Metasys® System UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Standard Smoke Control Panels Catalog Page

Metasys® System UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Standard Smoke Control Panels feature a wide assortment of pre-engineered panel enclosure configurations. Each panel comes with *Metasys* series control devices and related accessories that meet the Underwriters Laboratories, Inc.® (UL) requirements for Smoke Control Listing in the United States and Canada. These pre-assembled solutions eliminate the need to order the UL 864 custom panels for most smoke control applications.

The control panels come standard with NEMA/UL Type 1 rated industrial enclosures and are factory-wired with select models of *Metasys* system supervisory controllers and BACnet® MS/TP and N2 Bus field controllers. In addition to the controllers, the assembly includes a power supply that incorporates a 5A circuit breaker, a 96 VA 120/24 VAC transformer, and an MOV arrester kit. These panels contain terminal blocks that are pre-wired and pre-labeled to match every terminal on the controller, making installation, commissioning, and servicing faster and easier. Even though legacy N2 Bus field controllers can be part of a UL/cUL 864 10th Edition system, pre-configured UL 864 Listed control panels with older N2 field controllers are not offered.

For important product application information regarding the use of Smoke Control Panels, refer to the *Metasys® System UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Smoke Control System Technical Bulletin (LIT-12012487)*, available from your local Johnson Controls® representative.

Features and Benefits
- **Fully Compliant Panel Assembly**—meets the requirements specified in the UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Smoke Control Listing (UL/cUL Listing)
- **Resettable Circuit Breaker and Transformer on Power Supply**—provide high- and low-voltage protection

Figure 1: Example of Smoke Control Panel

- **Color-Coded and Clearly Labeled Terminations and Wiring**—ensure easily and properly identifiable input and output (I/O) points at the controller
- **Pre-Built, Pre-Wired, and Pre-Tested Assemblies**— ensure that UL 864 products manufactured in our ISO 9001 facility meet consistent high quality standards
- **Built-In Transient Surge Suppression on Inputs, Outputs, and Trunks**—protects all field controller components and communication trunks from sudden electrical surges
- **Built-In Transient Surge Suppression on Ethernet Lines**—protects network components from damages caused by sudden electrical surges
- **Professional Assembly Schematics**—available in Microsoft® Visio® format (Contact your local Johnson Controls representative)
- **Flexible Shipment Options**—help you meet critical delivery dates

Repair Information
If the control panel assembly or any of its components fail to operate within specifications, contact the Johnson Controls Repair Center in Louisville, Kentucky, at 1-502-671-7312.

Johnson Controls

Ordering Information and Requirements

Important:	You cannot purchase a similar third-party device and install it in a UL/cUL Listed smoke control system. Doing so **voids** the UL/cUL Smoke Control Listing. Third-party devices must be provided and labeled by the factory as described in the *Metasys System UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Smoke Control System Technical Bulletin (LIT-12012487)*.

Important:	The Johnson Controls® products listed in the following table have been tested and listed by UL/cUL for use in a *Metasys* Release 8.1 Smoke Control System. Installation of a product that is not UL/cUL isted and labeled for this application prevents the entire system from being UL/cUL Listed for smoke control.

UL 864 Standard Panels Ordering Information

All standard panels have a UL/cUL Listing label applied on the inside of the enclosure. You must install all panels in an indoor, dry environment only, where each air handling unit (AHU) is located in an indoor, enclosed space.

All FECs and IOMs have factory-installed MOV transient suppression kits on all I/Os, and all BACnet MS/TP communication devices have factory-installed MOV transient suppression kits on all FC and SA Buses. All panels with NxEs include a factory-installed CAT5 Ethernet cable between the 5-port Ethernet Switch and the NxE. All panels requiring surge protection have the necessary protection factory-installed.

Important:	All smoke listed enclosures are ordered through Johnson Controls. Device mounting is completed at the factory. Do not field-mount or alter the mounting of any device installed in a Johnson Controls approved smoke listed enclosure. Field-mounting or altering the mounting of any device installed in a Johnson Controls approved smoke listed enclosure **voids** the UL/cUL Smoke Control Listing. The only exception to this is replacing a failed supervisory controller or field controller with a repaired one from the Johnson Controls Repair Center in Louisville, Kentucky.

Table 1: Johnson Controls Standard Panels

Code Number	Description
PAGN00U11EC0 (-- DISCONTINUED --)	• MS-NAE5510-1U with two BACnet MS/TP (RS-485) or two N2 Bus trunks (or one BACnet MS/TP and one N2 Bus trunk) • Hoffman enclosure (9.25 x 24 x 24 in.) with keyed lock • EISK5-100T Contemporary Controls CTRLink 5-Port 10/100 Ethernet Switch • APC PNET1GB Ethernet Surge Protection (4) • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (2) **Notes:** • The MS-NAE5510-1U engine has been discontinued, but you may use an existing MS-NAE5510-1U engine for UL/cUL 10th Edition if you apply the WES2009 operating system upgrade. • The PAGN00U11EC0 panel has been discontinued, but you may use an existing PAGN00U11EC0 panel for UL/cUL 10th Edition.
PAG100U11EC0-1	• MS-NAE5510-2U with two BACnet MS/TP (RS-485) or two N2 Bus trunks (or one BACnet MS/TP and one N2 Bus trunk) • Hoffman® enclosure (9.25 x 24 x 24 in.) with keyed lock • EISK5-100T Contemporary Controls® CTRLink™ 5-Port 10/100 Ethernet Switch • APC® PNET1GB Ethernet Surge Protection (4) • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (2)
PAG200U11EC0-1	• MS-NAE5510-3U with two BACnet MS/TP (RS-485) or two N2 Bus trunks (or one BACnet MS/TP and one N2 Bus trunk) • Hoffman® enclosure (9.25 x 24 x 24 in.) with keyed lock • EISK5-100T Contemporary Controls CTRLink 5-Port 10/100 Ethernet Switch • APC PNET1GB Ethernet Surge Protection (4) • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (2)
PAKGJJU12BC0-1	• MS-FEC2611-0U and MS-IOM4711-0U with 12 UI, 4 BI, 6 BO, 4 AO, 8 CO • Hoffman enclosure (9.25 x 24 x 36 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • PAN-96VAXFR-U 120/24 VAC, 96 VA, Transformer • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (3) • SMOKE-MOVKIT-0U Transient Protection for MS/TP I/O Communication (74), or three MOV boards with MS/TP protection and one MOV board without MS/TP protection
PAKGJPU12BC0-1	• MS-FEC2611-0U and (2) MS-IOM4711-0U with 12 UI, 4 BI, 6 BO, 4 AO, 8 CO • Hoffman enclosure (9.25 x 30 x 42 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • PAN-96VAXFR-U 120/24 VAC, 96 VA, Transformer • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (3) • Three MOV boards with MS/TP protection and one MOV board without MS/TP protection

Table 1: Johnson Controls Standard Panels

Code Number	Description
PAKG00U11AC0-1	• MS-FEC2611-0U with 6 UI, 2 BI, 3 BO, 2 AO, 4 CO • Hoffman enclosure (9.25 x 20 x 24 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (2) • SMOKE-MOVKIT-0U Transient Protection for MS/TP I/O Communication (37), or three MOV boards with MS/TP protection and one MOV board without MS/TP protection
PAJJ00U11AC0-1	• MS-IOM4711-0U with 6 UI, 2 BI, 3 BO, 2 AO, 4 CO • Hoffman enclosure (9.25 x 20 x 24 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • SMK-MOVKIT-MSTP Transient Protection for MS/TP and SA Bus Communication (2) • SMOKE-MOVKIT-0U Transient Protection for MS/TP I/O Communication (37), or three MOV boards with MS/TP protection and one MOV board without MS/TP protection
PA5100U01FC0-1	• EIS8-100T Contemporary Controls CTRLink 8-Port 10/100 Industrial Ethernet Switch • Hoffman enclosure (6.62 x 16 x 20 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • APC PNET1GB Ethernet Surge Protection (8)
PA5200U15CC0 (-- DISCONTINUED --)	• 2960-24TC-S Cisco Catalyst 24-Port 10/100/1000 Ethernet Switch • Hoffman enclosure (9.25 x 30 x 42 in.) with keyed lock • APC PNET1GB Ethernet Surge Protection (24) • Tripp Lite® ISOBAR8 120 VAC Surge Protection **Note:** The Cisco 2960-24TC-S switch has been discontinued, but this model can still be used for UL/cUL 864 10th Edition.
PA5400U15CC0-1	• Cisco 4000-16T4G-E (E232864) Industrial Ethernet (IE) 24-port 10/100/1000 Ethernet Switch • Hoffman enclosure (9.25 x 30 x 42 in.) with keyed lock • Power supply ??? • APC PNET1GB Ethernet Surge Protection (24) • Tripp Lite ISOBAR8 120 VAC Surge Protection
PA5300U11FC0-1	• EISK5-100T Contemporary Controls CTRLink 5-Port 10/100 Ethernet Switch • Hoffman enclosure (6.62 x 16 x 20 in.) with keyed lock • PAN-PWRSP-U 120/24 VAC, 96 VA, Transformer with circuit breaker and 120 VAC outlet • APC PNET1GB Ethernet Surge Protection (5)

Table 2: UL/cUL 864 Standard and Custom Hoffman Enclosures, Transformers, and Power Supplies

Part Number	Description
Standard Hoffman Enclosures[1]	
PAN-ENH1620WDP	6.62 x 16 x 20 in. Enclosure with door, latch, subpanel
PAN-ENH1620WD	6.62 x 16 x 20 in. Enclosure with door, latch
PAN-ENH2024WDP	6.62 x 20 x 24 in. Enclosure with door, latch, subpanel
PAN-ENH2024WD	6.62 x 20 x 24 in. Enclosure with door, latch
PAN-ENH2424WDP	6.62 x 24 x 24 in. Enclosure with door, subpanel
PAN-ENH2424WD	6.62 x 24 x 24 in. Enclosure with door
PAN-ENH2436WDP	6.62 x 24 x 36 in. Enclosure with door, subpanel
PAN-ENH2436WD	6.62 x 24 x 36 in. Enclosure with door
Custom Hoffman Enclosures[1] with Lift-Off Doors, Louvers, and Locks	
PAN-ENC1620WDP	6.62 x 16 x 20 in. Enclosure with door, lock, subpanel
PAN-ENC1620WD	6.62 x 16 x 20 in. Enclosure with door, lock
PAN-ENC2024WDP	9.25 x 20 x 24 in. Enclosure with door, lock, subpanel
PAN-ENC2024WD	9.25 x 20 x 24 in. Enclosure with door, lock
PAN-ENC2424WDP	9.25 x 24 x 24 in. Enclosure with door, lock, subpanel
PAN-ENC2424WDF	9.25 x 24 x 24 in. Enclosure with cut-out door, lock
PAN-ENC2424WD	9.25 x 24 x 24 in. Enclosure with door, lock
PAN-ENC2436WDP	9.25 x 24 x 36 in. Enclosure with door, lock, subpanel

Table 2: UL/cUL 864 Standard and Custom Hoffman Enclosures, Transformers, and Power Supplies

Part Number	Description
PAN-ENC2436WDF	9.25 x 24 x 36 in. Enclosure with cut-out door, lock
PAN-ENC2436WD	9.25 x 24 x 36 in. Enclosure with door, lock
PAN-ENC3042WDP	9.25 x 30 x 42 in. Enclosure with door, lock, subpanel
PAN-ENC3042WD	9.25 x 30 x 42 in. Enclosure with door, lock
PAN-ENC3648WDP	9.25 x 36 x 48 in. Enclosure with door, lock, subpanel
PAN-ENC3648WD	9.25 x 36 x 48 in. Enclosure with door, lock
Power Supplies	
PAN-PWRSP-U	96 VA 120/24 VAC Power Assembly (Transformer, Receptacle, 5 A Overcurrent Circuit Breaker)
PAN-PWRSP-IU	96 VA 220/240 VAC Power Assembly (Transformer, Receptacle, 5 A Overcurrent Circuit Breaker). This transformer is for special applications mainly in Middle Eastern high-rise buildings that require a UL 864 UUKL 10th Edition listed *Metasys* smoke control application.
PAN-96VAXFR-U	Transformer, Power, Panel Mount, 120 V Primary, 24 V Secondary, 96 VA, Split Bobbin, 4 A Secondary Circuit Breaker,
PA0P00010FC0-U	Power Distribution Panel and Enclosure - Contains four PAN-96VAXFR-U transformers, 120V,10 A Primary Circuit Breaker. For powering multiple VAV/VMAs
Vendor Enclosures	
A20N16BLP	CTRLink Ethernet Switch Enclosure - 20 x 16 x 8.62 in. Medium Type 1 Enclosure
A20N16MPP	CTRLink Ethernet Switch Backplate - NEMA Type 1, Perforated 17.00 x 14.50 in. Subpanel, fits 20 x16 in. Enclosure
UL/cUL Listed VAV Box Enclosures and Covers	
00-00051-01	Johnson Controls ENVIRO-TEC® (ETI of Largo, FL) - VAV Electronic Enclosure - 16 in. Enclosure, Electronic Control, 18 GA
00-00052-01	Johnson Controls ENVIRO-TEC (ETI of Largo, FL) - VAV Electronic Enclosure - 16 in. Cover, Electronic Control, 18 GA

1   All Hoffman custom enclosures have a factory-installed grounding strap (supplied by Hoffman) connecting the enclosure to the enclosure door.