

Precision synchronized lifting system

Synchronized lifting systems enable the raising and lowering of heavy loads controlled for distance and force or the controlled forward feed of large components. To achieve this, eight or more cylinders are connected to a central high pressure hydraulic system (700 bar). The travel displacement of each individual cylinder must be measured as the actual value for the synchronized movement and supplied to the closed/open loop controller.

Draw-wire displacement sensors of the wireSENSOR Series P60 are employed for this task. Due to their compact shape, they are easy to fit even under tight spatial conditions. Complicated alignment is not necessary. The measuring wire is simply attached to the load or component with a hook.

The output signal from the displacement sensors which is proportional to the displacement (resistance value, voltage, current or increment) is fed into a PLC which controls the synchronism of the cylinders.

On the synchronized lifting system, the measurements are displayed via a PC and the parameters for the lifting/lowering and the permissible tolerances and limits for the travel displacement adjusted. The displacements (positions) can also be output via digital panel-mounted displays (accessories).

System setup

4 x WDS-500-P60-SR-U

4 x DD800



Application

Reasons for the system selection

- Draw-wire sensors are easy to mount without any particular effort.
- The space required is small.
- The sensor length is proportional to the momentary measurement displacement (actual value).
- High accuracy for an economical sensor price.
- Flexible sensor range (measurement ranges, models, output signals) for the most varied requirements.

Technical details

- Measuring range: 500 mm (100 and 1000 mm)
- Accuracy: ± 1 mm
- Resolution: 0.1 mm
- Bandwidth: 50 Hz

Ambient conditions

- Temperature: 10 - 40 °C

