

WIM Data Logger

Type 5204AC...

for dynamic vehicle weighing with Lineas® sensors

The WIM data logger Type 5204AC... in combination with Lineas Weigh In Motion (WIM) sensors enable customers to monitor traffic and gather accurate vehicle data.

- High weighing accuracy (OIML R134 certified) ¹⁾
- Able to monitor up to 4 traffic lanes
- Handling of stop & go traffic
- Wide speed range (0 ... 250 km/h)
- Measuring range up to 50 tons axle load
- Compact design with integrated amplifier
- Detect single or dual tires
- Easy to integrate into customer's overall solution incl. vehicle simulator (plug & play)
- Quick set up thanks to modern web interface
- Multiple languages available
- Vehicle classification

Description

The WIM data logger is a data processing unit specifically designed to interface with Lineas and Lineas Compact WIM sensors. It allows customers to monitor traffic in real time and to gather vehicle data.

The key is enhanced conditioning and processing of the Lineas and Lineas Compact WIM sensor signals to achieve the best weighing accuracy from low to high speed with the highest reliability. The WIM data logger can be easily integrated into the overall system by the system integrator, providing a customized solution according to the needs of the end user.

Both WIM sensors, Lineas and Lineas Compact, can be directly connected to the WIM Data Logger. Additionally, there are various digital inputs and outputs to interface peripheral devices such as loop cards, beam arrays, traffic signals, camera triggers, barriers, etc. The WIM data logger is available in versions with 4 or 8 channels to monitor 1, 2, 3 or 4 traffic lanes (3 and 4 lanes, only staggered layout).

In Kistler KiTraffic Plus systems, multiple WIM Data Loggers can be combined to monitor a virtually unlimited number of lanes with one single interface to the end user. Every lane can be equipped with 2 to 8 WIM sensors.

¹⁾ System accuracy and speed range depend on sensor layout and road quality. Detailed system information and OIML certificates are available on www.kistler.com/wim



Technical Data

General Data

Measuring range (axle load)	tons	0 ... 50
Speed range (without stop & go)	km/h	3 ... 250
Speed range (stop & go)	km/h	0 ... 250
Operating temperature range	°C	-20 ... 65
Degree of protection	EN60529	IP61
Mounting	EN50045	Type TS-35 (DIN Rail)
Dimensions	WxHxD	mm 213x77x136
Weight (4/8 channels)	kg	1,5/1,65
Vehicle classification		FHWA-13 EUR-13 RUS-12

Electrical Data

Supply voltage	VDC	18 ... 30
Current consumption (typically)	@18 V	mA 210
	@24 V	mA 150
	@30 V	mA 120

Conforming to CE and EMC standards

Sensor Inputs

Number of channels		4 or 8
Lineas WIM sensor	Type	9195GC...
Lineas Compact WIM sensor	Type	9196AC...

Other Interfaces

Communication ports Ethernet (TCP/IP)		2
Digital input channels		4
Type: Optocoupler with current limitation		
Minimal high-level input current	mA	2,5
Differential voltage range (between +/-)	V	0 ... 30
Digital output channels		4
Type: Semiconductor relays	mA	max. 120
Differential voltage range (between +/-)	V	-30 ... 30
Display interface Type RS-485		1

Applications

Due to the high measuring accuracy over a wide speed range and the ability to interface different external devices the WIM data logger can be used for several applications:

- Traffic data collection (e.g. statistics, count & classify)
- Weight enforcement (preselection or direct enforcement of overloaded vehicles)
- Toll collection (manual or automatic toll-by-weight)
- Industrial truck weighing (weight monitoring at harbors, mining, concrete plants or other industrial facilities)
- Overload detection for bridge protection

Typical Layouts

With KiTraffic Plus, each layout can be installed on a virtually unlimited number of lanes.

Layout for one lane:

Typical GVW accuracies for Lineas Type 9195GC (if not mentioned otherwise)

Staggered layout



10% (9195GC)
20% (9196ACxxS)

Double staggered layout



5%
stop & go capable

2 rows layout



5%

4 sensors tilted layout



9%
Single/dual tire detection

3 rows layout



3.5%
Stop & go capable

6 sensor tilted layout



4%
Single/dual tire detection
stop & go capable

4 rows layout



2.5%
Stop & go capable

8 sensors tilted layout



3%
Single/dual tire detection
stop & go capable

Lineas WIM sensor ——— Road marking |

Induction loops/beam array not considered in layouts
Both driving directions possible

Communication

The control unit (user interface) is usually a computer located in a remote office which is connected to the WIM data logger via Ethernet cable or wireless router. There are two options to communicate with the WIM data logger.

- 1 Via the Kistler web interface (by using a common web browser)
- 2 Via a machine readable interface

1 The web interface of the Kistler WIM data logger allows the following tasks to be performed:

- System setup (configuration and calibration)
- Visualization of vehicle data (live and history)
- Supervision (detect violations)
- Access system information and status
- Remote support
- ...

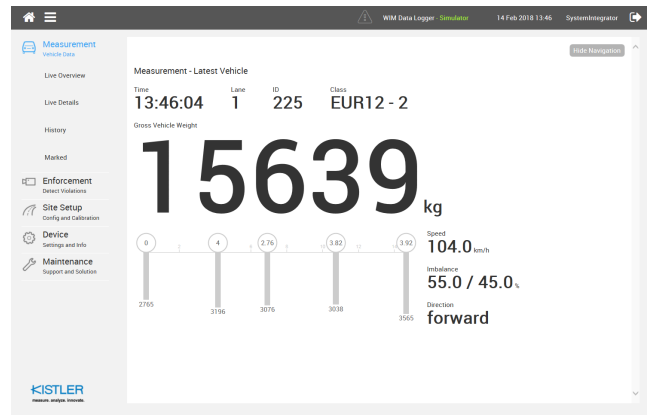


Fig. 1: Kistler web interface

2 The machine readable interface is based on a state of the art RESTful API interface. This allows quick and easy data communication and device control of any server in the network with the WIM data logger.

Output Data

The WIM data logger generates a large variety of vehicle data such as:

- Gross vehicle weight
- Axle information (wheel and axle load, axle distance, number of axles, wheel with single tire or dual tires)
- Vehicle speed
- Vehicle length
- Driving direction
- Imbalance (difference left/right in %)
- Time between vehicles (traffic density)
- Violations
- Driving behavior
- Vehicle classification

Mounting and Dimensions

The WIM data logger is typically mounted in a road side cabinet close to the WIM site. Inside this electrical cabinet, it can be fixed to a DIN rail with the provided adapter in three different positions.

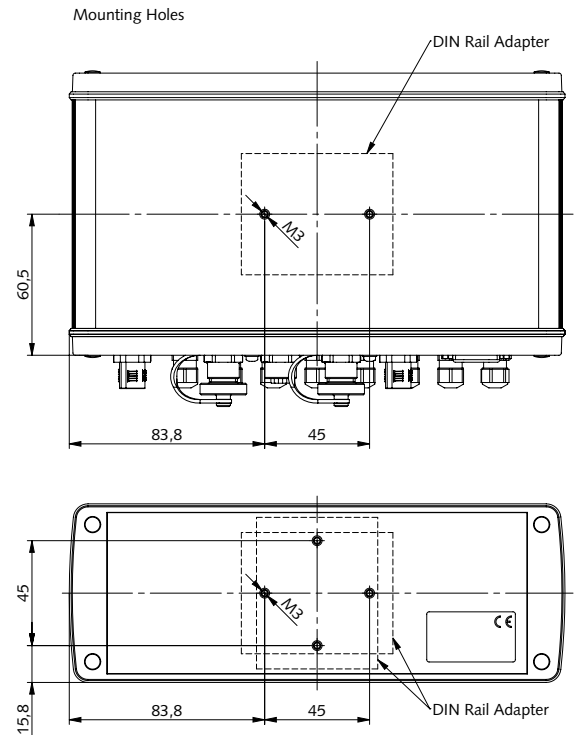
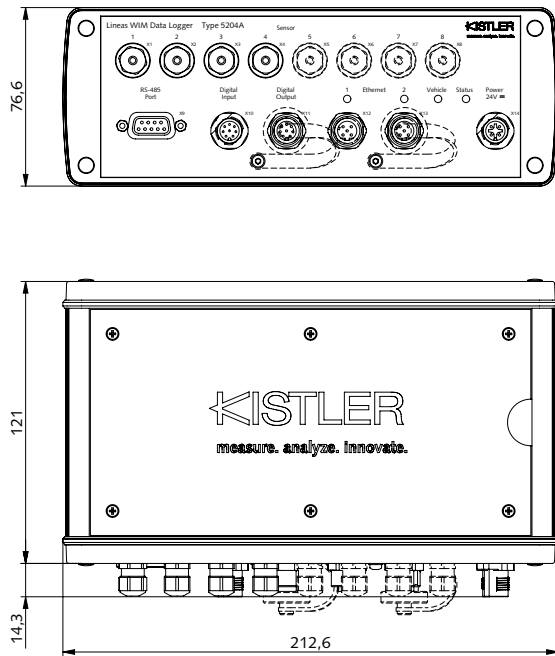


Fig. 2: Mounting and dimensions of Type 5204A...

Included Accessories

- Cable for power supply (M12 – open end, l = 2 m)
- Ethernet cable (M12 – RJ-45, l = 2 m)
- Digital input cable (M12 – open end, l = 2 m)
- DIN rail adapter
- Protection cap for D-Sub
- Protection caps for M12 (fix mounted)
- Sealing inserts for not used channels
- Systems including WIM data logger:
 - KiTraffic Plus
 - KiTraffic Statistics
 - Weigh In Motion System

Ordering No.

- 1700A119A2
- 1200A195A2
- 1700A115A2
- 55126892
- 55066918
- 65008419
- 55138567
- 9843A
- 9841A
- 9835A

Optional Accessories

- WIM system components with loop card prewired on a DIN rail
- WIM system components for beam array prewired on a DIN rail
- Power supply (24 VDC/100 W) *
- Loop card for up to 4 inductive loops (for >10 km/h)
- Beam array set for vehicle separation incl. heating (for <20 km/h) for 1 lane
- GPRS modem with antenna
- Digital output cable (M12 – open end, l = 2 m)
- Power transformer 110 V for beam array heating prewired on a DIN rail
- Power transformer 230 V for beam array heating prewired on a DIN rail
- Lineas toolbox for Type 9195GC sensors

Ordering No.

- 55140423
- 55140424
- 9835AZ100
- 9835AZ200
- 9835AZ300
- 9835AZ400
- 1700A117A2
- 55140425
- 55140426
- Z20015_GC

Ordering Key

Number of Sensor Inputs

4 sensors	04
8 sensors	08

Type 5204AC

* For measuring equipment only – for beam array heating power transformer Type 55140425 or 55140426 to be used.

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Software (web user interface) is integrated in all versions.