Foxboro DCS

Annunciator Keyboard

PSS 41H-4USBKBD

Product Specification

September 2024

USB ANNUNCIATOR KEYBOARD (P0924TT)

USB ANNUNCIATOR/NUMERIC KEYBOARD (P0924WV)

Legal Information

The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

Overview

Modern Human-Machine Interfaces provide great flexibility in presenting data to operators and maintainers. However, it is difficult at times to navigate to a graphic that you need or to enter numeric data. These keyboards fulfill the needs of trained personnel to have specific functions available in the same location at all times. The keyboard can act as a conventional annunciator, its horn can draw an operator's attention to a specific area of the control room and thereby assist in resolving the alarmed condition.

The EcoStruxure™ Foxboro™ DCS USB annunciator and annunciator/numeric keyboards provide output information through the use of annunciator lights and audible alarms, plus input information through key switches. Both keyboards are suitable for use with Foxboro DCS workstations or servers (which support their requirements). The keyboards can be free standing or workstation/panel mounted. The audio alarms feature multiple pitches which indicate audible differentiation of system alarms and process alarm priorities. An external audio output jack is available for an attachable, customer supplied, audio amplifier with speakers. The external speakers provide sufficient capacity to be heard if the keyboard is located in a noisy environment. The keyboards have a lamp test function (LED test), which simultaneously illuminates all the LEDs.

The overlay of the keyboards have positive tactile/audible feedback to help assure proper switch closure.

Workstations and servers can connect to USB annunciator and annunciator/numeric keyboards — they cannot connect to both types.

USB Annunciator Keyboard

The USB annunciator keyboard (P0924TT) is an array of 48 LED/switch pairs. It has five rows of 12 keys (which includes a row of 12 macro keys at the top). Its keys have LEDs next to them, except the 12 macro keys. As well, each keyboard has a Silence Horn key and a Lamp Test key. These two illuminated buttons are on the far left, with the Lamp Test key over the Silence Horn key.

This keyboard is supported on stations with these operating systems:

- Windows 10 21H2 LTSC
- Windows Server 2022
- Windows 10 (v1607)
- Windows 10 (v1809 Thin Clients)
- Windows Server 2016

Each LED, under control of the workstation processor's software, can be ON, OFF, or FLASHING as determined by the process conditions. These LEDs, when used in conjunction with the unit's audible annunciator, form an effective means of calling a user's attention to specific areas of the system. The switch associated with each LED can be used to call any preconfigured displays or operator responses.

Labels for each key, which might contain the LED/switch names, are inserted in a recess under the clear plastic shield inset into each key.

This keyboard includes an alarm relay - a two-pole device. One pole is used to activate an external device, such as driving an alarm horn, while the other pole is used internally to detect that the relay switch has closed. This self-check operation verifies the functionality of this relay even if this device activation functionality was disabled by the keyboard’s configuration application.

The USB annunciator keyboard is connected to its host either directly to one of the host’s USB ports, or through a USB hub which connects to the host via a USB cable. Extended connections from 1.8 m (6 ft) to 30.5 m (100 ft) need the kits listed in Extended Connection Kit for USB Annunciator and Annunciator/Numeric Keyboard, page 7. Unlike other USB Foxboro DCS station peripherals, it cannot be connected through a Remote Graphics Unit (RGU).

As well, stations with USB annunciator keyboards cannot have a serial card installed in them, nor can they use a GCIO interface module.

Each annunciator switch location has LEDs that can be configured for one of these states: red, yellow, green, or turned off (no color).

USB Annunciator/Numeric Keyboard

The USB annunciator/numeric keyboard (P0924WV) has four rows of eight keys plus a row of 12 macro keys at the top. These keys have LEDs next to them, except the 12 macro keys, and also provide for the insertion of polyester labels. This keyboard also includes four arrow keys around a Select key. The keypad section is suitable for entering numeric data into the system.

As well, each keyboard has a Silence Horn key and a Lamp Test key. These two illuminated buttons are on the far left side, with the Lamp Test key over the Silence Horn key.

This keyboard is supported on stations with these operating systems:

- Windows 10 21H2 LTSC
- Windows Server 2022
- Windows 10 (v1607)
- Windows 10 (v1809 Thin Clients)
- Windows Server 2016

This keyboard includes an alarm relay - a two-pole device. One pole is used to activate an external device, such as driving an alarm horn, while the other pole is used internally to detect that the relay switch has closed. This self-check operation verifies the functionality of this relay even if this device activation functionality was disabled by the keyboard's configuration application.

The USB annunciator/numeric keyboard is connected to its host either directly to one of the host's USB ports, or through a USB hub which connects to the host via a USB cable. Extended connections from 1.8 m (6 ft) to 30.5 m (100 ft) need the kits listed in Extended Connection Kit for USB Annunciator and Annunciator/Numeric Keyboard, page 7. Unlike other USB Foxboro DCS station peripherals, it cannot be connected through a Remote Graphics Unit (RGU).

As well, stations with USB annunciator/numeric keyboards cannot have a serial card installed in them, nor can they use a GCIO interface module.

The keys in the four rows of eight keys have LEDs that can be configured for one of these states: red, yellow, green, or turned off (no color).

Functional Specifications for USB Annunciator and Annunciator/Numeric Keyboard

Power Requirements	5 VDC, ± 5% at the USB Type A connection
Power Consumption	• USB Annunciator Keyboard: 300 mA (max) • USB Annunciator/Numeric Keyboard: 300 mA (max)
Audio Output Signal	• Output Impedance: 1200 Ohms Nominal • Nominal Level: 0.437 to 0.133 (Max. volume to min.) • Peak Amplitude, Vpk: 0.437 (square wave) • Peak to Peak Amplitude, Vpp: 0.872
Host Operating System Requirements	• Windows 10 21H2 LTSC • Windows Server 2022 • Windows 10 (v1607) • Windows 10 (v1809 Thin Clients) • Windows Server 2016

Environmental Specifications for USB Annunciator and Annunciator/Numeric Keyboard

The USB annunciator and annunciator/numeric keyboards are designed for a temperature range and a control room environment where the temperature is controlled and the relative humidity is indirectly controlled.

Operating Temperature	0 to 40°C (32 to 104°F)
Storage Temperature	-40 to +70°C (-40 to 158°F)
Humidity range, storage and operating	20% to 80%, non-condensing
Location	Is suitable for use in ordinary locations and is designed to help meet ordinary safety standards for fire and shock hazards
Contamination	Class G1 (Mild) as defined in ISA Standard S71.04
EMC Emission	CISPR 11, Class A
Liquid Spills	The annunciator panels can withstand liquid spills and washing with mild non abrasive liquid cleaning agents. For better results, use only a clean dampened cloth for cleaning.

Physical Specifications for USB Annunciator and Annunciator/Numeric Keyboard

Mass	1.27 kg (3.80 lb)
USB Cable (Included)	Plug Micro USB to Plug Standard USB 0.5 m (1.6 ft) Connects termination block to standard USB port
Construction	• Mechanical molded keyboard with keycap inserts (Keyboard) • Powder Coated Extruded Aluminum with molded plastic end caps (Base) • Santoprene (Foot Pads)

Extended Connection Kit for USB Annunciator and Annunciator/Numeric Keyboard

To connect a USB annunciator or annunciator/numeric keyboard to its host station from a location up to 30.5 m (100 ft) away, you need one of the kits listed.

Kit P0923DY Contents - 120 VAC USB Extender for USB Annunciator Keyboards

Kit Part Number	Description
P0923DX	30.5 m (100 ft), fiber, USB extender for Windows processors
RH103FU	7 Port USB Hub, includes 100-120 VAC power supply
N/A	(Two per cable) Module fasteners: Scotch®, heavy duty, 1" square, mounting foam pads, Catalog # 111 or equivalent

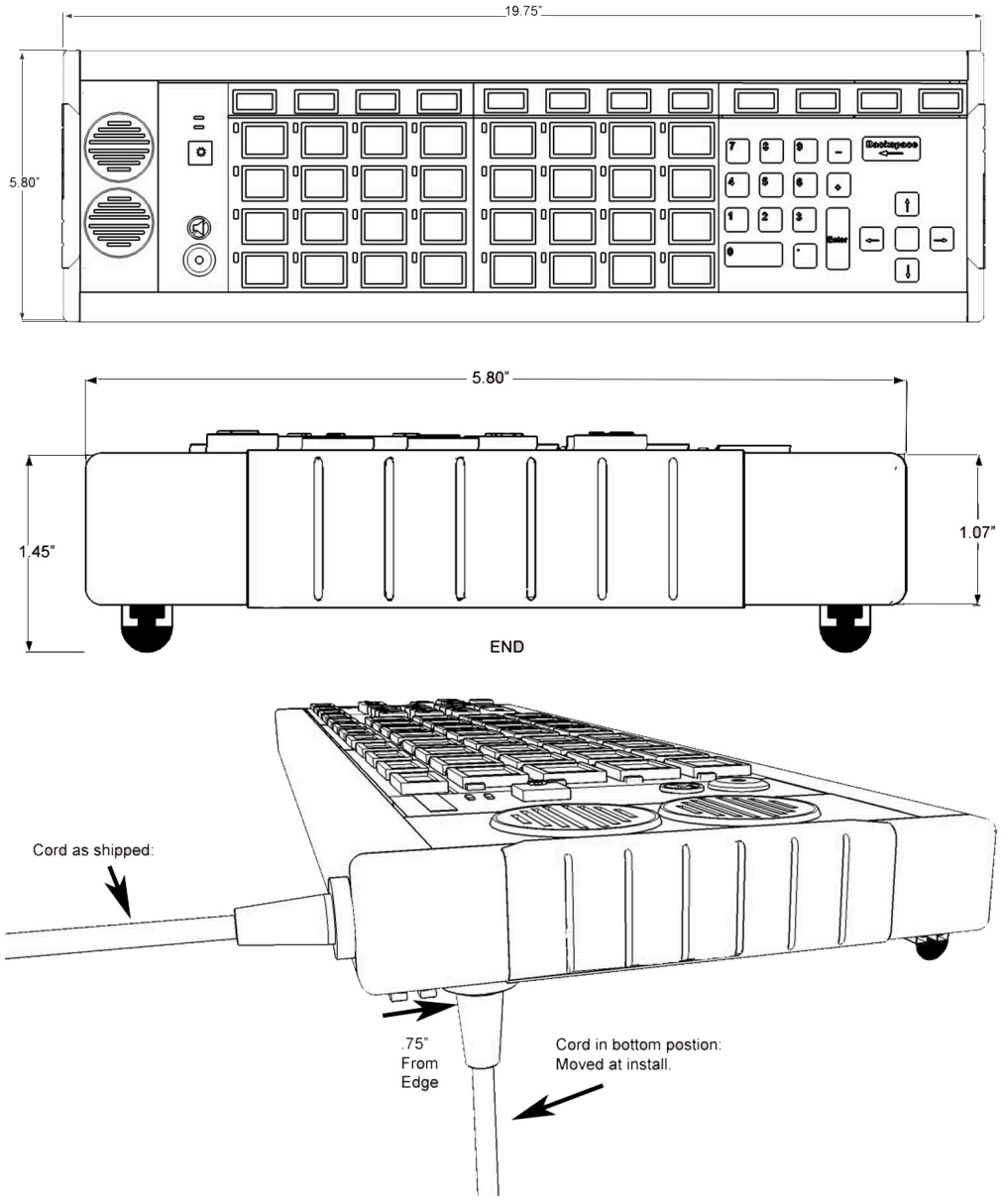
NOTE: You can connect other USB peripherals and hubs to the RH103FU USB hub as well.

Kit P0923DZ Contents - 240 VAC USB Extender for USB Annunciator Keyboards

Kit Part Number	Description
P0923DX	30.5 m (100 ft), fiber, USB extender for Windows processors
RH103FV	7 Port USB Hub
P0800FJ	Schuko (European) line cord
N/A	(Two per cable) Module fasteners: Scotch®, heavy duty, 1" square, mounting foam pads, Catalog # 111 or equivalent

NOTE: If a custom hub/extension device is used, verify that it has the ability to source the 5 V power for up to four USB annunciator and annunciator/numeric keyboards (5 VDC @ 500 mA per USB port).

USB Annunciator and Annunciator/Numeric Keyboard Dimensions - Nominal



WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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