

Position measurement in Computer Tomography (CT)

In the latest CT equipment, the most effective diagnoses are determined by how precise and fast the measurement systems are (speed and resolution), as well as their cost effectiveness.

Irrespective of whether spiral, helical or dual source apparatus is used, the requirements are continuing to increase.

In particular, this also concerns the length measurement equipment for the horizontal reclined position. In order to obtain the best possible overall image of the target, the individual X-ray sections, which normally travel through the object, have to be measured with smaller and smaller spacing. To do this, the sections are compiled in a 3D reconstruction to obtain voxels (volumetric and pixel). Based on this complete volume data set, any 3D views or sectional planes can be produced (see 3D image).

In order to correctly assign the sections, the horizontal position of the couch has to be measured precisely. Therefore, a measuring system with very high resolution and long measuring range is required.

In this application, draw-wire sensors from Micro-Epsilon achieve a resolution of up to 0.001% of the measuring

range; this is combined with maximum reliability, long service life and a very favourable price/performance ratio. A number of different sensor designs and signal outputs (analogue, incremental digital or absolute digital) are available which means the sensors can be adapted easily to individual customer requirements.

Requirements for the measuring system:

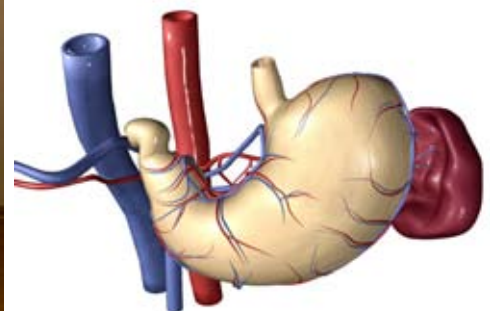
- Measuring range 1800mm
- Resolution 0.02mm

Benefits to the customer:

- High reliability
- Long sensor service life
- Simplified mounting
- Attractive price/performance ratio

Possible sensor series:

- WPS-xxxx-MK46 / MK77
- WDS-xxxx-Z60
- WDS-xxxx-P60



3D CT recording of a stomach and a spleen