

Product Description

The communication interface WebGate PO9901 allows ALNET I programmable controllers to connect to a TCP/IP Ethernet network. Through the WebGate Plus those controllers may be accessed by:

- Other Altus PLCs carrying the TCP/IP Ethernet interface
- Supervision software
- Any Altus PLCs using the ALNET I protocol and another WebGate or WebGate Plus
- A browser.

The WebGate Plus offers 8 local input/output digital points.

The WebGate connects to any device featuring a slave ALNET I port (available in all Altus PLCs and also some other equipment). There are two ways to communicate with devices through the WebGate Plus: either by protocol ALNET II over TCP/IP (supervision software, MasterTool programmer and some PLC models); or by browsers using HTTP and XML. Both communication methods may be used at same time.



PO9901 main features:

- Integration of any ALTUS controller to Ethernet networks using ALNET II over TCP/IP protocol and/or HTTP/XML.
- WebServer using HTML and XML allowing dynamic page creation with real time plant floor data
- Communication to any supervision system featuring a standard browser (available technologies: HTML, XML, Flash, Java, JavaScript and VBScript) with no need to any special configuration or plug in.
- Integration of any ALNET I device to Ethernet and Internet
- Master mode operation available to access other PLCs
- Access control by password and by hardware
- Diagnose statistic from Ethernet communication
- Memory expansion by Altus mcard with 128Kb
- 10BaseT Ethernet interface for local area network (Intranet) and Internet

Ordering Information

Product Packaging

The product packaging comes with:

- WebGate Plus PO9901
- One Card CD
- Instalation Guide

Product Code

Please use following product code when ordering:

Code	Description
P09901	WebGate Plus Interface with WebServer

Related Products

Depending on your system requirements, the following products might be ordered along with the PO9901. Please check with your sales representative if you have any questions.

Code	Description
AL-1714	RJ45-RJ45 RS232C Cable
AL-1719	RJ45-CMDB9 RS232C Cable
AL-1720	RJ45-CMDB9 RS232C Cable
AL-1726	RJ45-CFDB9 Cable
AL-1727	RJ45-CMDB9 Cable
PO8541	MCard 128 MBytes
MT4100	MasterTool Programming
MT7000	WebView

Notes

AL-1714 : cable with two Altus standard RJ45. It is used for:

- Interconnection of WebGatePlus with serial interface Com3 from PL104 and PL105.
- Interconnection of WebGatePlus with PONTO PLC and GRANO Series.

AL-1719 : cable with Altus standard RJ45 and Altus standard male DB9. It is used for:

- Interconnection of WebGatePlus with AL-2000 PLC and QK801 Series.

AL-1720 : cable with Altus standard male RJ45 and IBM/PC standard male DB9. It is used for:

- Interconnection of WebGatePlus with serial interface Com1 from PICCOLO Serie.

AL-1726 : cable with Altus standard RJ45 and IBM/PC standard female DB9. It is used for:

- Interconnection of WebGate with PONTO PLC and serial interface Com3 from PL104 and PL105.

AL-1727 : cable with Altus standard RJ45 and Modem standard male DB9. It is used for:

- Interconnection of WebGate with Optic Modem.

PO8541 : Memory expansion module.

MT7000 : Applets Java to be use on HTML page development.

Features

	PO9901
Type	Ethernet Communication Interface with WebServer
Ethernet Port	Physical level: RJ45 - 10BaseT (twisted pair) 10Mbps Enlace level: Ethernet DIX2 Network level: IP Transport level: TCP
Available Protocols at Application Level	ALNET II FTP: file transferring for Web interface HTTP: communication with standard browsers
Available Formats	HTML, XML, JAVA, JAVA SCRIPT, FLASH and others
Compatible Browser	Internet Explorer 5.0 or later
Available XML Commands	Operators reading and writing Status reading
Access Control System	Users with different access rights Encrypted password Hard-key to protect memory write
Flash Memory for Local Pages	150 Kbytes Extended by Altus mcard with 128 Kb
Serial Port COM1	RS232C (TX, RX, RTS, CTS) until 19200 bauds. Configuration or comunication mode selected by user.
Protocol	Serial: ALNET I
Input / Output Digital Points	8 input or output digital points selected by user
Local Configuration	4 DIP Switch on base
Diagnostic Indication	LEDs TX, Rx, NET, PWR and one for each I/O point. LED to indicate memory access to Altus mcard.
Power Supply	10 to 30 Vcc (ripple included)
Power Consumption	350 mA @ 12 Vdc 170 mA @ 24 Vdc
Power Dissipation	3,25 W
Protection	Inside the module, fuse 1 A
Maximum Operating Temperature	60 °C
Installation	Mounted on DIN TS35 rails
Dimensions	99 x 90,4 x 99,5 mm
Standards	IEEE 802.3

Input / Output Features

	WebGate Plus - PO9901
Digital Points	8 input or output digital points
Digital Input	Type 1, sink, no isolated switch. See note 1
Power Supply	24 Vcc nominal 10 to 30 Vcc to high state (1) 0 a 5 Vcc to low state (0)
Input Current	1 mA @ 24 Vcc
Input Impedance	24 Kohm
Digital Output	Transistor type source. See note 2
Output Voltage	30 Vcc (max)
Max Output Current /point	50 mA
Switch Time	20 us
Max Switch Frequency with nominal load	500 Hz. See note 3
Terminal Block Configuration	1 to each I/O point 1 to all input / outputs
Diagnostic Indication	1 LED for each I/O point

Notes:

- The input points are no isolated type. If necessary isolated inputs, it must be use following opto-isolated modules:
Weldmüller RS 40 (12 Vcc) – 1118761001
Weldmüller RS 40 (24 Vcc) – 1160961001
Weldmüller MCZ O 24 Vac or 24 Vcc - 836594
- The output points are no isolated type, with 50 mA. If necessary to use bigger then it, then it must be use the following relays modules:
Weldmüller RS 30, 12 Vcc, contact NA – 1129421001
Weldmüller RS 30, 24 Vcc, contact NA – 1101721001
Weldmüller DKR 12 Vcc – 817110
Weldmüller DKR 24 Vcc – 801661
- The switch frenquency dependes on the access cycle by the Ethernet network.

Using the Ethernet Feature

The PO9901 Ethernet TCP/IP canal has two distinct functions that may be used simultaneously:

- Communication canal with controllers, supervision stations and MasterTool programming software. For such cases the protocol used is ALNET II over TCP/IP – compatible with AL-3405 interface.
- Communication canal with standard browsers over the Internet. Through Internet protocols the WebGate Plus provides pages with real time data from the connected controller. Any authorized user may access such data from any computer connected to the Internet, there is no need for any additional plug in or special configurations.

ATTENTION:

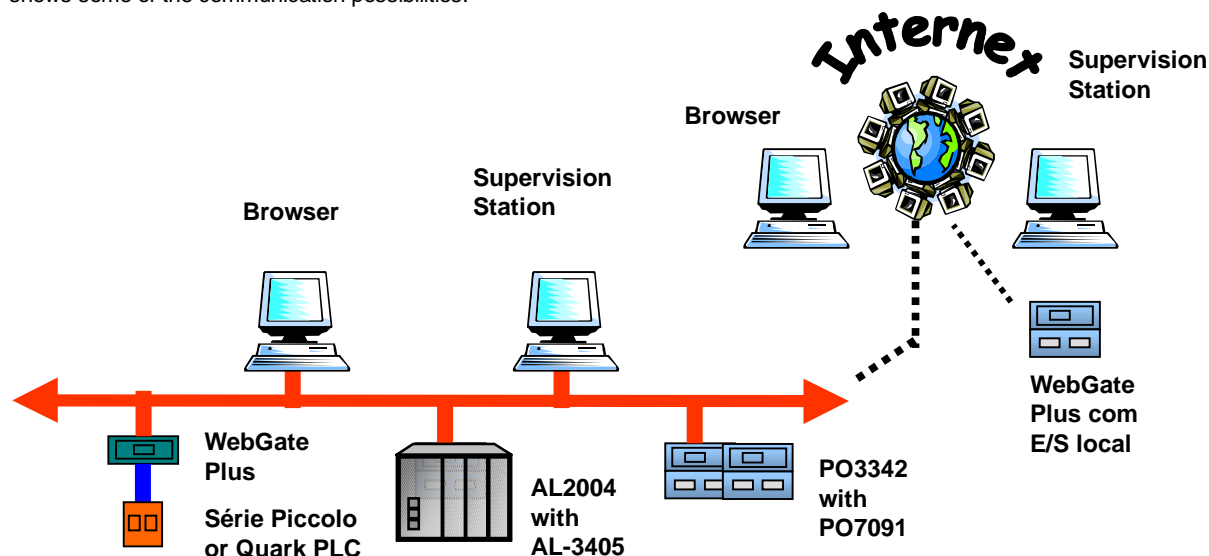
The Ethernet interface uses twisted pair (10BaseT) at the physical level; therefore the network integration requires hubs and/or switches. One of the greatest advantages of this architecture is the easy identification of damaged links. The whole network will keep functioning even if there is a TP cable rupture.

The multi-master communication network allows programmable controllers to read and write operands on other controllers with ALNET II over TCP/IP.

Through the AL-3405 interface, the AL-2000 PLCs Series establish the communication with other PLCs connected to WebGates or WebGates Plus.

Any Altus PLCs that don't have Ethernet interface (like Piccolo and Quark Series) may be connected to Ethernet networks through a WebGate Plus interface. Then such PLCs may exchange information among them and also with any AL-200° PLCs Series (through the AL-3405 interface).

Computers with supervision software may simultaneously access the same controllers. Through the PO9901 WebGate Plus the controllers PO3045 may access any other controller or equipment featuring the ALNET I slave protocol. The following diagram shows some of the communication possibilities.



As shown on the diagram, all Altus controllers may now communicate through TCP/IP networks. Through the WebGate, old and brand new controllers from Quark, Piccolo and AL-2004 Series also may take advantage of the Internet.

The interface PO9901 stores HTML pages that allow the implementation of simple supervision systems accessible through any conventional browser. No special configuration of plug in is required. The available communication technologies are XML, Flash, Java, JavaScript and VBScript.

Using XML technology it is possible to build dynamic pages with real time data from the controllers as well as remote modification of such data. The presentation format is configurable through style sheets. Through XML commands it is also possible to exchange data directly from databases to controllers and vice versa.

The pages update may be performed remotely using FTP protocol through the Intranet or Internet. Some examples of available software for that purpose are WS-FTP and CuteFTP.

The internal memory for HTML pages has a capacity of 150kbytes. It may be expanded using links to external web servers or Altus mcard PO8541.

The XML commands allow the communication with browsers and all other systems using this widespread technology. One of the greatest benefits is the direct integration with relational databases (like Oracle, Sybase) that are embracing these standards.

The integration with the Internet is an option. The browse access may be limited only to the supervision local network.

Access Control System

The access control system is based on user name and password with different authorization rights. For example, writing into operands may be blocked for any Internet or Ethernet communications.

ATTENTION:

It is recommended to install a firewall system when enabling Internet access into controllers. This procedure will increase the system security provided by passwords.

ALNET II over TCP/IP Protocol Commands

The ALNET II over TCP/IP protocol supports the following commands:

Type	Description
Operand Access	Writing Operands Writing Operands
Status	Reading Equipment Status Reading Communication Status Reading Forcing Status Reading IO Bus Status Reading IO Status
Program Modules	Removing Programming Module Enabling EPROM Module Transferring EPROM Module into RAM Transferring RAM Module into EPROM Erasing EPROM Flash Memory Compacting RAM Memory Reading General Directory of Modules Reading Program Module Status Reading Directory of Program Modules Reading Program Module
Status Changes	Switching into Programming Status Switching into Execution Status Switching into Cycled Status Executing one Cycle
Specials	Disabling Digital Outputs Enabling Digital Outputs Releasing All Forced IOs Releasing Operands Changing Protection Level Changing Password

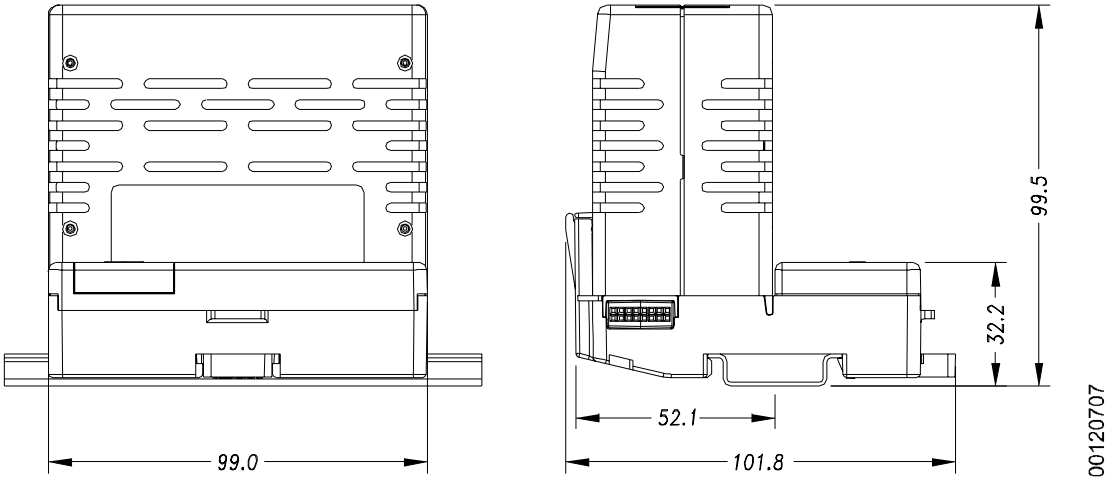
XML Commands

Through a Web interface the user may utilize a set of commands for reading and writing of operands, as well as reading the controllers status. The Web protocol supports the following commands:

Type	Description
Operand Access	Writing Operands Reading Operands
Status	Reading Equipment Status Reading Communication Status Reading Forcing Status Reading IO Bus Status
Program Modules	Reading Directory of Program Modules

Physical Dimensions

Dimensions in mm.



Manuals

Please read **PO9901 - WebGate Utilization Manual** and **Application Note – Page Development on PO9900 - WebGate** before using the product.

Please refer to following documents for further technical details, configuration, installation and programming on Ponto Family products:

Document Code	Description
CE109000	General Features of Ponto Family
MU209691	PO9901 WebGate Plus Utilization Manual
MU209000	IP20 Ponto Series Utilization Manual
MAN/MT4100	MT4100 - MasterTool Utilization Manual
NAP080	Application Note – Page Development on PO9900 - WebGate
NAP103	Application Note - Ethernet Network Configuration
NTP031	Technical Norm–ALNET I Protocol
CE109xxx	Ponto Series Technical Characteristics