press firmly, the self adhesive strip keeps it in place.
e. Now tighten the nut on the back firmly (hand tight).
f. Lead the cable wit the the 5 pin plug from the display direct to the computing unit, or cut the cable, reconnect in a junction box and lead the end (with the 5 pin plug) to the computing unit.

CONNECTIONS

The sensors

The sensors of the log and depthsounder are supplied with coaxial plugs which fit to the female plugs on the outside of the computing unit.

WARNING Do not cross these wires!
This could lead to damage of your set.

Masthead unit

The masthead unit cable with the 4 pin plug, which comes from the junction box at the mastfoot is connected to the computing unit.

Power supply

The blue wire is connected to a + (positive) pole (11 - 15 V).
Connect thru a switch (usually on the main switchboard)
The black wire to a - (negative) pole.

IF YOU SWITCH THE + AND - , THE FUSE IN THE COMPUTING UNIT WILL BLOW.

The green/yellow wire (which powers the lights) goes to + pole or via a switch on the main switchboard, connect to a + contact (a potentiometer can be connected).
After the connections are made, the powercable with the 3 pin plug is connected to the computing unit.

Cockpit display(s)

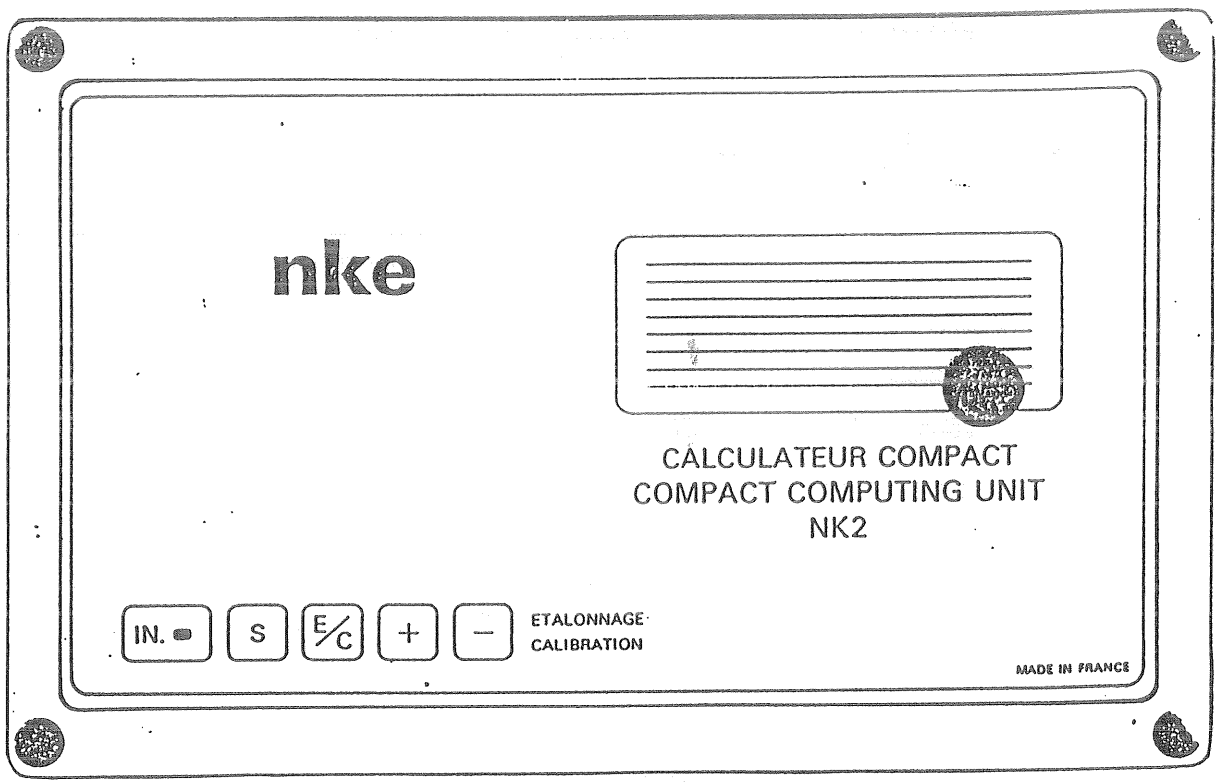
The cable with the 5 pin plug from the display goes either direct to the computing unit to the matching connector or can be cut and connected with other displays in a junction box. One cable with the 5 pin plug can run from the junction box to the computing unit where it is connected .

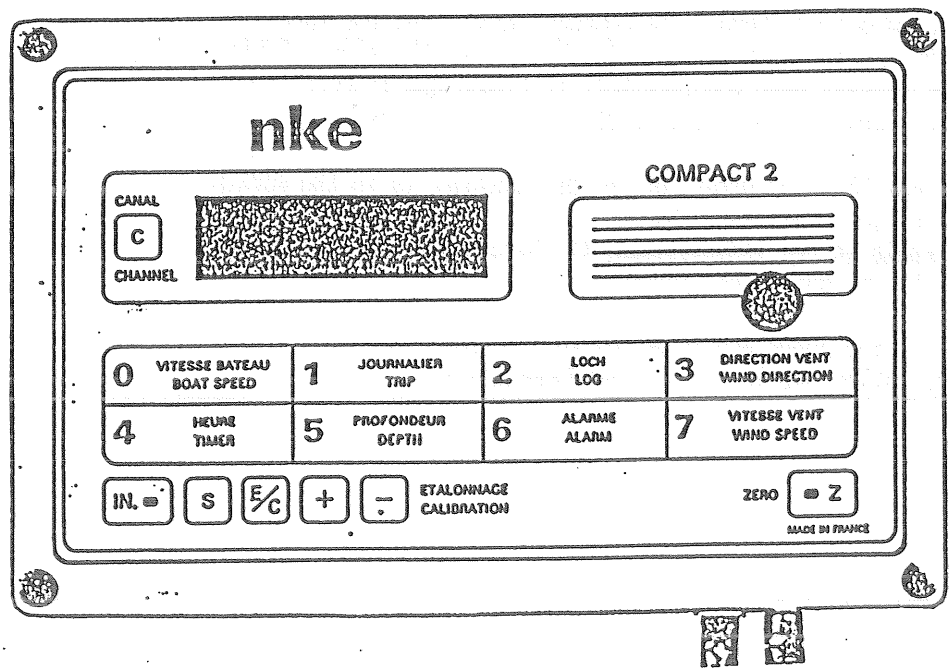
When all the connections are made:

Make sure that the impeller (log) is in the working position; i.e. that the paddle wheel is down all the way and protrudes beyond the boundary layer, and the handle of the sensor is in contact with the cap on the sensor (which is screwed onto the thru hull fitting), and is positioned fore and aft, parallel to the axis of the boat.

Check that the sensor of the depthsounder is in the working position. Make sure that it is down all the way with the handle in the indentations, the handle must be in contact with the cap of the sensor.

After all the above mentioned has been accomplished an initialization should be executed immediately.


nke
CALCULATEUR COMPACT
COMPACT COMPUTING UNIT
NK2
IN.
S
E/C
+
−
ETALONNAGE
CALIBRATION
MADE IN FRANCE


nke
COMPACT 2
CANAL
C
CHANNEL
0 VITESSE BATEAU BOAT SPEED
1 JOURNALIER TRIP
2 LOCH LOG
3 DIRECTION VENT WIND DIRECTION
4 HEURE TIMER
5 PROFONDEUR DEPTH
6 ALARME ALARM
7 VITESSE VENT WIND SPEED
IN.
S
E/C
+
−
ETALONNAGE CALIBRATION
ZERO
Z
MADE IN FRANCE

USE OF INSTRUMENTS

Initialization

This operation is necessary when power is first applied to the whole system.
After the mounting and wiring have been completed and carefully checked.

Press the key "IN" on the computing unit, while this key is depressed switch on the power, keep the key depressed for another second, then release it.

The NK2 unit is now ready for use and all the memories are on "0"

This procedure may have to be repeated in case of:

Misuse of the system (short circuiting, lightning or flattening of internal battery)

Every initialization procedure returns all the memories to 0, after which all the values have to be entered again.

Computing unit NK2

From the moment that the power is switched on, the NK2 supplies all the information to the displays generated from input from the sensors.
The keys on the computing unit give you access to the values of the various functions.

Position of sensor for log/speedo

In normal working position the handle of the unit seats all the way down.
The paddle wheel operates at a distance of approximately 1" from the hull (outside the boundary layer of the hull).
By pulling the handle straight the sensor unit retracts into the hull, preventing growth and unnecessary wear and tear.
This position cannot be maintained while sailing as the sensor cannot transmit accurate information to the computing unit.
By turning the unit a quarter turn (left or right) one can put the sensor in the up position.

ALWAYS RETRACT THE SENSOR before entering the harbor, if aground or for maintenance work.

Position of the echosounder sensor

In normal working position the handle of the unit seats all the way down on the top of the thru hull fitting, and the echo eye of the transducer is flush with the outside of the hull.
The bottom of the eye of the sensor must be carefully protected from rough handling.
By giving the unit a quarter turn (left or right) it can be retracted into the hull.

ALWAYS RETRACT THE SENSOR before entering the harbor, if aground or for maintenance work.

L O G S P E E D O M E T E R

SPEEDOMETER

Boat speed is read on channel 0 in knots to the nearest 0.01 knot.
This parameter is particularly useful because the value is updated every second representing the average of the past 8 seconds.

TRIP LOG

Distance in miles is read on channel 1, from 0.01 to 99.99 miles.
You reset to zero by pressing the "Z" key on Multimeters or the Compact 2 computer for 3 to 4 seconds.
The value returns to zero when the "Z" key is released.

TRIP LOG COUNTER

Total distance covered is read on channel 2 in miles.
This value is saved in memory by the use of a storage cell. It returns to zero whenever the unit is initialized.

CALIBRATION

For perfect calibration of the LOG SPEEDOMETER, it is necessary to find out a "speed base" (see appendix).
For applying the correction calculated, follow the method below:

with the unit operating on any channel you select

1) Press the "IN" key until the display clears
2) Press "S" until 0 XX appears
   (XX being the value of the previous correction)
   (0 being the number of the channel selected)
3) Press "+" for adding or "-" for subtracting or go on to paragraph 4 if you do not want to change the value
4) To confirm press "IN" until the display clears

NOTE : if calibration is positive, the display shows 0 XX
if calibration is negative, the display shows 0-XX

How to determine an overreading/underreading of your log

Although the log has been calibrated upon manufacturing it is strongly recommended to adjust the sensor to your boat.
Make sure the sensor is pushed down completely and the handle parallel with the axis of the boat.

Distance for calibration should preferably be a "mesured mile".

To get the most accurate value, calibration should be carried out : On smooth water
With no or steady wind
Constant speed under engine
At neap (slack) tide

Sail the distance two times back and forth.

Make a note of the distance sailed (from your log), deduct this reading from the chart distance (between two fixed shore marke).
The results allow you to make a correction.

Example : 2 x distance one direction	2,4 miles
2 x distance other direction	2,2 miles
log reading	4,6 miles
chart distance	4,0 miles
difference	0,6 miles

$$\text{Your log is overreading} \quad \frac{0,6 \times 100}{4,6} = 13\%$$

A 13% correction is to carried out as described in "correction of the speedo".

D E P T H S O U N D E R

Depth is displayed on channel 5 in metres. The recorded depth is the distance beneath the transducer.

You can display depth beneath the keel or depth beneath the surface.

A) DEPTH Beneath THE KEEL

Just enter into the depth sounder calibration a negative value equal to the distance between the transducer and the base of the keel.

1) Press "IN" until the display clears
2) Press "-" until the display shows 5 XX *
   5 being the number of the depth sounder's calibration register
   XX being the value of any previous correction made
3) Press "-" until the display shows 5-XX
   XX being the value of the distance between the transducer and the base of the keel (from 0.1 to 9.9 metres)
4) To confirm press "IN" until the display clears.

B) DEPTH BENEATH THE SURFACE

Just enter into the depth sounder calibration a positive value equal to the distance between the transducer and the surface.

1) Press "IN" until the display clears
2) Press "-" until the display shows 5 XX *
   5 being the number of the depth sounder's calibration register
   XX being the value of any previous correction made
3) Press "+" until the display shows 5 XX
   XX being the value of the distance between the transducer and the surface (from 0.1 to 9.9 metres)
4) To confirm press "IN" until the display clears.

* 5 XX if the correction is positive
   5-XX if the correction is negative

NOTE : Flashing display means that there is no echo

DEPTH ALARM

This a so-called "shallow" alarm, in other words the unit sounds off whenever the depth recorded is less than the value displayed on channel 6.

. to enter or change that value:

- set the Multimeter to channel 6
- press and hold the "Z" key (on Multimeters or the Compact 2 computer).
- 6 to 8 seconds later the display will start to change
  0,0 - 1,5 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 -
  10 - 15 - 20 - 25 - 30 - 35 - 40 - 45
  50 - 55 - 60
- once the value displayed reaches the one you want release the "Z" key.

. alarm triggering

When the recorded value is less than the alarm threshold programmed in,

- the unit sounds off,
- the display on channel 5 freezes at AB-5 (shallow alarm -5)
- the display on the other channels alternates with AB-5

care ; a false echo may also set off the alarm.

. temporary alarm cut-off

When the alarm is triggered, briefly pressing the "Z" key on Multimeters or the Compact 2 computer stops it sounding for 10 MINUTES.

. turning off the alarm

Set the value of channel 6 to 0.

W A R N I N G

Even taking all precautions, from time to time your unit may still give incorrect values (in the order of 1 to 1.5 metres).

This may occur in the following cases :

- Transducer not inserted low enough in its through-hull fitting. The stock must be in the recess of the locating ring, fully against the plug
- In rough sea with the boat slapping (in this case the transducer is often in a very disturbed area of water or out of it)
- In the wake of motor boats

ADJUSTING DEPTH SOUNDER GAIN

If your unit frequently gives wrong information, it may be necessary to adjust the gain (G V T).

- removing the rubber plug located on the front of the NK2 computer gives you access to a potentiometer using a small screwdriver.
- If the display frequently goes to 1 m, turn the potentiometer just a touch anti-clockwise.
- It the unit has a tendency to lose the echo (flashing) or indicates a multiple of the true depth in shallow waters (1 to 5 metres), turn the potentiometer just a touch clockwise.

These adjustments should only be made in small increments, and over firm ground (sand or rocks).

C L O C K

Hours and Minutes are displayed on channel 4.

For displaying race start count-down on this channel, just press the "Z" key on Multimeters or the Compact 2 computer just briefly at the 5 minute signal. The display then changes to 4.59 and counts down to 00.00 then starts counting the hours and minutes of the race.

Display the time by briefly pressing the "Z" key again.

SETTING THE TIME

The time is kept by the computer's memory cell. If you need to change the time :

1) Press "IN" until the display clears
2) Press "E/C" until the display shows 4 XX
   4 being the number of the Hours calibration register
   XX being the value of the hours in memory
3) Press "+" or "-" if you want to alter the Hours or go on to paragraph 4
4) Press "IN" until the display shows 1 XX
   1 being the number of the Minutes calibration register
   XX being the value of the Minutes in memory
5) Press "+" or "-" if you want to alter the minutes or go on to paragraph 6
6) To confirm press "IN" until the display clears.

A N E M O M E T E R / W I N D V A N E

Once the anemometer/wind vane sender is connected up to the computer, you see displayed :

- On channel 7 the wind speed in knots (to the nearest 0.1 knot)
- On channel 3, the apparent wind angle to the nearest degree to 10 to 180 degrees with port/starboard tack indicator.
  Example : 25° Port shows 8 0 25
  130° Port shows 8 1 30

  25° Starboard shows 5 0 25
  130° Starboard shows 5 1 30

Wind speed and wind angle values are updated every second representing the average of the past 8 seconds.

SENDER ALIGNMENT CORRECTION

The sender is factory-set for being exactly aligned along the boat's centreline.

Sometimes it is necessary to correct a slight alignment error. Proceed as follows to find out the correction which may need to be made :

The boat is assumed to be thoroughly tuned

- Close hauled, if the starboard angle is less than the port angle, the value of the correction to be made is equal to + half of the difference between the 2 tacks.
- Close hauled, if the starboard angle is more than the port angle, the value of the correction to be made is equal to - half of the difference between the 2 tacks.

Once you have found the value and direction of the correction, proceed as follows :

1) Press "IN" until the display clears
2) Press "+" until the display shows 3 XX *
   3 being the number of the wind vane calibration register
   XX being the value of any correction made already
3) Press "+" for adding or "-" for subtracting or go on to paragraph 4 if you do not want to change the value
4) To confirm press "IN" until the display clears

* NOTE : if calibration is positive, the display shows 3 XX
if calibration is negative, the display shows 3-XX

MAINTENANCE

Your NKE equipment is manufactured with great care. Even if used under the most demanding conditions, it will need only a minimum of maintenance.

Computing unit NK2

At the end of the season apply some silicone grease to the coaxial plugs.

Sensor of speedo/log

Retract the sensor before entering a harbor or for maintenance work.

Regularly clean the paddle wheel from shells and/or seaweed/algae, those could cause jamming or inaccurate readings.

NEVER PERFORM ANY MAINTENANCE WORK WHEN THE SENSORS ARE IN THE WORKING POSITION. THESE MUST BE RETRACTED.

NEVER let any grease come on the axle of the paddle wheel

NEVER let any paint come on the paddle wheel

Remove the sensor completely and put the cap on while the boat is out of the water

Changing the paddle wheel :

- unscrew the two axles
- remove the paddle wheel
- put the new paddle wheel in place
- put the two axles back in place and block these

CAUTION make sure the plastic screw-thread is not damaged.

- make sure the new paddle wheel spins freely.

Masthead unit

BEFORE UNRIGGING THE MAST: remove the sensorarm, apply some silicone grease to the contact and put the cap on.

Only after stepping the mast should the masthead unit be replaced.

TROUBLESHOOTING

No reading is displayed after the power is switched on

- check if all the plugs to the computing unit are connected correctly.
- check if the mainswitch is switched on
- check if the powercable has been connected correctly. if not: the fuse in the computing unit is blown replace the fuse
- check the cables to the displays or the masthead unit on shortcircuiting.
- if either of the last two is causing the trouble; correct the problem and enter all the values in the memory again

All displays are locked on a fixed value and an alarm sounds

The battery is too weak (delivers less than 11 Volts)

NOTE should your ships power drop under 11 Volts regularly, an adjustment to the system can be made by the manufacturer to operate on a lower voltage.

Initialization necessary each time the system is switched on

The built-in battery in the computing unit is discharging during the period the system is switched off.
Contact your dealer or importer.

The speedo shows a locked value of 00.00

Check if the sensor is all the way down the thru hull fitting.
Check if the paddle wheel is not jammed

The depthsounder flashes

Check if the sensor is correctly fitted in the thru hull fitting
Check if the sensor eye is clean
Check the G.V.T. (gain) (see: calibration of the depthsounder)

Sensor is jammed in the thru hull fitting

Loosen the locking nut of the thru hull fitting a little.
Carefully pull the sensor out with a minimum of force necessary.
Apply some silicone grease around the O-rings of the sensor and put it back in again.

TECHNICAL SPECIFICATIONS

Computing unit NK2	Operates on 12 Volts Consumption 50 mA max. Nickel Cadmium battery included to retain info. Need no recharge for 1 year Alarm incorporated 3 pin plug and 4 ft powercable included.
MFD	5 figures liquid crystals 3/4" high Operating temperatures between 14 degr. - 185 degr. F Consumption of illumination 12 mA 5 pin plug and 21 ft cable included
Transducers	Log, 21 ft cable and plug included. Depthsounder, 21 ft cable included frequency 200 Khz 30 degr. angle readings are in feet
Masthead unit	75 ft cable included 4 pin plug included

1 year warranty guaranteed by manufacturer.

Any number of repeaters of the same or different type can be installed.

Metal parts are made of S.S. 304 or anodised aluminum

Mounting of repeaters and MFD's require only one hole of 9/16"

Log transducer is fully retractable.

NKE Compact
==========

wiring diagram

the color and number between parenthesis e.g..(yellow 4) indicates the color of the wire and the pinnumber in the plug