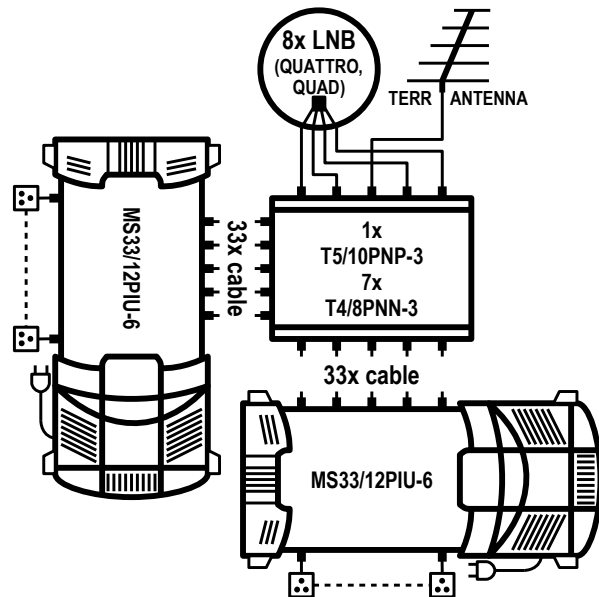


## 12) Related Products

Extension of distribution system to 24 outputs using splitters T5/10PNP-3 and T4/8PNN-3:



## 13) Contact

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5. května 690  
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## Instruction Manual

1/003574 A

MS21/12PIU-6  
MS25/12PIU-6

MS29/12PIU-6  
MS33/12PIU-6

**EMP-CENTAURI®**

Dear Customer,  
congratulations on the purchase of the EMP-Centauri product. Before its installation and putting into operation, read carefully the entire operation manual. Keep the purchase and rework (if any) records for future need.

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## 1) Field of Application, Warranty

The product is designed for the distribution of satellite (SAT), terrestrial (TERR) TV and radio signals. EMP-Centauri's PROFI CLASS products are covered under 4 (four) years warranty from the date of purchase. The warranty shall not apply to the product used for other than the specified purpose. The user will be responsible for injury or material damage which may arise in consequence of any product use in contradiction with the manual. It is prohibited to dismantle the product and make any interventions in it. Repairs or any interventions in the product may be performed only by EMP-Centauri company, or other companies authorized by EMP-Centauri.

## 2) Technical Specifications

The products are standalone multiswitches for distribution of terrestrial and satellite signals from 5 to 8 satellite positions (20 to 32 polarities) to 12 users. Multiswitches are controlled from a satellite receiver by commands DiSEqC 1.0 and 1.1. The multiswitches are compatible with quad LNB. Terrestrial input operates in active or passive mode, selection is made by a DIP-switch. Terrestrial input can supply DC voltage of 5 V resp. 12 V (selected by DIP-switch), maximum current is 150 mA. Multiswitches are powered from internal power supply P2U45, stand-by mode is supported (switching off unused LNBs and associated input circuits).

Specifications	MS21/12PIU-6	MS25/12PIU-6	MS29/12PIU-6	MS33/12PIU-6
Number of Inputs	21	25	29	33
Number of Outputs	12			
Frequency Range	TERR 40–862 MHz (active), 5–862 MHz (passive), SAT 950–2300 MHz			
Insertion Loss (avg)	TERR 3 dB (active), 22 dB (passive), SAT 3 dB			
Isolation (min)	20 dB			
Maximum Input Level*	TERR 90 dBuV (active), 100 dBuV (passive), SAT 90 dBuV			
Maximum Output Level*	TERR 87 dBuV (active), 78 dBuV (passive), SAT 87 dBuV			
Control	13/18 V & 0/22 kHz; DiSEqC 1.0; DiSEqC 1.1			
Current Consumption	45 mA (18 V) from each satellite receiver			
Terr. Input Current	150 mA max (5V DC / 12 V DC)			
Power Consumption (act./pas.)**	7 W / 5.5 W	8 W / 6.5 W	9 W / 7.5 W	10 W / 8.5 W
Power Consumption (maximum, including LNB)	45 W			
Power Consumption – stand-by (act./pas.)	2.3 W / 2.1 W			
Dimensions (w,d,h)	47.0 x 15.2 x 8.7 cm (including power supply)			
Temperature Range	-30°C – +60°C			

\* TERR: EN 50083-3/60dB IMA3 [dBuV]

\*\* without consumption of devices connected to inputs

avg – average value, there is tolerance of  $\pm 3$  dB in specified range

Power Supply Specifications	P2U45
Input Voltage	90–265 V AC, 50/60 Hz
Output Voltage	18 V DC, 12 V DC
Maximum Output Current	2 A (18 V DC), 1 A (12 V DC)
Maximum Output Power	45 W
Efficiency	75% min
Dimensions (w,d, h)	12.6 x 15.2 x 8.7 cm (power cord length 130 cm)
Temperature Range	-30°C – +60°C

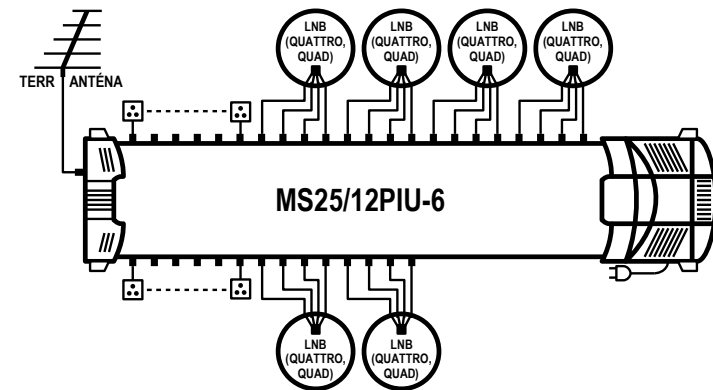
### 3) Product Takeover

Make sure that the product is not damaged and following accessories are enclosed:

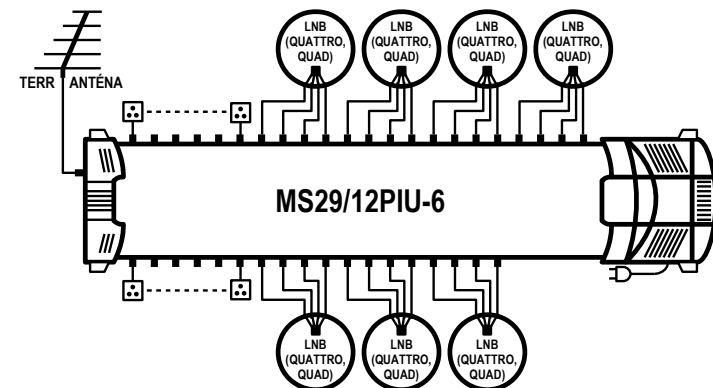
- screws and dowels to fix the product on the wall (4 pcs)
- 75  $\Omega$  loads for the impedance matching of unused outputs (2 pcs)

In the case of damage or missing accessories please contact your dealer.

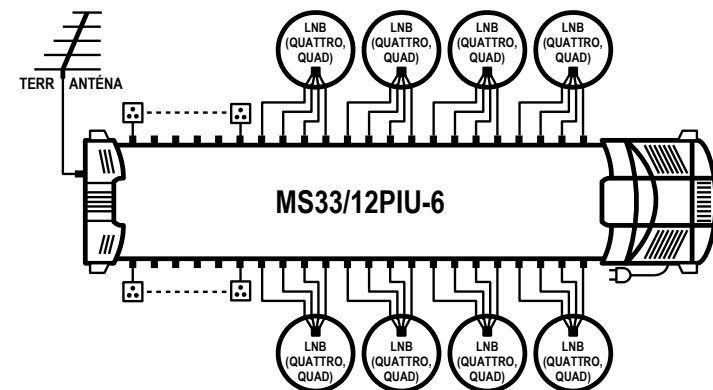
Connection of multiswitch for satellite reception from 6 satellites and distribution of terrestrial signals:



Connection of multiswitch for satellite reception from 7 satellites and distribution of terrestrial signals:



Connection of multiswitch for satellite reception from 8 satellites and distribution of terrestrial signals:












and re-plug the product into the power grid again.

- The power supply can fail temporarily in case of overload or overheating. The cause can be current consumption of devices connected to the satellite inputs of product which exceeds the specifications, see section 2) Product Specifications. The next cause can be the overheating of product in consequence of wrong installation, see section 4) Product Storing and Installation. Disconnect the product from the power grid, remove the cause, and re-plug the product into the power grid after a few minutes again.

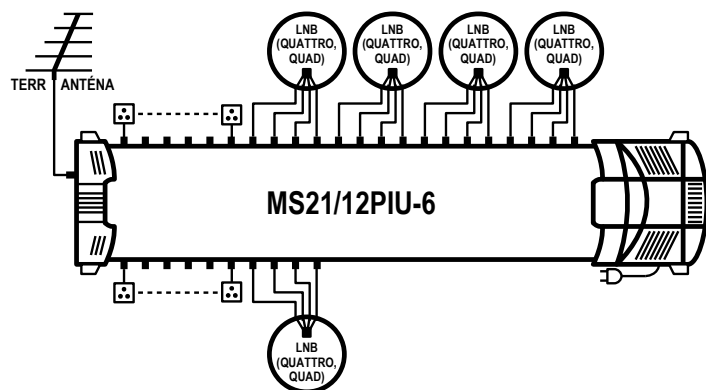
If the failure cannot be removed, please contact your distributor.

## 10) Symbols Explanation

	certificate of conformity
	international standard for digital satellite equipment control, number (1.0, 1.1, 1.2 or 2.0) determines DiSEqC version.
	for indoor use only
	DC power supply
	protective bonding
	class II device
	fuse protected
	safety transformer
	According to EU directive, electric and electronic devices which are identified by one of the following symbols must not be disposed of together with municipal waste. When disposing of the old device, use local waste collection and separation systems.

## 11) Wiring Diagrams

Connection of multiswitch for satellite reception from 5 satellites and distribution of terrestrial signals:



## 4) Product Storing and Installation

**We recommend the device to be installed and serviced by the qualified technician!**

The product must not be stored and installed in the place with excessive humidity, in the place with dripping or running water, in the place with high dust pollution, mechanical vibrations or impacts, in the place out of temperature limits specified in the section 2) Technical Specifications, close to heat sources (radiators or air ventilators, direct sunshine etc.), in the reach of children.

Do not expose the apparatus to dripping or splashing. Use the apparatus only in moderate climates (not in tropical climate).

Fix the product firmly on a wall or another hard and inflammable surface with screws and dowels. The product shall be in no case held only by the connected cables. Ensure the free space for the air circulation (space on sides and below the product should be at least 20 cm and the space over its top at least 50 cm). Do not cover the product (with curtains etc.). Do not place any containers with liquids (vases, glasses etc.) or naked flame sources (lighted candle etc.) on the product or near the product.

**The mains socket must be placed near the product. The mains plug shall remain readily operable. The mains socket and plug must be easily available.**

## 5) Product Connection

Connect the product in accordance with this manual and valid regulation in your country. Use high quality 75 Ω coaxial cable designed for satellite reception. Mount the F connectors (screw, crimp or compress type) on the ends of coaxial cables, in the case of using the screw F connectors proceed according to the following picture and instructions:



- Remove the outer coaxial cable coating in the length of approx. 15 mm.
- Roll up the metal shielding braid and the shielding foil underneath and cut the shielding with scissors to approx. 5 mm.
- Remove approx. 10 mm of the inner plastic insulation (approx. 5 mm of the insulation remains in a place).
- Carefully screw the F connector on the cable end until the plastic insulation levels with the F connector opening.
- Check there is no short between the inner conductor of coaxial cable and F connector.

The coaxial cables shall not be broken, the minimum bending radius should be 5 cm. Connect the F connectors into the F sockets of product and fasten them with an appropriate force.

Connect input F sockets marked A-D with converters (LNBS) outputs according to the next table:

marking of F socket of multiswitch	LNB position	marking of outputs of the LNB	
		Quattro LNB	Quad LNB
A / SAT SYSTEM A	A	VL	any output
B / SAT SYSTEM A		HL	any output
C / SAT SYSTEM A		VH	any output
D / SAT SYSTEM A		HH	any output
Connect outputs of other LNBS (B, C, etc.) to appropriate input F-sockets by the same manner			

- Connect input F socket marked TERR IN with output of terrestrial antenna, eventually with output of terrestrial antenna with terrestrial antenna preamplifier.
- Connect output F sockets marked 1 to 12 with other components in distribution system (satellite receiver, terrestrial receiver, wall socket etc.).
- Connect connector marked with protective bounding symbol with protective bounding conductor, see section 10) Symbols Explanation.
- Connect the mains plug into the mains socket with voltage according to section 2) Technical Specifications.

If some of outputs are not used, it is appropriate to terminate them with 75 Ohm loads. If not terminated, actual insertion loss figure may differ from given value.

The wiring examples are shown in the section 11) Wiring Diagrams or at the website [www.emp-centauri.eu](http://www.emp-centauri.eu).

## 6) Product Settings, Setup of Receivers

Lever 1 of DIP-switch selects passive (OFF position) or active (ON position) mode of distribution of terrestrial signals.

Levers 3 & 4 define DC voltage applied on input TERR IN, see table:

lever 3	lever 4	voltage at input TERR IN
OFF	OFF	0 V
ON	OFF	5 V
OFF	ON	12 V
ON	ON	

### Recommended setting of connected satellite receivers:

If satellite receiver allows to configure *both* DiSEqC 1.0 and DiSEqC 1.1 switching commands for each satellite, it is required to set up the satellite receiver according to the following table:

LNB	DiSEqC 1.0 (committed)	DiSEqC 1.1 (uncommitted)	LNB	DiSEqC 1.0 (committed)	DiSEqC 1.1 (uncommitted)
A	A (AA, 1 of 4)	1 (1 of 4)	E	A (AA, 1 of 4)	2 (2 of 4)
B	B (AB, 2 of 4)		F	B (AB, 2 of 4)	
C	C (BA, 3 of 4)		G	C (BA, 3 of 4)	
D	D (BB, 4 of 4)		H	D (BB, 4 of 4)	

If the receiver doesn't allow this setting, it is necessary to enter the motor configuration menu (DiSEqC 1.2, not USALS!) and to perform search and save procedure for each of received satellites:

- select "Drive Motor" command and wait until good signal quality is indicated (for some receivers it is more convenient to "step" by repeated pressing of button on remote control)
- stop the movement and save the found position
- select the next satellite and repeat this procedure

Notes: Command "Go to zero" selects anytime the LNB "A". Following "Drive to West" command will select successively LNB "B", "C", "D"... After reaching the last position the LNB "A" is set again. Command "Drive to East" rotates through the LNBs in the opposite sense.

The setting procedure of each receiver can differ, follow instruction manual of your receiver.

## 7) Safety

Due to security reasons the product and wiring in which the product is connected must be grounded properly. Use the earthing terminal identified with the symbol of grounding to ground the product. Make sure the antennas are grounded properly.

Connect all devices to power grid only after all connections are finished and checked.

Never work on the wiring (including terrestrial receivers, TVs) during or before a storm. A lightning stroke into the antenna may cause dangerous overvoltage in the product metallic parts.

The product should be disconnected from the wiring immediately if it gets into contact with liquids (dropping water, spilled drinks etc.).

The product works with the AC voltage, see section 2) Technical Specifications. Make sure, that the local AC voltage corresponds to the operating voltage of product. No objects can be placed on the mains cord for prevent its damage or break. No hot objects should touch the mains cord. While disconnecting the product from power grid, never pull the mains cord but the mains plug to prevent the mains cord damage. Pay attention that the mains plug holds tight in the mains socket. Loose mains plug or mains socket means the danger of fire. Never disassemble the product connected to the power grid, you risk the danger of electrical shock.

## 8) Product Maintenance

**Always disconnect the product from the power grid and wiring before performing any maintenance of the product. If you have to enter places with a risk of fall, pay attention to your safety.**

Use only dry cloth to clean the product and do not use any liquid agents.

Coaxial cables installed outdoors should be replaced once in a few years. Unscrew all F connectors and clean connector contacts, resp. shorten the coaxial cable by approx. 2 cm, every 2 years.

Check the state of power supply and its mains cord periodically. If the mains cord or the mains plug of product is damaged, it must be replaced by manufacturer or qualified technician to prevent any dangerous situation. Let the product to be serviced if the housing of power supply is damaged.

If not used for a prolonged period of time, disconnect the product from the power grid.

## 9) Troubleshooting

**Always disconnect the product from the power grid before working on product, otherwise you risk the electric hazard.** Pay attention to your safety if you have to enter places with a risk of fall.

In the case the product does not work and LED of power supply is on:

- Check if the terrestrial and satellite antennas are correctly fixed, optimally set and connected to the product, satellite and terrestrial receivers turned on, plugged on and correctly set.
- Check the connector connections. The inner conductor of coaxial cable must be in contact with the inner conductor of F socket and the shielding of coaxial cable with F connector. Replace broken or interrupted coaxial cable.
- Sometimes the reset of the multiswitch microprocessor is enough to fix the problem. Pull out the power plug of the multiswitch and satellite receiver from power grid and then re-plug them a few seconds later.

In the case the product does not work and LED of power supply is off or blinks:

- Check that the product is connected to the power grid with AC voltage. If not, connect the product to the power grid with correct AC voltage.
- Disconnect the product from the power grid and check that there is no short-circuit on the input satellite coaxial cables, which prevents the power supplying of LNBs. If yes, remove short-circuit