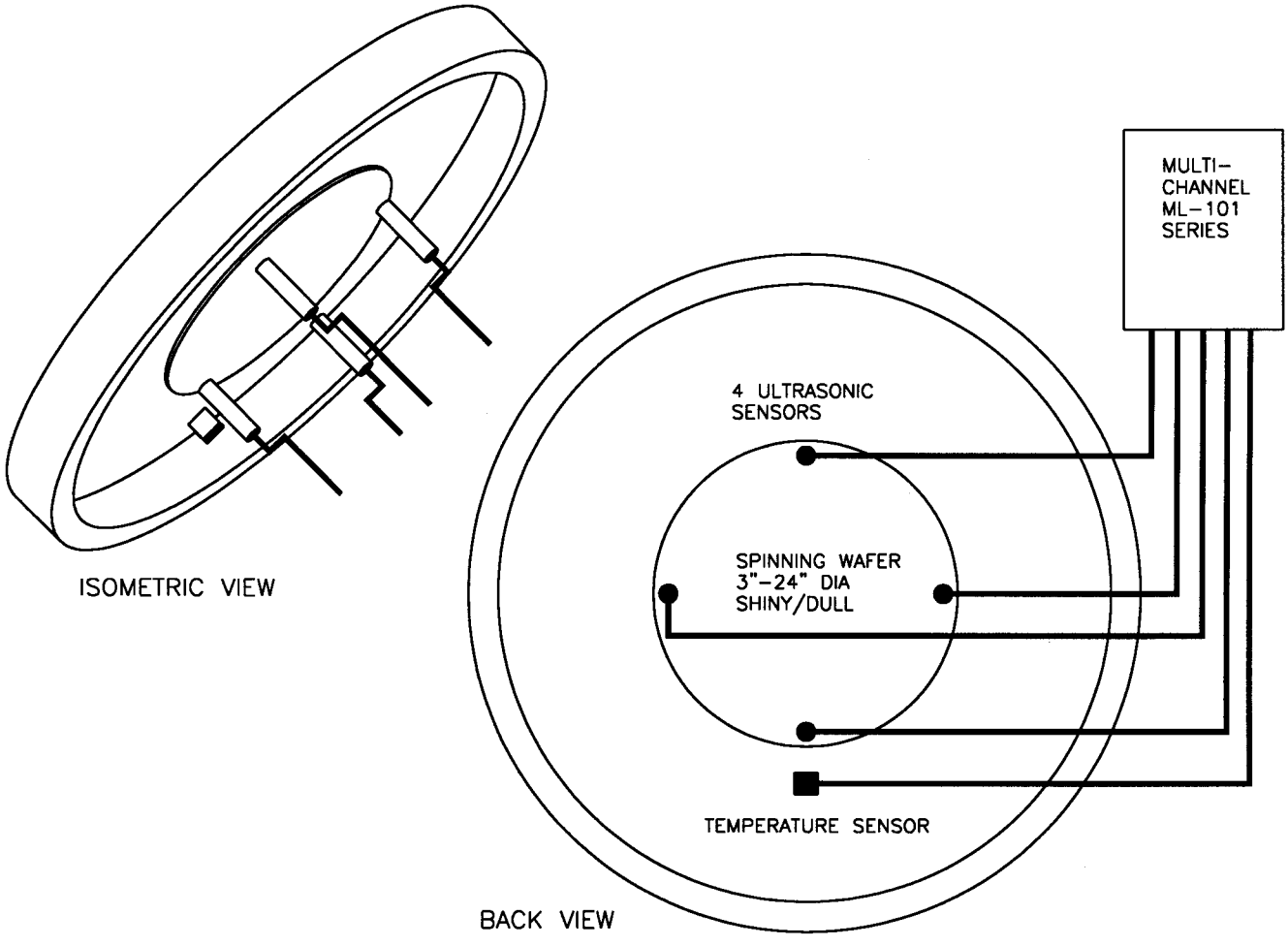
COSENSE
HAUPPAUGE, NY 11788

APPLICATION NOTE

AP-032

WAFER PROFILE SYSTEM



PROBLEM: THE CUSTOMER DESIRED TO PROFILE THE SURFACE OF A SPINNING WAFER, EITHER SHINY OR DULL (WHERE OPTICAL SYSTEMS FAILED) USING A SERIES OF FOUR/SIX SENSORS WITH MAXIMUM ACCURACY AND RESOLUTION. AN ADDITIONAL SENSOR WOULD BE NEEDED FOR THE DETECTION OF THE WAFER PRESENCE OR ABSENCE TO PREVENT DAMAGE TO THE REMAINDER OF THE SYSTEM SHOULD THE WAFER DISENGAGE IN WHOLE OR IN PART FROM THE SPINNING MECHANISM. THERE WAS ALSO A NEED FOR A CUSTOM MODE WHERE THE CUSTOMER COULD ENTER IN AN ACCEPTANCE BAND IN WHICH THE READINGS FROM ONE OR MORE SELECTED SENSORS NEEDS TO BE IN OTHERWISE A RELAY WOULD BE SET TO HALT THE PROCESS. ALL MEASUREMENTS NEED TO BE MADE FROM .5 INCHES TO 1.0 INCHES FROM THE FACE OF THE TRANSDUCERS.

SOLUTION: COSENSE DEVELOPED A MULTI-CHANNEL MICROLEVEL MEASUREMENT BOARD WHICH COULD HANDLE UP TO TWELVE SENSORS AND WOULD PROVIDE AN ACCURACY OF ±.0005 INCHES AND A RESOLUTION OF ±.0001 INCHES AT CONSTANT TEMPERATURE. THE ULTRASONIC SENSORS WERE CUSTOM BUILT TO PROVIDE A DEADBAND OF LESS THAN .5 INCHES. DATA WOULD BE DELIVERED VIA RS-232 FOR THE ACTIVE CHANNELS DURING REGULAR RUN MODE. IN THE CUSTOM MODE, THE UNIT SAMPLES THE WAFER AT MAXIMUM UPDATE RATE AND DATA IS DELIVERED ONLY WHEN A READING OUTSIDE THE ACCEPTANCE BAND IS ENCOUNTERED.

FOR FURTHER INFORMATION, CONTACT YOUR NEAREST COSENSE REPRESENTATIVE OR CALL (631) 231-0735 OR E-MAIL SALES@COSENSE.COM.