



## BRIEF INFORMATION

### Suspended Pedal sensors

- › Contactless measurement
- › Slim yet sturdy design
- › Simple mechanical connection
- › Redundant output signal
- › High measurement precision
- › No training in the vehicle necessary
- › High interference immunity against electrical and magnetic fields

## PRODUCT FEATURES

### Application

FORVIA HELLA accelerator pedals designed for suspended mounting can be used in a wide variety of vehicles – ranging from automotive sector applications, such as sports cars and electric vehicles, to robust applications in agricultural and construction vehicles.

Thanks to the contactless system of measurement provided by FORVIA HELLA's own CIPOS sensor (see description of design and function) and its extremely low level of mechanical wear, it is advisable to choose such a sensor system over contact-type accelerator pedals, especially for small, frequently recurring movements.

### Design and function

Housing and operating lever are completely made of glass-fibre reinforced plastic. The actuating force is generated by two springs, each individually ensuring safe return to the initial position. The electrical output signal is obtained via the CIPOS measuring principle. For this purpose, a sheet metal cursor is routed from the pedal arm contactless above sensor paths on the measuring board. There, two metallicly separated sensors each generate an output signal. Different output signals can be generated depending on the measuring board used. In addition, individual characteristic curves can be programmed on request.

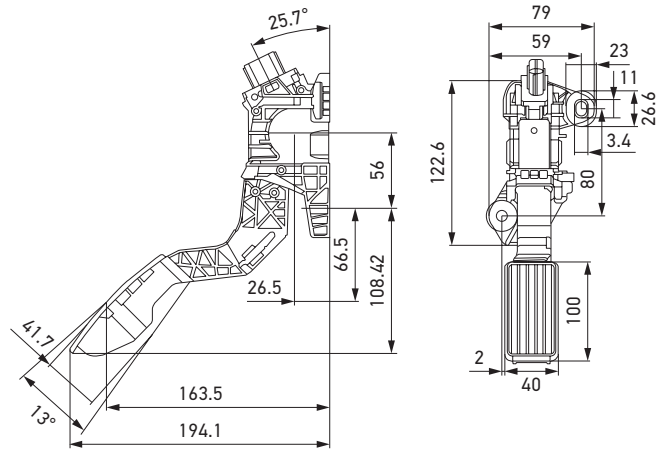
# TECHNICAL DETAILS

## Technical data

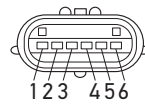
Operating voltage	5 V $\pm$ 10%
Idling voltage	15%/7.5%
Full throttle voltage	88%/44%
Signal output current	Max. 0.55 mA
Power consumption per channel	Max. 10 mA
Initial force	20 N
Final force	35 N
Actuation angle	13°
Load resistor	10 k $\Omega$ $\pm$ 1%
Load capacity	1 nF $\pm$ 5%
Temperature range	-40°C to +80°C
Storage temperature	-40°C to +80°C
Output signal	2x analogue ratiometric, 2nd channel half pitch
Protection class	IP 5K4 (with mounted counter connector)
Weight	$\leq$ 290 g
Mating connector <sup>1)</sup>	6189-1083
Resolution	0,04°
Linearity	$\leq$ 3%
Synchronisation	$\leq$ 2%
Filter constant in the control unit	1 ms $\pm$ 5%
Actuations	Min. 2 million
Compliant	ISO 26262 ASIL A (B)
Protection	Overvoltage protection, duration $t > \infty$ (16 V)
ESD	10 kV

<sup>1)</sup> This accessory is not included in the scope of delivery. Available from Sumitomo Denso 6189-1083. Gold-plated contacts and single conductor insulation are required.

## Dimensional sketch

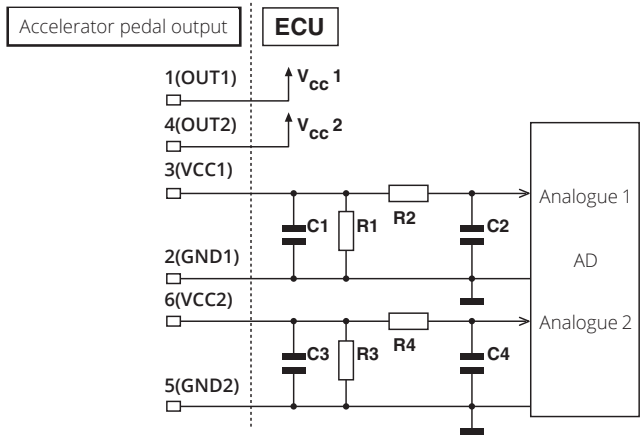


## Pin assignment/electrical connection

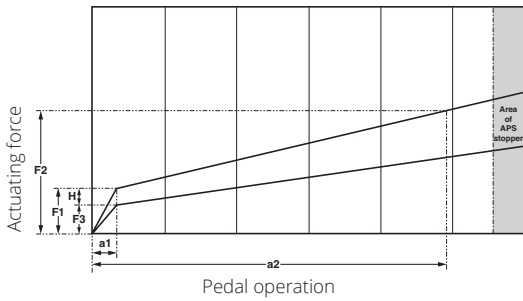


- Pin 1 – 5 V supply: Sensor 1
- Pin 2 – Ground: Sensor 1
- Pin 3 – Analogue signal: Sensor 1
- Pin 4 – 5 V supply: Sensor 2
- Pin 5 – Ground: Sensor 2
- Pin 6 – Analogue signal: Sensor 2

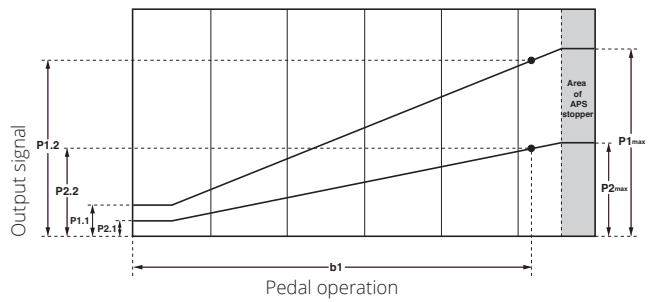
# RECOMMENDED WIRING IN THE CONTROL UNIT



Mechanical characteristic curve



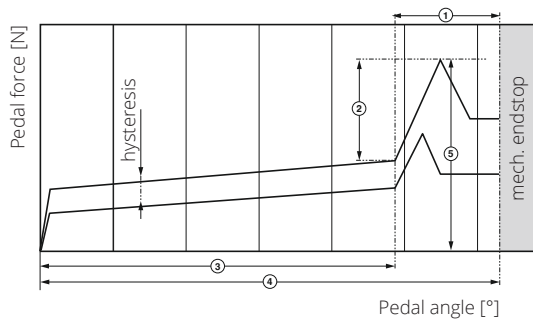
Electrical characteristic curve



Rated values			
F1	Initial force	Newton (N)	$20 \pm 4$
F2	Final force	Newton (N)	$35 \pm 5$
F3	Restoring force	Newton (N)	$> 5$
H	Force hysteresis	Newton (N)	$> 4$
a1	Starting angle	Degree ( $^\circ$ )	$< 1,1$
a2	End angle	Degree ( $^\circ$ )	13



Rated values			
P1.1	Idle voltage S1	Percent (%)	$15 \pm 1$
P2.1	Idle voltage S2	Percent (%)	$7,5 \pm 1$
P1.2	Full throttle voltage S1	Percent (%)	88
P2.2	Full throttle voltage S2	Percent (%)	44
$P_{1_{max}}$	Maximum voltage S1	Percent (%)	$< 89$
$P_{2_{max}}$	Maximum voltage S2	Percent (%)	$> 45$
b1	Full throttle angle	Degree ( $^\circ$ )	$11,9 \pm 0,6$

Mechanical characteristic curve with kickdown



① Kickdown: Width | ② Force level | ③ Kickdown: Start angle | ④ End angle | ⑤ APS: max. force



# PROGRAM OVERVIEW

Product picture	Description	Material	Part number	VPE*
	Accelerator pedal, suspended	Plastic	6PV 009 898-007	33
	Accelerator pedal, suspended, for heavy duty	Plastic + steel	On request	12

\* Packaging unit

\*\* Product image for reference only.

## OPTIONAL ACCESSORIES

Product picture	Description	Part number	VPE*
	Pedal plate orange for suspended pedal	On request	33
<b>Kickdown elements</b>			
	Short stroke (force level 131 N–151 N)	On request	–
	Long stroke (force level 32 N–76 N)	On request	–

\* Packaging unit