

ESU 51	21110061
ESU 53	21110026
ESU 54	21110027
ESU 56	21110028
ESU 57	21110029



Programmable Single-cable Outlets

Characteristics

- For single-cable systems according to EN 50494 and EN 50607
- With DC voltage feed-through via satellite connection to the trunk line (max. 24 V/400 mA, 22 kHz- and DiSEqC™ signal)
- Monitoring of DiSEqC™ signalling by microcontroller
- Overload protection by means of an electronic fuse and decoupling diodes
- Return-path compatible for systems with cable connection (CATV modem) or in IP over Coax systems, e.g. with KLAN modem (EXI 01)
- Configurable functions with the SWP 50 programming device:
 - disabling individual user bands
 - operation in Legacy mode (no switch-off at 18 V constant signal for standard multi-switch system)
 - operation in disconnect mode (no DC feed-through to the trunk)
 - LED display for status and fault indication (can be switched off)
 - Functions can be expanded.
- Basic functions at delivery:
 - The connected receiver is switched off if it does not use the single-cable DiSEqC™ command set in accordance with EN 50494 or EN 50607 (switching off the power from the satellite connection to the input at +18 V_{DC} after approx. 400 ms).
 - configured for single-cable systems according to EN 50494 and EN 50607
 - All user bands (UB1 ... UB32) are enabled.
 - LED display switched off
- Connections:
 - TV: IEC connector (m) (IEC 61169-2)
 - Radio: IEC connector (f) (IEC 61169-2)
 - SAT: F-socket (IEC 61169-24)
- With screw and claw fastening for flush-mounted installation boxes Ø 55 – 65 mm

Functional Specification

In single-cable satellite reception systems, interferences are possible if individual subscribers or receivers block the trunk line by means of an 18 V constant signal. Due to these interferences, other subscribers are no longer able to communicate with the multi-switch or LNB.

In practice, it is also possible that incorrectly configured receivers use the user IDs of other subscribers. In this case, we are talking about interferences in the form of the so-called ping-pong effect, because two subscribers “fight” for the same transponder.

The single-cable outlets of the ESU 5x series have a microcontroller that monitors signalling inside single-cable systems. In addition to signal voltages (14 V/18 V), audio signals (22 kHz) or DiSEqC™ signals are also analysed.

The antenna outlets turn off a permanent voltage of 18 V and, by means of a user ID check, ensure that only the enabled user band IDs are transmit-

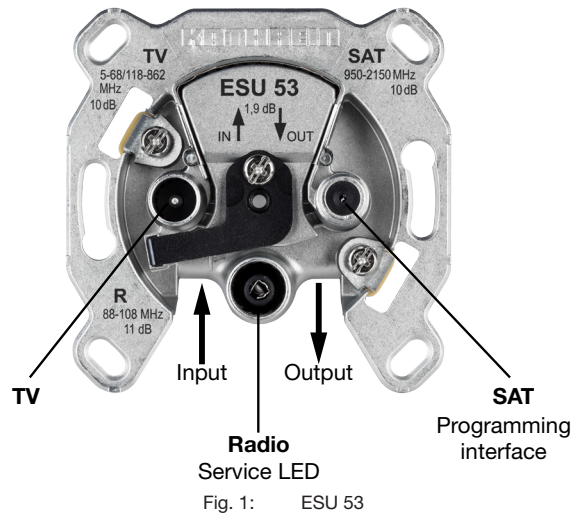
ted from the receiver to the multi-switch via the outlet.

The programming device SWP 50 transmits the user band IDs which need to be enabled to the single-cable antenna outlet, thus ensuring that the subscribers in a single-cable antenna system do not interfere with each other.

Using the programming device SWP 50, a specialist retailer or installer configures one or several defined user IDs in the single-cable antenna outlet during the installation of the antenna system. To do so, the specialist retailer or installer connects the programming device to the F-socket of the antenna outlet. By means of the *Kathrein ESU* app, a connection to the programming device is established, and the data for the configuration of the antenna outlet is transmitted to the programming device.

Notes for the Installer

- To adjust other functions, the programmer SWP 50 – order number 21110025 – and the *Kathrein ESU* app – available for free for various operating systems – are required; see Fig. 2.
- Pay attention to the SWP 50 and *Kathrein ESU* user guide.
- To configure a single-cable outlet according to the antenna system layout, connect the SWP 50 to the SAT connection (F-type connector) of the outlet and follow the instructions in the SWP 50 and *Kathrein ESU*. You can do it either *before* or *after* the outlet has been installed in the system.
- We recommend keeping records of the enabled user band IDs of the outlet for the user.
- When configuring an outlet, do not disconnect it from the SWP 50.
- Follow the installation instructions below to install the outlet.



- **ESU 51**
Terminated end outlet, 8 dB, for radial and star distribution systems or as an end outlet for loop-through systems
- **ESU 53, ESU 56, ESU 57**
 - Directional coupler outlet, 10 dB, 14 dB and 17 dB for loop-through systems
 - Use ERA 14 – order number 272899 – as a terminating resistor!
- **ESU 54**
Single outlet, 1 dB, for radial or star distribution systems



Fig. 2: Programming device SWP 50

Installation

Tools

- Knife or stripping aid
- Phillips screwdriver, size 1 or flat screwdriver 5 x 0,8

Installation and Safety Instructions



WARNING

Risk of injuries due to sharp edges!

- Ensure that the installation is carried out by qualified personnel only.
- Use outlets indoors in dry areas only.
- Make sure not to damage the outer conductor when stripping it, otherwise the specified screening factors cannot be achieved.
- Make sure that the wires of the braided shield do not touch the inner conductor after stripping the cable. Danger of short circuit!
- Do not touch the tips of the claws.

Installing the Outlets

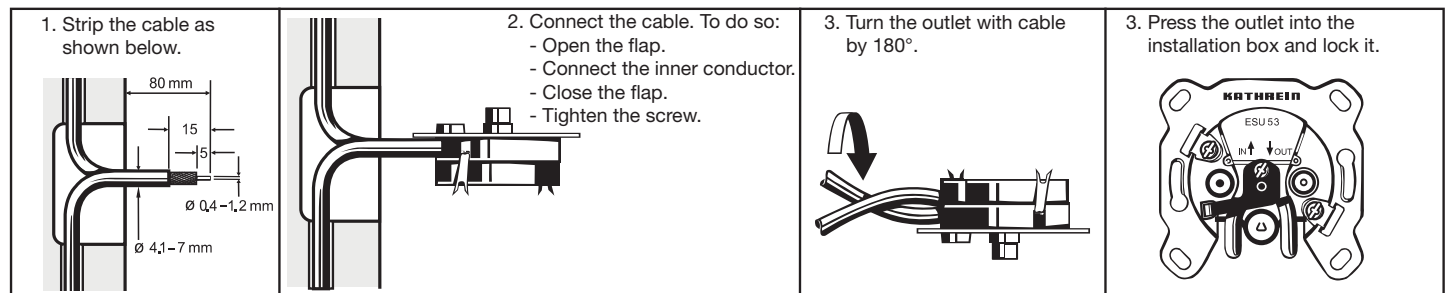


Fig. 3: Installing the outlets

Service LED

Display	Function
Red	18 V or 22 kHz signal at the satellite connection > 400 ms (single-cable mode)
Red	Load current is too high; > 500 mA (electronic fuse)
Red, flashing	DiSEqC command with a disabled user band ID from the end device at the satellite connection
Green	Configuration is being applied (programming mode).
Green, flashing	DiSEqC command with an enabled user band ID

Technical Data

		Type	ESU 54	ESU 51	ESU 53	ESU 56	ESU 57
		Order number	21110027	21110061	21110026	21110028	21110029
Through loss		5 – 10 MHz	–	–	1.5 dB	1.5 dB	1.5 dB
		10 – 862 MHz	–	–	1.1 dB	1.1 dB	1.1 dB
		862 – 2150 MHz	–	–	1.9 dB	1.9 dB	1.9 dB
Insertion loss	TV	5 – 68 / 118 – 862 MHz	1 dB	8 dB	10 dB	14 dB	17 dB
	SAT	950 – 2150 MHz	1 dB	8 dB	10 dB	14 dB	17 dB
	R	87.5 – 108 MHz	2 dB	9 dB	11 dB	15 dB	18 dB
Decoupling ¹⁾		5 – 862 MHz	–		≥ 42 dB		
		950 – 2150 MHz	–		≥ 32 dB		
Screening factor		≥ 85 dB (5 – 300 MHz), ≥ 80 dB (300 – 470 MHz), ≥ 75 dB (470 – 950 MHz), ≥ 55 dB (950 – 2150 MHz)					
Compliant with the standards		EN 60728-11, EN 50083-2					

¹⁾ Between two subscribers

Waste Disposal



Electronic equipment is not domestic waste – in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 concerning used electrical and electronic appliances, it must be disposed of properly. At the end of its service life, take this unit for disposal at a designated public collection point.