

Thomas Research Products

Innovative & Energy Saving Lighting Controls

75W TRC-075 Dimmable Series Switch Mode LED Drivers - Constant Current

Total Power: 75 Watts
 Input Voltage: 90-305 VAC, 50/60 Hz
 High Efficiency - 88% to 92%
 Active Power Factor Correction - 96-99%
 Waterproof IP67 Compliant
 Input and Output Protection
 Lightning Protection
 UL 8750 and EN61347 Certified

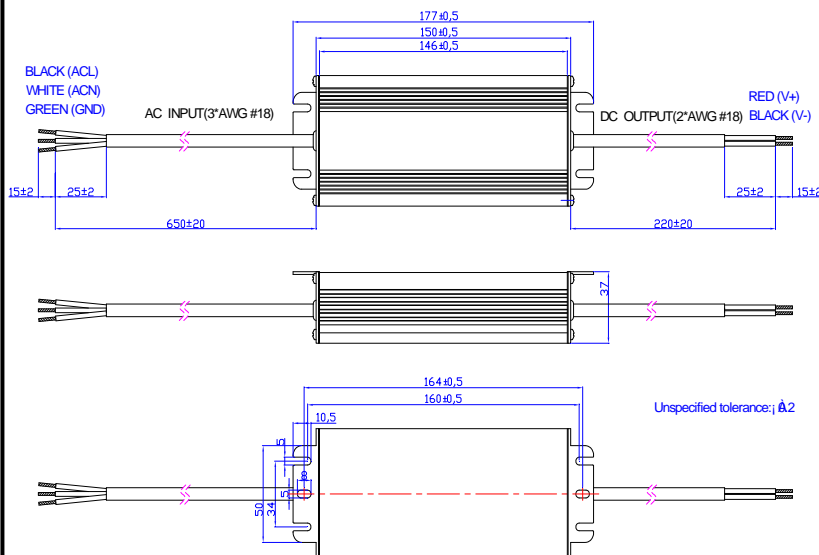
Electrical Specifications

Input Voltage Range: 90 - 305 VAC, 47 to 63 Hz
 Power Factor: 99% @110 VAC, 96% @ 220 VAC
 Input Current: 0.90 A @ 100 VAC, 040 A @ 220 VAC
 Efficiency: 88-92% typical at maximum load
 Inrush Current 50 A at 230 VAC
 Maximum Power: 75W
 Line Regulation 1%
 Load Regulation: 3%
 Protection: Output Over-Voltage, Output Over-Current, Output Short Circuit Protection with Auto Recovery, Over Temperature Protection

Environmental Specifications

Operating Temperature: -35°C to +70°C
 Maximum Case Temp. 90°C
 Storage Temperature: -40°C to +85°C
 Humidity: 10% to 100%
 Cooling: Convection
 MTBF: 498,000 Hours @ 25°C, 80% Load, 110 VAC on 2800 mA Output Model
 Lifetime 60,000 Hours @ 45°C, 80% Load, 110 VAC on 2800 mA Output Model

Dimensions



Output Current (1)	Max Output Voltage	Typical Efficiency (2)	Part Number
350 mA	107-214 VDC	92%	TRC-075S035DT
450 mA	83-166 VDC	92%	TRC-075S045DT
700 mA	54-108 VDC	91%	TRC-075S070DT
1050 mA	36-72 VDC	90%	TRC-075S105DT
1400 mA	27-54 VDC	90%	TRC-075S140DT
2100 mA	18-36 VDC	89%	TRC-075S210DT
2800 mA	13-27 VDC	89%	TRC-075S280DT
3750 mA	10-20 VDC	88%	TRC-075S375DT
5000 mA	7-15 VDC	88%	TRC-075S500DT

Blue = Class 2 US/Canada Green = Class 2 US Only

Safety and EMC Compliance

CUL CE	UL 8750 EN 61347-1, EN61347-2-13
EN 55015	Conducted emission
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations and flicker
EN 61000-4-2	Electrostatic discharge
EN 61000-4-3	RFE Field Susceptibility test
EN 61000-4-4	Electrical Fast Transient
EN 61000-4-5	Surge Immunity Test
EN 61000-4-6	Conducted Radio Frequency
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity

RoHS Compliant

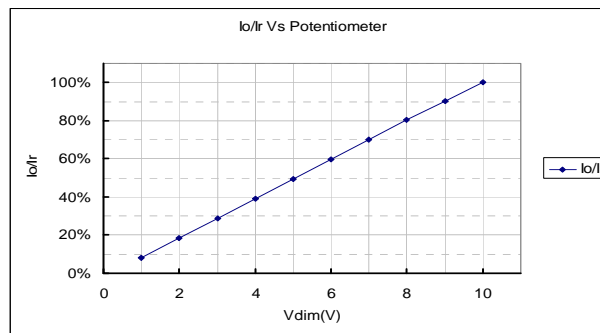
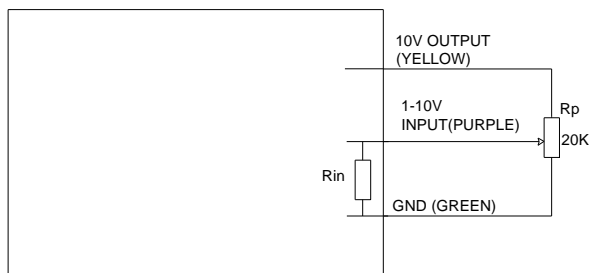
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Dimming Control Details

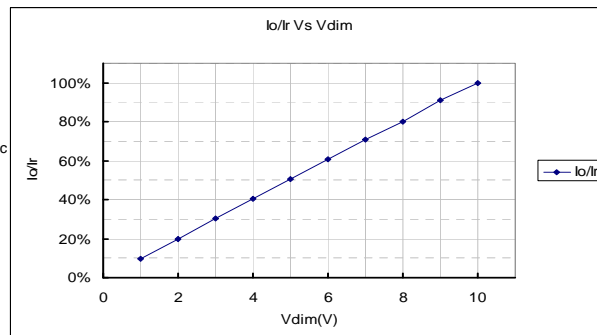
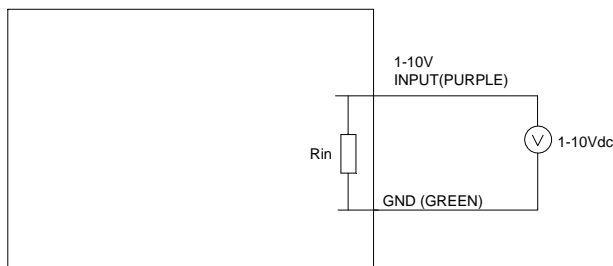
Parameter	Min.	Typ.	Max.
10V output voltage	9.8 V	10 V	10.2 V
10V output source current	-10 mA	-	10 mA
Absolute maximum voltage on the 1-10V input pin	-2 V	-	12 V
Source current on 1-10V input pin	0 mA	-	1 mA
Value of Rin (the resistor inside the LED driver which locate between the 1-10V input pin and ground pin)	-	10K	-

The dimmer control may be operated from either a potentiometer or from an input signal of 1 - 10 Vdc. Four recommended implementations are provided below:

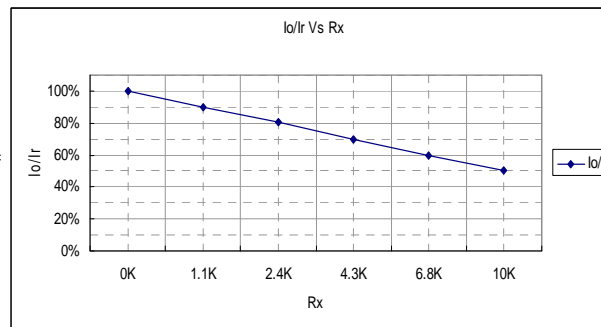
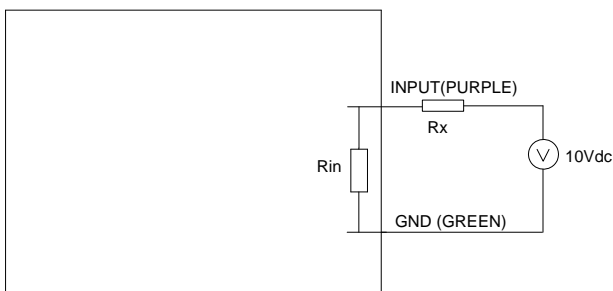
Option 1 - Potentiometer Control



Option 2 - DC Input



Option 3 - External Resistor

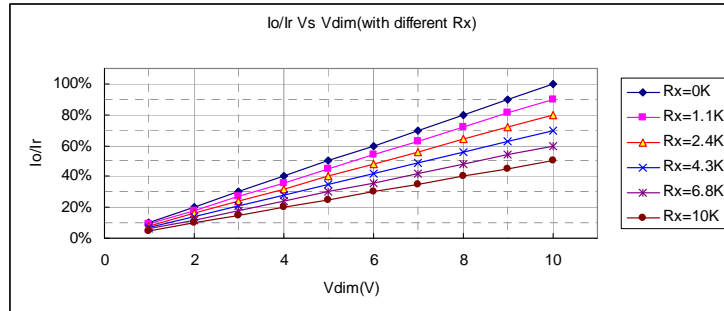
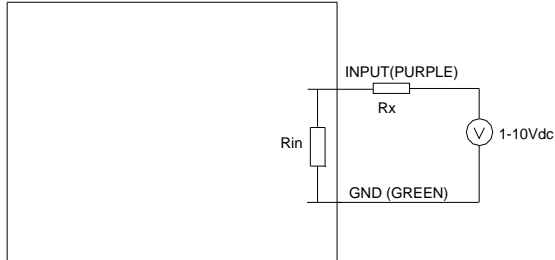




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Option 3 - External Resistor and DC Input



Notes:

1. If the dimming function is not used, please short 10V output pin (yellow) and 1-10 input pin (purple).
2. I_o is actual output current and I_r is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
4. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current cannot guarantee a good linearity.
6. The R_p , which stands for the potentiometer in the Implementation 1, is recommended between 10K~100K.
7. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.