

## Press Release

### Sensors made of stainless steel- ideal for applications in hydraulics and refrigeration

Korb, Germany, 2009-12-22

One-piece stainless steel pressure sensors with integrated connecting thread ensure a high burst pressure.

Ceramic, as material for pressure sensors in screen-print technology, is due to its chemical resistance, by now well established. A critical disadvantage of ceramic however is its missing ductility. In case of an overload, the ceramic membranes burst very quickly and the medium could leak. With stainless steel, contrary to ceramic, a progressive deformation takes place, before the membrane bursts. Therefore to replace ceramic with stainless steel is only obvious. A further advantage of steel sensors is that they, contrary to ceramic sensors, can be welded, thereby eliminating elastomer sealing. This can be a decisive advantage especially if applied in the hydraulic or refrigeration technology. It must be noted however that stainless steel strongly oxidises during the 850°C screen printing process. For the usual welding methods, like laser- or resistance welding, is this oxide layer an interference and needs to be chemically or mechanically removed. The SPS3003 pressure sensor manufactured out of one piece with integrated connecting thread was designed exactly for that reason. Without a welding seam, one of the most important advantage is the guarantee of a high burst pressure.



Photo: stainless steel sensor SPS 3003 with integrated G 1/4" pressure connection

## Press Release

### Sensors made of stainless steel- ideal for applications in hydraulics and refrigeration

Next to a sandwich type insulating layer system, characterised by minimal pinhole density and high insulation consistency, a layout consisting of digital-analog compensation and radial alignment of compensating resistors are used. Special efforts were undertaken to optimise the parameters of the laser compensation to ensure that the insulation layer is not damaged during the trimming process. Also of advantage to the sensor is the two-layered protection system increasing its moisture resistance.

The steel sensors of the series SPS3003 are available for pressure ranges from 0...10bar up to 0...1000bar relative pressure. New grounds were successfully broken with the stainless steel sensor SPS3003 with integrated connecting thread.

Author:  
Metallux AG  
Andreas Karaus  
Chief Technology Officer  
Tel. 07151/939 35-0  
Fax 07151/939 35-3  
andreas.karaus@metallux.de

About Metallux:  
Metallux AG is a high-performance manufacturer of electronic components produced in thick-film technology. Metallux offers a vast product portfolio and next to the standard program of pressure-, linear- and rotary- as well as foil sensors, high voltage- and power resistors as well as custom specific solutions; up to assembling of potentiometers and joysticks. A balanced customer orientation with relevant ideas and solutions make for a satisfied customer base. Innovative products, a multitude of registered patents and long time experience- numerous well known customers in the fields of automotive, electro static, medical- and industrial electronic as well as sensor systems, rely and trust for more than 22 years the company, located near Stuttgart.

For more information:  
[www.metallux.de](http://www.metallux.de)

PR contact:  
Metallux AG  
Anja Puttkammer  
Marketing & PR  
Tel. 07151/93935 -14  
Fax. 07151/93935-3  
anja.puttkammer@metallux.de