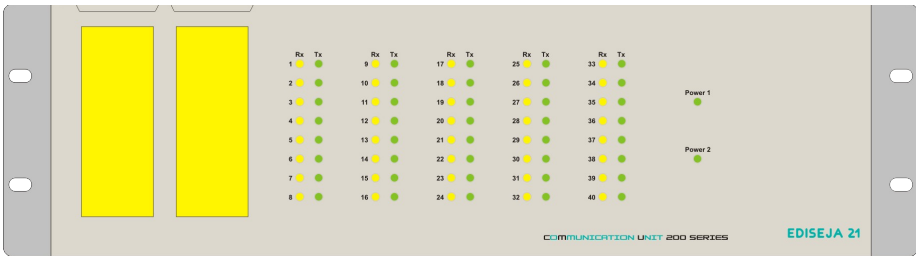


CMU 200
User manual

CMU 200 / HACx2 . 232x39 - 15
CMU 200 / MDCx2 . 232x39 - 15



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1 PREFACE

Liability statement

We have checked the contents of this manual to ensure that the descriptions of both hardware and software are as accurate as possible. However, deviations may occur so that no liability can be accepted for any errors or omissions contained in the information given.

The contents of this manual will be checked in periodical intervals, corrections will be made in the following editions.

We reserve the right to make technical improvements without notice.

Contact

If you have any questions or comments related to this product please contact us on:

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Explanation of the symbols



Read the instructions!



Device was tested with 2,5 kV AC voltage to check the device insulation.



Device ground terminal.



Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC; the affixed product label indicates that you must not discard this electrical/electronic product in domestic household waste.

<i>Company:</i>	<i>Device:</i>	<i>Document:</i>	<i>Code:</i>	<i>Version:</i>	<i>Date:</i>	<i>Page:</i>
Ediseja 21	CMU 200 / XXXx2.232x39 - 15	User manual	CMUMU205	V2	28.05.2015	3

Warnings

In this paper the following terms are used:

Danger

indicates that death, severe personal injury or substantial property damage will result if proper precautions are not taken.

Warning

indicates that death, severe personal injury or substantial property damage can result if proper precautions are not taken.

Caution

indicates that minor personal injury or property damage can result if proper precautions are not taken. This particularly applies to damage on or in the device itself.

General information

These paper contain the information that is necessary for the proper and safe operation of the described devices. This paper is intended for technically qualified personnel.



Warning!

Hazardous voltage is present inside the device during operation. Disregarding of safety rules can result in severe personal injury or property damage.

Only qualified personnel may work with described devices after being familiar with warnings and safety notices in this paper and other safety regulations.



Warning!

Device must operate completely assembled! Device must be used as described. No modifications of the device should be made.



Warning!

Do not open device while it is energized! Hazardous voltage is present inside the device. Disconnect all connectors before opening!



Warning!

If device is damaged disconnect it from power supply! Send it to the manufacturer for inspection.



Warning!

Connect to earth before attaching power supply!

2 CMU 200 SYSTEM

2.1 DESCRIPTION

Communication unit (CMU 200) is modular system of communication devices that can be used for various of tasks such as:

- ◆ communication converter (for example 20 channels RS232 to Fiber Optic converter)
- ◆ star coupler (for example RS232 to 39 fiber optic)

CMU 200 device is a couple of software and hardware. For different purposes, different software versions and different hardware configuration have been developed.

2.1.1 SOFTWARE

Software is application dependent and allows different hardware configurations. Software's task is switching between communication ports and allows almost any combination between them.

2.1.2 HARDWARE

CMU 200 can handle up to 40 different interface boards. Currently available interface boards:

- ◆ (non)isolated RS232
- ◆ isolated RS485
- ◆ Multimode Fiber Optic ST or SMA connectors
- ◆ USB
- ◆ ethernet (with one virtual com port)
- ◆ power supply

There is possibility to use additional redundancy power supply.

Housing is made from inox and is intended for mount on standard 19"rack.

3 DESCRIPTION

3.1 DESCRIPTION

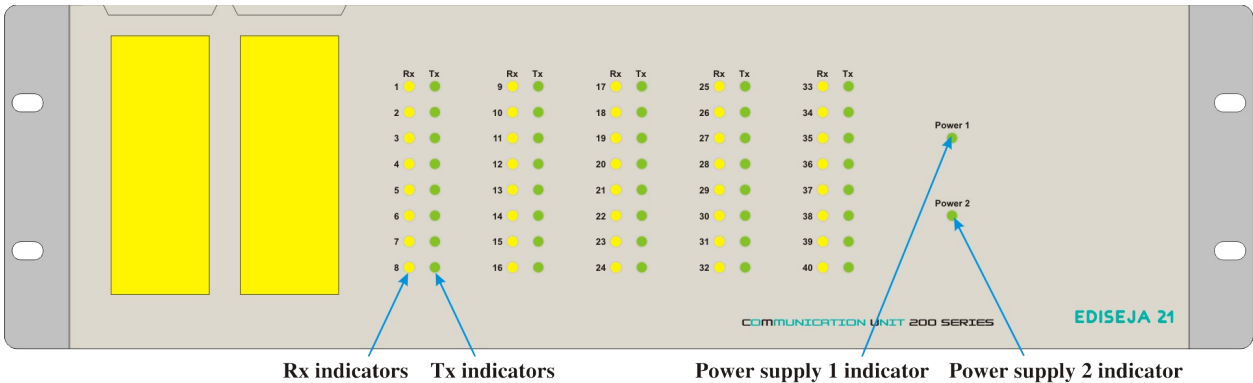
Star coupler is communication device that transfer data from one (master) to more than one (slave) port.

This device contains 39 RS232 ports. Two master and four (first three groups) or five (second three groups) slave ports made one group. Data is send from master port to all slave ports in the same group. On the other hand, data from either slave port is send to both master ports in the same group only.

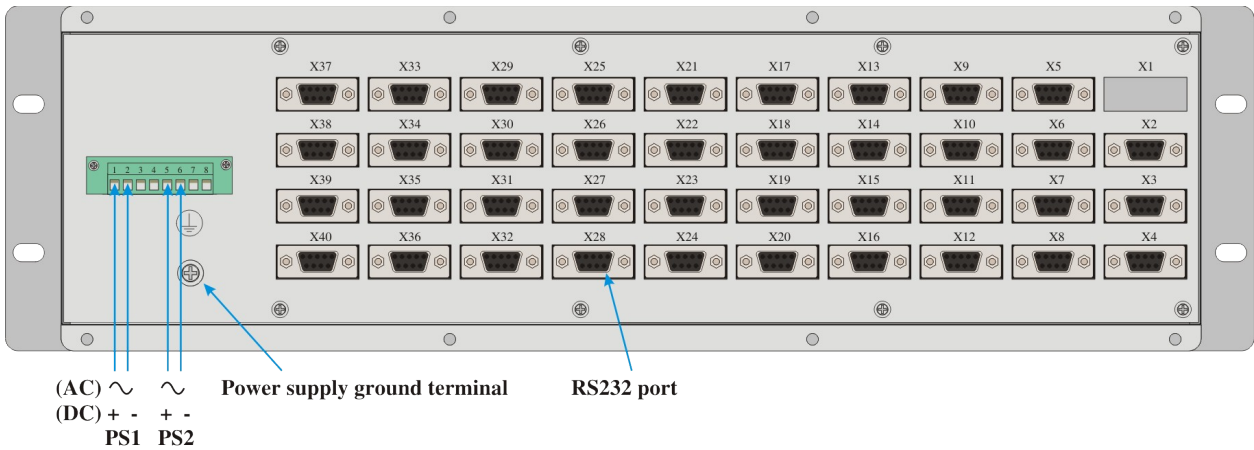
Power supply voltage allows connection to all common station batteries. Additionally it can be also connected to standard AC voltages.

This device is intended for use in cubicles and cabinets in all kinds of power production, transmission and distribution stations. It requires no maintenace. All normaly used connectors, switches and light indicators are accessed at the back side of the device. Two light indicators indicates power supply voltage, others indicate communication transfer.

3.2 APPERANCE



Picture 1: Front view



Picture 2: Back view

3.3 HARDWARE DESCRIPTION

3.3.1 PORTS CONFIGURATION

Port	1	2	3	4	5	6	7	8	9	10
Inter.	-	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232
Port	11	12	13	14	15	16	17	18	19	20
Inter.	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232
Port	21	22	23	24	25	26	27	28	29	30
Inter.	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232
Port	31	32	33	34	35	36	37	38	39	40
Inter.	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232	RS232

3.3.2 RS232 INTERFACE BOARD

Description

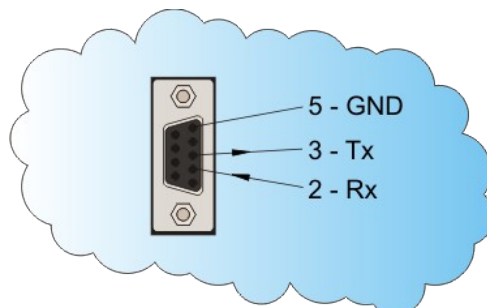
Single, nonisolated, full duplex, RS232 port with DB9 female connector. Supported Rx, Tx and GND pins.

Connector pin table

DB9 F	2	3	5
Description	RX	TX	GND

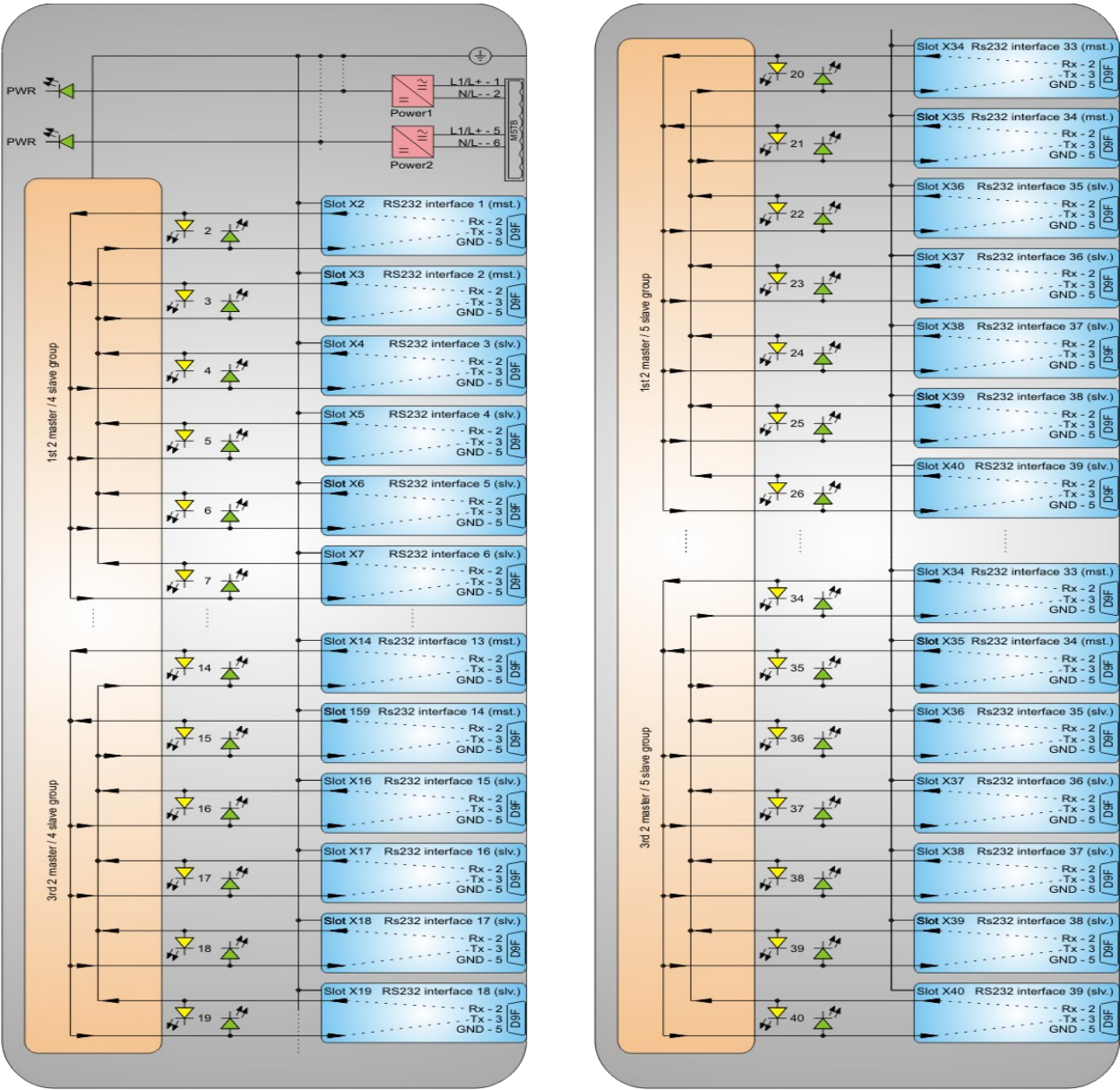
HARDWARE DESCRIPTION

DB9 F	2	3	5
Direction	IN	OUT	-



Picture 3: DB9 Female connector

4 SCHEMATIC



Picture 4: Schematic

5 INSTALLATION

5.1 INSTALLATION



Warning!

Hazardous voltage is present inside the device during operation. Disregarding of safety rules can result in severe personal injury or property damage.

Only qualified personnel may work with described devices after being familiar with warnings and safety notices in this paper and other safety regulations.

Following instruction must be taken into consideration:

- ◆ The device must be accessible to qualified personnel only.
- ◆ The device is permitted to operate in enclosed housing or cabinet only.
- ◆ The device location must be vibration-free.
- ◆ The admissible operating temperature must be observed.
- ◆ Check the device for damage at unpacking. If device is damaged it must not be installed but It should be send to the manufacturer for repair.
- ◆ The device should not be opened.
- ◆ The device should be mounted on 19" rack via 4x M6x10 mm screws
- ◆ Attach ground wire before attaching power supply. Device must be grounded during operation!
- ◆ Single core or stranded wire 0,5 – 2,5 mm² must be used for power supply connection. If stranded wire is used ferrules must be used to prevent fraying. Recommended stripping lenght is 5 mm.
- ◆ Protective earthing wire must be terminated with tinned copper ear terminal.
- ◆ The prescribed bending radius of the optical fibre cables must be observed.

6 COMMISSIONING & MAINTENANCE

6.1 COMMISSIONING



Warning!

Hazardous voltage is present inside the device during operation. Disregarding of safety rules can result in severe personal injury or property damage.

Only qualified personnel may work with described device after being familiar with warnings and safety notices in this paper and other safety regulations.

Following instruction must be taken into consideration:

- ◆ Device must operate completely assembled! Device must be used as described. No modifications of the device should be made.
- ◆ Attach ground wire before attaching power supply. Device must be grounded during operation!
- ◆ Check if the power supply voltage complies with device operation voltage.
- ◆ Do not open device while it is energized! Hazardous voltage is present inside the device.
- ◆ If single mode fiber optic interface is used, do not look into the laser beam.

6.2 MAINTENANCE

The device is maintenance-free. Disconnect power supply before cleaning it. Use moist cloth. Do not use liquids.

7 TECHNICAL DATA

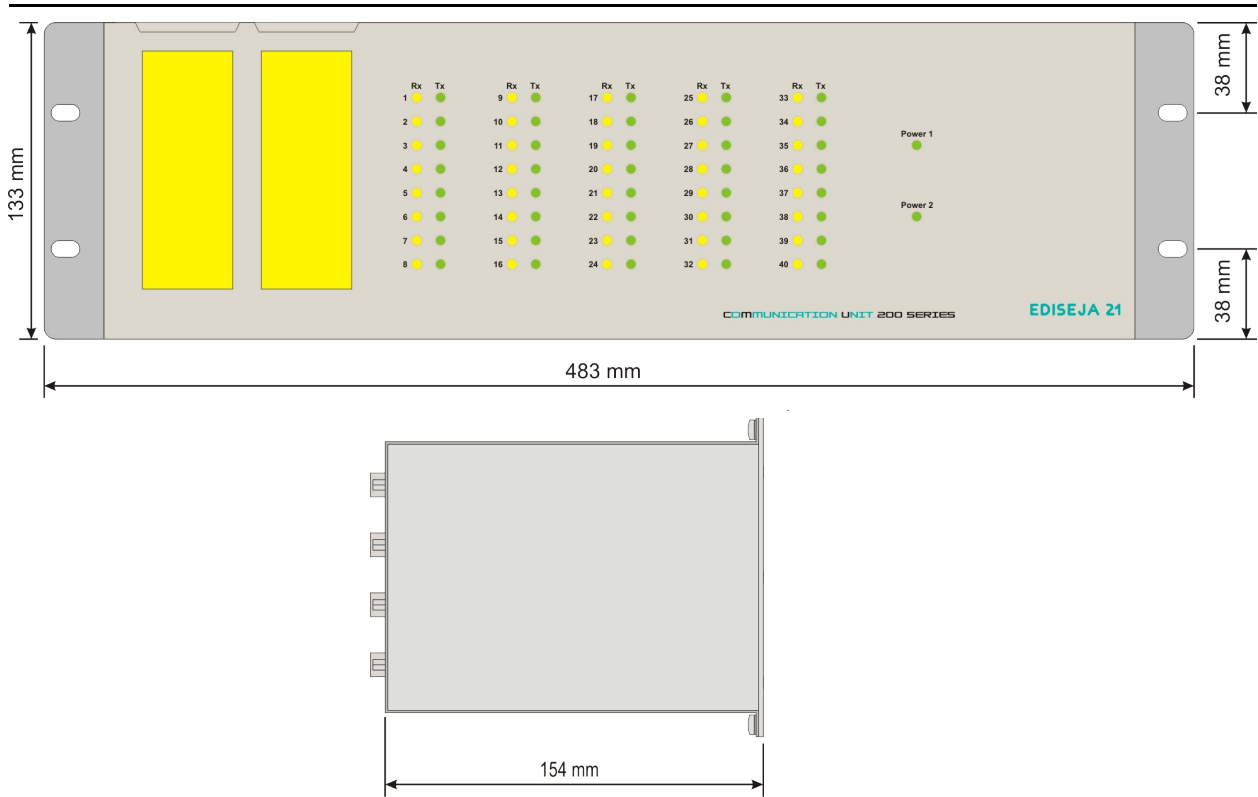
Power supply		
Rated voltage	HAC	230 V AC, +10 %, -10 %
		220 V DC, +10 %, -10 %
	MDC	110 V DC, +10 %, -10 %
Rated current	HAC	0,1 A
	MDC	0,2 A
Fuse (internal)	6,3 A T	
Power supply indicator	green LEDs marked Power 1 and Power 2	
voltage dips	20 ms	
Connector type	screw type „MSTB“ Phoenix 8pin	
Wire crossection	0,5 – 2,5 mm ²	

Communication port RS232 (interface type 23x)	
Type	RS232
Direction	full duplex
Speed	up to 230 k BAUD
Number of ports	1
Distance	up to 15 m
Isolation	none; (GND earthed)
Connector type	DB9 female
Lines in	1 (RX)
Lines out	1 (TX)

Device			
Weight	6 kg		
Dimensions (see picture)	(W)	(H)	(D)
	19" rack	3U (133 mm)	154 mm + connectors
Temperature range	0 °C to +55 °C		
Humidity operating	up to 95 % (noncondensing)		
Enclosure	Material		inox
	IP		20
Mount type	4x M6 screw 19" rack		
Class	I		

Device		
Overvoltage category	II	
Communication indicator	Receiveing	yellow LED marked Rx
	Tranmitting	green LED marked Tx

8 DIMENSIONS



Picture 5: Dimensions

9 ORDERING

ORDERING NUMBER:

(enclosure width: 19", height: 3U, depth: 154 mm)

CMU 200 / ☐ . ☐ . ☐ . ☐ . ☐ . ☐ . ☐ . ☐ . ☐ . ☐

Power supply :

single 230 V AC, 220 V DC power supply	HACx1
double 230 V AC, 220 V DC power supply	HACx2
single 110 V DC power supply	MDCx1
double 110 V DC power supply	MDCx2

Interfaces:

RS232 nonisolated, Rx & Tx support	232 x n
RS232 isolated, Rx & Tx support	23I x n
RS232 nonisolated, Rx, Tx, CTS & RTS support	23R x n
RS232 isolated, Rx, Tx, CTS & RTS support	2RI x n
RS485 isolated, half duplex (19200-115200 baud)	485 x n
RS485 isolated, half duplex (38400 - 4800 baud)	48M x n
RS485 isolated, half duplex (300-2400 baud)	48L x n
FO multimode ST	FOT x n
FO multimode SMA	FOA x n
Ethernet (one virtual com port)	ETH x n
n ... number of interfaces - maximum number of interfaces in CMU 200 is 40!	
Each 23R and 2RI interface must be treated as two interfaces!	

Function:

three ports star coupler (up to 13 groups)	2
1 on 1 converter (up to 20 groups)	7
40 port star coupler (1 master, up to 39 slaves)	12
39 port star coupler (2 masters to 4 slaves (3 groups), 2 masters to 5 slaves (3 groups))	15
40 port star coupler (1 master to 9 slaves, up to 4 groups)	18
For other functions please contact us.	

Software Version:

software version leave empty

Example: **CMU 200 / HACx2 . 232x3 . FOTx27 - 18** is

- 1x RS232 to 9x fiber optic, 3 groups star coupler with
- two 230 V AC power supply
- 3 RS232 interfaces
- 27 fiber optic interfaces with ST connector

Additional accessories (order if needed):

- power supply cable with „schuko“ plug, 2 m
- RS232 cable to PC (state the lenght up 15 m)
- fiber optic cables (state the lenght)

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