Net Controller NC9100/NC9200/NC9300

Desktop, DIN rail and embedded models

Network Adapter 10/100 Mbps

Getting started

1 Preparations

The first time the IP settings are made over the network they have to me made in a certain way.

Note, the values used in this document for the IP settings (IP 192.168.0.10, MAC 00-02-b8-00-02-01) are only examples. The real MAC address is factory labelled on each Net Controller.

The reset button **R** has two functions: Short pressing gives a normal Reset (restart), long pressing (3 s) activates Configuration mode.

1. Check with the network administrator if manual or automatic IP setting (DHCP) shall be used. (Automatic IP setting is set as default in Net Controller, IP address is 0.0.0.0)
2. If manual IT setting, ask for the IP settings from the network administrator, such as IP address, netmask and default gateway.

2 Connections

1. Connect the network port **TP** to the network with a TP cable.
2. Connect **Pwr** 12-48V AC/DC to power.
3. Check that LED **Pw** green is on ("Power and Started").
4. Check that LED **L/A** yellow is on ("Link" – Valid link for the network).
5. LED **Hs** green is on if 100 Mbps link ("High speed").

3a Automatic IP setting

At automatic IP setting, the network has a DHCP server where the IP settings are provided automatically.

1. Contact the network administrator and ask for the IP address that the DHCP server has assigned to Net Controller.
2. Test with **ping** of the assigned IP address from your PC: ***>ping 192.168.0.10*** (example of assigned IP address).
3. Start Telnet or a web browser with the assigned IP address and check other parameters.

3b Manual IP setting: Terminal

Setting via serial port with values from network administrator.

1. Connect a Terminal (PC) to serial port **S1** (run NCsetup or a terminal program).
2. Activate Configuration mode (press **R** button on Net Controller for 3 sec). The following text is displayed:
   Configuration mode
   Net Controller <Version information>
   *Enter password (j ********)*
3. Enter password with the **j** command:
   >j control (The text *Configuration open* is displayed)
4. Set IP address with the **a** command:
   MAIN ***>a 192.168.0.10***
5. Set netmask with the **m** command:
   MAIN ***>m 255.255.255.0***
6. Set default gateway with the **g** command:
   MAIN **>g 255.255.255.255**
7. Store changes to Flash memory with the **s** command:
   MAIN ***>s*** (The text *Warning, Store Configuration to Flash? Confirm with y* is displayed)
8. Type **y** to confirm.
   *MAIN>**y*** (The text *Store to Flash, Exit configuration* is displayed and Net Controller restarts)

3c Manual IP setting: Telnet

Setting via network with values from network administrator.

1. Make sure your PC is connected to the same subnetwork.
2. Enter IP and MAC address with the **arp** command:
   >arp –s 192.168.0.10 00-02-b8-00-02-01
3. Start Telnet with the assigned IP address.
   The following text is displayed:
   Configuration mode
   Net Controller <Version information>
   *Enter password (j ********)*
4. Enter password with the **j** command:
   >j control (The text *Configuration open* is displayed)
5. Set IP address with the **a** command:
   MAIN ***>a 192.168.0.10***
6. Set netmask with the **m** command:
   MAIN ***>m 255.255.255.0***
7. Set default gateway with the **g** command:
   MAIN **>g 255.255.255.255**
8. Store changes to Flash memory with the **s** command:
   MAIN ***>s*** (The text *Warning, Store Configuration to Flash? Confirm with y* is displayed)
9. Type **y** to confirm.
   *MAIN>**y*** (The text *Store to Flash, Exit configuration* is displayed and Net Controller restarts)

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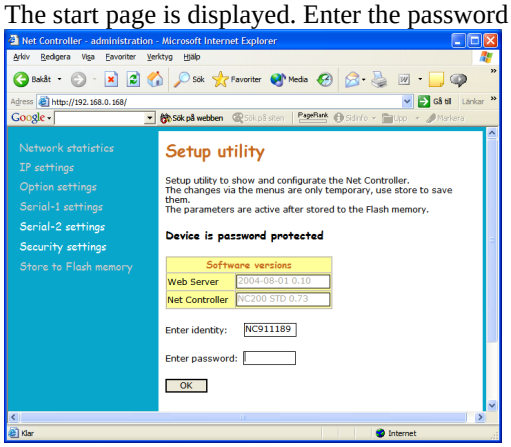
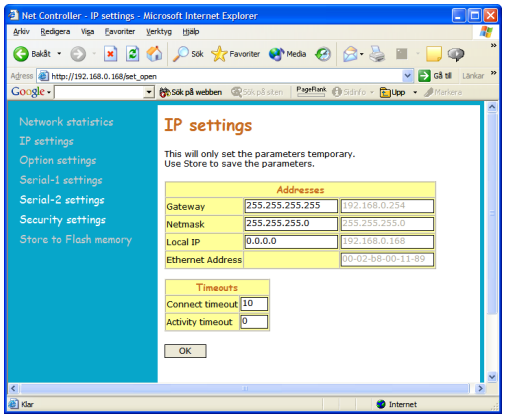
3d Manual IP setting: Web browser

Setting via network with values from network administrator.

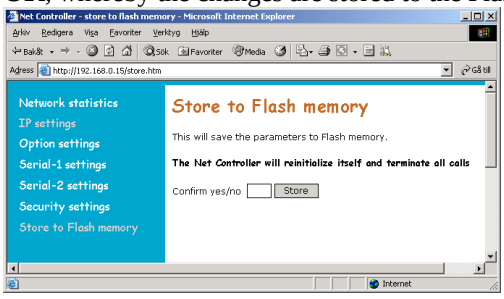
1. Make sure your PC is connected to the same subnetwork.
2. Enter IP and MAC address with the **arp** command:
   >arp –s 192.168.0.10 00-02-b8-00-02-01
3. Start the web browser with the assigned IP address.
4. The start page is displayed. Enter the password ***control***.



5. The page *IP settings* is displayed. Enter IP adress in the Local *IP* field and click **OK**.



6. Select *Store to Flash Memory*, confirm with ***yes*** and click **OK**, whereby the changes are stored to the Flash memory.



4 Command language

- Terminal (NCsetup or terminal program) and Telnet use the built in command language in Net Controller.
- Password is required at login.
- A command consists of one letter, any arguments and data. If no data is given, current Net Controller data is displayed.
- The command **>*?*** displays a list of all commands.
- Settings for the serial port is done via a submenu **>*1*** (with own list of commands **>*?***). Back to main menu with the **Esc** key.

5 Verify installation

1. Started and has power? LED **Pw** green is on.
2. Network link detected? LED **L/A** yellow is on.
3. 100 Mbps link? LED **Hs** green is on.
4. Valid IP setting? Run **ping** command:
   >ping 192.168.0.10 (example of assigned IP address)
5. Communication via the network to serial port(s)?
   Strap pin 3,2 (TD, RD) on the serial port (for loopback).
   Run **Telnet**. Make sure to enter the TCP port number that the serial port is assigned to: ***>telnet 192.168.0.10 10001*** (example of assigned IP address and TCP port number).
   Verify that it connects.
6. Send/receive data by pressing a character key?
   The character is sent via the network to the serial port.
   Verify network communication: LED **L/A** yellow blinking.
   Verify serial communication: LED **Td**, **Rd** yellow blinking.

Connectors and indicators

Reset button (R)

Action	Description
R Short pressing	Reset (restart)
R Long pressing (3 s)	Activates configuration mode via serial port

LED functions (Pw) (Hs) (L/A) (Td) (Rd)

LED	Colour	Status
Pw	Green	Power and Started
Hs	Green	High speed connection, 100 Mbps
L/A	Yellow	Link – Valid link for the network
L/A	Yellow blinking	Activity – Network communication in progress
Td	Yellow blinking	Serial communication Transmit in progress
Rd	Yellow blinking	Serial communication Receive in progress

Network port (TP) RJ45 connector

TP	10Base-T/100Base-TX

Serial port (S1/S2) DB9F connector (*Net Controller is DCE*)

Pin	Signal	RS232	RS422 4 wire	RS485 2 wire
1	Out	DCD		
2	Out	RD	T-	T-/R-
3	In	TD	R+	
4	In	DTR		
5		GND		
6	Out	DSR		
7	In	RTS	R-	
8	Out	CTS	T+	T+/R+
9	Out	RI		

Power (PW) Jack connector

Contact	Description
Pin	12-48V AC/DC-
Socket	12-48V AC/DC+

Power Terminal-T4 connector (NC9100/NC9200)

Pin	Description
+	12-48V AC/DC+ Primary
+	12-48V AC/DC+ Secondary
0	12-48V AC/DC-
⏚	Protective ground

Digital I/O Terminal-T6 connector (NC9200)

Pin	Description
1	Input-0, max 30V
2	Input-1 +V, max 30V
3	Input-1 0V
4	Output-0, max 30V, 30mA
5	Output-1, max 30V, 30mA
6	GND