www.InnoSenT.de

Data Sheet iSYS-3104

Version 1.2 - 11.01.2017

designed and manufactured in Germany

PRODUCT FAMILY

24GHz Radar System with signalprocessing and application unit for Traffic Monitoring

APPLICATIONS

- Traffic Monitoring

- Movement
- Velocity
- Direction
- Presence
- Distance
- Angle

FEATURES:

» Vehicle Counting and Classification
» Velocity measurement in a speed range of 1...300km/h
» Field of View is 40° (±20°)
» Interface is 10/100 Mbit Ethernet (TCP/IP) and RS485/422
» Temperature range is -30°C up to 60°C
» Power Supply 12 – 24V, 9W maximum and Power over Ethernet (PoE) (both as a standard feature integrated in the iSYS-3104)
» Protection standard IP67

DESCRIPTION

K-Band based motion detector with intelligent DSP decision unit or Multi-lane Traffic Counting, Speed Measurement and Classification.

ADDITIONAL INFORMATION

InnoSenT Standard Product. Changes will not be notified as long as there is no influence on form, fit and within this datasheet specified function of the product.

The device will have the following CE marking:

CE

CERTIFICATES

InnoSenT GmbH has established and applies a quality system for: development, production and sales of radar sensors for industrial and automotive sensors.

Qualitätsmanagement ISO/TS 16949 ▸ Regelmäßige freiwillige Überwachung DEKRA Certification DEKRA zertifiziert

Qualitätsmanagement ISO 9001:2008 ▸ Regelmäßige freiwillige Überwachung DEKRA Certification DEKRA zertifiziert

Umweltmanagement ISO 14001 ▸ Regelmäßige freiwillige Überwachung DEKRA Certification DEKRA zertifiziert

RoHS-INFO

This product is compliant to the restriction of hazardous substances (RoHS - European Union directive 2011/65/EU).

GENERAL

- radar module type: 24 GHz narrow band, phase monopulse
- modulation type: FSK
- frequency band: 24,000...24,250 GHz
- Transmit power: < 20 dBm (adjustable by user)
- Interface: 10/100Mbit Ethernet (protocol: TCP/IP)

  RS485/422

SYSTEM PARAMETERS

The system delivers an application message for each vehicle and an object list over an Ethernet Interface and RS485/422 Interface.

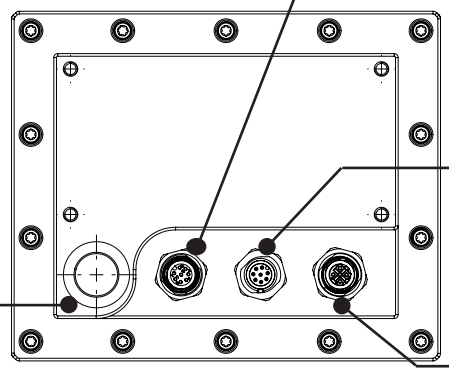
- Trigger area*: 20...80m (optimal area for counting and classification)
- Detection Range: 5m up to 300m (depends on RCS, installation, lane, etc.)
- Detection angle: ±20°
- Radial velocity: 1..300km/h
- Max. velocity error: 1km/h for velocities < 100km/h

  1% for velocities > 100km/h
- Direction: receding and approaching traffic
- Counting: >90% precision (receding and approaching traffic)
- Classification: >80% precision (receding and approaching traffic)
- Classes: 2+1 (passenger car, truck, others)
- Update time: 60 ms
- Protection class: IP67
- Temperature range: -30 ... +60°C (operating / storage)

*depends on lane, installation and traffic direction

INTERFACE

The system comes standard with Ethernet Interface and a RS485/422 Interface.



Master OUT
- Connector type: 8-pole female
- M12 Phoenix Connecter type SACC-DSI-FS-8CON-L180/SCO SH - 1553860

Supply Connector
- Connector type: 8-pole male
- M12 Phoenix Connecter type SACC-DSI-MS-8CON-180/SCO SH - 1553873

Ethernet Connector
- Connector type: 4-pole female
- M12 Phoenix Connecter type SACC-DSI-FSD-4CON-L180/SH TQ - 1456527

protective vent must not be covered

not used connector must be covered

Please use IT3734 for female and IT3733 for male connectors

M12 sealing cap for unoccupied M12 connectors of the sensor

Power Supply

	Comment	Symbol	min.	typ.	max.	Unit
supply voltage		Vcc	11.4		26.4	V
power consumption	complete system	P		6	9	W

Connector type: 8-pole male	M12 Phoenix Connecter type SACC-DSI-MS-8CON-180/SCO SH - 1553873

PIN	Signal	Comment
1	d.n.c.	do not connect
2	d.n.c.	do not connect
3	d.n.c.	do not connect
4	d.n.c.	do not connect
5	GND	
6	GND	
7	Supply	
8	Supply	

Ethernet Connector

	Comment	min.	typ.	max.	Unit
speed				100	Mbit/s
cable length	CAT 5e or higher			100	m

Connector type: 4-pole female	M12 Phoenix Connecter type SACC-DSI-FSD-4CON-L180/SH TQ - 1456527

PIN	Signal	Comment
1	Tx+ & pos/neg VPD	
2	Tx- & pos/neg VPD	
3	Rx+ & neg/pos VPD	
4	Rx- & neg/pos VPD	

Master OUT (to connect additional module e.g. GSM/GPRS)

	Comment	min.	typ.	max.	Unit
speed			115200	250000	bit/s
cable length	CAT 5e or higher			100	m

Connector type: 4-pole female	M12 Phoenix Connecter type SACC-DSI-FS-8CON-L180/SCO SH - 1553860

PIN	Signal	Comment
1	RS485 B	2 wire RS485/422
2	GND	Supply additional module
3	RS485 A	2 wire RS485/422
4	d.n.c.	do not connect
5	d.n.c.	do not connect
6	d.n.c.	do not connect
7	Aux Supply	Supply additional module
8	d.n.c.	do not connect

SOFTWARE

The iSYS-3104 software performs radar detection, signal processing, tracking and application algorithms. The result is an application message for each vehicle and an object list, which will be send to the Ethernet interface (optional RS485/422).

The application message contains the following information:

- Time stamp
- Lane
- Speed
- Class

The object list contains the following information:

- Object Id
- Time stamp
- Quality
- Position in x- and y-direction relative to pole (cartesian)
- Velocity in x- and y-direction relative to pole

The object list allows the implementation of own applications or system functions. The Object list will not be send out to RS485/422.

All software tools (Software Development Kit (SDK); iGUI-3104 Configuration Software; Serial Application Message Reader (iSAM)) and documentation can be downloaded under

http://www.innosent.de

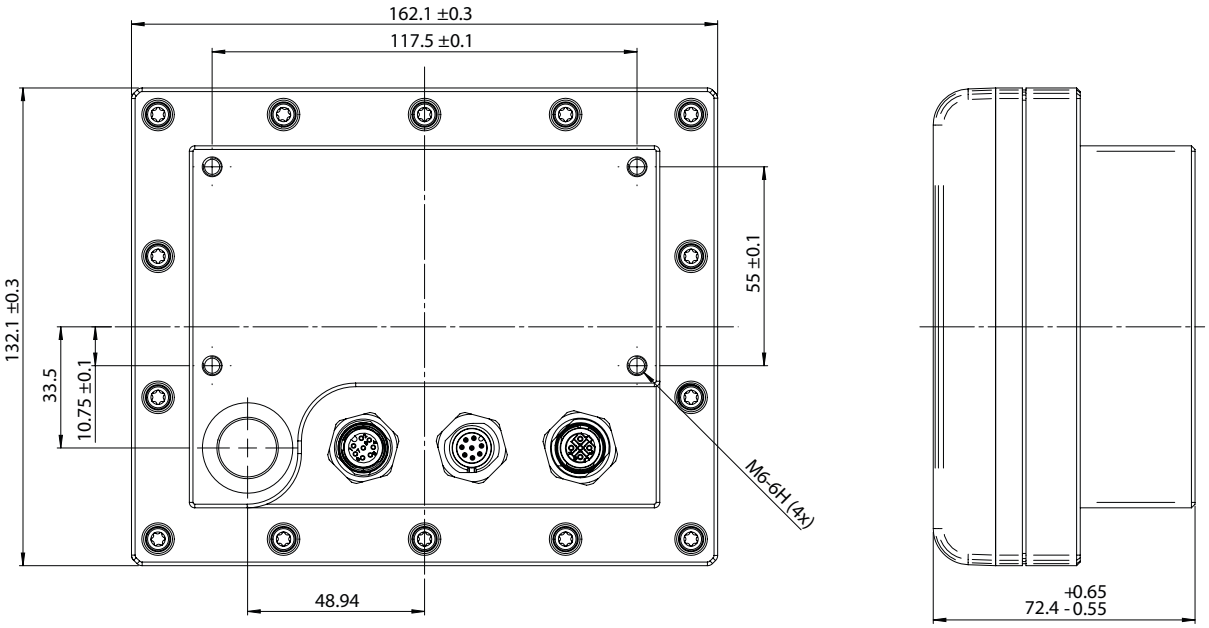
INSTALLATION PARAMETERS

Within the specified trigger areas several trigger lines can be configured. In case that a vehicle passes this trigger line it will be counted as well as classified.

A detailed description of the Installation parameters is published in the user manual of the iSYS-3104 that can be downloaded under: www.innosent.de

DIMENSIONS

For detailed dimensions compare to corresponding Datasheet.



APPROVAL

This Data Sheet contains the technical specifications of the described product. Changes of the specification must be in written form. All previous versions of this Data Sheet are no longer valid.

VERSION	DATE	COMMENT
1.0	27.06.2016	initial release
1.1	12.12.2016	reduction of power consumption
1.2	11.01.2017	remove stop and go mode

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