CHC-1000S Capacitive Height Controller

Introduction:

In the process of laser cutting, the distance between the nozzle and the surface of the workpiece is not constant because of the uneven workpiece and cutting high pressure gas injection, which will have a negative effect on the cutting performance or even crashing nozzle. CHC-1000S Height Controller can keep the distance between nozzle and workpiece constant when cutting in high speed, protect nozzle from colliding with workpiece, and improve cutting effect greatly. The capacitance sensor on the cutting head can detect the distance between the nozzle and the workpiece surface, send the signal through preamplifier to the adjustment box for processing, and send output signal to the servo controller to control the Z axis.

Features:

Capacitance sampling rate: 1,000 times per second.
Static measurement accuracy: 0.001 mm.
Height measurement range: 0 ~ 25mm.
The signal will not decay with strong capacity of resisting when the length of signal transmission cable is up to 100m.
Support network communications and U disk online upgrade.
Support the jitter suppression function; can effectively suppress the jitter caused by blowing air and dross, etc.
Adapt to any cutting head and nozzle; capacitance parameter adaptive.
Support panel collision alarm, nozzle electrode loss detection alarm, sensor wire breakage alarm.
Support 1 point, 2 points and 16 points capacitance calibration, support displaying the calibrated curve.
Support real-time capacitance calibration, can effectively solve the influence of

temperature and other factors on capacitance sensor.

The 16 bit DA output, the output voltage ($\pm$10 V) signal in the sensor control mode, or the linear height signal of the signal output voltage (0-10 V) in the distance measurement mode, have an update cycle of 1000 times per second.

The 14 bit AD input detects the external analog voltage signal (0V-10V) and adjusts the stationary distance in real time.

Support oscilloscope function, can detect the capacitance and height changes in real time.

Support oscilloscope function, can detect AD changes in real time.

Support EtherCAT bus communication.

System Composition

The capacitive control system is composed of CHC-1000S controller, preamplifier, laser cutting head, cable and so on.

Accessories	Quantity	Standard Configuration	Optional Configuration
Height Controller Host	1	CHC-1000S	
Preamplifier	1	CHC_AMP	
Radio-frequency Cable	1	SPC-140(140mm)	SPC-180(180mm)
Sensor Cable	1	STC-10(10m)	STC-15(15m)
Plug	1	DB25(M)	
Manual	1		