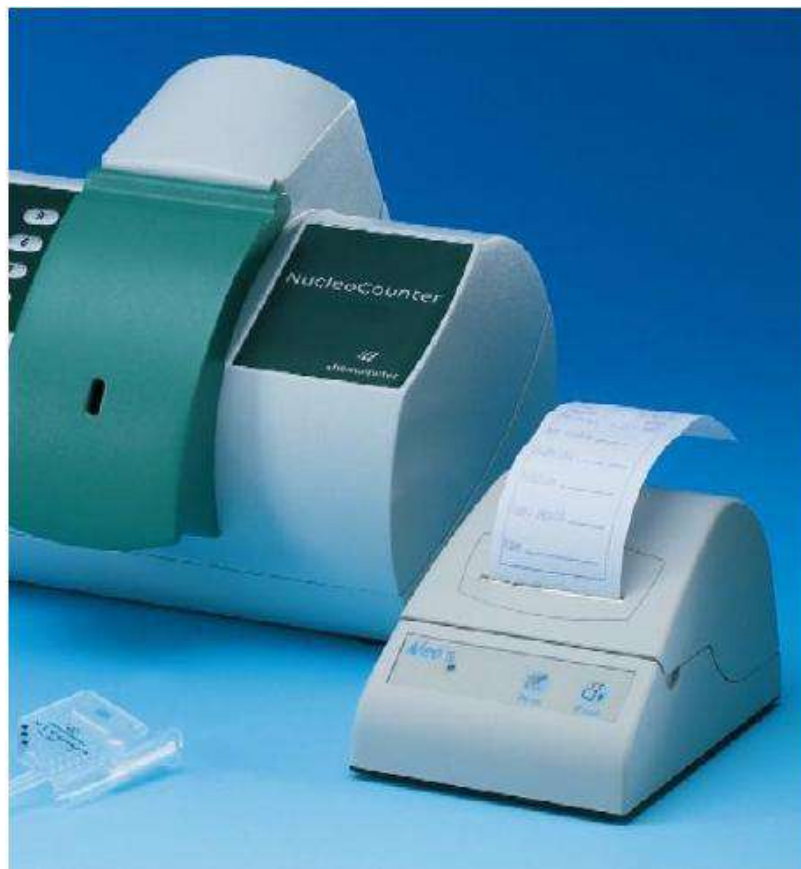


NucleoCounter[®] System

Connecting a PCNEOS Thermal printer

Revision 4.0



NucleoCounter[®] System – Technical Note No.0014

Connecting a PCNEOS Thermal printer to the
NucleoCounter[®] system
NucleoCounter[®] YC-100[™] system
NucleoCounter[®] SCC-100[™] system

Introduction	The NucleoCounter [®] instrument family is intended for the counting of various biological cells in a fast and efficient way. The analysis can be documented using specialized software like NucleoView. The present Technical Note describes how to connect a printer to the NucleoCounter [®] instrument family.
Application	For the purpose of documentation a printer can be connected to the NucleoCounter [®] , NucleoCounter [®] YC-100 [™] and NucleoCounter [®] SCC-100 [™] systems with SW release 3.00 or higher.
Product description	A printed report contains fields for: Instrument information, software version, date, time, number, sample ID, Number of Cells/ml, operator signature and other relevant fields when viability analysis is performed: Total number of cells, Number of dead cells, Dilution, Dilution Corrected result and Viability.
Unpacking the printer	The "Neo's User's Guide" is supplied with the printer and this documents the printer and its use. Please follow the instructions in this manual before attempting to use the printer.

How to connect the printer to the NucleoCounter

Figure 1 Location of the Printer output on the NucleoCounter



Figure 2 Connecting the Printer cable to the NucleoCounter (lower connector).

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Figure 3 Location of the Serial connector on the PCNEOS printer (to the left).



Figure 4 Connecting the Printer cable to the PCNEOS printer.

The Printer output on the NucleoCounter is on the left hand side of the instrument when seen from the rear (see Figure 1). Please note that the Printer output is the circular shaped connector below the USB connector.

Figure 2 shows how to connect the Printer cable to the Printer output connector.

The Printer cable must be connected to the Serial Connector placed on the left hand side of the printer when seen from the rear (see Figure 3). Please note that the connector to the right is the mains connector. Figure 4 shows how the Printer cable is connected to the PCNEOS printer.

How to install the paper

Page 8-9 of the printer User's guide describes the steps required for the installation of paper rolls.

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Storage time of the print.

The document (AP50KS-FZ 10 year.pdf) supplied with the paper describes how to ensure 10 years storage time of the paper type: AP50KS-FZ.

Other features for your printer option:

The NucleoCounter software has new features used for the printing report: Analysis Number, Time and Date.

The Analysis Number is a number incremented by 1 each time an Analysis is performed (if the Printer is enabled). This number is present on the Printing report. The Analysis Number can be reset to 1 using the F30 function. When the number reaches 9999 the next analysis will have no. 1. On the printout The Field "Number" contains the value of the Analysis Number.

The time and data of the analysis are printed on the printing report. Use the functions F200 and F201 to set Date and Time.

F30 - Resetting of the Analysis Number.

Turn the instrument on

Use the keypad to enter <F30> <enter>, then select <enter> or <Esc> to either continue or cancel the operation. If <enter> is selected the display will shortly show " Resetting.." indicating that the Analysis Number is being reset.

F200 - Setting of the Date.

Turn the instrument on

Use the keypad to enter <F200> <enter>, then you are prompted to enter the date using the format yy-mm-dd (year-month-day), below the present data value. If the year is 2004 then yy = 04, if the month is may then mm = 05 and if the day is the 17th then dd = 17. Use the <enter> key when done. You can at any time use the <Esc> key to cancel the operation.

F201 - Setting of the Time (24 hour clock).

Turn the instrument on

Use the keypad to enter <F201> <enter>, then you are prompted to enter the time using the format hh:mm (hour:minutes), below the present time value. If the time is 15 minutes past 16 (16:15 or 4:15pm), then hh = 16 and mm = 15. Use the <enter> key when done. You can at any time use the <Esc> key to cancel the operation.

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Accessories	Part No.	Description
	939-0006	Thermal printer PCNEOS-S2BN
	931-0010	Printer cable 0.9 m.
	991-0008	Neo's User's Guide
	939-0012-16	Datasheet for printer paper – LTS paper for PCNEOS-S2BN.pdf
	939-0012	LTS paper for PCNEOS-S2BN

Content of the Printing report

The printed report for the NucleoCounter and the NucleoCounter YC-100 looks as follows:

Chemometec NucleoCounter S/N 000-00 v3.00	Report header
Date 15-Jan-2004 Time 09:06:12 Number #0114	Analysis Number
Sample ID _____	Sample ID*
Cells/ml 2.28 x 10E5	Result: Cells/ml
Total _____ Dead _____	"X" indicating Total or Dead count*
Dilution _____	Used Dilution*
Corr. result _____	Dilution corrected result*
Viability _____	Calculated viability*
Sign. _____	Operator signature*

Figure 5 Printed report from a NucleoCounter and a NucleoCounter YC-100

* Must be entered by the Operator

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The printed report for the NucleoCounter SCC-100 looks like:

ChemoMetec NucleoCounter		Report header
S/N	000-00 v3.00	
Date	15-Jan-2004	
Time	09:06:45	
Number	#0115	Analysis Number
Sample ID		Sample ID*
SCC/ml	228,000	Result: Somatic Cell Count/ml.
Sign.		Operator signature*

Figure 6 Printed report from a NucleoCounter SCC-100

* Must be entered by the operator

Printer settings report.

Page 14 of the printer User's guide describes the steps required to check the printer settings

This part of the printer settings report appears after a small header.

```
Printer Emul.: Custom DPT24
Protocol      : No Addressable
Baud Rate    : 19200 bps
Data length  : 8 bits/chr
Parity       : None
Handshaking  : Xon/Xoff
Autofeed     : CR disabled
Panel Key    : Enabled
Print Mode   : Normal
Font Type    : Font A
Speed/Quality: Normal
Offline      : Disabled
Print Density: Dark
```

Figure 7 Printer settings report from the PCNEOS printer with settings for the NucleoCounter.

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Troubleshooting	In case your printer is not working please ensure that: The Printer cable is Connected The Printer is turned ON The Paper roll is correctly installed The settings of the printer matches the settings when the printer was supplied (see Figure 7)
Limitations	The use of a printer together with the NucleoCounter [®] system does not alter the analytical application or performance of the NucleoCounter [®] system used. For use of the NucleoCounter [®] system please refer to the NucleoCounter [®] User's guide or the appropriate Application Note.
Liability disclaimer	This Technical Note is intended to be used only as INSTRUCTIONS FOR THE CONNECTION OF THE SPECIFIED PRINTER TO THE APPROPRIATE NucleoCounter [®] System. This Technical Note does not warrant any use of the mentioned printer or consumables except for the printing of reports as described. Use of the printer for other purposes, lack of maintenance, use of un-recommended consumables or connectors can result in faulty and/or hazardous operation of the printer.
Product disclaimer	ChemoMetec A/S reserves the right to introduce changes in the product to incorporate new technology. This Technical Note is subject to change without notice.
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