

Engineering Specification for Paperless Data Recorder

A paperless recorder or “electronic data recorder” is required. The primary attributes of these recorders are a color LCD display, electronic data storage on removable media, and networkable data communications. Data Analysis Software is also required.

The recorder shall be available for use with 90-264VAC, 47- 63 Hertz. Power Consumption shall be less than 60 VA; an option for 24 VAC/DC shall be required. An optional 24VDC-power supply shall be available for powering field transmitters (200mA max.)

The recorder to fit into a 12.7” x 12.7” (323mm x 323mm) cutout. The front bezel and case shall be made from flame retardant material. The depth behind the panel should 3.0” (77mm) or less.

The recorder shall be equipped with a 12.1” diagonal, high resolution XGA, color TFT type display with a touch screen interface that provides easy navigation through the operator displays and menus. A means of reviewing the historic trend data and system messages at the recorder shall be available. Hierarchical Menus with intuitive prompts and selections are preferred.

The recorder shall be supplied with Analog Input circuitry that will resolve the analog field signals to 16 bits of resolution. The input circuitry should be configurable to accommodate various signal types on the same card. Up to 16 analog channels will be required for the relevant applications.

A custom screen building engineering tool that permits the development of screens is strongly preferred. A graphic change shall not affect the manufacturer’s firmware revision and screen changes shall not require re-certification of the recorder.

Each Data point shall be configurable for an independent logging rate from 20msec up to 60 hours. Each pen shall support math expressions of up to 100 characters of free form math or a math script up to 500 characters that allows the recorder to do logical decisions based on various input conditions.

The recorder shall support passwords with an audit trail capability that logs events, system messages, operator actions, alarms, configured events, diagnostic messages. The recorder password system shall comply with 21 CFR Part 11 and provide the ability to have up to 4 levels of user access for the individual areas of the configuration. Security shall be defined by a password administrator.

The recorder shall have a minimum internal memory of 1 gigabyte and be expandable to 4 gigabytes. This will be capable of being partitioned between display buffered data and data for archiving to the media based on the users needs. The buffer memory shall not require a battery back up to insure data retention in the event of any power loss. Stored data shall be recorded as a true archival database. The archived data shall be stored in a Contiguous File Structure and represented in a recorder/pen format for easy understanding.

The equipment shall have a 10/100 BASE T Ethernet (IEEE 802.3) compatible communications port as a standard feature and support TCP/IP and FTP protocols. An option to provide a secure FTP connection between the recorder and the companion software is required. The unit shall accommodate FIXED and DHCP IP addressing. Each user shall have access to the recorder’s set-up and data base functions using a browser which is password protected. The unit shall be capable of being connected to an OPC Client allowing the user to obtain real time data and alarm and events using a compatible OPC Client. The equipment shall also support RS485 Modbus RTU communications (up to 115200 Baud).

The recorder shall conform to Safety Standard: ANSI/UL61010-1 3rd Edition and CSA22.2-No.61010.1-2012. This product shall conform to the protection requirements of the following European Council Directives: 73/23/EEC, the Low Voltage Directive, and the EMC Directive 89/336/EEC.

Optional Digital Inputs (Dry contact), Alarm Outputs: “C Form” relays, NO/NC, 3 ampere 240VAC rating, minimum or Digital outputs SPNO 1A 24VDC rating (non-inductive, internally suppressed) and Analog outputs (4-20 ma/0-20ma) capable of re-transmitting selected signals shall be available.

The paperless recorder shall be the Honeywell DR Graphic paperless recorder or equivalent.