



Short/Medium Range Radar Sensor

Blind Spot Information System

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Product Overview

SAYKAL Radar Sensor; It is an innovative, robust, and reliable electronic sensing unit developed for the automotive industry and containing new-generation technologies. It is customized for out-of-cabin applications. AP003 is a high-performance short-range radar sensor operating in the 76-81 GHz band for various premium backward & forward-looking applications. Blind Spot Information System supports drivers in passing and lane change maneuvers to help avoid side collisions. When BSIS detects moving objects in the blind spot zone, the driver is cautioned with a visual and audible warning.



Applications

- Blind Spot Detection - BSD
- Rear Pre-Crash - RPC
- Frontal Collision Warning System - FCWS
- Automated Parking Assist - ADA
- Rear – Auto Emergency Braking Sensors
- Rear Cross Traffic Alert – RCTA
- Pedestrian Bike Detection
- Safe Exit Assistant – SEA
- Automated Guided Vehicle Sensor

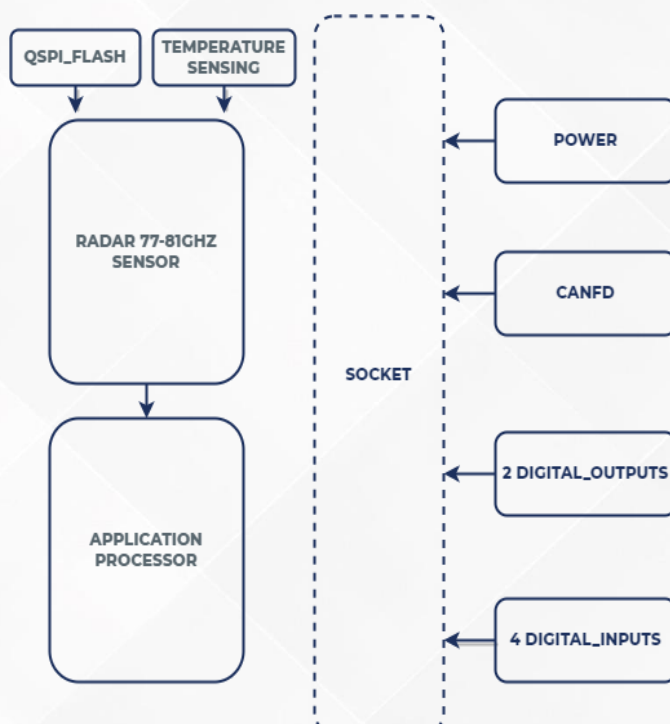
Hardware Features

- 7V – 40V DC / 4.5A
- Reverse Connection Protection
- AUTOMOTIVE
- 16 Megabit extended storage / 64k FRAM
- Optimal Reliability
- RS485
- CAN / FDCAN
- Temperature Sensing
- 2 x Output & 4 x Input

Software Features

- Firmware Update with CAN Bus
- UDS Enabled
- SAE J1939 Support
- High Precision
- Object Detection and Tracking
- Configurable Azimuth FOV up to 180°
- Configurable radar detection zone
 - Up to 30m for Vulnerable Road Users
 - Up to 50m for Motor Vehicles
- Configurable Sensor position and tilt.
- Detection of Position, Relative Speed, Direction of Motion, Ground Speed Static Objects

Functional Block Diagram

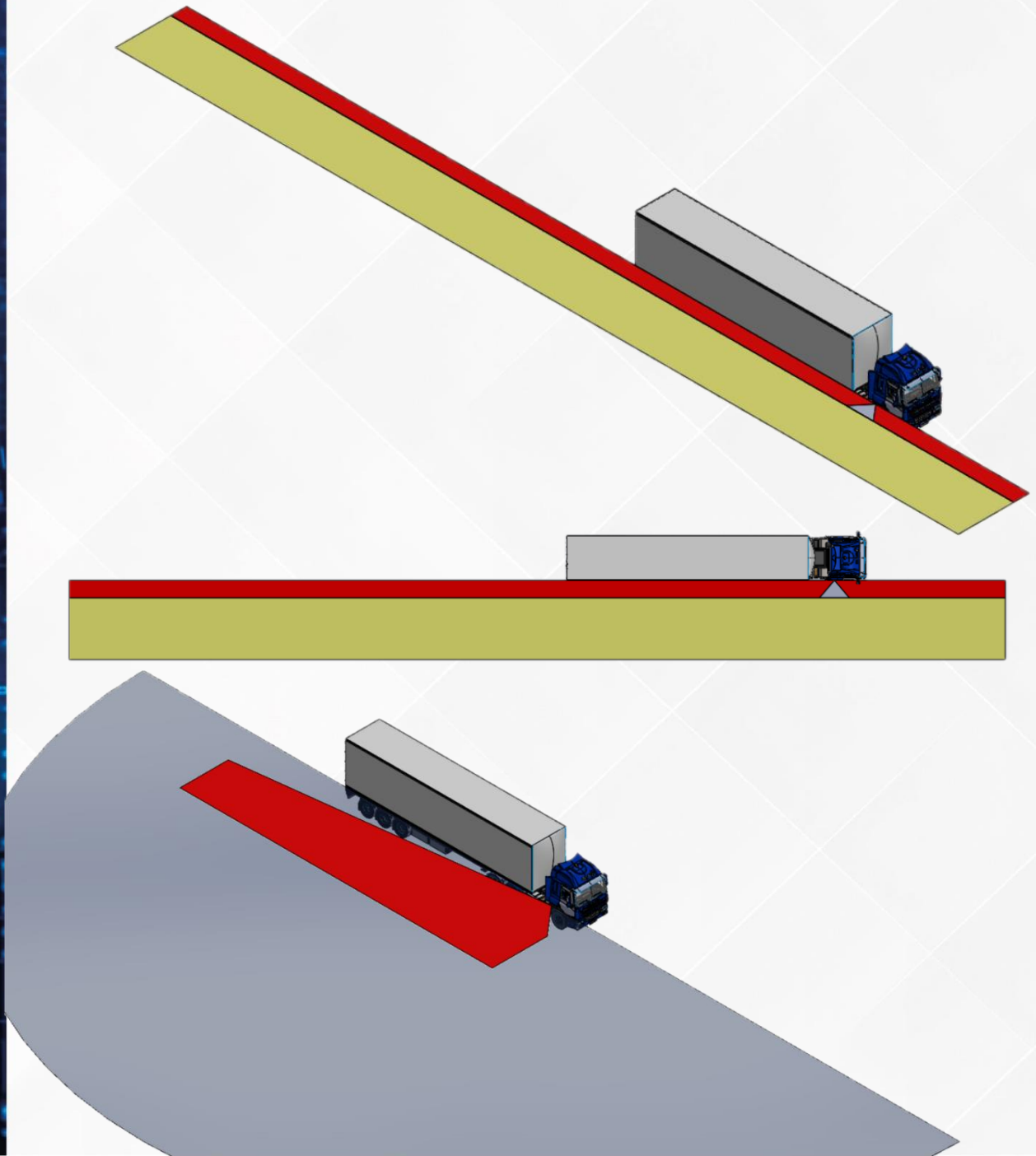


Typical Application Features – BSIS

- The BSIS can be easily calibrated through the configuration interface
- Detects dynamic and static objects.
- Classifies, and tracks detected objects according to radar cross-sectional areas.
- PC GUI connection
 - User configuration
 - Fault diagnostic
- The system powers up when the ignition is cycled on
- Optional Input-Output controller; blind spot detection alerts (visual and/or audible)
- Capability of CAN-Bus features

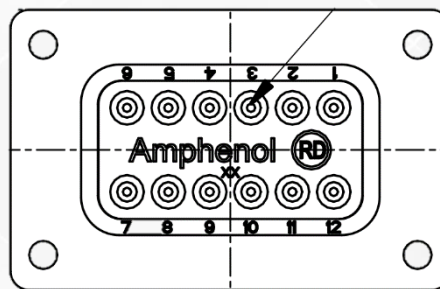
Application Example on Vehicle

- BSIS, 180° field of view.
- In the first two images, the area shown in red is given as the warning zone requested by the BSIS regulation.
- The area shown in yellow is given as the information area requested by the BSIS regulation.



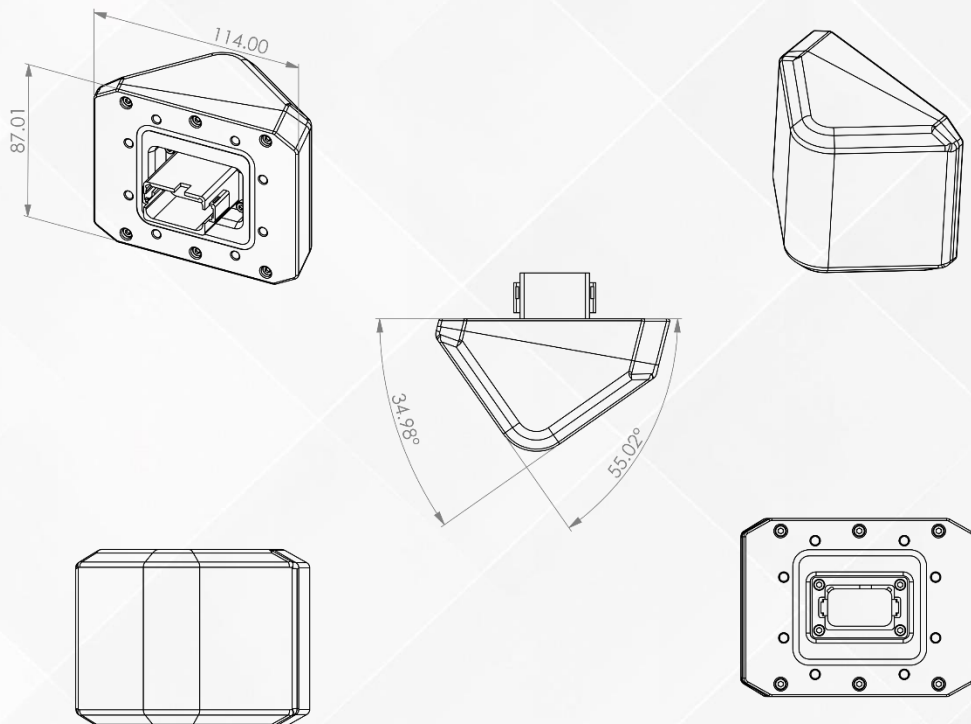
Pin Out / Pin Names and Descriptions

PIN	NAME	DESCRIPTION
1	Reserved	Serial Communication
2	Reserved	Serial Communication
3	CAN Low	Flexible Controller Area Network
4	CAN High	Flexible Controller Area Network
5	IN1	9V / 36V DC Input
6	IN2	9V / 36V DC Input
7	CANFD Low	Flexible Controller Area Network
8	CANFD High	Flexible Controller Area Network
9	D_OUT1	Low Side Switch
10	D_OUT2	Low Side Switch
11	Chassis Ground	Chassis Ground
12	DC_IN	Supply Voltage, 7V / 40V



AT04-12PA-PM02

Package Outline and Branding Drawing



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