



LAP ANTARIS

Long Range Laser Displacement
Sensor with integrated DSP
Measuring ranges up to 4000 mm

Laser Displacement Sensor LAP ANTARIS

With the LAP ANTARIS Displacement Sensor a wide range of measurement applications can be solved in all kinds of industries. The applications of ANTARIS vary from single sensor installation to complex projects with a combination of several sensors.

ANTARIS sensors use triangulation as the principle of operation. The entire data processing is based on a high-performance "Digital Signal Processor" (DSP), providing automatic control of both laser power and exposure time of the CCD array. This allows measurement of virtually any material or color. A high efficiency CCD array as sensor combined with LAP's unique digital data processing yields extremely high resolution over much larger distances than conventional triangulation sensors. Any material with at least partly diffuse light reflection can be accurately measured, such as wood, plaster, rubber, plastics, metal, paper, concrete, asphalt and stone, irrespective of their temperatures.

The standard measurement ranges (see table below) of the ANTARIS Displacement Sensors are between 150 and 4000 mm with a stand-off from 440 up to 1550 mm. On request, customer specific measuring ranges or stand-off distances can be made.

The ANTARIS Sensors provide a multidrop serial interface (RS485) and an analog output (4-20 mA). The analog output is useful for control loop systems and for simple PLC interfacing. The serial interface allows connection of up to 32 sensors to a single standard serial port of a PC, PLC or alike. The Antaris sensors can intercommunicate, providing stand-alone differential thickness measurement, straightness / curvature measurement. They come with powerful digital filters, allowing for complex data processing and filtering already on the sensor level. Optional built-in limit switches can be used to trigger alarms in case the measured values exceed preset tolerance limits.

ANTARIS S

Measuring Range	Stand-Off	Resolution	Repeatability	Linearity
[mm]	[mm]			
150	440	2,5 µm	± 80 µm	± 120 µm
250	620	4,2 µm	± 120 µm	± 170 µm
350	680	5,8 µm	± 160 µm	± 240 µm
500	780	8,3 µm	± 230 µm	± 340 µm
750	880	12,5 µm	± 350 µm	± 520 µm
1000	955	16,7 µm	± 450 µm	± 670 µm

ANTARIS L

Measuring Range	Stand-Off	Resolution	Repeatability	Linearity
[mm]	[mm]			
250	610	4,2 µm	± 120 µm	± 170 µm
350	720	5,8 µm	± 160 µm	± 240 µm
500	860	8,3 µm	± 230 µm	± 340 µm
750	1020	12,5 µm	± 340 µm	± 500 µm
1000	1140	16,7 µm	± 450 µm	± 670 µm
2000	1300	33,3 µm	± 1340 µm	± 2000 µm
4000	1550	66,7 µm	± 3200 µm	± 4800 µm

Technical Data

Measuring principle	Laser Triangulation
Measuring frequency	≤ 4000 meas./s
Light Source / Wavelength	Laser diode / 670 nm (bright red)
Laser power	1 / 5 mW
Laser Class	2 / 3B
Analog Output	4-20 mA, zoomable. Max. load: 250 Ohms
Serial Interface	RS 485
Baudrate	≤ 230 kBaud (optional 920 kBaud)
Interface Options	RS 232, Ethernet, Profibus
Supply Voltage	24 V DC +/- 10%
Dimensions (HxWxD)	124 x 320 x 200 mm (ANTARIS S), 124 x 560 x 200 mm (ANTARIS L)
Protection	IP 65
Ambient conditions	0...40 °C / 35...85 % rel. humidity, not condensing