



TECHNICAL SPECIFICATION SDI-5110

Utilitank Immersion Inspection System



Note: This specification is for the standard SDI-5110 Immersion Inspection System and is for information only. The details may differ significantly from those proposed for specific customer requirements. The specification provided in the Statement of Compliance and formal quotation supersedes this document.



Specification for an Advanced Ultrasonic Immersion System

1. INTRODUCTION

This specification is for a general purpose immersion system with the precision and repeatability required for the inspection of aero engine and airframe components. The equipment components include a precision bridge mounted on an extruded aluminum frame. The system is available with single or dual search tubes configured to accept a range of manual or motorized gimbal options. The equipment will operate with any system level ultrasonic instrumentation. It is designed to achieve the accuracy and resolution required at high throughput speeds in a harsh operating environment. SDI have supplied systems of this type for numerous aerospace research institutions.

2. SYSTEM DESCRIPTION

The system consists of a tabletop mounted extruded aluminum frame which spans the lucite immersion tank. The precision bridge, search tube and gimbal assembly are mounted on the frame, isolating them from the tank structure. The system can be fitted with one of SDI's mini rotators or turntables. All SDI turntables and rotators are removable and interchangeable.

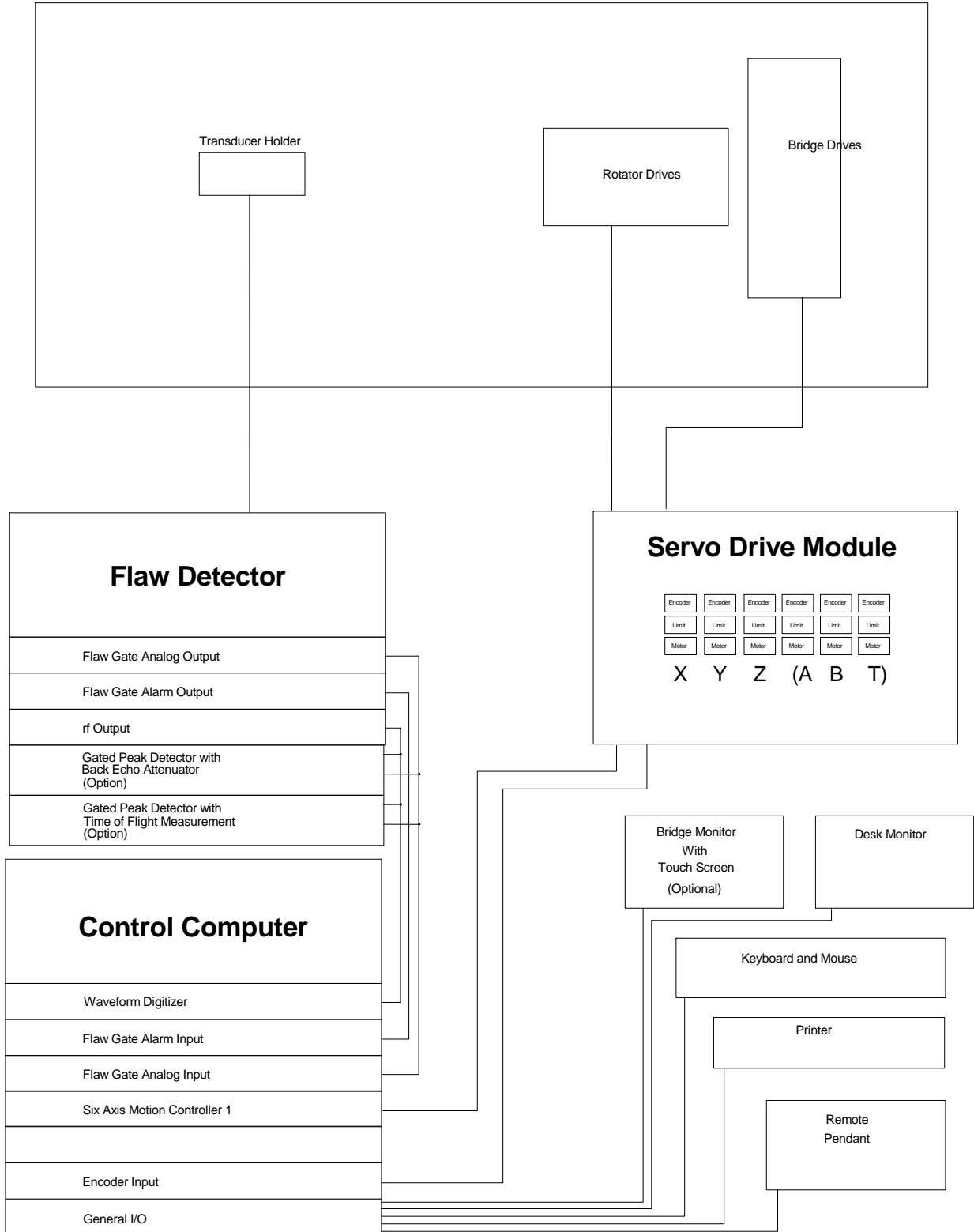
3. ELECTRICAL CONFIGURATION

The electrical configuration describes the components and interconnections for the motion control, drive, instrumentation and data acquisition sub systems. The components are design to be supported on a table supplied by the customer. All system components meet applicable US and International safety codes. Apart from the very low current ultrasonic signals, no voltages greater than 70 volts are present anywhere on the system outside the control console.

3.1 Control Console.

The control console components can be positioned on a table anywhere within reasonable distance from the system. The console requires a single 110V 60 Amp single phase supply.

The electrical layout is shown below





4. SYSTEM CONTROL - GENERAL

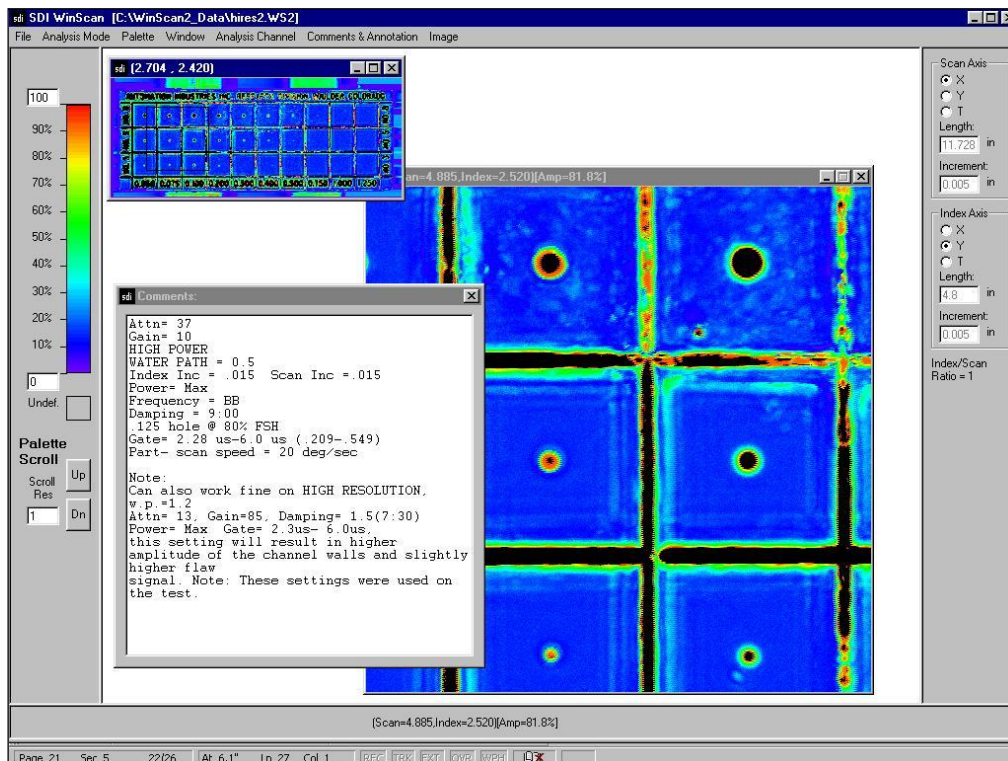
The SDI MasterScan/WinScan suite is one of the most powerful motion control and acquisition packages available. The well structured modular software has evolved by incorporating customer's motion control and acquisition requests into the standard product. With a user base of over 100 systems, incorporating the suggestions of technicians who spend all their time operating our equipment has resulted in the most versatile, user friendly, package in the industry. Targeted primarily at high volume test lab users, the principal operational criteria are ease of use and fastest possible inspection times.

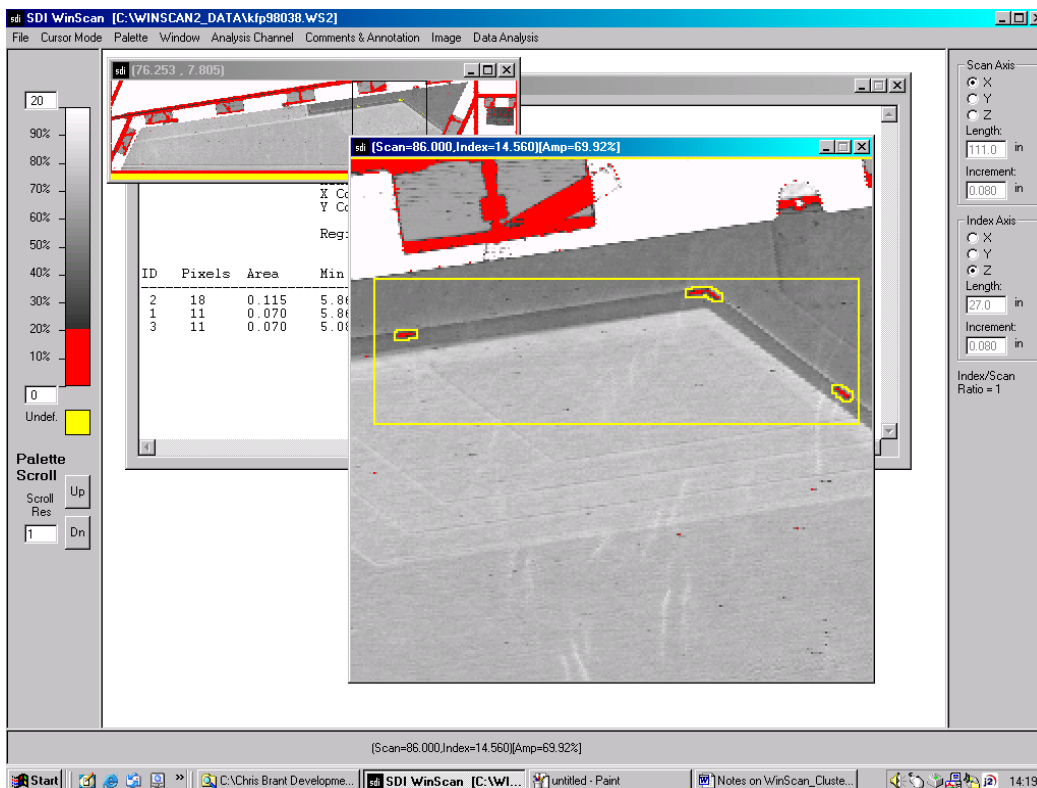
5. MOTION CONTROL

The motion control is provided by the SDI-1880 UtiliScan advanced controller. Designed specifically for ultrasonic applications, it features simple intuitive controls for simple 3 axis scanning. With the chain scan option, the operator can construct complex scans by chaining together individual motion commands, scan plans and instrument set-ups.

6. DATA ACQUISITION

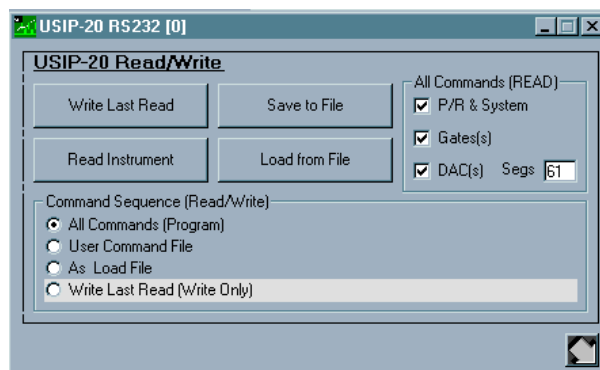
The system is supplied with the latest SDI-WinScan multi-tasking acquisition and analysis package designed for high throughput production applications. A technical description of the features and benefits of this high performance industrial package is attached





INSTRUMENTATION

All SDI systems are able to operate with a variety of flaw detectors. Systems have been installed using instruments supplied by all major instrument manufacturers. In addition, SDI manufactures their own range of high performance flaw detectors designed specifically for systems applications. When the SDI instruments are used there are a number of system features available which require instrument parameter changes at rep rate speeds. A wide range of SDI manufactured auxiliary instrumentation is also available and compatible with other manufacturers flaw detectors. This includes pre-amplifiers, log amplifiers, tone burst pulsers, high frequency pulser/receivers and others. The following third party flaw detectors have been supplied fully integrated with the SDI software. USD 15, USD 30, USIP 20, USPC2100, Staveley 138, Panametrics 9000. Other programmable flaw detectors can be used as required .





SYSTEM ACCEPTANCE/INSTALLATION

The system will be available for customer acceptance trials prior to shipment. The details of the Acceptance Test Procedure (ATP), are in accordance with the customer's requirements. The system will then be installed at the customer's site. It is understood that the customer will provide suitable single-phase power, water supply and drainage. Full installation drawings will be provided shortly after receipt of order. It is also recommended that a dedicated phone line be installed in close proximity to the system to allow modem communication for remote diagnostics, upgrades etc.

CUSTOMER SUPPORT

The service, maintenance and technical support facilities offered by SDI can be tailored to meet a wide range of customer requirements. Customers who purchase our equipment receive the complete range of services free of charge for the first year following equipment installation.

Field service personnel are complimented by the technical support and engineering staff at the SDI facility. The technical support staff is available to customer engineering and service personnel for free consultation via phone, fax and modem.

