RADARXENSE

RXS-LM-10

Length Measurement Radar

- Length and speed information of passing traffic
- Suitable for traffic monitoring and classification systems
- Suitable for tunnel installation

The RXS-LM-10 radar measures the velocity and the length of a passing target. The speed and length information is presented in a telegram sent over the serial line output. The radar is recommended in traffic monitoring applications where classification is important.

General Description

The RXS-LM-10 radar module measures the velocity and length of moving targets. The module is intended for gantry or roadside installation.
The radar observes one lane, so multiple lanes require multiple radars. The direction of traffic is indifferent, the radar detects the movement direction itself.
The radar does not require any settings, once power is supplied the radar starts functioning.
The radar can also be used in tunnel applications, as specials algorithms minimize multipaths and indirect reflections.

Application

The radar should be installed preferable on a gantry facing 60 degree downwards to the road surface. Roadside installation is possible, but when observing multiple lanes, precautions should be taken to prevent occlusion. The radar should have a free “line of sight” to the lane it observes. In case of roadside installation the radar should be installed at a height of 6-9 meters looking down, 60 degree forward to the middle of the lane it observes. The RS422 output telegram indicates the driven speed and the length of a target. This allows the user to use this radar in monitoring applications where classification is required. As the radar provides a RS422 telegram and no input settings are required, the RXS-LM-10 is easy to integrate in traffic systems. The radar provides an output telegram for every car that passes the radar.

General Technical Data

Supply voltage: 9 to 30V (secured against false polarity)
Supply current: 150mA

Transmit frequency: 24.000 – 24.250GHz
Maximum transmit power: 20dBm (EIRP)
FCC and ETSI 300 / 440 compliant

Antenna beam:
horizontal: 11° (+/-5,5°) (typical)
vertical: 11° (+/-5,5°) (typical)
Readout period: 24ms
Sensitive distance range: 0.3…15m
Relative Speed Range: -70m/s…+70m/s
Minimum speed: TBD
Maxium speed : 250km/h
Speed accuracy: 5%
Length Accuracy: 0.5m

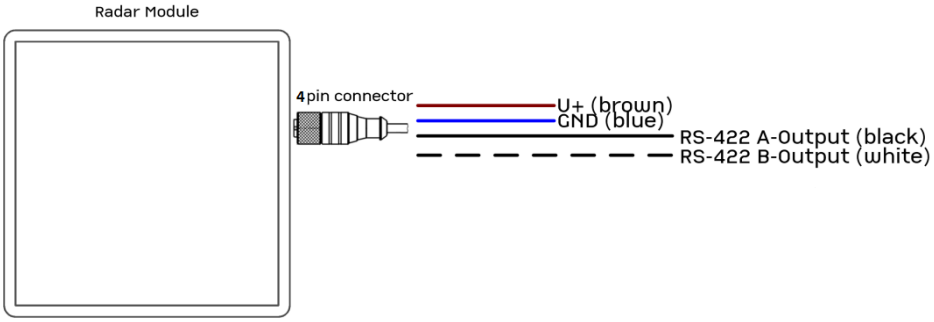
Output resistance (RS422): 1360hm
Output voltage (RS422): 5V (diff.)

Dimensions (lxwxh): 100 x 100 x 42 (mm)
Mounting possibilities:
- 4x M4 holes at the back side
- 82 x 82 mm in square

Environmental:
Housing: Rated IP67
Operating temperature: -20° to +60°
Storage temperature: -30° to +80°C

Module Interface

The circular connectors used are industrial standard, rated IP67. The connector type on the radar module is a five pole M12 male.



The radar system has the following interfaces:

- Power supply +9 to 30V (brown wire) and GND (ground, blue wire)
- RS422 serial interface; A-output (black wire) and B-output (white wire)

Readout Description

The RS422 communication interface output has the following specification:

- Interface specification: 19200, 8, N, 1

.

The readout telegram consists of:

Byte 1:	0x7e (integer 126) constant
Byte 2:	0x7e (integer 126) constant
Byte 3:	0x7e (integer 126) constant
Byte 4:	length of the target in cm's (lower Byte)
Byte 5:	length of the target in cm's (higher Byte)
Byte 6:	speed of the target in cm/s (signed integer; positive = approaching; lower Byte)
Byte 7:	speed of the target in cm/s (signed integer; positive = approaching; higher Byte)
Byte 8:	distance to the target in cm's (lower Byte)
Byte 9:	distance to the target in cm's (higher Byte)
Byte 10:	Reserved byte for future functions
Byte 11:	Reserved byte for future functions

RADARXENSE

Drawing and dimensions of the housing in mm