HCDW Eddy Current Displacement Sensor

The working principle of the HCDW eddy current sensor system is eddy current effect, which is a displacement sensor based on inductive measurement principle. The eddy current effect originates from the energy of the oscillation circuit, and eddy current needs to be formed in a conductive material. Conducting an alternating current into the inner coil of the sensor probe can form a magnetic field around the probe coil, If a conductor is placed in this magnetic field, according to Faraday's law of electromagnetic induction, an eddy current will be excited inside the conductor. According to Lenz's law, the direction of the eddy current magnetic field is exactly opposite to that of the coil magnetic field, which will change the impedance value of the coil inside the probe. The change in impedance value is directly related to the distance between the coil and the measured object, After the sensor probe is connected to the controller, the controller can obtain the change in voltage value from the sensor probe and calculate the corresponding distance value based on this. The principle of eddy current measurement can measure all conductive materials. Since eddy currents can penetrate insulators, even if the surface is covered with insulating metal materials, they can still be used as the tested object of eddy current sensors. The unique coil winding design of this device achieves an extremely compact sensor shape while meeting the requirements of high-temperature measurement environments.

Product Parameters

Range	1mm	2mm	4mm	5mm	12.5mm	20mm	25mm	50mm
Probe diameter	Φ6mm	Φ8mm	Φ11mm	Φ17mm	Φ30mm	Φ40mm	Φ50mm	Φ60mm
Accuracy (% FS)	≤±0.25	≤±0.25	±0.5	≤±0.5	≤±1	≤±1	≤±1	≤±2
Frequency	0~10KHz	0~10KHz	0~8KHz	0~8KHz	0~20KHz	0~1KHz	0~1KHz	0~1KHz
output signal	0~5V，0~10V，4~20mA，RS485							
Power supply	voltage type 9~18VDC，18~36VDC，±15V~±18VDC							
Power supply	current type 22~30VDC，RS485，12VDC							
TEMP drift	≤0.05%/℃							
Calibrate TEMP	(20±5)℃							
Operating TEMP	-30℃~+150℃							
Protection	IP68							
Cable length	Default 2m, customizable							

Beijing Hengrui Changtai Technology Co., Ltd. / Address: Room 1413，Building 2， No. 106 Kexing West Road， Changping District，Beijing，China / Postal Code: 102208 / Tel: +86 10 60728968 / Fax: +86 10 50976396 / Web: www.bjhrct.com/Mobile(WeChat):+86 15311807298/ Email(Skype) : bjhrct@126.com