

Medium User Interface (MUI) Version 3

The MUI is a remote user interface device for the FX Platform that supports FX06, FX07, FX14, FX15, FX16, and FXVMA controllers. You can use the MUI as a portable hand held unit, or permanently mount it in a panel or on the wall.

The MUI provides an easy way for the building operator or maintenance engineer to monitor and adjust the operation of the FX field controller. You can configure the MUI to receive event and alarm messages, to change time schedules, and to display event and trend log data. Access to data and operating commands are controlled by passwords.

With the FXVMA, the MUI functions as an airflow balancing tool to support the commissioning of Variable Air Volume (VAV) units.

The MUI presents data in a text format on a 4-line x 26-character backlit Liquid Crystal Display (LCD) and on an array of Light-Emitting Diodes (LEDs) for quick recognition of equipment operating status.

The format of the MUI is fully configurable using the FX Builder software package.

The MUI is a cost-effective solution for monitoring, commissioning, and servicing your building control system installation.



Figure 1: Medium User Interface (MUI) Version 3

Features and Benefits	
☐ Menu Driven Operation	Provides an easy and intuitive operation – you select from a list of options to monitor and control the system.
☐ Password Access Control	Provides protection against unauthorized use.
☐ Event Summary	Provides a quick overview of currently active or non-acknowledged event and alarm conditions.
☐ Event History	Provides a list of the latest events and alarms with time and date of occurrence.
☐ Trend Log	Allows the viewing of trend data from selected points for monitoring and diagnostic purposes.
☐ Time Scheduling	Allows you to view and adjust the time schedules in the connected FX controller for the switching of the supervised equipment.
☐ VAV Box Air Balancing	Provides access to automatic test routines and data in the FXVMA controller to quickly verify correct operation, or identify mechanical system problems.
☐ Fully Programmable	Enables customization of the MUI for each project using a design template in the FX Builder software configuration tool.
☐ Local Panel Mounting	Provides power from the controller with the connection cable – available for order with the MUI unit.
☐ Remote Mounting	Provides universal 12-24 VAC or 9-48 VDC power supply and isolated communications interface for mounting in panel or surface mounting up to 300 m (1,000 ft) from the controller.

Product Overview

MUI Features

The MUI has an array of 10 LEDs, a state-of-the-art backlit LCD display screen, and 6 operating keys. The LCD display screen shows 4 lines of up to 26 alpha-numeric characters.

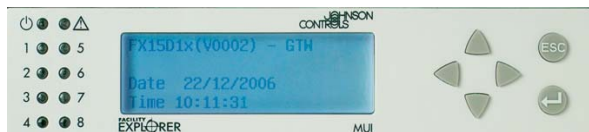


Figure 2: MUI LEDs, Screen, and Control Keys

You can configure the LEDs to indicate summary data from the monitored and controlled equipment. The LEDs provide a quick overview of the status without using the operating keys.

Detailed information is organized into data pages that you select from a menu page. The display of data pages, and the position of the cursor on the screen, are controlled by the four direction keys (←, →, ↑, ↓), and actions are confirmed or cancelled by the [ENTER] and [ESC] keys.

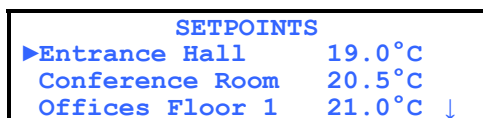


Figure 3: Data Points

FX Controller Support

The MUI connects to the FX06, FX07, FX14, FX15, FX16, and FXVMA field controllers. An FX controller with an integral display supports one MUI, either the local panel mount version or the remote mount version. An FX controller without an integral MUI supports one or two MUIs. One of the MUIs can be the local panel version and can be powered by the controller. When connected to an FXVMA controller, the MUI functions as an air balancing tool for commissioning the Variable Air Volume (VAV) box.

Communication with FX Controllers

The MUI connects to the Remote Display port of the FX controller. The MUI is a slave network device of the FX controller, and receives and sends information over the serial communication bus. This constant communication keeps the MUI and controller databases fully synchronized for monitoring of (and access to) all system functions and information available from the controlled equipment.

Account Password Protection

The MUI has a user account system that is protected by passwords that are defined in FX Builder. Three security levels of account protection prevent access by unauthorized users. The MUI prompts you to log in for any password-protected operation.

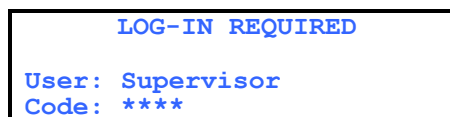


Figure 4: Account Log-In Prompt

Time Schedulers

You can view the time schedule programs in the FX controller on the MUI. Users with the proper level of account access can log in with their password and change the execution times and exception dates.

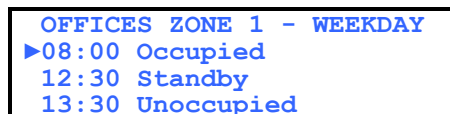


Figure 5: Occupancy Scheduler Page

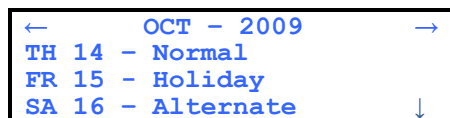


Figure 6: Calendar Page

Trend Data

The MUI enables you to view trend data that the FX controller collects, and add and delete data points from the trend log table. You select Trends in the main menu and then select the variable you want to view. The data appears in the order and time range that you select, and you scroll through the data using the direction keys.

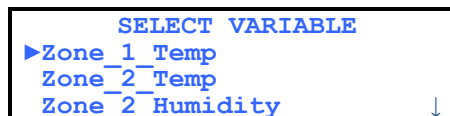


Figure 7: Selecting the Trend Variable

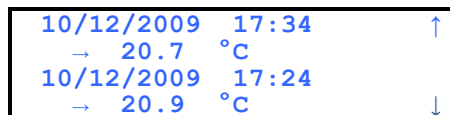


Figure 8: Viewing Trend Data

Event Notification and Management

When the FX controller detects an event or alarm condition, the LCD screen of the MUI displays the name of the event and the status (the buzzer may be activated for events that require acknowledgment).

The event then appears in the EVENT SUMMARY as long as it is active, or has not been acknowledged by an authorized user (if an acknowledgement is required).

The event summary page provides an overview of all points that are currently active or in alarm, in order of priority.

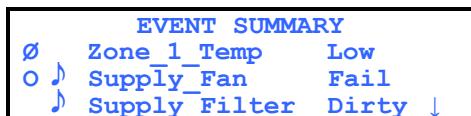


Figure 9: Event Summary

From the EVENT SUMMARY you can view the details of an active event, including the date and time of occurrence, the acknowledgement status, and account name.

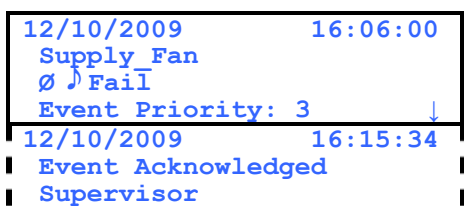


Figure 10: Event Details

The EVENT HISTORY file stores recent events. Details of past events can appear with the date and time of occurrence and, by scrolling left, you can view the user name and time of acknowledgement.

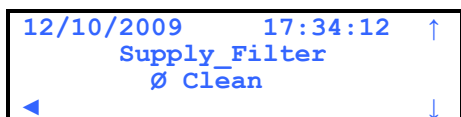


Figure 11: Event History Details

Communications Parameters

You can view and modify the communication parameters and message destinations from the MUI, when the FX controller is configured as a stand-alone device (to send out event messages over its serial port). Access is protected by the account password feature.

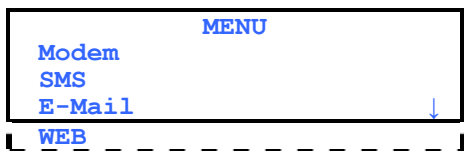


Figure 12: Access to Communication Parameters

Programming

You program the MUI along with the control application for the FX controller using the FX Builder software package. You select and enter data point names and status values in the application configuration program for the MUI. You also define the status values associated with the LEDs, and any special functions for the control keys. Event acknowledgement key(s) must be defined in FX Builder.

As the MUI application is built in FX Builder, you view the display format in a configuration panel on the computer screen.

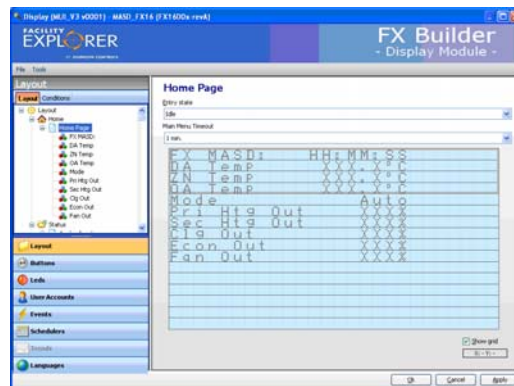


Figure 13: MUI Configuration Panel

This enables you to fully configure the MUI at design time before the MUI and FX controller are available for downloading and testing.

FXVMA Support

When connected to the FXVMA controller, the MUI provides information and command capabilities needed for monitoring and commissioning the FXVMA controller, and air balancing the VAV box.

The point data, command capabilities, and navigation structures are defined in the FXVMA application software using FX Builder.

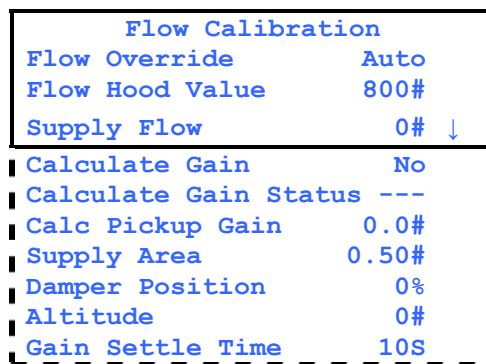


Figure 14: FXVMA Flow Calibration Details

The MUI can also be connected to the FX controller via the Network Room Module (NRM) that senses room temperature and setpoint adjustment.

Dimensions

Wall mounting requires a minimum of 45 mm (1.8 in.) free space in front of the mounting surface for clearance from nearby objects, such as sliding doors or movable panels, or for clearance within a protective enclosure or cover.

Panel mounting requires a minimum of 45 mm (1.8 in.) free depth behind the panel for the plug-in connectors at the rear.

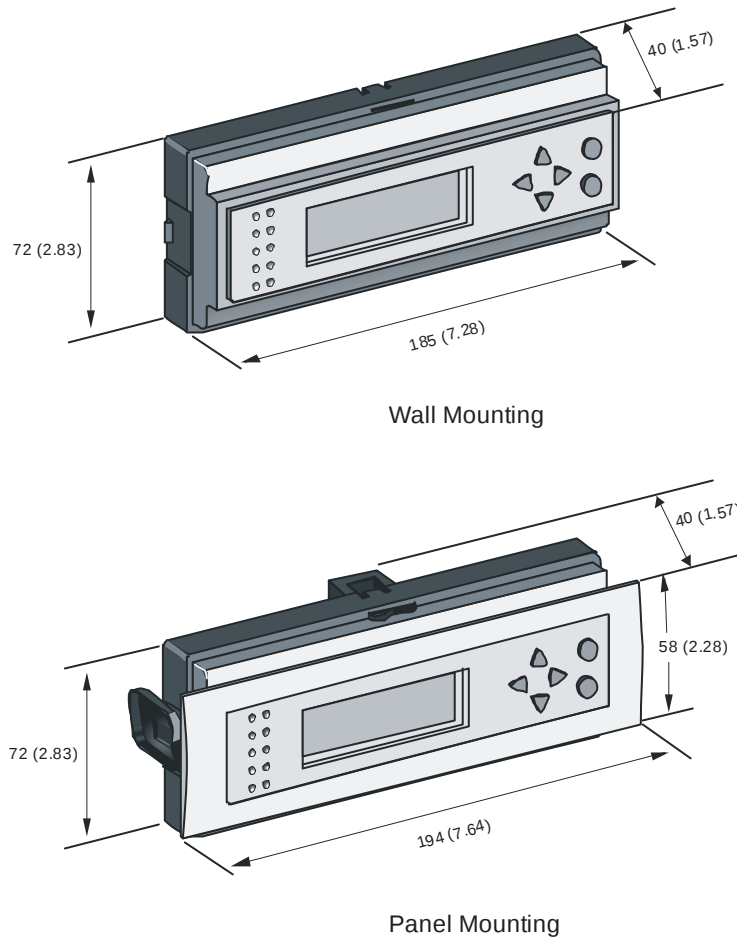


FIG: mui_dimensions

Figure 15: MUI Dimensions, mm (in.)

Ordering Codes

Table 1: Ordering Codes

Item Code	Description
LP-DIS60P20-0C	Medium User Interface (MUI) Version 3 (non-isolated version); can be mounted up to 3 m (9.8 ft) from the FX controller and includes panel mounting hardware.
LP-DIS60P21-0C	Medium User Interface (MUI) Version 3 (isolated version); can be mounted up to 300 m (1,000 ft) from the FX controller and includes panel and wall mounting hardware.
LP-KIT007-000C	Link cable for the connection of the MUI Version 3 LP-DIS60P20-0C (non-isolated panel mount version) to the FX07, FX14, FX15, and FX16 controller – 3 m (9.8 ft).
LP-KIT007-005C	Link cable for the connection of the MUI Version 3 LP-DIS60P20-0C (non-isolated panel mount version) to the FX06 controller – 3 m (9.8 ft).
LP-KIT060-000C	MUI Panel Mount Kit. Contains the mounting hardware (bezel, gaskets, clips, and connector) for one MUI as spare parts. All parts included with MUI Version 3.

Technical Specifications

Table 2: Technical Specifications

Product	Medium User Interface (MUI) Version 3	
Power Requirements	LP-DIS60P20-0C — Powered from the FX controller LP-DIS60P21-0C — Universal power supply: 9 to 48 VDC, or 12 to 24 VAC Safety Extra-Low Voltage — SELV (Europe) or Class 2 supply (North America)	
Power Consumption	200 mA or 2.5 W maximum at 9 to 48 VDC 3.5 VA maximum at 12 to 24 VAC	
Ambient Operating Conditions	-20 to +60°C (-4 to +140°F) 10 to 90%; RH (noncondensing)	
Ambient Storage Conditions	-20 to +70°C (-4 to +158°F) 10 to 90%; RH (noncondensing)	
Display and Keypad	LCD: 4 lines x 26 characters backlit Keypad: 6 buttons LEDs: 2 x 5 array	
Shipping Weight	0.4 kg (0.9 lb)	
Housing Protection	IP30 for hand-held and wall mounting applications IP54 for panel mounting applications	
Housing Material	Polycarbonate + ABS (GE CYCOLOY), self-extinguishing UL94V-0	
Dimensions (H x W x D)	72 x 194 x 40 mm (2.83 x 7.64 x 1.57 in.) Width = 185 mm (7.28 in.) without panel mount bezel	
CE and UL Compliance	Europe	– 2004/108/EC, EMC Directive: EN 61000-6-3, EN 61000-6-1
	Canada	– UL Listed (PAZX7), CAN/CSA C22.2 No. 205, Signal Equipment – Industry Canada, ICES-003
	United States	– UL Listed (PAZX), UL 916, Energy Management Equipment – FCC compliant to CFR 47, Part 15, Subpart B, Class A

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



Building Efficiency
507 E. Michigan Street, Milwaukee, WI 53202

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