

TRONIX

213-701

RF

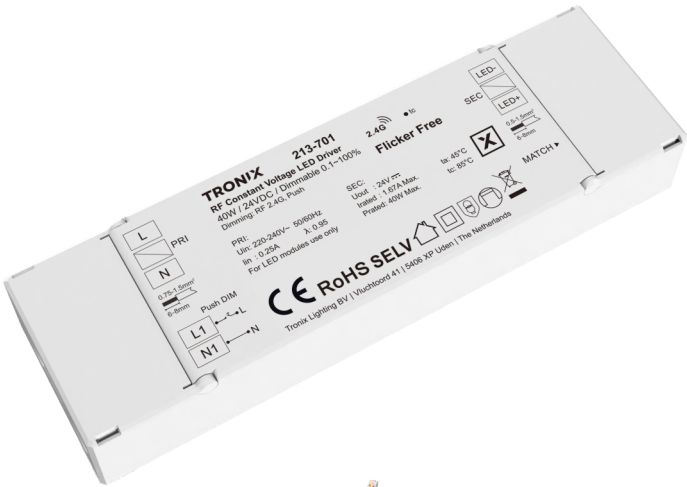
40W RF Dimming LED Driver

CE RoHS SELV



Product Features

- High power factor: PF≥0.95
- Low Harmonic Distortion: THD<10%
- Efficiency: >85%
- Flicker-free parameters: Pst LM≤0.04, SVM≤0.06
- No load/Standby power <0.5W
- Anti-surge voltage: differential mode1 kV (L-N)
- Designed for CE-Erp compliance
- Over-heat /Over-load / Short circuit protection
- Suitable for Class II III fixtures



Flicker Free



Advantages of the series products

- RF remote control dimming and traditional dimming: RF 2.4G remote control; push switch control, ready to use.
- High-frequency exemption level: Supports high-frequency dimming above 4000 Hz, compliant with IEEE 1789 exemption standards
- Deep dimming no flicker: The dimming range is 0.1 - 100%
- Ultra-low energy consumption: Features an active PFC design with PF ≥ 0.95
- Safety protection: Class II insulation design and multiple protection functions

Product Description

- 40W, 24V
- Constant voltage output, 1CH dimmable LED driver
- Dimming interface: RF or AC Push switch
- Dimming range: 0.1-100%
- 5 years warranty

Housing Features

- Housing material: Polycarbonate, white color
- Input wiring: Screw terminal
- Output wiring: Screw terminal
- Ingress protection: IP20, for indoor use

Product Applications

- LED strips for indoor lighting
- Wall Washer for Hotel/Retail Lighting
- Panel lights for office/commercial lighting

Model List

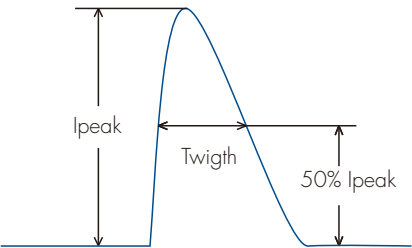
Input voltage ~	Output voltage ≡	Output power	Power factor	Efficiency	Dimming range	Certification
220-240V	24V	40W	≥0.95	>85%	0.1-100%	CE, RoHS

Technical Parameters

Output parameter			
Item	Value	Unit	Note
Output Voltage	24 ±2.5%	VDC	-
Output Current	Max. 1.67	A	-
Output Power	Max. 40	W	-
Dimming Range	0~100	%	down to 0.1%
Ripple & Noise	100	mV	-
PWM Frequency	4000	Hz	-
Start-up time	≤0.5	S	230VAC
Flicker-free	Pst LM≤0.04, SVM≤0.06	-	Measured using a constant-voltage LED strip. Refer to the "Char.Curve Figure 6"
Input parameter			
Item	Value	Unit	Note
Input Voltage Range	220~240	VAC	-
Frequency Range	50/60	Hz	-
Efficiency	>85	%	230VAC
Alternating Current	0.25 Max.	A	-
Power Factor	≥0.95	-	for 40W load refer to the "Char.Curve Figure3"
THD	<10	%	Full load, refer to the "Char.Curve Figure4"
Inrush Current	26.5	A	Cold start at 230VAC
Anti Surge	1	KV	diff. mode: L-N Acc. to IEC61000-4-5.1.2/50us,8/20us
Leakage Current	≤0.5	mA	-
No Load/Standby Power	<0.5	W	-
Operation Environment			
Item	Value	Unit	Note
Woking Temperature	-20~45	°C	-
T-case Max	85	°C	-
Working Humidity	20~90	%	non-condensing
Storage Humidity	10~95	%	-
Storage Temperature	-40~80	°C	-
Temperature Coefficient	±0.03	%/°C	0-50%
Vibration Resistance	10-500	Hz	Hz, 2G, 6min/cycle, X,Y,Z axes/2min
IP Rating	IP20	-	-
Lifetime	50000	Hrs	@Tc 85°C, refer to the"Char.Curve Figure5"
Safety & EMC			
Item	Value	Unit	Note
Withstand Voltage	3750	VAC	I/P-O/P
Insulation Resistance	100/500/25/70	MΩ/VDC/°C/%	I/P-O/P
EMC Emission	EN55015, EN61000-3-2/-3, EN61547	-	-
EMC Immunity	EN61000-4-2.3.4.5.6.8.11, EN61547	-	-
Certications	CE, RoHS	-	-

Certification Standards:
EN61347-1/-2, EN62493, ENIEC55015, ENIEC61547ETSI, EN301489-1/-3, EN61000-3-2/3, ETSIEN300440

Inrush current & MCB						
Item	Value				Unit	Note
Inrush current	26.5				A	-
Twighth	0.33				ms	-
MCB type	B10	B16	C10	C16	pcs	-
	9	14	15	23		



- The calculation is based on the parameters of the ABB S200 series of miniature circuit breakers.
- For miniature circuit breakers of different brands and models, the number of power supplies that can be connected varies.
- When the installation environment temperature of the MCB exceeds 30°C, or parallel connection installed, the number of connectable power supplies will also decrease, need recalculation.
- Type B MCB are suitable for household lighting, Type C MCB are suitable for commercial lighting.

Insulation between circuits				
Insulation	Input	Output	Case	PUSH
Input	-	SELV	SELV	-
Output	SELV	-	SELV	SELV
Case	SELV	SELV	SELV	SELV

Basic insulation: The minimum insulation required for the normal operation of the equipment, used to isolate energized parts from accessible parts (e.g., shells, parts that may be touched by the human body) and to prevent direct contact with electric shocks.

Double insulation: It is composed of basic insulation and additional insulation, forming two independent layers of insulation protection, even if one layer fails, the other layer can still prevent electric shock.

Protection function

Over Load: When the load≥110%~140%, hiccup protection, automatic recovery after load reduction.

Over Temperature: Current decrease when PCB temp>100°C, recovers automatically after fault condition is removed.

Short Circuit: Shut down the output voltage, recovers automatically after fault condition is removed.

Dimming interface

Push DIM dimming: Voltage range 220~240VAC 50/60Hz.

Dimming range: 0.1-100%

Test Note

If not specified, the above parameters are the result of testing at ambient temperature of 25°C, humidity of 50%, full load conditions.

The startup time is measured during a cold start. Ripple voltage is measured at full load using a constant voltage LED strip.

Characteristic Curve

Figure 1

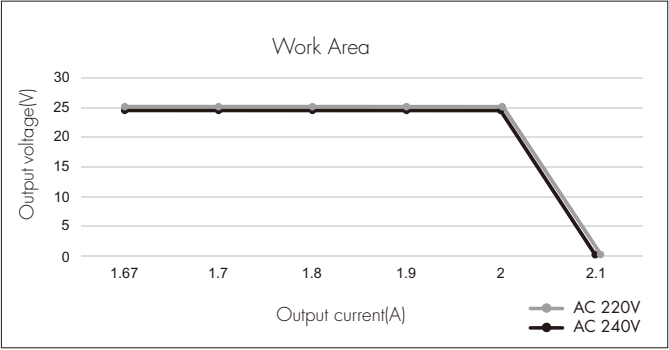


Figure 2

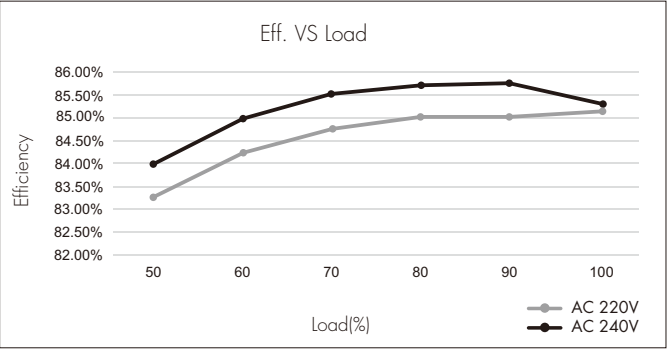


Figure 3

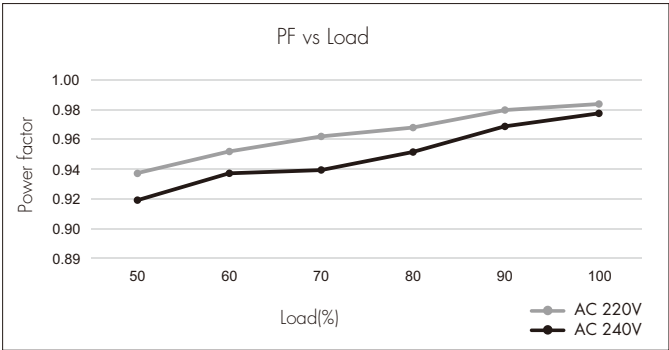


Figure 4

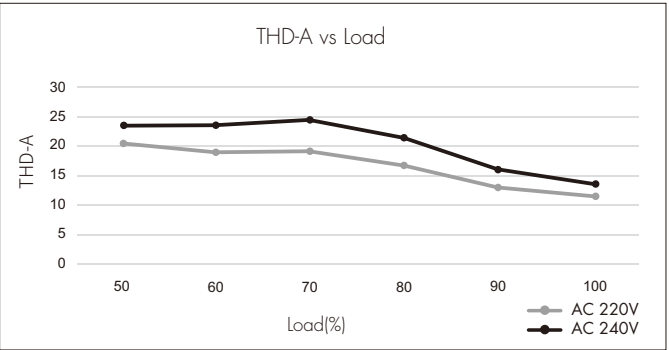


Figure 5

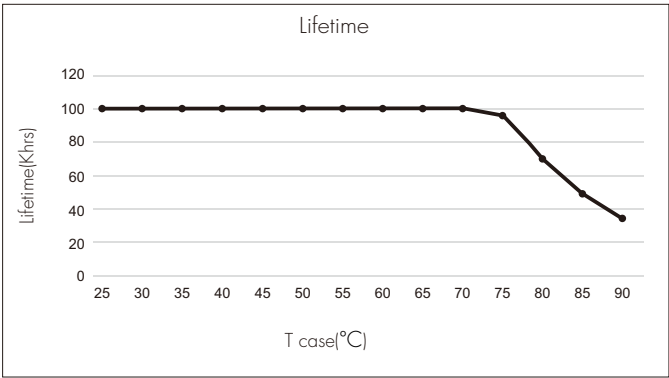
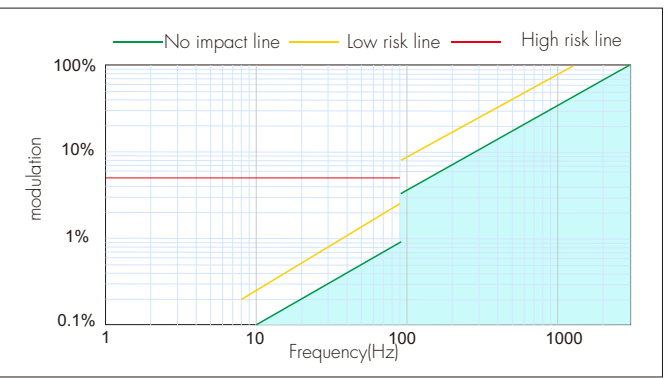


Figure 6



The relationship of the Tc temperature also depends on the lighting fixture setting.

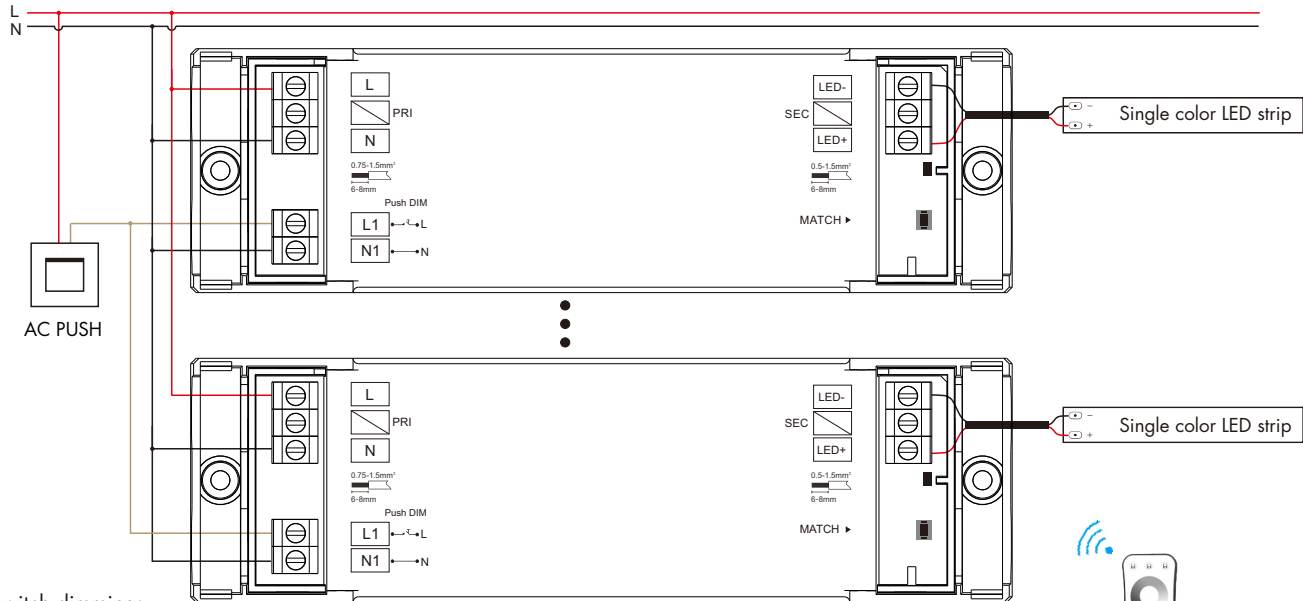
Wiring Diagram

● Wiring Instructions

Input/Output Wiring	Port Definition	Wire Diameter and Stripping Length
Input Wiring(PRI)	AC-L, AC-N AC Push switch input	Wire Diameter: 0.75-1.5mm ² (20-16AWG) Stripping Length: 6-8mm
Output Wiring(SEC)	LED+, LED-	Wire Diameter:0.5-1.5mm ² (20-16AWG) Stripping Length:6-8mm

● RF & AC Push Switch Dimming Wiring

220~240VAC, 50/60Hz



AC push switch dimming:

Short press: Turn on/off the light.

Long press(1-6s): Press and hold to step-less dimming, with every other long press, the light level goes to the opposite direction.

Dimming memory: Light returns to the previous dimming level when switched off and on again, even at power failure.

Synchronization: If more than one controller are connected to the same push switch, do a long press for more than 1.5s, then the system is synchronized and all lights in the group dim up to 100%.

Light on/off fade time

Long press match key 5s, then short press match key 3 times, the light on/off time will be set to 3s, the indicator light blink 3 times.

Long press match key 10s, restore factory default parameter, the light on/off time also restore to 0.5s.

Match Remote Control (two match ways)

End user can choose the suitable match/delete ways. Two options are offered for selection:

Use Match key

Match:

Short press match key,
immediately press on/off key (single zone remote)
or zone key (multiple zone remote) on the remote.
The LED indicator fast flash a few times means match is successful.

Delete:

Press and hold match key for 5s to delete all match,
The LED indicator fast flash a few times
means match was deleted.

Use Power Restart

Match:

Switch off the power 5s, then switch on power 2s, repeat again.
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 3 times on the remote.
The light blinks 3 times means match is successful.

Delete:

Switch off the power 5s, then switch on power 2s, repeat again.
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 5 times on the remote.
The light blinks 5 times means all matched remotes were deleted.

When use multiple RF LED drivers, two application method:

Auto-transmitting: One LED driver can transmit the signals from the remote to another LED driver within 30m, as long as there is a driver within 30m, the remote control distance can be extended.

Auto-synchronization: Multiple LED drivers within 30m distance can work synchronously when they are controlled by the same remote.
Driver placement may offer up to 30m communication distance. Metals and other metal materials will reduce the range.
Strong signal sources such as WiFi routers and microwave ovens will affect the range.
We recommend for indoor applications that driver placements should be no further apart than 1.5m.

Installation Precautions

1. Hot plug-in

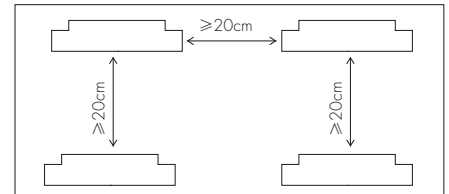
- Hot plug-in is not supported due to residual output voltage of $> 0\text{ V}$.
- If a load is connected, the device needs has to be restarted.
- The restart can be achieved by reset or dimming interface (Push DIM).

2. Wiring guidenlines

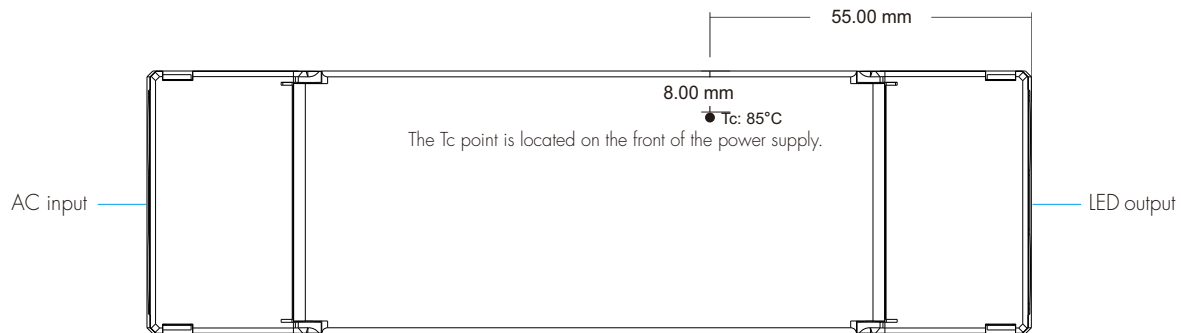
- This product must be installed and adjusted by a qualified professional.
- Before you power on the product, please make sure all the wiring is correct in case of incorrect connection.
- PC covers, housings and plug light kits for power supplies assembled within the fixture are required to meet UL94-V0 and above fire ratings.
- The power supply is used as part of the luminaire system in conjunction with the end device (luminaire), and since the EMC performance is affected by the LEDs and the alignment.
The end device manufacturer needs to re-verify the EMC of the complete unit.
- If a fault occurs, please do not attempt to x the product by yourself; If you have any questions, please contact us in time.

3. Installation environment

- This product is non-waterproof.
When installed outdoors, please ensure it is mounted in a water proof enclosure.
- This product should be installed in a dry, acid-free, oil-free environment.
- Please use the product within the operating temperature range of $-20^{\circ}\text{C}\sim 45^{\circ}\text{C}$ to ensure stable performance.
- LED driver should keep a certain distance from the heating stuff(such as the luminaries radiator).
The installation interval between the product and the product is recommended to be 20cm, so as not to affect the service life due to poor heat dissipation(show in Figure).

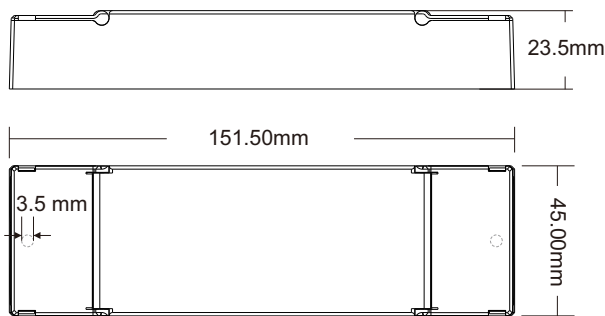


Tc Point Location

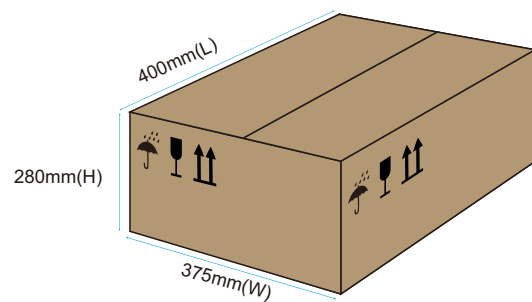


Product Size and Packaging Information

Product size:



Carton size:



Model	Product size (mm)	White box size(mm)	N.W(pcs)	Carton size(mm)	Qty/carton	N.W/carton	G.W/carton
213-701	151.5*45*23.5(L*W*H)	175*54*27(L*W*H)	216g ($\pm 5\text{g}$)	400*375*280	100pcs	21.6kg ($\pm 0.5\text{kg}$)	24.4kg ($\pm 0.5\text{kg}$)

Version Log

Version	Update time	Update Content
1.0.0	2025.8.9	Original version