RS-485/ETHERNET CONVERTER
PD8 TYPE

1. APPLICATIONS

The PD8 converter allows to transmit data to the master devices trough the computer network of Ethernet type, to devices equipped with the RS-485 interface. The converter is available in two versions concerning its operation manner: RealPort network service and serial bridge with UDP protocol.

In the version nr 1, the PC computer with the Ethernet network card is the connected master device. In the version nr 2, the converter co-operates with the device with the master function and the RS-485 serial interface. The version nr 1 of the PD8 converter requires the installation of a programmed controller of the virtual serial port on the PC computer with the Windows system.

This controller ensures to present-days master systems, e.g. LUMEL-HEAT and LUMEL-ENERGY systems, the possibility to transmit data between devices with RS-485 interface, through the Ethernet network, thanks the use of converters of PD8 type (Fig. 1). The converter used in this manner enables to co-operate only with one master computer in the given moment.

In case of using PD8 for servicing MODBUS and LUMBUS industrial protocols - its correct co-operation with master systems on a PC depends on their built-in mechanisms to control break-time intervals between received transmission characters.

When using PD8 in the version nr 2, one can develop the RS-485 bus with successive segments by means of additional PD8 converters and the local Ethernet network. The suitable configuration, at least of one pair of converters, allows to obtain their operation in the serial bridge mode (Fig. 3.). The configuration of their operation is also possible in the mode „one-to-several" (in the shape of a set including maximally 65 converters - Fig. 4.)

The version nr 2 operates in the local Ethernet network servicing the UDP datagram protocol.

2. TECHNICAL DATA

Transmission data:

– RS-485 interface:	
- data format	9, 10, 11, 12 [bit]
- baud rate of RS-485 port	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 56000 bit/s
- maximal response time to the query frame	1000 ms
- transmission range	up to 1200 m at 9600 bit/s
– ETHERNET interface:	
- interface type	10/100Base-T
- transmission protocol	Digi RealPort®, TCP/IP, HTTP, ICMP, DHCP, ARP
- baud rate	10, 100 Mbit/s
- transmission range	≤ 100 m
– Status and data flow indicators	5 diodes (supply, RxD, TxD, ACT, LNK)
– Time to obtain the readiness from the moment of switching on	≥ 16 s
Converter power consumption	≤ 5 VA
Rated operation conditions:	
- supply voltage	85...230...253 V or 20...24...50 V a.c./d.c.
- supply voltage frequency	40...50...440 Hz
- ambient temperature	-20...23...45°C
- relative humidity	< 85%
- external magnetic field	< 400 A/m
- work position	any
- admissible sinusoidal vibrations:	
- frequency	10...150 Hz
- displacement amplitude	≤ 0.15 mm
Storage and transport conditions:	
- ambient temperature	-20... 70°C
- relative humidity	< 85%
- admissible sinusoidal vibrations:	
- frequency	10... 150 Hz
- displacement amplitude	≤ 0.35 mm
Protection level ensured by:	
- housing	IP 30
- terminals	IP 20
Dimensions	45 × 100 × 120 mm
Weight	0.2 kg
Housing	adapted to be mounted on a 35 mm rail acc. to EN 60715
Electromagnetic compatibility:	
- immunity against interference	acc. to EN 61000-6-2
- immunity against decays	acc. to EN 61000-6-2
- emission of radio noise	acc. to EN 61000-6-4
Safety requirements: acc. to EN 61010-1:	
- installation category	III
- pollution level	2
- maximal working voltage in relation to earth:	
- for the supply circuit	300 V
- for other circuits	50 V

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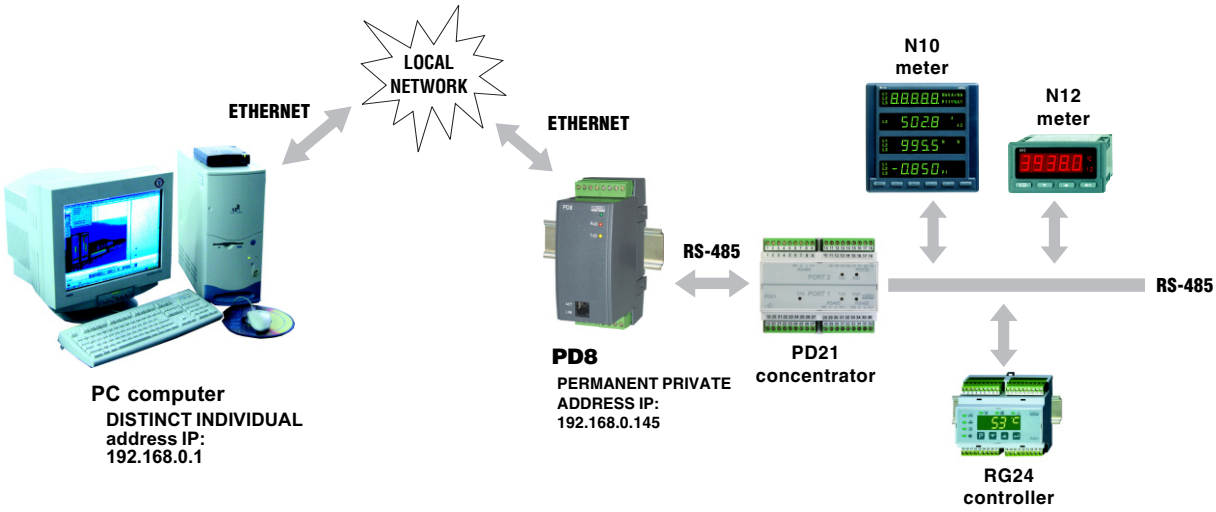

Fig. 1. Exemplary application of the PD8 converter in a local computer network.

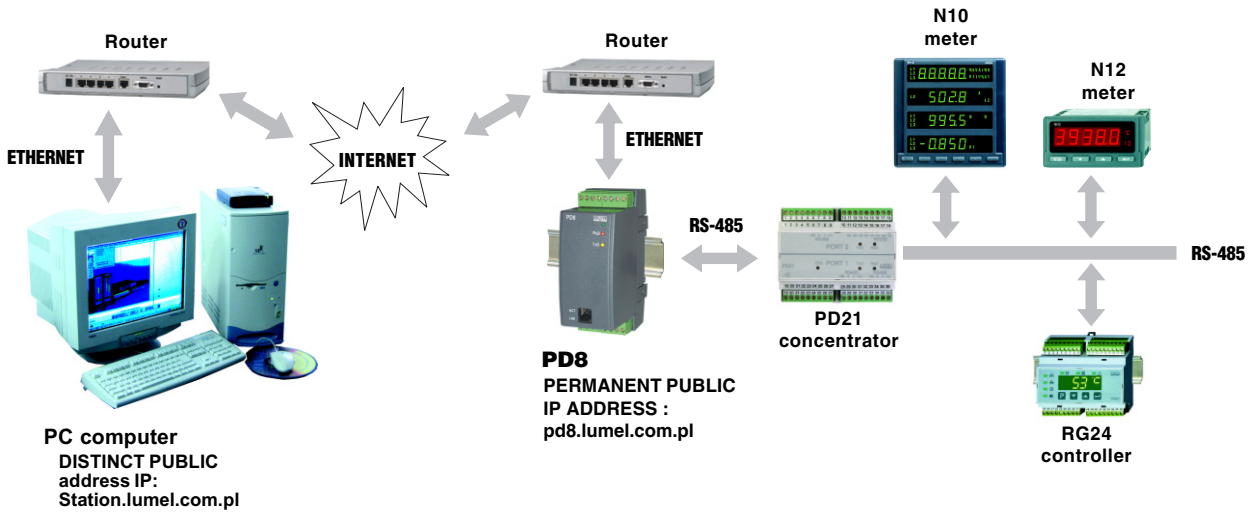

Fig. 2. Exemplary application of the PD8 converter (version nr 1) in an vide area computer network.

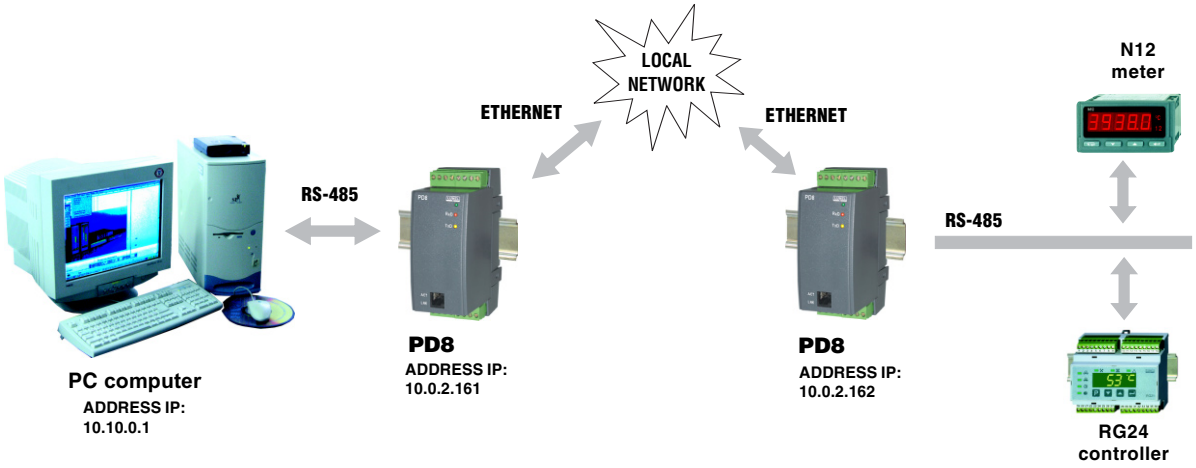

Fig. 3. Exemplary application of the PD8 converter (version nr 2) in the serial bridge mode.

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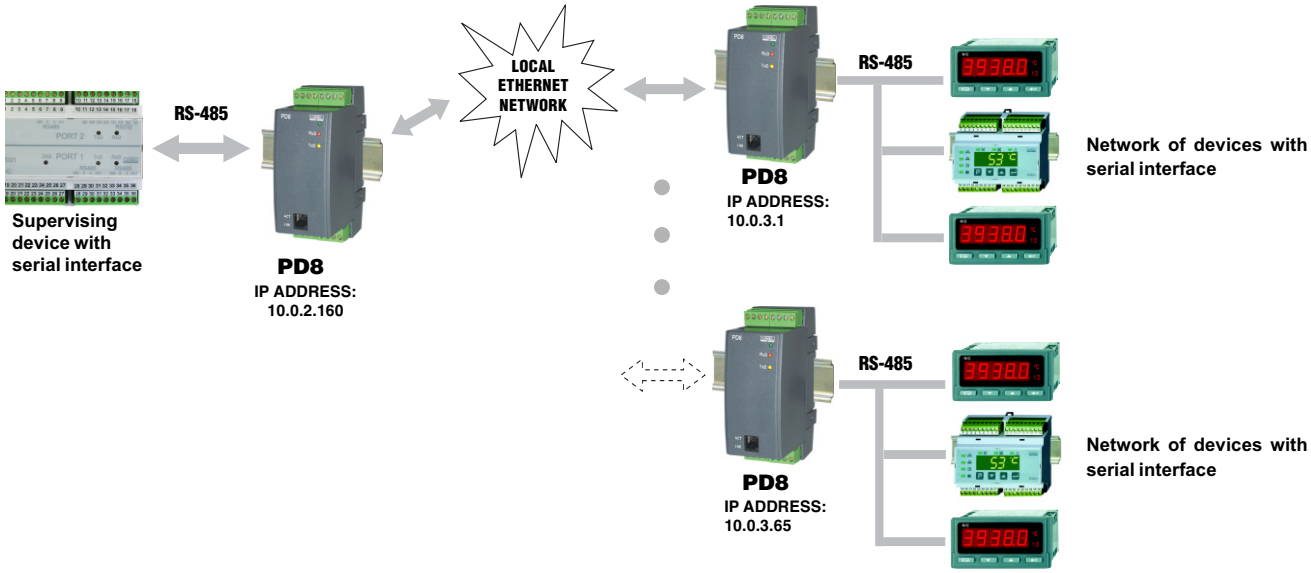

Fig. 4. Exemplary application of the PD8 converter (version nr 2) in the „one-to-several" mode.

3. OVERALL AND ASSEMBLY DIMENSIONS

The PD8 converter is foreseen to be installed on a 35 mm DIN rail in accordance with the fig. 5.

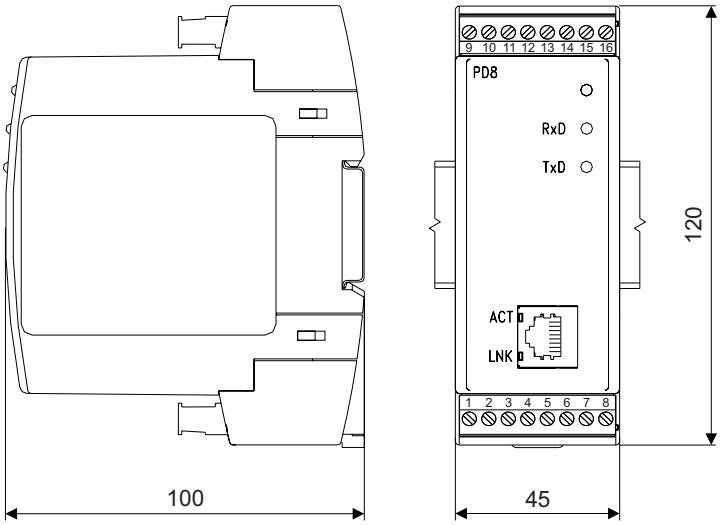

Fig. 5. Overall and assembly dimensions

4. ELECTRICAL CONNECTIONS

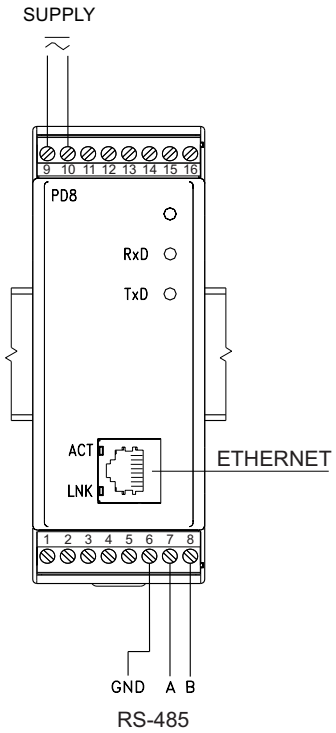

Fig.6 External connections of the PD8 converter

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5. ORDERING CODES

PD8 CONVERTER	X	X	X

Supply voltage:
85... 253 V a.c./d.c. **1**
20... 50 V a.c./d.c. **2**

Operation mode:
RealPort network service **1**
serial bridge with UDP protocol **2**
on order* ..... **X**

Acceptance tests:
without a quality inspection certificate **0**
with an extra quality inspection certificate **1**
according user's agreements* ..... **X**

* The version code will be assigned by the producer

EXAMPLE OF ORDER

Code: **PD8 1 00 1** means :

a **PD8** RS-485/ETHERNET converter

1 - supply voltage = 85... 253 V a.c./ d.c

2 - serial bridge with UDP protocol

1 - delivered with an extra quality inspection certificate.

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