

ARS 2-X

**“My car can see
.... and takes care of
the routine work for
me”**

ARS 2-X (adaptive cruise control)

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1. ARS 2-X function

ARS 2-X is a completely new type of cruise control system that supports the driver while driving. However, ARS 2-X does not relieve the driver of their responsibility or reduce the pleasure of driving.

ARS 2-X is an extension of the normal cruise control function that can not only keep the speed constant, but will automatically adjust the speed to the flow of the traffic in front.

The system may be operated like a normal cruise control:

- Whenever you press the accelerator, the car accelerates
- Whenever you brake, the system will switch off

The driver is relieved of routine work (such as, taking note of the maximum speed limit, reading the speedometer, estimating the distance from the vehicle in front, and constantly regulating these parameters with the accelerator and brake pedals) during NORMAL DRIVING.

The driver has time to observe the traffic in front, to decide on a driving strategy, and to react in sufficient time to critical situations. This is the reason why driving with ARS 2-X is less tiring and is safer and far more enjoyable.

Basic function:

- As long as the road is free in front of the vehicle, the ARS 2-X keeps the set speed constant.
- If the vehicle approaches a slower-moving vehicle in front, it adapts the speed to the vehicle ahead and then maintains the selected time-distance (in seconds) from this vehicle.
- When the road becomes clear again, the vehicle again accelerates back to the set speed.

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- The set speed can be selected in 5 mph (10 km/h) increments (irrespective of the speed at which the vehicle is currently traveling)
- The ranging cruise control includes the possibility of limited brake actuation. This allows you to adapt the speed comfortably and relatively quickly by use of the finger controls. The limited braking will also prevent the vehicle from traveling unintentionally faster on roads with a gradient.

2. Benefits to the customer

- Relaxed driving
- Less fatigue
- Driving with better anticipation
- Noticeable on every journey
- Active safety improvements thanks to driving more attentively and with more awareness of distances
- The many benefits of the ARS 2-X can also be seen in the comments from the assessments of drivers (see below)
- The best arguments, favoring ARS 2-X can be experienced by DRIVING with the system

3. How drivers assess the ARS 2-X based on their own EXPERIENCE

- I'm enthusiastic about it – I want this function!
- Very pleasant
- Helpful and stress-reducing
- I needed half an hour to get used to this completely new driving experience.
- Before I drove with the ARS 2-X, I thought I wouldn't need something like that.
- I'll never again drive too slowly. Whenever the traffic situation permits, I'll drive at exactly the speed I want to drive at.

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- I'll never again drive too fast. As soon as I see a speed limit, I'll adjust my desired speed and I'm sure that I won't exceed the limit through lack of attention or driving downhill.
- Never again will I maintain an insufficient distance from the car in front, so I'll avoid getting penalty points on my driver's license.
- It doesn't get on my nerves so much when I have to drive behind a slower vehicle.
- My wife feels much more comfortable as a passenger since I've been driving with the ARS 2-X.
- It's a real contribution towards active traffic safety – I'm more relaxed and more attentive than before.
- I always notice the benefits of this system when I'm driving.
- ARS 2-X is a must for everyone who drives outside of towns

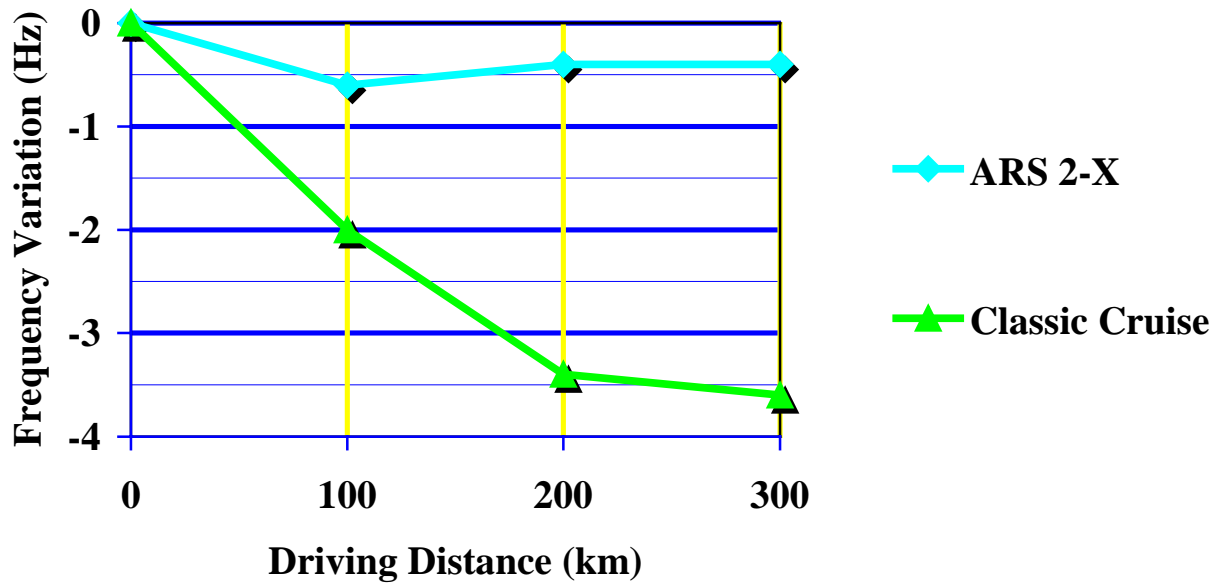
Extract from the German penalty points catalog

- 1.8 seconds stipulated distance = 1/2 speedometer
- 0.9 seconds DM 50.-
- 0.8 seconds DM 100,-
- 0.7 seconds DM 150,-
- 0.6 seconds DM 200,-
 >>>>>>>
- 0.2 seconds DM 400,- and immediate
 driver's license confiscation

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Driver fatigue over 300 km

Measured with flicker test



The social aspects of ARS 2-X:

- No risk compensation
- Consumption reduction
- The comfort of the system allows the driver to maintain his attention span over long distances
- The driving style of the ARS 2-X driver becomes more foresighted and mindful of distances
- ARS 2-X vehicles increase the traffic flow

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4. The most important data in brief

- Main area of use: Highways and expressways
- Speed range: 30 180 km/h
- Automatic brake: max. 20% of full braking
- Additional functions:
 - Speed limiter
 - Audible information about moving and stationary objects (even when ARS 2-X is switched off)

- Control elements:
- Knurled wheel or control lever for selecting the required following time
 - Cruise control lever
 - Switch for audible distance information

Information that the ARS 2-X provides for the driver:

- Ideal distance
- Detects the vehicle in front
- Actual distance from the vehicle in front
- Ideal speed
- Speed of the vehicle in front
- Insufficient distance warning
- Too rapid approach warning
- Warning when the system is switched off automatically

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5. Limitations of the system

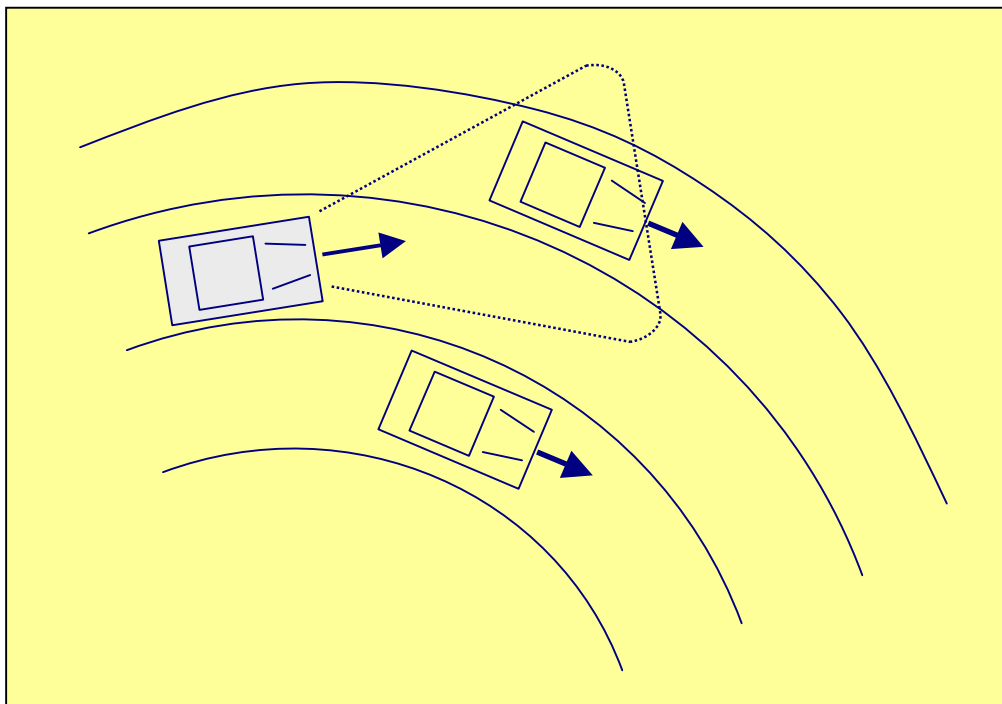
The ARS 2-X is an innovative driver assistance system that can support but not replace the driver.

The driver's sensory organs and data processing capacity cannot be reproduced by today's technology, which is the reason a system like ARS 2-X can only support and cannot replace the driver.

- No reaction to stationary obstacles
- There may be incorrect reactions, but these can be recognized in time by the driver and remedied.

Examples:

- Late reaction to vehicles cutting in front
- Detection reliability not 100% (see the example of negotiating curves)



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6. Tips for optimum use of the ARS 2-X

- Always set the set speed to the speed that you would drive at if there were no vehicle in front of you.
- When a vehicle cuts in front of you, drive directly up to the vehicle.
- When approaching exits, reduce the set speed to allow the ARS 2-X to slowly decelerate the vehicle.
- If you approach a vehicle at very high speed, reduce the set speed in good time.
- If the ARS 2-X accelerates the vehicle too slowly, take the opportunity to briefly harmonize the system with the accelerator pedal.
- If you must brake yourself, immediately after braking activate the Resume function in order to reactivate the system to the previous set speed.

**MY CAR CAN SEE AND TAKES CARE OF THE
ROUTINE WORK FOR ME.**

Take this opportunity for yourself and your customers

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Appendix:

The constant tasks of the drivers and the influence of ACC:

- Anticipating the traffic and road situation
- Speed selection
 - Noting the maximum permissible speed
 - Adapting the speed to the driving and traffic situation
 - Performing the control task
- Selecting and calculating the ideal distance
 - Estimating the distance
 - Regulating the distance, taking into account the maximum speed
- Deciding on the ideal driving trajectory
 - Performing the ideal / actual adaptation, or regulation (steering)

The tasks written in gray are largely taken care of by the ARS 2-X.