



## **Compact accident research**

# **An investigation into the availability of ESP in cars in 2008**

## **Imprint**

**German Insurance Association**  
**German Insurers Accident Research**

Wilhelmstraße 43/43G, 10117 Berlin  
PO Box 08 02 64, 10002 Berlin  
unfallforschung@gdv.de  
www.udv.de

Editors: Dipl.-Ing. Thomas Hummel, Dr. Matthias Kühn  
Layout: Franziska Gerson Pereira  
Photo references: Insurers Accident Research and source references

Published: 2009

---

## Preface

---

In 2006 and 2007 German Insurers Accident Research (Unfallforschung der Versicherer - UDV) conducted studies into the availability of ESP in new vehicles [1, 2]. In both studies it looked into the question as to which new passenger cars were equipped with ESP as a standard feature in Germany and for which vehicles ESP was only available as an option or not at all. The present publication is an update of these studies for 2008. The results should assist especially the consumer when purchasing a new car, they should, however, also encourage vehicle manufacturers to equip their entire vehicle fleet with ESP as a standard feature.

---

## Content

---

Preface	2
Functioning of ESP	4
ESP Descriptions	4
Potential benefits of ESP	5
ESP equipment rate in new car registrations in Europe	5
ESP–availability in Germany in 2008	5
2008 Results and comparison 2006 – 2008	7
UDV demands and recommendations	9
References	10
Annex 1	11
Annex 2	14

## Functioning of ESP

Through targeted braking of single wheels and intervention in the engine- and transmission management, ESP attempts to prevent the vehicle from skidding. In order for ESP to respond to a critical driving situation, a micro computer continuously compares the driver's intention with the actual driving condition of the vehicle. The steering angle sensor provides the signal in respect of the driver's intention, the engine management as well as the engine speed sensor and the yaw rate sensor provide the signals regarding the behaviour of

the vehicle. Should a difference be detected between the calculated driving condition and the driver's intention, ESP is activated within split seconds.

## ESP Descriptions

In respect of systems which control the driving dynamics electronically, different descriptions and abbreviations abound (see Figure 1). All systems share the same fundamental functioning; they can however differ in their lay-out as well as in the presence of additional functions (e.g. correction of the steering angle).

<b>▪ ESP - Electronic Stability Programme</b> e. g. Daimler Chrysler, AUDI, VW, Ford, Opel, SEAT, Skoda, Renault, Peugeot
<b>▪ VSC - Vehicle Stability Control</b> Toyota, Daihatsu
<b>▪ DSC - Dynamic Stability Control</b> BMW, Mazda, Ford
<b>▪ VSA - Vehicle Stability Assist</b> Honda
<b>▪ MASCS - Mitsubishi Active Stability Control</b> Mitsubishi
<b>▪ VDC - Vehicle Dynamic Control</b> Nissan, Subaru
<b>▪ DSTC - Dynamic Stability &amp; Traction Control</b> Volvo
<b>▪ PSM - Porsche Stability Management</b> Porsche
<b>▪ Stabili Trak</b> Cadillac

**Figure 1: ESP Descriptions**

## Potential benefits of ESP

Analyses by the Insurers' Accident Research [3] have established that about 25 percent of all passenger car accidents involving personal injury and 35 to 40 percent of fatal accidents are linked to skidding before the collision, and could be positively affected by ESP. As such - and if all cars are equipped with ESP - 37,000 accidents causing personal injury and 1,100 fatal accidents in Germany could be prevented or their dramatic consequences at least partially reduced.

## ESP equipment rate in new car registrations in Europe

In Germany 79 percent of all newly registered cars are equipped with ESP; together with Sweden (96 percent equipment rate) Germany thus leads other European countries (Figure 2) and occupies a position far above the European average, which lies at 50 percent [4].

In the European comparison Germany therefore occupies a top position; nonetheless the

situation is not satisfactory, because to date only 36 percent of the total car fleet features ESP [4].

## ESP-availability in Germany in 2008

During the months of March and April 2008 the Insurers Accident Research compiled data on ESP-availability in new cars in Germany; the respective research was conducted primarily via the internet. In total 278 model series of 38 vehicle brands offered on the German market (see Figure 3) were analysed.

Within each model range (e.g. Ford Fiesta) the availability of ESP was established for each obtainable variation with specific consideration of the engine size (e.g. 1.3l / 51kW / Ghia) and the vehicle type (e.g. limousine/station wagon).

In doing so the colours red, yellow and green were allocated for each model series in accordance with the relative availability of ESP and using the following method:

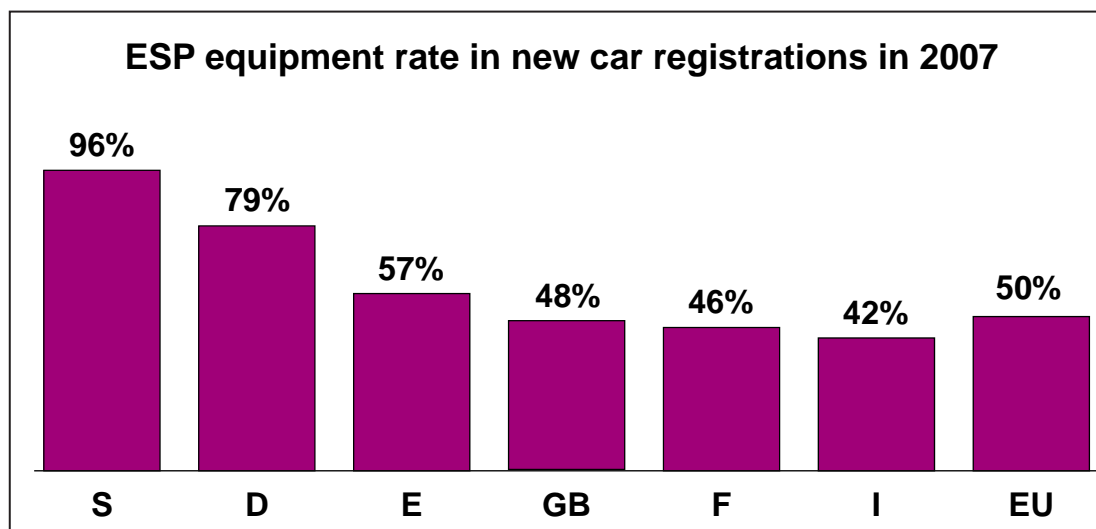


Figure 2: ESP equipment rate in new car registrations in 2007  
(Source: Bosch)

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

Figure 3: Vehicle manufacturers

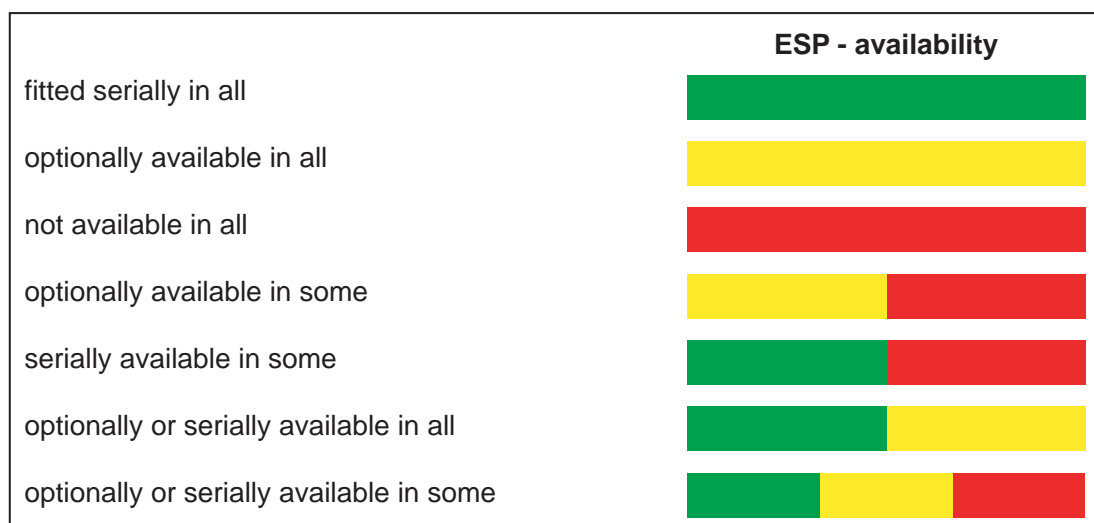


Figure 4: ESP-availability

- green: ESP fitted serially
- yellow: ESP optionally available
- red: ESP not available

In the case of all variations of a particular model series featuring serially fitted ESP, a solid

“green” bar was allocated; a solid “yellow” and a solid “red” bar represent a similar situation in each category. Mixed groups however also exist: model series in which some variations feature ESP only as an option, or are not available at all, twin- or three-coloured bars were allocated; the respective meaning is illustrated in Figure 4. Two typical examples of

the origin and division of the colour bars are illustrated in Figure 5.

ESP availability for all 278 model series was compiled in two lists: according to manufacturer on the one hand (see Annex 1) and according to vehicle class and manufacturer on the other hand (see Annex 2). The classification thus undertaken follows the Federal Motor Transport Authority's vehicle classification [5]; these ten vehicle classes as well as the ESP-availability within these classes are shown in Figure 6.

Before publication the results were made available to the motor vehicle manufacturers with a request for critical evaluation – the subsequent remarks were taken into account in presenting the results.

## 2008 Results and comparison 2006 – 2008

The current investigation of the availability of ESP in new cars shows some improvement in comparison to previous years: as such the share of model series that are serially fitted with ESP rose from 58 percent in 2006 to 64 percent in 2007 to 67 percent currently (Figure 7), and only every eleventh 2008 model series does not feature ESP at all (two years ago it was every fifth series).

Yet the dichotomy in these statistics is demonstrated in the smallest vehicle class, the minis: whereas on the one hand the share of model series not featuring ESP at all has fortunately dropped (2006: 73 percent; 2007: 44 percent; 2008: 19 percent), on the other hand no manufacturer except Smart has over the years decided to fit all its "first-time buyer" vehicles serially with ESP. In the small car category (e.g. Kia Picanto, Seat Ibiza, Peugeot 206) and in the utility vehicle category (Citroen Berlingo, Ford Tourneo or VW Caddy) ESP is also only offered at additional costs or as part of a package. It is however in this segment of the market where the additional costs of € 300 to € 700 are too

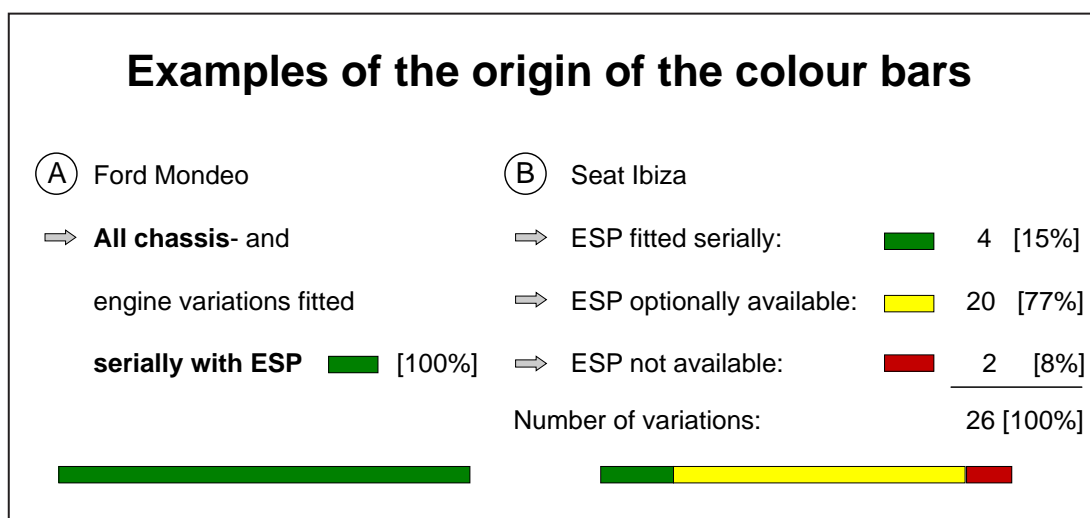


Figure 5: Examples of the origin of the colour bars



	ESP serially		ESP optionally		ESP not available		ESP partially available		Total	
Vehicle class	Number	%	Number	%	Number	%	Number	%	Number	%
Minis	1	6	3	19	3	19	9	56	16	100
Small cars	1	3	2	7	6	19	22	71	31	100
Compact class	27	71	1	3	4	10	6	16	38	100
Middle class	31	89	0	0	0	0	4	11	35	100
Upper middle class	16	100	0	0	0	0	0	0	16	100
Executive class	12	100	0	0	0	0	0	0	12	100
Vans	31	84	1	3	3	8	2	5	37	100
Utilities	2	14	3	21	4	29	5	36	14	100
Off-road vehicles	47	80	0	0	5	8	7	12	59	100
Sportscars	18	90	0	0	1	5	1	5	20	100

Figure 6: ESP-availability in the Federal Motor Transport Authority's vehicle classes

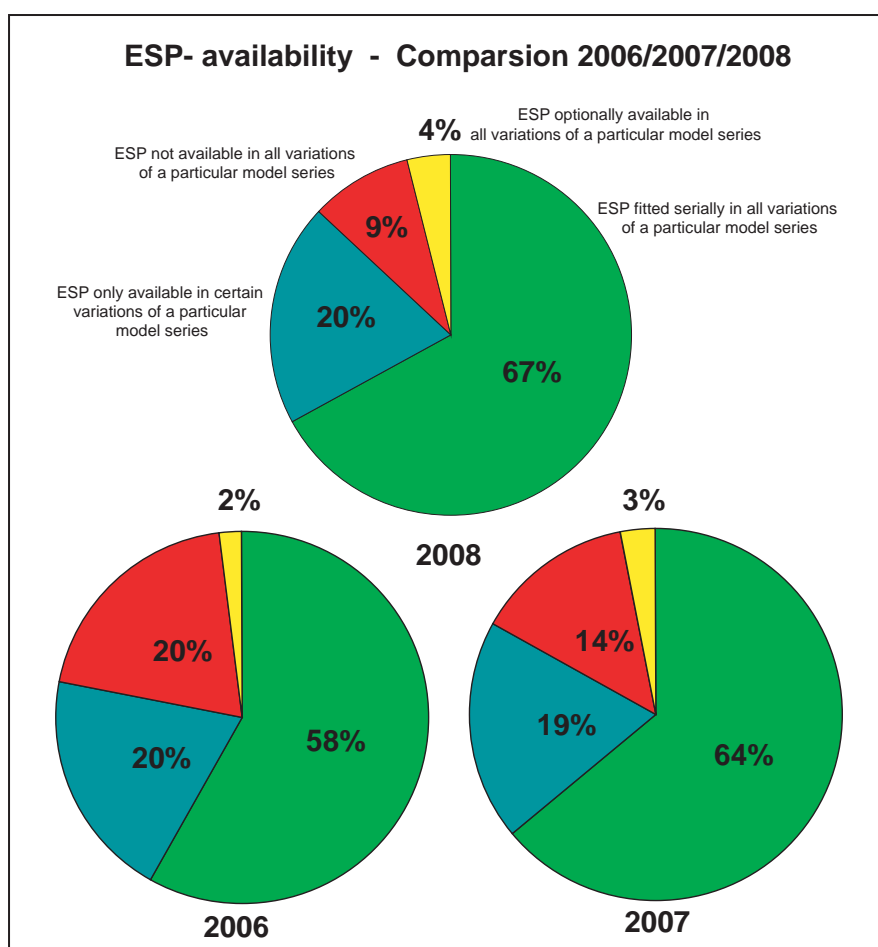


Figure 7: ESP- availability - Comparison 2006/2007/2008

high for potential buyers, with the result that ESP – as confirmed by the sales figures – is not bought as an extra feature. Given the fact that especially small vehicles or older used cars are often driven by the risk group of so-called “young drivers”, it would be so much more important to reach a 100 percent ESP equipment rate, in order for sufficient ESP equipped used cars to be available in the market for “young” drivers in a few years’ time.

From the Insurers’ Accident Research’s perspective it also remains incomprehensible that new small car series like the Opel Agila, the Renault Twingo, the Hyundai i10 as well as the Daihatsu Materia are not delivered with serially fitted ESP. The choice for or against ESP should not be left to the consumer, but should be eliminated completely by fitting ESP serially in all cars.

Despite all criticism in respect of the smallest vehicle classes the availability of ESP has improved most clearly in the category of mini cars: whereas 73 percent of model series were not available with ESP at all in September 2006, the figure shrunk to only 19 percent in May 2008. The category of mini cars thus does not bring up the rear, this position is occupied by utility vehicles (ESP not available in 29 percent of model series).

Consumers considering the purchase of a new car can make double sure by consulting the internet pages of the Insurers’ Accident Research ([www.udv.de](http://www.udv.de)) on the availability of ESP in individual model series. The databank (status 01.05.2008) does not only list all the ve-

hicle manufacturers and model series of new cars for the years 2006, 2007 and 2008, but also lists individual models. A novelty is also the availability of a list of older vehicles (used car list) – important especially for buyers of used cars.

---

## UDV demands and recommendations

---

The studies conducted so far on the effects of ESP have all corresponded in finding that very high potential benefits exist. In accordance with these, all passenger cars – independent of the price segment or the vehicle class – should be fitted serially with ESP. This does not only apply to Germany, but also across Europe and, last but not least, internationally. Under no circumstances should ESP be combined in packages with expensive other features. When buying used cars, consumers should look out for cars featuring ESP. Salespersons should point out the necessity for ESP when selling new or used cars.

Given the information materials on the availability of ESP and the new possibilities of doing ESP searches in the internet ([www.udv.de](http://www.udv.de)) as well as the UDV initiative “ESP – my guardian angel” ([www.schutzengel-esp.de](http://www.schutzengel-esp.de)) the consumer is provided firsthand assistance in selecting a new car. In the case of those model series that have not been rated with a solid green bar (ESP serially fitted in all models), care should be taken by the consumer to ensure that his/her dream car is in fact equipped with ESP.

---

## References

---

- [1]      Hummel, Th., Kühn, M (2006): Research on the Availability of ESP in Motor Vehicles 2006. GIA, Insurers Accident Research, Berlin
  
- 2]      Hummel, Th., Kühn, M. (2008): Research on the Availability of ESP in Motor Vehicles 2006. GIA, Insurers Accident Research, Berlin
  
- [3]      Langwieder, K., Gwehenberger, J., Hummel, T., Bende, J. (2003): Benefit Potential of ESP in Real Accident Situations Involving Cars and Trucks. ESV-paper No. 150. 18th ESV-Conference, Nagoya (Japan)
  
- [4]      Bosch (2008): Internal communications of the Bosch company
  
- [5]      Federal Motor Transport Authority (2008): New Registrations of Passenger Vehicles according to Segments and Model Series

## ESP-availability according to manufacturer



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

Source: GDV / Status: 01.05.2008

## ESP-availability according to manufacturer



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

Source: GDV / Status: 01.05.2008

## ESP-availability according to manufacturer

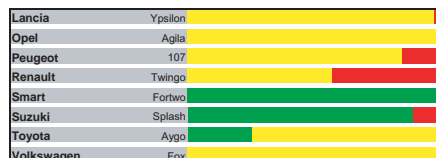
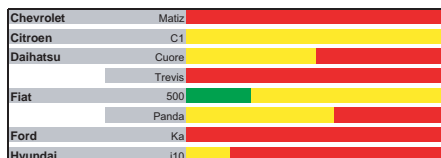


■ ESP serially
 ■ ESP only optionally available
 ■ ESP not available

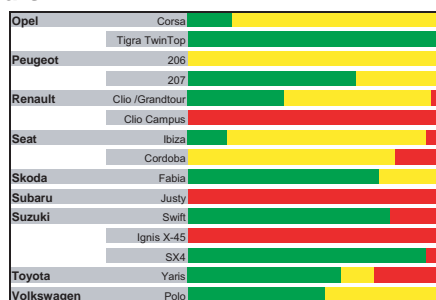
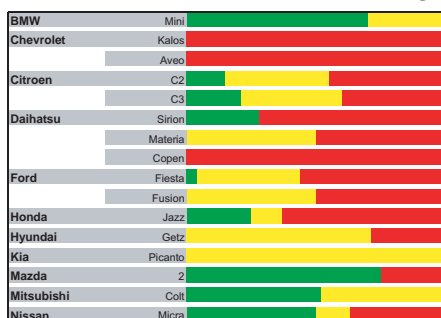
Source: GDV / Status: 01.05.2008

## ESP-availability according to vehicle class

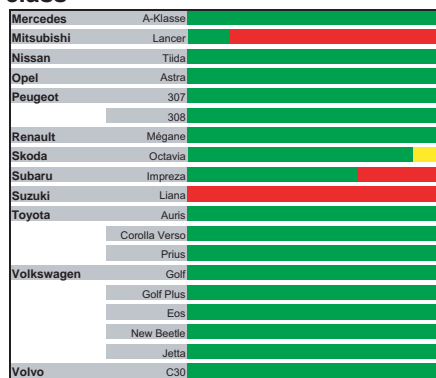
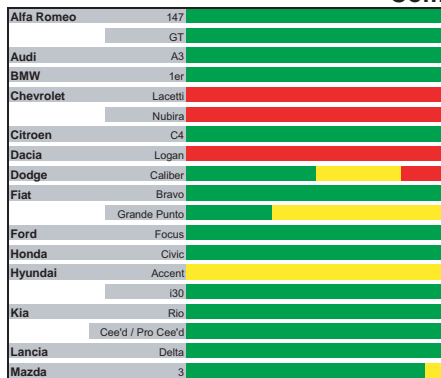
### Minis



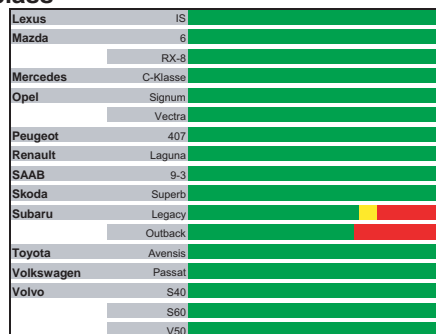
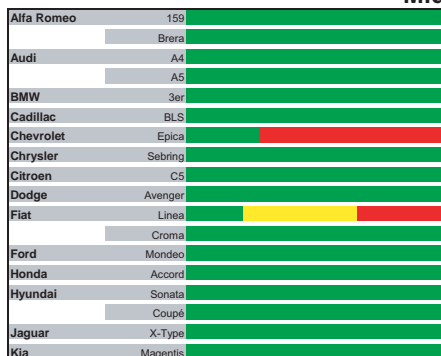
### Small cars



### Compact class



### Middle class



ESP serially

ESP only optionally available

ESP not available

Source: GDV / Status: 01.05.2008

## ESP-availability according to vehicle class

### Upper middle class

Audi	A6	
BMW	5er	
Chrysler	300C	
Citroen	C6	
Honda	Legend	
Hyundai	Grandeur	
Jaguar	S-Type	
Kia	Opirus	

Lexus	GS	
Mercedes	E-Klasse	
Peugeot	607	
Renault	Vel Satis	
SAAB	9-5	
Volvo	C70	
	S80	
	V70	

### Executive class

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

Lancia	Thesis	
Lexus	LS	
Mercedes	CL-Klasse	
	CLS-Klasse	
	S-Klasse	
Volkswagen	Phaeton	

### Vans

Chevrolet	Rezzo	
	HHR	
Chrysler	PT Cruiser	
	Grand Voyager	
Citroen	Xsara Picasso	
	C4 Picasso/ Gr. Picasso	
	C8	
Fiat	Ulysse	
Ford	C-Max	
	S-Max	
	Galaxy	
Honda	FR-V	
Hyundai	Matrix	
Kia	Carens	
	Carnival	
Lancia	Musa	
	Phedra	
Mazda	5	
Mercedes	B-Klasse	

Mitsubishi	Grandis	
Nissan	Note	
	Qashqai	
Opel	Meriva	
	Zafira	
Peugeot	1007	
	807	
Renault	Modus /Gr. Modus	
	Scénic /Gr. Scénic	
	Espace /Gr. Espace	
Seat	Leon	
	Altea	
	Toledo	
	Alhambra	
Skoda	Roomster	
SsangYong	Rodius	
Volkswagen	Touran	
	Sharan	

### Utilities

Citroen	Berlingo	
	Jumpy	
Fiat	Doblo	
	Scudo	
Ford	Tourneo/ Transit	
Opel	Combo	
Peugeot	Partner	

Peugeot	Expert Tepee	
Renault	Kangoo	
Skoda	Praktik	
Toyota	Hilux	
	Hiace	
Volkswagen	Caddy	
	Multivan/Caravelle/Transp.	

### Sportscars

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

Mazda	MX-5	
Mercedes	CLK-Klasse	
	SL-Klasse	
	SLK-Klasse	
	SLR	
Nissan	350Z	
Opel	GT	
Porsche	Boxster	
	Cayman	
	911	

ESP serially

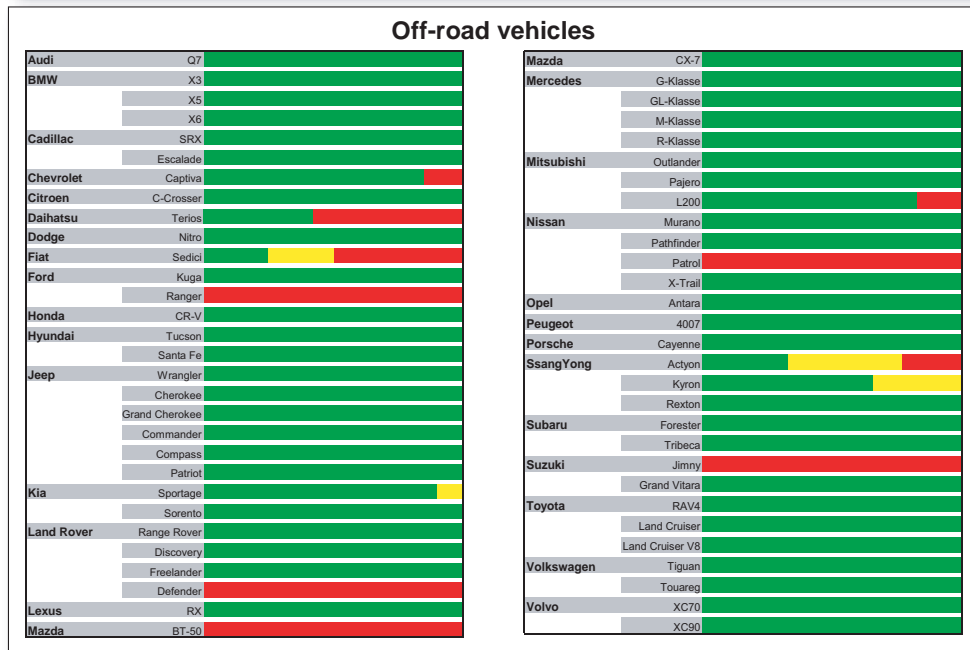
ESP only optionally available

ESP not available

Source: GDV / Status: 01.05.2008



## ESP-availability according to vehicle class



ESP serially

ESP only optionally available

ESP not available

Source: GDV / Status: 01.05.2008



**German Insurance Association**

Wilhelmstraße 43/43G, 10117 Berlin  
PO Box 08 02 64, 10002 Berlin

Phone: + 49 30/20 20-50 00, Fax: + 49 30/2020-60 00  
[www.gdv.de](http://www.gdv.de), [www.udv.de](http://www.udv.de)