

# UNIMA-KS

Development & production of control equipment  
Visualization, measurement and regulation SW

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## Communication Circuit Specification

### Internet-bridge XPort



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## 1. Basic features

Internet-bridge UNIMA-KS (hereinafter IB) is used for connection of the devices provided with RS-232 serial interface to Ethernet. Remote connection to the devices provided with the RS-232 interface only is possible through Internet using the Manager service program.

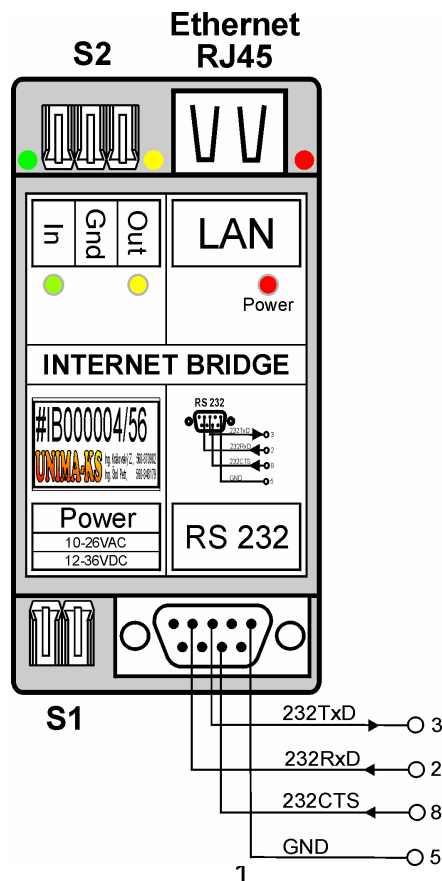
The UNIMA-KS devices that are equipped with both RS-232 and RS-485 interfaces can be interconnected mutually by means of RS-485 and after connection of IB to RS-232 of one of the devices, it is possible to control and set all the devices on the RS-485 bus bar.

IB basic features:

- Power supply: 10÷26V AC or 12÷36V DC
- Ethernet 10Base-T or 100Base-TX (automatic recognition)
- RJ45 connector configuration (Ethernet), CANNON9 (RS-232).
- TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, AutoIP protocols
- RS-232 300÷115200 bps serial line (57600 bps should be set for equipped UNIMA-KS)
- 1 binary input (e.g. for activation of e-mail message sending in case of an event)
- 1 binary output
- Easy configuration using a web interface

## 2. Mechanical design

IB is supplied in WEB-B3 plastic box for installation in DIN rail with dimensions of 48x96x42 (wxhxd). IB is provided with two CUF connectors (power supply and binary IO), RJ45 connector (Ethernet connection) and CANNON9 connector (RS-232).



### 3. Electric design

#### 3.1 S1 connector (power supply)

Pin	Identification	Description
S1.1	PwrA	10÷26VAC or 12÷36VCD power supply
S1.2	PwrB	

Connector pitch: 5.00mm

Max. wire cross section: 2.5mm<sup>2</sup>

#### 3.2 S2 connector (binary inputs and outputs)

Pin	Identification	Description
S2.I	BinIn	CP0 control, activation with GND short-circuit
S2.G	GND	Common ground
S2.O	BinOut	CP1 control, open collector (max. 50mA/60V DC)

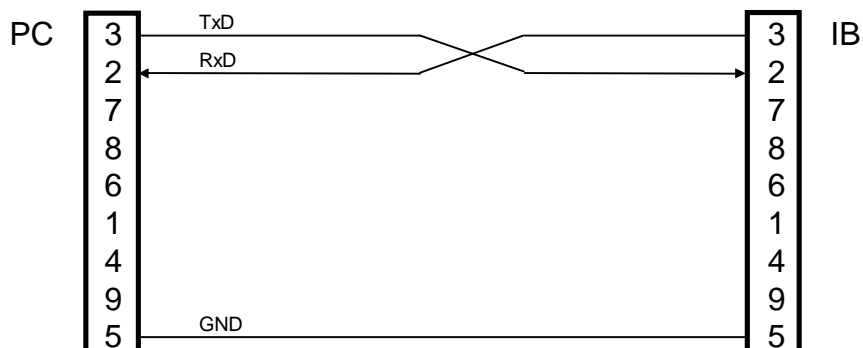
Connector pitch: 5.00mm

Max. wire cross section: 2.5mm<sup>2</sup>

#### 3.3 CANNON connector (RS-232)

Pin	Identification	Description
CAN.2	RxD	RS-232 communication interface for IB connection to UNIMA-KS
CAN.3	TxD	
CAN.5	GND	
CAN.8	CTS	

Connection of the cable for IB connection to a PC (configuration through RS-232)



## 4. Setting

### 4.1 IP address setting (location)

Knowledge of IB IP address by is important for IB configuration through a web interface. Initial setting of the IB IP address carried out by the IB manufacturer is 10.0.0.195 of IP setting.

Procedure of its location (setting):

- Interconnect IB with PC using a quad cable, see 3.3
- Activate a communication terminal (such as Hyper terminal)
- Fill the session title arbitrarily (if terminal requires it)
- Select connection using COM (through which IB is connected to PC)
- Define the following port setting: 9600bps, 8 data bits, without parity, 1 stop-bit and turn data flow control off.
- Hold the “x” key on the terminal depressed and activate IB power supply. As soon as the following text appears, release the “x” key.

```
MAC address 00204AB62280
Software version V6.6.0.2 (080926) XPTEXE
Press Enter for Setup Mode
```

- Then depress the Enter key within 3 s (if you do not depress it in time, the text “?!?” will appear and it will be necessary to turn power supply off and on and repeat the procedure) for access to configuration. IB configuration with a menu in the end of the listing will be listed:

```
*** basic parameters
Hardware: Ethernet TPI
IP addr 10.0.0.195, no gateway set, netmask 255.255.255.0
DNS Server not set

*** Security
SNMP is enabled
SNMP Community Name: public
Telnet Setup is enabled
TFTP Download is enabled
Port 77FEh is enabled
Web Server is enabled
Web Setup is enabled
ECHO is disabled
Enhanced Password is disabled
Port 77F0h is enabled

*** Channel 1
Baudrate 57600, I/F Mode 4C, Flow 00
Port 10195
Connect Mode : C0
Send '+++' in Modem Mode enabled
Show IP addr after 'RING' enabled
Auto increment source port disabled
Remote IP Addr: --- none ---, Port 10195
Disconn Mode : 00
Flush Mode : 80
Pack Cntrl : 20

*** Expert
TCP Keepalive : 45s
ARP cache timeout: 600s
CPU performance: Regular
Monitor Mode @ bootup : enabled
RS485 tx enable : active low
HTTP Port Number : 80
SMTP Port Number : 25
MTU Size: 1400
Alternate MAC: disabled
Ethernet connection type: auto-negotiate

*** E-mail
Mail server: 0.0.0.0
Unit :
Domain :
```

```

Recipient 1:
Recipient 2:

- Trigger 1
Serial trigger input: disabled
  Channel: 1
  Match: 00,00
Trigger input1: X
Trigger input2: X
Trigger input3: X
Message :
Priority: L
Min. notification interval: 1 s
Re-notification interval : 0 s

- Trigger 2
Serial trigger input: disabled
  Channel: 1
  Match: 00,00
Trigger input1: X
Trigger input2: X
Trigger input3: X
Message :
Priority: L
Min. notification interval: 1 s
Re-notification interval : 0 s

- Trigger 3
Serial trigger input: disabled
  Channel: 1
  Match: 00,00
Trigger input1: X
Trigger input2: X
Trigger input3: X
Message :
Priority: L
Min. notification interval: 1 s
Re-notification interval : 0 s

Change Setup:
  0 Server
  1 Channel 1
  3 E-mail
  5 Expert
  6 Security
  7 Defaults
  8 Exit without save
  9 Save and exit
                                Your choice ?

```

- IP address for the next IB configuration through the web interface is stated at the beginning of IB reply.

If it is necessary to modify the IP address (IB is connected to another local network and is not connected directly with Ethernet cable to PC), proceed as follows:

- Select the 0 item from the menu (Server)  
IP Address : (010)
- Type the highest part of the new IP address (e.g. 192 and depress Enter)  
IP Address : (010) 192.(000)
- and fill in the complete IP address successively (e.g. 192.168.1.195)  
IP Address : (010) 192.(000) 70.(000) 130.(195) 195  
Set Gateway IP Address (N) ?
- IB will prompt you to enter other parameters. You can only confirm them using the Enter key until the initial menu appears:  
IP Address : (010) 195.(000) 70.(000) 130.(195) 195  
Set Gateway IP Address (N) ?  
Netmask: Number of Bits for Host Part (0=default) (8)  
Set DNS Server IP addr (N) ?  
Change telnet config password (N) ?

```

Change Setup:
  0 Server
  1 Channel 1

```

```
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit          Your choice ?
```

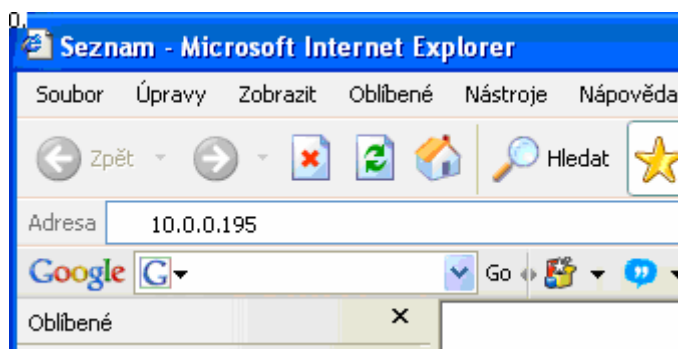
- Select the 9 item from the menu (Save and exit) for setting saving.

It is possible to carry out also the next IB configuration using the terminal, however, if you already know (or you have set) the IB IP address, configuration using a web interface is more convenient.

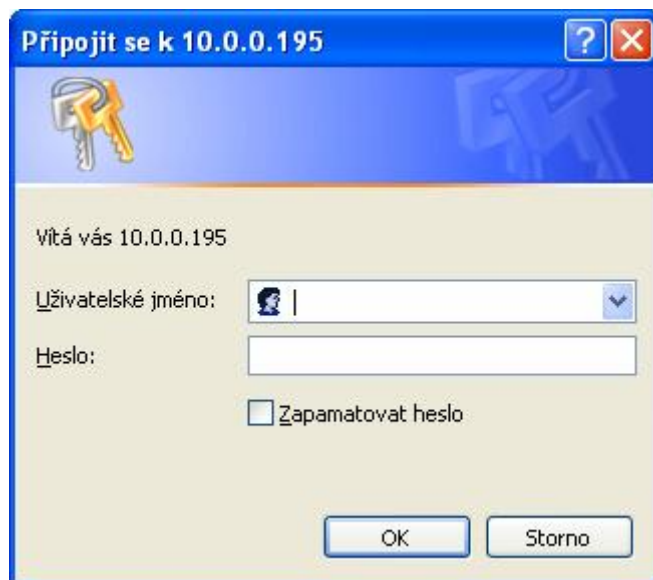
## 4.2 Configuration using web interface

IP addresses within the extent of the same local network should be set in both PC and IB before configuration. The configuration procedure is as follows (standard IB configuration is suitable for UNIMA-KS device connection):

Start the Internet browser and select an IB address (e.g. 10.0.0.195)



The following logging in dialogue appears after depressing ENTER:



It is unnecessary to enter any user name or password; it is sufficient to depress "OK" and IB setting will appear:



Select “Network” and set all items as follows:

If any item does not correspond and has been changed, it is necessary to depress “OK”.



Then select “Serial Settings” from the menu a check correct the settings:

LANTRONIX®

Firmware Version: V6.5.0.7

MAC Address: 00-20-4A-A6-ED-CF

Serial Settings

Network

Server

Serial Tunnel

Hostlist

Channel 1

Serial Settings

Connection

Email

Trigger 1

Trigger 2

Trigger 3

Configurable Pins

Apply Settings

Apply Defaults

Channel 1

☐ Disable Serial Port

Port Settings

Protocol: RS232

Flow Control: None

Baud Rate: 57600

Data Bits: 8

Parity: None

Stop Bits: 1

Pack Control

☒ Enable Packing

Idle Gap Time: 12 msec

Match 2 Byte Sequence: ☐ Yes ☒ No

Send Frame Immediate: ☒ Yes ☐ No

Match Bytes: 0x00 0x00 (Hex)

Send Trailing Bytes: ☒ None ☐ One ☐ Two

Flush Mode

Flush Input Buffer

With Active Connect: ☐ Yes ☒ No

With Passive Connect: ☐ Yes ☒ No

At Time of Disconnect: ☐ Yes ☒ No

Flush Output Buffer

With Active Connect: ☐ Yes ☒ No

With Passive Connect: ☐ Yes ☒ No

At Time of Disconnect: ☐ Yes ☒ No

OK

If any item has been changed, it is necessary depress OK again for confirmation.



Then check settings in the “Connection” menu:

**LANTRONIX®** Firmware Version: **V6.6.0.2**  
MAC Address: **00-20-4A-B6-22-80**

### Connection Settings

**Channel 1**

**Connect Protocol**  
Protocol: **TCP**

**Connect Mode**

**Passive Connection:**  
Accept Incoming: **Yes**  
Password Required: ☐ Yes ☒ No  
Password:   
Modem Escape Sequence Pass Through: ☒ Yes ☐ No

**Active Connection:**  
Active Connect: **None**  
Start Character: **0x0D** (in Hex)  
Modem Mode: **None**  
Show IP Address After RING: ☒ Yes ☐ No

**Endpoint Configuration:**  
Local Port: **10195**  
Remote Port: **10195**  
☐ Auto increment for active connect  
Remote Host: **0.0.0.0**

**Common Options:**  
Telnet Com Port Ctrl: **Disable**  
Connect Response: **None**  
Terminal Name:   
Use Hostlist: ☐ Yes ☒ No  
LED: **Blink**

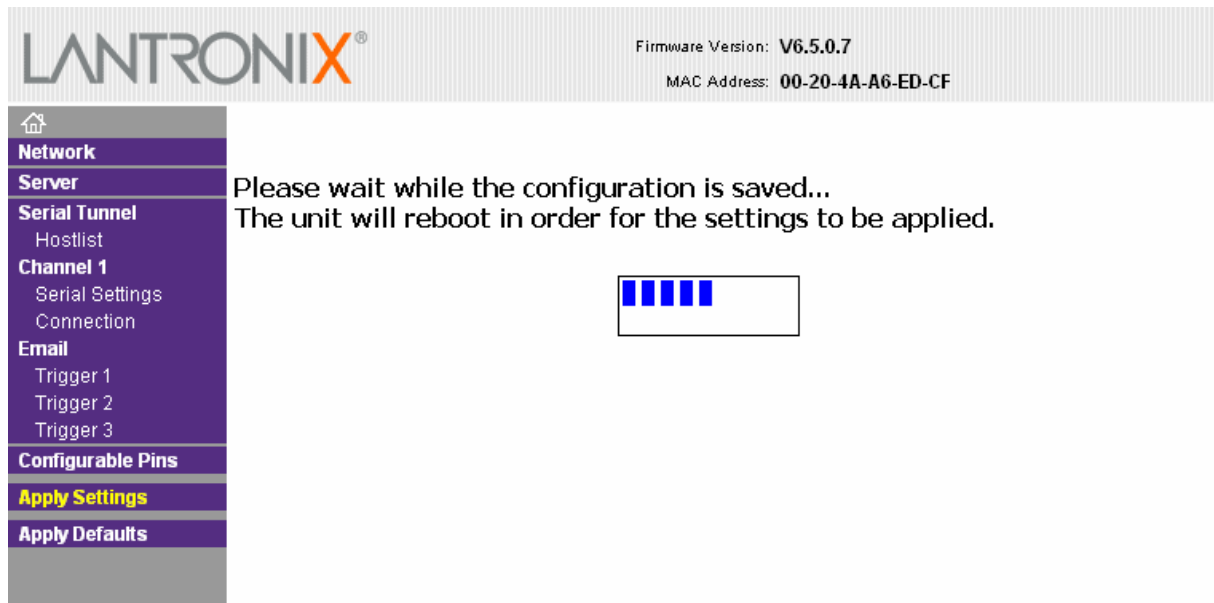
**Disconnect Mode**  
On Mdm\_Ctrl\_In Drop: ☐ Yes ☒ No  
Hard Disconnect: ☒ Yes ☐ No  
Check EOT(Ctrl-D): ☐ Yes ☒ No  
Inactivity Timeout: **0** : **0** (mins : secs)

**OK**

The “Local Port” and “Remote Port” items can be set to different values as required (this port is then referred to in case of service program connection). Both ports should be set to the same value.

If any item has been changed, it is necessary depress OK again for confirmation.

If everything is in compliance, select “Apply Settings” and the carried out setting changes will be saved.



Saving takes a while; IB is restarted then and everything should operate 😊

More information with respect to configuration, please see the document XPort\_UserGuide.pdf