

Ensuring Patient Safety

Power Compliance Module



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“First, do no harm.”

The ultimate goal of quality healthcare is enhancing the quality of life for patients. This begins with ‘First, do no harm’ and extends into every aspect of care within a facility. From certifying healthcare providers and ensuring proper equipment maintenance to reporting adverse events and taking corrective actions, patient safety and care are critical in every aspect of healthcare.

Electrical Safety in Healthcare

The **National Electrical Code® (NEC®)**, or **National Fire Protection Association® (NFPA 70®)**, sets the foundation for electrical safety in residential, commercial, and industrial occupancies around the world. This code exists to prevent and safeguard people from electrical fires and shock.

In 2017, the **National Fire Protection Association (NFPA 70)** changed the **National Electrical Code (NEC)** in regards to Class 1, 2, 3 and communications wiring. This, combined with the growing demand for 4K displays in procedure rooms has caused many medical facilities to be unknowingly non-compliant with the new code when they installed their 4K Surgical Field Displays (SFD) into their integrated operating rooms.



Potential Impact to Your Facility

An electrical safety code violation can create a hazard and may negatively impact your facility in several ways.

- Failed state inspections.
- Delays in opening procedure rooms.
- Additional delays and costs incurred related to resolutions.
- Violation remaining undetected, potentially exposing patients, staff, and/or property to unanticipated risk.

Committed to Compliance

Olympus is committed to complying with the **National Electrical Code** in all jurisdictions and maintaining the highest standards in all equipment deployments. As the manufacturer and installer of EasySuite 4K integrated operating rooms, Olympus engineering team completed extensive research into this code requirement and developed an innovative solution to this new 4K need.



NEC 2017 Code prohibits co-mingling of Class 1 conductors with lower power Class 2, 3 and Communication conductors.

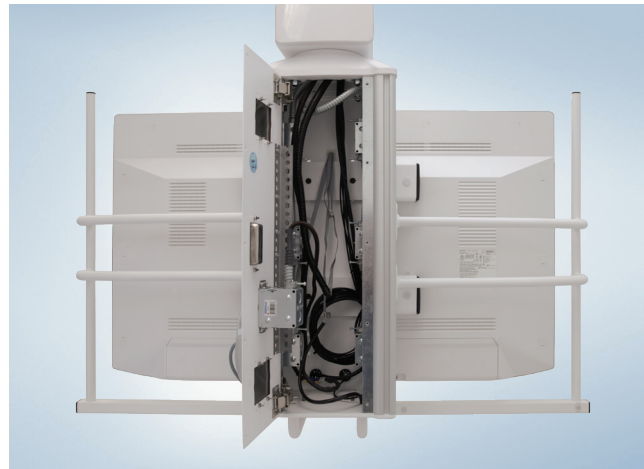
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Protecting Your Patients

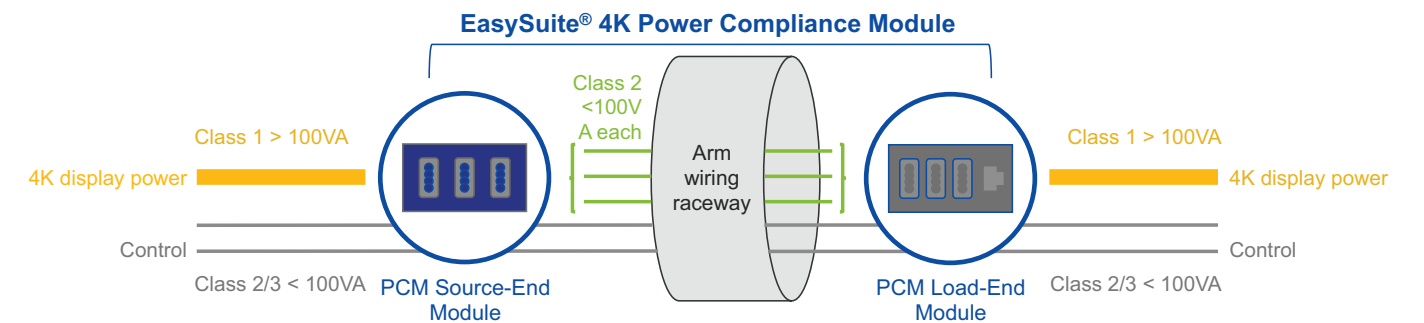
Through research, Olympus found the best approach to preventing the 4K SFD code violation was to restore the Class 2 status of the SFD power conductors. We did this by developing an innovative solution that distributes power across multiple individually protected current-limited conductors to safely restore the Class 2 status of the SFD power conductors. This strategy enables compliance to the **NEC code** while ensuring the proper mechanical operation of the boom and spring arm.



The EasySuite 4K Power Compliance Module

The patent-pending EasySuite 4K Power Compliance Module (PCM) ensures power to a 4K display runs in a safe and compliant manner using the procedure room's existing booms and infrastructure. Each module supports a single 4K display and consists of two components; the Source-End Module (SEM) located at the rack, and the Load-End Module (LEM) attached to the back of the 4K display.

- Meets **NFPA 70 (2017) National Electrical Code** requirement 725.136
- Safety listed to IEC 60601-1 CAN/CSA-C22.2 60950-1; ANSI/UL 60950-1; IEC 60950-1; EN 60590-1
- Consistent with Florida's Agency for Health Care Administration (AHCA) requirements for healthcare facilities including **NFPA 70 and NFPA 99** compliance
- Currently available, and successfully installed in several leading medical centers



For more information, kindly request an EasySuite 4K Power Compliance Module technical specification document or contact your Olympus Systems Integration representative.

Safety Code Information

NFPA 70® NEC 2017 Class 2 wiring standards

Excerpts

725.121 Power Sources for Class 2 and Class 3 Circuits.

(C): Marking. The power sources for limited power circuits in 725.121(A)(3) and limited power circuits for listed audio/video information technology (equipment) and communication technology (equipment), and listed industrial equipment in 725.121 (A)(4) shall have a label indicating the maximum voltage and maximum current or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label shall be permitted to be used. The effective date shall be January 1, 2018.

725.124: Circuit Marking.

The equipment supplying the circuits shall be durably marked where plainly visible to indicate each circuit that is a Class 2 or Class 3 circuit.

725.136 Separation from Electric Light, Power, Class 1, Non-Power-Limited Fire Alarm Circuit Conductors, and Medium-Power Network-Powered Broadband Communications Cables.

(A) General. Cables and conductors of Class 2 and Class 3 circuits shall not be placed in any cable, cable tray, compartment, enclosure, manhole, outlet box, device box, raceway, or similar fitting with conductors of electric light, power, Class 1, non-power-limited fire alarm circuits, and medium-power network-powered broadband communications circuits unless permitted by 725.136(B) through (I).

(B) Separated by Barriers. Class 2 and Class 3 circuits shall be permitted to be installed together with the conductors of electric light, power, Class 1, non-power-limited fire alarm and medium power, network-powered broadband communications circuits where they are separated by a barrier.

(I) Other Applications. For other applications, conductors of Class 2 and Class 3 circuits shall be separated by at least 50 mm (2 in.) from conductors of any electric light, power, Class 1 non-power-limited fire alarm or medium power network-powered broadband communications circuits unless one of the following conditions is met:

- (1) Either (a) all of the electric light, power, Class 1, non-power-limited fire alarm and medium-power network-powered broadband communications circuit conductors or (b) all of the Class 2 and Class 3 circuit conductors are in a raceway or in metal-sheathed, metal-clad, non-metallic-sheathed, or Type UF cables.
- (2) All of the electric light, power, Class 1 non-power-limited fire alarm, and medium-power network-powered broadband communications circuit conductors are permanently separated from all of the Class 2 and Class 3 circuit conductors by a continuous and firmly fixed nonconductor, such as porcelain tubes or flexible tubing, in addition to the insulation on the conductors.

800.133 Installation of Communications Wires, Cables, and Equipment.

(A)(1)(c): *Electric Light, Power, Class 1, Non-Power-Limited Fire Alarm, and Medium-Power Network-Powered Broadband Communications Circuits in Raceways, Compartments, and Boxes.* Communications conductors shall not be placed in any raceway, compartment, outlet box, junction box, or similar fitting with conductors of electric light, power, Class 1, non-power-limited fire alarm, or medium-power network-powered broadband communications circuits.

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