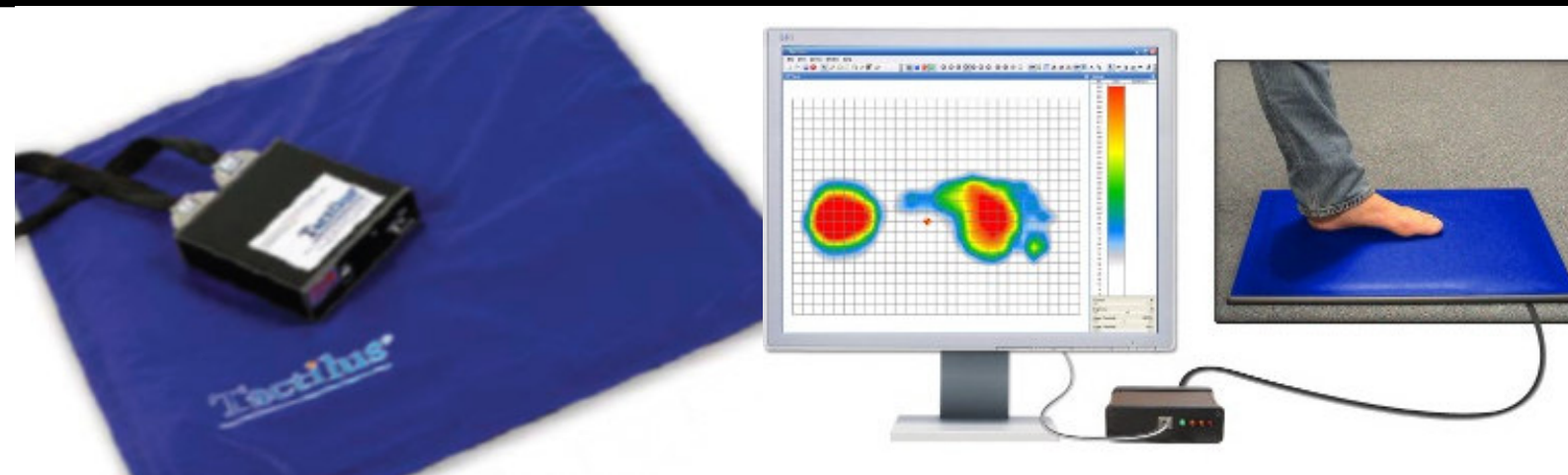


Surface Pressure Measured in Real Time



Tactilus Matrix

TIEDEMANN

Tactilus Electronic Pressure Film

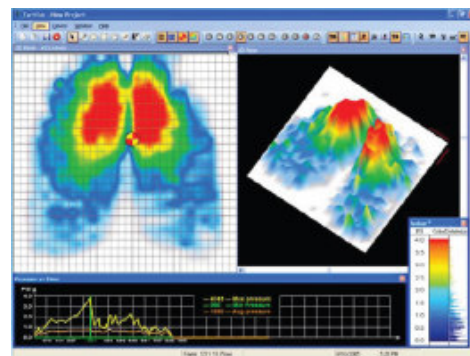
Measure Surface Pressures in Real Time

Tactilus, the electronic Pressure Sensitive Film

In the field of electronic surface pressure measuring Sensor Products Inc. is our partner for many years.

The new Tactilus® is a matrix based tactile surface sensor, that works by the principle of piezoresistance, can be placed as a thin mat between all bodies. Tiny sensing cells cover the entire surface area of our sensor "skin" allowing for discrete spot pressure analysis at any point in the contact region.

Tactilus opens up numerous possibilities that are not covered by the Prescale pressure measuring film. The measured data are routed through an amplifier to the notebook for evaluation. The intuitive program visualizes the results via easy-to-understand graphics in real-time.



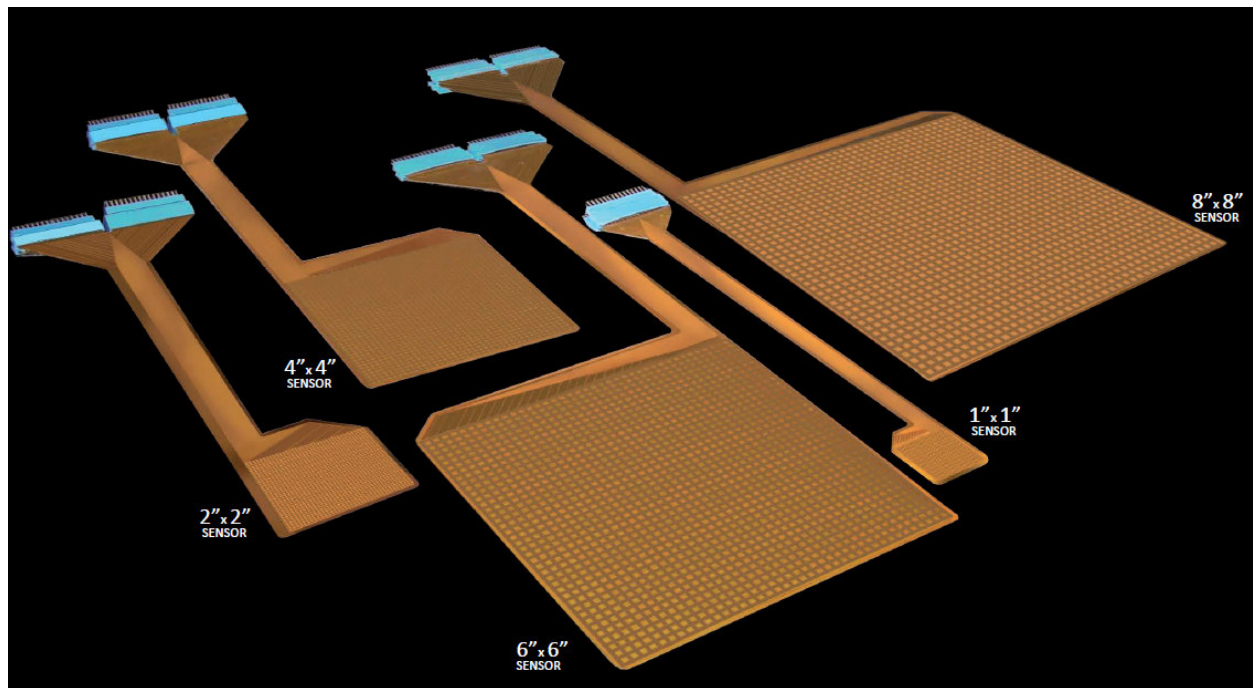
The Tactilus seat sensor system delivers real-time surface pressure distribution between a person and their seating surface.

Tiedemann's primary proposition is to offer our clients precisely what they require or need. To that end, everything we design can be completely tailored to your unique situation. Only the temperature and max. pressure range is limited.

Tactilus Standard Pressurs Pads									
	No.	Quantity	Sensor Size	Matrix	Sensors	Sensor Distance	Frames/sec	Thickness	Pressure Range
H	0	1	25,4 x 25,4 mm	32 x 32	1024	0,025 mm	100 Hz	0,3 mm	0,007 – 1,1 MPa
H	1	1	25,4 x 25,4 mm	16 x 16	256	1,6 mm	100 Hz	0,36 mm	0,007 – 1,1 MPa
H	2	1	50,8 x 50,8 mm	32 x 32	1024	1,6 mm	100 Hz	0,36 mm	0,007 – 1,1 MPa
H	3	1	102 x 102 mm	32 x 32	1024	2,2 mm	100 Hz	0,36 mm	0,007 – 1,1 MPa
H	4	1	153 x 153 mm	32 x 32	1024	4,8 mm	100 Hz	0,36 mm	0,007 – 1,1 MPa
H	5	1	203 x 203 mm	32 x 32	1024	6,6 mm	100 Hz	0,36 mm	0,007 – 0,7 MPa
H	6	1	277 x 277 mm	33 x 32	1024	9,3 mm	100 Hz	0,36 mm	0,007 – 0,3 MPa
H	7	1	357 x 357 mm	34 x 32	1024	11,2 mm	100 Hz	0,36 mm	0,007 – 0,3 MPa
A	8	1	480 x 480 mm	32 x 32	1024	10,31 mm	60 Hz	1,00 mm	0,007 – 0,7 MPa
A	9	1	2032 x 889 mm	32 x 32	1024	60 x 24 mm	5 Hz	1,00 mm	0 – 0,014 MPa
B	10	1	465 x 465 mm	32 x 32	1024	10,31 mm	90 Hz	1,00 mm	0,007 – 0,2 MPa
B	11	1	2033 x 889 mm	32 x 32	1024	60 x 24 mm	5 Hz	1,00 mm	0 – 0,014 MPa
D	13	16	D = 4 mm	1 x 1	1		100 Hz	0,14 mm	0 – 1,1 MPa
D	14	16	D = 15 mm	1 x 1	1		100 Hz	0,25 mm	0 – 1,4 MPa
D	15	16	D = 18 mm	1 x 1	1		100 Hz	0,22 mm	0 – 0,35 MPa
D	16	16	D = 25 mm	1 x 1	1		100 Hz	0,25 mm	0 – 1,4 MPa
D	17	16	10 x 10 mm	1 x 1	1		100 Hz	0,22 mm	0 – 1,4 MPa
D	18	16	25 x 25 mm	1 x 1	1		100 Hz	0,25 mm	0 – 1,4 MPa
D	19	16	44 x 44 mm	1 x 1	1		100 Hz	0,25 mm	0 – 0,35 MPa
F	20	1 pair	foot sole sensor Size from 38 EU	depends on size	Bluetooth	5 mm and more	500 Hz	0,33 mm	0,0002 – 1,4 MPa
E	21	2	Flat washer sensor	1 x 1	1	D _s = 13,2 mm, d= 2,8 mm	100 Hz	0,35 mm	0 – 1,75 MPa

All values between the surface pressure of 70 mbar to 11 bar can be measured with the most pressure sensors. The most standard sensors are squared, but customized individual rectangular shapes are possible.

The above table shows the typical standard sensor shapes and the technical data. The sensors H are very thin captone based sensors for flat surfaces. The max. pressure is about 11 bar. It comes in different sizes.

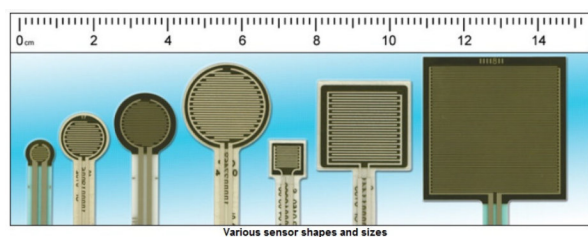


The sensors A and B are large, packed sensor to measure seating pressure or other loadings. Beside the standard version all sizes up to 380 x 106 cm are possible. The size and range is made according to customer requirements.

Moreover now these type of sensors are available with an elastic sensing element as well (sensor B). This called Tactilus Stretch has min. 1024 sensors as well, the measurement range last up to 2.1 bar. The elastic elongation is about 25%. This pad is especially made for uneven surfaces or seat or mattress covers because wrinkles will be avoided.

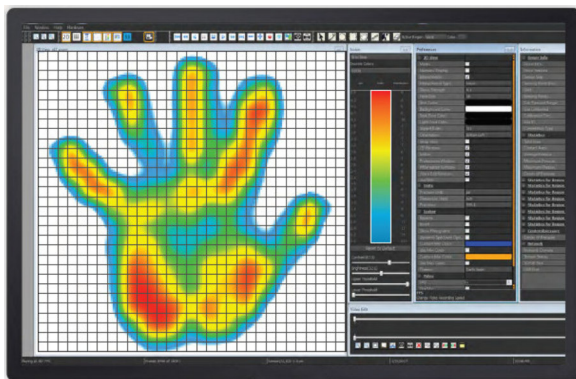


The types D comes each with 16 individual sensors. They are available in different sizes. All sensors are measured simultaneously. The calibration range will be customized same as with the other sensors. Typical applications can be found for example in medical technology for measurements under bandages or for measuring the pressure in steel coils or paper rolls. It is important that the sensor is completely loaded. Sensor E is made for measurements under washers.

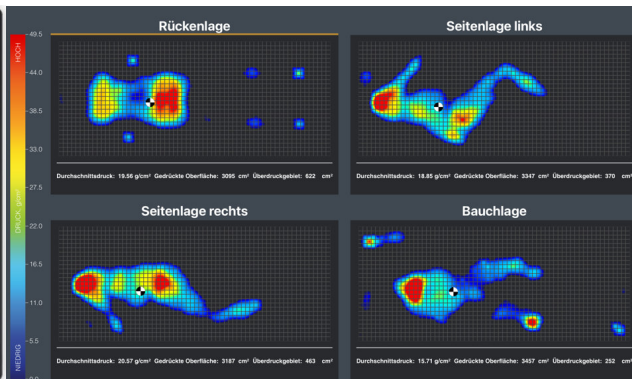


Two additional sensors can be run simultaneously to an existing system, but within the sensor type groups only (A-E, H).

All Tactilus systems are supplied with sensor, scientific software and cables. The software can be run on a Windows-based computer system or notebook. Only the mattress and foot sensors can also be operated via an IOS system, e.g. via bluetooth on an Ipad, together with the comparison software (different mattresses in comparison).



Scientific software program



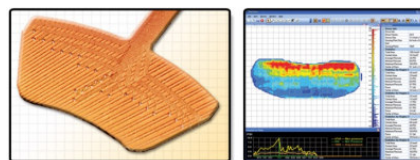
Mattress comparison program

Over the years a collection of different applications has been build up. Whether sitting or footprints, door seals, tire profile measurements or wafer polishing, pressing or rolling, laminating press tests. Other applications can be found in footprints of seat belts in a crash tests, for presses, brakes, adjustment of saddles or spray jets. As a special solution we offer a product for grip strength test, which finds its main application in the medical field.

Below we have compiled some examples out of this portfolio.



Automotive Applications



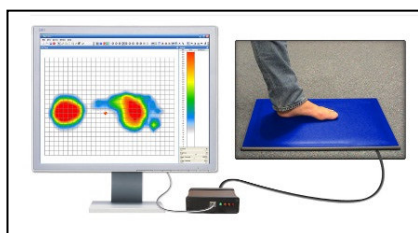
Brake Sensor



Impact Measurement



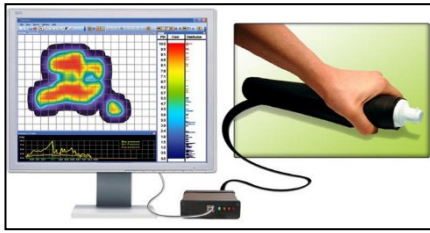
Door seal test



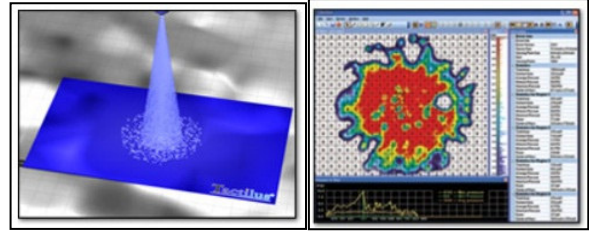
Footprint



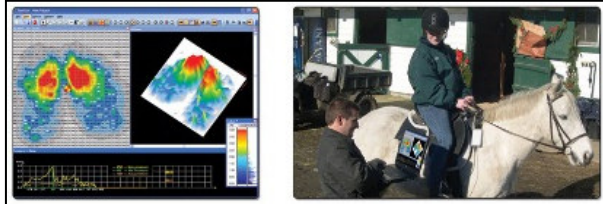
Mattress



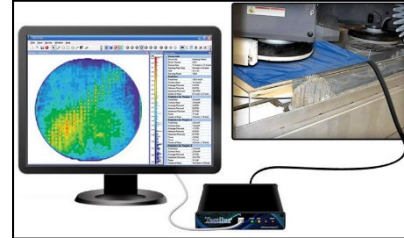
Gripping Force tube



Spray pressure



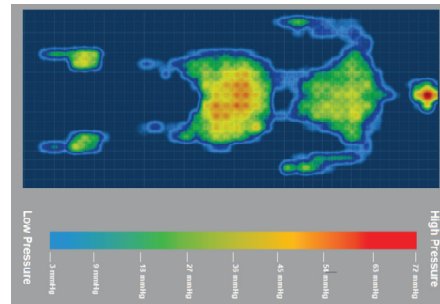
Saddle fitting



Wafer Polishing



Hand & Glove



Patient Movement Monitor

General Sensor Specifications

Sensor Technology	piezoresistive
Pressure Rang	(2) 70 mbar – 11 (17) bar on request
Matrix Size	16 x 16, 32 x 32 or customized
Mat Thickness	0,3 mm to 1 mm
Mat Size	6 – 40000 cm ²
Standard Size	See table on page 1
Elastic sensor	25% elongation available
Scan Frequency	Up to 100 Hz, single sensors up to 1 kHz
Resolution	0.8 mm – 14.5 mm
Accuracy	+/- 10 %
Reproducibility	+/- 2 %



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