IIII InnoSenT

Data Sheet ITR-3800 - A1 release - PoE / RS485

- preliminary -

Version 0.2 — 09.06.2022

PRODUCT FAMILY	InnoSenT Traffic Radar

APPLICATIONS	Intersection Management
	Traffic Monitoring

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

FEATURES:

- 4D MIMO FMCW RADAR working in the 24 GHz ISM band

- Worldwide certification possible

- Including software enabled tracking and classification

- Integrated 4K camera

- Target separation by distance, speed and angle

- Maximum detection range up to 300m

- 4+1 Classification up to 183m

- Velocity range from 0.5km/h up to 233km/h

DESCRIPTION

The ITR-3800 Traffic Radar covers intersection management and traffic monitoring applications and provides the output of events.
It has an integrated 4K camera which enables the service technician to perform a much more efficient setup on the junction sites.
Its modular design provides different interfaces, tailored to your needs.

CERTIFICATES

InnoSenT GmbH has established and applies a quality system for: development, production and sales of radar sensors for industrial and automotive sensors. See more information on our quality standards:

https://www.innosent.de/en/company/certifications/

ADDITIONAL INFORMATION

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

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PARAMETERS

The ITR-3800 consists of a 24 GHz Radar front end with FMCW modulation, a high end processing board and an integrated 4K camera with live video stream.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Regulatory					
transmission frequency	f_t	24.05		24.250	GHz
output power (EIRP)	P_{out}			12.7	dBm
Sensor					
standard detection range	d_r	5 | 16.4		300 | 984	m | ft
maximum distance for classification	$d_{r\_class\_truck\_car}$			183 | 600	m | ft
maximum distance for classification	$d_{r\_class\_ped\_bike}$			83 | 272	m | ft
standard detection field	azimuth		110		°
	elevation		30		°
velocity range	v_r	0.46 | 0.29		233 | 144.8	km/h | mph
velocity resolution	v_{res}		0.46 | 0.29		km/h | mph
update rate (depending on amount of targets) *	t_{update}		85 (*50)		ms
Power supply					
voltage supply DC	V_{CC}	24	±5%	48	V
current consumption @24V *	I_{CC}		0.67		A
power supply @24V *	P		16		W

* this parameter differs or might differ from series release

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PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Camera					
quality	live video	Full HD			
	still image	4K (13MP)			
standard field of view	diagonal		143		°
	azimuth		121		°
	elevation		73		°
range		5		80	m
video codec		H.264			
frame rate		20 Hz			
Mechanical Outlines					
outline dimensions	length	270			mm
	width	102			
	depth	37.4 (46.9 including connectors)			
weight *	m	1.6 kg			
Environment					
operating temperature	T_{OP}	-40		+85	°C
storage temperature	T_{STG}	-40		+85	°C
protection class *		IP6x (*IP67)			

* this parameter differs or might differ from series release

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MECHANICAL DRAWING (all dimensions in mm)

270

102

46,9

37,37

75

75

19

65,1

37,1

25,4

4 x M4 ⌵ 6
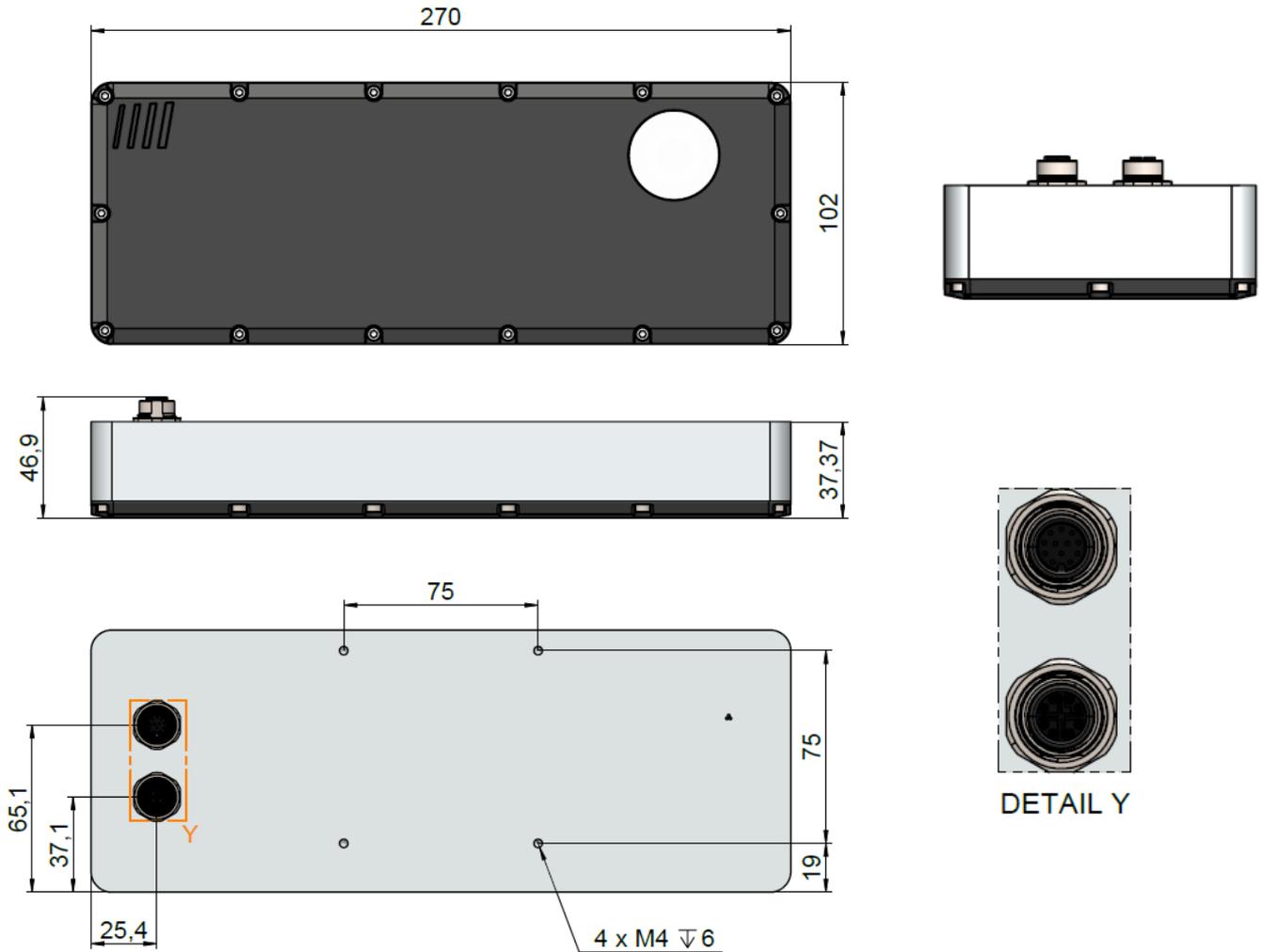
Use M4 X 6 mounting screws.
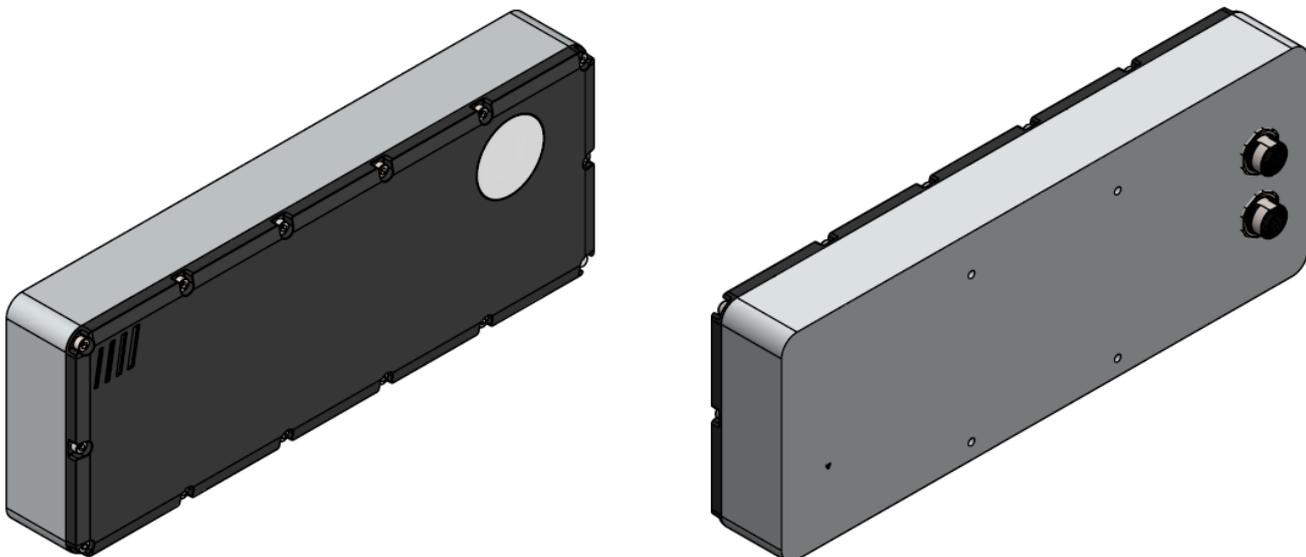
DETAIL Y

INTERFACES

The module provides two different interfacing possibilities. You can choose which one to use.

ATTENTION: Connect the module only as stated below. Do not mix those possibilities. It might result in unknown behaviour!

INTERFACES | PoE + RS485

All required hardware is provided in the Starter Kit ITR-3800 with ordering number 80.00000527.

PoE
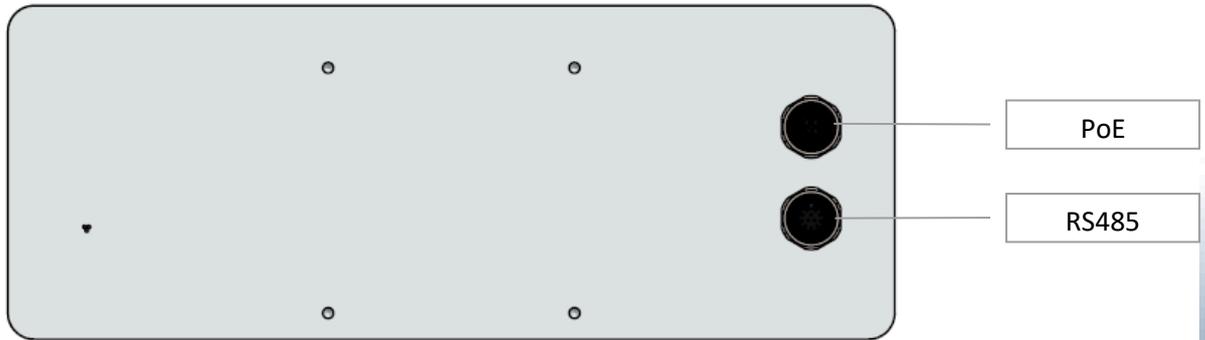
RS485

INTERFACES | Ethernet + RS485 + power supply

Ethernet
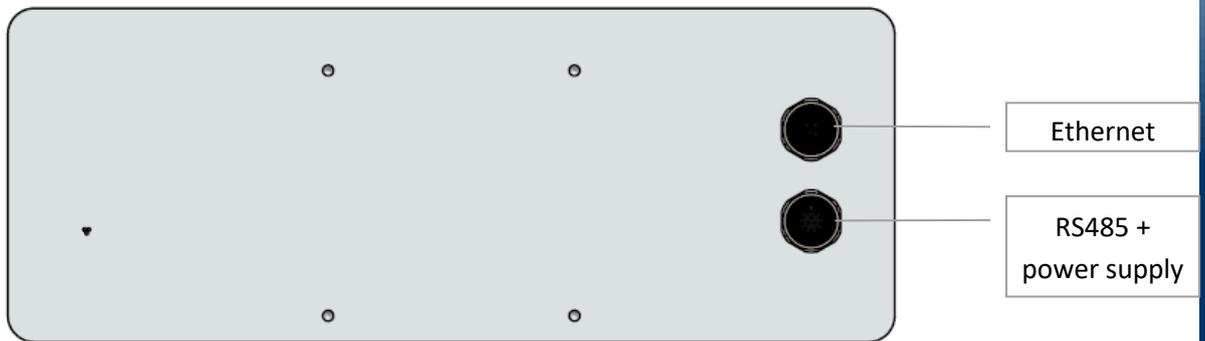
RS485 +
power supply

INTERFACE	CABLE	PIN COUNT	InnoSenT ORDERING NUMBER
PoE / Ethernet	M12 <-> RJ45 ETH	8	29.00000283
RS485 / power supply	M12 <-> COM / banana jacks	12	29.00000284

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FREQUENCY INFORMATION

The information that will be given below is only a rough overview; for details please contact the local approval agencies. An overview over the frequency bands in Europe can also be found in the REC 70-03 which is available under www.cept.org.

ISM FREQUENCY BAND

In general, the ITR-3800 can be used in the US and all European countries.

24.05

24.000   24.250
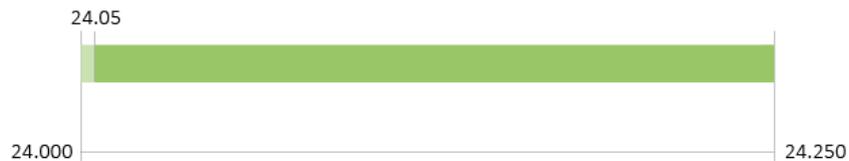
DISPOSAL

The device is to be disposed of according to the European Community Directive 2012/19/EU on waste electrical and electronic equipment.
Devices must not be disposed of with consumer waste.
For environmentally compatible recycling and disposal of the device, please contact a certified waste management company or send the device back to InnoSenT GmbH.

ESD-INFORMATION

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
**ELECTROSTATIC
SENSITIVE DEVICES**

This InnoSenT sensor is sensitive to damage from ESD. Normal precautions as usually applied to CMOS devices are sufficient when handling the device. Touching the signal output pins has to be avoided at any time before soldering or plugging the device into a motherboard.

REVISION HISTORY

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
0.1	2022-02-09	Document creation - PRELIMINARY
0.2	2022-06-09	Update to A1 release - PRELIMINARY

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