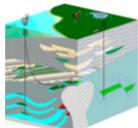


Lightning Protection



KMS Technologies

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Lightning protection on DAU

Lightning protection on a Data Acquisition Unit (DAU) is limited, which ONLY protects internal electronic circuit from being damaged by nearby lightning surges. It can NOT prevent damage from direct lightning strike on unit itself nor sensors.

Lightning protection device can be installed either externally or internally. Installing lightning protection device is very important for operation in lightning active area. KMS systems offer internal lightning protection as an option, which is installed on each analog input channel. Please note lightning protection will NOT work if the unit is connected to an external power source (like for charging) or grounding rod because the lightning can enter the unit via the ground instead of the sensor input.

KMS-820 Lightning Protection



Figure 1: KMS-820 lightning protection chip – Gas discharge tube

KMS-820 chooses Gas Discharge Tube as lightning protection device in every channel. It's designed for surface mounting on internal circuit board. The capacitance does not vary with voltage. These devices are extremely robust and are able to divert a 1000 A and 75 V pulse without destruction. If operates in lightning active area, we also recommend to use an external lightning protection device.

LEMI system Lightning Protection

LEMI systems have an external/internal device that operates in three stages lightning protection, which reduces lightning surge to different level before it reaches to internal circuit board.

THREE stages lightning protection:

Stage 1: 3-Pole Gas Discharge Tube, it is separated from main circuit board (Electric line for LEMI-424 system, this can also be used with KMS-820 systems)

Stage 2: Combination of resistor and capacitor on board

Stage 3: Combination of resistor and Transient Voltage Suppression diodes

First stage reduces voltage down to 75-90 V, second stage reduces current and voltage to 5-10 mA and 10-15 V, and third stage reduces voltage under 3 V.

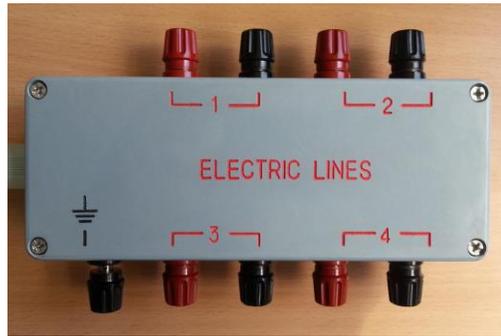


Figure 2: Electric lines in LEMI-424 system as Stage 1 lightning protection device

Product specifications – Gas discharge tube on KMS-820 unit

<i>Categories</i>	<i>Gas Discharge Tube Arresters</i>
Voltage – DC spark over (Nom)	75 V
Impulse discharge current (8/20us)	1000 A
Number of poles	2
Mounting type	Surface Mount