MODEL 9260

34Vp-p Differential / Dual Channel Signal Amplifier

- 45MHz bandwidth
- High amplitude to 34Vp-p into 50Ω
- High output current drive to 1A
- Fast transition time of <10ns
- Low distortion
- Custom Configuration of:
  - Gain
  - Input impedance
  - Output configuration

The 9260 is a bench-top, 2U, half 19" rack size, fully metal case, dual channel DC coupled wideband amplifier designed for high frequency, high current, signal amplification. With a high bandwidth of 45MHz, 34Vp-p into 50 ohms and up to 10W output power, the 9260 is the ideal complimentary amplifier to any signal source that needs a supporting power boost for demanding applications.

High Current High Power

With a peak output current of 1A the 9260 enables a continuous power output of up to 10W, making it ideal for various pulse applications.

Instrument Configuration

The 9260 can be configured to be used as two, single-ended independent channels, or as a one input with two differential outputs. The 9260's standard configuration enables a maximum output voltage of 34Vp-p into 50 ohms with a gain of x10. Other custom gain, such as x15 can be ordered at the time of the purchase, enabling clients' even wider variety of choices to solve their application.

Output Characteristics

The outputs are located on the front panel. There are two outputs, one for each channel. When the 9260 is configured as two separate amplifiers, the outputs generate amplified signals within the range of 34Vp-p into matching load impedance at approximately 45MHz bandwidth.

Input Characteristics

The inputs to the amplifiers can be configured to match different source impedances such as 50Ω75Ωor 1MΩThere are three inputs for each channel:

1. Main input. This input is located on the front panel and is normally used for signal inputs.

2. Auxiliary input. This input is located on the rear panel and can be used as a summing input.

3. DC Offset input. This input is also located on the rear panel and can be used for offsetting the signal level within the specified output level window.

Auxiliaries

The 9260 has two additional inputs for each channel allowing summation of two signals and providing an external control of DC level offset. These inputs are accessible from the rear panel only.

Target Applications

While target applications include piezo-electronics, transducer characterization, MEMS, general electronics and scientific applications, the new 9260 is an ideal solution for virtually any wide bandwidth application that requires high voltage and high current amplification.

MODEL 9260

34Vp-p Differential / Dual Channel Signal Amplifier

Specification

CONFIGURATION

Channels: 2 with single-ended outputs; 1 with differential output

INPUT CHARACTERISTICS

MAIN INPUT

Connector: Front panel BNCs
Impedance: 50Ω75Ωor 1MΩ
Coupling DC or AC
Damage Level: 12Vp-p (-6V to +6V peaks)
Differential Mode Accuracy: 4%

INPUT AUXILIARY CHARACTERISTICS

Connector: Rear panel BNC
Impedance: 50Ω
Coupling DC
Damage Level: 12Vp-p (-6V to +6V peaks)

OFFSET AUXILIARY CHARACTERISTICS

Connector: Rear panel BNC
Impedance: 10kΩ
Coupling DC
Damage Level: ±2V
Accuracy: 7%

OUTPUT CHARACTERISTICS

GENERAL

Connector: Front panel BNC
Source Impedance: 0Ω
Coupling: DC or AC
Protection: Short-circuit & Thermal protection
Gain (50Ωload): x10(2), fixed
Polarity: Normal
Amplitude: 34Vp-p into matching impedance
Max. Output Current: 1A

SQUARE WAVE CHARACTERISTICS

Transition Time: <10ns (typ.)
Aberrations: <10%

SINE WAVE CHARACTERISTICS

Bandwidth (-3dB): 45MHz (typ.)
Frequency Range: DC to 45MHz

Harmonics Distortion (typ.):	**10Vp-p**	**25Vp-p**
1MHz	<-65dBc	<-54dBc
10MHz	<-50dBc	<-45dBc
30MHz	<-38dBc	<-30dBc

GENERAL

Voltage Range: 85VAC to 265VAC
Frequency Range: 47Hz to 63Hz
Power Consumption: 25W
Signal Ground: Grounded to case ground
Dimensions:
With Feet 315 x 102 x 395 mm (WxHxD)
Without Feet 315 x 88 x 395 mm (WxHxD)
Weight:
Without Package 3.5kg
Shipping Weight 4kg
Temperature:
Operating 0°C to 50°C
Storage -40°C to 70°C
Humidity: 80% RH, non condensing
Safety: CE Marked, IEC61010-1
Calibration: 1 year
Warranty (*): 3 years standard

ORDERING INFORMATION

34Vp-p Differential / Dual-Channel Signal Amplifier

MODEL **9260-10-50-D-S(1)**

Gain: 10, 15 or 20, fixed(2)
Input Impedance: 50 = 50Ω
75 = 75Ω
1M = 1MΩ
Coupling: D = DC
A = AC
Output Configuration: S = Two separated channels
D = Single channel with differential outputs(3)

(1) Standard Configuration
(2) Custom gain from x10 to x20 can be ordered however, bandwidth may change.
(3) Selectable by switch.
(4) Specification is given for the standard configuration only

(*) Standard warranty in India is 1 year.

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MODEL 9250

40Vp-p Differential / Dual Channel Signal Amplifier

- Large signal bandwidth to 15MHz
- Small signal bandwidth to 30MHz
- High amplitude to 40Vp-p (into high impedance)
- Slew rate to 500V/µs
- Low distortion
- Custom Configuration of:
  - Gain
  - Input impedance
  - Output impedance
  - Output configuration

The 9250 is a bench-top, 2U, half 19" rack size, fully metal case dual channel amplifier. The instrument can be configured to be used as two, single-ended independent channels, or as a one input with two differential outputs.

Input Characteristics

The inputs to the amplifiers can be configured to match different source impedances such as 50, 75, or 1M and the outputs can be configured to match different load impedances such as 50, 75, or 600.
There are three inputs for each channel:

1. Main input. This input is located on the front panel and is normally used for signal inputs.
2. Auxiliary input. This input is located on the rear panel and can be used as a summing input.
3. DC Offset input. This input is also located on the rear panel and can be used for offsetting the signal level within the specified output level window.

Output Characteristics

The outputs are located on the front panel. There are two outputs, one for each channel. When the 9250 is configured as two separate amplifiers, the outputs generate amplified signals within the range of 40Vp-p into open circuit or 20Vp-p into matching load impedance. The bandwidth of the outputs is around 15MHz for large signals. Small signal bandwidth can reach 30MHz.

Instrument Configuration

The 9250 can be configured as a differential amplifier. In this case, the channel 2 input is disabled and channel 1 input is amplified and distributed differentially to both outputs. In this case, channel 1 output generates in-phase signal while channel 2 outputs an inverted signal that has exactly 180 phase offset to the normal output. Full amplitude and bandwidth is preserved when the 9250 operates in differential mode. The output impedance of the differential outputs is modified to 25, 37.5, or 300 for differential drive of 50, 75, or 600 loads. Using the differential mode, the 9250 does not sacrifice accuracy, nor does it sacrifice bandwidth.

Auxiliaries

The 9250 has two additional inputs for each channel allowing summation of two signals and providing an external control of DC level offset. These inputs are accessible from the rear panel only.

Target Applications

The amplifier case was designed to stack on top or below other Tabor products. It can also be mounted alongside a Tabor generator in a standard 19" rack. The waveform-amplifier combo is an ideal solution for virtually any high-voltage, wide bandwidth application.

MODEL 9250

40Vp-p Differential / Dual Channel

Specification

CONFIGURATION

Channels:	2 with single-ended outputs; 1 with differential outputs

INPUT CHARACTERISTICS

Connector:	Front panel BNCs
Impedance:	50, 75 or 1M
Coupling	DC or AC
Damage Level:	12Vp-p (-6V to +6V peaks)
Frequency Range:	
DC to 15MHz	DC coupled, 50
40kHz to 15MHz	AC coupled, 50 /75
20Hz to 15MHz	AC coupled, 1M

OUTPUT CHARACTERISTICS

GENERAL

Connector:	Front panel BNC
Impedance:	
Single-Ended	50, 75, or 600
Differential	600
Coupling:	DC or AC
Protection:	Short-circuit, 10 seconds
Gain:	x10[2], fixed
Polarity:	Normal
Amplitude:	0 to 20Vp-p into matching impedance 0 to 40Vp-p into high impedance
Max. Output Current:	200mA into 50

SQUARE WAVE CHARACTERISTICS

Transition Time:	<22ns
Aberrations:	<7%

SINE WAVE CHARACTERISTICS

Bandwidth:	-3dB
Small Signal	30MHz, at 2Vp-p
Large Signal	15MHz, at 20Vp-p
Accuracy:	±(3% of full-scale amplitude range + 25mV), Square wave at 1KHz
Flatness (10Vp-p):	
DC to 1MHz	5%
1MHz to 15MHz	10%
THD:	0.1%, 10Hz to100kHz
Harmonics (10Vp-p):	
100kHz to 5MHz	<-50dBc
5MHz to 15MHz	<-40dBc

GENERAL

Voltage Range:	85VAC to 265VAC
Frequency Range:	47Hz to 63Hz
Power Consumption:	25W
Signal Ground:	Grounded to case ground
Dimensions:	
With Feet	315 x 102 x 395 mm (WxHxD)
Without Feet	315 x 88 x 395 mm (WxHxD)
Weight:	
Without Package	3.5kg
Shipping Weight	4kg
Temperature:	
Operating	0°C to 50°C
Storage	-40°C to 70°C
Humidity:	80% RH, non condensing
Safety:	CE Marked, IEC61010-1
Calibration:	1 year
Warranty (*):	3 years standard

ORDERING INFORMATION

40Vp-p Differential / Dual-Channel Signal Amplifier

MODEL	**9250-10-50-50-D-S[1]**
Gain:	10, 15 or 20, fixed[2]
Input Impedance:	50 = 50Ω 75 = 75Ω 1M = 1MΩ
Output Impedance:	50 = 50Ω 75 = 75Ω 600 = 600Ω
Coupling:	D = DC A = AC
Output Configuration:	S = Two separated channels D = Single channel with differential outputs[3]

[1] **Standard** Configuration

[2] Custom gain from x10 to x20 can be ordered however, bandwidth may change.

[3] Output impedance for differential drive is 600Ω only.

[4] Specification is given for the standard configuration only

[*] Standard warranty in India is 1 year.

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MODEL A10160

45MHz 34Vp-p Single Channel Signal Amplifier

- 45MHz bandwidth
- High amplitude to 34Vp-p into 50Ω
- High output current drive to 1A
- Fast transition time of <10ns
- Small footprint, all metal case
- Custom gain configuration
- Low distortion

Model A10160 is an ultra-small footprint, wideband, DC coupled amplifier designed for high frequency, high current, signal amplification. With a high bandwidth of 45MHz, 34Vp-p into 50 ohms and up to 10W output power, the A10160 is the ideal complimentary amplifier to any signal source that needs a supporting power boost for demanding applications.

Enhancing Performance

The A10160 was designed as a "Snap-On" accessory for the Tabor WaveXciter series and models WS8351/2, both having a maximum amplitude of 4Vp-p, which can be limiting for some applications, requiring higher voltage and current to drive their UUT. Combined with the A10160 the WX and WS models will now offer even higher abilities to solve demanding application requiring up to 45MHz signals at 34Vp-p into 50 ohms loads, without compromising their signal integrity.

High Current High Power

With a peak output current of 1A and 750mA continuous the A10160 enables a continuous power output of 7.5W, and a peak output power of up to 10W, making it ideal for various pulse applications.

Cost Effective Versatile Solution

While the A10160 was designed with the Tabor units in mind, it can be used as a standalone amplifier for any signal source. The A10160 offers a compatible, compact and cost effective solution for extending any signal source's power performance.

Optional Configurations

The A10160's standard configuration enables a maximum output voltage of 34Vp-p into 50 ohms with a gain of x10. Other custom gain, such as x15 or 20 can be ordered at the time of the purchase, enabling clients' even wider variety of choices to solve their application.

Target Applications

While target applications include piezo-electronics, transducer characterization, MEMS, general electronics and scientific applications, the new A10160 is an ideal solution for virtually any wide bandwidth application that requires high voltage and high current amplification.

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MODEL A10160

45MHz 34Vp-p Single Channel Signal Amplifier

Specification

INPUT CHARACTERISTICS

Channels: 1
Type: Single Ended
Connector: Front panel SMA
Impedance: 50Ω
Coupling: DC
Damage Level: 6Vp-p (-3V to +3V peaks)
Frequency Range: DC to 45MHz

OUTPUT CHARACTERISTICS

No. of Channels: 1
Type: Single Ended
Coupling: DC coupled
Connector: Rear panel BNC
Gain: x10, fixed (x15 gain optional)
Polarity: Normal
Amplitude:

Peak	34Vp-p into 50Ω
Continuous	30Vp-p into 50Ω

Max. Output Current:

Peak	1A
Continuous	750mA

Impedance: 2.5Ω ±5%
Protection: Short Circuit to Case Ground & thermal protection

SQUARE WAVE CHARACTERISTICS

Transition Time: <10ns (typ.)
Aberration:

10Vpp	<5%
34Vpp	<10%

SINE WAVE CHARACTERISTICS

Bandwidth (-3dB):

<10Vpp	45MHz (typ.)
<34Vpp	30MHz (typ.)

Harmonics & Non-Harmonic Distortion (typ.)

	10Vpp	25Vpp
1MHz	<-58dBc	<-54dBc
10MHz	<-45dBc	<-45dBc
30MHz	<-42dBc	<-30dBc

GENERAL

Voltage: ±20VDC
Power Consumption: 20W
Signal Ground: Grounded
Dimensions: 45 x 30 x 85 mm (W x H x D)
Weight:

Without Package	115 g (Standalone)
Shipping Weight	
1 x A10160 Kit	1.25 Kg
2 x A10160 Kit	1.45 Kg

Temperature:

Operating	0°C to 40°C
Storage	-40°C to 70°C

Humidity: 80% RH, non-condensing
Safety: CE Marked, IEC61010-1
Calibration: 1 years
Warranty*: 3 year standard
* 1 year standard in India

ORDERING INFORMATION

MODEL	DESCRIPTION
A10160-10 (1)	45MHz 34Vp-p, Single Channel Signal Amplifier
Gain:	10 = x10 gain, fixed 15 = x15 gain, fixed 20 = x20 gain, fixed

(1) Standard Configuration
(2) Specification is given for the standard configuration only

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MODEL A10150

150MHz 16Vp-p Single Channel Signal Amplifier

- 150MHz bandwidth
- High amplitude to 20Vp-p into 50Ω
- Fast transition time of <1.8ns
- Small footprint, all metal case
- Low distortion
- Custom Configuration of:
  - Gain (x5 or x10)
  - Maximum output (16Vp-p or 20Vp-p)

Model A10150 is an ultra-small footprint, wideband, DC coupled amplifier designed for high frequency, low distortion, signal amplification. With a high bandwidth of 150MHz, 20Vp-p into 50 ohms and a fast transition time of less than 1.8ns, the A10150 is the ideal complimentary amplifier to any high speed signal source that needs a supporting power boost for demanding applications.

Optional Configurations

The A10150's standard configuration enables a maximum output voltage of 16Vp-p into 50 ohms with a gain of x5. Custom gain of x10 and/or maximum voltage of 20Vp-p into 50 ohms options can be ordered at the time of the purchase, enabling clients' even wider variety of choices to solve their application.

Enhancing Performance

The A10150 was designed as a "Snap-On" accessory for the Tabor WaveXciter series and models WS8351/2, both having a maximum amplitude of 4Vp-p, which can be limiting for some applications, requiring higher voltage to drive their UUT. Combined with the A10150 the WX and WS models will now offer even higher abilities to solve demanding application requiring up to 32Vp-p into high impedance loads, without compromising their signal integrity.

Cost Effective Versatile Solution

While the A10150 was designed with the Tabor units in mind, it can be used as a standalone amplifier for any signal source. The A10150 offers a compatible, compact and cost effective solution for extending any signal source's power performance.

Target Applications

While target applications include Ethernet testing, characterization and verification of ASICs, FPGAs and DACS and many more, the new A10150 is an ideal solution for virtually any high-voltage, wide bandwidth application.

MODEL A10150

150MHz 16Vp-p Single Channel Signal Amplifier

Specification

INPUT CHARACTERISTICS

Channels:	1
Type:	Differential
Connector:	Front panel SMA
Impedance:	50Ω
Coupling:	DC
Damage Level:	6Vp-p (-3V to +3V peaks)
Frequency Range:	DC to 150MHz

OUTPUT CHARACTERISTICS

No. of Channels:	1
Coupling:	DC coupled
Connector:	Rear panel BNC
Gain:	x5, fixed (x10 gain optional)
Polarity:	Normal
Amplitude:	16Vp-p into 50Ω(20Vp-p opt.)
Max. Output Current:	250mA
Impedance:	50Ω±1%
Protection:	Short Circuit to Case Ground, 10s max

SQUARE WAVE CHARACTERISTICS

Transition Time:	
2V step	<1.8ns (typ.)
10V step	<2.6ns (typ.)
Aberration:	
2Vpp	<5%
10Vpp	<10%

SINE WAVE CHARACTERISTICS

Bandwidth (-3dB):	
<2Vpp	200MHz (typ.)
<10Vpp	150MHz (typ.)

Harmonics & Non-Harmonic Distortion (typ.)

	2Vpp	5Vpp	10Vpp
20MHz	<-59dBc	<-52dBc	<-50dBc
50MHz	<-52dBc	<-45dBc	<-36dBc
100MHz	<-35dBc	<-30dBc	<-40dBc

GENERAL

Voltage:	±15VDC
Power Consumption:	7W
Signal Ground:	Grounded
Dimensions:	45 x 30 x 85 mm (W x H x D)
Weight:	
Without Package	115 g (Standalone)
Shipping Weight	
1 x A10150 Kit	1.25 Kg
2 x A10150 Kit	1.45 Kg
Temperature:	
Operating	0°C to 40°C
Storage	-40°C to 70°C
Humidity:	80% RH, non-condensing
Safety:	CE Marked, IEC61010-1
Calibration:	2 years
Warranty:	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
A10150-16-5 (1)	150MHz 16Vp-p, Single Channel Signal Amplifier
Output Voltage:	16 = 16Vp-p 20 = 20Vp-p
Gain:	5 = x5 gain, fixed 10 = x10 gain, fixed

(1) Standard Configuration

(2) Specification is given for the standard configuration only

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