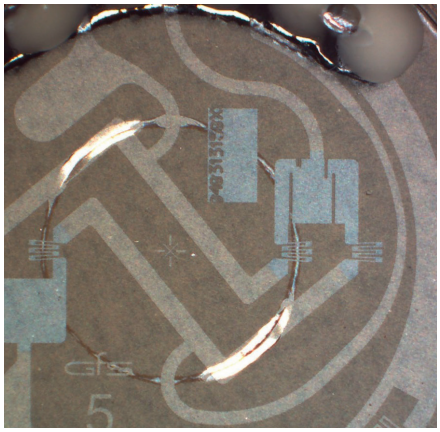
Defective pressure transmitters time and again due to pressure peaks? Not with the industrial pressure transmitter NAT 8252-5P

A common problem affecting applications with water or oil are brief pressure peaks, which are so high that they damage the measuring cell of pressure transmitters. Even if the system is carefully designed, it is possible that a pressure wave develops in the system due to quickly closing valves or external forces such as impacts, which exceeds the maximum nominal pressure multiple times. Since these pressure peaks only occur in the millisecond range, they are mostly not even detected by the measuring systems used. They only show up in increased wear and defective pressure transmitters.

Bubikon, March 2016 – Pressure transmitters used in such systems are usually fitted with a pressure peak compensator for filtering out high-frequency pressure peaks. However, this is not always sufficient; the search for the cause of the pressure peaks is often tedious and rarely produces any tangible results or approaches for an improvement. Therefore, in the case of defective pressure transmitters, the pragmatic way is often to choose a product that withstands these pressure peaks thanks to their overpressure resistance. For this purpose, measuring cells that are actually designed for a higher measuring range are used in the transmitters and the signal is zoomed accordingly. As a result, the overpressure resistance that is normally two to three times the nominal pressure can be increased significantly. However, since not only the signal but also the error or rather the measurement uncertainty increases by this factor, these transmitters often have a poorer accuracy.



Measuring cell that was damaged due to extreme pressure peaks.

Thanks to powerful electronics and more complex calibration, some of these errors (such as nonlinearity and temperature effects) can be partially compensated for. Yet apart from the hysteresis that cannot be compensated for, the long-term stability is primarily the decisive criterion for use over many years: When measuring cells with a typical long-term drift of 0.2 % per year are additionally zoomed by a factor of 2, the measurement uncertainty is already far above 1 % after 3 years, hence several times more than the as-delivered state. For this reason, it is crucial to use an extremely long-term stable measuring cell.

NAT 8252-5P - with five times overpressure

It is exactly here where the new Trafag pressure transmitter NAT 8252-5P with the option 5 takes effect, which guarantees five times overpressure resistance against nominal pressure without loss of accuracy. This is achieved by combining an extremely long-term stable cell that has proved itself hundreds of thousands of times in the toughest applications such as mobile hydraulics, and high-performance electronics based on the self-developed ASIC

Leckage due to damaged sensor membrane in a water pump.

Industrial Pressure Transmitter NAT 8252

- Smallest design
- Completely welded steel sensor system without additional seals
- Excellent long-term stability
- High resistance to over pressure

The industrial pressure transmitter NAT 8252 features the extremely robust and stable thin-film-on-steel sensor element from its well-proven predecessor NAT 8251. In combination with the new inhouse developed ASIC TX it offers a wide temperature range up to 125°C and triple overpressure safety which makes it the perfect solution for a wide range of demanding applications.
With the option 5P, the NAT 8252 achieves five times overpressure safety and is therefore suitable even for applications with high pressure peaks.

- Data sheet: www.trafag.com/H72303
- Flyer: www.trafag.com/H70666

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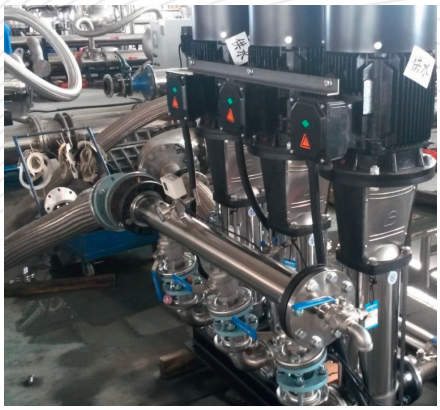
(application-specific microchip). Thanks to the extremely robust thin film-on-steel measuring cell, even the long-term drift is no problem: during continuous load tests with twice the nominal pressure over 20 million load changes, the drift remained below 0.1%.



Water pumps – an application, in which extreme pressure peaks occur very frequently.

In the case of applications with water pumps, for which this high overpressure requirement is absolutely typical, another problem is often condensation. This occurs in cold water applications when the dewpoint is fallen below and can cause corrosion to the electronics or connector. For this reason, when designing the industrial pressure transmitter NAT 8252, special care was taken to ensure that the pressure transmitter functioned reliably over long periods even under such conditions. We recommend using the M12 connector - or ideally the cable outlet - which is protected against corrosion even more reliably, since there are no corrodible connector pins.

Thanks to the particularly small size of 19 mm width across flats, the industrial pressure transmitter NAT 8252-5P also fits in restricted spaces.

We will be happy to assist you in selecting the most suitable pressure transmitter for your applications.

Trafag AG – Swiss quality sensors and monitoring devices

Trafag is a leading global provider of high-quality sensors and monitoring devices for pressure, temperature and gas density. In addition to a wide range of standardised, configurable products, Trafag also develops customized solutions for OEM customers.

Founded in 1942, Trafag is based out of Switzerland and has a wide distribution and service network in over 40 countries worldwide. This enables us to provide personal and professional customer service and ensures that all of their services are of the highest quality. Powerful development and production departments guarantee that Trafag products are of the highest quality and precision, product delivery is fast and reliable and customer requests are implemented quickly.

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