

Compact accident research

An investigation into the availability of ESP in cars in 2009

Imprint

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German Insurers Accident Research

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Preliminary remarks

At the beginning of 2009, for the fourth time, the UDV (German Insurers Accident Research) investigated which new cars in Germany are equipped with ESP (an electronic stability program) as standard, which vehicles only have ESP available as an option and which do not have it at all. This publication updates the previous investigations [1, 2 and 3] for the year 2009. The results are intended, above all, to help consumers decide which new car to buy, but they are also meant to encourage car manufacturers to equip all of their vehicles with ESP. The UDV has been making this demand for some time.

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How ESP works

By applying the brakes to wheels individually, as appropriate, and intervening in engine and transmission management, an ESP system prevents a vehicle from skidding. To enable the ESP system to respond to critical driving situations, a microcomputer continuously compares the driver's input with the car's driving status. The steering angle sensor indicates the direction in which the driver intends to go, and the engine management system, wheel-speed sensors and yaw-rate sensor supply signals that indicate the vehicle's behavior. If a discrepancy is

discovered between the calculated driving status and the driver's input, the ESP system intervenes within fractions of a second.

Different names used for ESP

Car manufacturers use a variety of different names and abbreviations for systems that control vehicle stability electronically (Figure 1). All these systems basically work in the same way, although they may differ in design or in the additional functions they offer (such as correction of the steering angle or trailer stabilization for vehicles with a trailer).

▪ ESP - Electronic Stability Program Audi, Chrysler, Fiat, Kia, Mercedes, Opel, Peugeot, Skoda, VW and others
▪ DSC - Dynamic Stability Control BMW, Jaguar, Land Rover, Mazda
▪ DSTC - Dynamic Stability & Traction Control Volvo
▪ MASAC - Mitsubishi Active Stability Control Mitsubishi
▪ PSM - Porsche Stability Management Porsche
▪ Stabili Trak - Vehicle Stability Enhancement System Cadillac
▪ VDC - Vehicle Dynamic Control Alfa Romeo, Subaru
▪ VSA - Vehicle Stability Assist Honda
▪ VSC - Vehicle Stability Control Daihatsu, Lexus, Toyota

Figure 1: Different names used for ESP

Potential benefits of ESP

The effectiveness of ESP has been confirmed by numerous national and international studies. The UDV's investigations [4] reveal that ESP could have a positive impact on 25 percent of car accidents involving personal injuries and at least 35 percent of car accidents involving fatalities.

If these findings are applied to the accidents involving one or more cars recorded in the official statistics for the year 2007, taking into account that in 2007 36 percent of all cars were equipped with ESP, around 21,000 such accidents involving personal injury and around 400 involving fatalities could have been prevented or their effects mitigated by ESP.

Percentage of newly registered cars in Europe equipped with ESP

In Germany, 81 percent of all newly registered cars are currently equipped with ESP. To-

gether with Sweden (98 percent), Germany is far ahead of other European countries in this respect (Figure 2) and far above the European average, which is 55 percent [5].

However, although Germany is a leading adopter of ESP in Europe, the situation cannot be considered to be satisfactory because, as things stand, only around 42 percent of all cars registered in Germany are equipped with ESP [5].

ESP-availability for new cars in Germany in 2009

In January and February 2009, the UDV collected information on ESP-availability for new cars in Germany. The research was carried out primarily on the internet. A total of 296 model ranges of 38 marques available on the German market were included (see Figure 3).

Within each model range (e. g. Renault Twingo), the availability of ESP was ascertained for each model variant, taking into account the

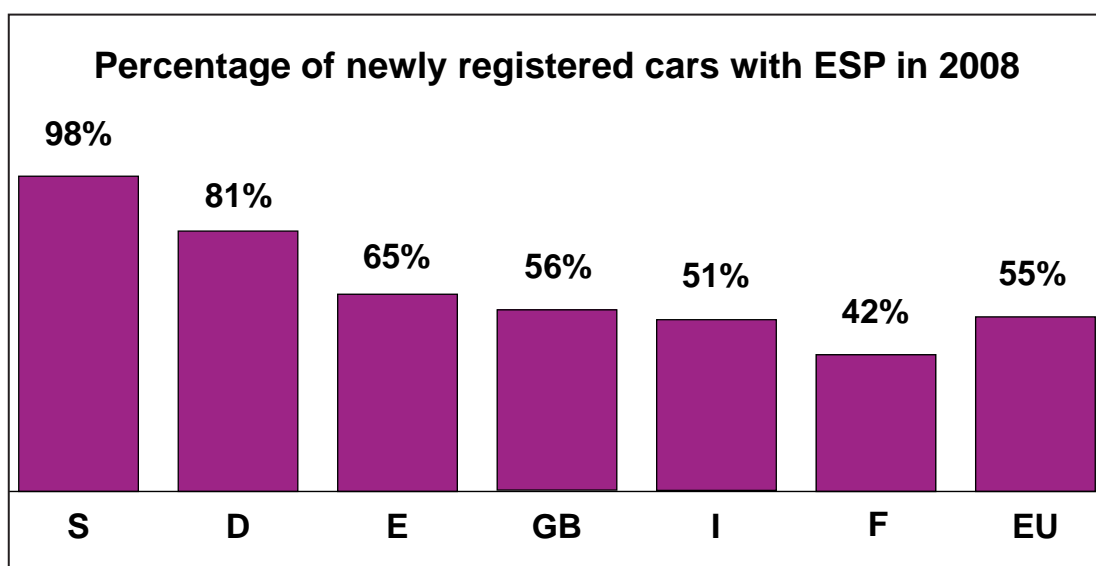


Figure 2: Percentage of newly registered cars with ESP in 2008
(Source: Bosch)

List of the 38 car manufacturers in the investigation		
Alfa Romeo	Jaguar	SAAB
Audi	Jeep	SEAT
BMW	Kia	Skoda
Cadillac	Lancia	Smart
Chevrolet	Land Rover	Ssang Yong
Chrysler	Lexus	Subaru
Citroen	Mazda	Suzuki
Dacia	Mercedes	Toyota
Daihatsu	Mitsubishi	Volkswagen
Dodge	Nissan	Volvo
Fiat	Opel	
Ford	Peugeot	
Honda	Porsche	
Hyundai	Renault	

Figure 3: Car manufacturers

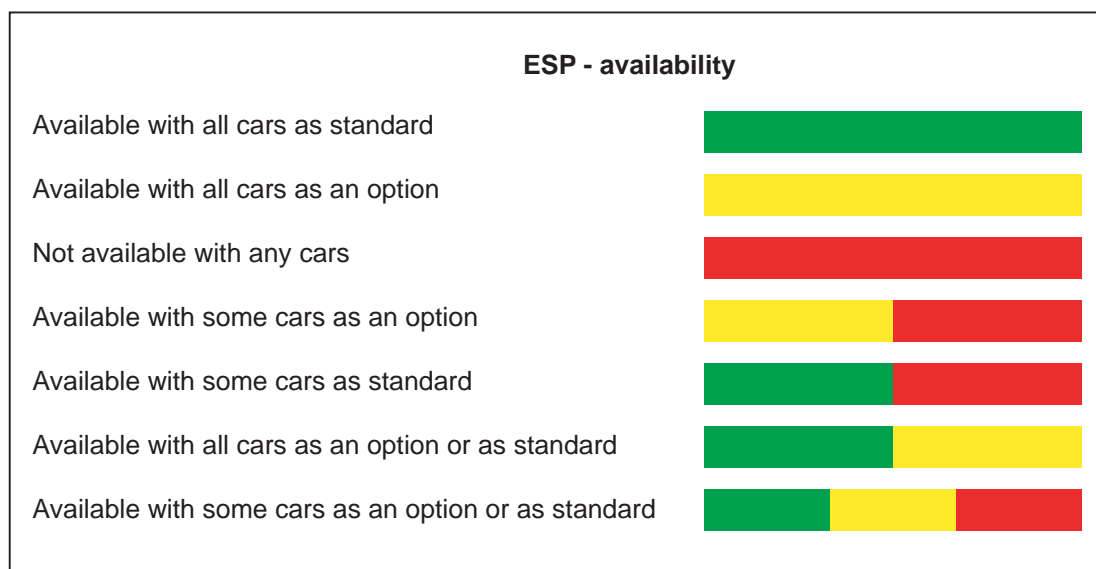


Figure 4: ESP-availability

engine (e. g. 1.3/ 43 kW) and trim level (e. g. "Expression"). The availability of ESP in a model range was indicated by means of three colors (green, yellow and red) as follows:

- Green: ESP available as standard
- Yellow: ESP available as an option
- Red: ESP not available

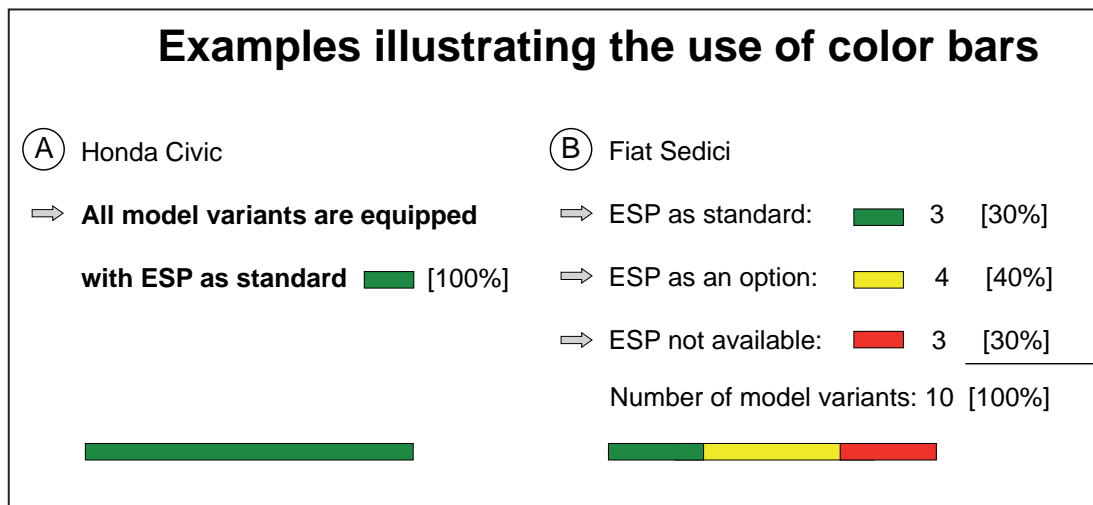


Figure 5: Examples illustrating the use of color bars

If all the variants in a model range are equipped with ESP as standard, the whole color bar for this model range is green. If they all have ESP available as an option, the whole bar is yellow, and if none of the variants is equipped with ESP, the whole bar is red. There are also model ranges in which some variants are equipped with ESP as standard, others have ESP available as an option, while ESP is not available at all for some variants. In such cases, the color bar has two or three colors, as shown in Figure 4. Two typical examples are shown in Figure 5.

ESP-availability was recorded in two lists for all 296 model ranges: by manufacturer (see Annex 1) and by vehicle category and manufacturer (see Annex 2). The vehicle categories defined by the Kraftfahrt-Bundesamt (German Federal Motor Transport Authority) [6] were used. These ten vehicle categories and ESP-availability within these categories are shown in Figure 6.

Before the results were published, they were made available to the car manufacturers, who were asked to check them. Any comments they made were taken into account in the description of the results.

Results for 2009 and comparison with the results for 2006

The percentage of model ranges equipped with ESP as standard has steadily increased in recent years (Figure 7), reaching 72 percent for 2009 models (2006: 58 percent; 2007: 64 percent; 2008: 67 percent). However, the percentage of model ranges with no ESP availability at all has remained static at 9 percent (the same as 2008). In the view of the UDV, this lack of progress is very regrettable. It means there are still 26 model ranges in Germany that are not equipped with a life-saving ESP driver assistance system (Figure 8). In addition, there are 15 model ranges in which not a single model variant is equipped with the required anti-skid system as standard. In the very small car segment, there are still only two out of 17 model ranges that have ESP as standard (the Smart and the Toyota IQ). Moreover, 10 model ranges in this vehicle category do not offer a single model with ESP as standard. The UDV accident researchers believe that a strategy of making consumers pay extra for ESP is wrong. Buyers of small cars are rarely prepared to pay 300 euros or more for this safety feature. For instance, only about two of every 100 Peugeot 206 bu-

	ESP available as standard		ESP optional		ESP not available		ESP available with some cars		Total	
Vehicle category	No.	%	No.	%	No.	%	No.	%	No.	%
Very small cars	2	12	4	23	2	12	9	53	17	100
Small cars	8	27	2	7	4	13	16	53	30	100
Compact cars	30	75	0	0	4	10	6	15	40	100
Midrange cars	33	92	0	0	0	0	3	8	36	100
Upper midrange cars	15	100	0	0	0	0	0	0	15	100
Luxury cars	12	100	0	0	0	0	0	0	12	100
MPVs	36	92	0	0	1	3	2	5	39	100
Utility vehicles	5	24	0	0	8	38	8	38	21	100
Off-road vehicles	51	80	0	0	6	9	7	11	64	100
Sports cars	20	90	0	0	1	5	1	5	22	100

Figure 6: ESP-availability in the vehicle categories of the KBA (German Federal Motor Transport Authority) in 2009

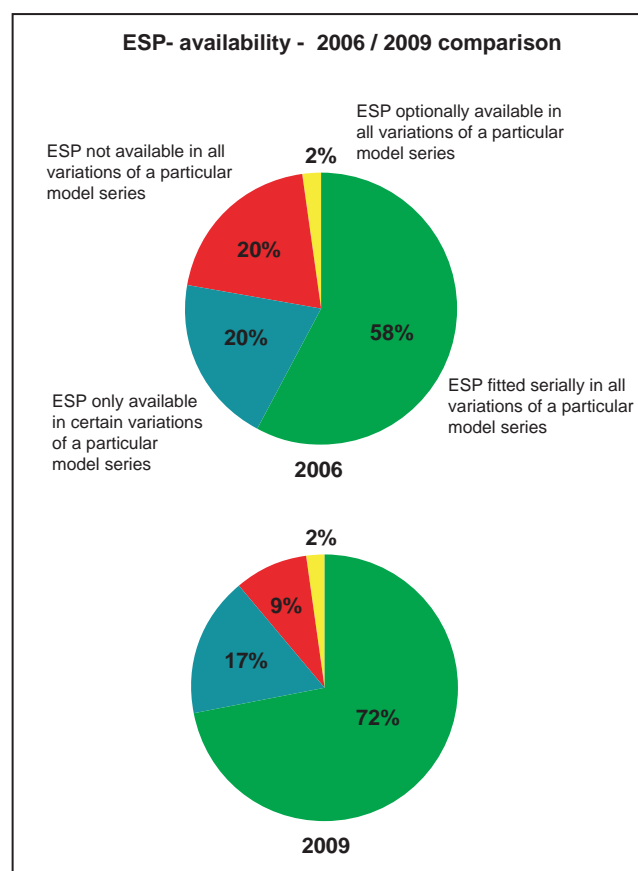


Figure 7: ESP-availability - 2006 / 2009 comparison

yers ordered ESP as an option in 2008 [7], and for the VW Fox it was 11 out of every 100 [8]. The decision for or against ESP should therefore not be left to the consumer, and all cars should be equipped with ESP as standard, thus relieving car buyers of this decision. Instead, ESP is not expected to be made mandatory in Europe for new model ranges until November 2011 and for all new cars until November 2014. Consumers who want to play safe when

buying a car can get information on ESP-availability for different car models from the UDV website (www.udv.de). You can search the database (last updated on March 13, 2009) not just for the manufacturers and model ranges of all new cars for the years 2006 to 2009 but also for individual models. There is also a list showing ESP-availability for older models (under the “ESP-Gebrauchtwagenliste” link). This is important, above all, for buyers of used cars.

Model ranges without ESP (as at March 13, 2009)		
Marque	Model range	Vehicle category
Chevrolet	Matiz	(Very small car)
Chevrolet	Aveo	(Small car)
Chevrolet	Lacetti	(Compact car)
Chevrolet	Nubira	(Compact car)
Chrysler	PT Cruiser	(MPV)
Citroen	Berlingo First	(Utility vehicle)
Dacia	Logan	(Compact car)
Dacia	Sandero	(Compact car)
Daihatsu	Cuore	(Very small car)
Daihatsu	Copen	(Small car)
Dodge	Viper	(Sports car)
Fiat	Doblò	(Utility vehicle)
Ford	Ranger	(Off-road vehicle)
Ford	Turneo	(Utility vehicle)
Land Rover	Defender	(Off-road vehicle)
Mazda	BT 50	(Off-road vehicle)
Nissan	NP 300 Pick Up	(Off-road vehicle)
Nissan	Patrol	(Off-road vehicle)
Nissan	Navara	(Utility vehicle)
Opel	Combo	(Utility vehicle)
Peugeot	Partner Origin	(Utility vehicle)
Renault	Clio Campus	(Small car)
Renault	Kangoo Campus	(Utility vehicle)
Subaru	Justy	(Small car)
Suzuki	Jimny	(Off-road vehicle)
Toyota	Hiace	(Utility vehicle)

Figure 8: Model ranges without ESP

Demands and recommendations of the UDV

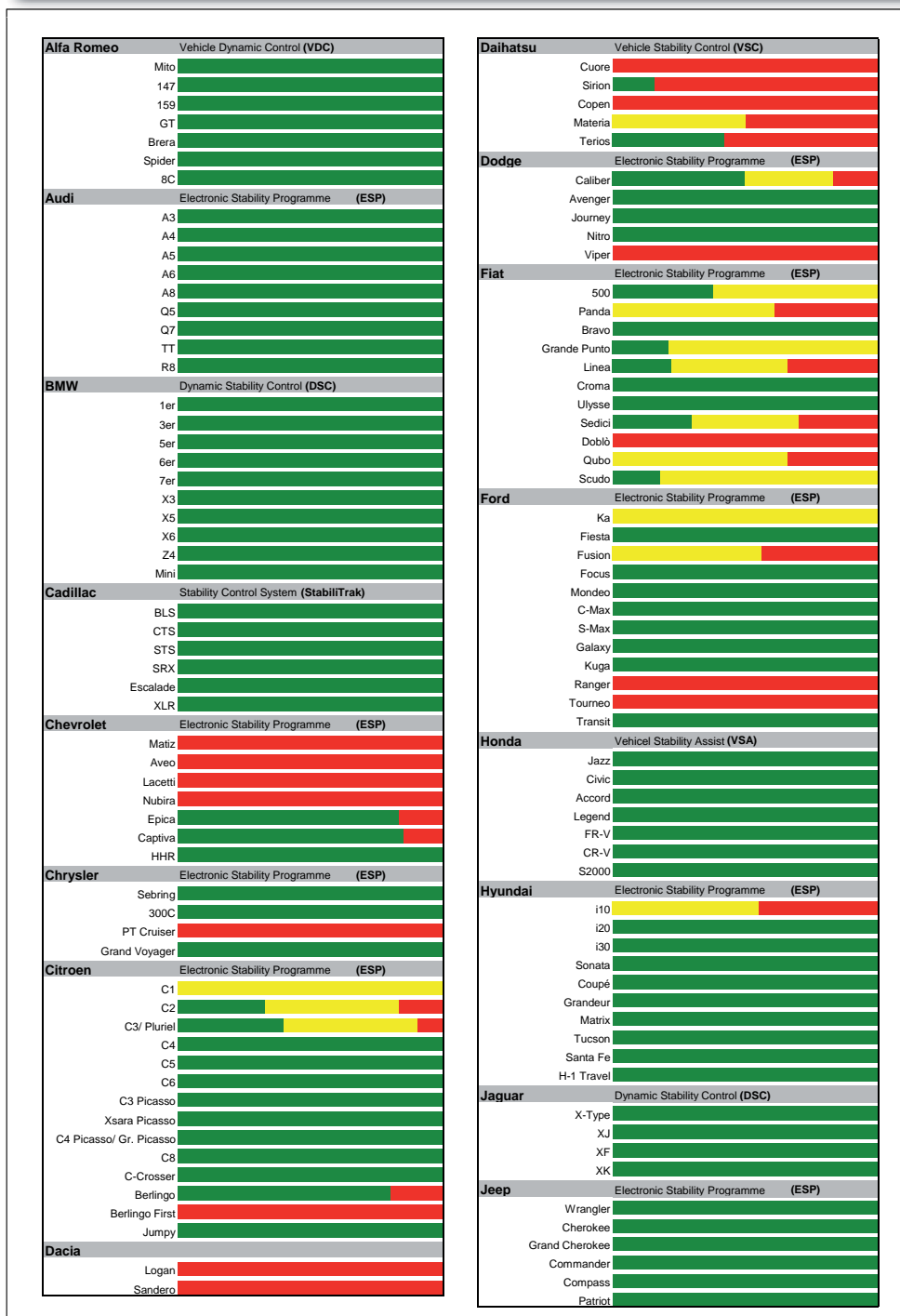
The studies carried out both nationally and internationally on the effects of ESP have unanimously found that ESP can offer great benefits. All cars – regardless of price segment and vehicle category – should therefore be equipped with ESP as standard. That means not just in Germany but also in Europe and ultimately the rest of the world. ESP should never be offered only in conjunction with expensive trim levels. Buyers of used cars should also make ESP an important consideration. Dealers should point out how necessary it is for both new and used cars to be equipped with ESP.

The information provided on the availability of ESP, the new option of searching for cars with ESP on the Internet and the UDV campaign “www.schutzensel-esp.de” help consumers with their decision-making when buying a new car. If you choose a car from a model range that does not have an entirely green color bar (indicating ESP is available as standard with all cars), you should exercise caution and make sure the car you want really is one of those that has ESP.

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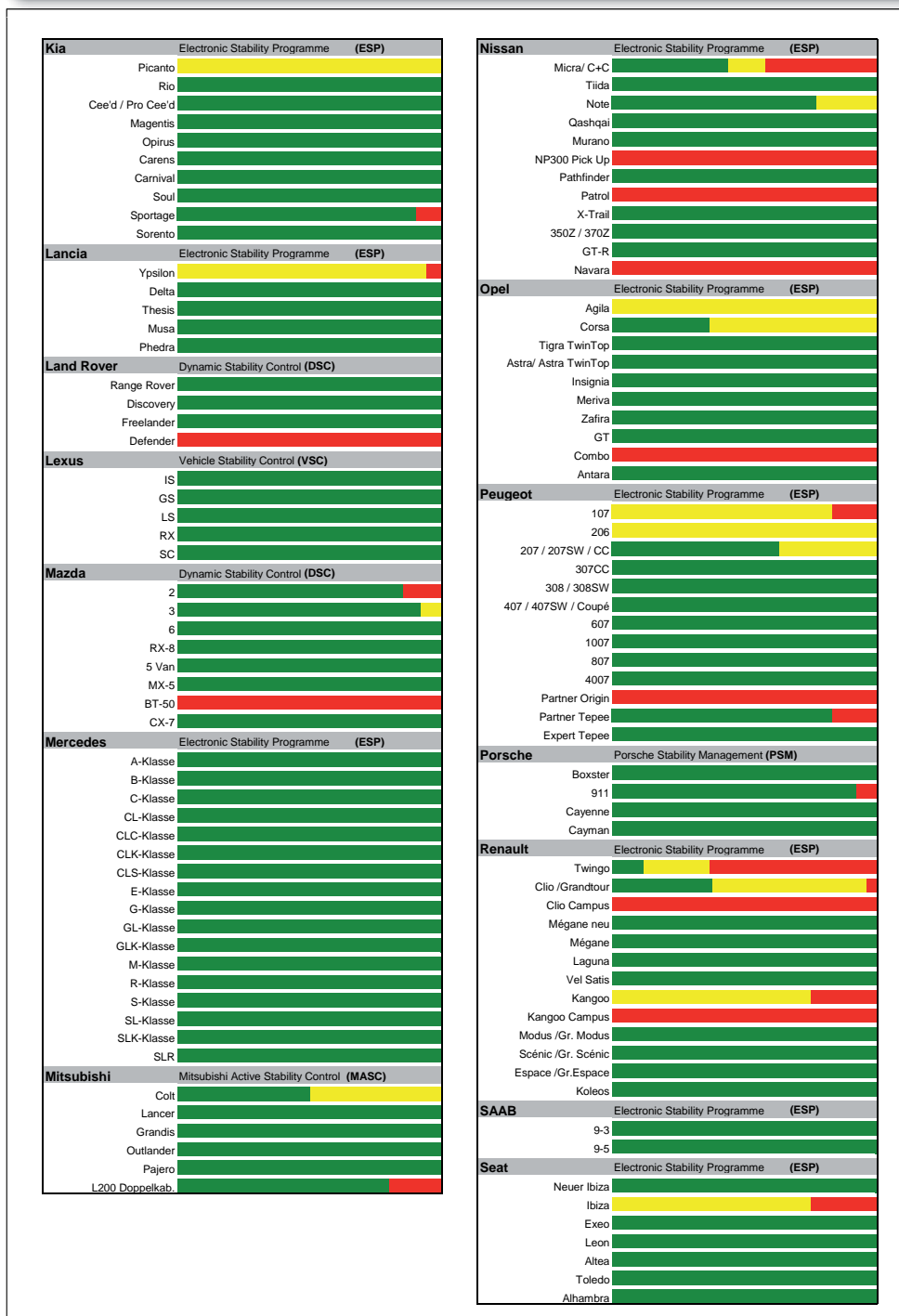
ESP-availability according to manufacturer



■ ESP serially
 ■ ESP only optionally available
 ■ ESP not available

Source: GDV / Effective: 13.03.2009

ESP-availability according to manufacturer



ESP serially ESP only optionally available ESP not available

Source: GDV / Effective: 13.03.2009

ESP-availability according to manufacturer

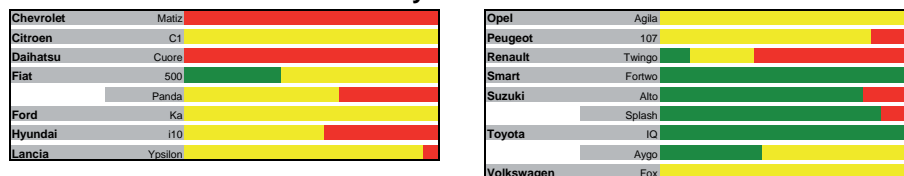


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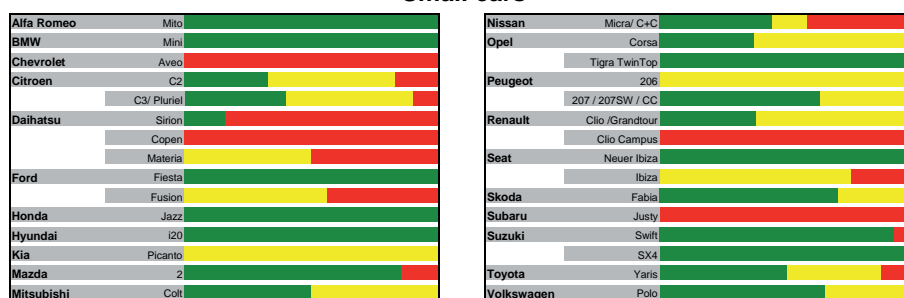
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ESP-availability according to vehicle category

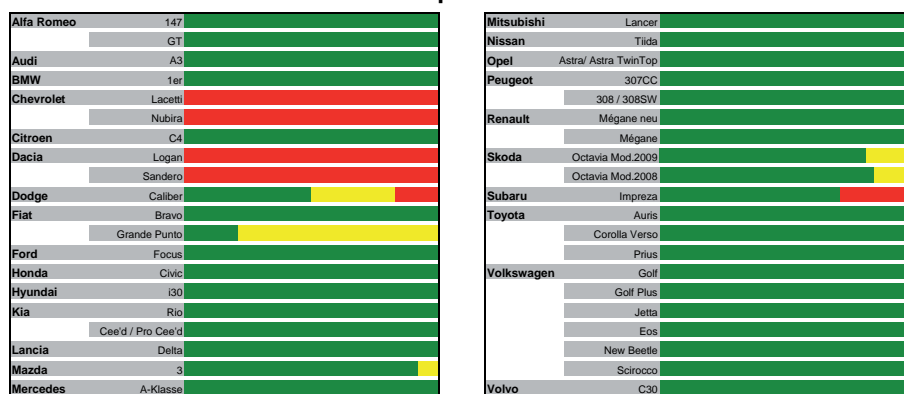
Very small cars



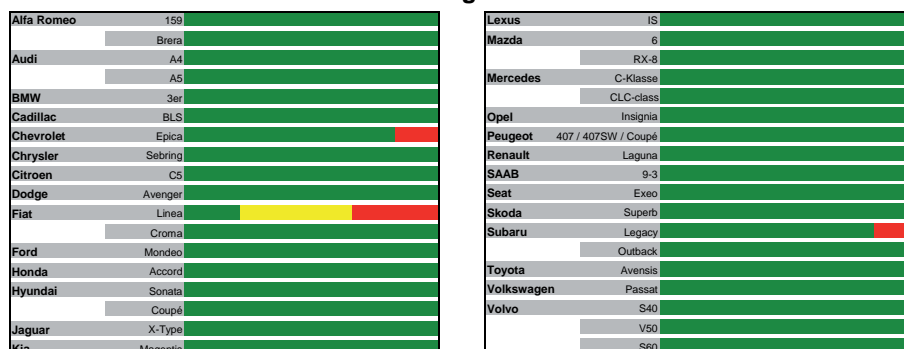
Small cars



Compact cars



Midrange cars



■ ESP serially
 ■ ESP only optionally available
 ■ ESP not available

Source: GDV / Effective: 13.03.2009

ESP-availability according to vehicle category

Upper midrange cars

Audi	A6	ESP serially
BMW	5er	ESP serially
Chrysler	300C	ESP serially
Citroen	C6	ESP serially
Honda	Legend	ESP serially
Hyundai	Grandeur	ESP serially
Kia	Optus	ESP serially
Lexus	GS	ESP serially

Mercedes	E-class	ESP serially
Peugeot	607	ESP serially
Renault	Vel Satis	ESP serially
SAAB	9-5	ESP serially
Volvo	C70	ESP serially
	V70	ESP serially
	S80	ESP serially

Luxury cars

Audi	A8	ESP serially
BMW	6er	ESP serially
	7er	ESP serially
Cadillac	CTS	ESP serially
	STS	ESP serially
Jaguar	XJ	ESP serially

Lancia	Thesis	ESP serially
Lexus	LS	ESP serially
Mercedes	CL-class	ESP serially
	CLS-class	ESP serially
	S-class	ESP serially
Volkswagen	Phaeton	ESP serially

MPVs

Chevrolet	HHR	ESP serially
Chrysler	PT Cruiser	ESP serially
	Grand Voyager	ESP serially
Citroen	C3 Picasso	ESP serially
	Xsara Picasso	ESP serially
	C4 Picasso/ Gr. Picasso	ESP serially
	C6	ESP serially
Dodge	Journey	ESP serially
Fiat	Ulysse	ESP serially
Ford	C-Max	ESP serially
	S-Max	ESP serially
	Galaxy	ESP serially
Honda	FR-V	ESP serially
Hyundai	Matrix	ESP serially
Kia	Carens	ESP serially
	Carnival	ESP serially
	Soul	ESP serially
Lancia	Musa	ESP serially
	Phedra	ESP serially

Mazda	5 Van	ESP serially
Mercedes	B-class	ESP serially
Mitsubishi	Grandis	ESP serially
Nissan	Note	ESP serially
	Qashqai	ESP serially
Opel	Meriva	ESP serially
	Zafira	ESP serially
Peugeot	1007	ESP serially
	807	ESP serially
Renault	Modus /Gr. Modus	ESP serially
	Scénic /Gr. Scénic	ESP serially
	Espace /Gr.Espace	ESP serially
Seat	Leon	ESP serially
	Altea	ESP serially
	Toledo	ESP serially
	Alhambra	ESP serially
Skoda	Roomster	ESP serially
SsangYong	Rodius	ESP serially
Volkswagen	Touran	ESP serially
	Sharan	ESP serially

Utility vehicles

Citroen	Berlingo	ESP serially
	Berlingo First	ESP serially
	Jumpy	ESP serially
Fiat	Doblo	ESP serially
	Qubo	ESP serially
	Scudo	ESP serially
Ford	Tourneo	ESP serially
	Transit	ESP serially
Hyundai	H-1 Travel	ESP serially
Nissan	Navara	ESP serially
Opel	Combo	ESP serially

Peugeot	Partner Origin	ESP serially
	Partner Tepee	ESP serially
	Expert Tepee	ESP serially
Renault	Kangoo	ESP serially
	Kangoo Campus	ESP serially
Skoda	Praktik	ESP serially
Toyota	Hilux	ESP serially
	Hiace	ESP serially
Volkswagen	Caddy / Caddy Maxi	ESP serially
	Multivan/Caravelle/Transp.	ESP serially

Sports cars

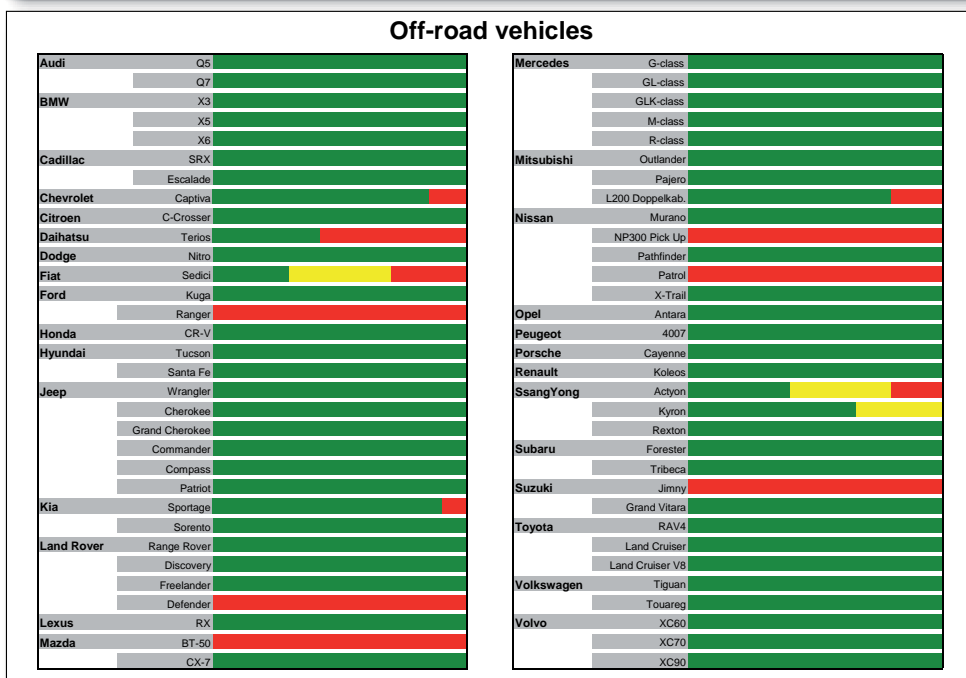
Alfa Romeo	Spider	ESP serially
	8C	ESP serially
Audi	TT	ESP serially
	R8	ESP serially
BMW	Z4	ESP serially
Cadillac	XLR	ESP serially
Dodge	Viper	ESP serially
Honda	S2000	ESP serially
Jaguar	XF	ESP serially
	XK	ESP serially
Lexus	SC	ESP serially

Mazda	MX-5	ESP serially
Mercedes	CLK-class	ESP serially
	SL-class	ESP serially
	SLK-class	ESP serially
	SLR	ESP serially
Nissan	350Z / 370Z	ESP serially
	GT-R	ESP serially
Opel	GT	ESP serially
Porsche	Boxster	ESP serially
	Cayman	ESP serially
	911	ESP serially

ESP serially
 ESP only optionally available
 ESP not available

Source: GDV / Effective: 13.03.2009

ESP-availability according to vehicle category



ESP serially

ESP only optionally available

ESP not available

Source: GDV / Effective: 13.03.2009



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