

Size:
7.835 x 4.134 x 1.614 inches
199.0 x 105.0 x 41.0 mm

Weight:
2.27 lbs (1.03kg)

FEATURES

- RoHS Compliant
- Built-in Active PFC, PF > 0.90
- Up to 457 Watts Output Power
- +5V/0.3A Auxiliary Output
- 150% Peak Load Capability
- Power OK Signal
- Constant Current Limit
- High Efficiency up to 93%
- 3000VAC (4242VDC) I/O Isolation
- Remote ON/OFF, Remote Sense Functions
- Universal Input Voltage Range: 90~264VAC (127~370VDC)
- Protection: SCP / OLP / OVP / OTP / Fan Failure
- 12V, 24V, 30V, 36V, & 48VDC Single Output Models
- UL 60950-1 and EN60950-1 Safety Approvals

DESCRIPTION

The PSAK450 series of AC/DC switching power supplies provides up to 457 Watts of output power in a 7.835" x 4.134" x 1.614" enclosed case. This series consists of single output models ranging from 12VDC to 48VDC with an input voltage range of 90~264VAC (127~370VDC). Standard features include high efficiency up to 93%, active PFC, remote on/off, remote sense, and power OK signal. This series also has short circuit, over load, over voltage, and over temperature protection. All models are RoHS compliant and have UL 60950-1 and EN60950-1 safety approvals.

MODEL SELECTION TABLE

Model Number	Input Voltage ⁽²⁾	Output Voltage	Output Current	Over Voltage Protection	Output Power	Ripple & Noise ⁽¹⁾	Efficiency
PSAK-450-12	90 ~ 264 VAC (127 ~ 370 VDC)	12 VDC	37.5A	14.4 ~ 15.6 VDC	450W	120mVp-p	89%
PSAK-450-24		24 VDC	19A	28.8 ~ 31.2 VDC	456W	240mVp-p	91%
PSAK-450-30		30 VDC	15A	36.0 ~ 39.0 VDC	450W	300mVp-p	91%
PSAK-450-36		36 VDC	12.7A	43.2 ~ 46.8 VDC	457W	360mVp-p	92%
PSAK-450-48		48 VDC	9.5A	57.8 ~ 62.4 VDC	456W	480mVp-p	93%

NOTES

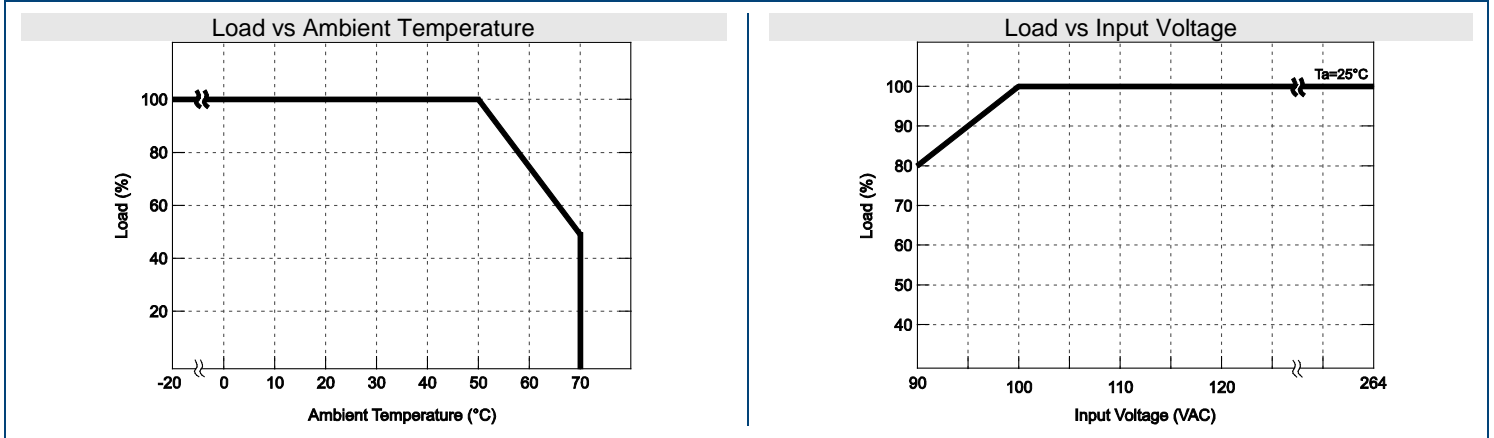
1. Ripple & noise is measured at 20MHz limited bandwidth and using a 12" twisted pair-wire terminated with a 0.1µF & 47µF capacitors in parallel.
 2. For voltages near the low end of the input voltage range, see the derating curve for the power supply output rating.
 3. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
- Due to advances in technology, specifications are subject to change without notice.*

SPECIFICATIONS: PSAK450 SERIES

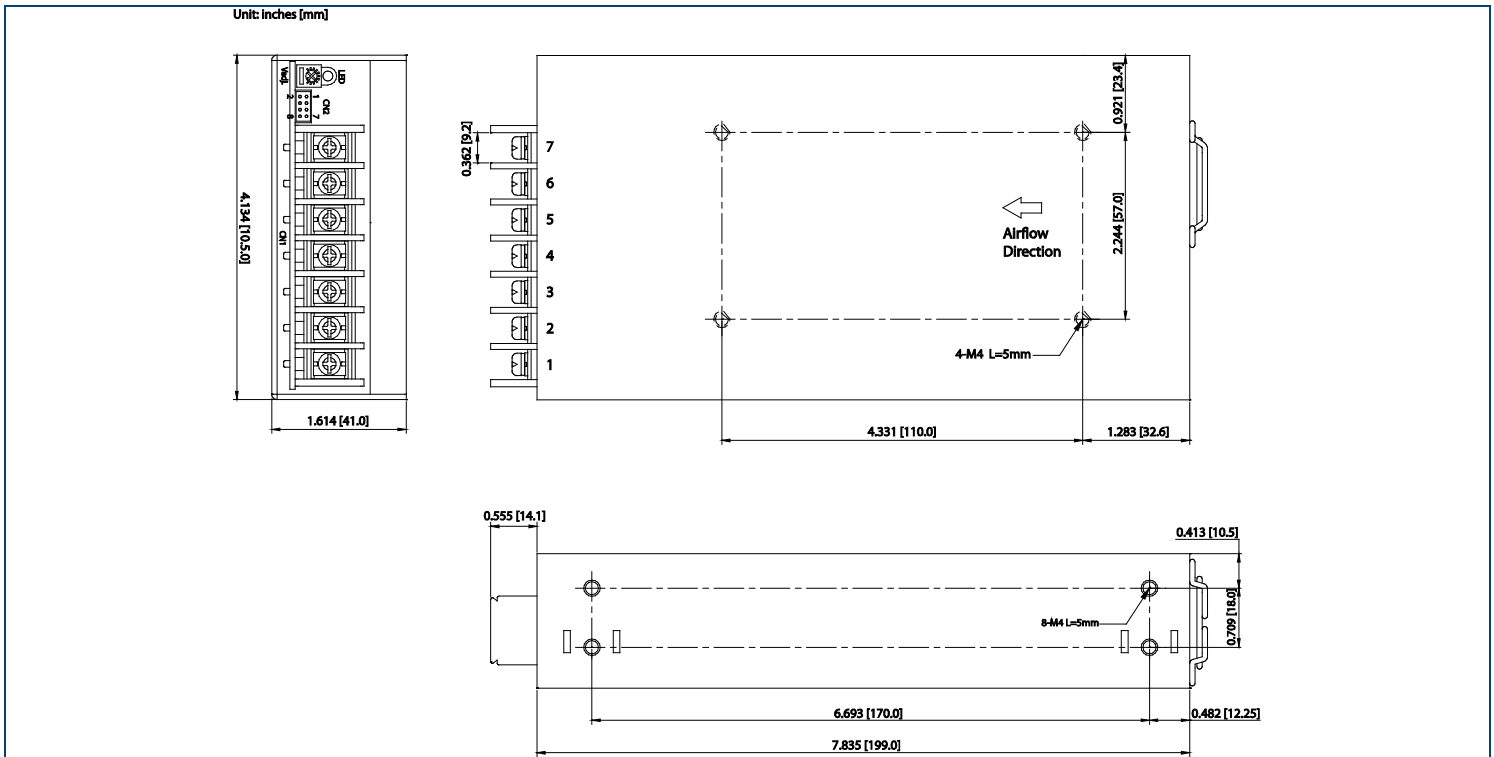
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
 We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS					
Input Voltage (See Note 2)	AC input voltage range	90		264	VAC
	DC input voltage range	127		370	VDC
Input Frequency		47		63	Hz
AC Current	At 115VAC and full load		4.5		A
	At 230VAC and full load		2.2		
Inrush Current	At 115VAC and cold start		27		A
	At 230VAC and cold start		54		
Power Factor	At 115VAC and full load		0.99		
	At 230VAC and full load		0.98		
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Tolerance	Includes set-up tolerance, line regulation, and load regulation	-1.0		+1.0	%
Voltage Adjustability	Typical adjustment by potentiometer	-10		+10	%
Line Regulation	Low Line to High Line	-0.5		+0.5	%
Load Regulation	0% to 100% full load	-0.5		+0.5	%
Output Power		See Table			
Output Current		See Table			
Ripple & Noise	Measured at 20MHz bandwidth and with 0.1µF and 47µF capacitors in parallel			1	%
Hold-up Time	At 230VAC and full load	16			ms
Setup Time	full load		800		ms
Rise Time	full load		60		ms
Temperature Coefficient	0-50°C	-0.02		+0.02	%/°C
PROTECTION					
Over Voltage Protection	See Table Protection type: latch-style. Recovery after reset AC power ON or inhibit				
Over Load Protection	Hiccup mode: when the rated output power is within 105~150% for more than 3secs.				
	Constant current limit: > 150% rated power / short circuit				
	Automatic Recovery: If the output drops to 40% of the rated output voltage, the PSU will shut down and auto-recover 5 times (If the fault condition still remains after recovering 5 times, the PSU will shut down. User must re-power on to recover)				
Over Temperature Protection	Detected on primary and secondary heatsink Protection type: shutdown output voltage (automatic recovery after temperature goes down)				
GENERAL SPECIFICATIONS					
Efficiency		See Table			
Isolation Voltage	Input to Output	Conducted test without enclosure		4242VDC (3000VAC)	
	Input to FG			2121VDC (1500VAC)	
	Output to FG			707VDC (500VAC)	
Isolation Resistance	Input to output, input to FG, output to FG; 500VDC	100			MΩ
Leakage Current	At 240VAC			1.0	mA
FUNCTIONS					
Auxiliary Power		+5V / 0.3A(±3%)			
Remote ON/OFF Control		External switch or NPN transistor to turn ON/OFF			
Power OK Signal		Open drain signal low when PSU turns on; sink current: 20mA max.; drain voltage: 40V max.			
ENVIRONMENTAL SPECIFICATIONS					
Operating Temperature	With derating (see derating curve)	-20		+70	°C
Storage Temperature		-40		+85	°C
Operating Humidity	Non-condensing	20		90	% RH
Storage Humidity		10		95	% RH
Cooling		Load and temperature controlled fan			
Vibration	10~500Hz, 5G 10 min./1 cycle, period for 60 min. each along X, Y, Z axes. Compliance to IEC 68-2-6, IEC 68-2-64				
MTBF	HRS certified MIL-HDBK-217F	74,710			hours
PHYSICAL SPECIFICATIONS					
Weight		2.27 lbs (1.03kg)			
Dimensions (L x W x H)		7.835 x 4.134 x 1.614 inches (199.0 x 105.0 x 41.0 mm)			
SAFETY & EMC (See Note 3)					
Safety Approvals		UL 60950-1; EN 60950-1			
EMI (Conduction & Radiation)		EN55022 Class B			
Power Harmonic & Voltage Fluctuation and Flicker		EN61000-3-2; EN61000-3-3			
EMS Immunity		EN55024; IEC 61000-4-2, 3, 4, 5, 6, 8, 11			

DERATING CURVES



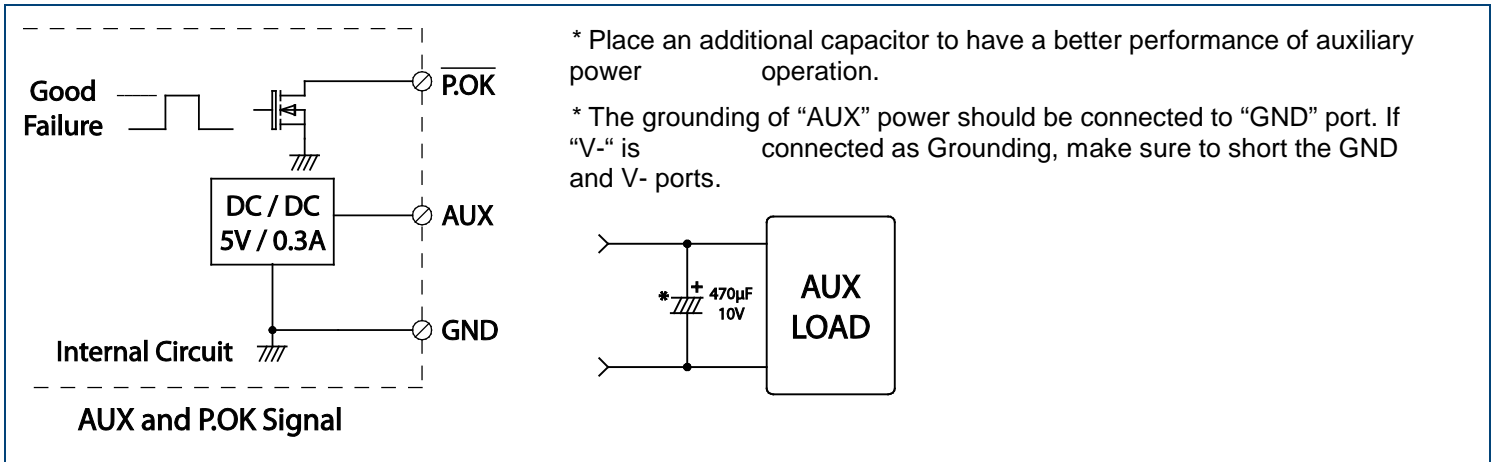
MECHANICAL DRAWING



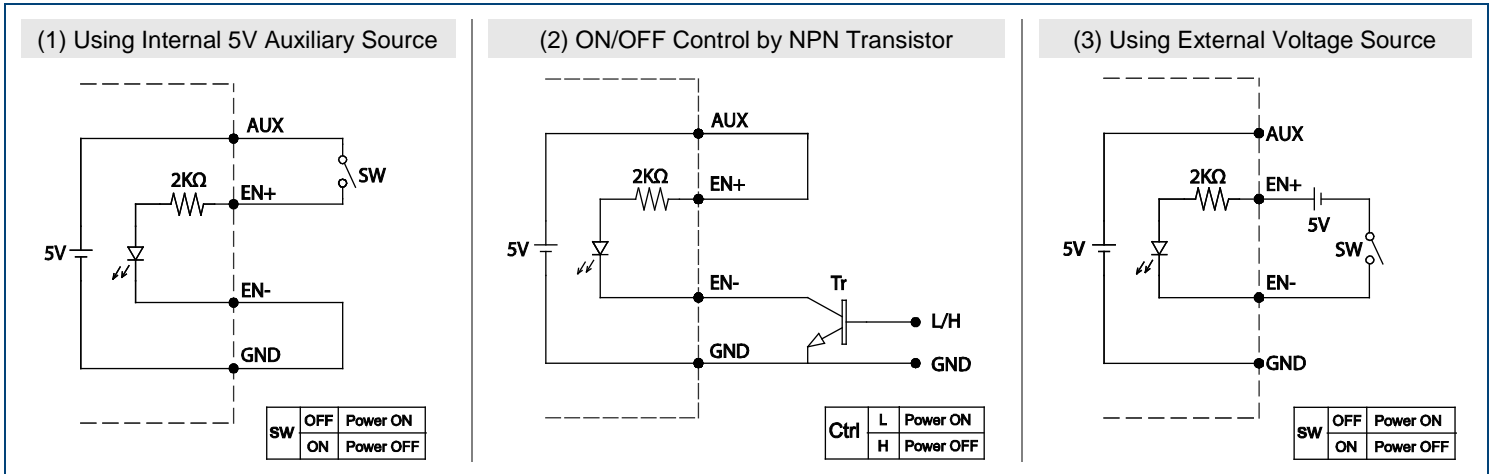
AC Input & DC Output Pin Connections	
Pin No.	Function
1	AC/L
2	AC/N
3	FG
4	-V
5	-V
6	+V
7	+V

Control Pin Number Assignment (CN2): JST S8B-PHDSS or Equivalent				
Pin No.	Function	Description	Mating Housing	Terminal
1	AUX	+5V/0.3A Auxiliary Power	PHDR-08VS	SPHD-002T-P05
2	GND	Ground		
3	P-OK	Power OK		
4	EN-	Remote ON/OFF (-)		
5	GND	Ground		
6	EN+	Remote ON/OFF (+)		
7	VS+	Remote Voltage Sense (+)		
8	VS-	Remote Voltage Sense (-)		

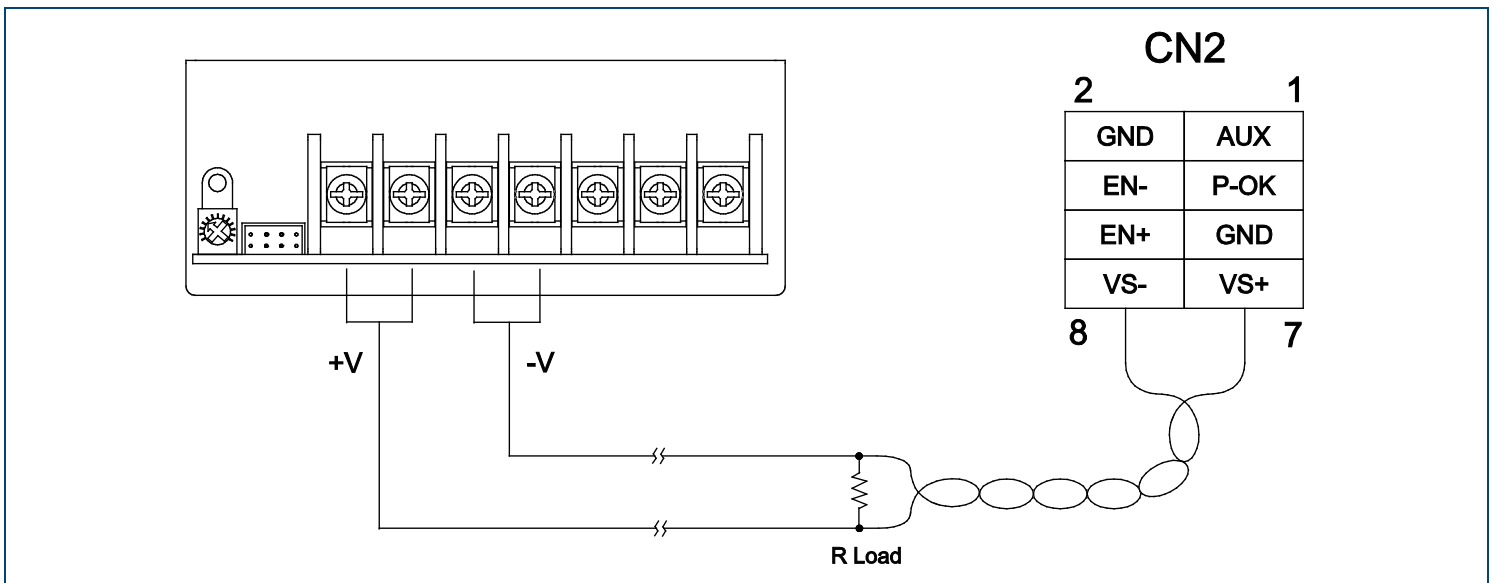
POWER OK SIGNAL & AUXILIARY OUTPUT



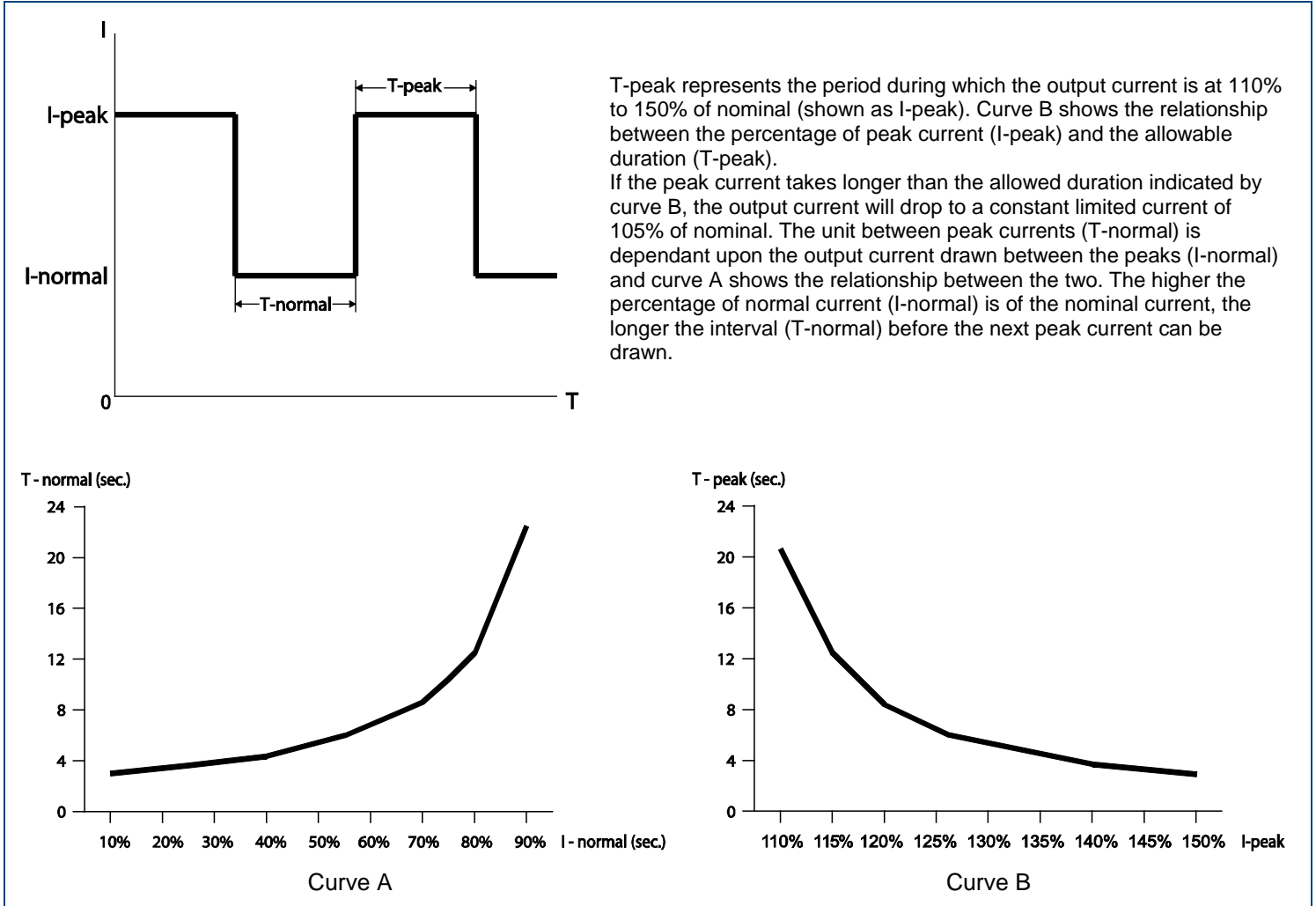
REMOTE ON/OFF



REMOTE SENSE



PEAK LOADING



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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