

GWM 30/250

Magnetostrictive displacement transducer



This sensor uses the physical principle of magnetostriction with high-precision, reproducible contactless position measurement. The key component of the displacement transducer is the ferromagnetic measuring element – the waveguide. The movable position magnet generates a longitudinal magnetic field in the waveguide. When a current pulse passes through the wave-guide, a second magnetic field is created radially around the waveguide. The convergence of the two magnetic fields produces a strain pulse that travels at a constant ultrasonic speed in the form of an acoustic wave from its point of origin – the measurement point – to the ends of the waveguide. It is transformed in the sensor element into an electric pulse that is processed by the evaluation electronics and turned into an analogue signal for automatic recording.

TECHNICAL DATA

Dimensionen	
Diameter Ø/length:	30/ 285 mm

Input	
Variable:	Displacement, speed/ 2-way positioning
Measuring length (profile):	72-250 mm

Output	
Voltage:	0.1-4.9 V
Burden:	> 10 kΩ

Accuracy of position measurement	
Zero/end point adjustment:	100 % of measuring range (min. range 72 mm)
Linearity:	< ± 0.15 mm
Repeatability:	< ± 25 µm
Hysteresis:	< 25 µm
Temperature coefficient:	< 0.02 mm/°C

Conditions of use	
Area of application:	Glass fibre rod extensometer
Operating temperature:	
Standard:	-40 to +70 °C
Extended:	-40 to +105 °C
Humidity/ Dewpoint:	90 % rel. humidity, no dew
Protection type (profile):	IP 67
Shock test:	100 g (single shock to IEC-Standard 68-2-27)
Jarring test:	15 g/ 100-2000 Hz to IEC-Standard 68-2-6
Operating voltage:	5 V ± 5 %
Current consumption:	40 mA typical