

# Charge Amplifier

## for Lineas WIM Sensors

Type 5163A...

Robust charge amplifier specifically designed for Kistler Lineas WIM sensors with charge output (Type 9195GC...). The charge amplifier provides well-conditioned voltage output signals for further processing by a data acquisition system.

- Compact design
- High accuracy through high linearity
- High immunity to temperature variations and EMC interferences
- Suitable for continuous and reliable operation in a roadside electronics cabinet
- Conforming to **CE** and EMC standards

### Description

This charge amplifier comes in two types: Type 5163A1... (measuring range 60 000 pC) for wheel load measurements and Type 5163A2... (measuring range 100 000 pC) for axle load measurements. To accommodate different WIM sensor layouts, the charge amplifiers are available in different versions with 2, 4 and 8 channels.

To measure wheel loads (recommended case), all sensors are connected to a separate input channel.

Example: One-lane layout with 4 Lineas WIM sensors. Select charge amplifier Type 5163A104.

To measure axle loads (special case) two sensors from the same row are connected to the same input channel within the charge amplifier.

Example: One-lane layout with 4 Lineas WIM sensors. Select charge amplifier Type 5163A202.

### Applications

In combination with the Lineas WIM sensors the charge amplifier can be used in applications for traffic data collection (statistics), overload detection and enforcement as well as for weight-dependent toll collection.



### Technical data

#### Electrical data

Supply voltage	VDC	18 ... 30
Power consumption		
2 / 4 / 8 channels	mA	<10 / <20 / <40
Output voltage	V	0 ... ±5
Output current	mA	0 ... ±1
Offset	mV	< ±100
Output impedance	Ω	10
Output noise signal (0,1 Hz ... 1 MHz)	mVpp	<5
Time constant	s	100 (±2,5)
Frequency range -3dB	Hz	0.0016 ... >5 000

#### General data

Number of input channels		
Type 5163A1...		2 / 4 / 8
Type 5163A2...		2 / 4
Measuring range		
Type 5163A1... (wheel load meas.)	pC	±60 000 (±600)
Type 5163A2... (axle load meas.)	pC	±100 000 (±1 000)
Operating temperature range	°C	-20 ... 65
Degree of protection (EN60529)		IP67
Dimensions	mm	185,5x64x34,5
Weight	kg	0,4
Connector signal input		Spring terminal through cable gland
Connector signal output		
Type 5163A102		Spring terminal through cable gland
All other Types		D-Sub 15 pin male

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**Dimensions**

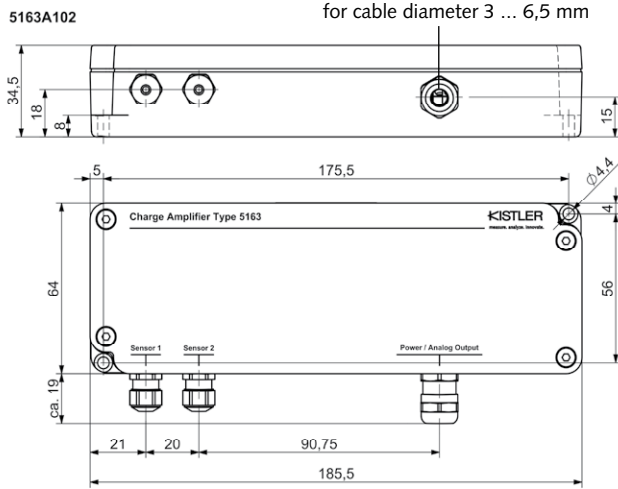


Fig. 1: Dimensions of charge amplifier Type 5163A102 with cable gland

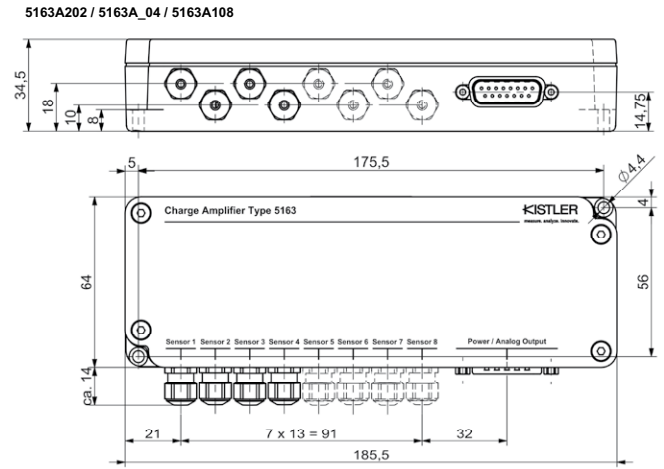


Fig. 2: Dimensions of charge amplifier Type 5163A... with D-Sub

**Pin allocation**



Fig. 3: Pin allocation spring terminal/cable gland (version with cable gland)

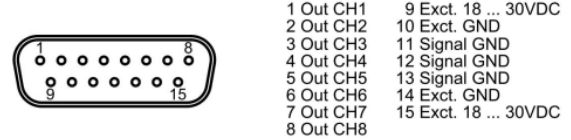


Fig. 4: Pin allocation D-Sub

**Mounting**

The charge amplifier can be fixed directly on a back panel with 2 screws ( $\leq M4$ , see drawings above).

**Included accessories**

- None

**Optional accessories**

- Lineas Installation Toolbox for Type 9195GC sensors **Type/Art. No. Z20015\_GC**
- Hexagon Tubular Box Wrench (AF11/14, for cable glands) **55091033\***
- Allen wrench ( $\varnothing 2,5$  mm) for Allen screws **65007772\***
- Output cable,  $l = 5$  m **1500A41A5**
- D-Sub 15 pin female – open cable end for Types 5163A202, 5163A\_04 and 5163A108
- Screw plug to tighten unused Lineas sensor cable input **55187432**

\* included in Lineas Installation Toolbox **Z20015\_GC**

**Ordering key**

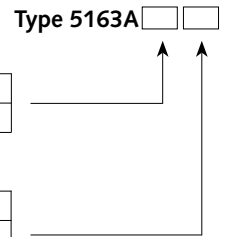
**Measuring range**

60 000 pC (wheel loads)	<b>1</b>
100 000 pC (axle loads)	<b>2</b>

**Number of channels**

2	<b>02</b>
4	<b>04</b>
8 *	<b>08</b>

\* Version only available for wheel load measurement (Type 5163A108)



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