Net Controller NC9300 Compact
Datasheet

Description

Net Controller is a network adapter for industrial use that connects equipment with serial interfaces (RS232/RS422/RS485) – to a standard Ethernet network with TCP/IP protocol (LAN, WAN, Internet, Intranet).
The communication is fully transparent. Ethernet TCP/IP is a well developed network technology and widespread standard that gives great advantages by e.g. simpler integration.

Net Controller replaces serial cables and modems by using existing networks. This will decrease cost due to simpler installations and maintenance, and lower operating costs.

Net Controller is a general and independent product that is easy to integrate into existing systems. Different system configurations can be achieved by using one or several ***Net Controllers***.

Net Controller NC9300 Compact is a small desktop and embedded model with credit card size footprint and one serial port.

Applications (examples)

Process applications – Supervision of machines and control of processors – PLC:s (Programmable Logic Controller)
Building automation – Regulation and supervision by building process stations, BPS
Security systems – Passage control and alarm systems, Card readers, Key pads, Sensors
Data collection – Storing and collecting information – Scales, Printers, Measuring equipment, Scanners, Packaging machines
Remote control – Controlling equipment via console/terminal port – Computers (e.g. UNIX), Telephone exchanges

System configurations (examples)

Remote access to own equipment over networks. Use own central applications or terminal programs (e.g. Telnet) to remotely access own equipment over networks by placing a ***Net Controller*** at the equipment.

Web. Use ***Net Controller*** with web pages for applications over Internet, e.g. show/control/configure own equipment.

Serial point-to-point connection over networks. Connect serial ports over networks (LAN, WAN, Internet, Intranet) using a ***Net Controller*** on each end. Existing own equipment can be connected without modification.

As a dial-up modem over networks. Connect own equipment intended for modem to a network by replacing each modem by a ***Net Controller*** that simulates modem connection, where the phone number is replaced by an IP address in the AT command.

Join networks. Join two subnetworks via a serial connection ("IP over serial line", PPP via RS232/RS422/RS485) using a ***Net Controller*** on each end. Distance up to 1 km with RS422. For longer distance, modem, radio link, etc. can be utilized.

Features

- Microprocessor controlled network adapter
- Flash memory for easy update
- One serial port with RS232/RS422/RS485
- Selectable serial data format and speed 300-115200 bps
- Simulation of modem with AT commands
- Ethernet with two speeds 10/100 Mbps
- One default gateway
- Fixed or dynamic IP address with DHCP
- Web server, compatible with all standard web browsers
- Supports own web pages, CGI support for serial port
- Configuration program for parameters via Terminal, Telnet or Web browser
- Diagnostics with LED and logging
- External power 12V-48V AC/DC
- Small size, dimensions 88 x 71 x 18 mm (82 x 58 x 17 mm excl connectors, mounting holes, rubber feet)
- Weight 86 g
- Mounting free-standing or with mounting holes

Net Controller NC9300 Compact

Desktop and embedded model

Network Adapter 10/100 Mbps

Function

- Each ***Net Controller*** has its own IP address and each port its own TCP port number
- Fixed or dynamic IP address with DHCP
- Connects automatically on received serial data, disconnects automatically on no data (timeout)
- Data communication is fully transparent
- Serial port with control signals for flow and modem control
- Simulates modem with AT commands, enabling connection of equipment intended for modem
- Handles routing with netmask and gateway for divided network
- TCP/IP compatible for standard applications such as Ping and Telnet
- All parameters – IP addresses, TCP ports, data format, speed – can be configured from web browsers or Telnet via network, or from terminal program via serial port
- Download of program to Flash memory from computer via serial port, for easy update

Web

- Own equipment can be shown/controlled/configured via Internet using own web pages that have been created and downloaded to ***Net Controller***
- ***Net Controller*** has a built-in web page enabling configuration via the network using a web browser

Customisation

- ***Net Controller*** can be ordered customised with own functions and special interfaces. Typical functions can be protocol, encrypting, polling, etc.
- Central applications can when needed be customised regarding functionality towards own equipment and towards ***Net Controller***
- ***Net Controller*** is TCP/IP compatible with tools such as e.g. Visual Basic, C++ and Winsock

WHI•KONSULT

Scheelegatan 11 • 112 28 Stockholm
Tel. +46 (0)8-449 05 30 • Fax +46 (0)8-449 05 39
Email info@whi.se
Webb http://www.whi.se

Technical data

Microprocessor controlled network adapter, 32 bits ARM7 RISC processor
Flash memory for easy update
Low power architecture with 3.3V logic
Watchdog for program surveillance and restart on errors

Ethernet IEEE 802.3, 10/100 Mbps
Protocols: ARP, DHCP, HTTP, ICMP, IP, PPP, TCP, UDP

Serial port RS232/RS422/RS485, flow control and modem signals
Selectable serial data format and speed 300-115200 bps

Power 12V-48V AC/DC, max 80mA

Dimensions 88 x 71 x 18 mm (82 x 58 x 17 mm excl connectors, mounting holes and rubber feet)
Weight 86 g

Ambient temperature 5-50°C/operating, -40-80°C/storage
Relative humidity 5-95% none-condensing

Mounted free-standing or with mounting holes (d=3,5 mm)

CE approved, conforms to the electromagnetic compatibility directive EMC

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) 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+