

2-axial, digital Tilt Sensor

**Model
260D/GP-X**

- Suitable for dummy positioning
- Measurement range $\pm 80^\circ$
- Resolution 0,1°
- Digital Sensor Interface
- Display via handheld PC or APS Monitor
- Self test of measurement capability
- TEDS according to IEEE 1451.2

Applications

The tilt sensor is used for the positioning of the dummy, particularly for Out Of Position (OOP) tests. Because of its specifications it is also qualified for the dummy calibration. At the crash test preparation the sensor enables an easy and reproducible dummy positioning in the vehicle. The fixing thread and the dowel pin hole are available in metric or imperial (see Option Code). 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). 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⁾. The dummy's x-ward (forward) tilt movement is displayed as "X"-value. Its y-ward (sideways) movement is displayed as "Y"-value.

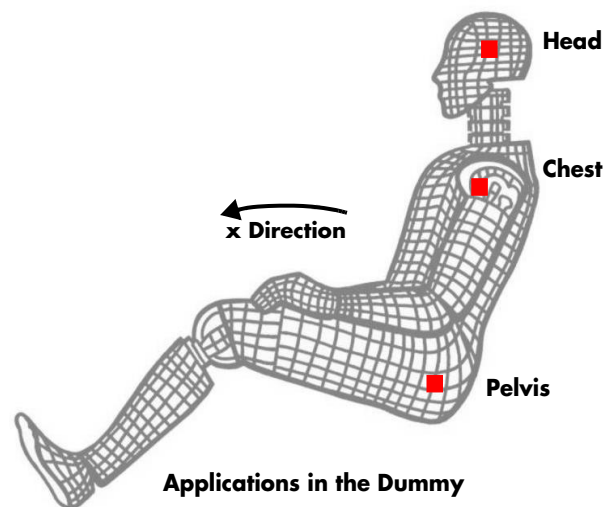
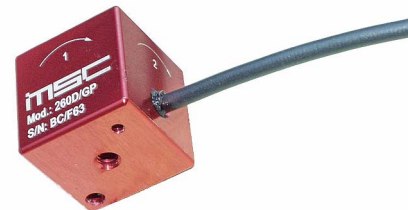
Combining the MDDA-System⁽³⁾ with the handheld or a Host-PC the records of the tilt sensor can be saved and read out immediately before and after the crash via Ethernet or CAN-Bus.

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 independent 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



Option: Customized cable lengths

Accessories*)

To model 260D/GP-I:	
Mounting screw imperial	Part-No.: 320162
Dowel pin imperial	Part-No.: 320167
To model 260D/GP-M:	
Mounting screw metric	Part-No.: 320220
Dowel pin metric	Part-No.: 320015

*) contained in scope of delivery

Technical Data

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 to 7	
Power consumption	mA	15	
Operating temperature ⁽¹⁾	°C	0 to 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	gram	20	
Dimensions	L x B x H (mm)	22 x 22 x 22	
Mounting thread	imperial/metric	8-32 / M4	Modell 260D/GP-I / -M
Dowel pin hole diameter	imperial/metric	1/8H7 / 3H7	Modell 260D/GP-I / -M

⁽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

Optional Accessories

620B/DTA	Digital Transducer Adapter
794A/iPAQ-37	Compaq Handheld with WIN CE and Tilt CE Software, iPAQ Series 36xx and 37xx
794A/iPAQ-39	Compaq Handheld with WIN CE and Tilt CE Software, iPAQ Series 38xx and 39xx

Mounting plates for several measurement locations are described in application note AN-145e

Model/Option Code: 260D/GP-X-KT-ST

260D/GP: Basic-Article-Description

X: Thread- and dowel pin unit¹⁾

I = imperial

M = metric

-KT: Cable Type resp. Cable Length

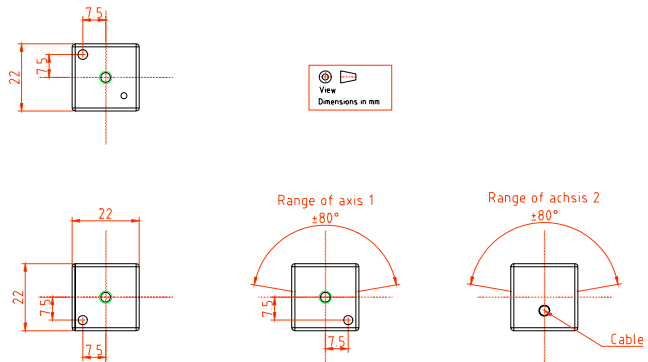
-St: Connector Type

Note: Old model number 260D/GP corresponds with option „imperial“



Digital Transducer Adapter 620B/DTA with Handheld and three connected Tilt Sensors 260D/GP

Dimensions:



Instrumentation examples 260D/GP-X



Mounted onto skull cap and ...

... onto pelvis mounting-plate