

Features

TRIAC Dimmable LED Driver

- Triac –dimmable with leading or trailing edge dimmers
- Class II with SELV output (no earth required)
- Extra-large screw terminals and integrated cable clamps for easy installation
- Power factor corrected >0.95
- Dimming range 1..100%
- Compatible with a wide range of dimmers



RACT18

18 Watt
TRIAC
Dimmable
Single Output



IEC/EN61347 Certified
IEC/EN61347-2-13 Certified
EN61547 Certified
EN62493 Certified
EN55015 Compliant
CB Report

Description

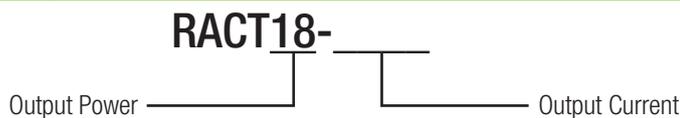
The RACT18-xxx series are low cost, triac-dimmable, constant current 18W LED drivers available with either 350mA, 500mA, 700mA, 1.05A or 1.4A full-range outputs. The drivers are Class II (double insulated) meaning no earth connection is required. The phase angle dimming works with leading or trailing edge dimmers. The RACT18 is suitable for indoor locations up to 50°C ambient temperature and is certified for building into furniture for applications such as dimmable shelf lighting, cove lighting or accent lighting. It is CE marked (LVD + EMC + RoHS) and has the international IEC61347-1 CB report certification.

Selection Guide

Part Number	Input Voltage Range [VAC]	Output Voltage Range [VDC]	Output Current [mA]	Efficiency min. @rated load [%]	Output Power [W]
RACT18-350	198-264	26-52	350	85	18
RACT18-500	198-264	18-36	500	84	18
RACT18-700	198-264	13-26	700	85	18
RACT18-1050	198-264	9-18	1050	82	18
RACT18-1400	198-264	6.5-13	1400	82	18

All LED Drivers may not be used without a load. They must be switched on the primary side only. Noncompliance may damage the LED or reduce its lifetime.

Model Numbering



Specifications (measured @ ta= 25°C, 240VAC, rated load unless otherwise specified)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		198VAC	230VAC	264VAC
Input Current	RACT18-350,1050,1400 RACT18-500,700			110mA 120mA
Inrush Current	full load			5A
No Load Power Consumption				1W
Input Frequency Range		50Hz		60Hz
Power Factor	full load	0.95		
THD	full load			20%
Start-up Time				500ms

continued on next page

Specifications (measured @ $t_a = 25^\circ\text{C}$, 240VAC, rated load unless otherwise specified)

Parameter	Condition	Min.	Typ.	Max.
Internal Operating Frequency	RACT18-350,700,1050		60kHz	
	RACT18-500		64kHz	
	RACT18-1400		65kHz	
Output Ripple Current ⁽¹⁾	RACT18-350			150mA
	RACT18-500			200mA
	RACT18-700			260mA
	RACT18-1050			700mA
	RACT18-1400			560mA

Notes:

Note1: Measured at 20MHz BW by using a 12" twisted pair-wire terminated with a 0.1 μF and 47 μF capacitor parallel across output.

REGULATIONS

Parameter	Condition	Value
Output Accuracy		$\pm 5\%$ typ.
Load Regulation		5% max.
Line Regulation		5% max.

PROTECTION

Parameter	Condition	Value
Input Fuse		fusible resistor
Short Circuit Protection (SCP)		Latch OFF, auto recovery after fault condition is removed
Over Voltage Protection (OVP)	RACT18-350	60VDC max.
	RACT18-500	43VDC max.
	RACT18-700	33VDC max.
	RACT18-1050	24VDC max.
	RACT18-1400	22VDC max.
Over Load Protection (OLP)		Latch OFF, auto recovery after fault condition is removed
Over Temperature Protection (OTP)	110 $^\circ\text{C}$	Latch OFF, auto recovery after fault condition is removed
Isolation Voltage	I/P to O/P tested for 1 minute	3.75kVAC
Leakage Current		5mA max.

Maximum loading of automatic circuit breakers*

* @ 230VAC, 10hm, 90° phase angle and max. load

Circuit Breaker	Circuit Breaker Current			
	Typ	10A	16A	25A
B	24	38	46	58
C	38	62	74	92

ENVIRONMENTAL

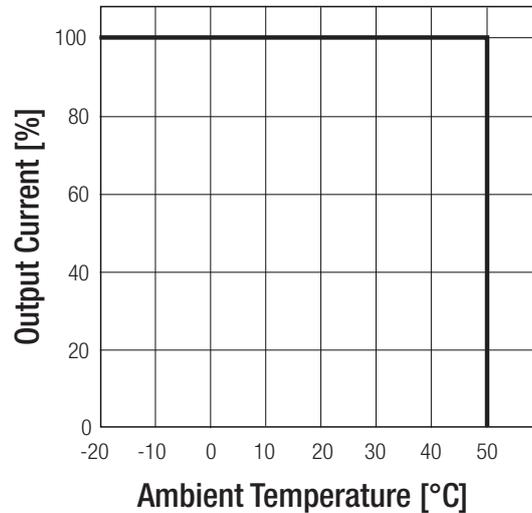
Parameter	Condition	Value
Operating Temperature Range	without derating @ natural convection 0.1m/s (see graph)	-20 $^\circ\text{C}$ to +50 $^\circ\text{C}$
Max. Case Temperature	at t_c point	+80 $^\circ\text{C}$ max.
Operating Humidity	non-condensing	5-85% RH
IP Rating		IP20
Pollution Degree		PD2
Design Lifetime	+25 $^\circ\text{C}$ ambient	>30 x 10 ³ hours

continued on next page

Specifications (measured @ $t_a = 25^\circ\text{C}$, 240VAC, rated load unless otherwise specified)

Derating Graph

(@ Chamber and natural convection 0.1m/s)



SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Report Number	Standard
Lamp Controlgear General Requirements for Safety (CB Scheme)	325797	IEC61347-1:2007, 2nd Edition
Lamp Controlgear Particular Requirements (CB Scheme)		IEC61347-2-13: 2014, 2nd Edition
Lamp Controlgear General Requirements for Safety (LVD)		EN61347-1:2007, 2nd Edition
Lamp Controlgear Particular Requirements (LVD)		EN61347-2-13: 2014, 2nd Edition
RoHS2+		RoHS 2011/65/EU + AM2015/863

EMC Compliance	Condition	Standard / Criterion
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment		EN55015: 2013 +A1 2015
Limits for harmonic current emissions		IEC61000-3-2: 2014, Class C
Limitation of voltage fluctuations/flicker in low-voltage systems		IEC61000-3-3:2013
Equipment for general Lighting Purpose EMC Immunity Requirements		IEC61547:2009
Assessment of lighting equipment related to human exposure to electromagnetic fields		EN62493:2015
ESD Electrostatic discharge immunity test	$\pm 8\text{kV}$ Air Discharge, $\pm 4\text{kV}$ Contact Discharge	IEC61000-4-2, Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3V/m	IEC61000-4-3, Criteria A
Fast Transient and Burst Immunity	L-N= $\pm 1\text{kV}$; DC Output= $\pm 0.5\text{kV}$	IEC61000-4-4, Criteria A
Surge Immunity	L-N= $\pm 0.5\text{kV}$	IEC61000-4-5, Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	3V r.m.s.	IEC61000-4-6, Criteria A
Voltage Dips and Interruptions	>95% reduction	IEC61000-4-11, Criteria B
	30%	IEC61000-4-11, Criteria B

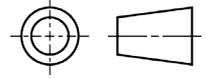
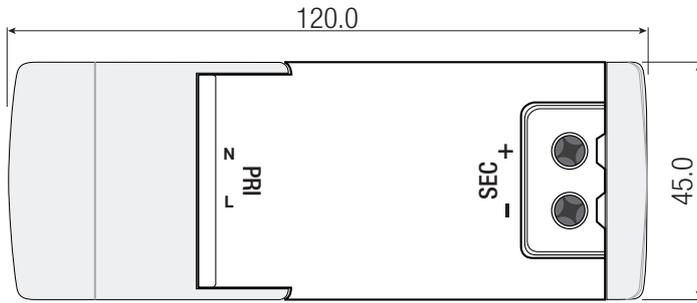
DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	Case PCB	Plastic (UL94V-2) FR4 (UL94V-0)
Package Dimension (LxWxH)		120.0 x 45.0 x 28.0mm
Package Weight		100g typ.

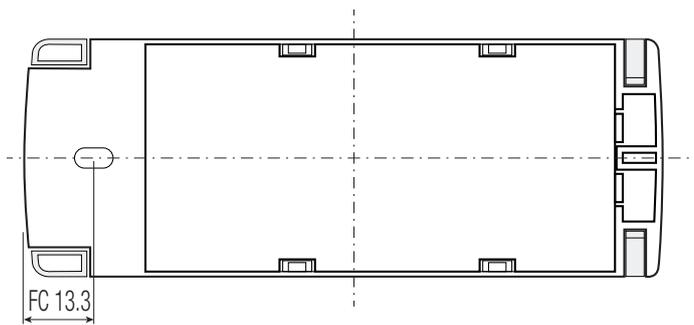
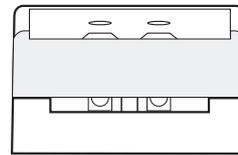
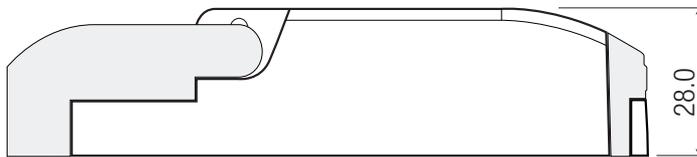
continued on next page

Specifications (measured @ $t_a = 25^\circ\text{C}$, 240VAC, rated load unless otherwise specified)

Dimensions Drawing (mm)



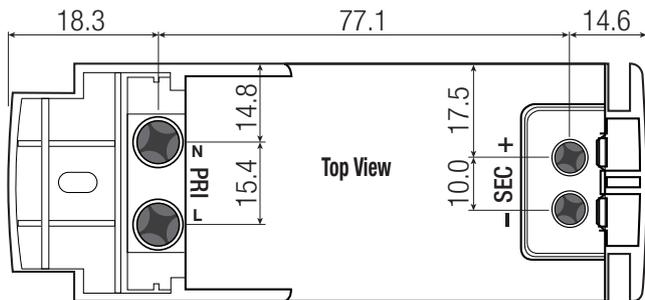
wire stripping length: 6-7mm
recommended tightening torque: 0.25Nm
 t_c = case temperature measuring point
FC = fixing centers
Tolerance: xx.x = $\pm 1.0\text{mm}$
xx.xx = $\pm 0.5\text{mm}$



Connection via Screw Terminal

Function	Solid Wire	Stranded Wire ⁽³⁾	AWG
VAC in (N)	0.75-2.5mm ²	0.75-2.5mm ²	20-14
VAC in (L)	0.75-2.5mm ²	0.75-2.5mm ²	20-14
LED+	0.5-2.5mm ²	0.5-2.5mm ²	21-14
LED-	0.5-2.5mm ²	0.5-2.5mm ²	21-14

without cable cover's



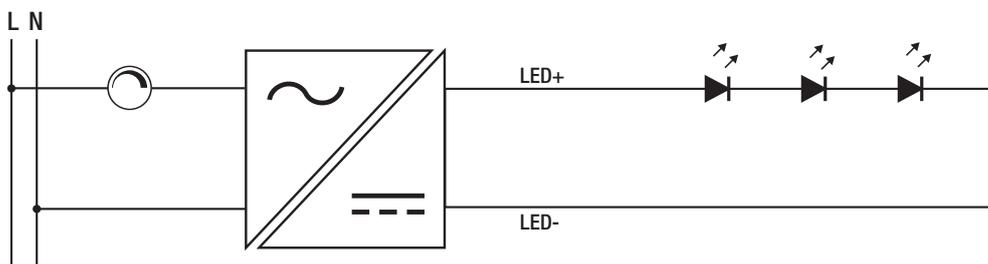
Notes:

Note3: The use of sleeve or ferrule terminations is recommended.

INSTALLATION and APPLICATION

Dimming Type	Value
AC phase-cut	work with leading/trailing edge dimmers

Connection



Specifications (measured @ $t_a = 25^\circ\text{C}$, 240VAC, rated load unless otherwise specified)

PACKAGING INFORMATION		
Parameter	Type	Value
Packaging Dimension (LxWxH)	cardboard box	330.0 x 137.0 x 55.0mm
Packaging Quantity		10pcs
Storage Temperature Range		-20°C to +70°C
Storage Humidity	non-condensing	5-85% RH