

Thomas Research Products

Innovative & Energy Saving Lighting Controls

40W TRC-040DS Dimming Series

Switch Mode LED Drivers - Constant Current
Long Life Model

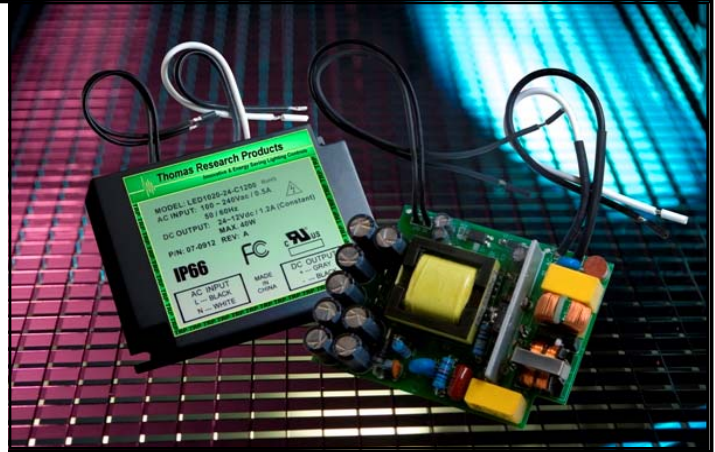
Total Power: 40 Watts
Input Voltage: 90-305 VAC
Outputs: Single from 12 VDC to 114 VDC
High Efficiency
Indoor or Outdoor Applications
Active Power Factor Correction
IP66 Compliant
Lightning Protection

Electrical Specifications

Input Voltage Range:	90 - 305 VAC,
Frequency:	47 to 63 Hz
Power Factor:	99% @ 110 VAC, 92% @ 220 VAC
Input Current:	0.48 A @ 110 VAC, 0.23 A @ 220 VAC
Efficiency:	84-88% typical at maximum load
Maximum Power:	40W
Line Regulation	2%
Load Regulation:	5%
Turn-on Time Delay	3 Seconds
Protection:	Output Over-Voltage, Output Over-Current, Output Short Circuit Protection with Auto Recovery

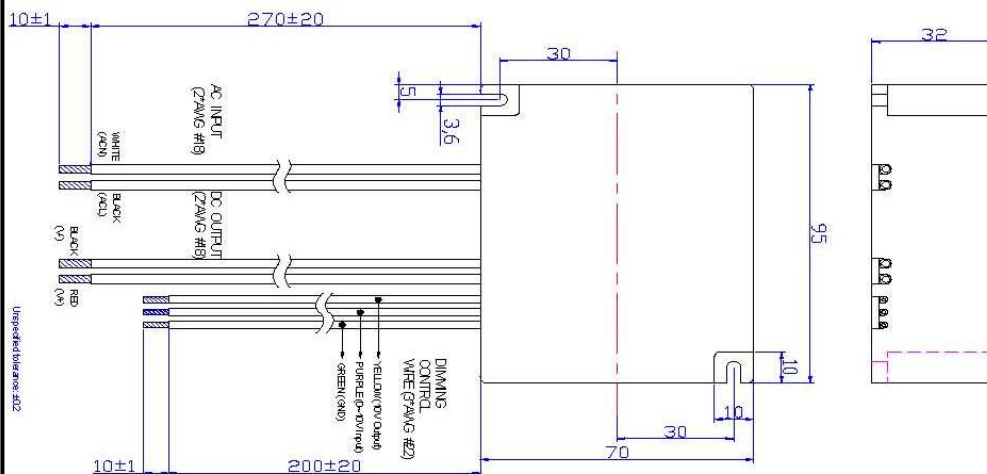
Environmental Specifications

Operating Temperature:	-30°C to +70°C
Maximum Case Temp.	90°C
Storage Temperature:	-40°C to +85°C
Humidity:	5% to 100%
Cooling:	Convection
MTBF:	487,000 Hours @ 25°C, 80% Load, 110VAC on 3330 mA output model (MIL-HDBK-217F)
Lifetime	77,000 Hours @ 45°C, 80% Load, 110VAC on 3330 mA output model



Output Current (1)	Max Output Voltage	Typical Efficiency (2)	Part Number
350 mA	38-114 VDC	88%	TRC-040S035DS
450 mA	30-89 VDC	88%	TRC-040S045DS
700 mA	18-54 VDC	87%	TRC-040S070DS
1050 mA	12-36 VDC	87%	TRC-040S105DS
1400 mA	10-29 VDC	87%	TRC-040S140DS
1660 mA	8-24 VDC	86%	TRC-040S166DS
2220 mA	6-18 VDC	85%	TRC-040S222DS
3330 mA	4-12 VDC	84%	TRC-040S333DS

Dimensions



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 61000-4-6	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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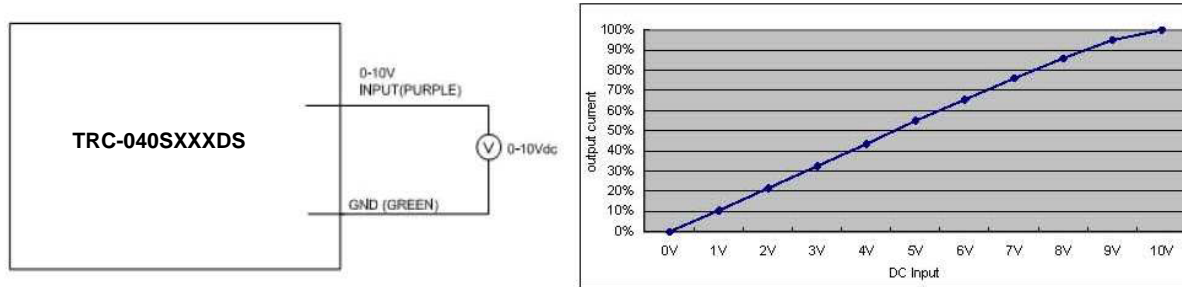
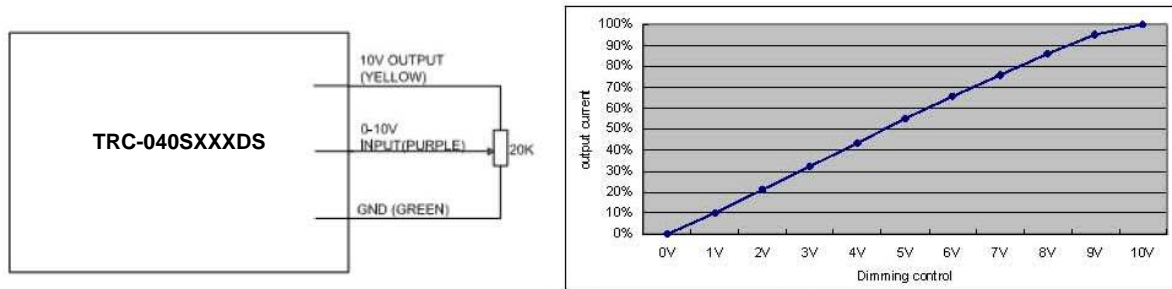
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Dimming Control Specifications

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	-10 mA	-	2 mA	
Absolute maximum voltage on the 0~10V input pin	-2 V	-	15 V	
Source current on 0~10V input pin	0 mA	-	1 mA	

The dimmer control may be operated from either a potentiometer or from an input signal of 0 – 10 Vdc. Two recommended implementations are provided below.



Notes:

- For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 33% of the max. output voltage for any given model).
- If the output voltage is maintained above 50% of the maximum output voltage, the dimmer control may be operated over the entire 0-10V range with output current varying from 100% down to practically 0%.
- If the output voltage is maintained between 33-50% of the maximum output voltage, the dimmer control may be operated over 5-10V range with output current varying from 100% down to 50%. Dimming below 5V under these conditions is not guaranteed.