

2-axial, digital Tilt Sensor

**Model
261D/GP**

- Suitable for dummy positioning
- Measurement range $\pm 80^\circ$
- Resolution 0,1°
- 10 Grams Weight
- Glue Mounting
- Digital Interface
- Self test of measurement capability
- TEDS according to IEEE 1451.2

Applications

The model 261D/GP is used for the positioning of the dummy and for Out Of Position (OOP) tests. Because of its specifications it is also qualified for the dummy calibration. During the crash test preparation the sensor enables an easy and reproducible dummy positioning in the vehicle. The transducer is fixed by glueing it to the measuring location.

Up to six tilt sensors with two measuring axes each are displayed in combination with the **Digital Transducer Adapter 620B/DTA** and a Compaq handheld with WIN CE (see on the back). The dummy's x-ward (forward) tilt movement is displayed as "X"-value. Its y-ward (sideways) movement is displayed as "Y"-value. For users of the portable APS-Monitor 600A/APS-G3 a DSI upgrading-module⁽¹⁾ is available for displaying and programming two digital tilt sensors⁽²⁾.

Combining the MDDA-System⁽³⁾ with the handheld or a Host-PC the records of the tilt sensor can be saved and read out immediately before and after the crash via Ethernet or CAN-Bus.

Functional Concept

This tilt sensor is based on a thermodynamic measurement principle. The position of a heated gas cloud is electrically determined in a measurement chamber. By a differential measurement process the tilt angles of two axes are determined simultaneously. Because of a temperature compensation the tilt angle is independant of the ambient temperature. The transducer has a synchronous serial interface for the communication with the data acquisition system or with the display device. The complete signal processing and linearisation is done in the transducer. All calibration data is stored in the TEDS⁽⁴⁾ of the transducer.

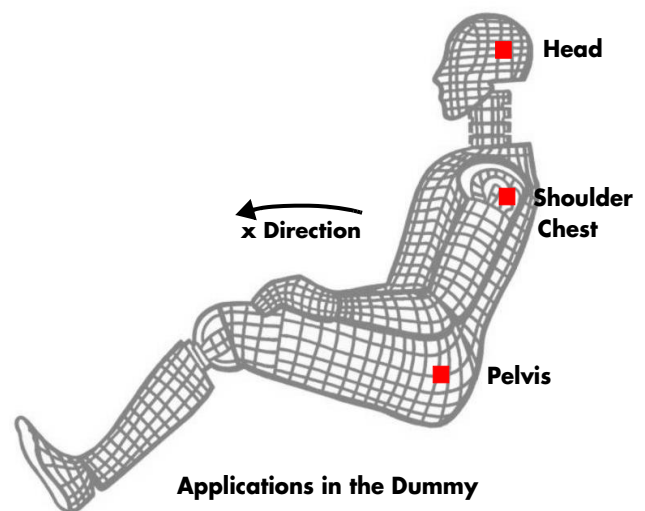
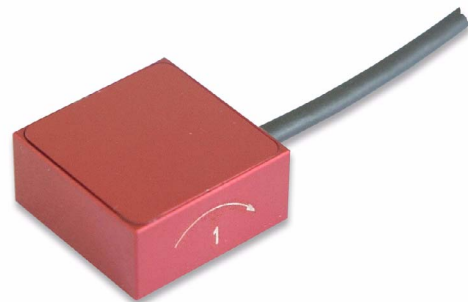
The allocation of the two measuring axes and their polarity are determined in the „Location Code“ of the TEDS. Depending on the selected transducer location in the dummy the user has to write this code into the TEDS via handheld or APS-Monitor before apply.

(1) **Digital Sensor Interface Card 600A/G3-DSI**

(2) For the use of mobile testing and displaying devices of Tilt Transducers see also Application Note AN-145e

(3) **Miniature Digital Data Acquisition System**

(4) **Transducer Electronic Data Sheet**



Applications in the Dummy

Options:
Customized cable lengths

Accessories*)

No Accessories necessary

*) Included in scope of delivery

Technical Specifications

All values measured at 25° C, otherwise different values are given.

	Units	Values	Remarks
Measuring range x-axis	°	±80	
Measuring range y-axis		±80	
Resolution	°	0,1	
Accuracy	°	typ. ±0,5	max. ±1°, up to ±60°
Supply voltage	V DC	6... 7	
Power consumption	mA	15	
Operating temperature ⁽¹⁾	°C	0 ... 50	
Warm up period ⁽²⁾	s	< 5	
Transducer identification ⁽³⁾		TEDS	according to IEEE 1451.2
Digital interface: Synchronous serial interface ⁽⁴⁾	MBit/s	2	max.
Maximum accepted acceleration in all axes	g	1000	2 ms
Mass	Gramm	10	without cable
Dimensions (L x W x H)	mm	22 x 22 x 12	incl. electronics
Mounting	-	Glue	at the measuring location

(1) The requested temperature range has to be specified when ordering

(2) Self test of the electronics

(3) TEDS (Transducer Electronic Data Sheet) contains all transducer specific data and is described in detail in IEEE 1451.2

(4) The transfer protocol is described in detail in Technical Specification TS-1005e

Model/Option Code: 261D/GP-KT-ST

261D/GP: Basis Article Description

-KT: Cable Type resp. Cable Length in cm

-ST: Connector Type

Optional Accessories

620B/DTA

Digital Transducer Adapter

794A/iPAQ-37

Compaq Handheld with WIN CE und Tilt CE-Software, iPAQ-Series 36xx and 37xx

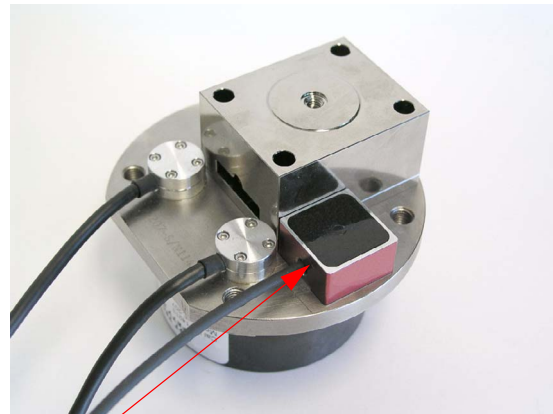
794A/iPAQ-39

Compaq Handheld with WIN CE und Tilt CE-Software, iPAQ-Series 38xx and 39xx

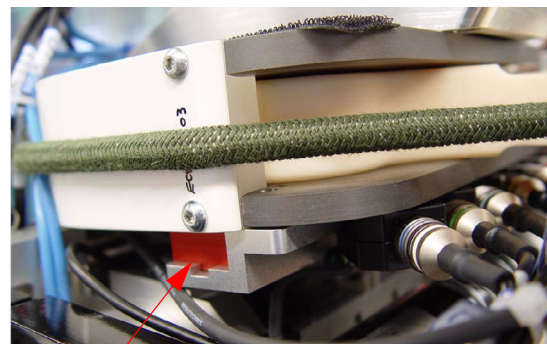


Digital Transducer Adapter 620B/DTA with Handheld and display of three connected Tilt Sensors 261D/GP

Instrumentation examples:



261D/GP and Accelerometer 355C, mounted on Upper Neck Load Cell 555B



261D/GP: Assembly with mounting angle at ES2 Shoulder