

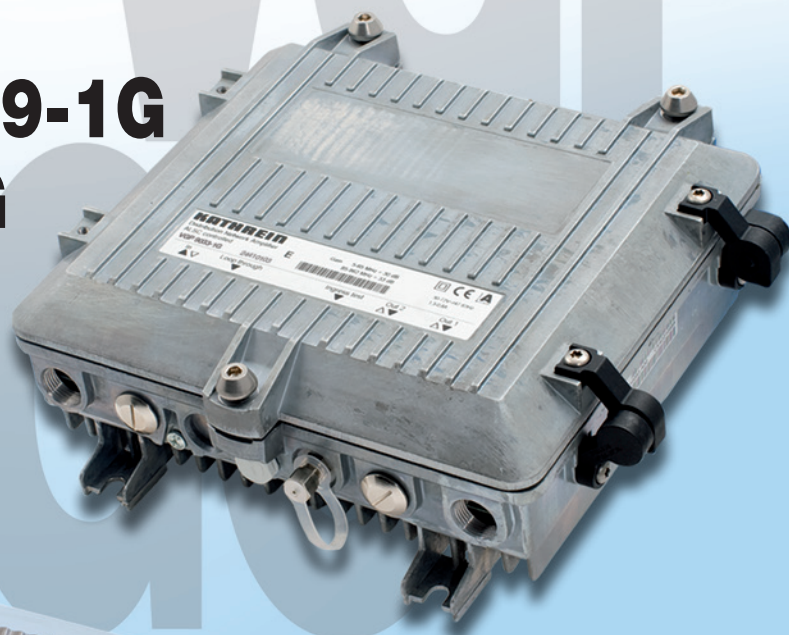
Compact amplifiers

VGP 9033-1G/9041

VGF 9030/9040

VGO 939-1G/VGF 939-1G

VOS 952-1G/953-1G



KATHREIN

Antennen · Electronic

CONTENTS

VGP 9033-1G/9041-VGF 9030/9040

| | |
|-------------------------------------|----------|
| Product description | Page 3 |
| Details, Block diagram, Accessories | Page 4-5 |
| Technical Data | Page 6 |

VGO 939-1G/VGF 939-1G

| | |
|-------------------------------------|----------|
| Product description | Page 7 |
| Details, Block diagram, Accessories | Page 8-9 |
| Technical data | Page 10 |

VOS 952-1G/953-1G

| | |
|-------------------------------------|------------|
| Product description | Page 11 |
| Details, Block diagram, Accessories | Page 12-13 |
| Technical data | Page 14-15 |

Accessories

| | |
|-----------------------------|------------|
| TVM 850/H, TVM 1000 | Page 16 |
| HTE 10 | Page 17 |
| Splitters, Taps, Equalisers | Page 18-19 |
| Connectors | Page 20 |

VGP 9033-1G/9041 VGF 9030/9040

DESCRIPTION

VGP 9033-1G/9041 – VGF 9030/9040

- Modern, monitorable compact amplifiers for interactive HFC networks
- Innovative operational concept: Using electronic tuning elements, set using HTE 10 hand-held unit (fewer plug-in cards and attenuation pads required, repeatable device settings)
- Integrated frequency-agile 2-pilot control in VGP 9033-1G/9041 enables quick commissioning:
 - Automatic levelling in the forward path, thus no need for time-consuming manual levelling
 - Automatic presetting of the return path is possible
- Remote configuration of all setting parameters via monitoring system (can be activated/deactivated)
- High gain (up to 40 dB), variable in interstage position
- Latest GaAs-MMIC technology
- Very high output levels at lowest intermodulation products, even for interstage operation
- Loop-through input (only for VGP 9033-1G/9041) and output splitter can be configured
- De-emphasis (inverse-equalisation) insert position
- Remote feeding: 7 A per input/output, local feeding: 10 A
- Insert position for monitoring transponder (HMS/DOCSIS)
- Test sockets on input/output and in return path amplifier
- Integrated return path amplifier, settable gain
- Ingress Control Switch
- Aluminium die-cast housing with PG 11 connections

The compact amplifiers with electronic tuning elements – VGP 9033-1G/9041 and VGF 9030/9040

With the VGP 9033-1G/9041 and VGF 9030/9040 Kathrein offers a latest-generation compact amplifier series. A wide range of settings, electronic operation and excellent technical data – at an unbeatable price/performance ratio.

"Plug-and-Play" redefined

Electronic setting of all important parameters, automatic levelling (only for VGP 9033-1G/9041) as well as remote configuration via HMS or DOCSIS monitoring ensure the shortest start-up and maintenance times. The copy function enables one to copy all settings and transfer them to another device at the press of a button. The absence of plug-in cards for gain and slope not only accelerates start-up, but also simplifies logistics and saves warehousing costs. Another advantage during modifications: new values are taken over without any interruptions. Multimedia services remain undisturbed.

Start-up without a measuring instrument – it doesn't get any easier than this

Due to automatic levelling, the compact amplifiers VGP 9033/9041 can be put into operation with just a few steps:

- Simply enter the desired output level for the lower and upper pilot frequency and start levelling
- After a few seconds, the device automatically sets the desired values, whereby optimal technical data are continuously reached. Manual vernier adjustment is still possible at any time.
- Subsequently, automatic presetting can also be effected in the return path.
- For the next devices, levelling runs even more quickly. The copy function enables desired settings to be automatically incorporated.

VGP 9033-1G/9041

VGF 9030/9040

DETAILS, ACCESSORIES, BLOCK DIAGRAM, DELIVERY STATUS

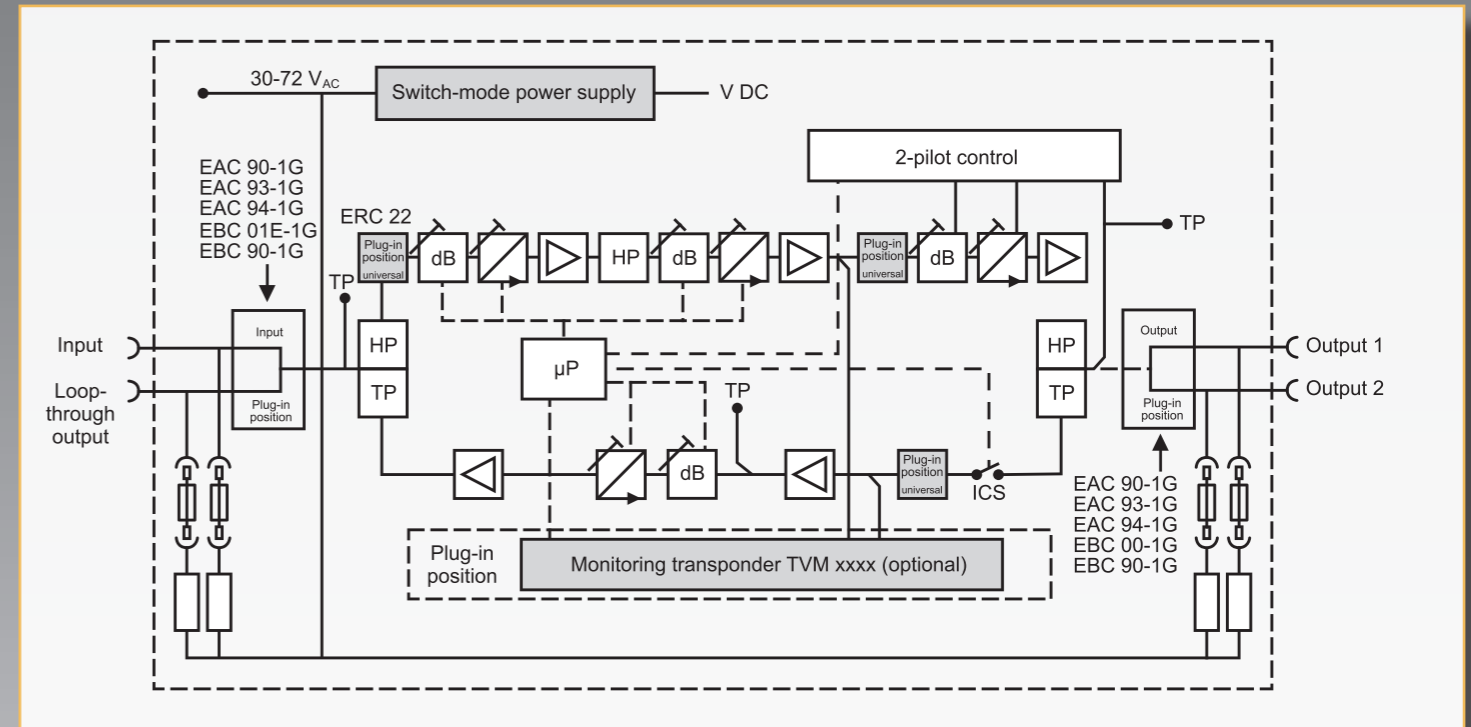
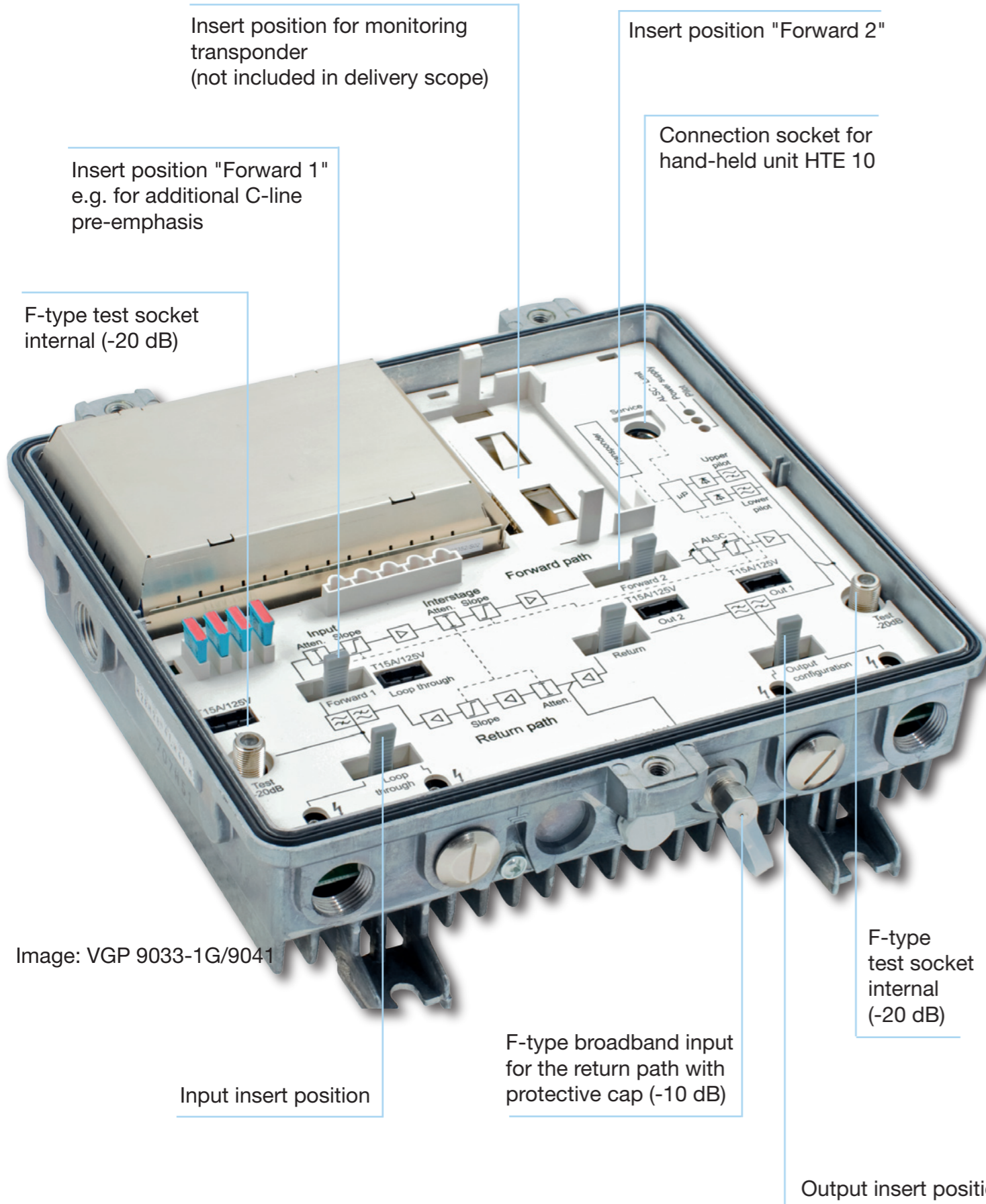


Image: VGP 9033-1G/9041

Delivery status

- Note: The input and output plug-in positions must each be equipped with a EBC/EAC xx for operation. The other plug-in positions are already equipped with null cards
- Input and output cable fittings not included in the delivery scope (see page 20)
- Please note that the VGF 9030/9040 does not include remote-feed fuses in its delivery scope (see page 20)

Accessories

- EBC 01E-1G (Order no. 24510121): Null card input
- EBC 00-1G (Order no. 24510119): Null card output, for operation with one output
- EBC 90-1G (Order no. 24510113): Splitter (2 outputs symmetrical)

- EAC 93-1G (Order no. 24510115): Tap (3/6 dB)
- EAC 90-1G (Order no. 24510116): Tap (1.5/10 dB)
- EAC 94-1G (Order no. 24510114): Tap (0.8/20 dB)
- ERC 22 (Order no. 24510085): C-line pre-emphasis equaliser for VGP 9041/VGF 9040
- ERZ 630 (Order no. 24510108): Equaliser 630 MHz
- ERS 800 (Order no. 24510109): System equaliser 862 MHz
- ERD 810 (Order no. 24510110): De-emphasis equaliser switchable, 862 MHz
- ERD 813 (Order no. 24510117): De-emphasis equaliser
- ERD 814 (Order no. 24510120): Attenuation pad
- TVM 850/H (Order no. 26210077): Monitoring transponder HMS (5-24 MHz), frequency-agile
- TVM 1000 (Order no. 26210086): Monitoring transponder DOCSIS
- FUN 15 (Order no. 25010017): FUN remote-feed fuse 15A/125 VDC
- HTE 10 (Order no. 25010005): Hand-held unit

For details see pages 16-20

VGP 9033-1G/9041

VGF 9030/9040

DATA

Technical Data

| Type | | VGF 9030 | VGF 9040 | VGP 9033-1G | VGP 9041 |
|--|-----------------|---|----------|-----------------------|----------|
| Order no. | | 24410108 | 24410109 | 24410103 | 24410054 |
| FORWARD PATH | | | | | |
| Frequency range | MHz | 85-862 | 85-862 | 85-1000 | 85-862 |
| Gain (at 1000 MHz) | dB | 33 | 40 | 33 | 40 |
| Return loss | dB | 19-1.5 dB/oct. | | | |
| Frequency response (85-1000 MHz at 25 °C) | dB | ± 0.5 | | | |
| Max. output level according to CENELEC 1) - CTB > 60 dB | dBμV | 114 | | | |
| Max. output level to CENELEC 1) - CSO > 60 dB | dBμV | 116 | | | |
| Attenuation range, electronically settable in 0.5 dB steps ⁵⁾ | dB | 0-16 | | 0-15 | 0-16 |
| Slope range, electronically settable in 0.5 dB steps ⁵⁾ | dB | 0-20 | | 0-15 | 0-20 |
| Interstage attenuation, settable in 1 dB steps | | - | | 0-5 | - |
| Interstage pre-emphasis, electronically settable in 2.5 dB steps | dB | 2-9 | | 2.5-10 | 2-9 |
| Noise figure at minimum pre-emphasis | dB | 6 | | 6.5 | 6 |
| Adjustment range, sloped at 85 MHz | dB | - | | ± 2 | |
| Adjustment range, parallel | dB | - | | ± 3 | |
| Frequency range lower pilot Pu ²⁾ | MHz | 85-230 | | 85-230 | 82.5-230 |
| Frequency range upper pilot Po ²⁾ | MHz | 570-870 | | 570-870 ⁵⁾ | |
| Pilot level (PAL/CW/QAM) | dBμV | 83-112 | | | |
| Hum modulation ratio at 7 A | dB | 70 | | > 67 | 70 |
| RETURN PATH | | | | | |
| Frequency range | MHz | 5-65 | | | |
| Gain | dB | 30 | | 28 | 30 |
| Frequency response at 25 °C | dB | ± 0.5 | | | |
| Input level density (CINR = 50 dB), at 28 dB gain ⁶⁾ | dBμV/Hz | -9 | | | |
| Dynamic range: CINR > 50 dB, 5-65 MHz, at 28 dB gain ⁶⁾ | dB | 21 | | | |
| Dynamic range: CINR > 50 dB, 5-65 MHz, at 18 dB gain ⁷⁾ | dB | 26 | | | |
| Noise figure | dB | 6 | | | |
| Attenuation, switchable in 1 dB steps | dB | 0-30 | | | |
| Slope, switchable in 7 steps | dB | 1-8 | | | |
| ICS switch (attenuation switchable over EMS or HTE 10 hand-held unit) | dB | 0/6/> 45 | | | |
| Hum modulation ratio at 7 A/> 15 MHz | dB | 60 | | | |
| GENERAL | | | | | |
| Voltage supply | V _{AC} | 30-72 | | | |
| Power consumption | W | 21 | | 23 | |
| Max. remote feed current per connection | A | 7 | | | |
| Max. remote feed current in local feeding (power passing) | A | 10 | | | |
| RF connections | | PG 11 | | | |
| Housing protection category | | IP 54 | | IP 67 | |
| Ambient temperature range | °C | -20 to +55 | | | |
| Screening factor | | Conforms to CENELEC EN 50083-2 | | | |
| Overvoltage protection acc. to IEC 60-2 | | 2 kV (1.2/50 μs) | | | |
| Dimensions (W x H x D) | mm | 240 x 95 x 240 ³⁾ | | | |
| NETWORK MANAGEMENT (optional) | | | | | |
| Monitorable/settable parameters | | Operational voltage; current; temperature; electronic tuning elements; pilot setting and alarm; automatic levelling of forward path; automatic presetting of return path; return path gain; ICS switch; remote inventory data | | | |

¹⁾ 9 dB slope ²⁾ Set using HTE 10 hand-held unit ³⁾ Width incl. hinges: 267 mm ⁴⁾ As of device version Bxx from 570-870 MHz ⁵⁾ For VGP 9033-1G in 1 dB steps

⁶⁾ For VGF 90xx at 30 dB gain ⁷⁾ For VGF 90xx at 20 dB gain

VGO 939-1G/

VGF 939-1G

DESCRIPTION

VGO 939-1G/VGF 939-1G

- Latest GaAs-MMIC technology
- Innovative operational concept:
 - Settings via slide switches
 - Device settings can be reproduced exactly
 - Fewer plug-in cards and variable attenuators needed
- Integrated duplexers allow optimised data
- Very high output level at lowest intermodulation products (also for interstage attenuation)
- Pluggable loop-through output
- One or two output(s) configurable
- Built-in active return path with various setting possibilities
- Return path can also be operated passively
- 15 MHz high pass can be activated in the return path
- Ingress Control Switch (ICS)
- Monitorable with HMS or DOCSIS transponder (option)
- Insert position for additional functions in the forward path (e.g. de-emphasis)
- Bi-directional test socket on the amplifier input
- Directional coupler test socket on amplifier output and in return path
- Test signals can be coupled in for the return path
- LED as function indicator
- Highly efficient switched-mode power supply unit
- Advanced remote power concept in the VGF 939-1G:
 - Newly developed remote feed coils
 - Remote feed current: Max. 7 A per connection, local insertion max. 10 A totally
 - Remote feeding possibilities: By choice via all RF connections or local connector (power passing)
- Surge absorber on all RF connections and in switched-mode power supply unit
- Power management: Unused amplifier stage switch-off for reduced power consumption
- Die-cast housing with PG 11 connectors
- Easy connection of large cable fittings due to extended thread distance
- Outdoor operation possible, housing protection class: IP 54
- Test sockets: F-type connectors (internal)

The compact amplifier with slide switches – VGO 939-1G/VGF 939-1G

In addition to the devices with electronic setting, Kathrein offers yet another highly innovative compact amplifier platform. This particularly economical series requires no equaliser cards or attenuation pads. All adjustments can be easily carried out using slide switches.

Simple, yet effective

The required attenuation and slope values are set with a combination of several slide switches. The advantages are obvious. Besides saving plug-in cards, this allows exact reproduction of setting values without requiring a measuring instrument. Replacement of the device, for example, is thus much easier.

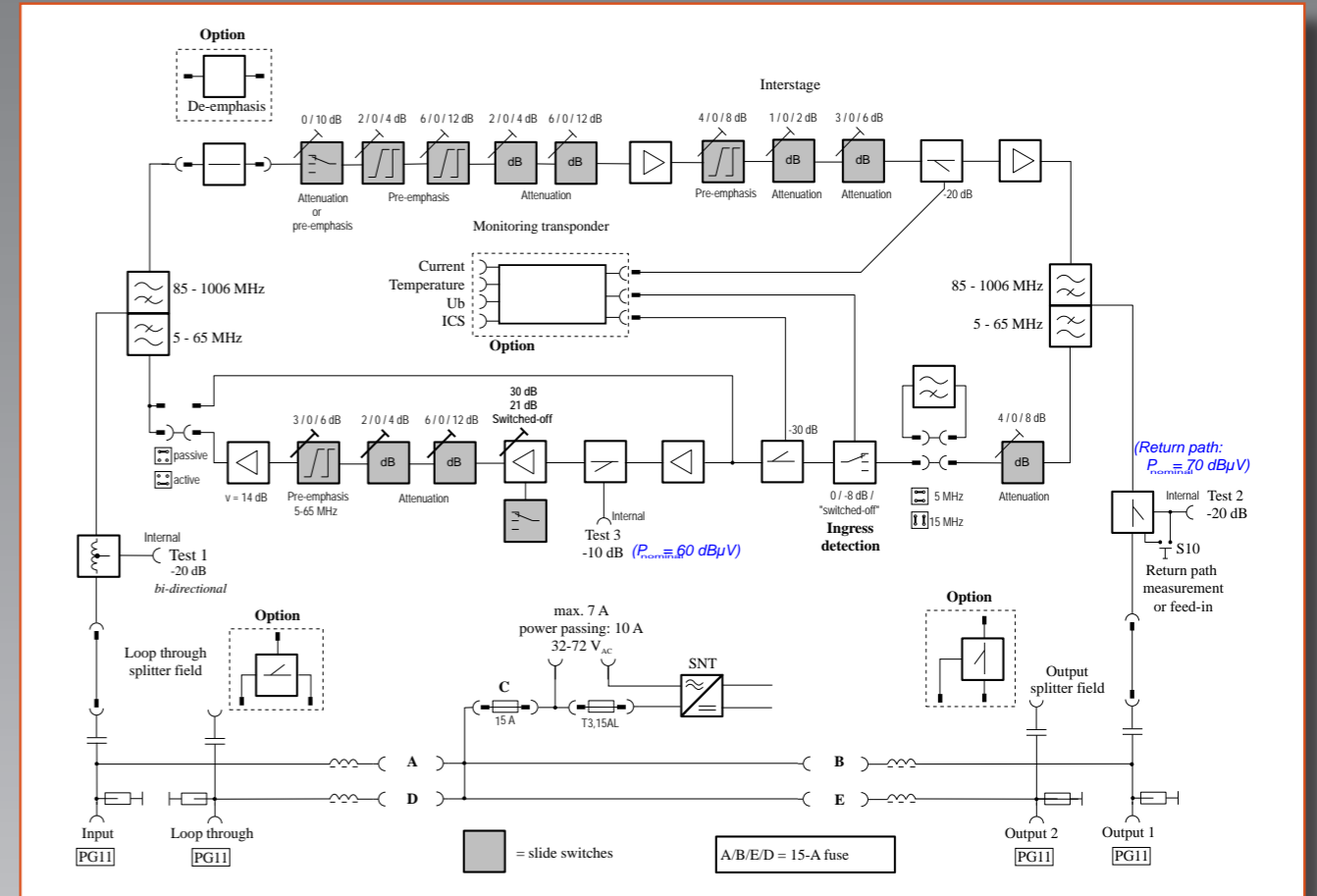
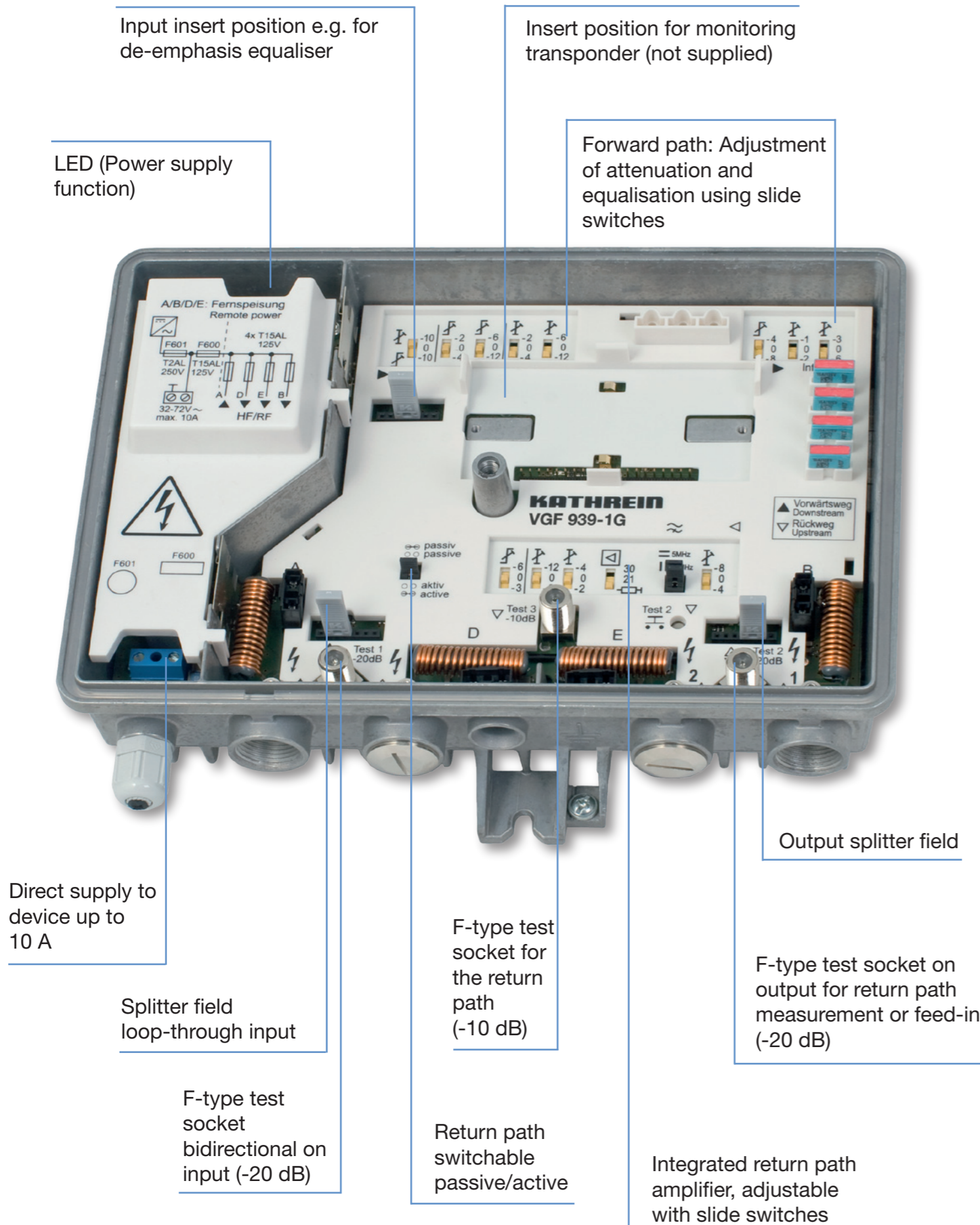
When slide switches are shifted, a virtually uninterrupted signal flow is guaranteed – multimedia services remain undisturbed.

Maximum reliability

The implemented slide switches fulfil the highest demands regarding reliability and endurance. Dual gold-plated contact reeds, increased contact pressure and a separate catch spring ensure ultimate reliability of the switches, which have been proven and tested 100,000 times.

VGO 939-1G/ VGF 939-1G

DETAILS, ACCESSORIES, BLOCK DIAGRAM, DELIVERY STATUS



Delivery status

- For operation with one input or output, no plug-in cards required
- All insert positions are fitted with 0-dB bridging plugs ex works
- Input and output cable fittings not included in the delivery scope (see page 20)

Accessories

- EBC 90-1G (Order no. 24510113) Splitter (2 outputs symmetrical)
- EAC 93-1G (Order no. 24510115): Tap (3/6 dB)
- EAC 90-1G (Order no. 24510116): Tap (1.5/10 dB)
- EAC 94-1G (Order no. 24510114): Tap (0.8/20 dB)

- ERZ 940 (Order no. 24510059): De-emphasis equaliser (cable-analogue) 862 MHz, 7 dB fixed
- ERD 810 (Order no. 24510110): De-emphasis equaliser
- ERD 813 (Order no. 24510117): De-emphasis equaliser
- ERD 814 (Order no. 24510120): De-emphasis equaliser/attenuator
- ERZ 630 (Order no. 24510108): Equaliser 47-630 MHz, switchable in 2-dB steps from 2-18 dB
- ERS 800 (Order no. 24510109): System equaliser 862 MHz
- TVM 850/H (Order no. 26210077): Monitoring transponder HMS (5-42 MHz), frequency-agile
- TVM 1000 (Order no. 26210086): Monitoring transponder DOCSIS

VGO 939-1G/ VGF 939-1G

DATA

VOS 952-1G/953-1G DESCRIPTION

Technical Data

| Type | | VGO 939-1G | VGF 939-1G | Notes |
|--|---------|---|--------------|---|
| Order no. | | 24410101 | 24410100 | |
| | | Locally fed | Remotely fed | |
| FORWARD PATH | | | | |
| Frequency range | MHz | 85-1000 | | |
| Gain | dB | 40 | | |
| Gain setting range, interstage ³⁾ | dB | 32-40 | | |
| Amplitude response | dB | ±0.5 | | 85-1000 MHz, at 25 °C |
| Amplitude response (additional, 862-1000 MHz) | dB | -0.5 | | at 25 °C |
| Attenuation setting range, on input ³⁾ | dB | 0-26 | | |
| Pre-emphasis setting range, at input ³⁾ or interstage | dB | 0-26 or 0/4/8 | | |
| Return loss, as of 40 MHz | dB | 18-1.5/oct. | | |
| Noise figure | dB | 4 | | at 40 dB gain |
| Max. operational level: CENELEC raster ¹⁾ | dBµV | 116/118 | | CTB: 60 dB/CSO: 60 dB (pre-emphasis 4 dB) |
| Hum modulation ratio | dB | - | 60/70 | AT 7 A, 5-65/85-1000 MHz |
| RETURN PATH | | | | |
| Frequency range | MHz | 5-65 | | |
| Gain (input stage bridged), active operation | dB | 30 (21) | | |
| Gain, passive operation | dB | -2 | | |
| Amplitude response | dB | 0.5 | | |
| Attenuation setting range, at input or interstage ³⁾ | dB | 0/4/8 or 0-16 | | |
| Pre-emphasis setting range, interstage | dB | 0/3/6 | | |
| Ingress Control Switch (ICS) | dB | 8/> 40 | | attenuated/switched-off |
| Max. output level at 30 and 21 dB gain | dBµV | 107/116 | | 60 dB IMod2/IMod3 (EN 60728-3/50083-5) |
| Max. output level | dBµV | 120 | | According to KDG 1 TS 140 (full system load) |
| Input level density | dBµV/Hz | -8 | | CINR at 50 dB (EN 60728-3/item 4.7) |
| Dynamic range at 30 dB gain (5-65 MHz) ²⁾ | dB | 18 | | |
| Dynamic range at 21 dB gain (5-65 MHz) ²⁾ | dB | 25 | | |
| Noise figure | dB | 6 | | |
| NETWORK MANAGEMENT | | | | |
| Monitorable parameters | | Internal voltage supply, internal current drain, internal temperature, ICS switch | | |
| Test sockets | | | | |
| Test socket 1 (on amplifier input), bi-directional | dB | 20 | | |
| Test socket 2 (on amplifier output), directional coupler | dB | 20 | | Possibility to feed in return path signals (5-65 MHz); if button is kept pressed, the incoming return path signal can be measured |
| Test socket 3 (in return path amplifier), directional coupler | dB | 10 | | Attenuation relative to return path input |
| SWITCHED-MODE POWER SUPPLY | | | | |
| Nominal input voltage | V AC | 230 | | 32-72 |
| Mains frequency range | Hz | 50-60 | | |
| Max. remote feed current | A | - | 7 | per input or output |
| Max. remote feed current, local insertion | A | - | 10 | |
| Power consumption (without monitoring) | W | 17.5 | | Return path amplifier active |
| GENERAL | | | | |
| Classification according to KDG 1 TS 140 | | D(4.4) | | |
| Ambient temperature range | °C | -20 to +55 | | data-conform operation |
| RF connections | | PG 11 | | |
| Test sockets | | F-type connector | | |
| Housing protection class (to EN 60529) | | IP 54 | | |
| Dimensions (W x H x D) | mm | 238 x 86 x 189 | | |
| Packing unit/weight | pc./kg | 1(10)/2.2 | | |

¹⁾ CENELEC: 41 channels ²⁾ When the 15 MHz high pass is connected, the dynamic range increases by 3 dB ³⁾ Settable in 2-dB steps using slide switches

VOS 952-1G/953-1G

- Latest GaAs-MMIC technology
- Innovative operational concept:
 - Settings via slide switches
 - Device settings can be reproduced exactly
 - Fewer plug-in cards and variable attenuators needed
- Very high output level at lowest intermodulation products
- Built-in active return path with various setting possibilities
- 15 MHz high pass can be activated in the return path
- Ingress Control Switch (ICS)
- Monitorable with HMS or DOCSIS (option)
- Insert position for additional functions in the forward path (e.g. de-emphasis)
- Bi-directional test socket on amplifier input with inductive coupling
- Directional coupler test socket on amplifier output and in return path
- Test signals can be coupled in for the return path
- Highly efficient switched-mode power supply unit
- VOS 952-1G - locally fed, F-type connectors
- VOS 953-1G - remotely fed (auto-supply), F-type sockets
- Surge absorbers on all RF connections and in switched-mode power supply unit
- Die-cast housing
- Test sockets: F-type sockets

House connection amplifiers

The compact, price-optimised house connection amplifiers 952-1G and VOS 953-1G were designed for application in modern HFC networks. Great value was set upon a high dynamic range for Interstage operation as well as upon a cost-efficient operation concept with slide switches.

Monitoring via DOCSIS transponder

If fitted with the optional monitoring transponder TVM 1000/H, the amplifiers VOS 952-1G/953-1G can be monitored via DOCSIS protocol. Monitoring with HMS Both amplifiers can be flexibly integrated into monitoring systems which operate with the widespread HMS protocol.

Bridgeable duplex filter

Bridging plugs enable variation of the frequency range between 47-1000 MHz and 85-1000 MHz making it possible to carry out transmission in BAND I in the forward path (without return path).

Flexible return path

In the latest generation, the return path can be operated either actively or passively.

VOS 952-1G/953-1G

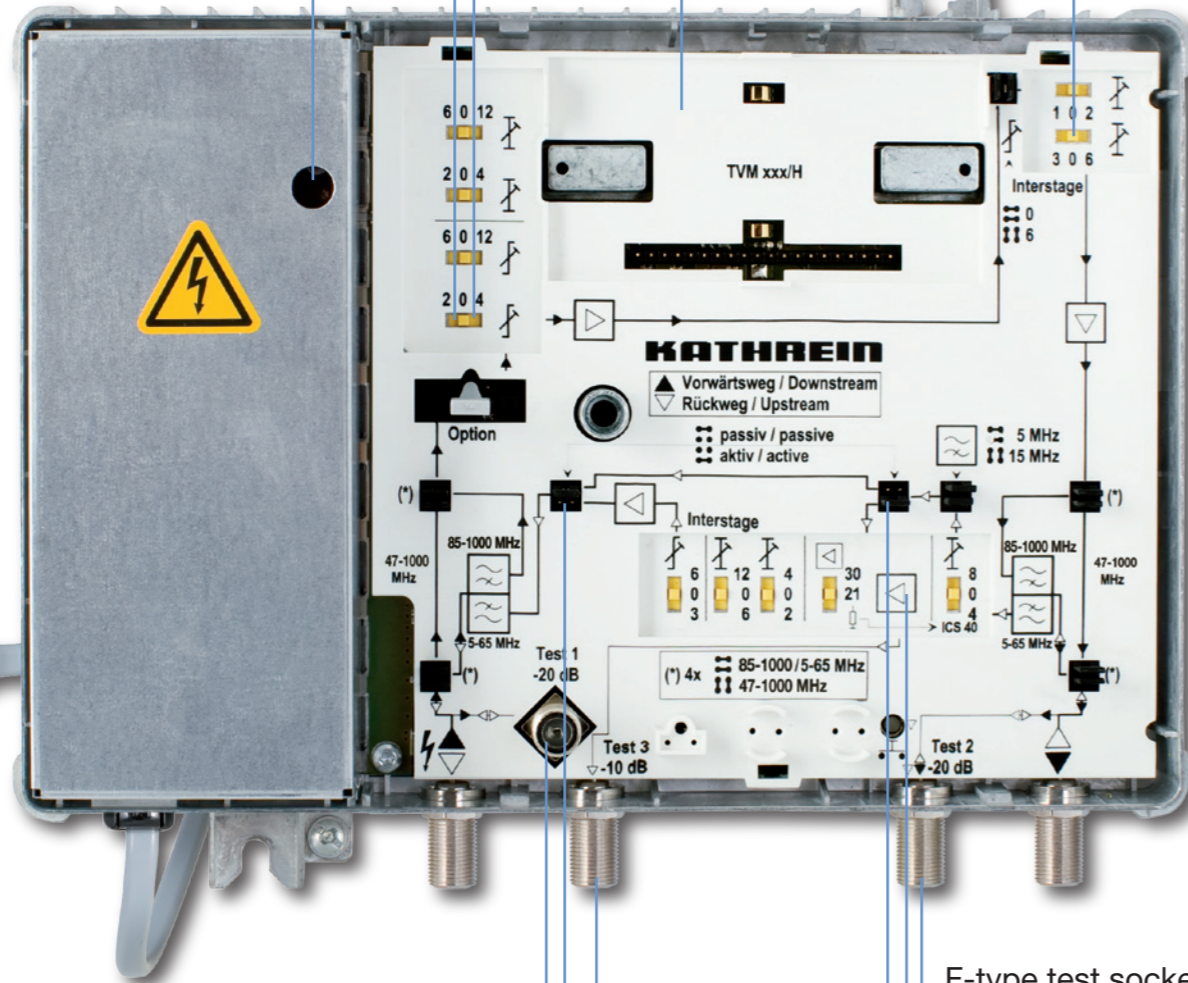
DETAILS, ACCESSORIES, BLOCK DIAGRAM, DELIVERY STATUS

Input insert position e.g. for de-emphasis equaliser

Insert position for monitoring transponder (not included in delivery scope)

LED (Power supply function)

Forward path: Adjustment of attenuation and equalisation using slide switches



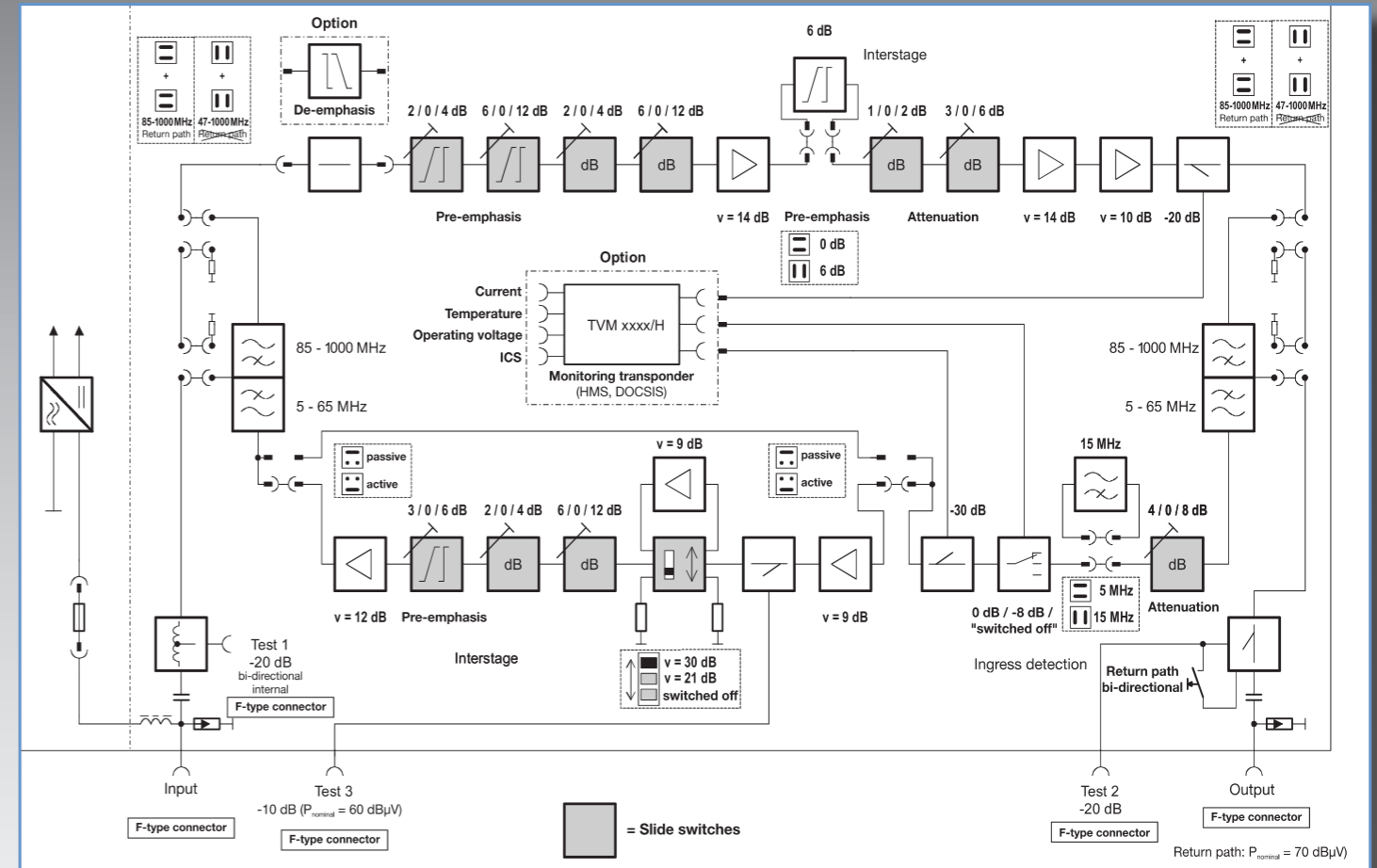
F-type test socket bidirectional on input (-20 dB)

F-type test socket for the return path (-10 dB)

Return path switchable passive/active

F-type test socket on output for return path measurement or feed-in (-20 dB)

Integrated return path amplifier, adjustable with slide switches



Delivery status

- The insert position is fitted with a 0-dB bridging plug ex works

Accessories

- ERZ 940 (Order no. 24510059): De-emphasis equaliser (cable-analogue) 862 MHz, 7 dB fixed
- ERZ 630 (Order no. 24510108): Equaliser 47-630 MHz, 2-18 dB in 2-dB steps
- ERS 800 (Order no. 24510109): System equaliser 862 MHz
- ERD 810 (Order no. 24510110): De-emphasis equaliser, switchable 3 dB
- TVM 850/H (Order no. 26210077): Monitoring transponder HMS protocol (frequency-agile)
- TVM 1000 (Order no. 26210086): Monitoring transponder DOCSIS protocol

VOS 952-1G/953-1G

Technical Data

| Type | | VOS 952-1G | VOS 953-1G | Notes |
|--|---------|--|--|--|
| Order no. | | 24410098 | 24410099 | |
| | | Locally fed | Remotely fed | |
| FORWARD PATH | | | | |
| Frequency range | MHz | 47/85-1000 | 47/85-1000 | |
| Gain ¹⁾ | dB | 40-32 | 40-32 | Interstage gain setting |
| Amplitude response | dB | ±0.5 | ±0.5 | 85-1000 MHz, at 25 °C |
| Amplitude response (additional, 862-1000 MHz) | dB | -0.5 | -0.5 | at 25 °C |
| Attenuation setting range | dB | 0-16 | 0-16 | On amplifier input |
| Pre-emphasis setting range | dB | 0-16 and 0/6 | 0-16 and 0/6 | On amplifier input and interstage |
| Noise figure | dB | 4/5/5 | 4/5/5 | At 40/36/32 dB gain |
| Max. operational level: CENELEC channel plan ²⁾ | dBμV | 112/116 | 112/116 | CTB: 60 dB/CSO: 60 dB (pre-emphasis 6 dB and gain 40 dB) |
| Hum modulation ratio | dB | - | >60/70 | |
| RETURN PATH | | | | |
| Frequency range | MHz | 5-65 | 5-65 | |
| Gain, switchable | dB | 30/21 | 30/21 | |
| Frequency response | dB | 0.5 | 0.5 | |
| Attenuation setting range | dB | 0-16 / 0/4/8 | 0-16 / 0/4/8 | On input/interstage |
| Pre-emphasis setting range | dB | 0/3/6 | 0/3/6 | Interstage |
| Ingress Control Switch (ICS) | dB | 8/> 40 | 8/> 40 | attenuated/switched-off |
| Max. output level at 30 and 21 dB gain | dBμV | 107/116 | 107/116 | 60 dB IM2/IM3 (EN 60728-3/50083-5) |
| Maximum output level | dBμV | 120 | 120 | According to KDG 1 TS 140 (medium system load) |
| Input level density | dBμV/Hz | -10 | -10 | CINR at 50 dB (EN 60728-3/ item 4.7) |
| Dynamic range at 30 dB gain (5-65 MHz) ³⁾ | dB | 17 | 17 | |
| Dynamic range at 21 dB gain (5-65 MHz) ³⁾ | dB | 25 | 25 | |
| Noise figure | dB | 5 | 5 | |
| NETWORK MANAGEMENT | | | | |
| Monitorable parameters | | Internal supply voltage, internal current drain, temperature, ICS switch | Internal supply voltage, internal current drain, temperature, ICS switch | |
| TEST SOCKETS | | | | |
| Test socket 1 (on amplifier input) | dB | 20 | 20 | 5-862 MHz bi-directional, internal |
| Test socket 2 (on amplifier output) | dB | 20 | 20 | 5-862 MHz with directional coupler, external - return path signals can be fed in (5-65 MHz); if push-button is kept pressed, the incoming return path signal can be measured |
| Test socket 3 (in return path) | dB | 10 | 10 | 5-65 MHz with directional coupler, external |

| Type | | VOS 952-1G | VOS 953-1G | Notes |
|--|--------|----------------|----------------|--|
| Order no. | | 24410098 | 24410099 | |
| | | Locally fed | Remotely fed | |
| SWITCHED-MODE POWER SUPPLY | | | | |
| Nominal input voltage | V AC | 230 | 38-65 | |
| Mains frequency range | Hz | 50-60 | 50-60 | |
| Power consumption | W | 11 | 12 | Return path amplifier active/ without monitoring |
| GENERAL | | | | |
| Ambient temperature range | °C | -20 to +55 | -20 to +55 | |
| RF connections | | F-type socket | F-type socket | |
| Test sockets | | F-type socket | F-type socket | |
| Housing protection class (to EN 60529) | | IP 54 | IP 54 | IP 54: Outdoor use in weather-proof cabinet |
| Dimensions (W x H x D) | mm | 225 x 55 x 155 | 225 x 55 x 155 | |
| Packing unit/weight | pc./kg | 1(10)/1.8 | 1(10)/1.8 | |

¹⁾ Adjustable with 2 slide switches in 1 dB steps

²⁾ CENELEC: 42 channels

³⁾ When the 15 MHz high pass is connected, the dynamic range increases by 3 dB

Accessories

Monitoring transponder HMS protocol, frequency-agile

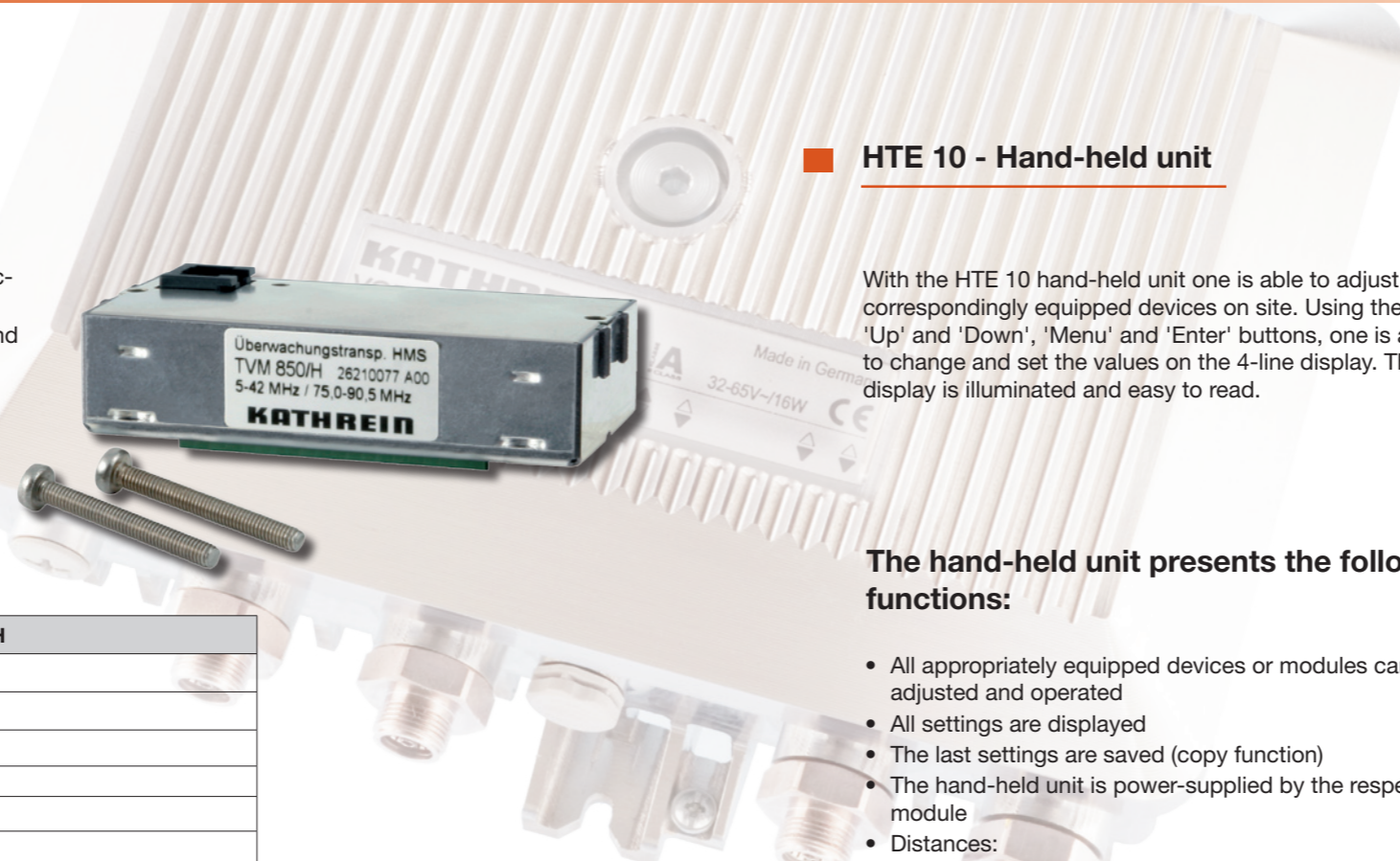
- Monitoring transponder for compact amplifiers, house connection amplifiers and optical compact receivers (see table)
- Monitors various parameters such as voltage, current drain and internal temperature
- Controls the Ingress Control switch in correspondingly equipped devices
- Transmission in the HMS protocol
- Frequency-agile in range 5-42 MHz

| Type | TVM 850/H | |
|------------------------|---|----------|
| Order no. | | 26210077 |
| Input frequency range | MHz | 75-90.5 |
| Input level range | dBµV | 50-95 |
| Output frequency range | MHz | 5-42 |
| Max. output level | dBµV | 105 |
| Power consumption | W | 1 |
| Transmission protocol | | HMS |
| Suitable for | VGO 939, VGF 939, VGO 939-1G, VGF 939-1G, VOS 952/953, VOS 952-1G, VOS 953-1G, ORA 9022, ORA 9022-1G, ORA 920/921, VGP 9033, VGP 9033-1G, VGP 9041, VGF 9030/9040 | |

TVM 1000 - Monitoring transponder DOCSIS/EuroDOCSIS, frequency-agile

- Monitoring transponder for compact/house connection amplifiers and optical compact receivers (see table)
- Monitors various parameters such as voltage, current drain and internal temperature
- Controls the Ingress Control switch in correspondingly equipped devices
- Transmission in DOCSIS or EuroDOCSIS protocol
- Frequency-agile in range 5-65 MHz and 90-862 MHz

| Type | TVM 1000 | |
|------------------------|---|-----------------------|
| Order no. | | 26210086 |
| Input frequency range | MHz | 90-862 |
| Input level range | dBµV | 48-78 |
| Output frequency range | MHz | 5-65 |
| Max. output level | dBµV | 113-118 |
| Power consumption | W | 3.5 |
| Transmission protocol | | DOCSIS/EuroDOCSIS 2.0 |
| Suitable for | VGO 939, VGO 939-1G, VGF 939, VGF 939-1G, VOS 952/953, VOS 952-1G, VOS 953-1G, ORA 9022, ORA 9022-1G, ORA 920/921, VGP 9033 as of version A03 (Nov. 2008), VGP 9033-1G, VGP 9041 as of version A02 (Nov. 2008), VGF 9030/9040 | |

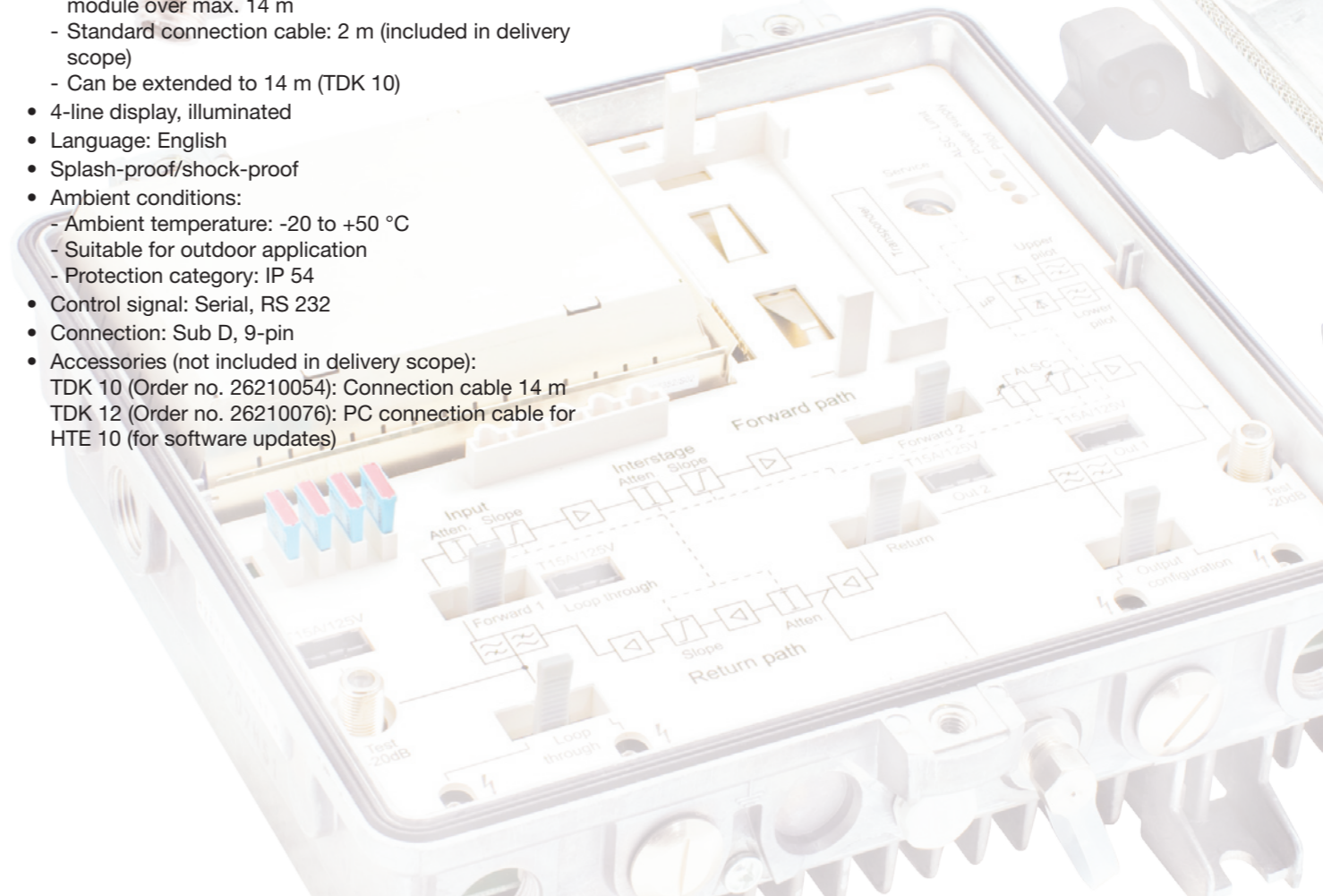
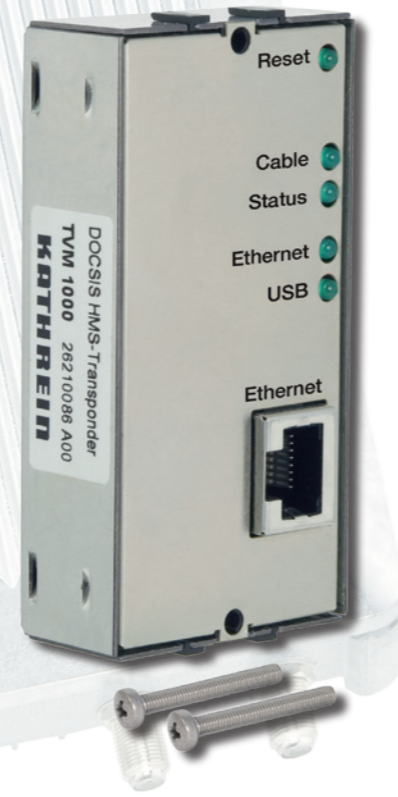


HTE 10 - Hand-held unit

With the HTE 10 hand-held unit one is able to adjust correspondingly equipped devices on site. Using the 'Up' and 'Down', 'Menu' and 'Enter' buttons, one is able to change and set the values on the 4-line display. The display is illuminated and easy to read.

The hand-held unit presents the following functions:

- All appropriately equipped devices or modules can be adjusted and operated
- All settings are displayed
- The last settings are saved (copy function)
- The hand-held unit is power-supplied by the respective module
- Distances:
 - Data transfer between HTE 10 and the device or module over max. 14 m
 - Standard connection cable: 2 m (included in delivery scope)
 - Can be extended to 14 m (TDK 10)
- 4-line display, illuminated
- Language: English
- Splash-proof/shock-proof
- Ambient conditions:
 - Ambient temperature: -20 to +50 °C
 - Suitable for outdoor application
 - Protection category: IP 54
- Control signal: Serial, RS 232
- Connection: Sub D, 9-pin
- Accessories (not included in delivery scope):
 - TDK 10 (Order no. 26210054): Connection cable 14 m
 - TDK 12 (Order no. 26210076): PC connection cable for HTE 10 (for software updates)



Accessories

EAC 90-1G, 93-1G, 94-1G – Tap-off cards

- Plug-in modules to extend the corresponding devices to two outputs
- When inserted in the amplifier's input section these modules can be used to configure a loop-through input



EBC 90-1G – Splitter, 2-way



| Type | | EAC 90-1G | EAC 93-1G | EAC 94-1G | EBC 90-1G |
|---|-----|-----------|-----------|-----------|-------------------|
| Order no. | | 24510116 | 24510115 | 24510114 | 24510113 |
| Frequency range | MHz | 5-1000 | 5-1000 | 5-1000 | 5-1000 |
| Through loss ¹⁾ 5-610 MHz | dB | < 1.3 | < 2.1 | < 0.5 | < 3.6 |
| Through loss ¹⁾ 610-862 MHz | dB | < 1.3 | < 2.3 | < 0.6 | < 3.8 |
| Through loss ¹⁾ 862-1000 MHz | | < 1.5 | < 2.6 | < 0.9 | < 3.9 |
| Tap loss | dB | 10 | 6 | 20 | Like through loss |
| Decoupling 5-65 MHz | dB | > 28 | > 23 | > 38 | > 28 |
| Decoupling as of 65-610 MHz | dB | > 26 | > 23 | > 33 | > 22 |
| Decoupling as of 610-862 MHz | | > 24 | > 23 | > 30 | > 20 |
| Decoupling as of 862-1000 MHz | | > 22 | > 20 | > 28 | > 18 |

¹⁾ The through loss is the signal loss between the unit's output and output 1 when the insert is inserted in the output section insertion point or between the unit's input and the tap output when the insert is inserted in the unit's input configuration section

EBC 00-1G and EBC 01E-1G – Null cards (output, input)

- Plug-in modules for operation of the VGP 90xx distribution network amplifiers with one input or output
- EBC 01E-1G: For operation on the input insert position
- EBC 00-1G: For operation on the output insert position



| Type | | EBC 01E-1G | EBC 00-1G |
|----------------------------|-----|------------|-----------|
| Order no. | | 24510121 | 24510119 |
| Frequency range | MHz | 5-1000 | 5-1000 |
| Through loss ¹⁾ | dB | < 0.5 | < 0.5 |

¹⁾ The through loss is the signal loss between the unit's output and output 1 when the insert is inserted in the output section insertion point or between the unit's input and the tap output when the insert is inserted in the unit's input section (input configuration section)

ERC 22 - C-line pre-emphasis equaliser

- Generates pre-emphasis based on the C-line specifications of Kabel Deutschland
- For use in the amplifiers VGP 9041/VGF 9040
- Application in the universal input insert position ("Forward 1")



| Type | | ERC 22 |
|-------------------------|----------|-------------|
| Order no. | | 24510085 |
| Transmission range | MHz | 50-862 |
| Nominal impedance | Ω | 75 |
| Pre-emphasis | | For C-lines |
| Basic loss (at 862 MHz) | dB | 1 |
| Return loss | dB | 23 -1/oct. |

Accessories

ERZ 940 – De-emphasis equaliser

- Cable-analogue 7 dB



| Type | | ERZ 940 |
|------------------------|----------|----------|
| Order no. | | 24510059 |
| Transmission range | MHz | 47-862 |
| Nominal impedance | Ω | 75 |
| De-emphasis | dB | 7 ± 1 |
| Basic loss (at 47 MHz) | dB | 0.3 |
| Return loss | dB | 20-3 |

ERZ 630 – Equaliser

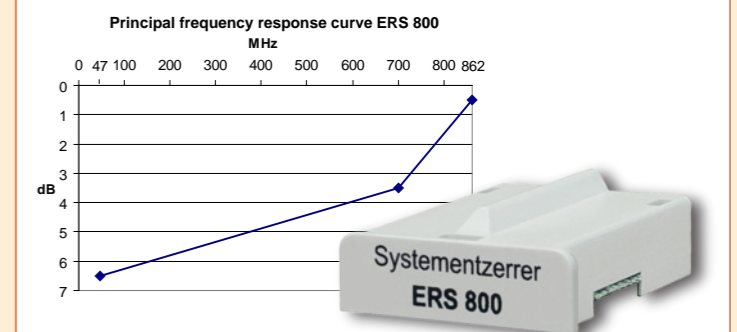
- Equaliser 47-630 MHz
- Switchable in 2-dB steps from 2-18 dB (cable equivalent)



| Type | | ERZ 630 |
|--|----------|----------|
| Order no. | | 24510108 |
| Transmission range | MHz | 47-630 |
| Nominal impedance | Ω | 75 |
| Basic loss (at 47/630) | dB | 0.5/1.5 |
| Equalisation, adjustable in 2-dB steps | dB | 2-18 |

ERS 800 – System equaliser

- System equaliser for use in special applications
- Characteristics:
 - Cable-equivalent pre-emphasis in the range 47-700 MHz: 3 dB (at 47-862 MHz: 4 dB)
 - Cable-equivalent pre-emphasis in the range 700-862 MHz: 3 dB (equivalent to additional emphasis in the range 700-862 MHz by 2 dB)



| Type | | ERS 800 |
|---|----------|----------|
| Order no. | | 24510109 |
| Transmission range | MHz | 47-862 |
| Nominal impedance | Ω | 75 |
| Cable-equivalent pre-emphasis, 47-700/(equivalent to 47-862) MHz: | dB | 3/(4) |
| Cable-equivalent pre-emphasis in the range 700-862 MHz | dB | 3 |
| Basic loss (at 862 MHz) | dB | 0.5 |
| Return loss | dB | > 15 |

Accessories

De-emphasis equalisers/attenuators

| | |
|----------------|----------|
| ERD 810 | 24510110 |
| ERD 813 | 24510117 |
| ERD 814 | 24510120 |



- Cable simulation switchable:
 - Cable-equivalent de-emphasis 85-862 MHz: Switchable 3, 6 and 9 dB
 - KDG de-emphasis 470-862 MHz: Switchable 0, 4 and 8 dB
- Both de-emphases can be used in combination
- Available types:
 - ERD 810: De-emphasis equaliser, switchable, 862 MHz
 - ERD 813: Cable-equivalent de-emphasis 6 dB ¹⁾
 - ERD 814: 6 dB attenuation

¹⁾ In reference to 85-862 MHz

| Type | | ERD 810 | ERD 813 | ERD 814 |
|---|-----|----------------|----------|----------|
| Order no. | | 24510110 | 24510117 | 24510120 |
| Transmission range | MHz | 85-862 | 85-1000 | |
| Nominal impedance | Ω | 75 | | |
| Attenuation (linear) | dB | | 1 | 6 |
| Return loss | dB | 20 -1.5/octave | | |
| De-emphasis | dB | 3 | 7 | |
| KDG de-emphasis 470-862 MHz: switchable | dB | 0/4/8 | | |
| Cable equivalent de-emphasis 85-862 MHz, switchable | dB | 3/6/9 | | |
| Basic attenuation (at 85 MHz) | dB | 0.5 | | |

F-type cable fittings

| | |
|----------------|--------|
| EMK 104 | 273195 |
| EMK 105 | 273196 |
| EMK 106 | 273197 |



EMK 106

- Cable fitting
 - EMK 104: F-type cable fitting for LCM 33 cable
 - EMK 105: F-type cable fitting for LCM 50 cable
 - EMK 106: F-type cable fitting for LCM 96 cable

Remote-feed fuse

| | |
|---------------|----------|
| FUN 15 | 25010017 |
|---------------|----------|



- 15 A/125 V_{DC}

PG 11 connectors

| | |
|---------------|--------|
| EMP 26 | 275281 |
| EMP 28 | 275283 |
| EMP 29 | 275284 |
| EMP 34 | 275289 |
| EMP 35 | 275300 |
| EMU 29 | 273243 |



EMP 26

- Plugs:
 - EMP 26: Plug for cables LCD 90/95/99/110/111
 - EMP 28: Plug for cables LCM 14/17
- Cable fitting:
 - EMP 29: Cable fitting for cable LCM 33
- Adapters:
 - EMP 34: PG 11 to IEC socket with M14 external thread
 - EMP 35: PG 11 to F-type socket (female)
 - EMU 29: PG 11 adapter ring to 5/8"

The products described must only be installed by qualified specialists. Please consult the provided instruction manuals for the safety instructions that are to be considered during use.

We are pleased to advise you:

Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>