

*Operating Instructions*

# ***Monitoring Station RTU***



# Contents

<b>Technical Data</b>	<b>4</b>
<b>Ordering Data</b>	<b>5</b>
<b>General Information</b>	<b>6</b>
<b>Designated Use</b>	<b>6</b>
<b>Safety Instructions</b>	<b>7</b>
<b>Items supplied</b>	<b>7</b>
<b>Identification marking</b>	<b>8</b>
<b>Conditions of use</b>	<b>8</b>
Temperatures	8
Ambient conditions	8
Installation conditions	8
EMC conditions	8
Storage	8
<b>Description of the product</b>	<b>9</b>
<b>General</b>	<b>9</b>
<b>Module rack</b>	<b>9</b>
<b>Components and connections</b>	<b>10</b>
<b>Pin assignment</b>	<b>11</b>
<b>Add-on modules</b>	<b>11</b>
Communication module I-COM for RTU (analogue)	11
Interface card I-OTDR	12
Interface card I-OSW	13
<b>Installation</b>	<b>14</b>
<b>Installation into 19" rack</b>	<b>14</b>
<b>Installation of a wall mount cabinet</b>	<b>14</b>
<b>Measurement cards</b>	<b>15</b>
<b>Cable connection</b>	<b>16</b>
Power supply cable	16
Clamp assignment	17
Connection cable for measurement cards	17
<b>Start-up</b>	<b>18</b>
Switch-on power	18
<b>Configuration of the CPU card</b>	<b>18</b>
Establish a connection	18
<b>Configure</b>	<b>20</b>
Show actual configuration	20
System configuration	21
Configure the ethernet interface	22
Send a ping to the host	23
Configure the modems	24
Configure the serial number	27
Configure the Telnet password	27
Configure other parameters	28
<b>End connection</b>	<b>28</b>
<b>Operation of the monitoring station</b>	<b>28</b>

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Maintenance .....	29
CPU card .....	29
Storage .....	29
EC Declaration of Conformity .....	32



**Important! It is imperative to read and observe all safety Instructions prior to initial operation!**

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## Technical Data

### DC/DC-power supply unit (specifications for 60V)\*

Input voltage:	36 .. 75 V DC
Current consumption:	approx. 150 mA without measurement cards additionally approx. 40 mA per installed card
Power consumption:	<10 VA without measurement cards additionally approx. 2.5 VA per installed card

### AC/DC-power supply unit (specifications for 230V)\*

Input voltage:	100 .. 250 V AC/45 .. 65 Hz
Current consumption:	approx. 70 mA without measurement cards additionally approx. 10 mA per installed card
Power consumption:	<18 VA without measurement cards additionally approx. 2.5 VA per installed card

Output voltage:	$U_1 = 5 \text{ V DC (8 A)}$
galvanically isolated	$U_2 = 12 \text{ V DC (2 A)}$
and short-circuit proof	$U_3 = 12 \text{ V DC (2 A)}$
(maximum current)	$U_4 = 60 \text{ V DC (0,1 A)}$

LEDs:	$U_1, U_2, U_3, U_4$ (function check)
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### RTU

Operating temperature range:	0 .. +55 °C
Storing temperature range:	-20 .. +60 °C
Admissible humidity:	0 .. 95 % rel. humidity, non-condensing
Dimensions (H x B x T):	min. 266 x 483 x 310 mm dimension for mounting into 19"-Rack
Weight without cards:	< 10 kg
Slots:	12 for measurement cards in IEC format
Dimensions measur. cards:	Front plate: 4 DU x 3 HU PCB: approx. 100 x 160 mm

### Communication modules Dimensions

#### I-COM for RTU (analogue)

Front plate:	8 DU x 3HU
PCB:	100 x 160 mm

#### Interface card I-OTDR

Front plate:	4 DU x 3 HU
PCB:	100 x 160 mm

#### Interface card I-OSW

Front plate:	8 DU x 3 HU
PCB:	100 x 160 mm

#### \* Note:

Specifications on name plate (page 8) are maximum values, which are predetermined by the maximum load of the power supply unit.

**CPU card**

Embedded Controller:	PowerPC MPC565 32-Bit 40 MHz
Operating system:	RTEMS
Storing capacity:	SRAM: 4 MB (8 MB Option) Flash: 2 MB (8 MB Option) RAMDisk: 4 MB (12 MB Option) SD-Card: 1 GB
Memory buffer:	approx. 1 year by battery
RTC	
Interfaces	
Ethernet:	10 Mbit BaseT, connector: RJ45
RS232:	9600 Baud 8N1, connector: female 9-pin SUB-D
CAN:	125 kbit 2.0B, connector: male 9-pin SUB-D
LEDs:	LINK, TRAFFIC
Operating elements:	Reset button
Dimensions:	Front plate: 4 DU x 3 HU PCB: approx. 100 x 160 mm

**Software**

Accessible hardware:	64 devices 10 measurement buses parallel measurement of all measurement cards
Storing capacity at 2 MB RAMDisk	max. 750 sensors and max. 15 OTDR-traces
Storing capacity at 12 MB RAMDisk	max. 2000 sensors and max. 100 OTDR-traces

**Ordering Data****Monitoring station RTU**

36 .. 75 V DC (DC/DC power supply unit)	<b>Order-No. 067400.000</b>
100 .. 250 V AC/45 .. 65 Hz (AC/DC power supply unit)	<b>Order-No. 067400.008</b>

**Spare parts / Accessories**

<b>CPU card RTU</b>	<b>Order-No. 072413.000</b>
<b>Connection cable</b>	
<b>RS232</b> , 1.8 m, 9-pin SUB-D male/female	<b>Order-No. 073134.000</b>
<b>CAN</b> , 3 m, 9-pin SUB-D female	<b>Order-No. 073135.000</b>
<b>Communication module I-COM for RTU (analogue)</b> with internal modem	<b>Order-No. 072445.001</b>
<b>Interface card I-OSW</b>	<b>Order-No. 071517.000</b>
Further ordering data:	
<b>OTDR module</b> , 2 HU, complete (router and patch cable included)	<b>Order-No. 074522.0YY</b>
<b>Optical switch module</b> , Z HU, 1xX, complete	<b>Order-No. 073XXX.0YY</b>

X, Y and Z depending on configuration

## General Information

These operating instructions contain important instructions to ensure safe, appropriate and cost-effective operation of the equipment, to reduce repair costs and downtimes, as well as to raise the equipment's reliability and operational lifetime.

The operating instructions endorse the directives of national regulations for the prevention of accidents and the protection of the environment.

These operating instructions should always be available at the installation site.



**These operating instructions shall be read and adopted by anyone assigned to work with/on the equipment, e.g. during maintenance, inspection and repair**

In addition to the operating instructions and the mandatory regulations for the prevention of accidents, applicable in the operator's country and at the place of use, the recognised technical regulations for safe and professional operation, shall also be observed.

## Designated Use

The RTU monitoring station was developed for logging and evaluating measurement readings in a LANCIER Monitoring System.

The monitoring station was developed to collect and analyse measurement data in a LANCIER Monitoring System.

Proper intended use includes adherence to all prescribed operating, service and repair conditions.



**Important!**  
**Obey handling instructions. Electrostatic discharge (ESD) damage.**

Any non-compliant use excludes the manufacturer from liability for any damages. The operator carries the risk!

---

## Safety Instructions



### Important!

**It is imperative to read and observe all safety instructions prior to initial operation!**

- Keep the operating instructions ready to hand!



### Risk of damage to property!

**Disconnect the power supply before working on the equipment!**



### Danger to life!

**Disconnect the power supply before working on the equipment!**

- The equipment should only be operated in technically-sound condition, for its designated use, with safety and risk awareness in mind, taking into account the operating instructions.
- Malfunctions deleteriously affecting safety in particular must be remedied immediately!
- The monitoring station RTU may only be serviced and operated by persons familiar with it who have been informed of the possible risks.
- Do not modify the equipment in any way.



### Risk of damage to property!

- Maintenance and repair work should only be performed by trained personnel!
- Only use original LANCIER Monitoring replacement parts!

## Items supplied

- 1 Monitoring station RTU
  - 1 Cable RS232, 9-pin, Sub D male/female
  - 1 19" mounting set (4 grounded captive nuts, 4 screws)
  - 1 Power supply cable
  - 1 Operating instructions
  - 1 EC Declaration of Conformity
-

## Identification marking

The monitoring station is clearly identified by the nameplate with technical data and particulars of the manufacturer. The nameplate (7) is located inside the housing at the right hand bottom.

Compliance with the directives in force is confirmed by the attached EC declaration of conformity (see back of these operating instructions).

## Conditions of use

### Temperatures

- Permissible ambient temperature: 0 °C to + 55 °C  
The monitoring station is guaranteed to function perfectly in this temperature range.

### Ambient conditions

- Ambient media, particularly those of a chemically aggressive nature, may attack seals, wire and plastic.

### Installation conditions

- The monitoring station RTU should be installed in a dry, dust-free and frost-free room, while adhering to the general guidelines

### EMC conditions

- Operation must follow EMC regulations. The housing of the RTU is screened accordingly. The flap (front door) must be shut after mounting and configuration (lock screws). Observe EMC regulations and mounting instructions (see page 11) when mounting the housing into a 19" rack and during installation of power mains and measurement cables.

### Storage

General storage information

- If the monitoring station is not installed and operated straightaway it must be kept under appropriate storage conditions in dry, dust-free and frost-free premises away from the sunlight.
- for storage purposes it should be plastic or foil wrapped.



**If the above mentioned conditions of use are not observed, the monitoring systems operating mode cannot be guaranteed.**



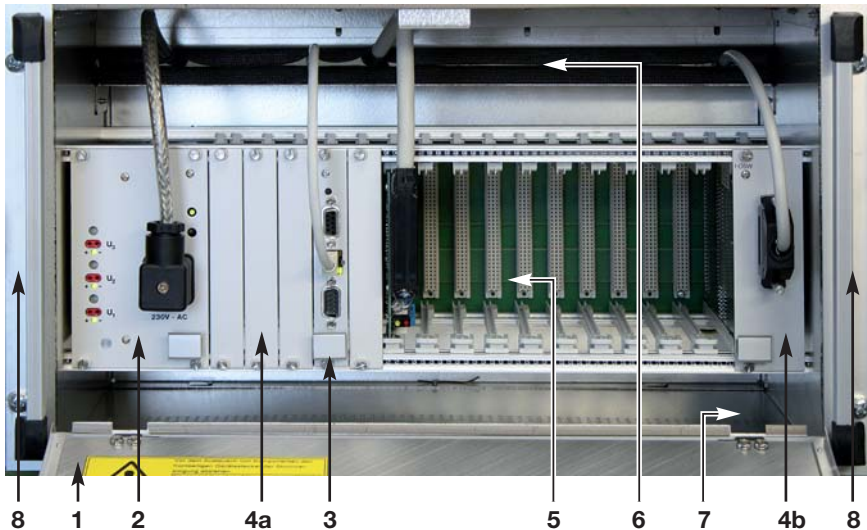
# Description of the product

## General

The RTU is an universal platform for all network and plant monitoring tasks. It collects and evaluates the measured parameters according to programmed thresholds. Alarms and information about actual device conditions are polled continually by a central server via intranet and SNMP.

## Module rack

- 1 Housing
- 2 Power supply unit
- 3 CPU card with interfaces
- 4 Free slots with dummy plates
  - a for communication module I-COM
  - b for interface card I-OTDR
- 5 12 slots for measurement cards
- 6 Cable outlet with EMC screen
- 7 Name plate
- 8 Handles



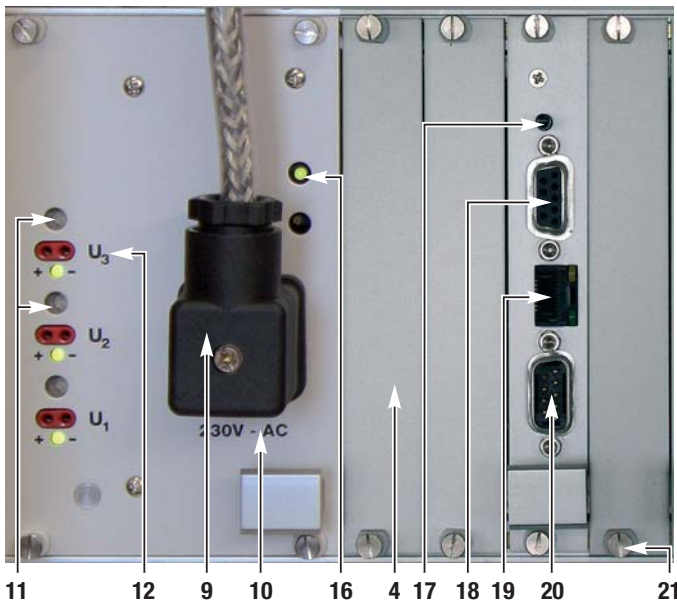
## Components and connections

### Power supply unit (2)

- 9 Power socket, power supply according to label (10)
- 10 Label for power supply (230 V AC/50 Hz or 36 - 75 V DC)
- 11  $U_1 - U_3$  = Trimmer for factory settings
- 12  $U_1 - U_3$  = Test jacks for factory voltage settings  $U_1 - U_3$   
with function check LEDs for internal voltage  
 $U_1 = 5\text{ V}$   
 $U_2 = 12\text{ V}$   
 $U_3 = 12\text{ V}$ 12
- 16 LED  $U_4$  = Function check for measurement voltage 60 V DC, adjustable

### CPU card with interfaces (3)

- 17 Reset button
  - 18 RS 232 interface port for service (RS 232 9-pin)
  - 19 Ethernet port with indicators for data stream (RJ45)
  - 20 CAN bus port (RS 232 9-pin)
  - G Interface port to optical switch (socket 25-pin SUB-D)
- 4 Free slot with dummy plate
- 21 Fixing screws



## Pin assignment

- 18** RS 232 interface port (**18**)  
 PIN 2: TX  
 PIN 3: RX  
 PIN 5: GND  
 PIN 7: RTS  
 PIN 8: CTS
- 19** Ethernet port with indicators for data stream (**19**)  
 PIN 1: TX+  
 PIN 2: TX-  
 PIN 3: RX+  
 PIN 6: RX-
- 20** CAN bus port  
 PIN 2: CAN L  
 PIN 7: CAN H

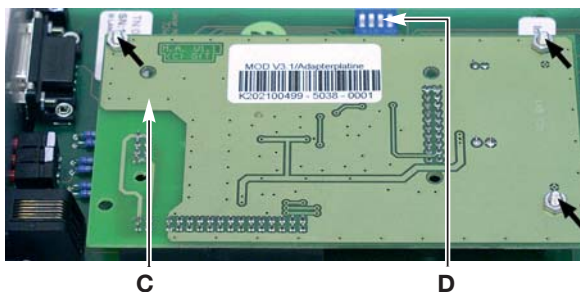
## Add-on modules

### Communication module I-COM for RTU (analogue)

If the RTU is not integrated in a LAN, the communication module I-COM can connect the RTU with the monitoring system via telephone lines (**A**) by means of its internal modem.

An external modem can be connected via the RS232 interface (**B**). In this case the internal modem PCB (**C**) must be removed before:

- Unscrew the three nuts (see arrows) and pull-off the modem PCB.
- Set all pins of the DIP switch (**D**) to position „ON“.



Remove the dummy plates (**4a**) (between power supply unit (**2**) and CPU card (**3**)) before mounting the communication module. Insert module into the left slot and fix both screws.

Meaning of the LEDs:

- The LEDs „Tx“ and „Rx“ light up when the serial interfaces COM 1 and COM 2 are busy (data transfer).
- The LED „CD“ lights up when connection is established.
- The LED „LI“ lights up when modem answers (loop current recognition).

**B RS232 interface** (socket 9-pin SUB-D)

Pin assignment:

- PIN 1: DCD (Carrier Detect)
- PIN 2: RxD (Receive Data)
- PIN 3: TxD (Transmit Data)
- PIN 4: DTR (Data Terminal Ready)
- PIN 5: GND (Signal Ground)
- PIN 6: DSR (Data Set Ready)
- PIN 7: RTS (Request to Send)
- PIN 8: CTS (Clear to Send)
- PIN 9: RI (Ring Indicator)

**A Telephone line** (6-pin, Western socket RJ 11)

Pin assignment:

- PIN 1: idle
  - PIN 2: b2 (Return line)
  - PIN 3: b (Telephone line, tip)
  - PIN 4: a (Telephone line, ring)
  - PIN 5: a2 (Return line)
  - PIN 6: idle
-

## Interface card I-OSW

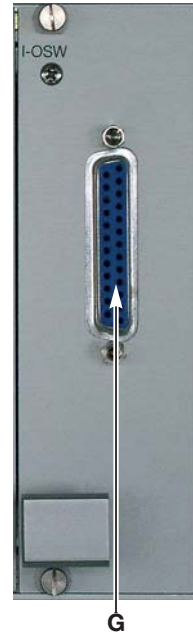
The interface card I-OSW is needed to connect optical switches to the RTU.

### G Interface port optical switch (socket 25-pin SUB-D)

Optical switches must be connected only by the cable delivered with the „Optical switch module“ by LANCIER Monitoring (see page 9, ordering data). It is not included when the interface is ordered as spare part.

PEASE MIND:

The interface card needs the space of two slots!



## Dip switch settings

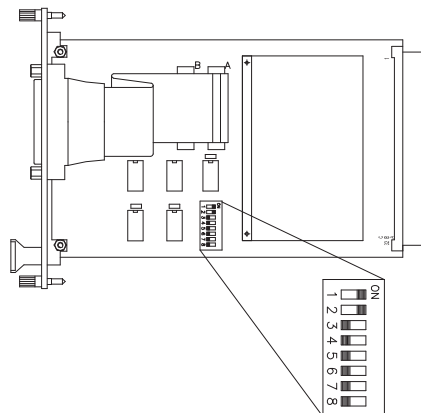


**Important!**

**Obey handling instructions. Electrostatic discharge (ESD) damage.**

The interface card I-OSW must be set-up according to the used type of optical switch. The set-up is accomplished in binary code by a dip-switch on the PCB of the interface card. Dismount interface card I-OSW to get access to dip-switch.

Binary code	No. of Channels	Switch type
1	2	Dicon, ver. 1.0
2	4	Dicon, ver. 1.0
3	10	Fitel, ver. 1.0
4	16	Fitel, ver. 1.1
5	20	Fitel, ver. 1.1
6	30	Fitel, ver. 1.1
7	50	Fitel, ver. 1.1
8	6	Fitel, ver. 1.3
9	-	-
10	3	Lighttech 1.5
11	-	-
12	-	-
...	...	...



Example: Dip-switch set to code „3“

## Installation



**IMPORTANT!**  
Observe the EMC directives!

### Installation into 19" rack

The monitoring station RTU is designed for the installation into 19" racks at the four pierced holes (8) at the front next to the handles.

The place of mounting should be dry and swept clean.

- Insert the 4 grounded captive nuts into the adequate notches of the 19" rack.
- **The 19" rack must be grounded.**  
**Use the delivered grounded captive nuts with contact claws only, to assure the necessary grounding!**
- Screw the housing with 4 screws and washers tightly to the rack.

### Installation of a wall mount cabinet

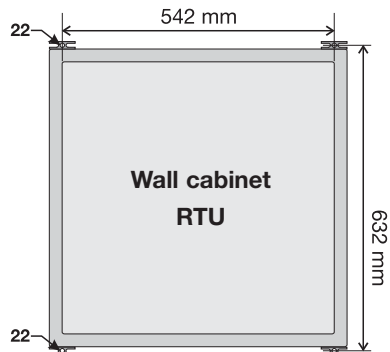
The monitoring station RTU can be delivered premount in a cabinet which is designed for wall mounting. For this purpose, 4 mounting links (22) are attached to the back of the equipment.

The place of mounting should be dry and swept clean.

Minimum distance to adjacent walls and equipment = 100 mm

- Drill 4 holes into a load-bearing wall:  
horizontal distance: 542 mm  
vertical distance: 632 mm
- Use delivered fastening material for the mounting (wall plug and screws).
- Screw the equipment tightly into the 4 holes (22) without wall clearance.

**The wall cabinet must be grounded. For this purpose there is a grounding connector inside the cabinet.**



## Measurement cards



### Important!

**Obey handling instructions. Electrostatic discharge (ESD) damage.**

LANCIER Monitoring provides measurement cards for various measurement tasks. The most popular are:

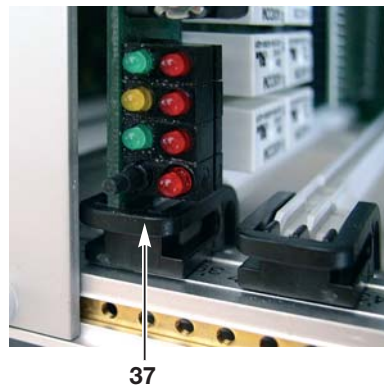
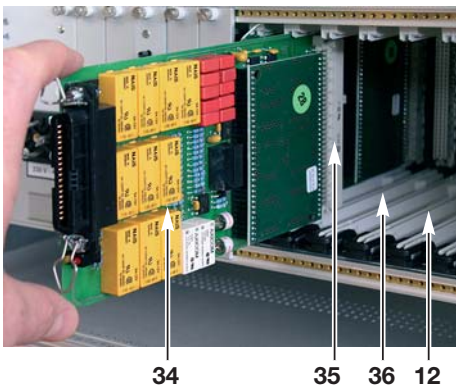
- Measurement cards QE 16 for addressable sensors
- Measurement cards R 10 for insulation and loop resistance sensors
- Measurement cards C 32 for the conditions of dry contacts (open/closed)
- Measurement cards V 32 for the conditions of wet contact
- Relais output cards
- Measurement cards SP4 for addressable Sparton sensors
- Measurement cards T36 for 20/40 step pressure and flow sensors
- Interface cards for optical switches (third-party supplier)

All measurement cards (34) are in IEC format and are mount into the RTU in a similar way:

- Each card (34) may be mount into any slot (12). Usually the slots are filled from the left to the right. Relais output cards are mounted into the slot placed at the right end.

**Advice:** If measurement cards have to be replaced (e.g. because of repair), the same type of card must be put into the identical slot. Otherwise the allocation in the monitoring system will be out of joint.

- Hold the measurement card (34) at the upper and lower edge and slide it with the connector (35) in front along the mounting rail (36) into a slot. The unequipped PCB bottom shows to the left.
- Push measurement card (34) securely into the connector, until the bracket (37) snaps in.



## Cable connection



**IMPORTANT!** Observe the EMC directives!

- The screening (aluminium screens) of the connected cables must have contact to the EMC screen (6) and the strain relief bar (26) to assure grounding.



**Deadly risk!**

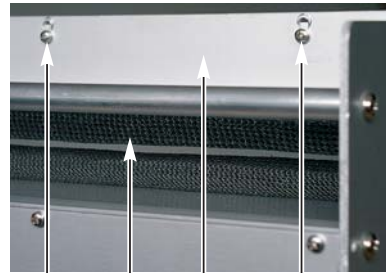
Switch off operating voltage,  
Unscrew or disconnect back-up fuse!

Electrical connection must only be made by electrical specialists!

Open cable outlet with EMC screen (6).

To do so

- loosen 4 fixing screws (23), but do not remove them.
- push profile (24) with upper screen (6) upwards and fix it with screw (23).



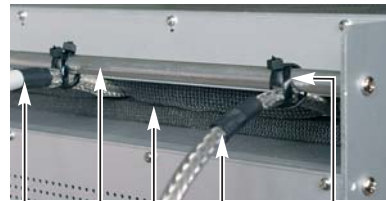
23 6 24 23

### Power supply cable

- Slide delivered power supply cable (27) through open cable outlet.

**The cable screening is stripped for about 10 cm.**

- Place cable (27) so, that the stripped area contacts the strain relief bar (26) and the EMC screening (6).
- Fix power supply cable (27) in this position to the strain relief bar (26) by means of 2 cable ties (28).



30 26 6 27 28

- Connect plug (29) of the power supply cable (27) to the power socket (9) of the power supply unit (2). The cable must show upwards. Fix plug by tightening the center screw.
- Lead the other end of the power supply cable (27) to the terminal strip of the 19" rack or the wall cabinet and connect it according to the table clamp assignment (Page 17).



2 29 9 31 32 33



**ATTENTION**

**Observe different clamp assignment for DC/DC and AC/DC power supply units!**

**Clamp assignment**

Power supply unit / wire	yellow/green	black	grey	brown
<b>230 V AC/45 .. 65 Hz</b>	ground wire	phase	neutral wire	--
<b>36 .. 75 V DC</b>	ground wire	--	+ (plus)	- (minus)

-- wire is not used and should be cut off

**Connection cable for measurement cards**

- Slide delivered connection cable (30) through open cable outlet.  
**The cable screening is stripped for about 10 cm.**
- Place cable (30) so, that the stripped area contacts the strain relief bar (26) and the EMC screening (6).
- Fix connection cable (30) in this position to the strain relief bar (26) by means of 2 cable ties (28)
- Connect plug (31) of the connection cable (30) to the socket (31) of the appropriate measuring card (32) and fix it with the clamps (33). The cable must show upwards.
- Lead the other end of the connection cable (30) to the terminal strip of the 19" rack or the wall cabinet and connect it according to the plan coming with the cable.

Close cable outlet (6) after all cables are connected. To do so

- Loosen clamping screw (23) and push down profile (24) with upper EMC screening (6) and hold it down there.
- Take care that the stripped areas of all cables contact the EMC screening (6) and the strain relief bar (26).
- Tighten all 4 fixing screws (23) while pushing the profile (24) downwards.

Proceed in analogue manner for later cable installations.

## Start-up

### Switch-on power



#### Deadly risk!

When power is switched-on neither remove back panel of the RTU nor pull out the power supply unit!

- Switch on power and watch the LEDs of the power supply unit (2):
  - All 4 green LEDs „U<sub>1</sub>“ to „U<sub>4</sub>“ light up at once.
- The RJ45 socket (ethernet port) of the CPU card has 2 more LEDs with the following meaning:
  - The green LED „Link“ lights permanently when a LAN is connected.
  - The yellow LED „Traffic“ flashes, during data flow.
- Configure the RTU according to the procedures on the following pages and close the housing afterwards.



18

## Configuration of the CPU card

Usually the RTU is configured ready to use before delivery according to user specifications. Configuration has to be executed only at later replacement of the CPU card or trouble-shooting.

### Establish a connection

Configuration is executed via the RS232 interface (18) (9-pin SUB-D, cable not crossed).

- Connect the laptop or other PC to the CPU card via the RS232 interface
- Start up terminal program, adjust connection features and proceed with connection (illustrated below, using the Windows „Hyperterminal“ Program as an example).

- Run the „Hyperterminal“ software, i.e. under Windows „Start“ -> „(All) Programs“ -> „Accessories“ -> „Communication“ -> „Hyperterminal“
- Enter any name (example: RTU Konfiguration) in the „New connection“ window and confirm „OK“ by clicking on the button.

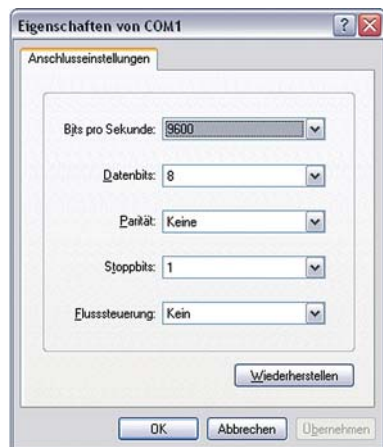


- Select the COM interface used from the pull-down menu in the „Connect with“ window.



- Insert the following values in the „COMX features“ window:
  - **9.600** bps
  - **8** databytes
  - **no** parity
  - **1** stop bit
  - **no** flow control

*The CPU connection is configured.*



## Configure

Press the „Enter“ or „Return“ key in the „Hyperterminal“ window to start the configuration menu. A password is not needed.

*The main menu of the RTU appears:*

Help INFO

```

=====
<a> Modemserver      <g> Ping Host      <i> Ifconfig
<k> Show Config     <n> Sys Serial-No. <o> OTDR-Setup
<p> Telnet Password <r> System Reset   <w> Powersupply
  
```

= Changes are not effective before a restart of the CPU card (press reset button (17)).

For menu control enter the prefixed letters in pointed brackets (example: <c> for system configuration) and subsequent pressing of the „Enter“ or „Return“ key.

If the query is without result, the main menu appears again (e.g. after pressing <a> Modemserver, and no modem is built-in).

### Show actual configuration

**(k) Show Config**

Press „k“ + „Enter“

*Display in Hyperterminal:*

Show Configuration

```

=====
Programm Version   : 0.63.0 May 22 2012 15:27:27
System Clock      : 40 MHz Quarz:4000000 Multi:10
Uptime            : 0 Days 1 Hours 49 Minutes 18 Seconds
Telnet User       : Lancier
Telnet Password   : Lancier
System Serial-No. : 2147483644
Free RAMDiskSpace : 2077184Bytes  2028.50KBytes  1.98Mbytes
Network-IP        : 172.16.1.56
Network Netmask   : 255.255.0.0
Network Gateway   : 172.16.10.1
Network Nameserver : 255.255.255.255
Network MAC       : 00:50:C2:39:22:E0
  
```

## Configure the ethernet interface

To configure the ethernet interface IP-address, Netmask and Gateway settings must be known. Please ask your network administrator.

**<i> Ifconfig**

Press „i“ + „Enter“

*Display in Hyperterminal:*

```

      Current   NET-Config
=====
IP           = 172.16.1.56
Netmask      = 255.255.0.0
Gateway      = 172.16.10.1
Nameserver   = 255.255.255.255
MAC          = 00:50:C2:39:22:E0

```

**TCP/IP Config Menu**

=====

```

<1> Card-IP
<2> Netmask
<3> Gateway
<4> Nameserver
<5> Card-MAC
<0> Exit Menu

```

Input->\_

Enter the dedicated number depending on which parameter shall be configured. Example for the configuration of the IP address:

Press „1“ + „Enter“

*Display in Hyperterminal:*

```

Input->1
Current IP       : 172.16.1.56
Please enter IP   : _

```

Enter the new IP address and confirm by pressing the „Enter“ key.

To cancel the input press „Ctrl“+“C“.

In Hyperterminal the menu **TCP/IP Config Menu** is displayed.

Now further ethernet configurations can be executed.

If the address of „**Nameserver**“ is unknown, enter 255.255.255.255.

Never change the **MAC hardware address** of the CPU card. It is labelled on the PCB of the CPU card.

## Finish ethernet configuration

Press „0“ + „Enter“

*Return to main menu (see page 20)*



### Important!

**Changes are not effective before a restart of the CPU card (press reset button (17)).**

The correct ethernet configuration has to be checked by sending a ping to the host (see the following chapter).

If the RTU is connected to a server protected by a firewall the ports 161, 162 and 23 have to be unlocked.

For other questions about your network ask your administrator!

## Send a ping to the host

This function checks whether the RTU is connected to the host.

**<g> Ping Host**

Press „g“ + „Enter“

*Display in Hyperterminal:*

**Ping a Host**

**Enter Host Name or IP :\_**

Enter the IP address of the requested host and confirm by pressing the „Enter“ key.

*Display in Hyperterminal (server not found):*

**PING 192.168.1.100 (192.168.1.100) : 56 data bytes**

**No Answer from 192.168.1.100**

**No Answer from 192.168.1.100**

**No Answer from 192.168.1.100**

**No Answer from 192.168.1.100**

**4 Packets send, 0 Packets received, 4 Packets lost.**

Press „Enter“

*Return to main menu (see page 20)*

---

## Configure the modems

<a> Modemserver

Press „a“ + „Enter“

*Display in Hyperterminal:*

```
Current Modem Server Config
```

```
/device/gftmodem
```

```
=====
```

```
Modem-IP   : 192.168.10.10
```

```
Netmask    : 255.255.255.0
```

```
Gateway     : 192.168.10.1
```

```
Dial-No.   : 23
```

```
Debug Flag: OFF [0]
```

```
Modem Server Config Menu
```

```
=====
```

```
<1> Modem-IP
```

```
<2> Netmask
```

```
<3> Gateway
```

```
<4> Dial-No.
```

```
<5> Start a Call...
```

```
<6> Hang up
```

```
<7> Debug Flag
```

```
<0> Exit Menu
```

```
Modem[0] is OFFLINE..
```

```
Input->_
```

Enter the dedicated number depending on which parameter shall be configured. Example for the configuration of the modem's IP address:

Press „1“ + „Enter“

*Display in Hyperterminal:*

```
Input->1
```

```
Current IP       : 192.168.10.10
```

```
Please enter IP : _
```

Enter the IP address of the modem and confirm by pressing the „Enter“ key.

To cancel the input press „Ctrl“+“C“.

In Hyperterminal the menu **Modem Server Config Menu** is displayed.

Now further modem configurations can be executed as described before.

<1> **Modem-IP** is the RTU's IP in the modem's interface.

<2> **Netmask** is the Netmask for the PPP gateway.

<3> **Gateway** is the receiver's IP (PC or Router)

<4> **Dial-No.** is the phone number of the receiver.

Admissible characters are: figures (0 to 9) and comma (,) for partitions and pauses.

The RTU does not dial, if a „0“ is entered as phone number. In this case it can only be called.

<5> **Start a Call...**

<6> **Hang up**

<7> **Debug Flag** displays a problem report and is needed only for testing and first set-up.

The **Debug Flag** is reset to „off“ after each system start.

**Note:** The entries of **Modem-IP** <1>, **Netmask** <2> and **Gateway** <3> can be changed by the remote system.

If they are set to „0“ the remote system must be able to change the entries (necessary in exceptional cases only, e.g. if the gateway to the intranet is accessed by an external provider).

## Modem status information

Two conditions are displayed in the **Modem Server Config Menu** in brackets [ ]:

### 1. Debug Flag

If Debug Flag is switched on (<7> **Debug Flag** on), its status is displayed (<7> **Debug Flag: ON** [0]).

[0] if no alarm is pending.

Values larger than [0] indicate the remaining time in seconds until the next try to establish a dial-up connection when an alarm is pending.

Values below [0] indicate the time in seconds since when an alarm is pending, but the modem could not establish a dial-up connection.

Each new event increases the value about 60 additional seconds. The modem tries to establish a dial-up connection until the value is [0].

### 2. Modem

[0] Modem is stand-by.

[1] Modem is dialling.

[81] Connection is established (outbound).

[4] Modem receives a call.

[84] Connection is established (inbound).

[82] Modem hangs up.



**Important note when the RTU is connected to a LANCIER monitoring system with UMS-Server:**

The Gateway-IP of the RTU and the IP-range for the dial-up connections of the Windows system must not overlap.

Example for an **invalid** configuration:

RTU	RTU-IP	192.168.1.10
	RTU-Gateway-IP	192.168.1.1
	RTU-Netmask	255.255.255.0
Windows	incoming connection	
	IP-range	192.168.1.1 - 192.168.1.20
Windows	incoming connection	
	IP	192.168.1.1

Windows reports an error (address already in use) because in- and outbound connections try to use the same IP range.

Example for a **valid** configuration:

RTU	RTU-IP	192.168.1.10
	RTU-Gateway-IP	192.168.1.1
	RTU-Netmask	255.255.255.0
Windows	incoming connection	
	IP-Bereich	192.168.1.2 - 192.168.1.9
Windows	incoming connection	
	IP	192.168.1.1

**Finish modem configuration**

Press „0“ + „Enter“

*Return to main menu (see page 20)*

### Configure the serial number

The RTU is identified in the monitoring system by its serial number. So if the CPU card is replaced (e.g. because of repair) the serial number of the RTU (see nameplate, page 8) must be assigned to the new CPU card to assure its proper identification in the monitoring system.

**<n> SysSerial-No.**

Press „n“ + „Enter“

*Display in Hyperterminal:*

```
System Serial-No. 1050500288
```

```
=====
```

```
<1> System Serial-No.
```

```
<0> Exit Menu
```

```
Input->1
```

```
System Serial-No. Enter: _
```

Enter the new serial number and confirm by pressing the „Enter“ key.

To cancel the input press „Ctrl“+“C“.

In Hyperterminal the **main menu** is displayed.

### Configure the Telnet password

**<p> Telnet Password**

Press „p“ + „Enter“

*Display in Hyperterminal:*

```
Telnet-Password Config
```

```
=====
```

```
<0> Exit
```

```
<1> User      : Lancier
```

```
<2> Password : Lancier
```

```
Input->_
```

Enter the dedicated number depending on which parameter shall be configured. Example for the configuration of the user:

Press „1“ + „Enter“

*Display in Hyperterminal:*

```
Input->1
```

```
Old User : Lancier
```

```
New User : _
```

Enter the new user's name and confirm by pressing the „Enter“ key.

In order to keep the old user name, re-enter the previous entry.

In Hyperterminal the menu **Telnet-Password Config** is displayed.

Now the password can be edited in an analogous manner.

### Finish Telnet password configuration

Press „0“ + „Enter“

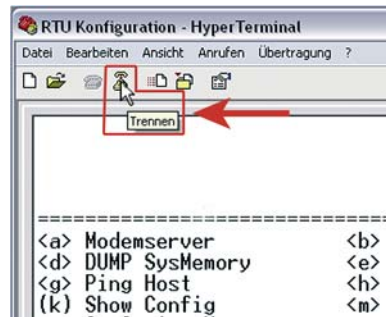
*Return to main menu* (see page 20)

### Configure other parameters

All other parameters are installed for fault repair and debugging and may be used by qualified personnel of LANCIER Monitoring only. They must not be executed by any other user.

## End connection

- Click on „Off“ button on the „Hyperterminal“ software menu bar.
- Close the „Hyperterminal“ software.



### Important!

Changes are not effective before a restart of the CPU card (press reset button (17)).

## **Operation of the monitoring station**

The RTU monitoring station can now operate independently.

Remote reading and evaluation are normally conducted via the UMS server.

## Maintenance

### CPU card

The CPU card is equipped with a battery for measurement data buffering. Under normal operating conditions it has no wear. But it should be replaced after a longer power failure to maintain its full ability, which is about 1 year of data buffering.

Battery replacement can be executed at LANCIER Monitoring works only.

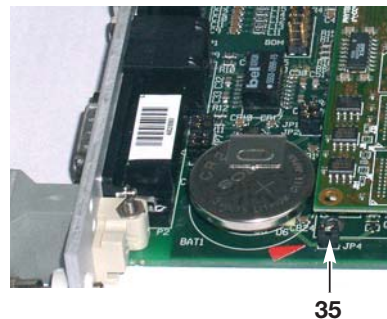
- Back-up stored measurement data by means of the monitoring system UMS (refer to software manual UMS).
- Loosen screws **(21)** of the CPU card **(3)** and pull it out at the handle **(34)**.
- Ship CPU card to LANCIER Monitoring GmbH (see last page for address).
- Mount replacement CPU card if available and fix screws **(21)**.
- Mount the repaired CPU card, when it is returned.



### Storage

The RAM buffering should be deactivated if the RTU is stored to avoid a discharge of the battery.

- Dismount the CPU card as described in chapter „Maintenance“.
- Remove jumper „JP4“ **(35)** (red arrow on PCB) and put it up on one pin only for later reuse.
- Mount CPU card again.
- Place a note outside the RTU about the buffer deactivation.
- Reactivate the RAM buffering before the RTU is used again by installing the jumper „JP4“ **(35)** again.









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## EC Declaration of Conformity

We declare under our sole responsibility, that the product

**Make:** LANCIER Monitoring  
**Type:** Monitoring Station RTU

to which this declaration refers, meets the relevant health and safety requirements of the following EC directives:

<b>2006/95/EG</b>	<b>Low voltage directive</b>
<b>2004/108/EG</b>	<b>Electromagnetic compatibility</b>
<b>2011/65/EU</b>	<b>RoHS-II</b>

For proper implementation of the health and safety requirements named in the EC directives the following standard(s) and/or technical specification(s) have been consulted:

<b>EN 60950-1</b>	<b>Information technology equipment - Safety</b>
<b>EN 61326-1</b>	<b>Electrical equipment for measurement, control and laboratory use - EMC requirements (class B)</b>

Münster, 02.10.2013

Research and Development

Managing Director