



by Honeywell



# TRAILING EDGE LED DIMMERS



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# UNDERSTANDING DIMMER TECHNOLOGIES

When a residential, hospitality or light commercial environment requires mains LED dimming, there are two key types available which are known as trailing edge and leading edge.

**LEADING EDGE** is often used for standard incandescent, mains halogen, LV halogen and LED lamps.

They are also commonly referred to as TRIAC dimmers due to the methodology of control. The components used can cause unwanted buzzing and noise.

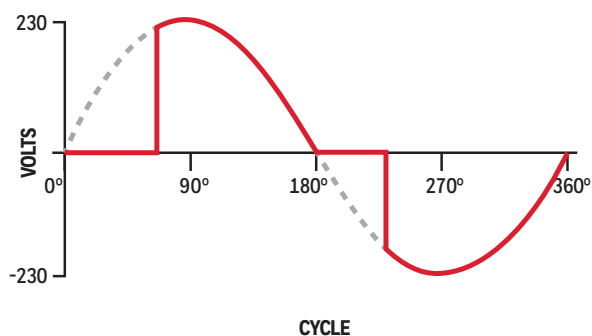
**TRAILING EDGE** is the most commonly used method for dimming LED lamps.

They employ the latest micro-controller based, digital circuitry technology which delivers flicker free and silent dimming.

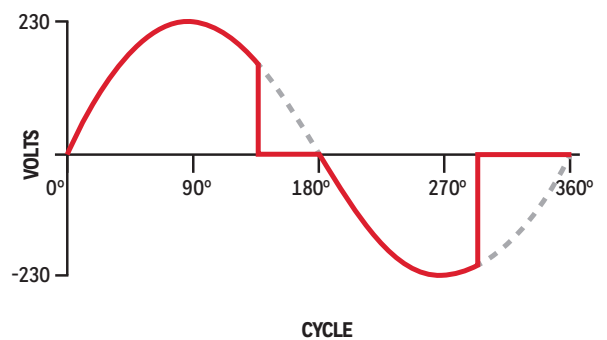
Both types are often referred to as phase cut or phase dim. Dimmer switches using leading edge technology cut off the front edge of the half cycle of each AC wave, whereas trailing edge dimmers cut off the second half of each half cycle as shown in the graphs below.

It's widely accepted in the electrical industry that Trailing Edge dimming offers a number of key benefits that can improve the overall user experience, such as flicker free, silent dimming. Also, the majority of LED lamps today, are designed to operate with trailing edge dimmers.

## LEADING EDGE



## TRAILING EDGE





# TOP 5 CONSIDERATIONS WHEN CHOOSING A DIMMER SWITCH

1

## DO YOU NEED A TRAILING OR LEADING EDGE DIMMER?

LEDs are normally optimised for one type of dimming, although some can operate on both options.

Check with the lamp or fitting manufacturer as to what is the most suitable technology.

2

## WHAT WATTAGE ARE YOU LOOKING TO DIM?

LEDs consume much less power than traditional light sources and dimmers specific to LEDs are rated as such.

Make sure that the load you are looking to control can be accommodated by the dimmer.

3

## HOW MANY LAMPS ARE YOU LOOKING TO DIM?

Some dimmers have a lamp limit due to LEDs having a higher start up (inrush) current that can cause the internal overload to operate.

Our MK Trailing Edge dimmer does not have this and can control any amount of lamps up to its rated wattage.

4

## DO YOUR LAMPS DEMAND HIGHER START UP POWER?

Some lamps use much more power than their nominal rating, check with your lamp manufacturer.

Some LED lamp types have issues with switching ON at very low dim values.

Our MK LED dimmer offers an adjustable start level that will power up on a higher value and then dim down to the last set level.

5

## HOW DO YOU ENSURE A FIT AND FORGET SOLUTION?

Look for a reputable manufacturer and the guarantee they've provided.

Our MK Trailing Edge dimmer comes with a product guarantee of 10 years.

# WHY CHOOSE MK TRAILING EDGE LED DIMMERS?



## HIGH QUALITY LED DIMMING EXPERIENCE THAT IS FLICKER-FREE AND SILENT

- Flicker free dimming without the buzz thanks to the latest digital dimmer technology
- Easily adjustable min/max setting for a smooth and linear dimming range over 270° rotation of the dimmer knob
- Adjustable start-level for optimal switch-on performance

Some LED lamp type have issues with switching ON at very low dim values. The adjustable start level will power up on a higher value and then dim down to the last set level.



## ABILITY TO USE MAX. OUTPUT RANGE OF THE DIMMER AND ENSURING CORRECT DIMMER PERFORMANCE

- Use full 120W output without LED lamp limit or derating due to inrush current
- Ability to dim modern LED lamps with load from >1W
- Compatible with leading, reputable LED lamp manufacturers

## BROAD RANGE OF STYLES AND FINISHES TO COMPLEMENT ANY INTERIOR DESIGN

- Available in Logic Plus, Aspect, Edge, Albany Plus and Grid Plus

## MARKET LEADING 10 YEAR PRODUCT GUARANTEE

- Total peace of mind for specifiers, installers and end users



### HOW TO SPECIFY

A flicker-free and silent dimmer switch solution for 230V AC lamps, with the ability to dim loads of 1-120W whilst using the full maximum output without LED lamp limit or derating due to inrush current. Programmable dimming settings to ensure dimmer is compatible to reputable LED brands in installation and even when users change lamp types. Must comply to BSEN60669-2-1 and be available in a broad range of styles and finishes to complete interior design. Manufacturers 10 year product guarantee.

# Product Selector

## GRID PLUS 1-120W



1 Module



1 Module

### FINISHES

<b>WHITE</b>	<b>K4512WHI</b>
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BACK BOX DEPTH  
35MM  
APPLICABLE  
STANDARDS  
BSEN60669-2-1

<b>BLACK</b>	<b>K4512BLK</b>
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BACK BOX DEPTH  
35MM  
APPLICABLE  
STANDARDS  
BSEN60669-2-1

## LOGIC PLUS 1-120W

Double dimmer rating:  
2 x 1-120W



SINGLE  
1G 2 WAY



DOUBLE  
1G 2 WAY

<b>WHITE</b>	<b>K1528WHI</b>	<b>K1529WHI</b>
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MOUNTING BOX:  
FLUSH  
861/866ZIC  
SURFACE  
K2140WHI  
DIMENSIONS  
86 x 86mm

MOUNTING BOX:  
FLUSH  
861/866ZIC  
SURFACE  
K2140WHI  
DIMENSIONS  
86 x 86mm



# Product Selector

## ASPECT 1-120W

Double dimmer rating:  
2 x 1-120W



SINGLE  
1G 2 WAY



DOUBLE  
1G 2 WAY

## EDGE 1-120W

Double dimmer rating:  
2 x 1-120W



SINGLE  
1G 2 WAY



DOUBLE  
1G 2 WAY

## ALBANY PLUS 1-120W

Double dimmer rating:  
2 x 1-120W



SINGLE  
1G 2 WAY



DOUBLE  
1G 2 WAY

### FINISHES

<b>BRUSHED STAINLESS STEEL</b>	K24523BSS	K24524BSS	K14525BSS	K14526BSS	K1537BSS	K1538BSS
<b>LACQUERED BRUSHED STEEL</b>	K24523LBS	K24524LBS	K14525LBS	K14526LBS		
<b>BRUSHED CHROME</b>	K24523BRC	K24524BRC	K14525BRC	K14526BRC	K1537BRC	K1538BRC
<b>POLISHED CHROME</b>	K24523POC	K24524POC	K14525POC	K14526POC	K1537PCR	K1538PCR
<b>SATIN GOLD</b>	K24523SAG	K24524SAG	K14525SAG	K14526SAG	K1537SAG	K1538SAG
<b>PORCELAIN WHITE</b>	K24523WHI	K24524WHI	K14525WHI	K14526WHI		
<b>LUSTROUS BLACK</b>	K24523LBK	K24524LBK	K14525LBK	K14526LBK		
<b>POLISHED BRASS</b>	K24523PBR	K24524PBR	K14525PBR	K14526PBR		

MOUNTING BOX:  
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BSEN60669-2-1

WHEN CALCULATING THE TOTAL LOAD INCLUDE THE POWER DRAWN BY THE LAMP POWER SUPPLY, A 7 WATT RATED LAMP CONSUMES MORE POWER THAN ITS RATING

# FREQUENTLY ASKED QUESTIONS

## WHICH LED LAMPS ARE COMPATIBLE WITH MK TRAILING EDGE LED DIMMER SWITCHES?

At MK, we have tested a range led lamps from a number of key, reputable brands to be assured of compatability.

Please contact our Technical Helpline to request information on LED lamps you have selected (see back cover for details).

## ARE ALL LED LAMPS DIMMABLE?

Not all LED lamps are dimmable, check the lamp manufacturers product information for confirmation.

## CAN THE DIMMER HANDLE MIXED LOADS?

The MK Trailing Edge LED dimmer has not been designed for mixed loads of LED lamp types. We do not recommend mixing lamp types or even lamp brands on the same circuit. The dimming rates will be very different and it is very difficult to judge if and when an overload may occur.

## HOW LOW CAN THE MK TRAILING EDGE LED DIMMER DIM LED LOADS?

The dimmer has an adjustable minimum brightness setting that can bring an LED down to 0, but this is often not achievable. Different brands of LED lamps will have different minimum brightness levels and the dimmer will only be able to take an LED lamp as low as it is designed to go.

## DO I NEED TO CONSIDER TYPICAL INITIAL POWER SURGE OF LED LOADS AND REDUCE THE MAXIMUM LOAD OR NUMBER OF LAMPS?

No, the MK Trailing Edge LED Dimmer is designed to use the full output load up to 120W. There is no need to limit the number of lamps, providing the maximum specified load does not exceed the maximum rating of the module (120W).

## WHY CAN I NOT SWITCH ON THE LED LAMP ON LOW BRIGHTNESS LEVEL?

Some LED lamp drivers struggle with low start up power; for these cases, the dimmer can be set to a higher start level and then will reduce down to the desired level after start up.

## CAN I USE THE MK TRAILING EDGE LED DIMMER WITH MY EXISTING DIMMABLE LED LAMPS FOR LEADING EDGE DIMMERS?

Always be sure that the LED lamps you want to use are both dimmable and are designed for trailing edge dimming technologies. This should be detailed in the manufacturers product information. You cannot use lamps with dimmer switches with different dimming technologies - otherwise there's a risk that LED dimming will not operate as intended.





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