



TIC1xx Pro

RELIABLE VEHICLE CLASSIFICATION AND AXLE COUNTING,
EVEN OVER MULTIPLE LANES

Profiling systems

SICK
Sensor Intelligence.

TIC102: PROVEN PERFORMANCE

Modern traffic management on roads and rails is geared towards safety, efficiency and a good environmental balance. SICK offers a wide range of innovative and reliable products, combined with a global service and sales structure. This makes SICK the market and technology leader in many areas of data acquisition in the transport engineering industry.

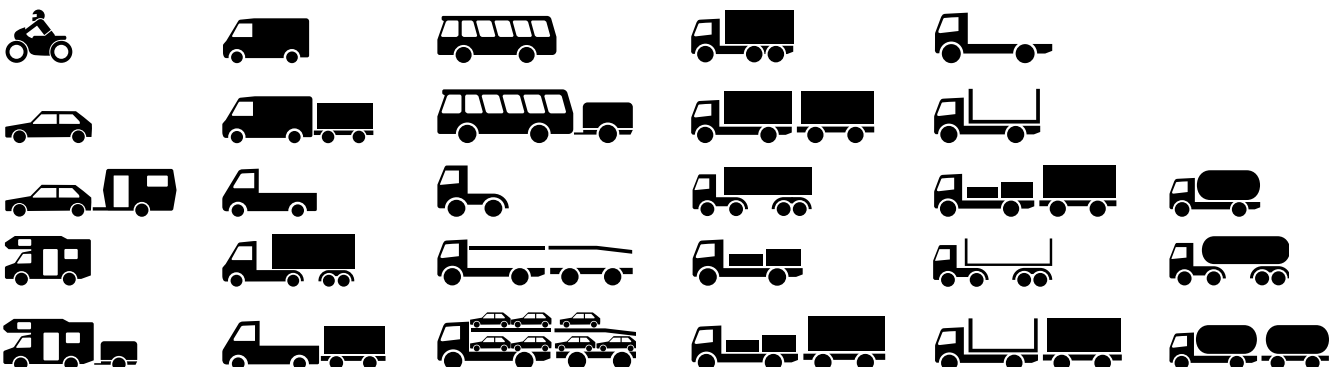
Based on laser scanner technology, the TIC102 system from SICK collects data on vehicles, traffic flow and the composition of traffic on the road. Using invisible infrared laser beams, the laser scanners scan the road up to 50 times a second. The measurement data acquired is used to generate a 3D model of every vehicle. The graphical installation wizard and various self-tests allow easy and economical commissioning. For counting axles, the proven TIC102 profiling system is enhanced with an additional laser scanner. With the additional data the system reliably determines the number of axles.

Watertight detection

- Typically 99.8% counting accuracy
- Scans the entire width of the road:
TIC102 even detects vehicles changing lanes or on the shoulder
- Resistant to weather factors such as fog, rain and snow
- Even detects vehicles in stop-and-go traffic

Extensive measured value range

- Classification with typically 98% accuracy
- Confidence indication for each measured value
- Lane detection
- Time intervals between vehicles
- Positive vehicle identification with a time stamp for third-party systems, such as license plate recognition cameras





Wide range of applications

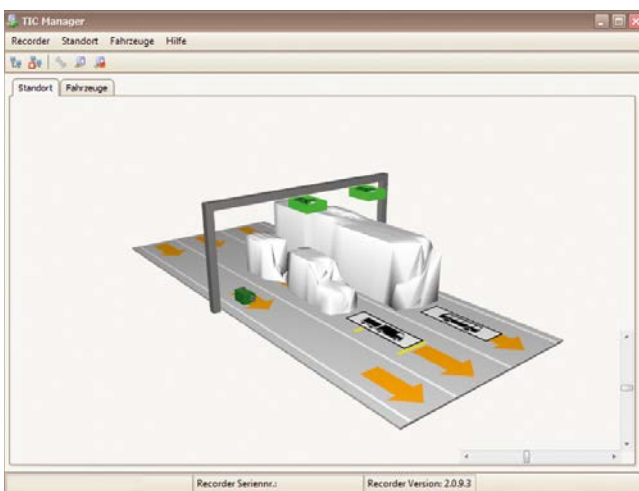
- Vehicle classification and axle counting for electronic toll collection on multi-lane roads
- Fast lanes at tollbooths
- Traffic management
- Traffic analysis
- Traffic jam detection

No traffic disruption

- Quick installation and cost-effective maintenance, as devices do not need to be fitted into the road surface
- Lane allocations can easily be adjusted using the configuration wizard in the event of temporary lane alterations
- Laser beams are invisible and do not harm the eyes (laser class 1)

TIC102 with axle counting: The complete solution

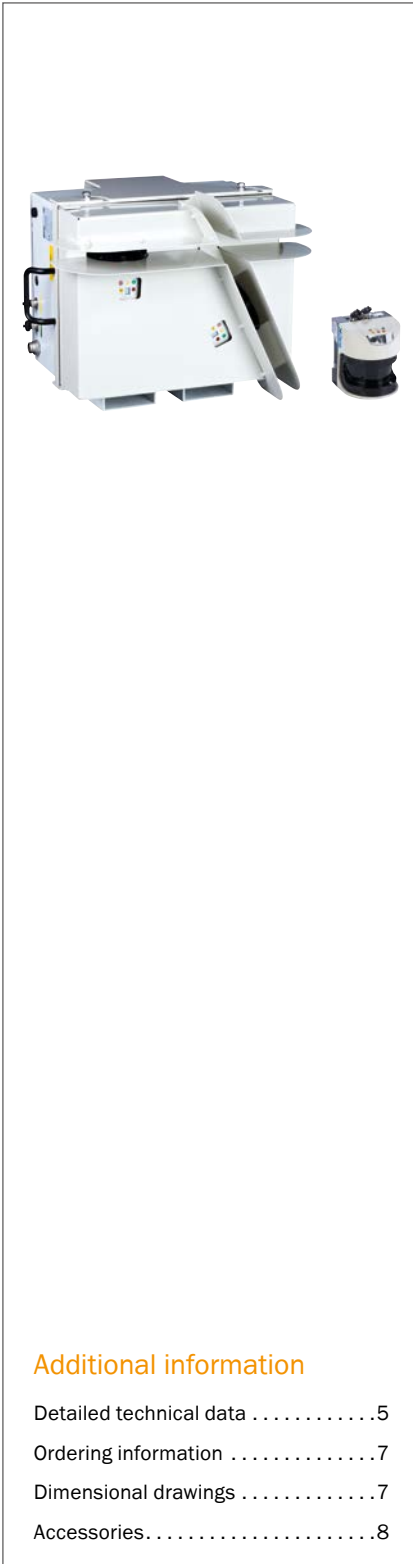
- Highly precise axle counting in all traffic conditions
- Simple and economical installation on the side and above the roadway



User-friendly

- Self-calibrating system for fast and reliable commissioning
- Intuitive configuration wizard for setting up the measuring heads
- 3D live display of passing vehicles
- TCP-based interface for easy integration
- Automatic blanking of static objects, e.g., guardrails
- Integrated self- and remote-maintenance system
- Remote system access minimizes support and maintenance costs

RELIABLE VEHICLE CLASSIFICATION AND AXLE COUNTING, EVEN OVER MULTIPLE LANES



Product description

The TIC1xx Pro (Traffic Information Collector) profiling system is based on SICK's proven laser measurement technology. It is designed for use in multi-lane, free-flowing traffic and stop-and-go traffic for toll systems and for performing traffic management. A highly innovative configuration tool, including a live 3D view, allows commissioning in just a few minutes. The system is automatically calibrated during flowing traffic and provides an integrated

remote maintenance function. Configurable software triggers significantly improve the detection and read rates of license plate cameras and DSRC antennas. The TIC102 profiling system has been enhanced with a roadside laser measurement scanner for axle counting. The combination of the data from the laser measurement scanner mounted on the side and above the road surface ensures reliable axle counting, including the confidence level.

At a glance

- Highly precise vehicle classification and axle counting in all traffic conditions
- Reliable in multi-lane, free-flowing traffic and stop-and-go traffic
- Detection of lane changers
- Detection of up to 30 different vehicle classes
- Information about vehicle speed and dimensions
- Time synchronization with external systems

Your benefits

- Automatic calibration allows commissioning in just a few minutes
- Intuitive graphical user interface allows quick and easy operation
- Full detection of vehicles and axles increases classification accuracy
- Simple and economical installation on the side and above the roadway. No work is required on the road surface.
- The software trigger improves the detection and reading rate of license plate detection cameras or the DSRC antenna system
- Long maintenance intervals and fast installation reduce operating costs to a minimum
- Reliable operation even at night and in inclement weather

Additional information

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→ www.mysick.com/en/TIC1xx_Pro

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

TIC1xx Pro

Features

	TIC102-20000	TIC102-02000
System part	Processing head (integrated control unit)	Sensor head (without control unit; must be connected to a processing head)
Integrated application	Vehicle classification, vehicle counting, Axle counting ¹⁾	
Scanner design	2-scanner solution	
Vehicle data	Vehicle class (selectable category systems with up to 30 classes) Driving direction Lane assignment Confidence level for all vehicle datas Point cloud	
Number of covered lanes	1	
Recommended distance between max. vehicle height and sensor	Typ. 1.5 m	
Calibration	Automatic	
Laser class	1, eye-safe (IEC 60825-1 (2007-3))	
Heating	✓	
Internal computer	Traffic Controller TIC	-

¹⁾ For the axle counting extension the LMS511 Traffic is needed.

Performance

Counting accuracy	> 99.8 %
Classification accuracy	Typ. 98 %

Interfaces

	TIC102-20000	TIC102-02000
Optical indicators	LED, status and function display	
NTP synchronization	✓	-
Ethernet	✓ (3)	✓ (2)
Function	Operator interface, sensor interface	Sensor interface
Data transmission rate	1 Gbit/s, for each interface	
Protocol	TEMS Info Interface (TCP/IP Interface) WCF TEMS Manager (configuration software)	-
Electrical connection	1 x connector ETH_Host (M12) for operator interface, 2 x connector ETH_Internal (M12) for sensor interface	2 x connector ETH_Internal (M12) for sensor interface

Mechanics/electronics

	TIC102-20000	TIC102-02000
Supply voltage	24 V DC (22.8 V DC ... 25.2 V DC)	
Power consumption	130 W, with heating 51 W, without heating	120 W, with heating 41 W, without heating
Housing dimensions (W x D x H)	355 mm x 482 mm x 373 mm	
Weight	16.1 kg	15 kg
Installation position	Overhead	

	TIC102-20000	TIC102-02000
Installation height	6 m, 5 m ... 8 m	
Enclosure rating	IP 66 (EN 60529)	

Ambient data

Ambient temperature operation	-20 °C ... +50 °C ¹⁾
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¹⁾ Protection against direct sunlight is required to prevent overheating.

LMS5xx Traffic

General notes

Description	Configured laser scanner for profiling systems used for traffic applications. Complete specifications can be found under the standard resolution LMS511-10100 PRO (1046135).
Note on use	Not suitable for personnel protection

Features

Field of application	Outdoor
Version	Mid Range
Variant	PRO
Resolution power	Standard Resolution
Light source	Infrared (905 nm)
Laser class	1, eye-safe (IEC 60825-1 (2007-6))
Aperture angle	190°
Heating	Yes
Amount of evaluated echoes	5
Fog correction	Yes

Interfaces

Ethernet	Function	✓
	Data transmission rate	Host 10/100 MBit/s
	Protocol	TCP/IP, OPC
	Optical indicators	5 LEDs (additional 7-segment display)

Mechanics/electronics

Electrical connection	4 x M12 circular plug-in connector
Supply voltage	24 V DC
Power consumption	22 W, + 55 W heating (typical)
Housing color	Gray (RAL 7032)
Enclosure rating	IP 67 (EN 60529, Section 14.2.7)
Protection class	III (EN 60529, Section 14.2.7)
Weight	3.7 kg
Dimensions (L x W x H)	160 mm x 155 mm x 185 mm

Ambient data

Object remission	2 % ... > 1,000 % (reflectors)
Electromagnetic compatibility (EMC)	EN 61000-6-2:2005, EN 61000-6-3 (2007-03)
Vibration resistance	EN 60068-2-6 (1995-04)

Shock resistance	EN 60068-2-27 (1993-03), EN 60068-2-29 (1993-04)
Ambient operating temperature	-30 °C ... +50 °C
Storage temperature	-30 °C ... +70 °C
Ambient light immunity	70,000 lx

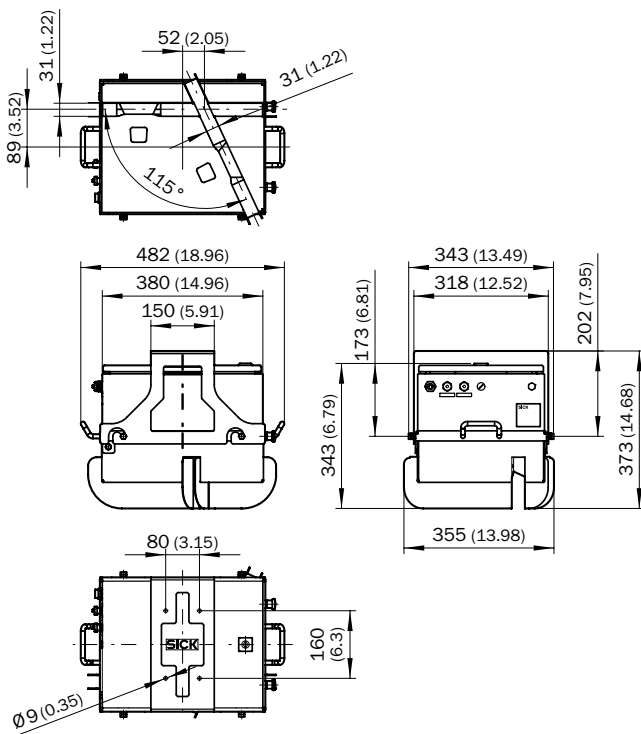
Ordering information

- **Integrated application:** vehicle classification, vehicle counting, Axle counting (For the axle counting extension the LMS511 Traffic is needed.)

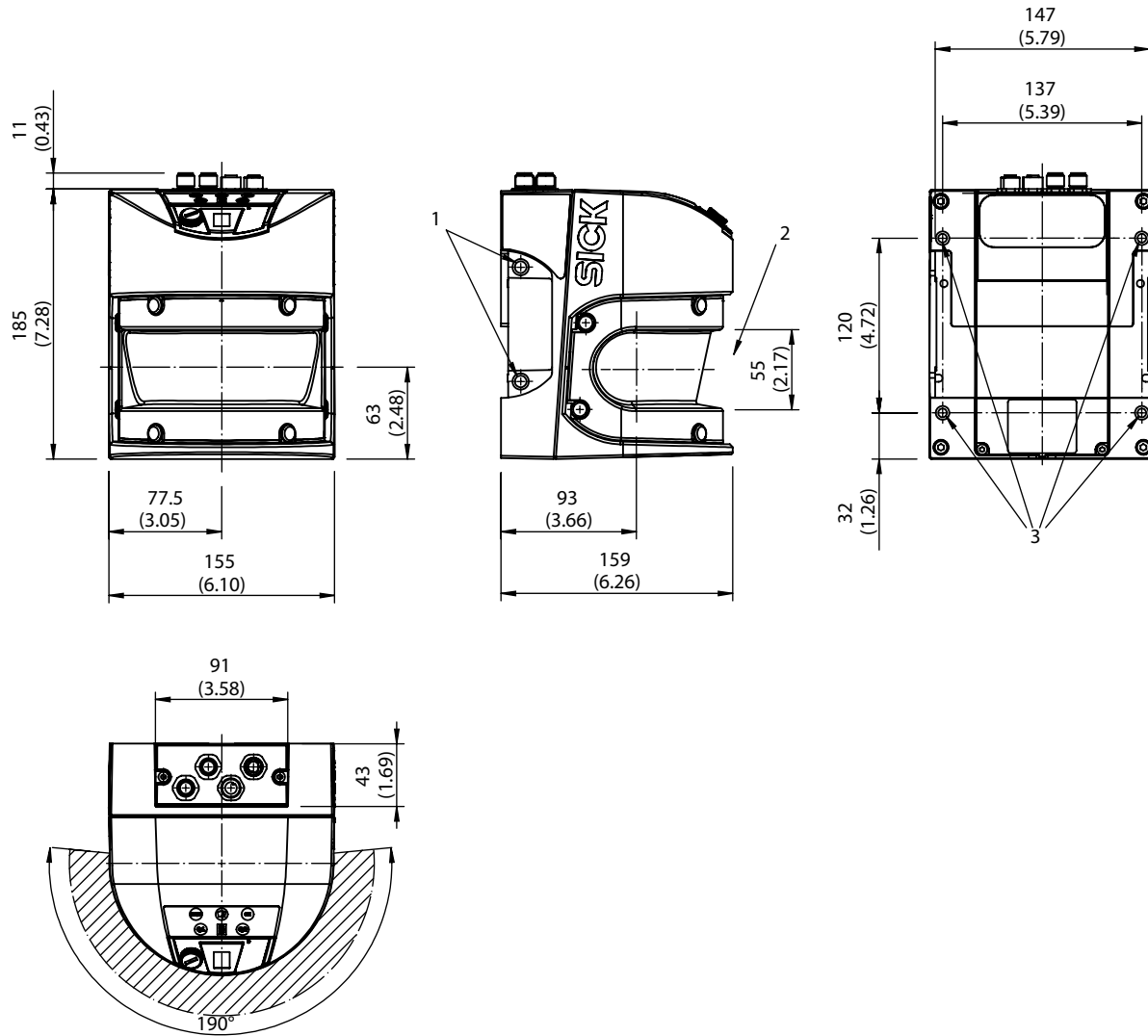
System part	Internal computer	Type	Part no.
Processing head	Traffic Controller TIC	TIC102-20000	1055102
Sensor head	-	TIC102-02000	1055104

Dimensional drawings (dimensions in mm (inch))

TIC1xx Pro



LMS511 Traffic



- ① 4 screw holes M8 x 9
- ② Do not obstruct front window
- ③ 4 screw holes M6 x 8







Accessories

Mounting systems

Device protection (mechanical) Protective housings and protective pipes

Figure	Description	Type	Part no.			
				TIC102-20000	TIC102-02000	LMS511 Traffic
	Weather hood	Weather hood	4068062	●	●	-
	Weather hood (180°), vertical mounting	Weather hood	2063050	-	-	●


Mounting brackets and mounting plates **Mounting brackets**

Figure	Description	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	Mounting bracket	Mounting bracket	4068061	●	●	-
	Mounting bracket for LMS5xx (for retrofitting, if 2018303 is already in use)	Mounting bracket	2059271	-	-	●
	Mounting kit for wall-mounting (adjustment bracket)	Mounting kit	2018303	-	-	●
	Mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable	Mounting kit 1	2015623	-	-	●
	Mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623)	Mounting kit 2	2015624	-	-	●
	Mounting bracket for rear mounting on wall, floor, or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623) and 2 (2015624)	Mounting kit 3	2015625	-	-	●

Other mounting accessories

Figure	Description	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	Strap for mast bracket (sold by meter)	Clamping strap	5306222	-	-	●
	Strap lock	Clamping strap lock	5306221	-	-	●


 Terminal and alignment brackets **Alignment brackets**

Figure	Description	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	Pole bracket requires additionally adapter bracket (2059271) or mounting set (2018303)	Alignment bracket	2018304	-	-	●


Connection systems

Plug connectors and cables

- **Signal type/application:** Ethernet


Figure	Connection type head A	Connection type head B	Cable	Cable length	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	Male connector, M12, 4-pin, straight	Male connector, M12, 4-pin, straight	AWG22	15 m	Connection cable (male connector-male connector)	6045328	●	●	-
		Male connector, RJ45, straight	4-wire, AWG26	30 m	Connection cable (male connector-male connector)	6045311	●	●	●

Plug connectors and cables

Figure	Connection type head A	Connection type head B	Cable	Cable length	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic	
	Female connector, M12, 5-pin, straight, A-coded	Cable	4-wire	5-wire	30 m	Connecting cable (female connector-open)	6045327	●	●	-
				5-wire	5 m	Connecting cable (female connector-open)	6036159	-	-	●
				5-wire	20 m	Connecting cable (female connector-open)	6042564	-	-	●
				5-wire	10 m	Connecting cable (female connector-open)	6042565	-	-	●

Further accessories

Test and monitoring tools

Figure	Description	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	Scan finder, receiver to localize infrared scans	LS-80L	6020756	-	-	●

System components LMS5xx Traffic

Figure	Type	Part no.	TIC102-20000	TIC102-02000	LMS511 Traffic
	LMS511 Traffic	1064730	●	●	-

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SICK AT A GLANCE

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