



IDS500

Ethernet Access Controller

XNC900-0-0-GB-XX XNC901-0-0-GB-XX XNC910-0-0-GB-XX
 XNC911-0-0-GB-XX IPS971-0-0-GB-XX

General Hardware (Continued)

- 64 MB SDRAM Memory (Models XNC900 and XNC910).
- 128 MB SDRAM Memory (Models XNC901 and XNC911).
- Operation from power inputs in the range 10 V DC to 30 V DC.
- One RS232 Port with Full Flow Control.
- One USB V1.1 Host Port.
- One USB V1.1 Device Port.
- Two SPDT Relay Outputs.
- Two Dry Contact Digital Inputs.
- Fully incorporated uninterrupted Power Supply with trickle charge and battery management.
- Power Input Fail and Battery Low signal reporting.
- 48 Hour Hibernation Mode for extended battery backup of the SDRAM Memory.

Aluminium Extruded Cabinet (XNC900 and XNC901)

- Housed in a robust, aluminium enclosure.
- An incorporated 6 V 3 Ahr Sealed Lead Acid Battery providing 6 hours full operation.

Power Supply Combo (IPS971)

- A 3 Amp Switch Mode Power Supply providing 13.8 V DC.
- Integrated, automatic switch-over to Battery operation on Mains Failure.
- Compact, Mild Steel Cabinet, accommodating the Power Supply, Controller and a Sealed Lead Acid Battery.
- Five Quick Click Glands for easy wiring.
- An internal power supply provides the battery charging facility at 6.8 V and 350 mA.

Physical Specifications

XNC900 and XNC901 Aluminium Extruded Cabinet

Length	: 165 mm (7 in).
Width	: 197 mm (8 in).
Height	: 89 mm (4 in).
Approximate Weight	: 2 kg (4 lb) Battery included.
Cabinet Material	: Aluminium.
Colour	: Black.

XNC910 and XNC911 PCB only

Length	: 160 mm (6 in).
Width	: 114 mm (4 in).
Height	: 23 mm (0.9 in).
Approximate Weight	: 160 g (7 oz).

IDS500 Controller

Product Specification Catalogue

The **IDS500 Ethernet Access Controller** is a Linux based Single Board Computer for setting up custom based embedded networking solutions. The design of the IDS500 makes it ideal for OEM applications. The IDS500 is an ARM-9 Linux based solution making the full power of Linux available to application developers.

The IDS500 features a full speed 10/100 Ethernet port as well as support for USB devices. It also features dual RS485 ports with automatic line-turnaround, allowing the control of other devices. The Controller comes standard with a Python 2.4 Interpreter. This is the preferred programming environment for developing applications. Other development tool chains are available on request.

The IDS500 is a high performance yet low cost, low power solution giving it an advantage over similar applications.

The Controller is available as a housed model or as a stand-alone Printed Circuit Board (PCB) to suit your specific needs.

Key Features

General Hardware

- ARM920T Microprocessor Core operating at 200 mips (million instructions per second).
- Linux™ Operating System.
- 16 MB Flash Memory.
- LEDs indicate transmit and receive line activity for diagnostics.
- A Real Time Clock (RTC) with a 3 V Lithium Backup Battery (providing 5 years stand-by operation).
- Remote Firmware download capability.
- Supports a secure logon when changing Controller Configuration settings using the Ethernet Discovery Utility.
- An Ethernet Controller Port for connection to an Ethernet Switch or Hub (or other network device).
- Two RS485 Bus Ports.



IPS971 Power Supply Combo

Length	: 305 mm (12 in).
Width	: 295 mm (11 in).
Height	: 77 mm (3 in).
Approximate Weight	: 3 kg (7 lb) excluding Controller and Battery.
Cabinet Material	: Mild Steel.
Colour	: Black.

Environmental Specifications

XNC900, XNC901, XNC910 and XNC911

Operating Temperature	: -10°C to +50°C (+14°F to +122°F).
Storage Temperature	: -15°C to +50°C (+5°F to +122°F).
Humidity Range	: 0 to 95% relative humidity at +40°C (+104°F) non-condensing.

Approvals

CE Approval : EN 301 489-3 and EN 304 489-1.

FCC Approval : Pending.

Dust & Splash Resistance XNC900, XNC901 : Designed to work in an indoor (dry) environment similar to IP30. The Controller is, therefore, not sealed against water.

Dust & Splash Resistance XNC910, XNC911 : Designed to work in an indoor (dry) environment. The Controller is not sealed against water.

Drop Endurance : 2 m (7 ft) drop (in packaging).

IPS971 Power Supply Combo

Operating Temperature	: -25°C to +60°C (-13°F to +140°F).
Storage Temperature	: -40°C to +80°C (-40°F to +176°F).
Humidity Range	: 0 to 95% relative humidity at +40°C (+104°F) non-condensing.

Approvals

CE Approval : EN 301 489-3, EN 301 489-1 and EN300 330-1.

FCC Approval : Pending.

Dust & Splash Resistance : Designed to work in an indoor (dry) environment similar to IP20. The Power Supply Combo is, therefore, not sealed against water.

Drop Endurance : 1 m (3.28 ft) drop (in packaging).

Electrical Specifications

Power

XNC900, XNC901, XNC910 and XNC911

Input Voltage : 10 V DC to 30 V DC.

Power Requirements	Current (mA)	Power (W)
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Input Voltage 10 V DC (Maximum)	: 480	4.8
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Input Voltage 30 V DC (Maximum)	: 160	4.8
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Permissible Input Supply

Ripple Voltage (Max) : 1 V_{PP} at 50 Hz.

Power Input Protection : Reverse polarity on DC power inputs, over-voltage and over-current protection are provided on the Controller.

Battery

Type : 6 V 3 Ahr Sealed Lead Acid Battery.

Length : 133 mm (5 in).

Width : 34 mm (1 in).

Height : 65 mm (3 in) including the terminals.

Battery Life : 4-6 Hours uninterrupted operation.
48 Hours Power Shutdown (Hibernation Mode).

Real Time Clock Backup Battery (RTC)

Battery Type : 1 x 3 V, CR2032, Lithium cell Battery.

Battery Life : 5 Years (with power OFF).

IPS971 Power Supply Combo

Input Voltage : 85 V AC to 265 V AC at 50/60 Hz.

Power Output

Output Voltage (Mains Power On) : 13.8 V DC ±0.3 V DC.

Output Current : 2 A continuous (Power Output Terminals).

NOTE: The Power Supply Combo includes a 3 A Switch Mode Power Supply which provides two outputs, both with a voltage of 13.8 V DC. The combined current supply from both outputs may not exceed 2 A. The remaining 1 A is used for battery charging and system requirements.

Battery

Type : 6 V 3 Ahr (Max), Sealed Lead Acid Battery.

Length : 151 mm (6 in) (Max).

Width : 65 mm (3 in) (Max).

Height : 99 mm (4 in) including the terminals (Max).

Real Time Clock Backup Battery (RTC)

Battery Type : 1 x 3 V, CR2032, Lithium cell Battery.

Battery Life : 5 Years (with power OFF).

The following specifications are common all models of the IDS500 Controller:

Controller Bus

USB Host Port

Connection : USB, Type-B, female connector, 12 Mbps, USB V1.1.

Host Power : 5 V at 500 mA max.

USB Device Port

Connection : USB, Type-B, female connector, 12 Mbps, USB V1.1.

Ethernet Port

Connection : Standard Ethernet RJ45 connector. 10/100 Mbps, half or full duplex.

Protocol : TCP/IP, UDP.

RS232 Port

Connection : 9-Way, D-type, male connector, full flow control.

Default Baud Rate : 115 200.

RS485 1 (Controller) Port

Configuration : 38 400 Default.

Electrical Interface : RS485.

Baud Rates : 9 600, 19 200, 28 800, 38 400, 57 600 and 76 800 selectable via the Protocol.

Data Format : 8 data bits, no parity, 1 stop bit.

Communications Protocol : ImproX Secure Communications Protocol.

Line Termination (RS485) : Provision is made for line termination.

Default Mode : Receive Mode.

Terminal Bus

RS485 2 (Terminal) Port

Configuration : 38 400 Default.

Electrical Interface : RS485.

Baud Rates	: 9 600, 19 200, 28 800, 38 400, 57 600 and 76 800 selectable via the Protocol.
Data Format	: 8 data bits, no parity, 1 stop bit.
Communications Protocol	: ImProX Secure Communications Protocol.
Line Termination	: Provision is made for line termination.
Default Mode	: Receive Mode.

Digital Inputs

Input Type	: 2 Inputs, Dry Contact closure to Ground
Protection Range	: Protected to ± 80 V.

Relays

Relay Output	: 2 Relays, SPDT, with NO, COM and NC contacts.
Contact Ratings	: 3 A at 28 V DC. 3 A at 125 V AC.

Memory

RAM (Non-volatile)	: 64 MBytes or 128 MBytes.
Flash ROM	: 16 MBytes.

Other

Anti-tamper Switch XNC900, XNC901, XNC910, XNC911	: 2 Internal Switches.
Anti-tamper Switch IPS971	: 1 Internal Switch.

Factory Defaults

Test Modes

Power-on Self-test	: RAM, Flash-ROM, RTC.
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Baud Rates

RS485 1 (Controller) Port	: 38 400.
RS485 2 (Terminal) Port	: 38 400.
RS232 Port	: 115 200.

User Interfaces

Controller

Power Indicator

Power-on LED	: Red LED (internally visible).
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Diagnostic Indicators

Incoming RS485 1 (Controller)	: Flashing Green LED (internally visible).
Outgoing RS485 1 (Controller)	: Flashing Red LED (internally visible).
Incoming RS485 2 (Terminal)	: Flashing Green LED (internally visible).
Outgoing RS485 2 (Terminal)	: Flashing Red LED (internally visible).
Link Speed LED (Ethernet)	: Flashing Red LED (internally visible).
Duplex Mode LED (Ethernet)	: Flashing Red LED (internally visible).
Link Active LED (Ethernet)	: Flashing Red LED (internally visible).
CPU Usage	: Red LED (internally visible). On = Idle, Off = Busy.
CPU Running	: Red LED (internally visible). On = Yes, Off = No.

CPU Fault	: Red LED (internally visible). On = Fault Condition, Off = Ok.
Relay Activated	: Red LED (internally visible).
Digital Input Closed	: Green LED (internally visible).

Related Information

For extra information relating to this product refer to the:

- IDS500 Hardware Installation Manual (XNC300-0-0-GB-XX).
- IDS500 Controller Software Training Guide (XNC301-0-0-GB-XX).

Ordering Information

Order the IDS500 Ethernet Access Controller using the following Part Numbers:

- XNC900-0-0-GB-XX: IDS500 Ethernet Access Controller with 16 MB Flash and 64 MB SDRAM.
- XNC901-0-0-GB-XX: IDS500 Ethernet Access Controller with 16 MB Flash and 128 MB SDRAM.
- XNC910-0-0-GB-XX: IDS500 Printed Circuit Board with 16 MB Flash and 64 MB SDRAM.
- XNC911-0-0-GB-XX: IDS500 Printed Circuit Board with 16 MB Flash and 128 MB SDRAM.
- IPS971-0-0-GB-XX: ImProX IPS containing an IDS500 Ethernet Access Controller.

Warranty Details

This product conforms to our Warranty details on www.impro.net.

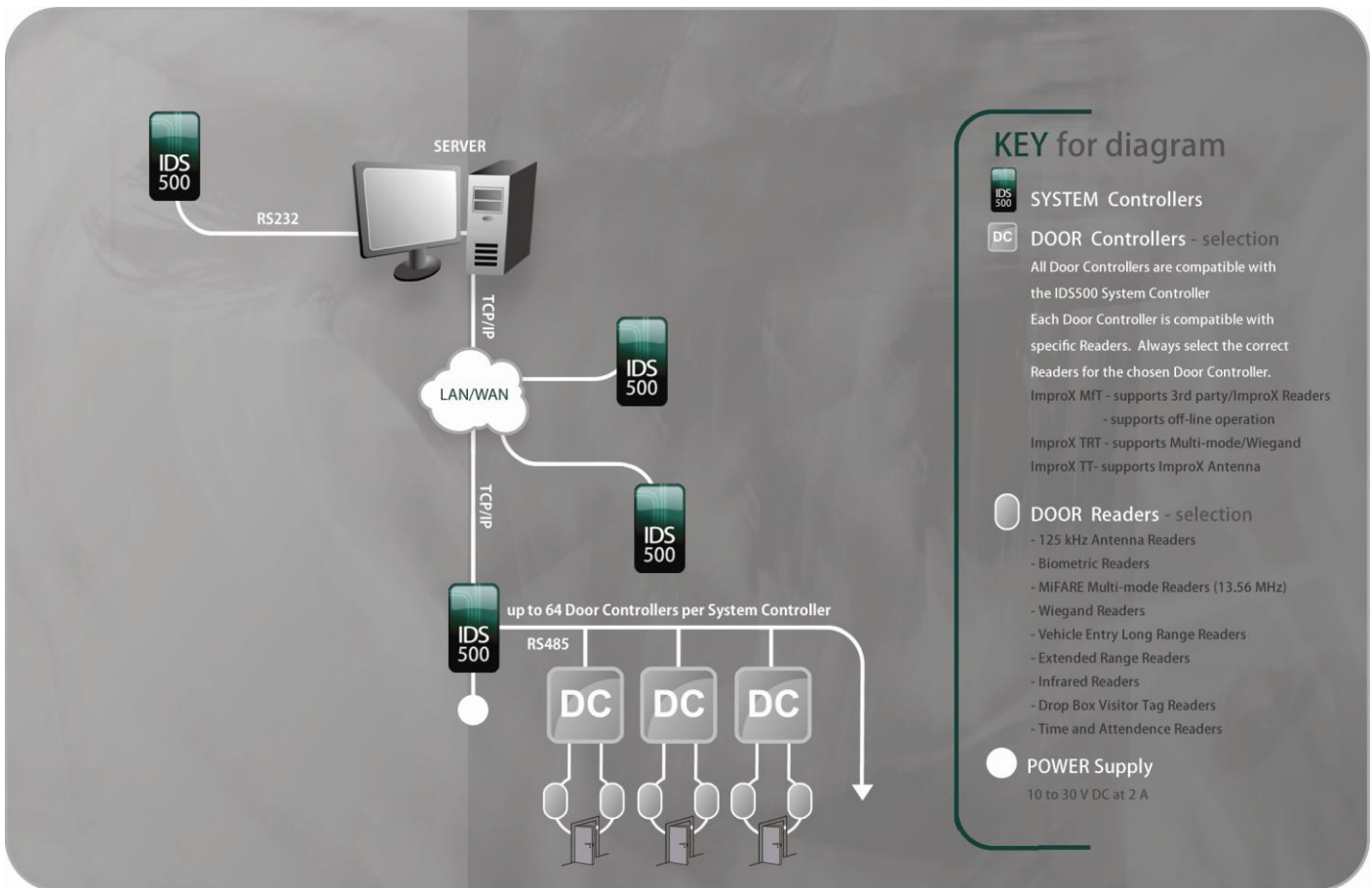


Figure 1: IDS500 Overview

This Product Specification Catalogue applies to the IDS500 Ethernet Access Controller, XNC900-0-0-GB-01, XNC901-0-0-GB-01, XNC910-0-0-GB-00, XNC911-0-0-GB-00 and IPS971-0-0-GB-00.

The last two digits of the Impro stock code point to the issue status of the document or product.

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