

KiTraffic Statistics

Type 9841A...

Complete WIM system for traffic data collection

The KiTraffic Statistics WIM (Weigh In Motion) system is based on Lineas Compact sensors in combination with the Kistler WIM Data Logger and supporting electronics all prewired on a DIN-rail.

- Wide measuring range for weight and speed
- Count and classify vehicles with weight information
- Quick and easy installation of sensors into road pavement
- Excellent price-performance ratio
- Quartz sensor technology
- Fast system installation and configuration

Description

The KiTraffic Statistics system (Type 9841A) consists of Lineas Compact sensors (Type 9196), a WIM Data Logger (Type 5204A) and associated electronics.

The Lineas Compact WIM sensor is a force sensor with quartz elements specially designed for measuring wheel and axle loads of road vehicles. Lineas Compact sensors are especially designed for cost-efficient traffic data collection.

When a force is applied to the sensor, the quartz elements yield an electrical charge signal proportional to the applied force. The sensor requires connection to the Kistler WIM Data Logger. The WIM Data Logger converts the electric charge signals of all Lineas Compact WIM sensors into wheel, axle and gross vehicle weight and derives vehicle classification information. One WIM Data Logger can cover up to 4 lanes. Note: Lineas Compact WIM sensors are only available with Kistler WIM Data Logger and electronics to ensure best sensor performance.

Applications

The KiTraffic Statistics system is intended for use in applications where economic and reliable counting and classifying of vehicles is more important than the highest accuracy of the weight data. The typical application of the system is traffic data collection for monitoring of traffic on roads and on bridges.



Technical data

KiTraffic Statistics system Type 9841A

Number of inputs: WIM sensors		4 or 8
Digital inputs (loops)		4
Number of traffic lanes		up to 4
Number of outputs: Ethernet	TCP/IP	2
Digital outputs channels		4
Measuring error with staggered layout (2 Lineas compact sensors p. lane)	% of GVW	±15
Weight measurement accuracy confidence level	%	95
Measuring range axle loads	tons [lb]	0 ... 25 [55100]
Speed range	km/h [mph]	3 ... 250 [2 ... 155]
Electronics operating temperature range	°C [F]	-20 ... 65 [-4 ... 149]
Mounting (EN50045)	Type	TS-35 (DIN Rail)
Power Input	VAC	85 ... 264
Power Consumption	W	<8

Lineas Compact sensor Type 9196

Insulation resistance	Ω	>1·10 ⁹
Operating temperature range	°C [F]	-40 ... 80 [-40...176]
Sensor length	m [ft]	1.75/2.00 [5.74/6.56]
Cable length	m [ft]	40/100 [131/328]

Sensor dimensions

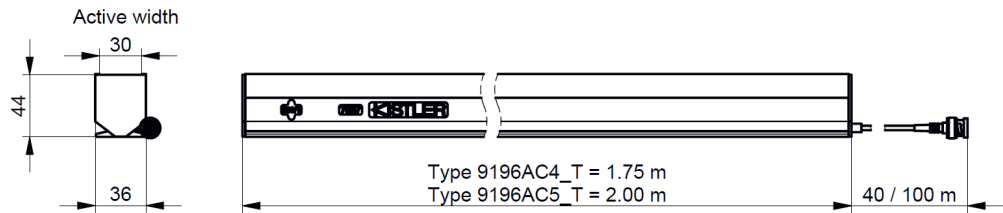


Fig. 1: Dimensions of Lineas Compact sensor (Type 9196ACxxT)

Sensor Installation

Lineas Compact sensors are easy to install. The Lineas Compact sensors are laid in self-hardening epoxy grout. This provides an optimum and consistent mounting into the pavement. The complete installation instructions for Type 91956AC__T (Doc. No. 002-831) describes all relevant steps. The installation of Lineas Compact sensors requires the supervision of a Kistler engineer, or an engineer certified by Kistler.

System electronics

The KiTraffic Statistics system comes prewired on a DIN-rail with WIM Data Logger, induction loop card, power supply and connectors for easy installation inside a roadside cabinet close to the WIM site. The user friendly web interface can be used for system configuration and calibration, visualization of measurement data and monitoring of the correct operation of the system. In addition, a state of the art machine readable REST API interface is available.

Sensor cross section and slot dimensions

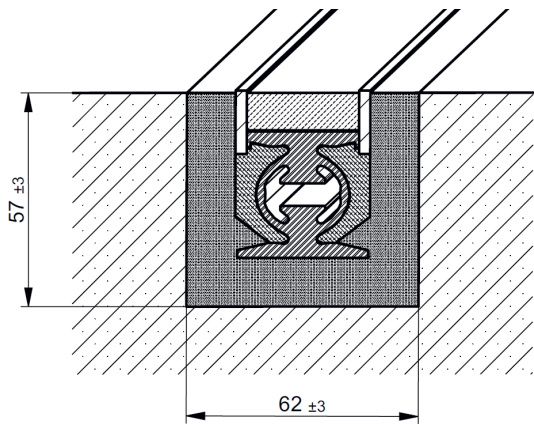


Fig. 2: Sensor cross section and slot dimensions

Kistler web interface

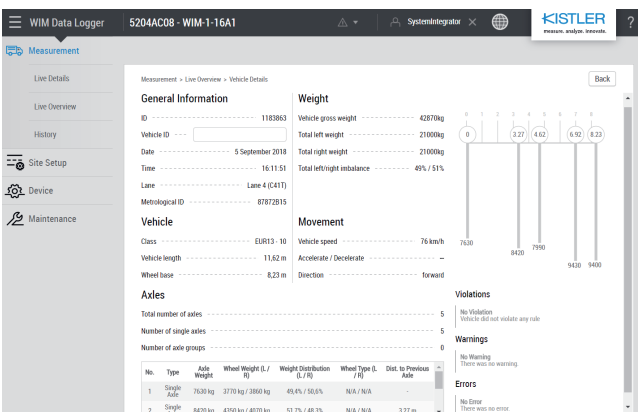


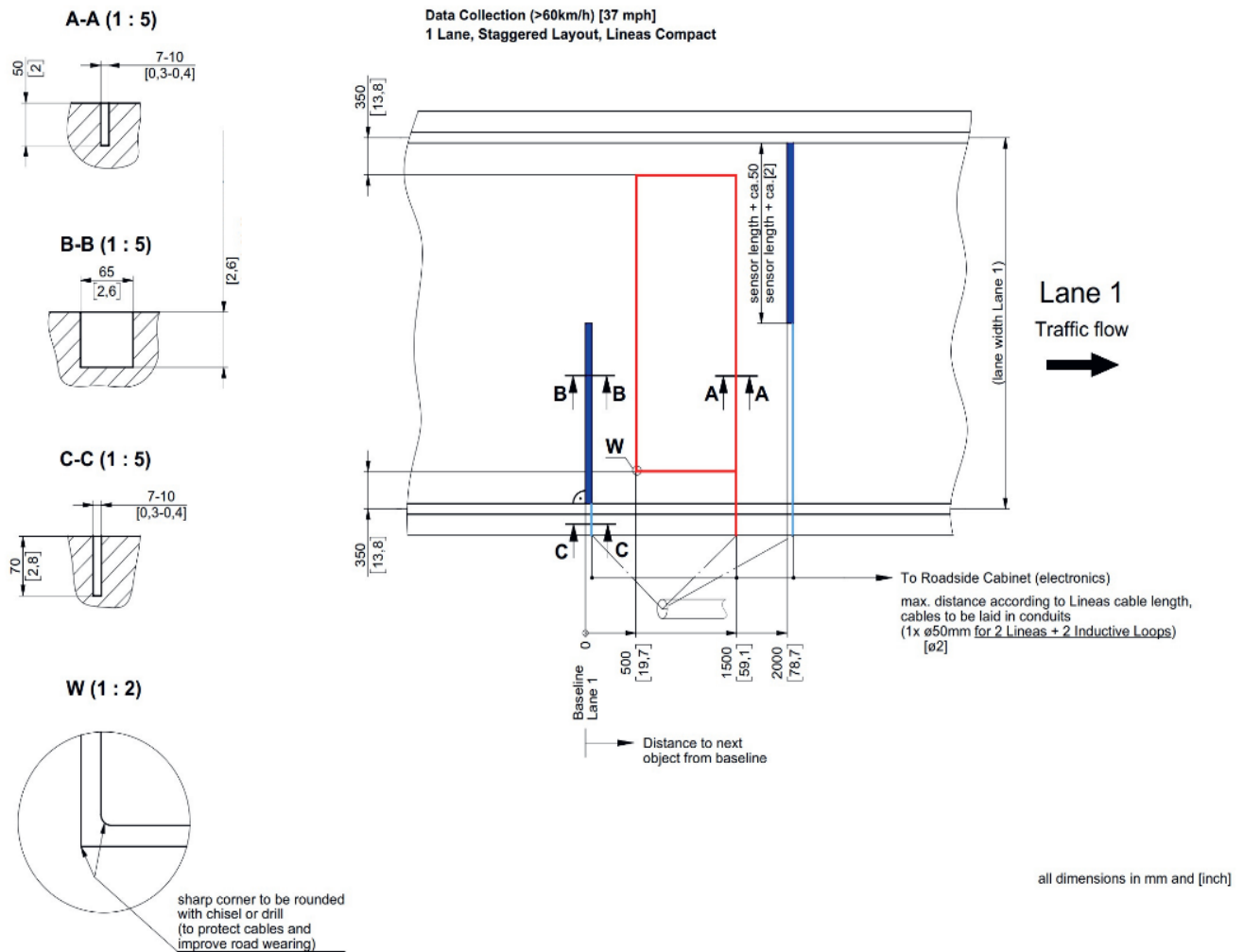
Fig. 3: Kistler web interface

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Sensor layout of KiTraffic Statistics

The Lineas Compact WIM sensors and the inductive loop of the KiTraffic Statistics system shall be installed on each lane in a simple staggered layout. This layout enables cost efficient weighing of vehicles at all driving speeds and is illustrated below for one

lane (color coding: dark blue = slots for Lineas Compact sensor, light blue = slots for sensor cable, red = slots for inductive loop cable). One KiTraffic Statistics system can support up to four lanes with this layout.



- All dimensions specified and proved for WIM components provided by KISTLER. Other dimensions technically possible (to be checked with KISTLER service engineer).
- For concrete slabs: Do not cut closer than 100mm (laterally) and 500mm (driving direction) to expansion joints.
 [3,9] [19,7]
- For further information refer to the installation instructions (document 002-831)

Fig. 4: Sensor layout of KiTraffic Statistics

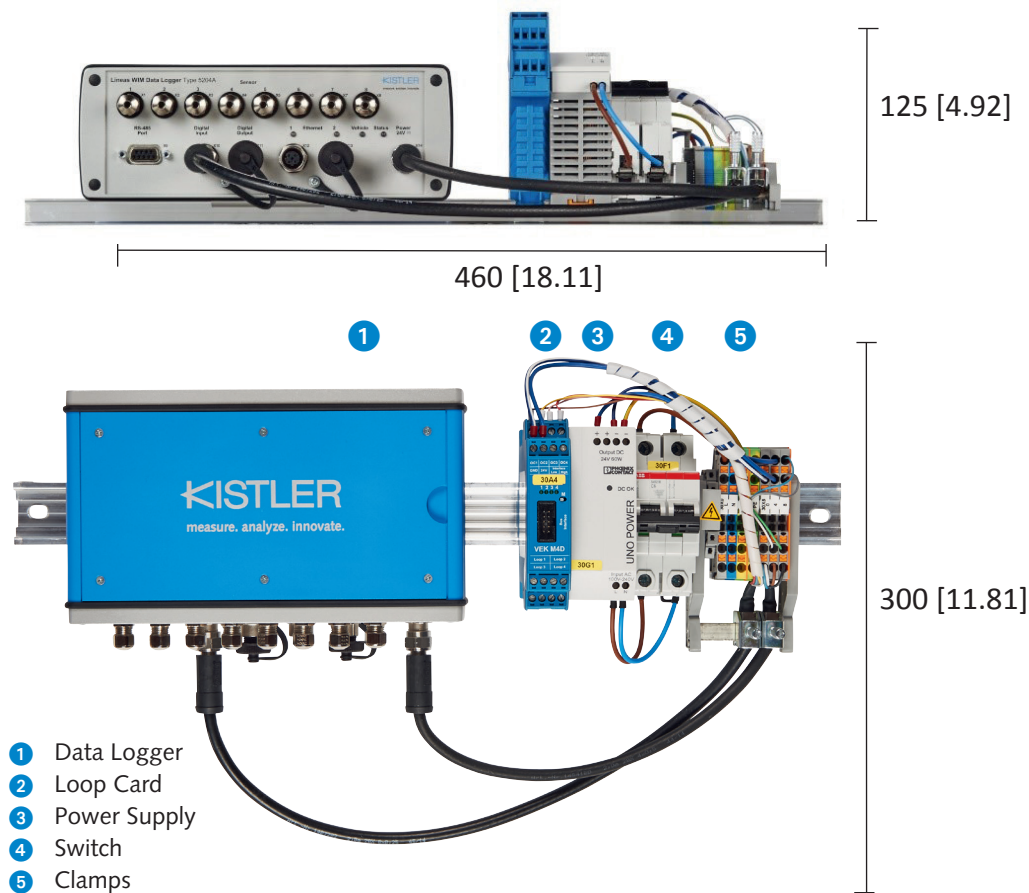


Fig. 5: KiTraffic Statistics system components

Included accessories

- Lineas Compact sensors
- WIM Data Logger
- WIM system components with loop card prewired on a DIN rail

Type/Art. No.

9196A...T
5204A...
55140423

Mandatory accessories

- Grouting compound (1 buckets per sensor)

Type/Art. No.

1000A1

Optional accessories

- Lineas installation toolkit (contains all required tools for the sensor installation)
- Inductive loop cable
- Ground cable

Type/Art. No.

Z20015_GC
9835AZ220
9835AZ240

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Ordering key

Type 9841A

Quantity of Type 9196AC41T sensors*		
Sensor length 1.75 m	Cable length 40 m	0 ... 8
Quantity of Type 9196AC42T sensors*		
Sensor length 1.75 m	Cable length 100 m	0 ... 8
Quantity of Type 9196AC51T sensors*		
Sensor length 2 m	Cable length 40 m	0 ... 8
Quantity of Type 9196AC52T sensors*		
Sensor length 2 m	Cable length 100 m	0 ... 8
4-channel WIM Data Logger and prewired components with loop card		1
8-channel WIM Data Logger and prewired components with loop card		2

* Maximum total amount of sensors:8

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