



WOLF SAFETY LAMP COMPANY

Saxon Road Works, Sheffield S8 0YA, England
Tel: +44 114 255 1051 Fax: +44 114 255 7988

Best Practice when using multiple 18-50V AC LinkEx™ LED Temporary Luminaire LX-400 with 24V AC output transformers.

A typical Wolf Safety setup of LinkEx™ LED Temporary Luminaire LX-400s powered from a 24VAC 400VA transformer fitted with 16A gG output fuse would be:

8 linkable lamps fitted with 5M of 2.5mm² cable and connected in 2 strings of 4 lamps; no longer than 20M (maximum cable length for reliable 16A gG fuse operation).

When linking multiple LinkEx™ LED Temporary Luminaire LX-400s the following guidelines must be followed (as a minimum requirement) to ensure that the lamps and supply equipment are used both optimally and in a safe manner.

Maximum Transformer Load

A Transformer is designed to supply a maximum load without overheating. If this load is exceeded, the transformer's circuit protection device (CPD), such as a fuse or MCB, may blow or the certification code safety limits may be invalidated e.g. T class or ambient. Any apparatus operated from the transformer should be checked to ensure that the maximum load of the transformer and associated plugs and sockets is not exceeded.

The LinkEx™ LED Temporary Luminaire LX-400 has a circuit power of: 27.1W or 41.2VA.

Power rating for 8 off 24V LinkEx™ LED Temp Luminaire LX-400s = 217W or 330VA (Watts/pf)

Selecting a Circuit Protection Device (CPD).

It is the job of a CPD is to ensure any fault occurring at any point in a circuit is interrupted within a time 't'. This will ensure that a fault current does not cause the permitted limiting temperature of any conductor to be exceeded. Incorrect CPD selection may result in overheating damage to the transformer's internal wiring or external conductors, potentially resulting in an unsafe condition in the safe or hazardous area.

A value for 't' can be found using the adiabatic equation given in local wiring regulations. This equation accounts for prospective fault currents and conductor material data. Using t and the CPD characteristic curves the appropriate sized CPD can be selected or a fitted CPD checked as suitable for the desired lighting arrangement.

Circuit cable lengths and conductor areas have an impact on prospective fault currents, as they alter string impedances.

It is the user's responsibility to ensure that any cable configuration used with a transformer will not compromise the CPDs protection of the unit.

SOVI.

The LinkEx™ LED Temporary Luminaire LX-400 is fitted with a Safe/Optimal Voltage Indicator (SOVI) to highlight to the user if the product is operating outside of the certified maximum and recommended minimum voltage range.

A LinkEx™ LED Temporary Luminaire LX-400 operating over 50V will pulse dim the light. The luminaire must not be used at this voltage. Continued use above 50V for 18-50V models is above the acceptable voltage defined in the EU type examination certificate and IECEx certificate of conformity.

The light output reduces incrementally as the input voltage falls below 19V. When operating below 18V the dimmed light will pulse brighten. The luminaire will shut down if the supply voltage continues to fall. Continued use below 18V is not recommended, but it is within the safe limits of the EU type examination certificate and IECEx certificate of conformity to 0V.

If connecting a large number of luminaires check for SOVI indication on all the lamps in the string.

SOVI indication may be due to an incorrect supply voltage or too many lamps being linked together.

Voltage Drop

The supply voltage at the terminals of any lamp in a string of lamps is a function of a number of factors;

1. The output voltage of the transformer, this will be affected by the input voltage to the transformer and how heavily loaded the transformer is. The greater the load the more the output voltage will drop.
2. Any conductor in a current carrying circuit has an impedance and therefore a voltage drop associated with it. Cable lengths and conductor areas will alter cable impedance. Longer cables and smaller conductor areas increase the voltage drop.
3. The more lamps in the string the higher the total current and the greater the voltage drop across the preceding links.

Apparatus with long cable lengths or strings of multiple lamps, must be checked to ensure the calculated voltage drop will not prevent the apparatus from operating within the specified voltage tolerance.

Further Guidance on lamp connection and extensions can be found on the Wolf website:- www.wolfsafety.com.

Wolf Safety Lamp Company

Saxon Road Works, Sheffield, S8 0YA, England
Tel: +44 114 255 1051 Fax: +44 114 255 7988

E-mail: info@wolfsafety.com Website: www.wolfsafety.com

LX-1032 issue 3

DF519