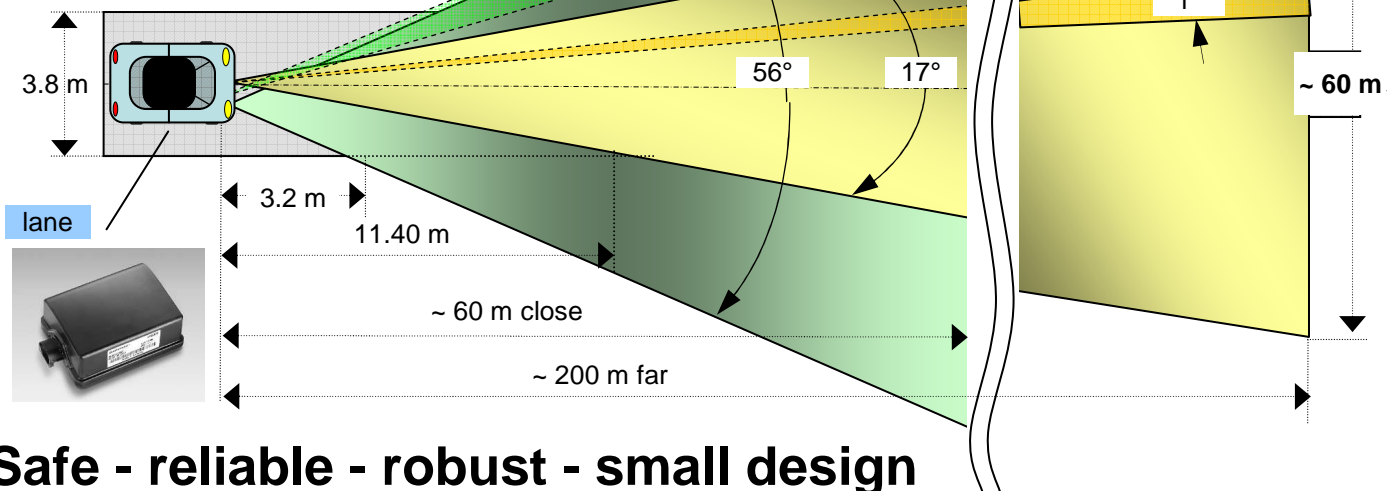


ARS 30X /-2 /-2C/-2T/-21

Long Range Radar



Safe - reliable - robust - small design

The A.D.C. GmbH, a subsidiary of the Continental Corporation, offers a new type of radar sensor, the ARS 3XX, as a possible adaption in different application.

Typical areas of application:

- **Anti-collision protection for vehicles of every description (particul. autonomous)**
- Headway control also for far field (vehicles of every description, particularly autonomous)
- Area monitoring system for far field, e.g. of hazardous or non-accessible areas
- Traffic light approximation recognition, classification of objects (app. 90 single targets)
- Object detection, e.g. in confusing or unclear areas
- Unremarkable object detection by affix a protection cover before it

Measuring procedure:

The rugged ARS 3XX sensor from A.D.C. measures independent the distance and velocity (Doppler's principle) to objects without reflector in one measuring cycle due basis of FMCW (Frequency Modulated Continuous Wave) with very fast ramps, with a real time scanning of 15 / sec.. A special feature of the device is the simultaneously measurement of great distances **up to 200 m**, relative velocity and the angle relation between 2 objects.

Advantages:

- **Fast and safe:** The ARS 3XX dispels with the apparent contradiction between excellent great Measuring performance and a high degree of operational safety. The rugged ARS 3XX radar sensor is capable of determining the distance to an object in real time scanning and dependent on the driving speed a possible risk of collision.
- **Reliable:** The ARS 3XX radar sensor is fail-safe and able to recognize troubles of the sensor and sensor environment and display it automatically.
- **Robust and small design:** By using a radar technology with less complex measuring principle and the development and mass production in automotive supply industry, the design is kept very robust and small.

Benefit from the unique features of the latest A.D.C. technology!



ARS 30X /-2 /-2C/-2T/-21

Radar-Sensor 77 GHz

Measuring performance		to natural targets (non-reflector targets)
Distance range		0.25 ...200 m far field, 0,25... 60 m close-up range
Resolution distance measuring		2 m or > 5.5 km/h (ability to separate targets and objects)
Accuracy distance measuring		0.25 m or 1.5 % @ >1 m
Azimuth angle augmentation	(field of view FoV)	-8.5°...+8.5° far field, -28°...+28° close-up range
Elevation angle augmentation	(field of view FoV)	4.3° at 6 dBm
Resolution angle measuring		1° far field, 4° close-up range
Accuracy angle measuring		0.1° far field, 1°...2° close-up range
Speed range		-88 km/h...+265 km/h (- leaving objects...+approximation)
Speed resolution		2.76 km/h far field, 5.52 km/h close-up range
Speed accuracy		0.5 km/h far field, 1.0 km/h close-up range
Cycle time		app. 66 ms close and far measurement
Blockage recognition time		<= 60 s (electro mechanical functions)
Antenna quantity		17 far field, 15 close-up range
Operating conditions		
Radar operating frequency band		76...77 GHz (license industry expected app. 2011)
Transmission capacity	average	<10 mW
Mains power supply	at 12 V DC / 24 V DC	+8.0 V...27 V DC / +8,0 V...34 V DC
Power consumption	at 12 V DC / 24 V DC	7 W at 14 V DC / 7 W at 28 V DC
Power consumption	with heater	maximum 35 W at 14 V / maximum 63 W at 28 V
High system voltage	at 12 V DC	up to 27 V DC without time limit
High system voltage	at 24 V DC	up to 36 V DC 5 min., up to 50 V DC 2 min.
Operating-/ storage temperature		-40°C...+85°C / -50°C...+105°C
Shock	mechanical	50 g
Vibration	mechanical	20 m/s ² peak@10 Hz / 0.14 m/s ² peak@1000Hz
Protection rating		IP 6k 9k (dust, high-pressure cleaning) IP 6k7 (10 cm under water), ice-water shock test, salt fog resistant, mixed gas EN 60068-2-60
Displays and connections		
Monitoring function		self monitoring (fail-safe designed)
Displays		none
Interface	multiple party on 1 CAN bus possible	1 x CAN 1 - high-speed 500 kbit/s multiple party via CAN ID allocation
Housing		
Dimensions / weight	W * H * D (mm) / (mass)	120 * 90 * 46 / < 500 g
Material	housing front / rear side	Epoxy resin glass blackcoloured / aluminium
Miscellaneous		
Measuring principle (Doppler's principle) in one measuring cycle due basis of FMCW with very fast ramps		independent measurement of distance and velocity
Version ARS 308-2 and -2T	sensor for the industry	open CAN protocol - type -2T with internal termination
Version ARS 309-2	sensor high sensitivity	as ARS 308-2, but with app. 20 dB higher sensitivity
Version ARS 308-2C	sensor anti-collision	as ARS 308-2, but with anti-collision parameter
Version ARS 308-21	combined functions	as ARS 308-2, but with combined functionality

Interfaces:

The device is fitted with one CAN bus interface as standard. Further interfaces as converter, Software adaption, housing and / or hardware adaption are possible on demand and in case of assumption of costs. The ARS 3XX also could be used for complex measuring tasks.

Information:

Further information about the ARS 3XX is available directly from A.D.C. GmbH.

We look forward to receiving your call at +49 8382 9699-114. Tell us about any special requirements you may have, even if they are for a completely different purpose! We would be pleased to provide you with an individual solution.

A.D.C. GmbH

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