

EX8282

TCP/IP-gateway



Communication gateway for TCP/IP communication, intended for connecting one or several controllers with serial communication to a computer network.

- ✓ Ethernet 10Base-T/100Base auto-negotiation
- ✓ TCP/IP communication
- ✓ 10/100 Mbit network
- ✓ Automatic network address via DHCP or DNS

Application

EX8282 is a TCP/IP gateway, normally used for carrying EXOline messages in a system between the main computer and the controllers. EX8282 connects to the controllers using either RS232 or RS485. When more than one controller is connected RS485 has to be used. The connection from EX8282 to the network is via Ethernet 10Base-T/100Base autonegotiation. The gateway supports addressing via DHCP, DNS names and automatic DNS name registration.

Function

The transport via TCP/IP is invisible to the controller(s), as the communication is translated to and from ordinary serial communication for the controller. This means that ordinary computer networks, and even the Internet, can be used for communication between and with controllers. Systems can be spread over greater geographic areas with very simple resources. Exploiting the infrastructures already in use for ordinary computers reduces installation costs.

The EX8282 unit can be used with most types of TCP/IP networks, e.g. local area networks, the Internet, etc. It is not however suitable for use in dial-up TCP/IP networks.

Installation

All electrical connections to external equipment are easily attainable via RJ45 and plug-in screw connectors.

HEAD OFFICE SWEDEN

Phone: +46 31 720 02 00

Web: www.regincontrols.com

E-mail: info@regincontrols.com

EX8282

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REGIN
THE CHALLENGER

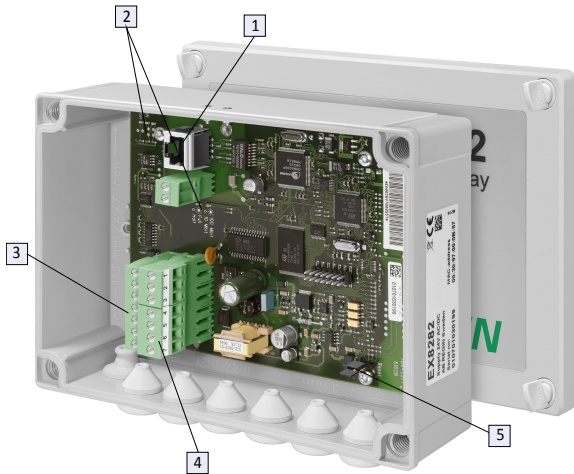


Fig. 1 1=Ethernet port, 2= LED indications, 3=RS232 terminals, 4=RS485 terminals, 5=RESET jumper

Network Design

A controller's serial port is always either a master or a slave, which is configured in EXOdesigner. All communication must go between a master port and a slave port. Since the EX8282 has a fixed master port towards subordinate controllers, these must be set to slave mode.

Security

Security in this context means how to protect the system against network intruders. There are a few mechanisms in the TCP/IP Gateway which together with a firewall provide good security.

Note that the TCP/IP Gateway only has the protocols EXOline-TCP and EXOconfig, not telnet or ftp etc.

Performance

The EX8282 is a gateway that takes the information from a serial port and transports it over a network using the TCP and IP protocols. So the EX8282 is not only a physical converter, but also a protocol converter to a certain extent. This means that even if the transfer speed of the network is 100 Mbit, the transfer of data between the computer and the EX8282 will be significantly lower.

Configuration - Run setup on an EX8282

The TCP/IP Gateways and the controllers are configured with EXOdesigner. Connect the crossover cable between the laptop PC and the EX8282. When the setup is

complete, the crossover cable is disconnected and the EX8282 is connected directly to the network.

Each EX8282 unit has a unique serial number. The Ethernet-address is a 48-bit address, unique amongst all Ethernet units produced (worldwide). It is also known as the MAC address. The EX8282's Ethernet-address is noted on the barcode label.

Firewalls

To communicate via EX8282 units through a firewall, it must be configured for that purpose. A firewall is a unit that only allows TCP/IP-communication on certain port numbers and not on others. TCP/IP-ports work as separate communication channels between two nodes. The TCP/IP Gateway uses separate ports for operation and setup, as described below:

Type of communication	Protocol name	Port number	Protocol
Normal operational traffic	EXOline-TCP	26486	TCP
Setup upgrade etc	EXO TCP/IP setup	26487	TCP, UDP

Indications

There are four LEDs:

- ✓ **Type of communication (half-/full-duplex):** A yellow LED shows if the communication is half-duplex or full-duplex. If the LED is lit, it indicates full-duplex communication. If it is not lit, the communication is half-duplex.
- ✓ **Communication speed (10/100 Mbit):** A green LED indicates the communication speed. If the LED is lit, the speed is 100 Mbit. If it is not lit, the communication speed is 10 Mbit.
- ✓ **Network LAN activity and link (LAN):** A green LED indicates LAN, when lit or flashing the EX8282 has connection to the network. Flashing LED indicates communication in the network.
- ✓ **ID-function (ID):** A green LED flashes when a configuration tool is configuring the unit, this to help the configurator to identify the unit.

Restore factory settings

1. Power off the device
2. Close the RESET jumper
3. Power on the device
4. Wait at least 5 s
5. Power off the device and remove the jumper

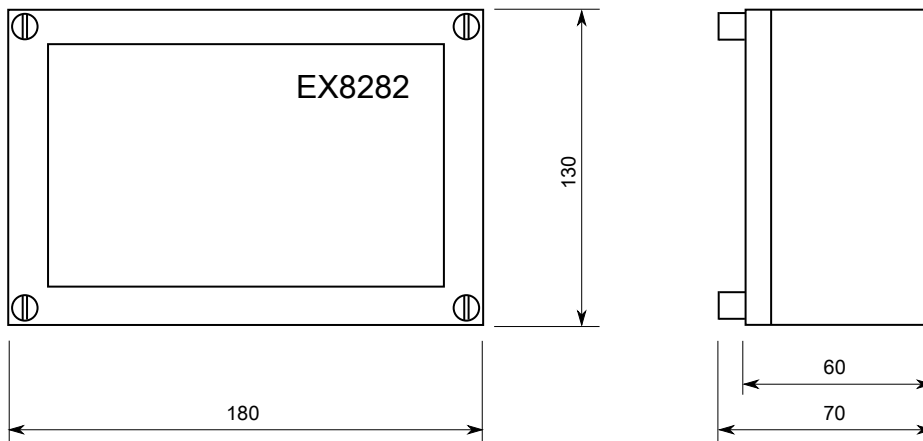
Technical data

Supply voltage	24 V AC/DC (18...30 V AC/DC)
Power consumption	5 VA (connected to the network)
Dimensions, external (WxHxD)	180 x 130 x 70 mm
Protection class	IP55
Internal serial port, type	RS232 or RS485
Internal serial port, communication speed	9600 bps
Internal serial port, built-in protocol	EXOline-master
Ethernet port, type	10Base-T/100Base auto-negotiation
Ethernet port, connector	Shielded RJ45
Ethernet port, supported standards	IEEE 802.3u and IEEE 802.3x full-duplex flow control
Ethernet port, built-in protocol	EXOline over TCP/IP Slave
Ethernet port, cable length	Max 100 m
Ethernet port, cable type	Min CAT 5



This product carries the CE-mark. More information is available at www.regincontrols.com.

Dimensions



[mm]

Wiring

Pin no	Signal	Detailed function	Group function
1	+24 V	Power supply +24 V AC or DC	
2	0 V	Power supply 0 V. The 0 V-connection is normally grounded at the supply source, so as to define the potential to earth reference and to compensate for disturbances and transients from I/O signals.	
3	EMI ground	This terminal is connected internally to the Gateway's frame and to internal protective circuits. It must be connected to the ground rail or equivalent with a separate heavy wire to divert disturbances.	

Pin no	Signal	Detailed function	Group function
4	B		EXOnline connection, Port 3 Galvanically insulated from all other circuits.
5	A		
6	N	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at least at one point.	
7	E		
8	TxD		RS232 connection, Port 3 This connection is galvanically insulated from the internal circuits. GND is the signal zero. Use screened cable and earth it at one point.
9	RxD		
10	RTS		
11	NC		
12	GND		
13	GND		
14	SEL		

Documentation

The product documentation can be downloaded from www.regincontrols.com. System customers can download additional documentation from our FTP server. Please contact Regin's sales department to get access.