INSTRUCTION MANUAL

URANIUM ORE FACE SCANNING SYSTEM

TYPE : FS 900

NUCLEONIX SYSTEMS PRIVATE LIMITED

Plot No: 162 A & B, Phase II, I.D.A. Cherlapally, Hyderabad - 500 051.

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FILE NAME : NSPL/DOC / MAN / FS900/ 01

VER_20170809

IMPORTANT NOTE

While using this Uranium ore face scanning system FS900, the following information is to be kept in mind while making measurements.

Display updating time is fixed & is 5 sec, while the Time constant (TC) to measure is variable upto 99 sec. Hence if the Time constant chosen is more (typically say 20 sec), then one has to allow FOUR display updated readings (equal to 4x5 sec) to get correct reading on the display. Then only the reading is correct. So, for each measurement of correct data a minimum of one Time constant time is to be allowed. One should ignore initial (Three) readings, till Time constant is complete in this case. Otherwise one would feel that data readings are fluctuating. Always wait for one Time constant time.

CONTENTS

CHAPTER - I

INTRODUCTION

Uranium Ore Face Scanning System, Type : FS900 manufactured by Nucleonix Systems is exclusively designed to meet the requirements in Uranium mines for ore face scanning.

For mining purposes it is essential to mark ore boundary on the rock sample and obtain the average ore grade. To obtain ore boundary scanning is done along the foliation and to obtain ore grade, scanning is done perpendicular to the foliation.

Uranium Ore Face Scanning System developed by Nucleonix Systems is a compact, light-weight, portable & battery powered unit. System essentially has three parts consisting of electronic measuring unit, Face scanning probe assembly comprising of a detector kept open towards ore Face with adequate lead shielding covered on the rest of the walls of detector & a long connecting cable between the probe & measuring unit.

Data can be acquired in sample (SAM) mode, standard (STD) mode or background (BG) mode. In standard mode, instrument is calibrated using standards of known % U308. In sample mode, Ore grade of unknown sample is estimated. In background mode, the background CPM is estimated.

Using this instrument, one will be able to seggregate ore from waste material.

Before user can acquire for sample Ore grade using the instrument, it needs to be calibrated with a standard with known %U308. For this, user needs to acquire for the standard for a preset time for chosen number of iterations. Also % U308 of standard needs to be entered. After this user should also enter BG factor. These parameters are now to be saved using SAVE option.

FEATURES :

- Compact, light weight, battery powered instrument.
- Detector : GM tube - GM137.
- THREE Acquisition modes – STD, SAM, BG.
- Acquisition Type – CPM or ORE GRADE.
- Time Constant – Adjustable from 5 to 99 seconds.
- Direct reporting of ORE GRADE in %U308 on display after calibration.
- 1” Lead Shielding all round detector except measuring face.
- Cable length of upto 30 meter can be used.

CHAPTER – II

FRONT PANEL & SIDE PANEL CONTROLS

Face Scanning Unit

Face Scanning Probe

Pin No. 1 – Anode of GM Tube, Pin No. 2 – Cathode of GM Tube, Pin No. 3 – NC (No Connection)

2.1 FRONT PANEL CONTROLS AND INDICATIONS

2.1.1. LCD DOTMATRIX DISPLAY

This is a 16 X 2 alpha numeric LCD dotmatrix display which serves as visual indication to the user, which responds to all the commands from the keypad and displays program parameters.

2.1.2. INTELLIGENT KEYPAD

(a) **PROG key button:** This key is an important one which facilitates the user to program the operation of the instrument for different modes / conditions.

(b) **START key button:** This is used for starting of acquisition once all the program parameters have been set.

(c) **STOP key button:** This key can be used to stop acquisition.

(d) **INC/DEC key button:** These keys are used while setting the program parameters to increment and decrement a value or to change the option selected to another value.

(e) **STORE key button :** This key is used for storing the readings or data values in the following way
If you want to store the data, then press STOP button to stop acquisition and then press STORE button.

Note : Keypad commands have been explained in detail under chapter IV - 4.1

2.1.3. POWER ON / OFF:

The power to this unit is provided through 6v, DC (4 x 1.5) Volts, R20 Type cells, which is housed inside the unit.

2.1.4. TO DETECTOR (CIRCULAR I/O):

Face Scanning probe is connected through a 3-core cable to 3-pin I/O connector.

CHAPTER - III

SPECIFICATIONS

Radiation Detected	**:**	Gamma
Detector	**:**	Halogen Quenched Beta-Gamma Radiation Detector Type : GM137
Detector Probe	**:**	GM Detector enclosed in cylindrical shell covered with adequate 1” Lead Shielding on all sides excepting on measuring ore Face & connected to measuring unit through a long cable.
Measuring Range for Grade	**:**	0.001 to 1.0%
Dimensions	**:**	106.52W x 196.58L x 164Ht in mm (approx), Probe: 186.61 mm Length x 20mm dia (approx) - without Lead Shielding & handle.
Modes of Data Acquisition	**:**	STD, SAM and BG modes.
TC Selection	**:**	5 sec to 99sec.
Measuring Range for Grade	**:**	0.001 to 1.0 %
Background correction	**:**	Automatic subtraction
Visual Indication	**:**	i) Dotmatrix LCD display for reading CPM or GRADE ii) Low battery indication on LCD display
User Interface	**:**	User interface is through SEVEN control buttons START, STOP, PROG, STORE, INC, DEC, POWER ON/OFF. The above functions allow the user to program & operate the instruments in different modes.
Power	**:**	6 volts DC, EVEREADY, Type R20, (4x1.5Volts), cells.

CHAPTER – IV

INSTRUCTIONS ON INTELLIGENT KEYPAD COMMANDS

Once the unit is switched ON, display appears as shown below,

GAMMA COUNT RATE METER

for 3 secs

NUCLEONIX SYSTEMS

for 3 secs

The instrument is basically operated in TWO modes of acquisition – Calibration Mode & Sample Acquisition Mode.

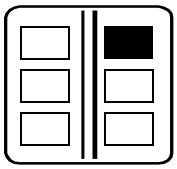
4.1. CALIBRATION MODE

This mode is used for calibration of the instrument using standards to report OREGRADE of samples in %U308.

To calibrate the instrument user has to go through below menus and set the parameters then acquire for each of the standards and store data in EEPROM.

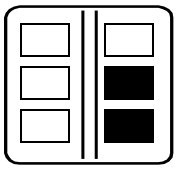
4.1.1. MODE SELECTION

Press PROG key till below screen appears,



ACQ MODE XXX

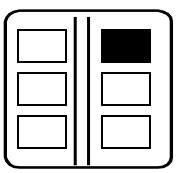
Now press Inc or Dec keys to select STD MODE.



ACQ MODE STD

4.1.2. TO ENTER % U308 OF THE CURRENT STANDARD

The %U308 of the standard can be set by pressing PROG key till display appears as shown below,

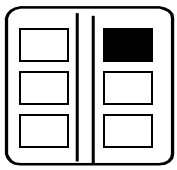


% U308 OF STD XXXXXX

Now using Inc or Dec keys, the %U308 of current standard can be set.

4.1.3. TO SELECT TIME CONSTANT FOR ACQUISITION OF STANDARD

The Time Constant is the time taken by instrument to report the normalized countrate on the display. Press PROG key till display appears as shown below.

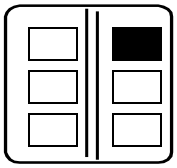


TIME CONSTANT
XX

Now select time between 15-99 seconds depending upon the countrate obtained, so that variations in readings are minimized. This can be done by use of Inc or Dec keys.

4.1.4. TO SELECT NO. OF ITERATIONS

Press PROG key till display appears as shown below,

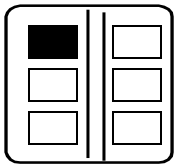


ITERATIONS
X

Now select between 1-9 using Inc or Dec keys.

4.1.5. TO ACQUIRE FOR THE STANDARD

Once parameters from 4.1.1. to 4.1.4 are set, then user can acquire for the standard by pressing START button, display will appear as shown below,



ACQUIRING A → Blinking

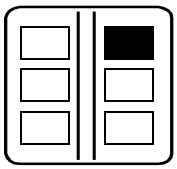
After acquiring for the time constant for the number of iterations set, the averaged CPM is displayed as shown below,

STD ACQ END
XXXXXX CPM

Now this data has to be stored by going through option 4.1.9.

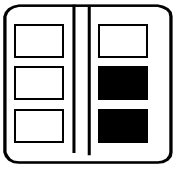
4.1.6. SAVING CURRENT DATA

To save the data / parameters in EEPROM press PROG key till the display appears as shown below,



SAVE ?

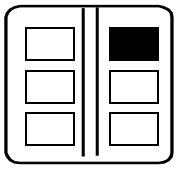
Now press Inc or Dec keys. After 3-4 seconds screen appears as shown below indicating data has been stored.

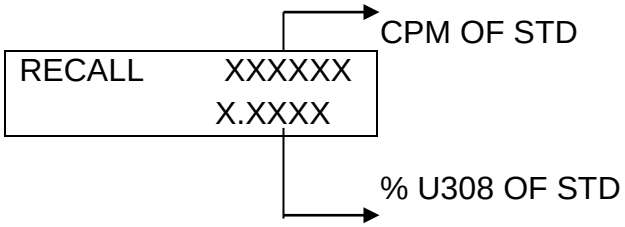


SAVE ?
OK

4.1.7. RECALL STORED STANDARD DATA

% U308 and CPM of the standard acquired can be viewed by pressing PROG till below screen appears.





4.1.8. TO STOP ACQUISITION

To stop acquisition while it is in progress press STOP key.

4.2. BACKGROUND ACQUISITION

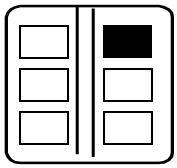
To acquire for background keep a Lead block underneath the detector probe flat surface and select the BG mode of acquisition. Now press START button to acquire for background. Once data is acquired it is stored automatically in EEPROM.

4.3. SAMPLE ACQUISITION MODE

Once the user has acquired for the standard, he can acquire samples for OREGRADE calculation in % U308.

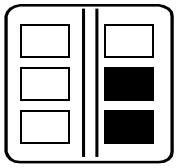
4.3.1. ACQUISITION MODE SELECTION

To select sample mode of acquisition, press PROG key till below screen appears,



ACQ MODE XXX

Now press Inc or Dec keys till display appears as shown below,

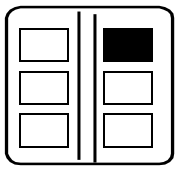


ACQ MODE SAM

Now sample mode of acquisition is said to be selected.

4.3.2. ACQUISITION TYPE SELECTION

To select type of acquisition (i.e.,) CPM or ORE GRADE mode, press PROG key till below screen appears,

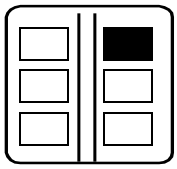


ACQ TYPE
ORE GRADE

Now using Inc or Dec keys select required type of acquisition.

4.3.3. TIME CONSTANT SELECTION

The time required for displaying %U308 of the sample in OREGRADE mode and CPM in CPM mode constant.
To set time constant, press PROG key till display appears as shown below,

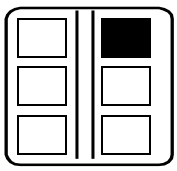


TIME CONSTANT
XX

Now using Inc or Dec keys, set the time constant to required value.

4.3.4. TO SET BG FACTOR

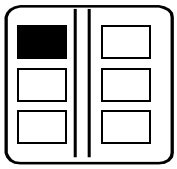
To correct for the variations in BG countrate from place to place, a factor known as BG factor is introduced.
To set this, press PROG key till display appears as shown below.



BG. FACTOR A
X.XX

Now set this value depending upon BG of the site using Inc or Dec keys.
Once these parameters are entered, they need to be saved before proceeding for acquisition.

4.3.5. TO PERFORM ACQUISITION: To perform acquisition, acquisition type, Time Constant and BG factor needs to be selected. After entry of these settings, press START button. Display appears as shown below.



ACQUIRING A → Blinking

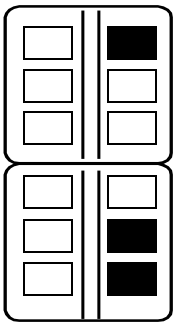
Depending upon the acquisition type selected display will show up CPM or Ore Grade as shown below after selected time constant respectively as shown below.

ACQUIRING A XXXXXX CPM	for CPM
ACQUIRING A X.XXXX %U308	for OREGRADE

This data obtained can be noted down for your records.

4.3.6. TO SET / CLEAR BACKLIGHT

Backlight of instrument can be made ON during PROG mode by pressing PROG key till display appears as shown below.

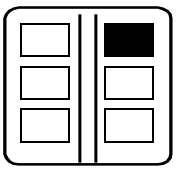


BACK-LIGHT ON

Now using Inc or Dec keys, toggle the backlight to ON/ OFF mode.

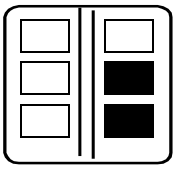
4.3.7. TO SAVE PARAMETERS ENTERED IN SAMPLE MODE

Parameters entered can be stored by pressing PROG key till display appears as shown below.



SAVE ?

Now press Inc or Dec keys to save the settings “OK” message as shown below appears to indicate successful storage of settings.



SAVE ? OK

4.3.8. TO STOP ACQUISITION

To stop acquisition, press STOP button.

CHAPTER – V

TYPICAL MEASUREMENT PROCEDURE FOR FACE SCANNING

5.1. ORE GRADE MODE OF ACQUISITION

i. Initially ensure interconnection between Uranium Ore Face Scanning Probe and the Uranium Ore Face Scanning measuring unit cable with appropriate connections.
ii. Power ON the unit & place the probe on a “STANDARD”.
iii. Set the TC (Time Constant) to typical 20 sec.
iv. Now enter STANDARD GRADE in % U308 (Uranite).
v. Set the no. of iterations required.
vi. Take standard readings.
vii. Now save data acquired for ”STANDARD” in the unit.
viii. Take BG (readings) for 60sec and is automatically saved.
ix. Take the system to the site and set the BG factor according to the BG of that site & save it, in sample mode.
x. Now set the acquisition mode “ORE GRADE” mode.
xi. Take observations of the face being scanned & get the result in %U308.

5.2. CPM MODE OF ACQUISITION

i. Take readings with STANDARD, in sample mode, by setting the TC (Time Constant) as required.
ii. Take BG readings, also in sample mode with TC same as standard.
iii. Find out the net counts by subtracting average BG from average standard.
iv. Find out the multiplying factor by dividing “Standard Grade” by ‘net counts’.
v. Take observations in the site in sample mode with same time constant & subtract BG for that location from the count obtained & multiply it by multiplying factor to get the grade.

CHAPTER – VI

6.1. MAINTENANCE AND WARRANTY CLAUSE

As per the warranty clause of the company we provide one-year warranty during which period we provide free service at our works. Hence in case of any mal-function in our instruments you are requested to send the unit back to our works by RPP/COURIER/SPEED POST PARCEL/GATI/XPS/door delivery. We shall arrange immediate rectification/replacement within two weeks from the date of receipt of the equipment at our place. Please note that the equipment will be serviced at our works only.

The equipment is to be sent to :

The Servicing Department
NUCLEONIX SYSTEMS PRIVATE LIMITED
Plot No : 162 A & B, PHASE II,
I.D.A. Cherlapally,
Hyderabad - 500 051

Note : In respect of all types of portable radiation monitors, it may be necessary to checkup and recalibrate the equipment once a year at our works.

6.2 A QUICK CHECK, ON THE BASIC WORKING OF UNIT

Select from the menu, Acquisition in “BG’ mode, and START acquisition. This unit will record the counts in CPM mode, at the end of one TC (Time constant) unit will display CPM counts recorded. If it records typically 50 to 75 counts, then unit functionality to OK & this confirms that detector, HV & majority of electronics is OK. If the records ‘zero’ count then, the unit is faulty & problem could be with detector, cable or connectors, or HV has failed or controller or associated electronic circuits could have developed fault.

CHAPTER -VII

BLOCK DIAGRAM DESCRIPTION

The above block diagram illustrates implementation of Uranium Ore Face Scanning System. It essentially has the following three components / sub-systems namely.

a. Uranium Ore-face Scanning GM Probe with Lead Shielding.
. Uranium Ore Face Scanning measuring electronic unit.

A. URANIUM ORE FACE SCANNING GM PROBE WITH LEAD SHIELDING

Uranium Ore Face Scanning GM probe is offered with a detector which has an active length of 9.5cm.

The detector probe is covered on all the three sides by 1" Lead Shielding excepting on the front which faces the ore face for scanning. Both the detectors have +530V as the operating voltage.

A 3 pin circular connector on the detector side connects through a 30 meter 3 core cable to the main unit.

B URANIUM ORE FACE SCANNING MEASURING ELECTRONIC UNIT

This unit has the following major electronic components to achieve the desired function. A High voltage circuit generating +500V, a pulse shaping circuit.

A micro contro er with embedded code to perform desired functions, a SIX digit serial counter, a low dropout regulator chip, tactile keypad, LCD ot matrix display module & other associated components.

The Primary function of this unit are :

I. To provide +5V LV supply to all circuits.

II. To generate and provide +530V for the GM probe.

III. To perform pulse shaping and convert tail to TTL for measurement by digital circuits.

IV. To provide user interface through command buttons START, STOP, PROG, INC, DEC & STORE POWER ON / OFF.

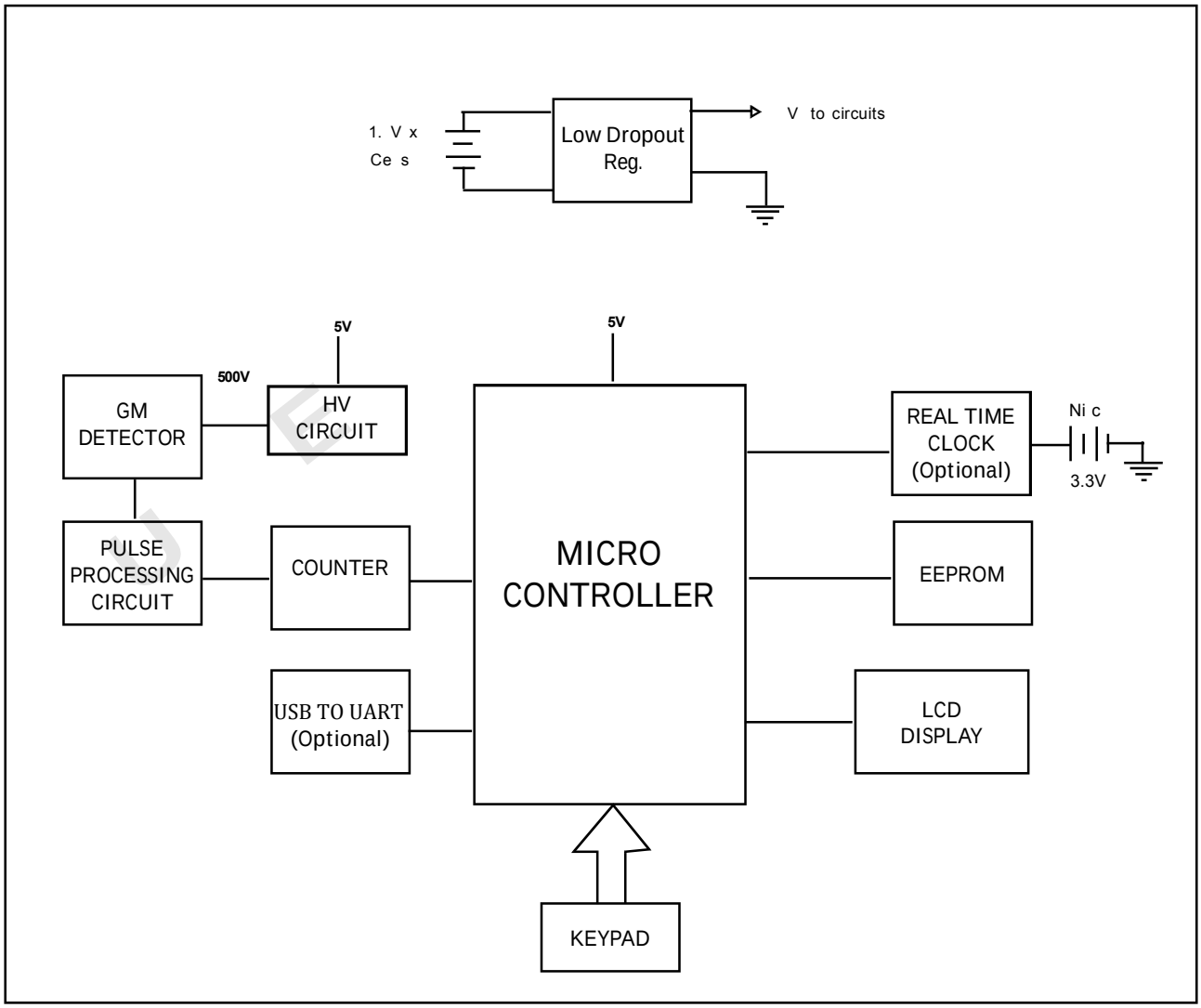
V. Visual display is through LCD Display.

VI. Data acquisition in TWO modes – CPM & ORE GRADE mode.

VII. Calibration of unit with standards with known ore grades, before actual measurements.

VIII. Programmability for iterations, Time Constant etc.

IX. Unit works on 1.5V x 4 = 6V R20 Eveready cells. Power last for about 30 to 35 hours of continuous use.



CHAPTER – VIII

USB TO UART DATA COMMUNICATION

A) Verify if Windows 7 is installed on Target PC. Nucleonix provides support only for Windows 7.
In case, for whatever reason, it is required to demonstrate the software on Windows XP, install the Service Pack 3 (if it is not already installed).
1. Double click on "windowsxp-kb936929-sp3-x86-enu._u5Kng" file in "windows xp service pack3" folder.

B) Login with Administrator privileges on your PC.
Insert NucSoft software CD and run NucSoft.bat to start installation. The Batch file automatically installs the necessary files.

C) NucSoft.bat should have installed NucSoft.xls and NucSoftLogin.xls automatically in C:\.
In case you do not find these files in C:\, Copy NucSoft.xls and NucSoftLogin.xls to c:\

D) NucSoft.bat should have installed USB_Serial Bridge drivers automatically.
In case it is not installed, Install by
1. Double Clicking on driver.exe in BAFOProlific_USBSerialBridge_Driver folder in CD and follow the steps.

E) NucSoft.bat should have installed dotNET framework automatically.
In case it is not installed, Install dotNET framework by
1. Double Clicking on dotNetFx40_Client_x86_x64.exe in dotNETClient folder in CD and follow the steps.

F) NucSoft.bat should have installed Setup.exe for NucSoft automatically.
To verify this, click on Start --> All Program --> Nucleonix Systems. If you do not find NucSoft shortcut, then it means, NucSoft is not installed. Run NucSoft Setup by double clicking on "Setup.exe" application in Debug folder.

G) NucSoft should have installed Skype automatically. In case it is not installed,
Run Skype Setup by Double clicking on "SkypeSetup" in SkypeSetup folder. Internet Connectivity is required.
Skype is required for Remote technical support.

H) In case your PC does not have Windows Live Movie Maker / Windows Media Player, Run Windows Live Movie maker Setup by Double clicking on "windowsLiveMovieMakersetup-web" in WindowsLiveMoviemakersetup folder. Internet Connectivity is required.
Windows Live Movie Maker is required to play Movie files (Documentation).

I) Go through the following Videos to understand the working of NucSoft, before running the application. To locate the Videos, click on Start --> All Programs --> Nucleonix Systems.
1. NucSoft_AboutUs
2. NucSoft_UserManual_SystemRequirements
3. NucSoft_UserManual_MakingConnections
4. NucSoft_UserManual_IdentifyingCOMPOrt
5. NucSoft_UserManual_SoftwareFeatures

J) Default Login and password for NucSoft software is 'admin' and 'Nucleonix'.

CCHAPTER - IX

AVAILING OF MAINTENANCE/ CALIBRATION SERVICES AND WARRANTY CLAUSE (with in India)

8.1 GENERAL

As per the warranty clause of the company, we provide one year warranty during which period we provide free service at our works. Hence in case of any mal-function in our instruments, you are requested to send the unit back to our works by RPP/COURIER/SPEED POST PARCEL/GATI/XPS/door delivery. We shall arrange immediate rectification/replacement within two weeks from the date of receipt of the equipment at our place. Please note that the equipment will be serviced at our works only.

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Hyderabad - 500 051 + 91-7207034546/ 7331104481 / 7331104482
E-mail: info@nucleonix.com www.nucleonix.com

For all the Radiation monitoring equipment, detectors built-in or external probes will not have one-year warranty, but only inspection warranty at the time of supply is provided. Since detectors will / may have fragile glass construction, we do not provide warranty. In case of failure of these components, Nucleonix will supply detector replacement at cost-cost price.

Note: In respect of all types of portable radiation monitors, it may be necessary to checkup and recalibrate the equipment once a year at our works.

8.2 EQUIPMENT REPAIRS / SERVICING POLICY (WITH IN INDIA)

(a) During Warrantee

The following procedure is to be followed by the customers with in India for availing services/ repairing facility during warrantee period.

Equipments are to be sent to our works for availing free repair services during warrantee, after the customer receives approval from the customer support division, by sending an e-mail.
For all equipments, costing less than 6.0 lakhs one year warrantee & free service is offered, when the equipments are sent to our works only. For larger systems such as installed systems, networked systems, specialized systems, costing more than 6.0 lakhs during one year warrantee, free service is offered at site. Field service Engineer will be deputed subject to warrantee terms & conditions.
This does not include personal computer related problems, for which local computer service provider of the PC vendor is to be contacted. Also for software related problems online support will be provided. Software support doesn't include cleaning of virus problems etc.
When the equipments are sent to our works for warrantee services, they are to be properly packed with adequate cushion to prevent any transportation damages. Nucleonix Systems is not responsible for damages or loss during transportation.
Packing / Freight charge is to be borne by customer when he sends the equipment to our works. However when we return after servicing packing will be Nucleonix responsibility & Freight charges will be to your account. Only services are free.
Please indicate in your correspondence equipment model & serial number.
All the equipments are to be sent to our works only on door delivery basis.
For Door Delivery Transportation contact XPS/GATI cargo in your city / town or a reliable courier service to pick the consignment from your place. For their nearest local address & phone no's look into their websites. Transit insurance if the customer feels is necessary it is to be covered.
Nucleonix Systems will not receive the equipments sent by other modes of transportation, such as Rail/ Road.
After servicing, equipments will be sent back by same mode of transport such as XPS/GATI/COURIER/ RPP.

All types of Radiation detectors, glass ware, PMTs etc which are fragile are not covered in warrantee, if the failure is due to physical damage, external or internal due to shock, dropping, miss-handling etc. If the failure is due to a natural fault then only it is covered under warrantee for a limited period of three months. However complete electronics is covered for 1 year warrantee.
You can also send the equipment personally to our works for repairs either during or after warrantee, after fixing up with our service dept (Customer Support Division). If possible we may repair on same day or your person can stay for a day or two & get it repaired & or calibrated.

(b) After warrantee Services

On expiry of 1yr warrantee if you like to send the equipment (low cost less than 6.0 lakhs) for repairs to our works, you may please observe the following procedure.
Send an e-mail with details mentioning that you agree to pay service charges which includes: Basic service charges per unit / module in the range of Rs: 2500 to Rs : 10,000 depending on the sophistication of the unit calibration charges (if applicable for your equipment) + cost of components + packing charges + Return Freight charges @ actual.
Once our customer support department responds & requests you to despatch the equipment to our works for repairs, you may do so by following the steps given below.
Followed by this you can send the equipment straight away if it is within 5 yrs old. If the equipment is beyond 5 yrs old, then also you can send it for repairs, however only after you receive confirmation from Customer Support Division, that it is repairable & is not an obsolete model. If the design is obsolete then customer support division (CSD) may give you 'buy back' offer to replace with new model or upgrade it with electronic circuit boards & enclosure.
For all installed equipments costing above Rs: 6.0 lakhs which are larger in size & for which field servicing only is recommended, you can obtain a quotation with relevant details by sending an e-mail & avail the services accordingly.
For all field servicing jobs, since we need to depute engineers, it is likely, to take time & also it will cost more which includes Engineer's TA & DA etc., apart from basic service charges + cost of spares etc. Please note that basic service charges will be different for different products depending upon sophistication.
Also in some cases it may not be possible to fix-up the problems in the field itself, in such cases we may advise you to send them to our works.
For all jobs to be serviced in the field, customer is requested to provide adequate details on the nature of problems, to enable our engineer to come prepared with adequate spares.
For any additional information send an e-mail to info@nucleonix.com, Atten: Customer support division.

8.3 EQUIPMENT REPAIRS / SERVICING POLICY (FOR EXPORTS)

Equipments, manufactured & exported are subjected to a well defined quality assurance (QA) plan & Factory acceptance tests (FAT). Nucleonix systems has the following policy to provide maintenance support to overseas customers either directly or through international dealers / distributors.

(a) During & after warranty:

For minor problems, which can be handled by customers, servicing tips have been provided in the user manual / servicing manual.
Also most of the equipments have built-in fault diagnostic features which will indicate to the user nature of problem in the equipment. Based on the visual indication in the instrument Display, user can take corrective action or contact Nucleonix systems by email for help.
Nucleonix systems will guide in localizing the defective part / module or sub-system by interacting with the customer if required. Skype will be used for communication.
During warranty free replacement of sub-system or board (PCB) will be done. However customer has to send defective sub-system back to Nucleonix system with-in 15 days on arranging replacement.
During & after warranty, any Freight charges & customs clearance charges are to be borne by customers, both ways.
If it is a manufacturing defect, then Nucleonix system will bear the replacement cost of sub-system / unit. However any Freight charges & customs clearance charges in their country are to be borne by customer.
After warranty, services will be similar to that of services during warranty. However, customer will have to pay for cost of parts replaced, freight charges both ways & customs clearance charges in both the countries. Nucleonix systems plans to introduce audio visuals on web or on CDs to facilitate product demonstration, installation & minor maintenance very soon.

8.4 HOW TO AVAIL CALIBRATION SERVICES (FOR INDIAN CUSTOMERS)

Nucleonix Systems offers radiation calibration services to its customers. Calibration services are provided for Nucleonix Systems manufactured products only, in general, as a company policy.

How to avail calibration services:

It is best advised that each of the Radiation monitors including Area monitors are calibrated once in a year. When you want to send your Radiation monitor / Area monitor / Contamination monitor for calibration to our works. You may send the equipment for calibration, by following the steps given below:

1. Our standard calibration charges per equipment (All types of Radiation monitors including portable survey meters, contamination monitors & Area Gamma Monitors) are Rs: 2500 + Packing + Freight charges. You can email a 'work order' accepting these charges.
2. Email your work order and despatch / send the equipment to our works if it is 5 years old or less including details of mode of transport sent with docket particulars.
3. Also mention in your work order & clearly indicate that you will agree to pay calibration charges & also equipment repair charges additionally if the unit is faulty & requires repairs before one can take it up for calibration.
4. You are requested to ensure good packing to avoid any transportation damages. Especially if there are external detector probes, they are to be packed with sufficient soft foam to ensure no damage in transportation.
5. Use only the specified following mode of transportation system for dispatching on door delivery basis. XPS/GATI cargo / Courier/RPP/Speed Post parcel etc. Send the equipment on freight paid basis. (Equipments sent by other methods such as Rail/Road etc will not be collected). Also you can cover for transit insurance both ways if you wish. Nucleonix system is not responsible for any transportation damages or loss during transportation both ways.
6. Immediately on receipt of the equipment, we will send an acknowledgement & also a proforma bill by email/ post.
7. Based on the proforma bill, once we receive the payment, equipment will be dispatched back by similar mode of transportation as mentioned above.

8.5 ANNUAL MAINTENANCE CONTRACT (AMC)

Annual maintenance contract (AMC) services:

For all sophisticated instruments & systems and also for installed monitors & networked systems in a nuclear facility or a Radiological lab or in a Medical cyclotron facility where no. of instruments are networked, it is advised that customer enters into an economical Annual maintenance contract with Nucleonix system.

Detailed AMC proposal can be obtained from our customer support division (CSD), by giving required inputs.

Inputs required by our CSD to send you AMC proposal:

- Name, year & data of purchase, Sl. Nos. of equipments, Model No's, No. of equipments for which AMC is required. Additionally no. of calls per annum required for preventive & breakdown maintenance may also be indicated.

Advantage of entering into AMC:

- Equipment services offered will be prompt & timely
- Nucleonix systems maintain required spares, spare tested PCBs, detectors & other critical components which may become obsolete.
- Obsolescence in electrons is quite rapid. If you enter into AMC guaranteed service for the period of AMC will be the responsibility of Nucleonix Systems.
  Nucleonix Systems will maintain Engineers at your disposal to attend to AMC calls on time

  Without AMC prompt service calls are not guaranteed.
  If some critical components become obsolete, then Nucleonix systems may request you to upgrade the product with new model or new electronics which may be expensive if you are not under AMC.

Training on maintenance / servicing:

- To a limited extent, we offer training on maintenance / repairs at our works to customers on chargeable basis. Details can be obtained from our customer support division, by customers who may require such services.

HOW TO REPLACE BATTERY

When you observe battery low voltage indication 'LB', on left corner of LCD display, it is advised that the battery be replaced to ensure correct calibration and indication of the counts / count rates.

Follow the below procedure for replacement of battery

a) Lift the two latches and disengage the top unit from its bottom cover. Now holding the bottom cover lift off the top unit by its handle. (Steps 1 & 2)

b) Notice battery holder on the bottom side of instrument electronic unit cover.(Step 3)

c) Now the existing batteries mounted in the **battery holder** are to be removed and replaced with new set of batteries ensuring proper polarity. (Step 4 & 5)

d) Now check battery voltage again, for that switch 'ON' the unit and see that 'LB' is not displayed on LCD display.

Step-1

Note : To separate the top instrument panel with handle which also contains electronics PCB, from the bottom cover follow the instructions given below;

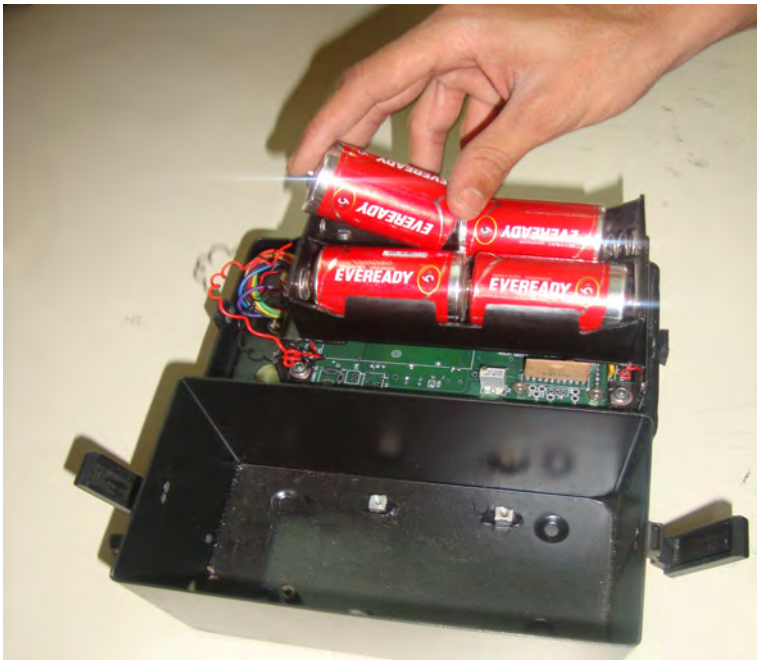
A. Hold the latches both sides as shown in the above figure with thumbs touching onto the top of latch and first finger touching on to the bottom of the latch.

B. Now bottom of the latch should be pulled outwards by using first finger as indicated in figure, by arrow.

C. This will loosen in the latches, facilitating one, to separate the top instrument panel with handle, from the bottom enclosure of the unit.


EVEREADY
EVEREADY
EVEREADY
EVEREADY

Step-2


EVEREADY
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EVEREADY
EVEREADY

Step-3

CHAPTER –X

CONTACT US FOR AVAILING SERVICES

Postal/Mailing Address (Phone / Fax / Email)

Nucleonix Systems Pvt Ltd.
Plot No. 162 A&B, Phase II, I.D.A.,
Cherlapally, Hyderabad - 500 051, Telangana, India.
Phone: +91-7207034546, 68888777.
Mobile: 7331104480, 7331104481 & 7331104482.
Email : info@nucleonix.com

For any information, Contact by email is always appreciated. (This will help us to respond to you quickly)

Marketing Department :

a) Sales / Commercial Information / Field installation and servicing

For any Commercial, Price information, Product information, customer coordination & quotation of our products customer related commercial services, please contact front office marketing staff through the listed Email Ids or Phone Nos. given below

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Whom to Contact:

Business Executives:	Contact Numbers	Contact by E-mail ID
1.R.Maniram (Sr. Business Executive)	Mob: 7331104481, Ph +91-7207034546	info@nucleonix.com
2.Ch.Gayatri (Business Executive)	Mob: 7331104481, Ph +91-7207034546	info@nucleonix.com
3.K.Swapna (Business Executive)	Mob: 7331104481, Ph +91-7207034546	info@nucleonix.com

Note: Our business executives will also connect you to concerned Engineer or General Manager for any technical clarifications if required

b) Factory Services

For **Servicing and Calibration** factory services & follow up on the above jobs including dispatch related/payment related issues of serviced & calibrated items please contact

Ms.K.Sarika **Mob:** 7331104482 **E-mail:** info@nucleonix.com
(Executive services)

She will also connect you to concerned engineer or general manager if required, for any clarifications & deficiencies in services

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c) Dispatch Related Issues (Production Items)

For dispatch related issues of your ordered equipments, including delays, purchase order related document deficiencies, payment proofs, dispatch docket details and bills etc,.contact

Ms.V.Anusha / Renuka Devi **E-mail:** info@nucleonix.com
(Executive Dispatch)

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d) Product Technical Information / Clarifications

Whom To Contact:

Contact any front office "Business Executive"- He/She will take your details and connect you to concerned product engineer for any technical clarifications. Best thing is to email your technical queries and obtain the reply, rather than on telephone.

You can also contact General Manager or Director (Tech) if required.

e) Marketing Manager

On business matters for all your marketing services / techno commercial requirements about Nucleonix Products contact:

Bhaskara I.V.
Mob:8019662500
Email: info@nucleonix.com

f) General Manager

Dr.M.S.R.Murthy PhD (Nuclear physics)
Email: info@nucleonix.com

Contact General Manager for all sales / servicing and technical information including customer support related issues, on the delays, gaps & lapses by our staff. Contact G.M. regarding field installations & field servicing jobs schedule etc.

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g) H.R -Incharge

Contact her regarding, job vacancies, sending resume for employment, H.R. related issues etc. contact

Ms. Shanthi Sri . P **Mob**:7331104480 **Email:** recruit@nucleonix.com

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h) Director -Technical

Mr. J. Dheeraj Reddy
Email: jdreddy@nucleonix.com
Mobile No. +91-7674009005

Contact him for, any Technical Information and clarifications on products, which cannot be answered by General Manager / Customer support executives.

For any technical deficiencies in products, related issues & suggestions on product improvements you may contact by email or telephone. This will help the company to improve the product & serve you better.

Dealer's complaints, on commercials, lapses by our commercial staff, or any other discripancy, or you like to give any feedback on any Nucleonix staff doing any wrong thing against cleaner / ethical business principles / practices can be complained to any of the directors or managing director.

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i) Director - IT
Mr. J. Nishanth Reddy
Email: nishureddy@yahoo.com; info@nucleonix.com
Mobile No. +91-9966691000

For any deficiencies in product software's, related issues, & any suggestions or improvisations in software's can be contact by email or telephone. This will help the company to improve the product & serve you better.

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j) Managing Director
Shri. J.Narender Reddy (Managing Director)
Email : jnreddy@nucleonix.com; info@nucleonix.com

Contact Managing Director for, Foreign relations, International Business co-operation, Joint ventures, Exports, Dealership in other countries, Policy matters, Technology tie-ups etc.

k) Dealers Complaints :
Dealers complaints, on commercials, lapses by our commercial staff, or any other discripancy, or you like to give any feedback on any Nucleonix staff doing any wrong thing against cleaner / ethical business principles / practices can be complained to any of the directors or managing director.

An innovative company working towards excellence in the field of Nuclear Instrumentation

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