



How can I ensure the position of my hydraulic cylinder in my system?

https://youtu.be/ABv3AeK70_s

Part 1 Inductive proximity switches

In many applications, reliable statements about the current position of a hydraulic cylinder are required, for example for safety interrogations or to prevent different axes of movement from interfering with each other. The simplest form here is a position switch. Inductive, pressure-resistant proximity switches (NI sensors) are most commonly used for this purpose in the end positions of the hydraulic cylinders.

Precise and inexpensive: built-in, pressure-resistant proximity switches

When the piston position reaches one of the two end positions, this is electronically signalled by the proximity switch. Inductive proximity switches operate without contact and are therefore wear-free. They can be used with almost all [cylinder types](#), i.e. also with [block cylinders](#), up to 500 bar and 120°C.

What do I do if I do not know the exact end position?

Often the exact end position of the cylinder in a system cannot be determined from the outset. Either the end position is influenced by tolerances of the components to be processed, or the system is fine-tuned on completion. To prevent the proximity switch from not emitting a signal because the end position is not reached, a so-called switching point advance can be specified. In this case, the piston is turned so that the proximity switch receives the signal several mm before the end position. In this way, if the external end position of the cylinder is subsequently changed, for example, I can be sure that I will still receive a signal.

How an inductive proximity switch works

Inductive sensors generate an electromagnetic alternating field. When an electrically conductive object approaches, it withdraws energy from the alternating field, reducing the level of the oscillation amplitude. This change is evaluated in the inductive sensor. Thus, the sensing is contactless.

Using inductive sensors to obtain intelligent cylinders

Sensors are constantly evolving. And they are also taking on more and more tasks in hydraulic cylinders. In the past, it was sufficient to know the position of the hydraulic cylinder. Today, HEB can additionally determine the temperature and the number of strokes with intelligent IO-Link sensors. And not only for the current state, but also over a period of time. This allows conclusions to be drawn about possible wear and tear and preventive maintenance to be initiated. Contact us for more information.