

UA 1000 F Compact Universal Extended Broadband Amplifier production G02

Description

Universal amplifier UA 1000 F can be used for broadband distribution of RF signals in CATV systems in the frequency range 85 - 1000 MHz.

The final stage of the amplifier is designed in GaAs technology. This provides an optimum relation between power consumption and channel load.

The amplifier is suitable for distribution of the return path. The use of the return path (5-65 MHz) can be configured by jumpers.

Input and RF output 1 are provided with test sockets (RF output 2 upon request).

Attenuation, equalization and other functions can be activated by means of plug-in modules. This guarantees a stable setting during a long period.

The remote power supply is protected by a self recovering fuse.

Housing is made of die-cast aluminium and offers protection according to IP54. This type of housing guarantees optimal heat dissipation and perfect protection of the electronic components.



For optimal HF contact, the connectors are Cabelcon IEC 14F-FF (at the input) and F-61-HQ-1-01 (at both outputs). The connectors are mounted with sunken rubber O ring and soldered inner conductor.

Features

- Output splitter included for symmetrical outputs. No additional logistics are needed. Single output selectable by means of shifting the module one pin to the right.
- The plug-in modules (PIM ..) for attenuation and equalization can be changed without service interruption.
- No power consumption in returnpath amplifier when disabled.
- Ultra-high efficiency switch mode power supply (> 88%).
- Indicator for DC and AC supply voltages enabling fast diagnosis.
- Power factor corrector which reduces power loss in feeding-net by 75% (I^2R).
- Ceramic capacitors in switch mode power supply secondary site, significantly improving lifetime, reliability and EMI.
- Only electrolytic capacitor on input site, stress protected by PFC.

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General data

Dimensions HxWxD	:	115x190x85 mm
AC connection	:	AMP 6.3 mm
RF cable inlet	:	IEC/M14
Test sockets	:	IEC 169-2
RF outputs	:	F
Earthing connection	:	AMP 6.3 mm
Nominal temperature range	:	-20...+55°C
Maximum temperature range	:	-20...+70°C
Transient AC power port protection	:	1 kV, EN 50083-2 4-7, EN 61000 4-4
ESD	:	4 kV, EN 50083-2 4-6, EN61000 4-2 ESD encl.
EMC	:	EN 50083-2
Overvoltage protection acc. EN 61000 4-5	:	2 kV, 1.2µs/50µs surge to RF ports, every port
Hum modulation, at maximum current 2,5 A, according EN 50083-3	:	≥ 65 dB (10-65 MHz), ≥ 70 dB (85-862 MHz)
Screening	:	≥ 85 dB
Ordering type	:	UA 1000 F, artnr: 695.004.464

Technical data *

Frequency range	:	
Forward	:	85...1000 MHz
return path	:	5...65 MHz
Gain	:	2x30 dB ± 0.5 dB (862 MHz)
Flatness (90-700 MHz)	:	≤ ± 0.5 dB
Flatness (700-862 MHz)	:	≥ - 0.5 dB and ≤ + 0.7 dB
Variation in gain per °C, -20...+55°C	:	≤ 0.023 dB
Group delay	:	≤ 2.5 ns (B=4.43 MHz, f _g ≥ 90 MHz)
Return loss	:	≥ 18 dB at 40 MHz- 1.5 dB/octave to 862 MHz
Impedance	:	75 Ohm
Test socket MP RF-in	:	-20 ± 1.5 dB, bidirectional
Test socket MP OUT1	:	-20 ± 1 dB unidirectional; 75 ohm
Noise figure (at max. gain)	:	≤ 5.5 dB max ≤ 6.5 dB
Output level (for 2 RF-outputs)	:	
acc. to EN 50083-5 (IMA3= 60 dB)	:	≥ 2x120 dBµV
acc. to EN 50083-5 (IMA2= 60 dB)	:	≥ 2x115 dBµV
42 channels CENELEC (CTB= 60 dB)	:	≥ 2x105 dBµV
42 channels CENELEC (CSO= 60 dB)	:	≥ 2x108 dBµV
Attenuation, input	:	0...25 dB, plug-in module PIM, step 1 dB
Equalization, input, see table	:	0...21 dB, plug-in module PIM, step 1 dB
Equalization, input	:	0,12 dB, via jumpers
Equalization, interstage	:	0,8 dB, via jumpers

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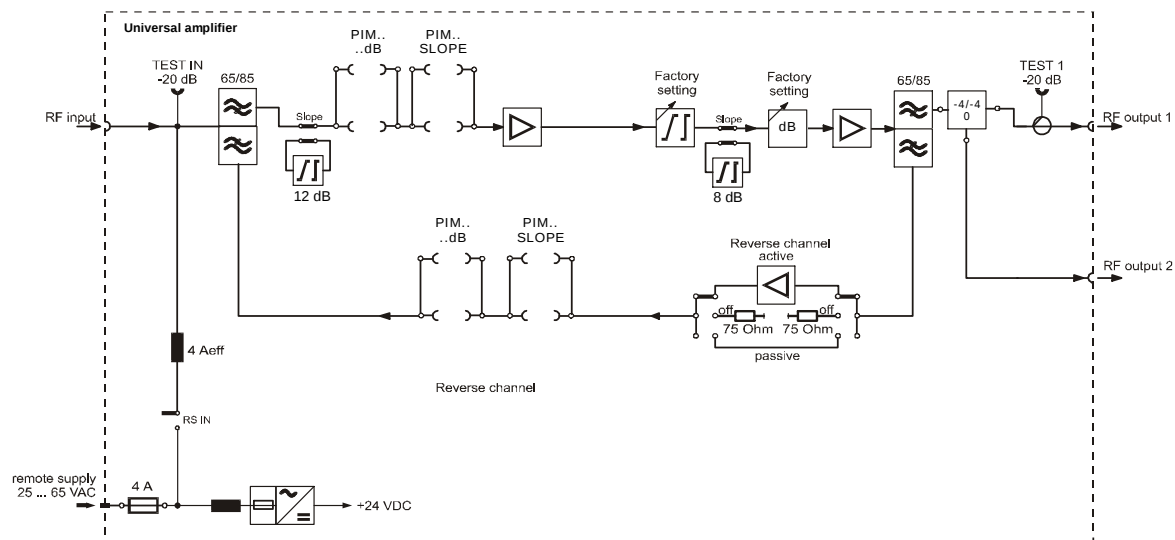
Remote power supply	
supply voltage	: 25...65 VAC sine, 30...75 VAC block
frequency	: 48...62 Hz
Power consumption, remote supply	: ≤ 8.5 W (passive return path)
(at 50 VAC)	: ≤ 9.5 W (active return path)
Max. AC input current RF input	: 3 A
Max. AC output current AMP 6.3 mm	: 2.5 A

Return path

Diplexfilter	: 5...65/85...1000 MHz
Upstream active	: 2x16 dB ± 2 dB
Upstream passive	: 2x-6.5 dB (>60 MHz, <65 MHz 2x-7.5 dB)
Upstream set off by jumpers	: 75 Ohm termination resistors
Group delay	: ≤ 25 ns (B=3.2 MHz, f= 60 MHz)
Noise figure (at max. Gain with splitter)	: ≤ 8.5 dB (>60 MHz, <65 MHz ≤ 10 dB)
Output level (max.)	
acc. to EN 50083-5 (IMA3= 60 dB)	: ≥ 114.5 dBμV
acc. to EN 50083-5 (IMA2= 60 dB)	: ≥ 110 dBμV
Attenuation	: 0...25 dB, plug-in module, step 1 dB
Equalization, see table	: 0...10 dB, plug-in module, step 1 dB

*Technical data,
at room temperature range

Block diagram of the Compact Universal Extended Broadband Amplifier UA 1000 F



Remark: Plug-in modules (PIM..) for attenuation and equalization can be changed without service interruption.

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PIM module	Equalization 85-862 MHz, dB	Loss @ 85 MHz, dB	Loss @ 862 MHz, dB		PIM module	Equalization 5-65 MHz, dB	Loss @ 5 MHz, dB	Loss @ 65 MHz, dB
PIM 00	0,0	0,0	0,0		PIM 00	0,0	0,0	0,0
PIM 01	0,8	-1,0	-0,2		PIM 01	1,0	-1,0	0,0
PIM 02	1,5	-1,9	-0,4		PIM 02	1,9	-1,9	0,0
PIM 03	2,3	-2,9	-0,6		PIM 03	2,9	-2,9	0,0
PIM 04	3,2	-3,9	-0,7		PIM 04	3,9	-3,9	0,0
PIM 05	4,0	-4,8	-0,8		PIM 05	4,8	-4,8	0,0
PIM 06	4,9	-5,8	-0,9		PIM 06	5,8	-5,8	0,0
PIM 07	5,8	-6,7	-0,9		PIM 07	6,8	-6,8	0,0
PIM 08	6,8	-7,7	-0,9		PIM 08	7,7	-7,8	-0,1
PIM 09	7,7	-8,6	-0,9		PIM 09	8,6	-8,7	-0,1
PIM 10	8,6	-9,6	-1,0		PIM 10	9,6	-9,7	-0,1
PIM 11	9,5	-10,5	-1,0		PIM 11	10,5	-10,6	-0,1
PIM 12	10,5	-11,5	-1,0		PIM 12	11,4	-11,5	-0,1
PIM 13	11,4	-12,4	-1,0					
PIM 14	12,3	-13,3	-1,0					
PIM 15	13,1	-14,1	-1,0					
PIM 16	14,0	-15,0	-1,0					
PIM 17	14,9	-15,9	-1,0					
PIM 18	15,7	-16,7	-1,0					
PIM 19	16,5	-17,5	-1,0					
PIM 20	17,3	-18,3	-1,0					
PIM 21	17,9	-18,9	-1,0					
PIM 22	18,7	-19,7	-1,0					
PIM 23	19,6	-20,6	-1,0					
PIM 24	20,0	-21,0	-1,0					
PIM 25	20,5	-21,5	-1,0					

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Table with 12 dB equalization at input activated			
PIM module	Equalization 85-862 MHz, dB	Loss @ 85 MHz, dB	Loss @ 862 MHz, dB
PIM 00	10,8	-12,2	-1,4
PIM 01	11,6	-13,2	-1,6
PIM 02	12,3	-14,1	-1,8
PIM 03	13,2	-15,1	-1,9
PIM 04	14,0	-16,1	-2,1
PIM 05	15,0	-17,1	-2,1
PIM 06	15,8	-18,0	-2,2
PIM 07	16,6	-18,9	-2,3
PIM 08	17,6	-19,9	-2,3
PIM 09	18,5	-20,8	-2,3
PIM 10	19,5	-21,8	-2,3
PIM 11	20,4	-22,7	-2,3
PIM 12	21,3	-23,7	-2,4
PIM 13	22,2	-24,6	-2,4
PIM 14	23,2	-25,5	-2,3
PIM 15	24,0	-26,4	-2,4
PIM 16	24,9	-27,3	-2,4
PIM 17	25,7	-28,1	-2,4
PIM 18	26,5	-28,9	-2,4
PIM 19	27,3	-29,7	-2,4
PIM 20	28,1	-30,5	-2,4

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Plug-in modules

art. nr.

PIM 00, passive pl-in mod., 0 dB	695.004.400
PIM 01, passive pl-in mod., 1 dB	695.004.401
PIM 02, passive pl-in mod., 2 dB	695.004.402
PIM 03, passive pl-in mod., 3 dB	695.004.403
PIM 04, passive pl-in mod., 4 dB	695.004.404
PIM 05, passive pl-in mod., 5 dB	695.004.405
PIM 06, passive pl-in mod., 6 dB	695.004.406
PIM 07, passive pl-in mod., 7 dB	695.004.407
PIM 08, passive pl-in mod., 8 dB	695.004.408
PIM 09, passive pl-in mod., 9 dB	695.004.409
PIM 10, passive pl-in mod., 10 dB	695.004.410
PIM 11, passive pl-in mod., 11 dB	695.004.411
PIM 12, passive pl-in mod., 12 dB	695.004.412
PIM 13, passive pl-in mod., 13 dB	695.004.413
PIM 14, passive pl-in mod., 14 dB	695.004.414
PIM 15, passive pl-in mod., 15 dB	695.004.415
PIM 16, passive pl-in mod., 16 dB	695.004.416
PIM 17, passive pl-in mod., 17 dB	695.004.417
PIM 18, passive pl-in mod., 18 dB	695.004.418
PIM 19, passive pl-in mod., 19 dB	695.004.419
PIM 20, passive pl-in mod., 20 dB	695.004.420
PIM 21, passive pl-in mod., 21 dB	695.004.421
PIM 22, passive pl-in mod., 22 dB	695.004.422
PIM 23, passive pl-in mod., 23 dB	695.004.423
PIM 24, passive pl-in mod., 24 dB	695.004.424
PIM 25, passive pl-in mod., 25 dB	695.004.425

Output(s):

Two outputs: Splitter 2x 4 dB module (included).

One output: Shifting the above module one pin to the right.

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