

## Model Information



### ■ Features

- Controls 4 RS232 or RS422/485 devices located virtually anywhere via Ethernet, WLAN or Internet
- Easy selection of RS232, RS422 or RS485 by single DIP switch or individually by software
- Port expansion over USB A connector
- LAN 1000/100/10 Ethernet auto-detect
- NetCom Manager automatically finds NetCom+ devices in the network
- Configuration over Driver Panels, serial Port, Telnet, WEB Browser, SNMP
- Automatic mode switching between Driver and Raw Mode
- Supports TCP/IP, UDP, Telnet, DHCP, ICMP, HTTP, SNMP V1/2c/3, DNS, PPP, openVPN
- SSL/AES-256 encryption on Ethernet, WLAN and Internet
- Optional: Wireless network IEEE 802.11b/g/n
- Optional: 3G/4G Modem for mobile networks

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# ModGate Plus 413

## (ModGate 413)

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### ■ Overview

The Modgate Plus (or Modgate+) are easy to use Gateways from Modbus/TCP on Ethernet or WLAN to Modbus/RTU or Modbus/ASCII on the serial ports. Modgate+ 413 connects four Modbus serial lines to a network running TCP/IP. Metal case, wide temperature range and flexible DC power supply classify the Modgate+ as industrial-strength devices. They are based on a state-of-the-art RISC processor, to provide cost-effective design and low power consumption.

Using TCP/IP the Modgate+ operate without limitations on distance or OS platform, the Gateways are usable via Internet and VPN connections. The serial port is configured for Modbus/ASCII or Modbus/RTU and physically set to RS232, RS422 or RS485 operation. The messages received on the network are sent to the serial line, messages from the serial port are sent via network. Modgate+ automatically adjusts as Master or Slave on the serial port.

Modbus Master Multiplexing is implemented as an extension to the standard. Several masters connect to Modgate+ by Modbus/TCP, slaves on serial lines may answer requests from multiple masters.

The configuration of Modgate+ is done via browser. The user interface is based on Web 2.0 to provide an easy handling of the options. UPnP provides a simple and standard way to find the Gateway in the network.

Modgate+ devices can be ordered with an embedded module for WLAN 802.11b/g/n. Plus the

Modgate+ 413 may be ordered as POE device, with additional power supply via Power-over-Ethernet 802.3af (Class 0).

## ■ Application

- Secure Remote Monitoring
- SCADA system
- Building automation system
- Self-service banking system
- Industrial / Factory / Laboratory automation
- Automatic warehouse control system
- Wafer fabrication system
- Other remote and distributed serial devices control

## ■ Interface

<b>Ethernet interface</b>	Auto-detecting 1000BaseT/100BaseTx/10BaseT (GigaLAN) Connector 8P8C (RJ45)
<b>Wireless interface</b>	Optional via internal module or external USB stick IEEE 802.11b/g/n operation in Access Point or Client Mode
<b>Protocols</b>	TCP/IP, DHCP, ICMP, HTTP, DNS, UDP, UPnP/SSDP, Modbus/TCP, Modbus/RTU, Modbus/ASCII
<b>Serial interface</b>	RS232/422/485 selected by software
<b>No. of port</b>	4x DSUB 9 male connector (as PC)
<b>Available Modes</b>	<ul style="list-style-type: none"><li>• RS232 full duplex</li><li>• RS422 full duplex</li><li>• RS485 4 wire, full duplex</li><li>• RS485 2 wire, half duplex</li></ul>
<b>Signals</b>	<ul style="list-style-type: none"><li>• RS232: TxD,RxD, RTS,CTS, DTR,DSR, DCD, GND</li><li>• RS422: Tx+/-, Rx+/-, GND</li><li>• RS485 2 wire: Data+/-, GND</li><li>• RS485 4 wire: Tx+/-, Rx+/-, GND</li></ul>
<b>RS485 Data control</b>	Controlled by ART (Automatic Receive Transmit control)
<b>Expansion port</b>	USB 2.0 High Speed, for WLAN

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## ■ Serial Performance

<b>Speed</b>	up to 115.2 kbps for Modbus RS232: up to 1000 kbps, RS422/485: up to 3 Mbps
<b>Parity</b>	None, even, odd
<b>Data bits</b>	7, 8
<b>Stop bits</b>	1, 2

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## ■ Operating Modes

<b>Modbus RTU/ASCII</b>	Modbus RTU or Modbus ASCII protocol selected for each serial port individually
<b>DirectMappingMode</b>	Direct mapping of Modbus addresses to serial ports or TCP connections
<b>PromiscuousMode</b>	Mapping of serial ports to TCP connections

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## ■ Power and Environment

<b>Connector</b>	3-pin Terminal Block with Protective Earth
<b>Power requirements</b>	9 - 54V DC, 0.5A @ 12V, 6W
<b>Power over Ethernet</b>	Optional, Class 0 Device (802.3af). Typical consumption is 6W.
<b>Dimension</b>	196×147×44 mm <sup>3</sup> (W×L×H)
<b>Operating Temp</b>	-20°C - 65°C
<b>Storage Temp</b>	-20°C - 85°C
<b>Case</b>	SECC sheet metal (1mm)
<b>Weight</b>	0.9kg
<b>Mounting</b>	<ul style="list-style-type: none"><li>• 19-inch Rack</li><li>• Wall mount</li></ul>

## ■ Standards

<b>Declarations</b>	CE, FCC
<b>EMI</b>	<ul style="list-style-type: none"><li>• EN 55022 Class B</li><li>• EN 61000-3-2: Limits of harmonic current emissions</li><li>• EN 61000-3-3: Limitation of voltage changes</li><li>• 47 CFR FCC Part 15 Subpart B</li></ul>
<b>EMS (EN 55024)</b>	<ul style="list-style-type: none"><li>• EN 61000-4-3: Radiated RFI</li><li>• EN 61000-4-4: Electrical Fast Transient</li><li>• EN 61000-4-5: Surge</li><li>• EN 61000-4-6: Induced RFI</li><li>• EN 61000-4-8: Power Frequency Magnetic Field</li><li>• EN 61000-4-11: Power supply dips</li></ul>
<b>ESD</b>	EN 61000-4-2 4kV contact 8kV air for <ul style="list-style-type: none"><li>• Serial Ports</li><li>• USB</li><li>• Ethernet</li><li>• DC Power connector</li></ul>

## ■ Special Features

<b>Installation</b>	DIP switches set a defined temporary IP Address to contact via WEB Browser
<b>Operating mode</b>	<b>Promiscuous Mode</b> Messages received from the network are sent to defined serial ports, messages from the serial port are sent to defined connected network host. <b>Mapped Mode</b> Received messages are scanned for their target address. This address is found in a table, the message is sent to the defined connection (serial or TCP).
<b>Modbus Master Multiplexing</b>	An extension to the standard. Slaves on serial lines may answer requests from multiple masters. The masters connect to ModGate+ by Modbus/TCP.
<b>Configuration</b>	Configuration over WEB Browser
<b>Detection</b>	Announces presence in the network via Universal Plug and Play (UPNP) protocol
<b>DNS</b>	Domain Name Server support
<b>Serial Interface</b>	Serial Interface configurable by software This also enables internal Termination for RS485
<b>Firmware</b>	Firmware update over WEB Browser
<b>LEDs</b>	LEDs for Power, Ready, WLAN, serial Tx, Rx, Ethernet Link, Speed

## ■ Security

<b>Password access</b>	Webinterface is password protected. The password can be changed in the Webinterface.
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## ■ Ordering Information

<b>6730</b>	ModGate Plus 413 (4x RS232/422/485)
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## ■ Options

<b>6689</b>	WLAN Kit internal internal module 802.11b/g/n, pigtail and antenna Purchase time option, not for later retrofitting
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<b>6690</b>	WLAN Kit external USB stick 802.11b/g/n, antenna
<b>6031</b>	Power supply adapter 12V DC, 1A
<b>663</b>	5-pin Terminal block adapter to DB9 female
<b>6061</b>	RJ45 adapter to DB9 female
<b>661</b>	Serial Null-Modem adapter 9PF-9PF, change male to female
<b>on Request</b>	Option POE, 802.3af (Class 0) Power-over-Ethernet alternative supply

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■ **Packaging**

**Packing list**

- ModGate Plus 413
- Mounting brackets for 19-inch rack
- Wall mount plates
- Terminal block for Power Supply
- CD-ROM with user manual

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**Wall Mounting Kit**  
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