ROCKWELL AUTOMATION PROCUREMENT SPECIFICATION

**PROCUREMENT SPECIFICATION**

**PanelView™ 5510 Operator Interface for**

**7-inch to 19-inch Displays**

**NOTICE:** The specification guidelines in this document are intended to aid in the specification of products. Specific installations have specific requirements, and Rockwell Automation does not recommend or intend any specific application based solely upon the guidelines provided here. Because of the variety of uses for this information, the user of, and those responsible for applying this information, are responsible for ensuring the acceptability of each application and appropriate use of the guidelines. In no event will Rockwell Automation be liable for misuse, misapplication or reliance on these guidelines in connection with any specific application. Rockwell Automation also disclaims indirect or consequential damages resulting from the use or application of this information.

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1. **GENERAL**
	1. QUALIFICATIONS
		1. Manufacturer must:
			1. Specialize in manufacturing products specified in this section with minimum 20 years documented experience.
			2. Have service personnel available 24 hours per day through a toll-free phone number.
			3. Offer local standard and customized training courses.
		2. Supplier must be an authorized distributor of specified manufacturer with minimum three years documented experience.
	2. REFERENCES
		1. The operator interface terminal shall be designed to meet the following agency approvals:
			1. cULus Listed Industrial Control Equipment for use in Hazardous Locations Class I, Division II, Groups A, B, C, D.
			2. CE marked for applicable EMC and LVD directives.
			3. UKCA marked.
			4. RCM marked for use in continental Australia and New Zealand.
			5. RoHS (Europe, China, and Turkey).
			6. KCC.
			7. ODVA Conformant.
	3. ENVIRONMENTAL REQUIREMENTS
		1. The supplier shall conform to specified service conditions during and after installation of programmable controllers.
		2. The supplier shall maintain area free of dirt and dust during and after installation of products.
	4. SUBMITTALS
		1. The supplier shall provide catalog cut-sheets.
2. **PRODUCTS**

Any general specifications (–GENERAL) are design requirements for all PanelView 5510 models covered in this document. Design requirements specific to each model start in section 2.08 and are in addition to the general design requirements.

* 1. MANUFACTURER–GENERAL
		1. Shall be Allen-Bradley®, Model 2715P PanelView 5510 Terminal.
		2. Substitutions are not permitted.
	2. CONSTRUCTION–GENERAL
		1. The operator interface terminal shall combine the display, logic communication, and power into one base unit in a fixed hardware configuration.
		2. The operator interface terminal shall be designed to be mounted in space required for similar PanelView models with 7-inch to 19-inch display sizes.
		3. The operator interface terminal shall be designed for the following environmental parameters:
			1. Operating temperature range of 0 to 55 °C (32 to 131 °F) [19-inch models to 50 °C (122 °F)].
			2. Non-operating temperature range of -25 to +70 °C (-13 to 158 °F).
			3. Humidity range of 5 to 95% non-condensing.
		4. The operator interface terminal shall operate on power input of 18 to 30 VDC.
		5. The operator interface terminal shall be provided with clamps for installing the display in the enclosure’s cutout. The clamps shall compress the bezel gasket to form a permanent seal against the panel.
		6. The operator interface terminal shall be designed to provide free air flow convection cooling without a fan.
		7. All sizes of the operator interface terminal shall be available in conformally coated versions.
		8. Both the 9” and 12” wide display models shall be available in versions with stainless steel bezels that meet the Ingress Protection code IP69K, being resistant to powerful close range, high-temperature water jets.
	3. DISPLAY FEATURES–GENERAL
		1. The operator interface terminal shall have:
			1. An analog-resistive, color TFT LCD touch screen with 24-bit color graphics (16.7 million colors).
			2. An LED backlight.
		2. Touch screen operator interface terminals shall have the entire display available for object usage or shall have a combination touch screen and keypad layout.
		3. The operator interface terminal shall have a separate, physical navigation button for an on-screen pop-up menu to display screen navigation.
		4. The operator interface terminal shall include status indicators for the following:
			1. Controller status.
			2. Ethernet link presence and activity.
	4. LOGIC FEATURES–GENERAL
		1. The operator interface shall provide connectivity to as many as four of the following “Logix” controllers:
			1. ControlLogix 5570 and 5580 controllers with firmware V27 or later
			2. CompactLogix 5370, 5380, and 5480 controllers with firmware V27 or later
		2. The operator interface terminal memory shall have a minimum total capacity of:
			1. 1 GB of RAM memory.
			2. 1.4 GB of nonvolatile storage available for projects.
		3. The back of the operator interface terminal shall have a slot for a Secure Digital (SD) memory card for loading troubleshooting profiles, saving troubleshooting logs, loading of terminal firmware and user projects, and exporting data logs or alarm history. The SD card shall be hot-swappable: it can be inserted and removed while the terminal is powered on and in use.
		4. The operator interface terminal shall have two Universal Serial Bus (USB) type-A host ports to support removable flash drives for external storage, loading troubleshooting profiles, saving troubleshooting logs, loading of terminal firmware and user projects, and exporting data logs or alarm history and for connection of keyboards and pointing devices.
		5. The operator interface terminal shall have two 10/100Base-T, Auto MDI/MDI-X Ethernet ports that support DLR (Device Level Ring), linear, or star network topologies with embedded switch technology.
		6. The operator interface terminal shall include a battery-backed real-time clock. User programs shall have access to the real-time clock via system tags.
		7. The operator interface terminal shall support at least six different security roles to which individual users may be assigned. After a user has logged in with their username and password, the roles then determine which screens the user may access and which functions they can execute within each screen. The operator interface terminal shall also support a guest account which can be customized to allow access to functions not requiring security when no user is logged in.
	5. PROGRAMMING–GENERAL
		1. The operator interface terminal shall run HMI projects developed in and downloaded from the Studio 5000® Software environment.
		2. The operator interface terminal shall be capable of being flash updated using ControlFLASH™ or ControlFLASH Plus™ over the Ethernet network.
		3. Programming shall be performed using Logix tags with extended properties and direct reference tags.
		4. The design application shall have an emulator function to allow testing the project with or without connection to a controller. That emulator shall be compatible with a separate controller emulator such that applications can be fully tested in the absence of any terminal or controller hardware.
		5. Remote access shall be available using VNC client/server. The design environment shall enable granting users connected through VNC read/write or read-only access.
		6. The operator interface terminal shall be capable of displaying any of the tags available in the Logix controllers. The data values include:
			1. BOOL
			2. SINT
			3. INT
			4. DINT
			5. LINT (time stamp values only)
			6. REAL
			7. STRING (up to 484 characters)
			8. All pre-defined data types
			9. User-defined data types
			10. Module-defined data types
			11. Add-On Instruction data types
			12. Arrays of 1, 2, and 3 dimensions
	6. PROGRAMMING TECHNIQUES–GENERAL
		1. The design application shall have the capacity to develop the following high-performance features:
			1. High-speed on-screen buttons.
			2. Property binding.
			3. Events and commands.
		2. The HMI project shall be capable of displaying:
			1. Advanced runtime diagnostics of the operator interface terminal and the controller.
			2. Both real-time and historical trending.
			3. Smart runtime error notifications.
			4. Dedicated, pre-configured, customizable screens for alarm management and alarm history.
		3. Graphic capabilities shall exist for the following:
			1. Scalable vector graphics.
			2. Automatic rescaling.
			3. Alignment via guides.
			4. Pre-programmed and pre-tested graphics (Rockwell Automation Faceplates).
			5. Reuse of custom graphics.
			6. Graphic animation.
			7. Adjustment of screen color balance under user program control.
			8. Up to 500 user-configured display screens.
		4. The operator interface terminal shall include a viewer for Portable Document Format (.PDF) files.
		5. The operator interface terminal shall be able to display Logix Device-based alarms. Such alarms shall be enabled on the operator interface terminal by establishing a connection with the Logix controllers with no additional configuration or programming required. Operators shall have the option of managing such alarms through standardized, yet configurable display screens and history screens. Alarm logs shall be exportable to USB or SD removeable memory devices for offline analysis.
		6. The operator interface terminal shall be capable of sending emails via an SMTP server under program control with current tag values, alarm statuses and other user-defined, dynamic text.
		7. The operator interface terminal shall support an Automatic Diagnostic function whereby system-generated diagnostic messages published by field devices to connected Logix controllers are displayed on the terminal screen with no user configuration or programming required.
		8. The operator interface terminal shall support a HTML5-compatible web browser function which operates as its own separate window and shall be capable of the following:
			1. Displaying HTML content served by systems from the internet, a local intranet or from removable media placed within the terminal’s SD and/or USB ports.
			2. User-configured filtering to limit users within each security role to a specific list of permitted URLs.
			3. Functioning as a media player by displaying HTML5-compatible mp4 multimedia content from remote systems or from removable media placed within the terminal’s SD and/or USB ports.
			4. Connecting to and displaying streaming video from network-connected video cameras which support the H.264 standard or mjpeg.
			5. Consuming the entire screen or any subset thereof.
			6. Being displayed with or without the conventional “ribbon bar” menus which would allow users to close the browser or navigate to the previously displayed webpage, etc.
			7. Keeping the browser window open and active even when it loses focus such that operators can view a webpage or video stream while operating connected equipment.
			8. Automatically closing if the user navigates to a different screen or opens a popup display.
	7. RATINGS–GENERAL
		1. The operator interface terminal shall be able to withstand:

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| Vibration (7- to 12-inch models) | 10 – 57 Hz, 0.012 peak-to-peak displacement;57 – 500 Hz, 2 g peak acceleration |
| Vibration (15- and 19-inch models) | 10 – 57 Hz, 0.006 peak-to-peak displacement;57 – 640 Hz, 1 g peak acceleration |
| Altitude, Operating | 2000 m (6561 ft) |
| Shock, Operating | 15 g at 11 ms |
| Shock, Non-operating | 30 g at 11 ms |

* + 1. The operator interface terminal shall have enclosure ratings of NEMA/UL Type 12, 13, 4X (Indoor use only), and IP66 as classified by UL.
	1. OPERATOR TERMINAL–SPECIFIC
		1. 6.5-INCH DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510.
			2. The viewing area shall be 132 mm wide by 99 mm high (5.2 x 3.9 inch).
			3. The operator display/input shall be a color graphic display with touch screen [or touch screen and keypad] plus menu navigation button.
		2. 9-INCH WIDESCREEN DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510.
			2. The viewing area shall be 196 mm wide by 118 mm high (7.7 x 4.6 inch).
			3. The operator display/input shall be a color graphic display with touch screen plus menu navigation button.
			4. The 9-inch widescreen display unit shall be available with an optional 316 stainless-steel bezel which is rated for IP69K ingress protection with a field-replaceable gasket and conformally coated circuit boards.
		3. 10.4-INCH DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510.
			2. The viewing area shall be 211 mm wide by 158 mm high (8.3 x 6.2 inch).
			3. The operator display/input shall be a color graphic display with touch screen [or touch screen and keypad] plus menu navigation button.
		4. 12.1-INCH WIDESCREEN DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510.
			2. The viewing area shall be 261 mm wide by 163 mm high (10.3 x 6.4 inch).
			3. The operator display/input shall be a color graphic display with touch screen plus menu navigation button.
			4. The 12-inch widescreen display unit shall be available with an optional 316 stainless-steel bezel which is rated for IP69K ingress protection with a field-replaceable gasket and conformally coated circuit boards.
		5. 15-INCH DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510.
			2. The viewing area shall be 304 mm wide by 228 mm high (12 x 9 inch).
			3. The operator display/input shall be a color graphic display with touch screen [or touch screen and keypad] plus menu navigation button.
		6. 19-INCH DISPLAY
			1. The operator interface terminal shall be Allen-Bradley Series 2715P, PanelView 5510 1900.
			2. The viewing area shall be 376 mm wide by 301 mm high (14.8 x 11.9 inch).
			3. The operator display/input shall be a color graphic display with touch screen plus menu navigation button.
1. **EXECUTION**
	1. INSTALLATION
		1. The supplier shall install in accordance with manufacturer’s instructions.
		2. The supplier shall unload, unpack, and transport equipment to prevent damage or loss.
		3. The supplier shall replace damaged components as directed by engineer.
		4. The equipment shall be protected from dust and other harmful materials.
	2. INTERFACE WITH OTHER PRODUCTS
		1. The supplier shall provide all required cables, cords, and connections for interface with other control system components.
		2. The supplier shall coordinate size and configuration of enclosure to meet project requirements.
	3. CLEANING
		1. The supplier shall clean units as recommended by manufacturer.
	4. SPARE MATERIALS
		1. For each size operator interface terminal being installed, the supplier shall provide:
			1. Antiglare overlay kit
			2. SD card
			3. Real-time clock replacement battery

END OF SECTION