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## HOUSE DISTRIBUTION AMPLIFIERS ECO-LINE "BK"



- Die-cast housing IP 20
- Excellent EMC characteristics
- Easy mounting through compact design
- Frequency range up to 862 MHz
- RF connectors: F sockets
- BK 226, BK 306: with passive return path 5-65 MHz

Type		BK 22	BK 30	BK 226	BK 306
Article No.		5700 1293	5700 1294	5700 1428	5700 1429
Frequency range	MHz	5 - 862	5 - 862	85 - 862	85 - 862
Gain	dB	19 ... 22 ± 1	28 ... 30 ± 1	19 ... 22 ± 1	28 ... 30 ± 1
Noise figure	dB	7	5	7	7
Linearity	dB	± 0,5	± 0,5	± 0,5	± 0,5
Attenuator / Equalizer	dB	0...20 / —	0...20 / 0...18	0...20 / —	0...20 / 0...18
Output level max.					
CSO / CTB >60 dB, 42 Ch. flat	dBμV	96 / 99	96 / 99	96 / 99	96 / 99
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN	dBμV	100 / 115	104 / 115	100 / 115	104 / 115
Return path, passive	MHz	—	—	0 - 65	0 - 65
Operating voltage	V~	230	230	230	230
Power consumption	W	6,0	6,0	6,0	6,0
Burst protection	kV	2,5	2,5	2,5	2,5
Dimensions / Weight	mm / kg	105 x 150 x 40 / 0,8	105 x 150 x 40 / 0,8	105 x 150 x 40 / 0,8	105 x 150 x 40 / 0,8

## RETURN PATH AMPLIFIER PROFI-LINE "BKD"



- Die-cast housing IP 20 with very good heat dissipation for high reliability and long life-time
- Excellent EMC characteristics
- Easy mounting through compact design
- With plug-in slot for active or passive return path modules
- RF connectors: F sockets
- Version with remote feeding on request

Type		BKD-RV 0
Article No.		1016 1319
Frequency range	MHz	5 - 862
Slots for return path		1
Gain	dB	-0,7 with return path amplifier module / -1,6 without return path amplifier module
Operating voltage	V~	230
Power consumption	W	1,8
Dimensions / Weight	mm / kg	175 x 85 x 50 / 1,1



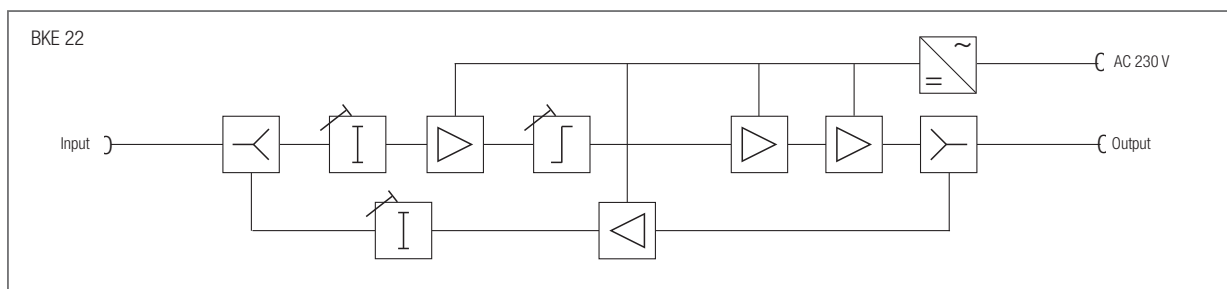
## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "BKE"

- With built-in return path amplifier
- Die-cast housing IP 20 with very good heat dissipation for high reliability and long life-time
- Excellent EMC characteristics
- Easy mounting through compact design
- Frequency range up to 862 MHz
- With attenuator and equalizer
- LED-indication
- RF connectors: F sockets



Type		BKE 22	BKE 30	BKE 35	
Article No		5700 1229	5700 1230	5700 1277	
Downstream	Frequency range	MHz	85 - 862	85 - 862	
	Gain	dB	19...22 ± 1	20...23 / 28...31 ± 1	32...35 ± 1
	Noise figure	dB	7	7	5
	Linearity	dB	± 0,5	± 0,5	± 0,7
	Attenuator	dB	0 ... 20	0 ... 20	0 ... 20
	Equalizer	dB	0 ... 18	0 ... 18	0 ... 18
	Output level max.				
	CSO / CTB >60 dB, 42 CH flach	dBµV	96 / 99	96 / 99	104 / 101
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN-level	dBµV	100 / 115	104 / 115	111 / 117	
Upstream	Frequency range	MHz	5 - 65	5 - 65	5 - 65
	Gain	dB	22 ± 1	22 / 28 ± 1	28 ± 1
	Noise figure	dB	6	6	6
	Attenuator	dB	0 ... 18	0 ... 18	0 ... 18
	IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN-Pegel	dBµV	108 / 115	108 / 115	108 / 115
Operating voltage	V~	230	230	185-265	
Power consumption	W	7,5	7,5	8,0	
Burst protection	kV	2,5	2,5	2,5	
Connectors		F female	F female	F female	
Dimensions	mm	170 x 85 x 50	170 x 85 x 50	170 x 85 x 50	
Weight	kg	1,1	1,1	1,1	
KDG 1 TS 140		■	■	■	

CATV



## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "BKD"



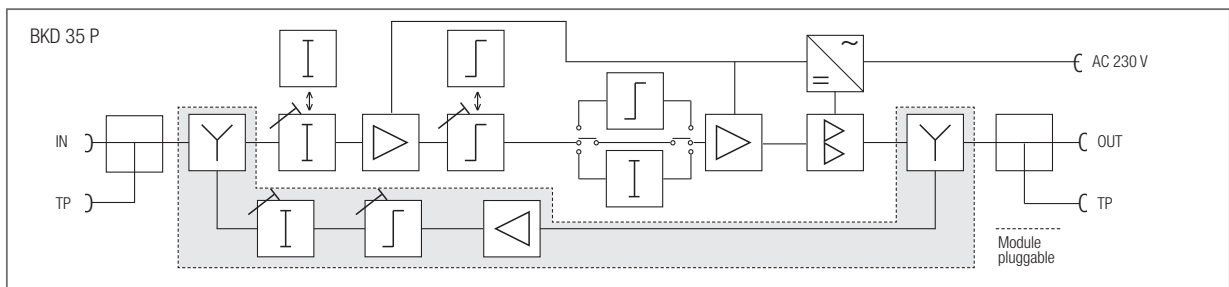
- Die-cast housing IP 20, low temperature rise through modern cooling concept for high reliability and long life-time
- Excellent EMC characteristics
- Easy mounting through compact design
- With plug-in slot for active or passive return path modules (optional p. 40)
- Attenuation and equalization with variable attenuator (ex-factory) or with pads, adjustable in steps of 1 dB
- Modular power supply: in case of service the power supply can be easily replaced or upgraded. No readjustment of amplifier necessary, min. interruption of operation

### BKD 15 P, BKD 35 P:

- Push-Pull amplifier with high output level
- Low noise factor, GaAs-FET pre-amplifier (BKD 35 P)

Type		BKD 22 P	BKD 30 P	BKD 15 P	BKD 35 P
Article No.		5700 1418	5700 0879	5700 1232	5700 1451
Frequency range	MHz	5 - 862	5 - 862	5 - 862	5 - 862
Slots for return path		1	1	1	1
Gain	dB	22 ± 1	23/31 ± 1 switchable	15,5 ± 1	29/35 ± 1 switchable
Noise figure <sup>1</sup>	dB	7	6	7	5
Linearity <sup>1</sup>	dB	± 0,7	± 0,7	± 0,5	± 0,7
Equalizer		with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB			
Attenuator		with variable attenuator 0...20 dB (ex-factory) or with Pads adjustable in steps of 1 dB			
Interstage equalizer		—	- 5 dB switchable	—	- 5 dB switchable
Output level max. <sup>1</sup>					
CSO / CTB >60 dB, 42 CH flach	dBµV	96 / 99	96 / 99	102 / 103	104 / 101
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN-level	dBµV	104 / 114	104 / 115	113 / 117	111 / 117
Operating voltage	V~	230	230	230	185-265
Power consumption	W	4,5	5,5	7,5	8,0
Test point input		—	- 20 dB (F female)	—	- 20 dB (F female)
Test point output		- 20 dB (F female)	- 20 dB (F female)	- 20 dB (F female)	- 20 dB (F female)
Burst protection	kV	2,5	2,5	2,5	2,5
Connectors		F female	F female	F female	F female
Dimensions	mm	170 x 85 x 50	170 x 85 x 50	170 x 85 x 50	188 x 85 x 50
Weight	kg	1,1	1,1	1,1	1,1
KDG 1 TS 140		■	■	■	■

<sup>1</sup> Specifications without return path





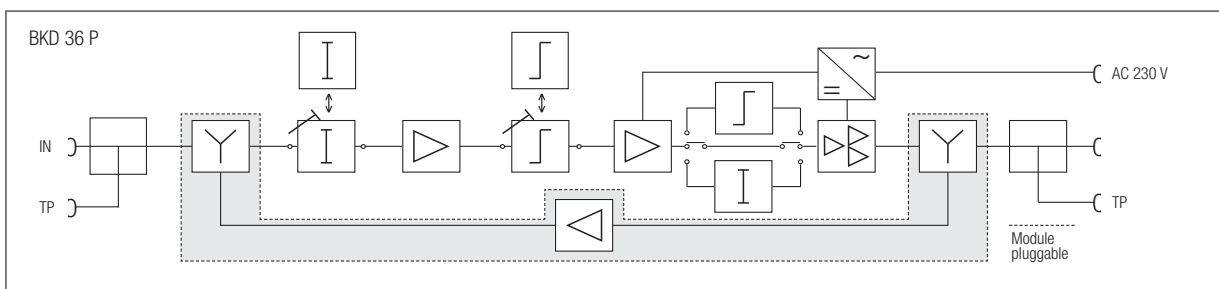
## HOUSE DISTRIBUTION AMPLIFIERS GaAs-FET PROFI-LINE "BKD"

- Die-cast housing IP 20, low temperature rise through modern cooling concept for high reliability and long life-time
- Excellent EMC characteristics
- Easy mounting through compact design
- With plug-in slot for active or passive return path modules (optional p. 40)
- Attenuation and equalization with variable attenuator (ex-factory) or with pads, adjustable in steps of 1 dB
- Modular power supply: in case of service the power supply can be easily replaced or upgraded. No readjustment of amplifier necessary, min. interruption of operation
- Input and output test points
- High output drivability through Push-Pull GaAs-FET technology
- Low noise factor



Type		BKD 20 P	BKD 36 P
Article No.		5700 1272	5700 1270
Frequency range	MHz	5-862	5-862
Slots for return path		1	1
Gain	dB	13/21 ± 1 (switchable)	30/36 ± 1 (switchable)
Noise figure <sup>1</sup>	dB	4	4
Linerarity <sup>1</sup>	dB	± 0,5	± 0,7
Equalizer	dB	with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB	
Attenuator	dB	with variable attenuator 0...20 dB (ex-factory) or with Pads adjustable in steps of 1 dB	
Interstage equalizer	dB	- 5 switchable	-5 switchable
Output level max. <sup>1</sup>			
CSO / CTB >60 dB, 42 CH flach	dBµV	104 / 106	104 / 106
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN-level	dBµV	115 / 120	117 / 123
Operating voltage	V~	185-265	185-265
Power consumption	W	10,0	9,5
Test point input		-20 dB (F female, external) bi-directional	
Test point output		-20 dB (F female, external) uni-directional	
Burst protection	kV	2,5	2,5
Connectors		F female	F female
Dimensions	mm	188 x 85 x 50	188 x 85 x 50
Weight	kg	1,1	1,1
KDG 1 TS 140		■	■

<sup>1</sup> Specifications without return path at 21/36 dB gain



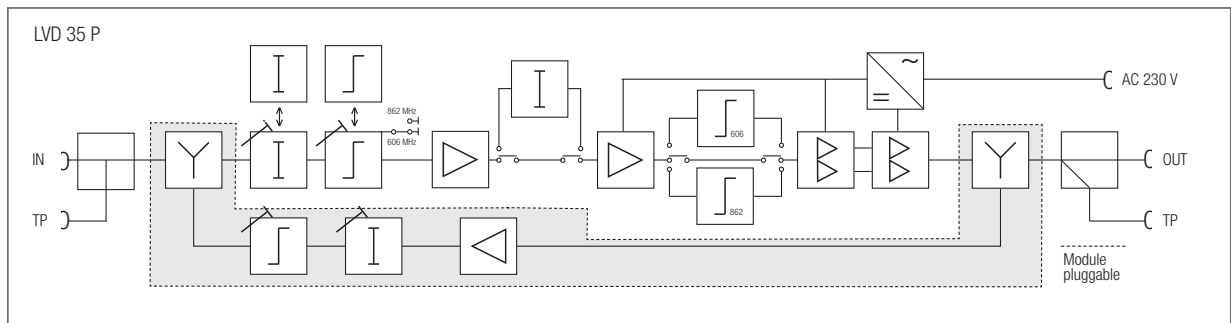
## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "LVD"



- For local feeding
- Die-cast housing IP 50 with very good heat dissipation and excellent EMC characteristics
- With plug-in slot for active or passive return path modules (optional p. 40)
- GaAs-FET Push-pull stage for high output level
- Excellent linearity
- Attenuation and equalization with variable attenuator (ex-factory) or with pads, adjustable in steps of 1 dB
- Interstage tilt -5 dB selectable
- Highly efficient switch mode power supply
- Input and output test points

Type		LVD 27 P	LVD 35 P	LVD 40 P
Article No		5700 1234	5700 1236	5700 1238
Frequency range	MHz	5 - 862	5 - 862	5 - 862
Slots for return path		1	1	1
Gain		27 ± 1	29/35 ± 1 (switchable)	35/41 ± 1 (switchable)
Interstage equalizer	dB	- 5	- 5	- 5
Noise figure <sup>1</sup>	dB	7	5	5
Linearity <sup>1</sup>	dB	± 0,5	± 0,7	± 0,8
Equalizer		with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB		
Attenuator		with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB		
Output level max. <sup>1</sup>				
CSO / CTB >60 dB, 42 Ch. flat	dBμV	112 / 107	112 / 107	112 / 107
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN	dBμV	122 / 123	122 / 123	122 / 123
Operating voltage	V~	185-265	185-265	185-265
Power consumption	W	10,5	12,5	12,5
Test point input		-20 dB (F female, internal) bi-directional		
Test point output		-20 dB (F female, external) uni-directional		
Surge and burst protection	kV	4,5 / 4,5	4,5 / 4,5	4,5 / 4,5
Connectors		F female	F female	F female
Dimensions	mm	210 x 122 x 70	210 x 122 x 70	210 x 122 x 70
Weight	kg	1,2	1,2	1,2
KDG 1 TS 140		■	■	■

<sup>1</sup> Specifications without return path at 27/35/41 dB gain





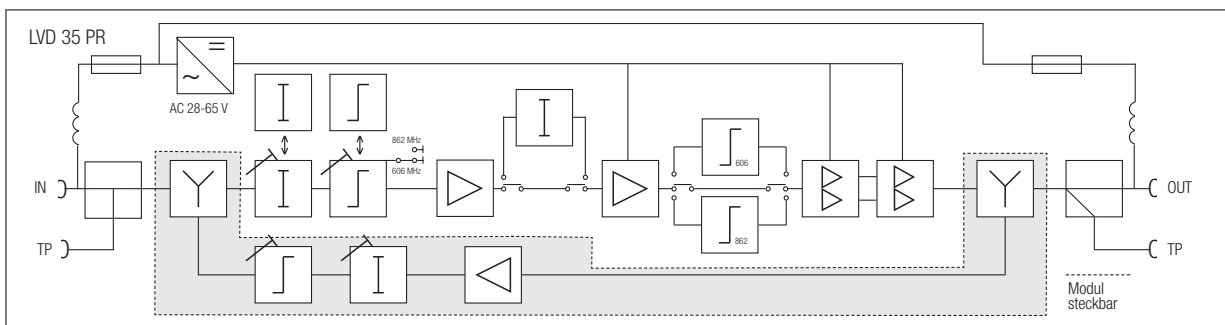
## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "LVD"

- For remote feeding
- Die-cast housing IP 50 with very good heat dissipation and excellent EMC characteristics
- With plug-in slot for active or passive return path modules (optional p. 40)
- GaAs-FET Push-pull stage for high output level
- Excellent linearity
- Attenuation and equalization with variable attenuator (ex-factory) or with pads, adjustable in steps of 1 dB
- Interstage tilt -5 dB selectable
- Highly efficient switch mode power supply
- Input and output test points
- Remote current max 2,7 A



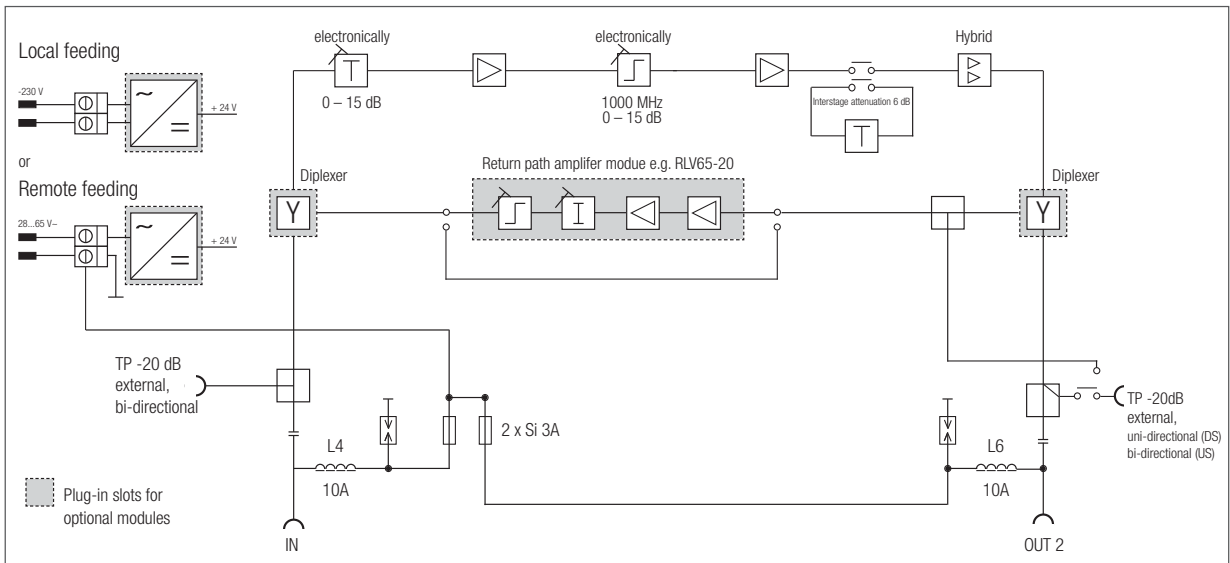
Type		LVD 27 PR	LVD 35 PR
Article No.		5700 1235	5700 1237
Frequency range	MHz	5 - 862	5 - 862
Slots for return path		1	1
Gain	dB	27 ± 1	29/35 ± 1 (switchable)
Interstage equalizer	dB	- 5	- 5
Noise figure <sup>1</sup>	dB	7	5
Linerarity <sup>1</sup>	dB	± 0,7	± 0,8
Equalizer		with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB	
Attenuator		with variable attenuator 0...18 dB (ex-factory) or with Pads adjustable in steps of 1 dB	
Output level max. <sup>1</sup>			
CSO / CTB >60 dB, 42 Ch. flat	dBμV	112 / 107	112 / 107
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN	dBμV	122 / 123	122 / 123
Operating voltage	V~	30-65 via input	30-65 via input or output
Remote current max	A	2,7	2,7
Current consumption	A~	0,30 (at 42 VAC)	0,35 (at 42 VAC)
Test point input		-20 dB (F female, internal) bi-directional	
Test point output		-20 dB (F female, external) uni-directional	
Surge and burst protection	kV	4,5 / 4,5	4,5 / 4,5
Connectors		F female	F female
Dimensions	mm	210 x 122 x 70	210 x 122 x 70
Weight	kg	1,2	1,2
KDG 1 TS 140		■	■

<sup>1</sup> Specifications without return path at 27/35/41 dB gain



## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "LHD"

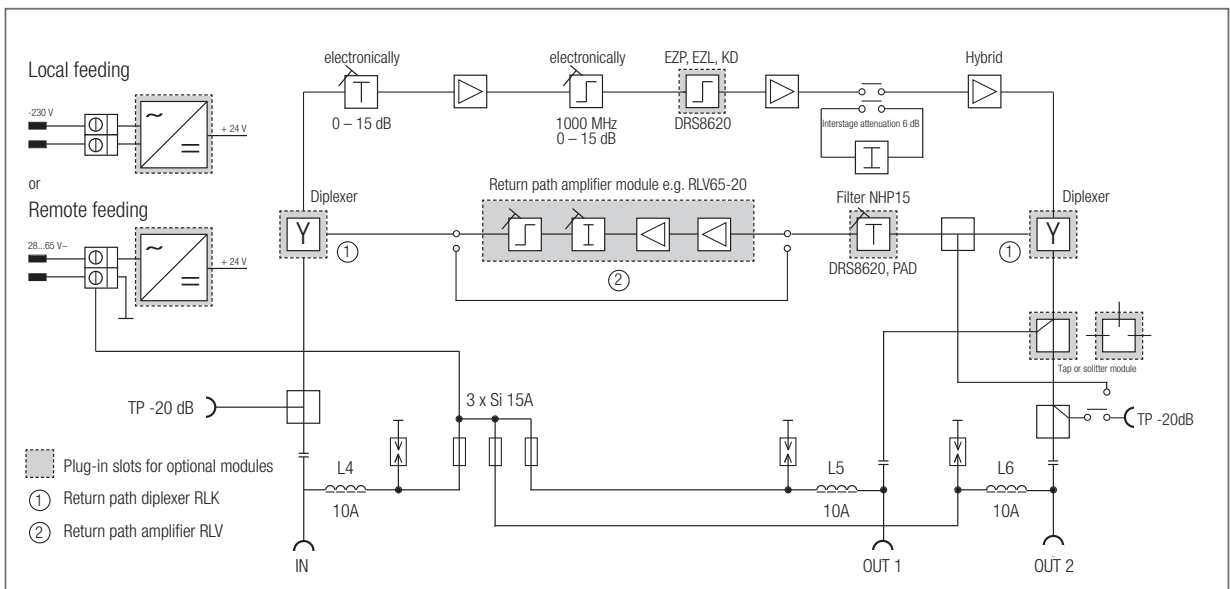
Modern, highly drivable, distribution network amplifier with 1 GHz bandwidth, for use in e.g. DOCSIS 3.0 networks. Electronic attenuator and equalizer with readable setting value.



## HOUSE DISTRIBUTION AND DISTRIBUTION AMPLIFIER PROFI-LINE "LHA"

Modern, highly drivable, distribution network amplifier with 1 GHz bandwidth, for use in e.g. DOCSIS 3.0 networks. Electronic attenuator and equalizer with readable setting value.

Plug-in slot for various equalizer and attenuation modules. Switchable output test socket. Plug-in slot for tap- or splitter module on output. Plug-in slot for return path ingress filter.







## HOUSE DISTRIBUTION AMPLIFIERS PROFI-LINE "LHD"

- For local or remote feeding
- Die-cast housing IP 54 with very good heat dissipation and excellent EMC characteristics
- Flexible and future-proof return path technology (optional p. 39)
- Extended broadband, frequency range up to 1 GHz
- High output level with Power-Doubler GaAs-FET hybrid
- Excellent linearity
- Electronic attenuator and equalizer, adjustable in steps of 1 dB
- Interstage tilt -5 dB selectable
- Highly efficient switch mode power supply
- Input and output test points
- Integrated surge protection



**1 GHz**  
TECHNOLOGY

Type		LHD 35-3	LHD 35-3 R	LHD 40-3	LHD 40-3 R
Article No.		5700 1240	5700 1241	5700 1242	5700 1243
Final stage		GaAs-Fet Hybrid		GaAs-Fet Hybrid	
Frequency range	MHz	5 - 1000		5 - 1000	
Slots for return path	MHz	1		1	
Gain	dB	30/36 ±1, switchable		34/40 ±1, switchable	
Noise figure	dB	7		7	
Linearity	dB	± 0,5	± 0,7	± 0,7	± 0,9
Attenuator		0, 1, 2 ... 15 dB, electronically adjustable in steps of 1 dB			
Equalizer		0, 1, 2 ... 15 dB, electronically adjustable in steps of 1 dB			
Output level max. <sup>1</sup>					
CSO / CTB >60 dB, 42 Ch. flat	dBμV	113 / 111		113 / 111	
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN	dBμV	124 / 125		124 / 125	
Return loss		20 dB bei 40 MHz (-1,5 dB/octave)		20 dB bei 40 MHz (-1,5 dB/octave)	
Operating voltage	V~	230	28-65	230	28-65
Remote current max	A	—	2,0	—	2,0
Hum isolation	dBc	—	> 60	—	> 60
Power consumption		14,5 W	0,6 ... 0,3 V~	14,5 W	0,6 ... 0,3 V~
Connectors		F female		F female	
Test point input		- 20 dB (F female, bi-directional)		- 20 dB (F female, bi-directional)	
Test point output		- 20 dB (F female, uni-directional)		- 20 dB (F female, uni-directional)	
Burst- and surge protection	kV	4,5 / 4,5		4,5 / 4,5	
Dimensions	mm	225 x 190 x 86		225 x 190 x 86	
Weight	kg	2		2	
KDG 1 TS 140		■		■	

<sup>1</sup> Specification without return path modules at 27/35 dB gain

## DISTRIBUTION AND TRUNK LINE AMPLIFIERS PROFI-LINE "LHA"



**1 GHz  
TECHNOLOGY**

- For local or remote feeding
- Die-cast housing IP 65 with very good heat dissipation and excellent EMC characteristics
- Flexible and future-proof return path technology (optional p. 39)
- Extended broadband, frequency range up to 1 GHz
- High output level with Power-Doubler GaAs-FET hybrid
- Excellent linearity
- Electronic attenuator and equalizer, adjustable in steps of 1 dB
- Interstage tilt -5 dB selectable
- Plug-in slot for return path ingress filter
- Plug-in slot for splitter- or tap module on output
- Highly efficient switch mode power supply
- Test sockets on output, switchable to forward or return path
- Integrated surge protection

Type		LHA 40-3	LHA 40-3 R
Article No.		5700 1457	5700 1458
Final stage		Power Doubler GaAs-Fet Hybrid	Power Doubler GaAs-Fet Hybrid
Frequency range	MHz	5 - 1000	5 - 1000
Slots for return path	MHz	1	1
Gain	dB	40 ±1	40 ±1
Noise figure <sup>1</sup>	dB	< 7	< 7
Linearity <sup>1</sup>	dB	± 0,7	± 0,9
Attenuator		0, 1, 2 ... 15 dB, electronically adjustable in steps of 1 dB	
Equalizer		0, 1, 2 ... 15 dB, electronically adjustable in steps of 1 dB	
Interstage		Plug-in slot	Plug-in slot
Output level max. <sup>1</sup>			
CSO / CTB >60 dB, 42 Ch. flat	dBμV	113 / 111	113 / 111
IMA <sub>2</sub> / IMA <sub>3</sub> >60 dB, DIN	dBμV	124 / 125	124 / 125
Return loss		20 dB at 40 MHz (-1,5 dB/octave)	20 dB at 40 MHz (-1,5 dB/Octave)
Operating voltage	V~	185-265	28-65
Remote current max	A	—	10
Power consumption		14,5 W	0,6...0,3 A~ (28...65 V)
RF-Output		1 / 2 (plug-in slot for splitter or tap module)	1 / 2 (plug-in slot for splitter or tap module)
RF-Connectors		PG 11 or 5/8"	PG 11 or 5/8"
Test point input/output		-20 dB / switchable	-20 dB / switchable
Burst- and surge protection	kV	4,5 / 4,5	4,5 / 4,5
Dimensions	mm	225 x 190 x 86	225 x 190 x 86
Weight	kg	2	2

<sup>1</sup> Specification without return path modules at 40 dB gain



## DISTRIBUTION AND LINE AMPLIFIERS PROFI-LINE "NVE"



CATV

### The advantages at a glance

- Trunk line and distribution amplifier for modern, interactive HFC-networks
- Local and remote feeding
- High quality die-cast housing with excellent thermal conduction, protection class IP 65
- Built-in return path hybrid-amplifier (modular), with plug-in places for ingress filter, attenuators and equalizer
- Extremely high return path output level
- With modern GaAs-FET-IC pre-amplifier and GaAs-FET hybrid output amplifier an extremely low noise figure and an excellent linearity is reached besides high output level
- Uninterruptable PAD adjustment
- AGC module plugable for automatic compensation of temperature dependent level variations
- Input with line-out configuration, splitter or tap plugable
- Output splitter, configuration with internal jumper
- LED power supply indication
- High configuration comfort with test points at in- and output and highly efficient switched mode power supply

### Uninterruptable adjustment with Pads

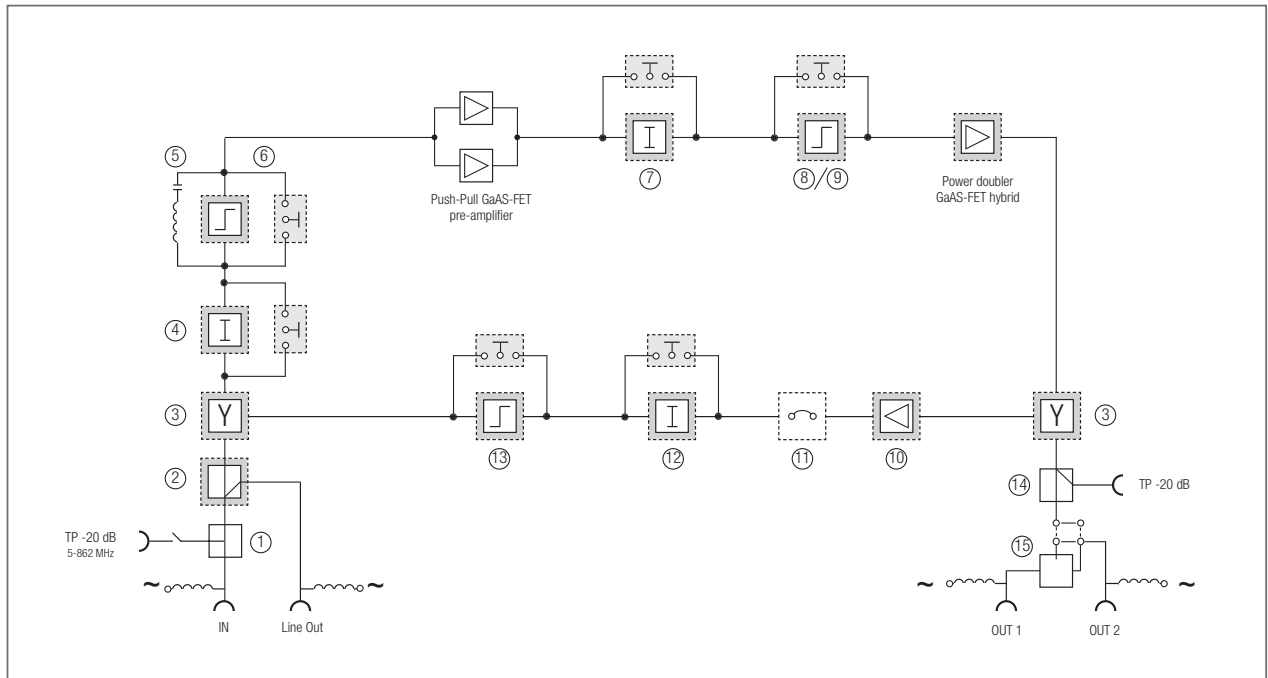
These modern amplifiers are equipped with plug-in places for pads and do without variable attenuators. Thus these amplifiers are exactly adjusted with 1 dB steps. By this way alignment is facilitated and working reliability of the amplifier is increased.

The main advantage of the uninterruptable adjustment is the continuous signal transmission in case of adjustment and service. This is particularly important when multimedia services like internet, telephone etc. are transmitted. In the case of maintenance work at the amplifier, no service interruption occurs and there is no need to reactivate modems.

The following adjustments can be done without interruption with pads in 1 dB steps:

- Input attenuation
- Input equalization
- Interstage attenuation
- Interstage equalization
- Return path attenuation
- Return path equalization

## DISTRIBUTION AND LINE AMPLIFIERS PROFI-LINE "NVE"



Plug-in slots for optional modules (return path amplifier contain in the scope of supply)

### Short description NVE 8128 / NVE 8136

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>① Test point - 20 dB, F-connector external, bi-directional</li> <li>② Plug-in slot for input and line-out with splitter type VM 02 or tap type AM 01 (optional p. 43)</li> <li>③ Plug-in slot for return path diplexer 30 or 65 MHz Type: RLK 30, RLK 65 (optional p. 41)</li> <li>④ Input attenuation, plug-in place for adjustments with pads in 1 dB steps, uninterruptable</li> <li>⑤ Equalization plug-in slot for module EZP, EZL, (optional p. 42).</li> <li>⑥ At this plug-in slot there is also the possibility to use an AGC-module type AGC 203 (optional p. 43)</li> <li>⑦ Interstage attenuation uninterruptable, with pads in 1 dB steps selectable</li> </ul> | <ul style="list-style-type: none"> <li>⑧ Plug-in place for interstage equalization, tilt with Pads adjustable, equalization uninterruptable with Pads in 1 dB steps adjustable.</li> <li>⑨</li> <li>⑩ Return path amplifier hybrid pluggable, contained in the scope of supply</li> <li>⑪ Plug-in place for ingressfilter, e.g. NHP 15 (optional p. 41)</li> <li>⑫ Return path attenuation uninterruptable with Pads in 1 dB steps adjustable</li> <li>⑬ Plug-in place for return path equalization, tilt with Pads adjustable, equalization uninterruptable with Pads in 1 dB steps adjustable</li> <li>⑭ Testpoint -20 dB, F-connector external, uni-directional</li> <li>⑮ Output splitter, configuration with jumper</li> </ul> |
|---|---|



## DISTRIBUTION AND LINE AMPLIFIERS PROFI-LINE "NVE"

- For local or remote feeding
- Die-cast housing IP 65 with very good heat dissipation and excellent EMC characteristics
- Built-in return path amplifier (modular)
- Extremely high return path output level
- GaAs-FET Hybrid Power Doubler final stage
- Low noise factor through GaAs-FET-IC pre-amplifier
- Uninterruptable adjustments with Pads
- Plug-in slot for AGC-module
- Line-Out input via splitter or tap module configurable, output splitter configuration with jumper
- Highly efficient switch mode power supply



Type		NVE 8128	NVE 8128 R	NVE 8136	NVE 8136 R
Article No.		5700 1256	5700 0674	5700 1266	5700 1267
Downstream	Final stage	Power Doubler GaAs-FET-Hybrid		Power Doubler GaAs-FET-Hybrid	
	Frequency range	47/85 - 862 MHz		47/85 - 862	
	Gain	28 ± 1 dB with Pads in 1 dB steps adjustable		36 ± 1 dB with Pads in 1 dB steps adjustable	
	Noise figure	< 5 dB		< 5	
	Linearity	± 0,5 dB	± 0,5	± 0,6	± 0,7
	Attenuation input	0 ... 20 dB with Pads in 1 dB steps adjustable		0 ... 20 dB with Pads in 1 dB steps adjustable	
	Equalization input	Plug-in slot for equalizer modules "EZF / EZL"			
	Interstage attenuation	0 ... 20 dB with Pads in 1 dB steps adjustable		0 ... 20 dB with Pads in 1 dB steps adjustable	
	Interstage equalization	0 ... 20 dB with Pads in 1 dB steps adjustable		0 ... 20 dB with Pads in 1 dB steps adjustable	
	Output level max.	113 / 111 dBµV		113 / 111	
	CSO / CTB >60 dB, 42 Ch. flat	124 / 125 dBµV		124 / 125	
	Return loss	20 dB at 40 MHz / -1,5 dB / octave		20 dB at 40 MHz / -1,5 dB / octave	
	Upstream	Frequency range	5 - 30/65 MHz		5 - 30/65
Gain		24 ± 1 dB		24 ± 1	
Noise figure		< 7 dB		< 7	
Attenuation		0 ... 20 dB, with pads in 1 dB steps adjustable			
Equalization		0 ... 20 dB, with pads in 1 dB steps adjustable			
Output level max.		120 / 116 dBµV		120 / 116	
1 TS 140 / IMA <sub>3</sub> > 60 dB		10,0		10,0	
Operating voltage	V~	185-265	30-70	185-265	30-70
Remote current max	A	—	10,0	—	10,0
Power consumption	A~	24 W	1,0...0,4 A~ (30...70 V)	24 W	1,0...0,4 A~ (30...70 V)
Test point input		-20 dB (F female external) bi-directional, connectable			
Test point output		-20 dB (F female external) uni-directional			
Burst- and surge protection	kV	4,5 / 4,5		4,5 / 4,5	
Connectors		PG 11 or 5/8"		PG 11 or 5/8"	
Dimensions	mm	225 x 190 x 86		225 x 190 x 86	
RF-Input /-Output		2		2	

## DISTRIBUTION AND LINE AMPLIFIERS EXPERT-LINE "NVD"



**NEW**

■ DOCSIS-Transponder

### The advantages at a glance

- Controllable distribution and trunk line amplifier for modern, interactive HFC- networks
- Expandable with a transponder to DOCSIS- or HMS-standard at any time
- Compact die-cast housing with very good heat sink, protection class IP 65
- Built-in return path amplifier (modular), with ingress control switch 0/6-8/ > 40 dB
- Low noise factor, excellent linearity and high output level through GaAs-FET-IC pre-amplifier and GaAs-FET hybrid final stages
- NVD 8238 with 2 high-level outputs
- Electronic attenuation and equalization for perfect level adjustments
- Interstage attenuation or equalization with pads in 1 dB steps selectable
- AGC plug-in slot for for automatic gain control to compensate level variations due temperature shift
- High configuration comfort with test points at in- and output and highly efficient switched mode power supply

**Remark:** Cable fittings are not scope of delivery. Cable fittings see catalogue page 45.

### Monitoring transponder according to HMS standard

The following parameters can be monitored and controlled via a transponder which complies with the DOCSIS- or HMS standard:

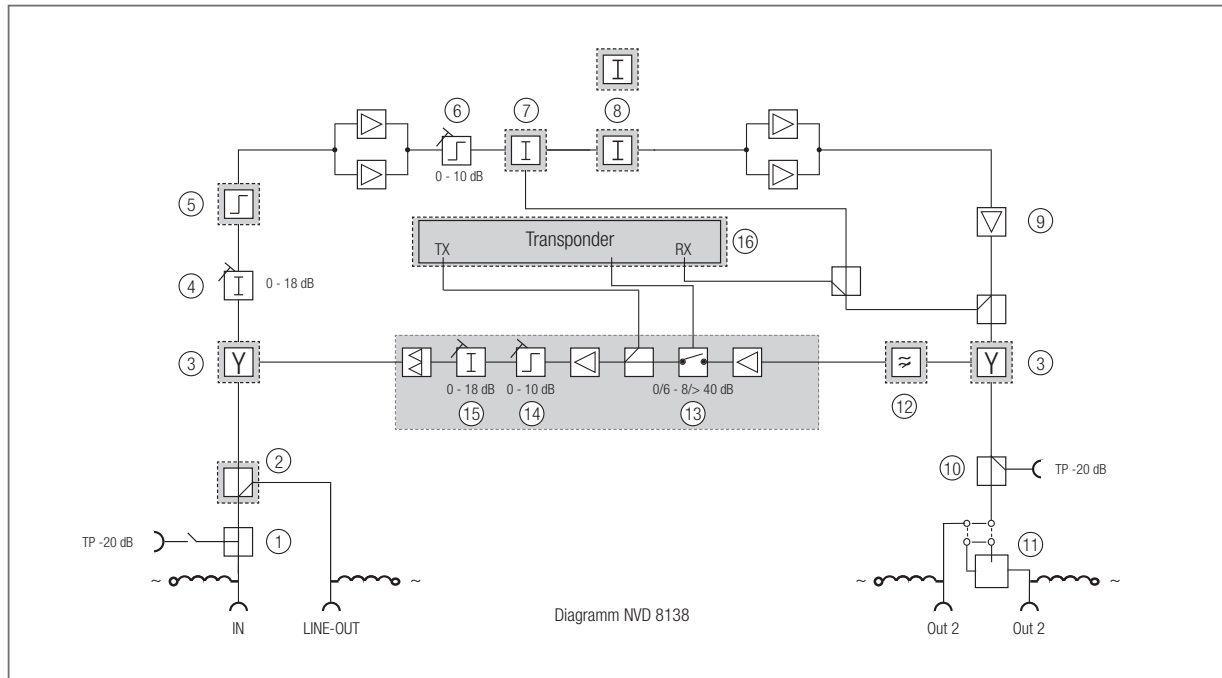
- Operating voltage
- RF-level
- Return path ingress switch
- Temperature
- Amplifier type and amplifier location identification
- Further control and monitor functions



■ DOCSIS-Transponder



## DISTRIBUTION AND LINE AMPLIFIERS EXPERT-LINE "NVD"



Plug-in slots for optional modules (return path amplifier contain in the scope of supply)

### Short description NVD 8128 / NVD 8136

- |  |   |
|--|---|
| <p>① Test point - 20 dB, F-connector internal, connectable, bi-directional</p> <p>② Plug-in slot for splitter type VM 02 or tap type AM 01 (optional p. 43)</p> <p>③ Plug-in slot for return path diplexer 30 or 65 MHz<br/>Type: RLK 230, RLK 265 (optional p. 41)</p> <p>④ Electronic attenuator 0...18 dB for perfect level adjustments</p> <p>⑤ Plug-in slot for equalizer 606 or 862 MHz.<br/>Type: EZP, EZL (optional p. 42)<br/>Equalization with pads in 1 dB steps selectable (EZP, EZL)</p> <p>⑥ Electronic interstage equalizer 0...10 dB</p> <p>⑦ Plug-in slot for AGC-module type AGC-203 (optional p. 43) for automatic gain control to compensate level variations due temperature shift. At this plug-in slot there is also the possibility to use an interstage attenuator</p> <p>⑧ Plug-in slot for interstage attenuator type ID 100 (optional p. 43) or interstage equalization with pads in 1 dB steps adjustable</p> | <p>⑨ GaAs-FET Power-Doubler hybrid</p> <p>⑩ Testpoint -20 dB, F-connector internal, uni-directional</p> <p>⑪ Splitter, selectable (taps on request)</p> <p>⑫ Plug-in slot for ingress filter type NHP 15 (optional p. 41)</p> <p>⑬ Return path ingress switch, through HMS-transponder manageable, 0 / 6-8 / &gt; 40 dB</p> <p>⑭ Electronic return path equalizer 0...10 dB</p> <p>⑮ Electronic return path attenuator 0...18 dB</p> <p>⑯ Plug-in slot for transponder<br/>Controlling and managing of following parameters:</p> <ul style="list-style-type: none"> <li>• Operating voltage</li> <li>• RF-level</li> <li>• Return path ingress switch</li> <li>• Temperature</li> <li>• Amplifier type and amplifier location identification</li> </ul> |
|--|---|

## DISTRIBUTION AND LINE AMPLIFIERS EXPERT-LINE "NVD"



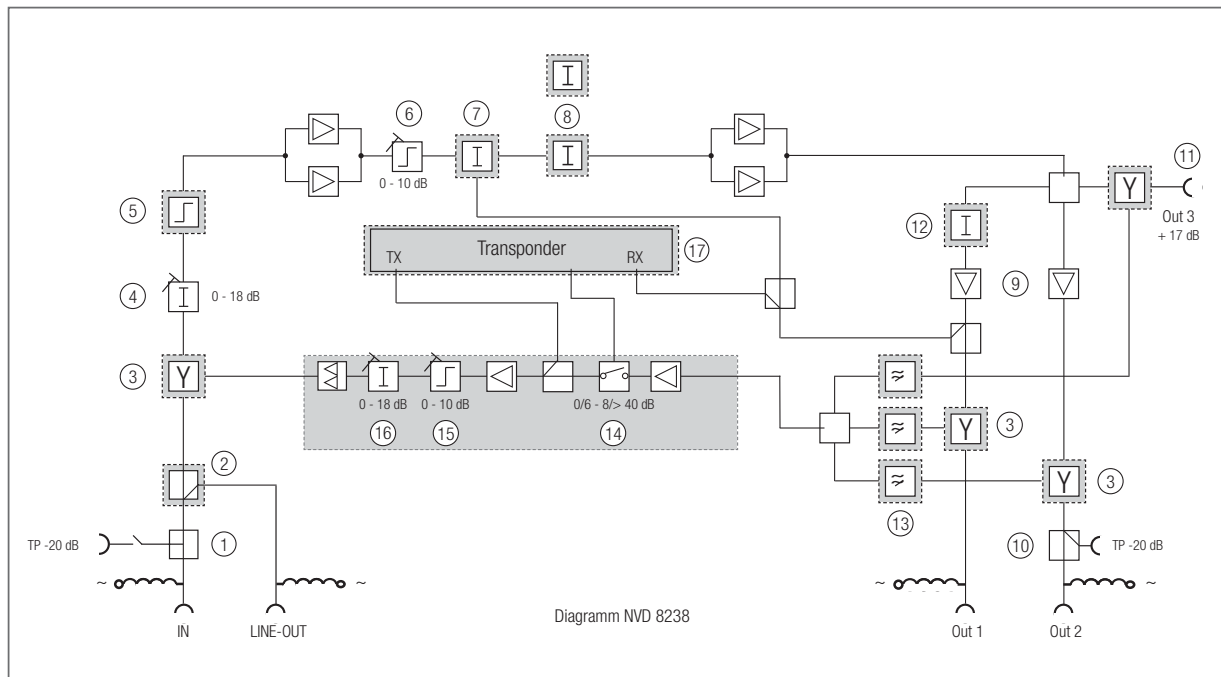
- Controllable distribution network and line amplifier for modern interactive HFC networks
- For local or remote feeding
- Die-cast housing IP 65 with very good heat dissipation and excellent EMC characteristics
- A transponder DOCSIS or HMS standard can be subsequently fitted
- Electronic attenuator and interstage equalizer with pads in 1 dB steps adjustable
- Flexible and future-proof return path technology, built-in return path amplifier (modular), with ingress switch
- Low noise factor through GaAs-FET-IC pre-amplifier
- High output level with Power-Doubler GaAs-FET hybrid
- Plug-in slot for AGC-module
- Highly efficient switch mode power supply
- Remote current 10 A, integrated surge protection

Type		NVD 8128	NVD 8138	NVD 8128 RP	NVD 8138 RP	
Article No.		1016 1582	1016 1583	1016 1585	1016 1586	
Final stage		1 x Power Doubler GaAs-FET	1 x Power Doubler GaAs-FET	1 x Power Doubler GaAs-FET	1 x Power Doubler GaAs-FET	
Downstream	Frequency range	MHz	47/85 - 862	47/85 - 862	47/85 - 862	47/85 - 862
	Gain	dB	28 ± 1	38 ± 1	28 ± 1	38 ± 1
	Noise figure	dB	< 5	< 5	< 5	< 5
	Linearity	dB	± 0,5	± 0,7	± 0,5	± 0,7
	Attenuator input	dB	0...18	0...18	0...18	0...18
	Interstage equalizer	dB	0 ... 10	0 ... 10	0 ... 10	0 ... 10
	Interstage settings		Attenuator or equalizer with pads in 1 dB steps adjustable			
	Output level max.					
	CSO / CTB >60 dB, 42 Ch. flat	dBµV	113 / 111	113 / 111	113 / 111	113 / 111
	IMA <sub>2</sub> / IMA <sub>3</sub> > 60 dB, DIN	dBµV	124 / 125	124 / 125	124 / 125	124 / 125
Return loss	dB	20 dB at 40 MHz (-1,5 dB/octave)				
Upstream	Frequency range	MHz	5 - 30/65	5 - 30/65	5 - 30/65	5 - 30/65
	Gain	dB	22 ± 1	22 ± 1	22 ± 1	22 ± 1
	Noise figure	dB	< 7	< 7	< 7	< 7
	Attenuator	dB	0...18	0...18	0...18	0...18
	Equalizer	dB	0...10	0...10	0...10	0...10
	Output level					
	IMA <sub>3</sub> > 60 dB	dBµV	116	116	116	116
IMA <sub>2</sub> > 60 dB	dBµV	110	110	110	110	
Operating voltage	V~	185-265	185-265	30-70	30-70	
Remote current max	A	10	10	10	10	
Hum isolation	dBc	> 60	> 60	> 60	> 60	
Power consumption		24 W	22 W	0,9...0,4 A (30...70 V)	0,9...0,4 A (30...70 V)	
Test point input		-20 dB (F female internal) bi-directional, connectable				
Test point output		-20 dB (F female external) uni-directional				
Burst- and surge protection	kV	4,5 / 4,5	4,5 / 4,5	4,5 / 4,5	4,5 / 4,5	
Connectors		PG 11 or 5/8"	PG 11 or 5/8"	PG 11 or 5/8"	PG 11 or 5/8"	
Dimensions	mm	319 x 246 x 119	319 x 246 x 119	319 x 246 x 119	319 x 246 x 119	
RF-Input/-Output		2	2	2	2	





## DISTRIBUTION AND LINE AMPLIFIERS EXPERT-LINE "NVD"



Plug-in slots for optional modules (return path amplifier contain in the scope of supply)

### Short description NVD 8238, 2 high-level outputs

- |  |   |
|--|---|
| <p>① Test point -20 dB, F-connector internal, connectable, bi-directional</p> <p>② Plug-in slot for splitter type VM 02 or tap type AM 01 (optional p. 43)</p> <p>③ Plug-in slot for return path diplexer 30 or 65 MHz<br/>Type: RLK 230, RLK 265 (optional p. 41)</p> <p>④ Electronic attenuator 0...18 dB for perfect level adjustments</p> <p>⑤ Plug-in slot for equalizer 606 or 862 MHz. Equalization with pads in 1 dB steps selectable<br/>Type: EZP, EZL (optional p. 42)</p> <p>⑥ Electronic interstage equalizer 0...10 dB</p> <p>⑦ Plug-in slot for AGC-module type AGC-203 (optional p. 43) for automatic gain control to compensate level variations due temperature shift. At this plug-in slot there is also the possibility to use an interstage attenuator</p> <p>⑧ Plug-in slot for interstage attenuator type ID 100 (optional p. 43) or interstage equalization with pads in 1 dB steps adjustable</p> | <p>⑨ 2 GaAs-FET Power-Doubler hybrids</p> <p>⑩ Testpoint -20 dB, F-connector internal, uni-directional</p> <p>⑪ Active sub output, + 17 dB</p> <p>⑫ Plug-in slot for attenuation pads to adjust different input levels of the outputs</p> <p>⑬ Plug-in slot for ingress filter type NHP 15 (optional p. 41)</p> <p>⑭ Return path ingress switch, through transponder manageable, 0 / 6-8 / &gt; 40 dB</p> <p>⑮ Electronic return path equalizer 0...10 dB</p> <p>⑯ Electronic return path attenuator</p> <p>⑰ Plug-in slot for transponder<br/>Controlling and managing of following parameters:</p> <ul style="list-style-type: none"> <li>• Operating voltage</li> <li>• RF-level</li> <li>• Return path ingress switch</li> <li>• Temperature</li> <li>• Amplifier type and location identification</li> </ul> |
|--|---|

## DISTRIBUTION AND LINE AMPLIFIERS EXPERT-LINE "NVD"



- Controllable distribution network and line amplifier for modern interactive HFC networks , with 2 high-level outputs (2 hybrids)
- For local or remote feeding
- Die-cast housing IP 65 with very good heat dissipation and excellent EMC characteristics
- A transponder DOCSIS or HMS standard can be subsequently fitted
- Electronically attenuator and interstage equalizer with pads in 1 dB steps adjustable
- Flexible and future-proof return path technology, built-in return path amplifier (modular), with ingress switch
- Low noise factor through GaAs-FET-IC pre-amplifier
- High output level with Power-Doubler GaAs-FET hybrid
- Plug-in slot for AGC-module
- Highly efficient switch mode power supply
- Remote current 10 A, integrated surge protection

Type		NVD 8238	NVD 8238 RP	
Article No.		1016 1584	1016 1587	
Final stage		2 x Power Doubler GaAs-FET	2 x Power Doubler GaAs-FET	
Downstream	Frequency range	MHz	47/85 - 862	47/85 - 862
	Gain	dB	2 x 38 ± 1 1 x 17 dB	2 x 38 ± 1 1 x 17 dB
	Noise figure	dB	< 5	< 5
	Linearity	dB	± 0,7	± 0,75
	Attenuator input	dB	0...18	0...18
	Interstage equalizer	dB	0 ... 10	0 ... 10
	Interstage settings		Attenuator or equalizer with pads in 1 dB steps adjustable	
	Output level max.			
	CSO / CTB >60 dB, 42 Ch. flat	dBµV	2 x 113 / 111	2 x 113 / 111
	IMA <sub>2</sub> / IMA <sub>3</sub> > 60 dB, DIN	dBµV	2 x 124 / 125	2 x 124 / 125
Return loss	dB	20 dB at 40 MHz (-1,5 dB/octave)	20 dB at 40 MHz (-1,5 dB/octave)	
Upstream	Frequency range	MHz	5 - 30/65	5 - 30/65
	Gain	dB	22 ± 1	22 ± 1
	Noise figure	dB	< 7	< 7
	Attenuator	dB	0...18	0...18
	Equalizer	dB	0...10	0...10
	Output level			
	IMA <sub>3</sub> > 60 dB	dBµV	116	116
IMA <sub>2</sub> > 60 dB	dBµV	110	110	
Operating voltage	V~	185-265	30-70	
Remote current max	A	10	10	
Hum isolation	dBc	> 60	> 60	
Power consumption		36 W	0,9...0,4 A (30...70 V)	
Test point input		-20 dB (F female internal) bi-directional, connectable		
Test point output		-20 dB (F female external) uni-directional		
Burst- and surge protection	kV	4,5 / 4,5	4,5 / 4,5	
Connectors		PG 11 or 5/8"	PG 11 or 5/8"	
Dimensions	mm	319 x 246 x 119	319 x 246 x 119	
Input/Output		2 / 2+1	2 / 2+1	



# GAIN EXTENDER

## Upgrade of HFC networks with too low gain of the trunk amplifiers

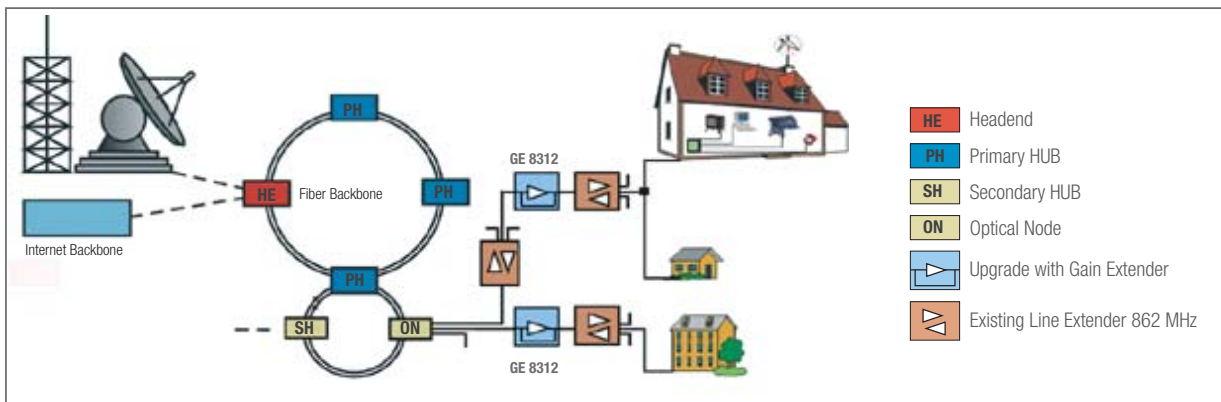
Experiences show that often the level in the C-line is too low. This problem cannot be compensated by the installed trunk amplifiers because their adjusted gains are at the upper limit. Further the transmission of HDTV channels with QAM256 requires 3-4 dB higher level in relation to QAM64 transmissions.

To compensate the missing gain in HFC networks the Gain Extender GE 8312 can be installed punctually. The Gain Extender GE 8312 is connected just at the input of the trunk amplifier.

Hence the expensive trunk amplifier remains further in the network and replacement is not necessary.








Type		GE 8312	GE 8312 PR	
Article No.		5700 1319	5700 1341	
Inputs		1	1	
Outputs		1	1	
Downstream	Frequency range	MHz 85 - 862	85 - 862	
	Gain	dB 12 ± 1	12 ± 1	
	Noise figure	dB 4	4	
	Linearity	dB ± 0,5	± 0,5	
	Attenuator	dB	2 x plug-in slots for PAD, EZP, EZL, KD	
	Equalizer	dB	2 x plug-in slots for PAD, EZP, EZL, KD	
Output level max.				
	66 dB CSOA	dBµV 100	100	
	66 dB CTBA	dBµV 103	103	
Up	Frequency range	MHz 5 - 65	5 - 65	
	Attenuation	dB 2 ... 3	2 ... 3	
Operating voltage		V~ 185-265	30-65	
Remote current max.		A 7	7	
Power consumption		W 6,5	6,5	
Burst protection (EN 61000-4-4,-5)		kV 6	6	
Connections		3,5/12, F female	3,5/12, F female	
Testpoint output		-20 dB (F female internal, bi-directional)	-20 dB (F female internal, bi-directional)	
Dimensions / Weight		mm/kg 188 x 85 x 50 / 1,1	188 x 85 x 50 / 1,1	




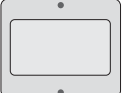


## OVERVIEW AMPLIFIERS

### House distribution amplifiers

Type	BK	BKE	BKD	LVD	LVD
					
Output level dBuV (CTB/CSO > 60 dB)					
108				LVD 27, 35, 40	
106			BKD 20, 36		LVD 3440
104		BKE 35	BKD 15, 35		
98	BK 22, 30 BK 226, 306	BKE 20, 30	BKD 22, 30		
Application	GA / MATV / SMATV	Multimedia	Multimedia	Multimedia	CATV / SAT
Return path	- / passive	active, fix	active, modular	active, modular	active, modular
Attenuator / PAD	■ / -	■ / -	■ / ■	■ / ■	■ / -
RF-Connectors	F female	F female	F female	F female	F female / PG 11
Power supply	fixed	fixed	modular	fixed	fixed
Local- / Remote-feeding	■ / -	■ / -	■ / -	■ / ■	■ / ■

### Distribution and line amplifiers

Type	LHD	LHA	NVE	NVD
				
Output level dBuV (CTB/CSO > 60 dB)				
111/113	LHD 35-3, 40-3	LHA 40-3	NVE 8128, 8136	NVD 8238 NVD 8128, 8138
Application	Multimedia house distribution amplifier	Distribution network and line amplifiers	Distribution network and line amplifiers	Managable distribution network and line amplifiers
No. of outputs	1	1 / 2	1 / 2	1 ... 3
Adjustment elements	electronically	electronically	PAD's uninterruptible	electronically
RF-Connectors	F female	F female or PG 11	PG 11 or 5/8"	PG 11 or 5/8"



## OVERVIEW PLUG-IN MODULES

### House distribution amplifiers BKD, LVD

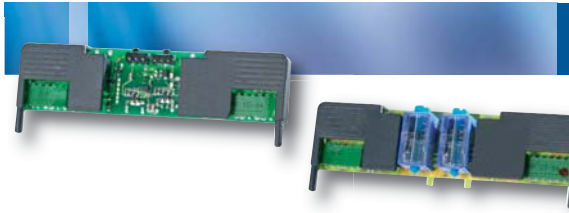
Type		RV 30-10	RV 65-10	RV 65-20 F2	RV 65-28 F2	RV 30-20 E2	RV 65-20 E2	RV 65-28 E2	RV 65-20 P	RV 65-28 P
Article No.		1016 1622	1016 1623	5700 1448	5700 1447	1016 1306	5700 1449	5700 1450	5700 1263	5700 1264
Frequency range	MHz	5-30	5-65	5-65	5-65	5-65	5-65	5-65	5-65	5-65
Gain	dB	-2/10	-2/10	22	28	22	22	28	22	28
Attenuator	dB	–	–	0...20	0...20	0...20	0...20	0...20	Pads	Pads
Equalizer	dB	–	–	–	–	1...10	1...10	1...10	Pads	Pads
Output level max. 1TS 140 / DIN IMA3	dBµV	–/110	–/110	120/115	120/115	–/115	120/115	120/115	120/115	120/115
BKD 15 P		■	■	■	■					
BKD 20 P		■	■	■	■	■	■	■	■	■
BKD 22 P		■	■	■	■					
BKD 30 P		■	■	■	■	■	■	■	■	■
BKD 35 P		■	■	■	■	■	■	■	■	■
BKD 36 P		■	■	■	■	■	■	■	■	■
BKD-RV0		■	■	■	■	■	■	■	■	■
LVD 27 P / PR		■	■	■	■	■	■	■	■	■
LVD 35 P / PR		■	■	■	■	■	■	■	■	■
LVD 40 P		■	■	■	■	■	■	■	■	■
LVD 3440		■	■	■	–	■	■	–	■	–

### Distribution and line amplifiers LHD, LHA, NVE, NVD

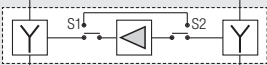
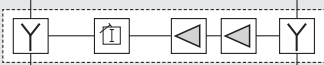
Type		RLK 30	RLK 65	RLK 230	RLK 265	RLV 65-20	RLV 65-30	RLV 65-20 P	RLV 65-30 P	ID 100	NHP 15
Article No.		1016 1313	1016 1310	1016 1588	1016 1589	1016 1309	5700 1425	5700 1251	5700 1426	1016 1588	5700 1255
Description		Diplexer	Diplexer	Diplexer	Diplexer	Amplifier	Amplifier	Amplifier	Amplifier	Attenuator	Ingress-Filter
Frequency range	MHz	5-30	5-65	5-30	5-65	5-65	5-65	5-65	5-65	5-862	15-65
Gain	dB	-1,0	-1,0	-1,0	-1,0	22	30	22	30		-1,5
Attenuator	dB					0 ... 20	0 ... 20	Pads	Pads	Pads	
Equalizer	dB					0 ... 10	0 ... 10	Pads	Pads		
Output level max. 1TS 140 / DIN IMA3	dBµV					120/115	120/115	120/115	120/115		
LHD		2 x ■	2 x ■			■	■	■	■		
LHA		2 x ■	2 x ■			■	■	■	■		■
NVE		2 x ■	2 x ■							■	■
NVD 81..				2 x ■	2 x ■					■	■
NVD 82..				4 x ■	4 x ■					■	■

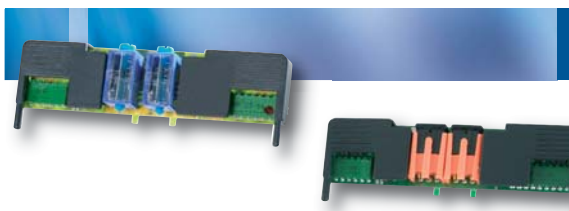
Type		EZP ...	EZL ...	DEM 10	KD 741	AGC 203	VM 02	VM 202	AM 01-10	AM 01-20
Article No.				5700 1356	5700 1461	1016 1355	1016 1357	5700 1222	1016 1611	1016 1354
Description		Equalizer	Equalizer	Equalizer	Equalizer	AGC	Splitter	Splitter	Tap	Tap
Frequency range	MHz	85-862	85-862	47-862	85-862	5-862	5-862	5-862	5-862	5-862
Attenuator	dB	1	1		0,8	< 5	4,0	4,0	1,3 / 10	0,9 / 20
Equalizer		6,9,12,15	6,9,12,15		6,3					
LHD										
LHA		■	■		■					
NVE		■	■	■	■	■	■		■	■
NVD 81..		■	■		■	■		■	■	■
NVD 82..		■	■		■	■		■	■	■
GE 8312		■	■		■					

## RETURN PATH MODULES FOR HOUSE DISTRIBUTION AMPLIFIERS

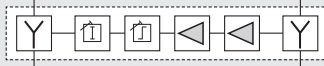
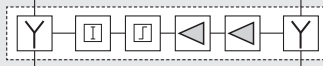


- For amplifiers series BKD and LVD
- To use see overview page 39
- Excellent linearity
- Fully protected with plastic housing

Type		RV 30-10	RV 65-10	RV 65-20 F2	RV 65-28 F2
Article No.		1016 1622	1016 1623	5700 1448	5700 1447
					
Return path frequency	MHz	5-30	5-65	5-65	5-65
Gain	dB	-2/10 (switchable)	-2/10 (switchable)	22	28
Attenuation		—	—	0...20	0...20
Equalization		—	—	—	—
Linearity	dB	± 0,5	± 0,5	± 0,5	± 0,5
Noise figure	dB	7	7	7	7
Output level max.					
1TS 140	dB $\mu$ V	115	115	120	120
IMA <sub>3</sub> > 60 dB	dB $\mu$ V	110	110	112	112
Forward path frequency	MHz	47-862	85-862	85-862	85-862
Attenuation	dB	- 1,0	- 1,0	- 1,0	- 1,0



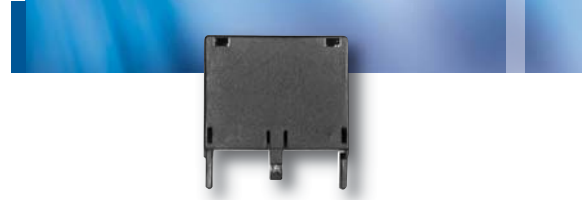
- To use see overview page 39
- Attenuation and equalization adjustable
- Excellent linearity
- Fully protected with plastic housing

Type		RV 30-20 E2	RV 65-20 E2	RV 65-28 E2	RV 65-20 P	RV 65-28 P
Article No.		1016 1306	5700 1449	5700 1450	5700 1263	5700 1264
						
Return path frequency	MHz	5-30	5-65	5-65	5-65	5-65
Gain	dB	22	22	28	22	28
Attenuation		0...20 dB	0...20 dB	0...20 dB	PAD's in 1 dB	PAD's in 1 dB
Equalization		1...10	1...10	1...10	steps	steps
Linearity	dB	± 0,5	± 0,5	± 0,5	± 0,5	± 0,5
Noise figure	dB	7	7	7	7	7
Output level max.						
1TS 140	dB $\mu$ V	120	120	120	120	120
IMA <sub>3</sub> > 60 dB	dB $\mu$ V	115	115	115	115	115
Forward path frequency	MHz	47-862	85-862	85-862	85-862	85-862
Attenuation	dB	- 1,0	- 1,0	- 1,0	- 1,0	- 1,0



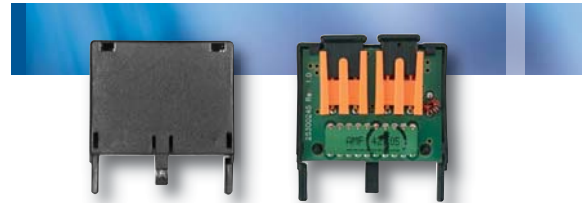
## RETURN PATH MODULES FOR DISTRIBUTION AND LINE AMPLIFIERS

- Diplexer modules
- For house distribution amplifiers series LHD, and distribution and line amplifiers series, LHA, NVE and NVD
- Return loss 18 dB at 47 MHz, 1,5 dB/octave
- Fully protected with plastic housing
- Remarks: 2 diplexers will be needed for each amplifier



Type	RLK 30	RLK 65	RLK 230	RLK 265
Article No.	1016 1313	1016 1310	1016 1588	1016 1589
Application	LHD, LHA, NVE	LHD, LHA, NVE	NVD	NVD
Frequency range Upstream MHz	5-30	5-65	5-30	5-65
Frequency range Downstream MHz	47-862	85-862	47-862	85-862
Attenuation dB	1,0	1,0	1,0	1,0

- Return path amplifier modules
- For house distribution amplifiers series LHD, and distribution and line amplifiers series LHA
- RLV: with variable attenuator and equalizer
- RLV-P: with plug-in slots for pads, attenuation and equalization setable in steps of 1 dB



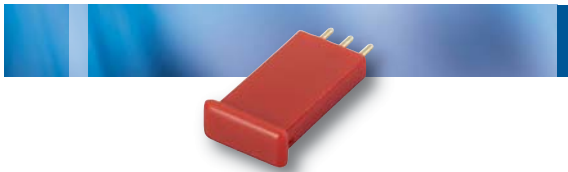
Type	RLV 65-20	RLV 65-30	RLV 65-20 P	RLV 65-30 P
Article No.	1016 1309	5700 1425	5700 1251	5700 1426
Application	LHD, LHA	LHD, LHA	LHD, LHA	LHD, LHA
Return path MHz	5-65	5-65	5-65	5-65
Gain dB	22	30	22	30
Attenuation dB	0...20	0...20	with pads in 1 dB steps adjustable	
Equalization dB	0...10	0...10	with pads in 1 dB steps adjustable	
Linearity dB	± 0,5	± 0,5	± 0,5	± 0,5
Noise figure dB	7	7	7	7
Output level max.				
1TS 140 dBμV	120	120	120	120
IMA <sub>3</sub> > 60 dB dBμV	115	115	115	115

## RETURN PATH INGRESS FILTER

- Return path ingress filter
- For distribution and line amplifiers series LHA, NVE and NVD
- For suppression of return path ingress
- High rejection loss

Type	NHP 15	
Article No.	5700 1255	
Transit range MHz	15-65 (862)	
Through loss dB	< 1,5	
Rejection range MHz	0-10	
Rejection loss dB	> 40	

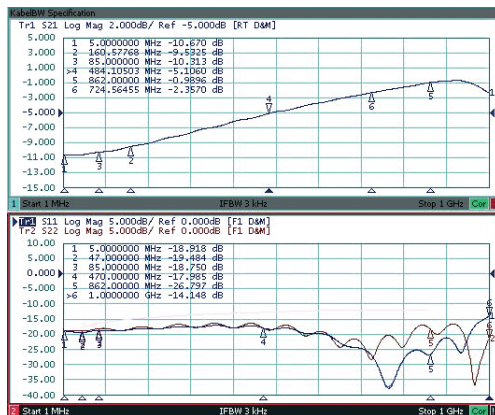
## EQUALIZATION PADS FOR DISTRIBUTION AND LINE AMPLIFIERS



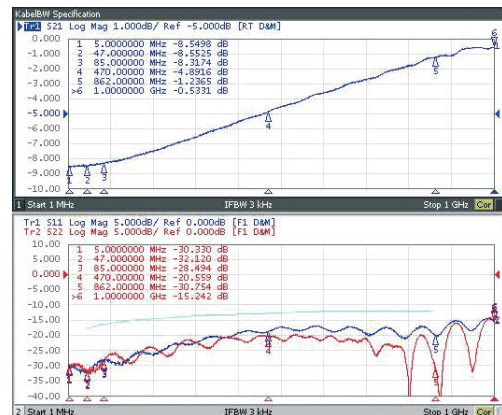
- For distribution and line amplifiers series LHA, NVE and NVD, gain extender GE 8312
- Return loss 18 dB at 47 MHz, 1,5 dB/Octave
- Fully protected with plastic housing

Type	EZP 806	EZP 809	EZP 812	EZP 815
Article No.	5700 1366	5700 1367	5700 1368	5700 1369
Frequency range	MHz	85-862	85-862	85-862
Equalization	dB	6	9	12
Basic attenuation	dB	0,8	1,0	0,9
Linearity	dB	± 0,2	± 0,2	± 0,2

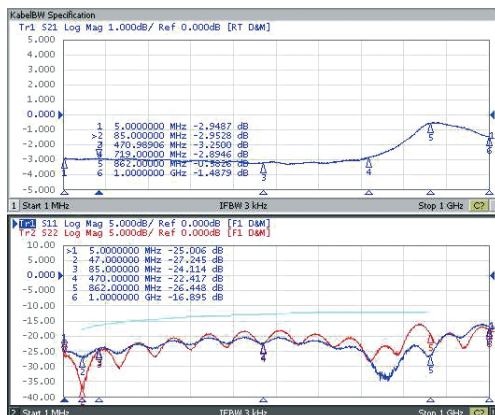
Type	EZL 803	EZL 806	EZL 809	EZL 812
Article No.	5700 1421	5700 1422	5700 1423	5700 1424
Frequency range	MHz	85-862	85-862	85-862
Equalization	dB	2,3	4,5	7,3
Basic attenuation	dB	0,9	1,1	1,2
Linearity	dB	± 0,2	± 0,2	± 0,2



Equalization of EZP 809 at 85-862 MHz



Equalization of EZL 809 at 85-862 MHz



- System equalizer for frequency range (740-862 MHz) accentuation
- Suitable for use with distribution and line amplifiers NVE, NVD and LHA, as well as the gain extender GE 8312
- Return loss 18 dB at 47 MHz, 1,5 dB/octave
- Fully protected with plastic housing

Type	KD 741	
Article No.	5700 1461	
Frequency range	MHz	5-720 MHz 3 dB 740 - 862 MHz 0,7 dB
Equalization	dB	6,3
Basic attenuation	dB	0,8
Linearity	dB	± 0,2





## SYSTEM MODULES FOR DISTRIBUTION AND LINE AMPLIFIERS

- AGC-module
- For distribution and line amplifier NVE and NVD
- To compensate level variations due temperature shift
- Sum regulation, non pilot tone required

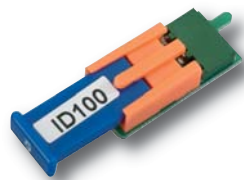


Type		AGC 203
Article No.		1016 1355
Application		NVE, NVD
Frequency range	MHz	5-862
Through loss	dB	< 5
Regulation range	dB	± 3,0
Note	using the AGC-module, amplification will be reduced at 5 dB (mid-position)	

- De-emphasis equalizer
- For distribution and line amplifier NVE
- To balance the pre-emphasis in networks level NE 3
- Infinitely adjustable equalization, 1 dB at 47 MHz, 1...10 dB at 862 MHz

Type		DEM 10
Article No.		1016 1356
Application		NVE
Frequency range	MHz	47-862
Equalizer	dB	1...10

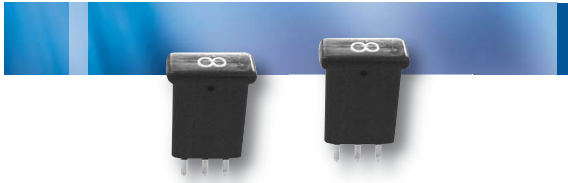
- Adaptor for Interstage plug-in
- For distribution and line amplifiers series NVE, NVD
- Plug-in slot for EZP, EZL or KD



Type		ID 100
Article No.		1016 1637
Application		NVE, NVD
Frequency range	MHz	5-862
Attenuation	dB	1...20

Type	VM 02	VM 202	AM 01-10	AM 01-20
Article No.	1016 1357	5700 1222	1016 1611	1016 1354
Specification	Splitter	Splitter	Tap	Tap
Application	LHA, NVE	NVD	LHA, NVE, NVD	LHA, NVE, NVD
Frequency range	MHz	5-862	5-862	5-862
Attenuation Output 1	dB	4,0	1,3	0,9
Attenuation Output 2	dB	4,0	10,0	20,0

## ATTENUATION PADS



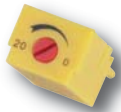
- Fixed attenuation pads
- For exact settings of attenuation and equalization
- Pads in 1 dB steps
- Length 0,45" or 1"

Type		PAD 0	PAD 1	PAD 2	PAD 3	PAD 4	PAD 5	PAD 6
Article No.	1016	0358	0359	0360	0361	0362	0363	0364
Attenuation	dB	0	1	2	3	4	5	6
Type		PAD 7	PAD 8	PAD 9	PAD 10	PAD 11	PAD 12	PAD 13
Article No.	1016	0365	0366	0367	0368	0369	0370	0371
Attenuation	dB	7	8	9	10	11	12	13
Type		PAD 14	PAD 15	PAD 16	PAD 17	PAD 18	PAD 19	PAD 20
Article No.	1016	0372	0373	0374	0375	0376	0377	0378
Attenuation	dB	14	15	16	17	18	19	20

Length 11,4 mm (0,45")

Type		PAD 0 L	PAD 1 L	PAD 2 L	PAD 3 L	PAD 4 L	PAD 5 L	PAD 6 L
Article No.	1016	0523	0524	0525	0526	0527	0528	0529
Attenuation	dB	0	1	2	3	4	5	6
Type		PAD 7 L	PAD 8 L	PAD 9 L	PAD 10 L	PAD 11 L	PAD 12 L	PAD 13 L
Article No.	1016	0530	0531	0532	0533	0534	0535	0536
Attenuation	dB	7	8	9	10	11	12	13
Type		PAD 14 L	PAD 15 L	PAD 16 L	PAD 17 L	PAD 18 L	PAD 19 L	PAD 20 L
Article No.	1016	0537	0538	0539	0540	0541	0542	0543
Attenuation	dB	14	15	16	17	18	19	20

Length 25,4 mm (1")



- Attenuator pad
- For variable equalization and attenuation
- For all amplifier with pad plug-in places (BKD, LVD, LHD)




Type	DRS 8620	
Article No.	5700 1269	
Frequency range	MHz	47-862
Attenuation	dB	0...20



## MOUNTING ACCESSORIES FOR HUTH-SYSTEM




Type	BKD-EC	LHD-EC
Article No.	1016 1229	1016 1379
Application	BKE, BKD	LHD, LHA, NVE
Packing contents	1 Mounting-Kit	2 Mounting-Kits, 1 Huth-bar




## CONNECTOR ACCESSORIES PG 11

Type	PG11m-Ff	PG11m-IECf	PG11m-3,5/12f	PG11m 3,5/12f
				
Article No.	5700 1082	1016 1203	5700 1141	5700 1291
Description	PG 11 - adapter PG 11 / F female	PG 11 - adapter PG 11 / IEC female	PG 11 - adapter PG 11 / 3,5/12 female	PG 11 - adapter PG 11 / 3,5/12 female
Length inner conductor	47 mm	17 mm	47 mm	17 mm

Type	PG 11m-5/8f	PG 11 PC
		
Article No.	1016 1204	1016 1205
Description	PG 11 - adaptor PG 11 / 5/8"	PG 11 port cap

Type	A025-PG11m	B004-PG11m	B004-Fm	B004-SPL
				
Article No.	5700 1019	5700 1023	5700 1011	5700 1016
Description	PG 11 - cable fitting	PG 11 - connector	5/8" cable fitting	cable splice
Useable for cable type, dimensions	7,0 mm	RG 11	1,6 / 10,0 / 10,1 mm	1,6 / 10,0 / 10,1 mm
Frequency range MHz	5 - 2200	5 - 2200	5 - 2200	5 - 2200
Shielding rate dB	> 110	> 110	> 110	> 110

Type	A025-5/8m	D015-5/8m	B071-5/8m	G003-5/8m	B004-5/8m
					
Article No.	5700 1024	5700 1025	5700 1026	5700 1027	5700 1028
Description	5/8" cable fitting	5/8" cable fitting	5/8" cable fitting	5/8" cable fitting	5/8" cable fitting
Useable for cable type	7,0 mm	nx	ikx	qkx	RG 11
Frequency range MHz	5 - 2200	5 - 2200	5 - 2200	5 - 2200	5 - 2200
Shielding rate dB	> 110	> 110	> 110	> 110	> 110

## BROADBAND DISTRIBUTION CABINETS PROFI-LINE “BVT”



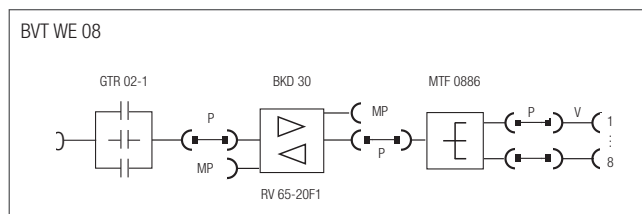
- Complete mounted broadband distribution cabinets, plug-and-play
- Each cabinet contains an amplifier with active return path, output splitter, patch-cable and 230 V~ power outlet
- Types with output splitter or taps available
- Contains a galvanic isolator to prevent equalizing currents between different potentials. With integrated surge and burst protection on request (e.g. KBW-Ausstattung)
- Robust and lockable steel cabinets

Type		BVT WE 04	BVT WE 06	BVT WE 08	BVT WE 10	BVT WE 12	BVT WE 14
Article No.		1016 1545	1016 1546	1016 1547	1016 1548	1016 1549	1016 1550
Output		4	6	8	10	12	14
Type of amplifier		BKD 30	BKD 30	BKD 30	BKD 35	BKD 35	BKD 35
Gain max.	dB	17	17	17	21	21	17,5
Output level max.*	dB $\mu$ V	86	86	86	90	90	86,5
Dimensions	cm	30 x 40 x 15	30 x 40 x 15	30 x 40 x 15	40 x 60 x 20	40 x 60 x 20	40 x 60 x 20
Weight	kg	10	10	10	19	19	19

\* Specification at transfer point level of > 69 dB $\mu$ V

Type		BVT WE 16	BVT WE 18	BVT WE 20	BVT WE 22	BVT WE 24
Article No.		1016 1551	1016 1552	1016 1553	1016 1554	1016 1555
Output		16	18	20	22	24
Type of amplifier		BKD 35	BKD 35	BKD 35	BKD 35	BKD 35
Gain max.	dB	17,5	17,5	17,5	17,5	17,5
Output level max.*	dB $\mu$ V	86,5	86,5	86,5	86,5	86,5
Dimensions	cm	40 x 60 x 20	40 x 60 x 20	40 x 60 x 20	40 x 60 x 20	40 x 60 x 20
Weight	kg	19	19	19	19	19

\* Specification at transfer point level of > 69 dB $\mu$ V



- The specified cabinet types are only one part of an extensive DELTA assortment, further types or special specifications on request.



## SURGE AND BURST ABSORBER

- Surge and burst charge diminator
- Direct screwable at in- and output of the equipment which should be protected



Type		ÜSA 45
Article No.		5700 1221
Frequency range	MHz	1000
Through loss	dB	0,7
Discharge voltage	V	max. 4.500
For max. output level		126 dB $\mu$ V / IMA <sub>2</sub> (DIN 45004A1)
(60 dB IMA)		125 dB $\mu$ V / IMA <sub>3</sub> (DIN 45004AB)
Dimensions	mm	44 x 48 x 24

## GALVANIC ISOLATOR

- For prevention of equalizing currents between different potentials
- Capacitive separation of inner and outer conductor between input and output
- With surge and burst protection up to 2 kV



Type		GTR 02-1
Article No.		1016 1670
Frequency range	MHz	5-1000
Through loss	dB	0,5 ... 1,0
Linearity	dB	$\pm$ 0,5
Proof voltage	kV	2 (between in- and output potentials)
Dimensions	mm	60 x 30 x 38

## RETURN PATH REJECTION FILTER

- FSP NIF 01: rejection filter for "Internet & Phone Only"
- FHP 8-65: for rejection of return path or intermodulation products and noise



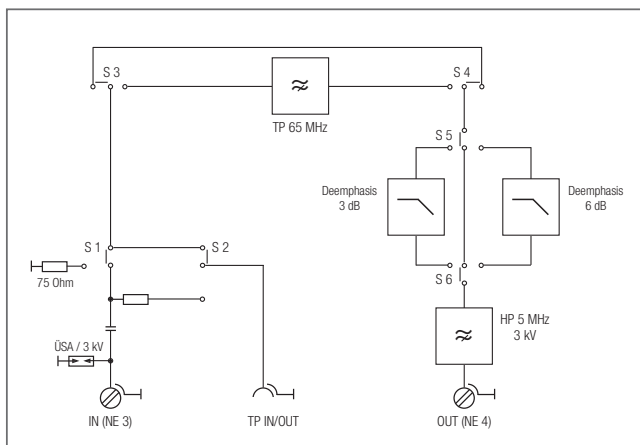
Type		FSP NIF 01	FHP 8-65
Article No.		5700 1349	5700 0989
Transit range	MHz	0-65, 542-862 (return path, K 30 - K 69)	86-862 (FM - K 69)
Through loss	dB	0,5	< 1
Rejection range	MHz	87,5-518 (FM - K 26)	0-65 (return path)
Rejection loss	dB	> 50	> 50
Dimensions	mm	67 x 20 x 49 (WxHxD)	42,4 x 12,5 (LxØ)

## CATV-BUILDING TRANSFER POINT PROFI-LINE



- For connection of the CATV network (NE 3) with the house distribution network (NE 4)
- Die-cast housing, IP 54
- Frequency range 5-862 MHz
- Return path rejection filter, switchable
- Capacitive separation of the inner conductor
- Adjustable de-emphasis slope
- With surge- and burst arrester
- Testpoint, between input and output switchable
- Fully protected with plastic housing
- Seal protection against unauthorized opening

Type		HÜP 862 D	
Article No.		5700 1434	
Frequency range	MHz	5-862 without return path rejection	85-862 with return path rejection
Rejection loss 5-65 MHz	dB	—	40
Through loss	dB	0,8	
Linearity	dB	± 0,5	
Isolation I/O at S1 at 75 Ohm	dB	50	
Deemphase at 470-862 MHz	dB	0 / 3 / 6 switchable	
Surge- and burst protection	kV	3	
Testpoint		1 F female (between in- and output switchable)	
Dimensions	mm	100 x 90 x 45	
Weight	kg	0,3	
Termination NE3		75 Ohm (connectable)	
Return loss	dB	-20 dB at 40 MHz / -1,5 dB/Octave	



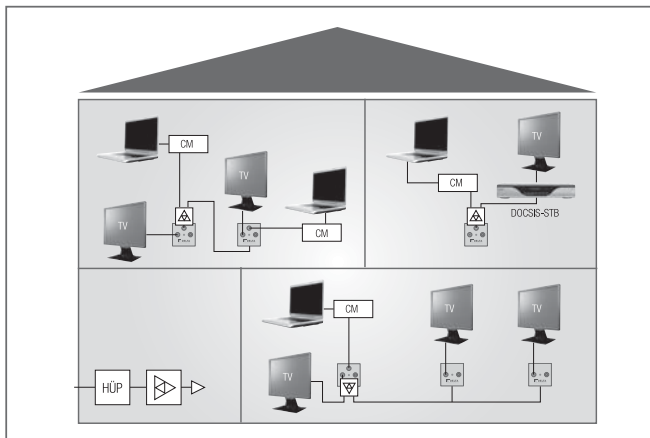


## 2-WAY APARTMENT DISTRIBUTION AMPLIFIER

- Apartment distribution amplifier with integrated return path
- Ideal for multimedia or DOCSIS usage, modem, TV or STB extensions
- For direct mounting on multimedia sockets
- Active distribution onto a cable modem and extended multimedia socket
- RF- connections: F-socket, F-plug
- With plug-in power supply



Type		ZGV 12-65
Article No.		5700 1462
Input		1
Output		2
Downstream	Frequency range	MHz 85 - 862
	Gain	dB 12
	Noise figure	dB 4,5
	Linearity	dB ± 0,5
	Output level	
	IMA 2 -60 dB	dBµV 93
	IMA 3 -60 dB	dBµV 110
Upstream	Frequency range	MHz 5 - 65
	Gain	dB -5
	Linearity	dB ± 0,7
Operating voltage		V~ 230
Remote current max.		W 0,5
Connector		2 x F-sockets, 1 x F-plug
Dimensions / Weight		mm/kg 44 x 48 x 24 / 0,6



### Example of use:

Ideal for the expansion of multi-media sockets in case of low signal levels. For additional connection of a cable modem or a set-top box with integrated cable modem. Also suitable for the connection of further sockets.

## DIGITAL CABLE-RECEIVER DVB-C/HDTV



- **CDR 3200:** Digital CI cable receiver for the reception of cable TV/Radio programs
- 2 Common-Interface slots (CI)
- Integrated card reader for Conax based Pay-TV offers
- **CDR 7200 HD:** HDTV CI cable receiver for the reception of high definition cable TV/Radio programs
- 2 Common-Interface slots (CI)
- Integrated card reader for Conax based Pay-TV offers

Type	CDR 3200	CDR 7200 HD
Article No.	5700 1340	5700 1356
Description	DVB-C-Receiver	DVB-C-HDTV-Receiver
System type	DVB-C	HDTV DVB-C
No. of tuners / input frequency range MHz	1 / 47 - 862	1 / 47 - 862
Demodulation	16, 64, 128, 256 QAM	16, 64, 128, 256 QAM
RF-Modulator (C21-C69)	1	1
Video decoding	MPEG-2	MPEG-2/4, MPEG-2, H.264/AVC
Video bit rate Mbit/s	1,5 - 15	1,5 - 15
Sampling rate kHz	32 / 44,1 / 48	32 / 44,1 / 48
Common interface slots (CI)	2	2
Card reader	Conax	Conax
Display	VFD alphanumeric, 12-digit	VFD alphanumeric, 12-digit
Channel memory positions	4000	4000
Multi-languages on-screen display	■	■
Electronic programme guide EPG	■	■
Programme scan	■	■
Programmable channel lists	■	■
Favourite channel lists	■ / 8	■ / 8
Videotext decoder/page memory	■ / 100	■ / 800
Picture format recognition	16:9, 4:3, Pan Scan, Letterbox	16:9, 4:3, Pan Scan, Letterbox
EPG programmable timers	8	8
Software-Update	RS 232	RS 232
Child protection (channel block function)	■	■
Mains switch	■	■
Connections		
Scart-(RGB-YUV)	■ / 2	■ / 2
HDMI / YPbPr	- / -	■ / ■
Optical S/PDIF, Dolby Digital	■	■
Audio- / Video- output (RCA)	2	2
RS 232	1 / -	1 / -
Mains voltage V~	90 - 240	90 - 240
Power consumption operation/standby W	25 / 9	27 / 13
Dimensions / Weight mm/kg	360 x 60 x 280 / 2,6	360 x 60 x 280 / 2,6