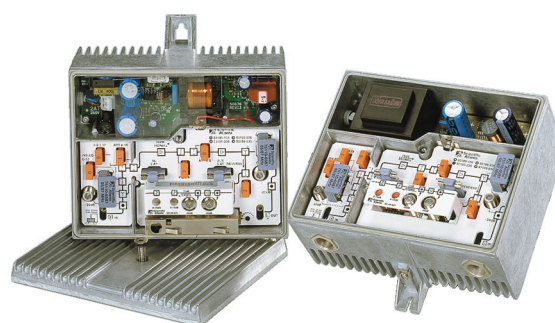


Compact Advanced Mini Amplifiers Type 93189 and 93199

Description

The Scientific-Atlanta Compact Advanced Mini Amplifiers type 93189 and 93199 are small, cost-effective amplifiers that address the divergent needs of today's broadband networks. These next-generation Advanced Compact Mini Amplifier in 28 and 36 dB gain versions offer new and enhanced features for cable operators. In addition, GaAs-FET technology is utilized for longer system reach and superior distortion performance. A compact design and low power consumption enable these high-performance advanced mini amplifiers to make significant contributions to efficient end-of-line applications.

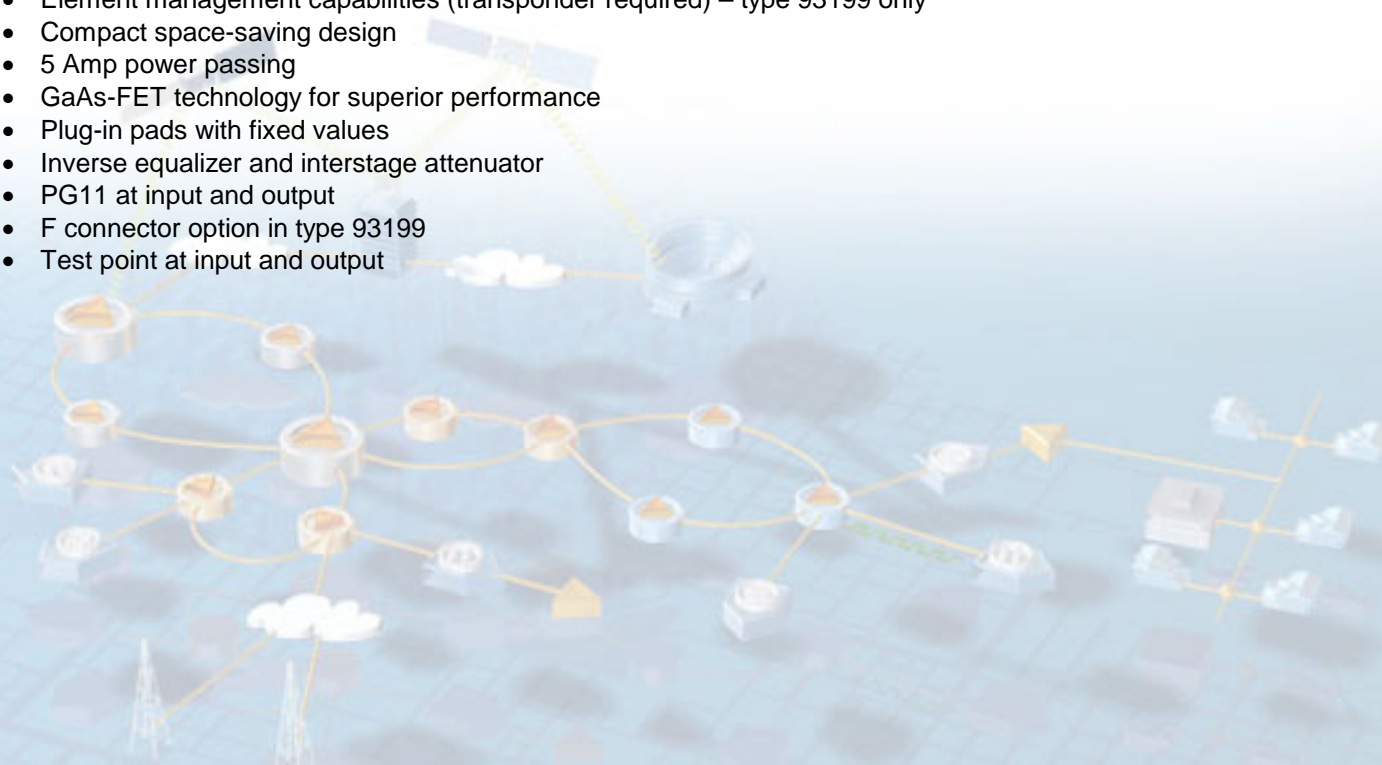


The Compact Advanced Mini Amplifiers share common plug-in accessories to lower your cost of spares. All attenuators, equalizers and inverse equalizers are plug-in pads with fixed values to provide maximum user friendliness. In case it is necessary to replace an amplifier in the network, this is easily done as the pads are simply moved to the new amplifier.

The types 93189 and 93199 amplifiers are similar except for the element management capabilities and higher output level of type 93199. The Advanced Compact Mini Amplifier type 93199 can be configured with a Scientific-Atlanta transponder (Compact SMC or HMS) to enable remote monitoring of vital amplifier parameters and remote control of the built-in 3-state reverse switch. By switching to detection mode (-6 dB) it can be observed from which part of the network the ingress derives. Once a failure has been located, the defective network segment may be isolated until the failure has been eliminated and the remaining part of the reverse path is ensured normal traffic.

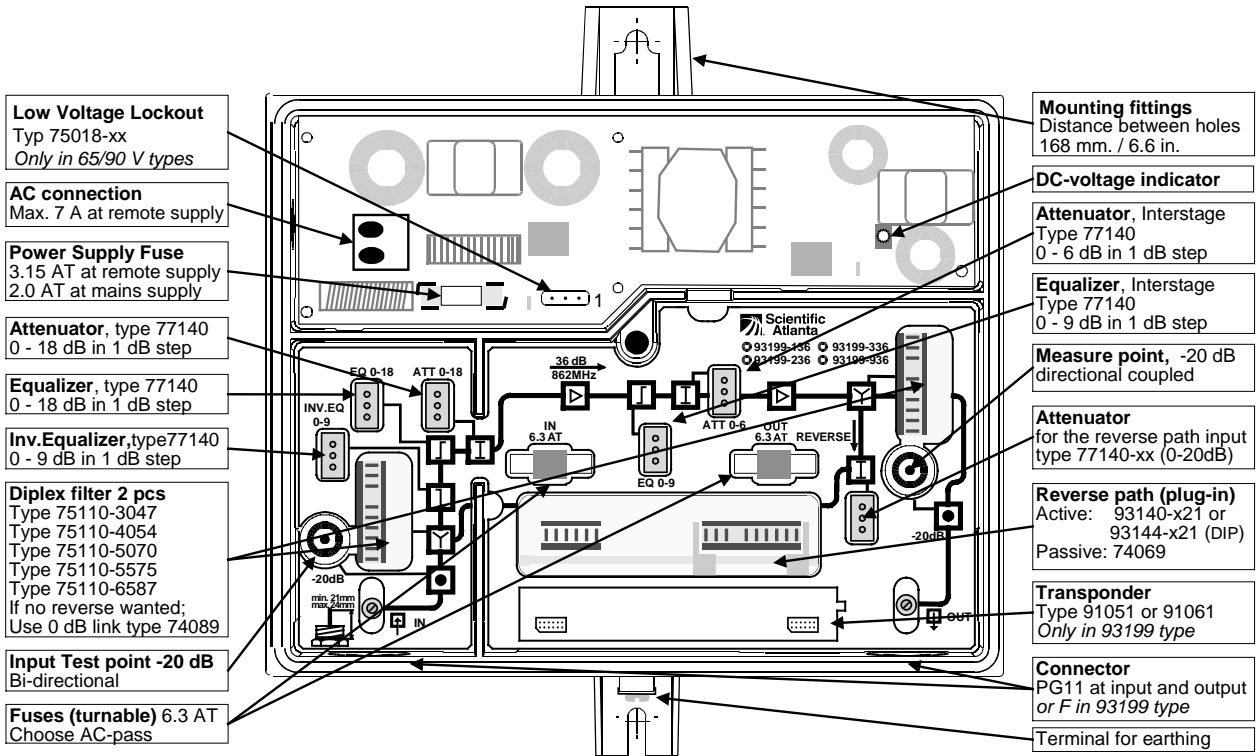
Features

- Built-in 3-state reverse switch (on/-6 dB/off) – type 93199 only
- Element management capabilities (transponder required) – type 93199 only
- Compact space-saving design
- 5 Amp power passing
- GaAs-FET technology for superior performance
- Plug-in pads with fixed values
- Inverse equalizer and interstage attenuator
- PG11 at input and output
- F connector option in type 93199
- Test point at input and output

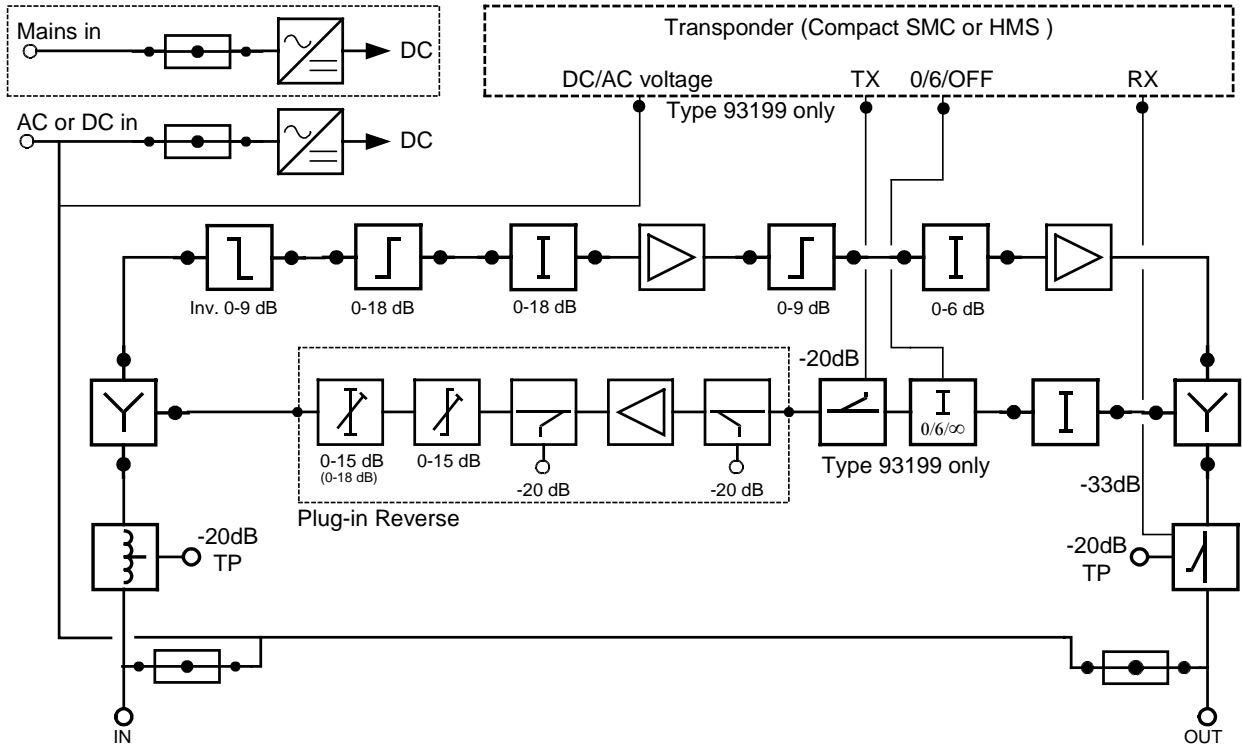


Compact Advanced Mini Amplifiers 93189 and 93199

Overview



Block Diagram



Compact Advanced Mini Amplifier 93189

Specifications

General Performance	Units	93189-x28	93189-x36	Notes
Forward path	MHz	40 - 862		1
Reverse path	MHz	5 - 80		1
Gain	dB	28	36	
Flatness	dB	± 0.75		
Attenuator, plug-in	dB	0 - 18		
Equalizer, plug-in	dB	0 - 18		
Inverse equalizer, plug-in	dB	0 - 9		
Output tilt, plug-in	dB	0 - 9		
Interstage attenuator, plug-in	dB	0 - 6		
Number of outputs		1		
Return loss, 5 - 40 MHz	dB	20		
Return loss, 40 - 862 MHz	dB	20 red. 1.5 / octave		
Passive reverse loss, with 74069	dB	< 1.9		
Output level; CTB ≥ 60 dB, typical	dBμV	111.0	111.0	2
Output level; CSO ≥ 60 dB, typical	dBμV	110.0	111.5	2
Noise figure	dB	≤ 8.5	≤ 7.0	
Electrical				
Supply voltage, mains powered	V AC	207 - 244		
Remote (coax line)	V AC	24 - 65		
Power consumption mains powered	W	10.5		3
Power consumption remote powered	W	9.0		3
Current consumption, 24 V AC, fully loaded	mA	< 550		
Current consumption, 42 V AC, fully loaded	mA	< 330		
Current consumption, 60 V AC, fully loaded	mA	< 230		
Max. current, local insertion	A AC	7		
Max. current, input/output	A AC	5		
Hum modulation, at max. current	dB	< - 65		4
Over voltage protection	μs	6 kV, 1.2 /50		
Environmental				
Operating temperature range	°C	-20 to +55		
Mechanical				
Connectors, input, output		PG 11 (5/8")		
Connectors, test points		F		
Housing dimensions, excl. mounting fittings	mm	185 W x 145 H x 95 D		
Emission, EN 50083-2	dBpW	< 20		
Screening efficiency	dB	> 85		
Enclosure category		IP 66		
Weight	kg	< 2.2		
All specifications are measured with 0 dB link 74089 at the filter connectors.				
Notes:				
1) Frequency range depends on the diplex filters				
2) CTB/CSO is measured with 6 dB pre-equalizer, EN 50083-3.2.				
3) Exclusive active reverse; for active reverse add 1.5 W				
4) 15 – 862 MHz				

Compact Advanced Mini Amplifier 93199

Specifications

General Performance	Units	93199-x28	93199-x36	Notes
Forward path	MHz	40 - 862		1
Reverse path	MHz	5 - 80		1
Gain	dB	28	36	
Flatness	dB	± 0.75		
Attenuator, plug-in	dB	0 - 18		
Equalizer, plug-in	dB	0 - 18		
Inverse equalizer, plug-in	dB	0 - 9		
Output tilt, plug-in	dB	0 - 9		
Interstage attenuator, plug-in	dB	0 - 6		
Number of outputs		1		
Return loss, 5 - 40 MHz	dB	20		
Return loss, 40 - 862 MHz	dB	20 red. 1.5 / octave		
Passive reverse loss, with 74069	dB	< 3.2		
3-state reverse switch, Element Management controlled	dB	on / -6 / off		
Output level; CTB ≥ 60 dB, typical	dBμV	113.0	113.0	2
Output level; CSO ≥ 60 dB, typical	dBμV	113.0	118.0	2
Noise figure	dB	≤ 8.5	≤ 7.0	
Electrical				
Supply voltage, mains powered	V AC	187 - 250		
Remote (coax line)	V AC	24 - 65		
Power consumption mains powered	W	13.5		3
Power consumption remote powered	W	13.5		3
Current consumption, 24 V AC, fully loaded	mA	< 917		
Current consumption, 40 V AC, fully loaded	mA	< 540		
Current consumption, 60 V AC, fully loaded	mA	< 360		
Max. current, local insertion	A AC	7		
Max. current, PG11 input/output	A AC	5		
Max. current, F connector input/output	A AC	3		
Hum modulation, at max. current	dB	< - 65		4
Over voltage protection	μs	6 kV, 1.2 / 50		
Environmental				
Operating temperature range	°C	-20 to +55		
Mechanical				
Connectors, input, output		F or PG11 (5/8")		
Connectors test points		F		
Housing dimensions, excl. mounting fittings	mm	185 W x 145 H x 95 D		
Emission, EN 50083-2	dBpW	< 20		
Screening efficiency	dB	> 85		
Enclosure category		IP 66		
Weight	kg	< 2.2		
All specifications are measured with 0 dB link 74089 at the filter connectors.				
Notes:				
1) Frequency range depends on the duplex filters				
2) CTB/CSO is measured with 6 dB pre-equalizer, EN 50083-3.2.				
3) Exclusive active reverse and transponder; for active reverse add 1.5 W, for transponder add 3.0 W				
4) 15 – 862 MHz				

Compact Advanced Mini Amplifiers 93189 and 93199

Ordering Information

Description	Part Number
93189 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, 230 V, plug-in attenuator and equalizer, PG11 at input/output	A93189.10228
93189 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, 65 V, plug-in attenuator and equalizer, PG11 at input/output	A93189.10328
93189 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, 230 V, plug-in attenuator and equalizer, PG11 at input/output	A93189.10236
93189 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, 65 V, plug-in attenuator and equalizer, PG11 at input/output	A93189.10336
93199 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, high level output, 230 V, plug-in attenuator and equalizer, PG11 at input/output, plug-in transponder	A93199.10228
93199 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, high level output, 65 V, plug-in attenuator and equalizer, PG11 at input/output, plug-in transponder	A93199.10328
93199 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, high level output, 230 V, plug-in attenuator and equalizer, PG11 at input/output, plug-in transponder	A93199.10236
93199 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, high level output, 65 V, plug-in attenuator and equalizer, PG11 at input/output, plug-in transponder	A93199.10336
93199 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, high level output, 230 V, plug-in attenuator and equalizer, F at input/output, plug-in transponder	A93199.12228
93199 Compact Advanced Mini Amplifier, 862 MHz, 28 dB, high level output, 65 V, plug-in attenuator and equalizer, F at input/output, plug-in transponder	A93199.12328
93199 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, high level output, 230 V, plug-in attenuator and equalizer, F at input/output, plug-in transponder	A93199.12236
93199 Compact Advanced Mini Amplifier, 862 MHz, 36 dB, high level output, 65 V, plug-in attenuator and equalizer, F at input/output, plug-in transponder	A93199.12336

Required Accessories for Compact Amplifier 93189 and 93199

Below table contains ordering information for required and optional accessories that are not included as part of a 93189 and 93199 basic amplifier. Please consult your account representative or customer service for ordering assistance.

*The following **Required Accessories** must be ordered separately:*

Required Accessories	Part Number
Plug-in Pads (attenuators) - available in 1.0 dB steps from 0 to 20 dB <ul style="list-style-type: none"> • 3 required for forward attenuator + equalizer + inverse equalizer • 2 required for interstage attenuator + equalizer • 1 required for reverse input 	A77140.00xx A77140.00xx A77140.00xx
Plug-in Diplex Filter <ul style="list-style-type: none"> • 2 required, xx/yy MHz split 	A75110.10xxyy
Plug-in Reverse Amplifier <ul style="list-style-type: none"> • 1 required x MHz reverse band (passive reverse) (no reverse)	A93140.10x21 or A93144.10x21 A74069.10 A74150.1012
For more information on the above, see the "Compact Amplifier and Node Accessories" (P/N: A541441) data sheet.	

Compact Advanced Mini Amplifiers 93189 and 93199

Optional Accessories for Compact Amplifier 93189 and 93199

The following **Optional Accessories** for amplifiers 93189 and 93199 may be ordered separately:

Optional Accessories	Part Number
Plug-in Compact Transponder – type 93199 only	A91051.11
Plug-in HMS Transponder – type 93199 only	A91061.10
Voltage Lock-Out Module*, 24 or 35 V	A75018.00xx
*The 35 V Lock-Out Module is standard with all 90 V power supplies.	
For additional information on the status monitoring transponders, see the “Compact Transponder” (P/N: A541381) and “HMS Transponder” (P/N: A541440) data sheet(s).	



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