POWER

Technical Reference Note

AXA10W Series

10 Watts

DC/DC Converter

Total Power:	10 Watts
Input Voltage:	9 to 36 Vdc
	18 to 75 Vdc
# of Outputs:	Single /Dual

Special Features

- Package size 1.0” x 1.0” x 0.4”
- Ultra-wide 4:1 input range
- High efficiency up to 87%
- Operating temperature range: -40 ^{O}C to +80 ^{O}C
- Output voltage adjustable
- I/O isolation voltage 1500Vdc
- Remote ON/OFF control
- Input filter complies to EN55022, Class A& FCC, Level A
- Shielded metal case with isolated base plate
- 3 Years Product Warranty

Safety

cUL/UL 60950-1
IEC/EN 60950-1

Product Descriptions

The AXA10W series are single and dual output DC/DC converter modules with industry standard pin configuration. All models feature ultra-wide 4:1 input range with excellent output voltage regulation. The AXA10W series can deliver up to 10W output power from the single or dual output module with high 87% typical efficiency and excellent thermal performance over an operating ambient temperature range of -40 ^{O}C ~ +80 ^{O}C.

Suitable for a wide range of applications in nearly any industry, the AXA10W was particularly designed with battery operated equipment, instrumentation and distributed power applications and other space critical applications in mind. The AXA10W series can be ordered with optional heatsink attached to optimize thermal management.

ARTESYN™
An Advanced Energy Company

Model Numbers

Model	Input Voltage	Output Voltage	Maximum Load	Efficiency
AXA02F18-L	9-36Vdc	3.3V	2.2A	86%
AXA02A18-L	9-36Vdc	5V	2A	84%
AXA00B18-L	9-36Vdc	12V	0.83A	86%
AXA00C18-L	9-36Vdc	15V	0.66A	87%
AXA000H18-L	9-36Vdc	24V	0.41A	86%
AXA00AA18-L	9-36Vdc	±5V	±1A	84%
AXA000BB18-L	9-36Vdc	±12V	±0.41 A	86%
AXA000CC18-L	9-36Vdc	±15 V	±0.33 A	87%
AXA02F36-L	18-75 Vdc	3.3V	2.2A	85%
AXA02A36-L	18-75 Vdc	5V	2A	84%
AXA00B36-L	18-75 Vdc	12V	0.83A	86%
AXA00C36-L	18-75 Vdc	15V	0.66A	87%
AXA000H36-L	18-75 Vdc	24V	0.41A	86%
AXA00AA36-L	18-75 Vdc	±5V	±1A	84%
AXA000BB36-L	18-75 Vdc	±12 V	±0.41 A	86%
AXA000CC36-L	18-75 Vdc	±15 V	±0.33 A	87%

Options

Heatsink (-HS)

Electrical Specifications

Absolute Maximum Ratings

Stress in excess of those listed in the “Absolute Maximum Ratings” may cause permanent damage to the power supply. These are stress ratings only and functional operation of the unit is not implied at these or any other conditions above those given in the operational sections of this TRN. Exposure to any absolute maximum rated condition for extended periods may adversely affect the power supply’s reliability.

Table 1. Absolute Maximum Ratings:

Parameter	Model	Symbol	Min	Typ	Max	Unit
Input Voltage Operating -Continuous	24V input Models 48V input Models	$V_{IN,DC}$	9 18	- -	36 75	Vdc Vdc
Maximum Output Power	All models	$P_{O,max}$	-	-	10	W
Isolation Voltage Input to output	All models		1500	-	-	Vdc
Isolation Resistance 500Vdc	All models		1000	-	-	Mohm
Isolation Capacitance 100KHz, 1V	All models		-	-	1500	pF
Operating Ambient Temperature	All models	T_A	-40	-	+80	^{O}C
Operating Case Temperature	All models	T_{CASE}	-40	-	+100	^{O}C
Storage Temperature	All models	T_{STG}	-50	-	+125	^{O}C
Humidity (non-condensing) Operating Non-operating	 All models All models		 - -	 - -	 95 95	 % %

Input Specifications

Table 2. Input Specifications:

Parameter		Condition	Symbol	Min	Nom	Max	Unit
Operating Input Voltage, DC	24V Input Models 48V Input Models	All	$V_{IN,DC}$	9 18	24 48	36 75	Vdc
Input Surge Voltage	24V Input Models 48V Input Models	1 sec, max	$V_{IN,surge}$	-0.7 -0.7	- -	50 100	Vdc
Start-up Threshold Voltage	24V Input Models 48V Input Models	All	$V_{IN,ON}$	- -	- -	9 18	Vdc
Under Voltage Shutdown	24V Input Models 48V Input Models	All	$V_{IN,OFF}$	- -	- -	8.5 17	Vdc
Input reflected ripple current	All Models	5 to 20MHz,12uH source impedance	$I_{IN,ripple}$	-	30	-	mA
Input Current	AXA02F18-L AXA02A18-L AXA00B18-L AXA00C18-L AXA00H18-L AXA00AA18-L AXA000BB18-L AXA000CC18-L AXA02F36-L AXA02A36-L AXA00B36-L AXA00C36-L AXA000H36-L AXA00AA36-L AXA000BB36-L AXA000CC36-L	$V_{IN,DC}=V_{IN,nom}$	$I_{IN,full\ load}$	- - - - - - - - - - - - - - - -	352 496 483 474 477 496 477 474 180 248 241 237 238 248 238 237	- - - - - - - - - - - - - - - -	mA
No Load Input Current (V_O =On, I_O = 0A)	AXA02F18-L AXA02A18-L AXA00B18-L AXA00C18-L AXA00H18-L AXA00AA18-L AXA000BB18-L AXA000CC18-L AXA02F36-L AXA02A36-L AXA00B36-L AXA00C36-L AXA000H36-L AXA00AA36-L AXA000BB36-L AXA000CC36-L	$V_{IN,DC}=V_{IN,nom}$	$I_{IN,no-load}$	- - - - - - - - - - - - - - - -	30 30 30 30 30 30 30 30 20 20 20 20 20 20 20 20	- - - - - - - - - - - - - - - -	mA

Input Specifications

Table 2. Input Specifications con't:

Parameter		Condition	Symbol	Min	Nom	Max	Unit
Efficiency @Max. Load	AXA02F18-L	$V_{IN,DC}=V_{IN,nom}$ $I_O=I_{O,max}$ $T_A=25\ ^OC$	η	-	86	-	%
	AXA02A18-L			-	84	-	
	AXA00B18-L			-	86	-	
	AXA00C18-L			-	87	-	
	AXA00H18-L			-	86	-	
	AXA00AA18-L			-	84	-	
	AXA000BB18-L			-	86	-	
	AXA000CC18-L			-	87	-	
	AXA02F36-L			-	85	-	
	AXA02A36-L			-	84	-	
	AXA00B36-L			-	86	-	
	AXA00C36-L			-	87	-	
	AXA000H36-L			-	86	-	
	AXA00AA36-L			-	84	-	
	AXA000BB36-L			-	86	-	
	AXA000CC36-L			-	87	-	
Remote On/OFF Control		Remote ON Remote OFF		2.5 0	- -	50 1	Vdc
Reverse Polarity Input Current		All		-	-	1.5	A
Short Circuit Input Power		All		-	2.5	-	W
Internal Power Dissipation		All		-	-	5	W
Internal Filter Type			Internal LC Filter (for EN55022,Class A/ and FCC level A compliance)				

Output Specifications

Table 3. Output Specifications:

Parameter		Condition	Symbol	Min	Nom	Max	Unit
Output Voltage Set-Point	AXA02F18-L	$V_{IN,DC}=V_{IN,nom}$ $I_O=I_{O,max}$ T_A =25 ^{O}C	V_O	3.234	3.3	3.366	Vdc
	AXA02A18-L			4.90	5	5.10	
	AXA00B18-L			11.76	12	12.24	
	AXA00C18-L			14.70	15	15.30	
	AXA00H18-L			23.52	24	24.48	
	AXA00AA18-L			±4.90	±5	±5.10	
	AXA000BB18-L			±11.76	±12	±12.24	
	AXA000CC18-L			±14.70	±15	±15.30	
	AXA02F36-L			3.234	3.3	3.234	
	AXA02A36-L			4.90	5	4.90	
	AXA00B36-L			11.76	12	11.76	
	AXA00C36-L			14.70	15	14.70	
	AXA000H36-L			23.52	24	23.52	
	AXA00AA36-L			±4.90	±5	±4.90	
	AXA000BB36-L			±11.76	±12	±11.76	
	AXA000CC36-L			±14.70	±15	±14.70	
Output Current	AXA02F18-L	Convection cooling	I_O	0.33	-	2.20	A
	AXA02A18-L			0.30	-	2.00	
	AXA00B18-L			0.125	-	0.83	
	AXA00C18-L			0.10	-	0.66	
	AXA00H18-L			0.062	-	0.41	
	AXA00AA18-L			±0.15	-	±1.0	
	AXA000BB18-L			±0.062	-	±0.41	
	AXA000CC18-L			±0.05	-	±0.33	
	AXA02F36-L			0.33	-	2.20	
	AXA02A36-L			0.30	-	2.00	
	AXA00B36-L			0.125	-	0.83	
	AXA00C36-L			0.10	-	0.66	
	AXA000H36-L			0.062	-	0.41	
	AXA00AA36-L			±0.15	-	±1.0	
	AXA000BB36-L			±0.062	-	±0.41	
	AXA000CC36-L			±0.05	-	±0.33	

Output Specifications

Table 3. Output Specifications con't:

Parameter		Condition	Symbol	Min	Nom	Max[1]	Unit
V_O Load Capacitance	AXA02F18-L AXA02A18-L AXA00B18-L AXA00C18-L AXA00H18-L AXA00AA18-L AXA000BB18-L AXA000CC18-L AXA02F36-L AXA02A36-L AXA00B36-L AXA00C36-L AXA000H36-L AXA00AA36-L AXA000BB36-L AXA000CC36-L	All		- - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - -	560 560 150 150 68 220# 100# 100# 560 560 150 150 68 220# 100# 100#	uF
Output Ripple, pk-pk		20MHz bandwidth, measured with a 1uF MLCC and a 10uF Tantalum Capacitor	V_O	-	60	100	mV
Line Regulation		$V_{IN,DC=}V_{IN,min}$ to $V_{IN,max}$	$\pm\%V_O$	-	0.3	1.0	%
Load Regulation		I_O=15%$I_{O,max}$ to $I_{O,max}$	$\pm\%V_O$	-	0.5	-	%
V_O Dynamic Response	Peak Deviation Settling Time	25% load change, slew rate = 1A/uS	$\pm\%V_O$ t_s	- -	3 300	6 600	% uSec
Output Voltage Overshoot		All	$\%V_O$	-		5	%
Temperature Coefficient		All	%/^{O}C	-	0.01	0.02	%
Switching Frequency		All	f_{SW}	-	450	-	KHz
Output Over Current Protection		All		110	150	-	$\%I_{O,max}$
Output Short Circuit Protection		All		Hiccip Auotmatic Recovery			

Note1 - # for each output

AXA02F18-L Performance Curves

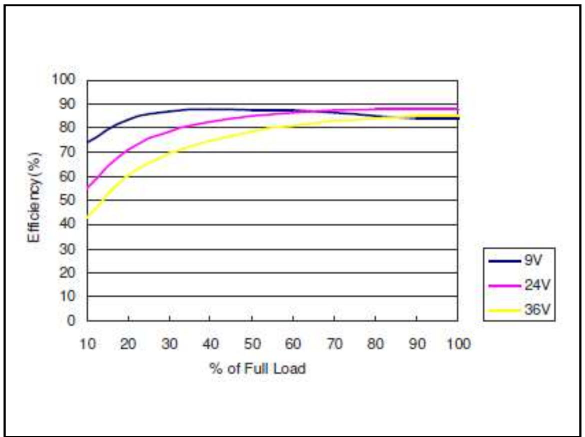


Figure 1: AXA02F18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 2.2A

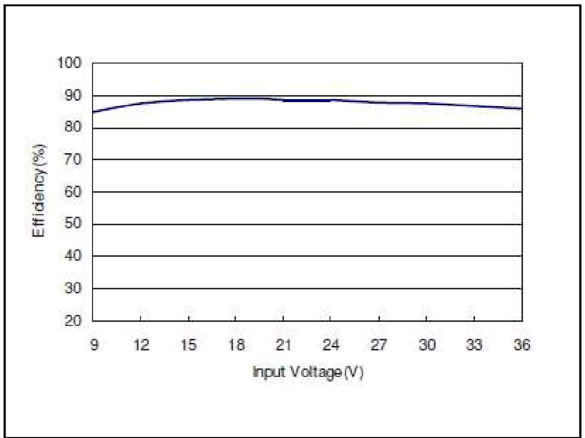


Figure 2: AXA02F18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 2.2A

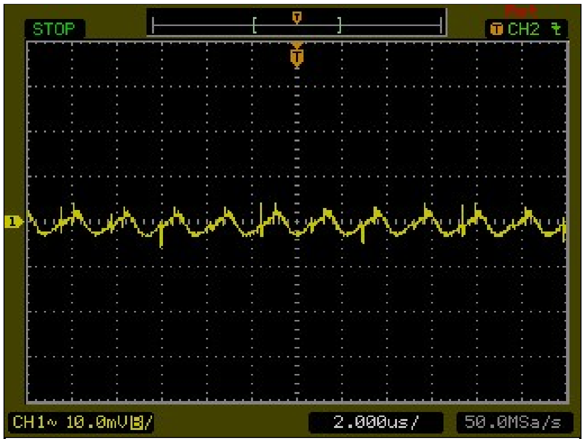


Figure 3 AXA02F18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 2.2A
Ch 1: Vo

Figure 4: AXA02F18-L Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

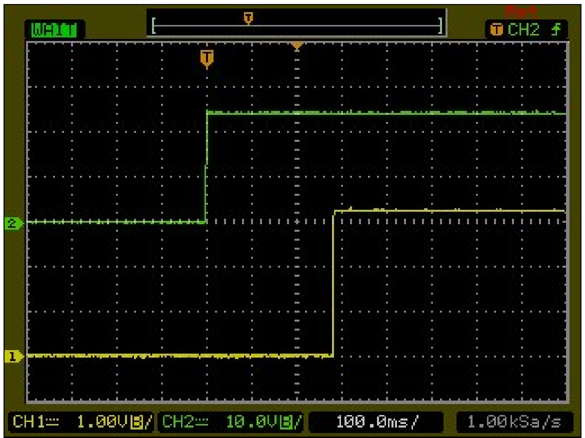


Figure 5: AXA02F18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = 2.2A
Ch1: Vo Ch2: Remote On/Off

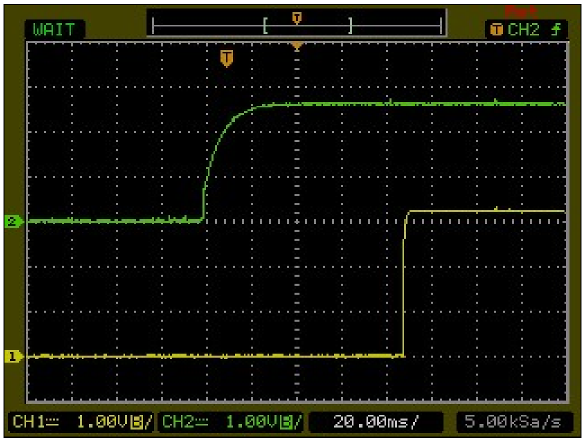


Figure 6: AXA02F18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 2.2A
Ch1: Vo Ch2: Vin

AXA02F18-L Performance Curves

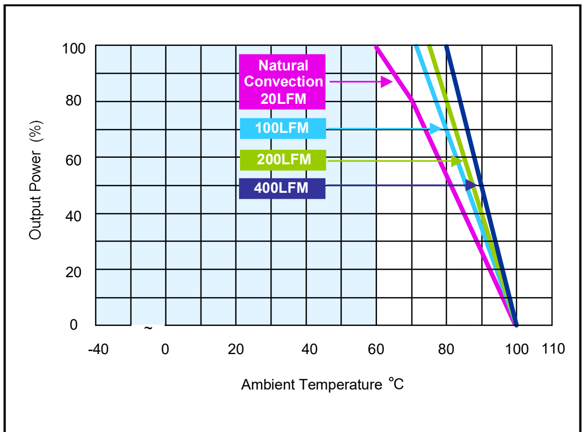


Figure 7: AXA02F18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to 2.2A

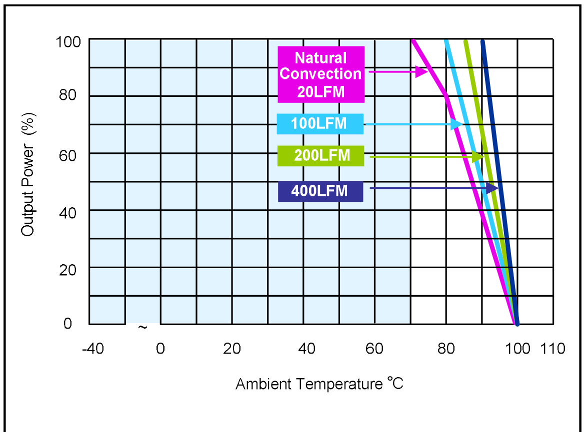


Figure 8: AXA02F18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to 2.2A

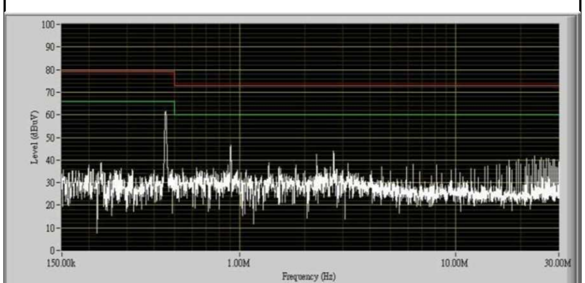


Figure 9: AXA02F18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = 2.2A

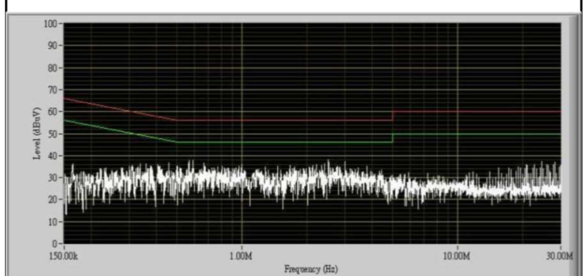


Figure 10: AXA02F18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = 2.2A

Note - All test conditions are at 25 °C

AXA02A18-L Performance Curves

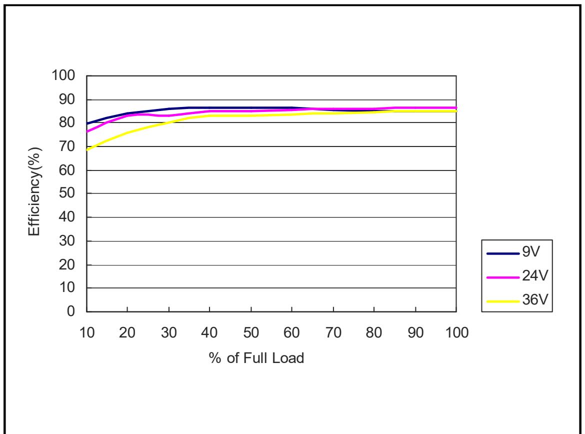


Figure 11: AXA02A18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 2A

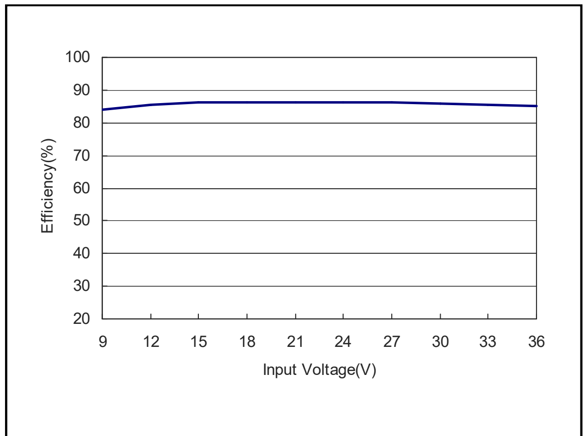


Figure 12: AXA02A18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 2A

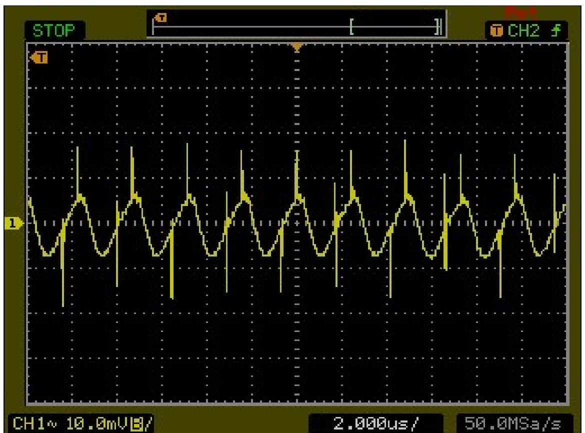


Figure 13: AXA02A18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 2A
Ch 1: Vo

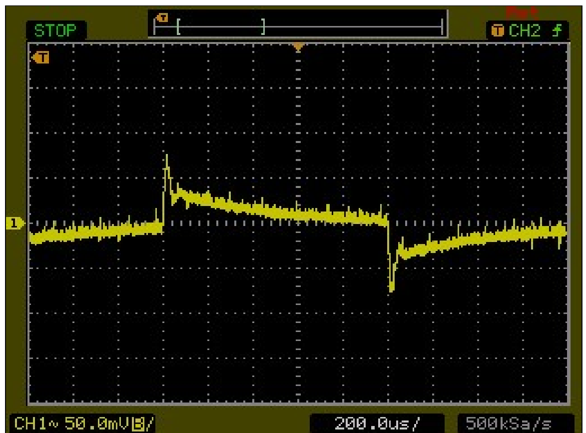


Figure 14: AXA02A18-LTransient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

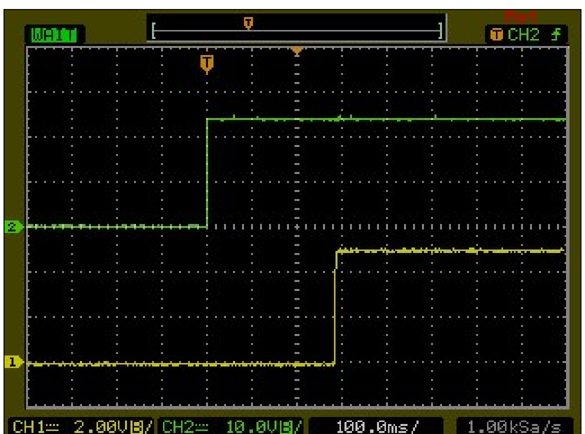


Figure 15: AXA02A18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = 2A
Ch1: Vo Ch2: Remote On/Off

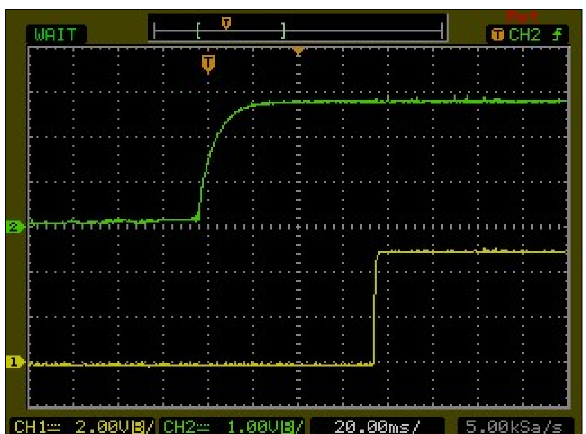


Figure 16: AXA02A18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 2A
Ch1: Vo Ch2: Vin

AXA02A18-L Performance Curves

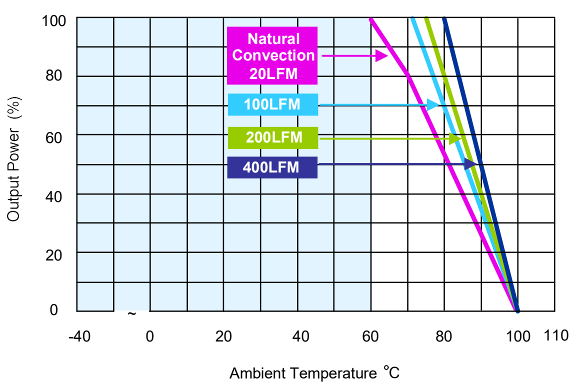


Figure 17: AXA02A18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to 2A

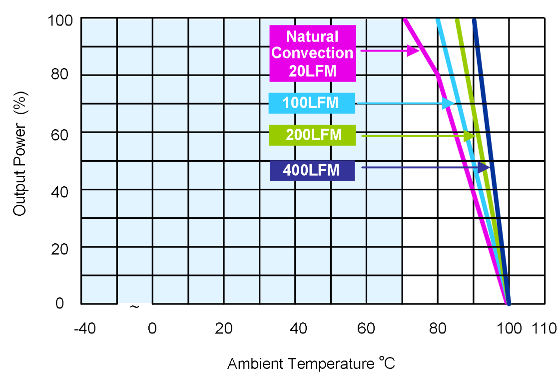


Figure 18: AXA02A18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to 2A

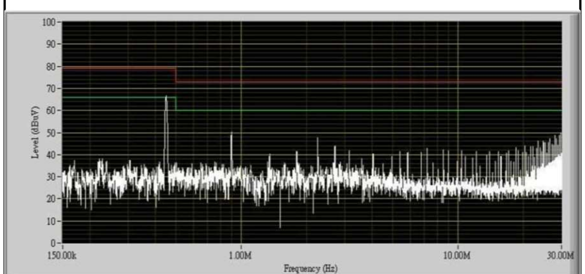


Figure 19: AXA02A18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = 2A

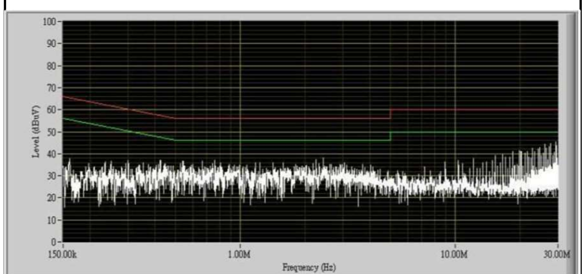


Figure 20: AXA02A18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = 2A

Note - All test conditions are at 25 ^{O}C

AXA00B18-L Performance Curves

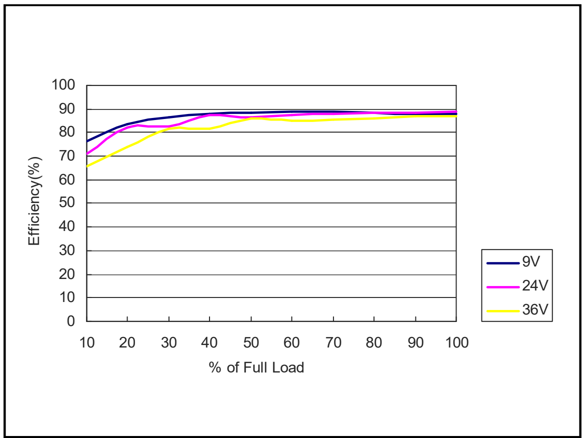


Figure 21: AXA00B18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 0.83A

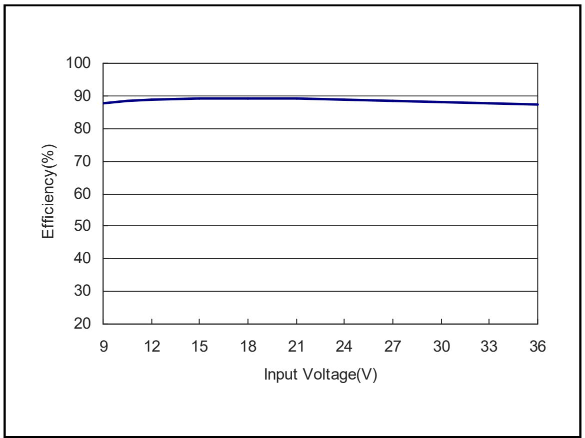


Figure 22: AXA00B18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 0.83A

Figure 23: AXA00B18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 0.83A
Ch 1: Vo

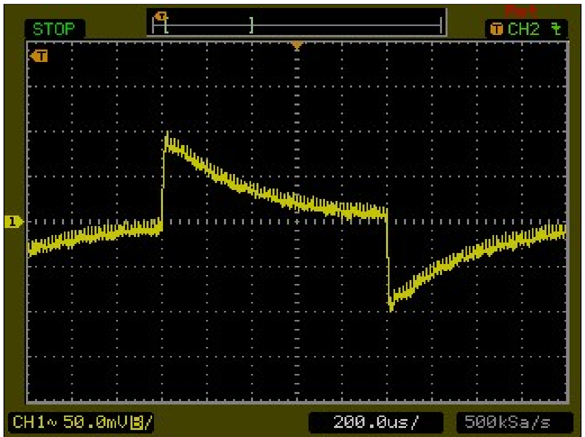


Figure 24: AXA00B18-LTransient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

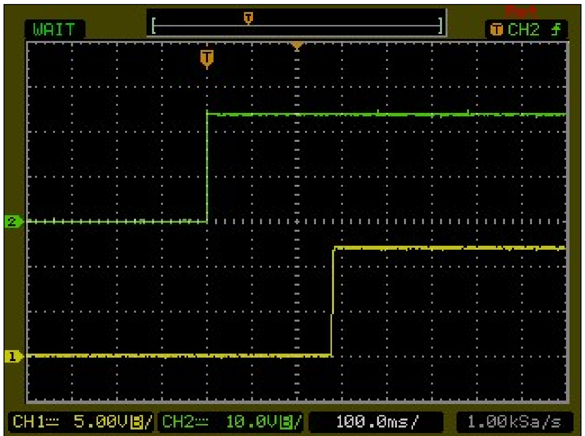


Figure 25: AXA00B18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = 0.83A
Ch1: Vo Ch2: Remote On/Off

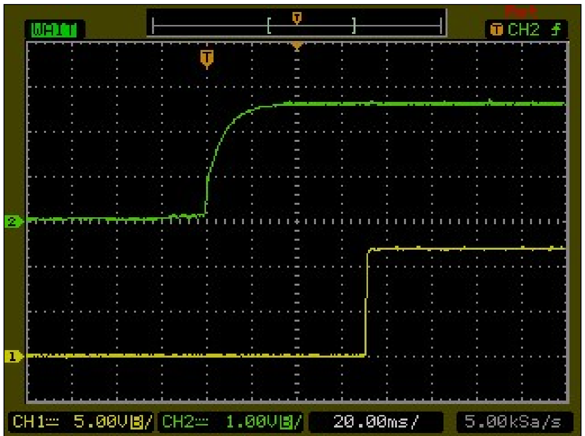


Figure 26: AXA00B18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 0.83A
Ch1: Vo Ch2: Vin

AXA00B18-L Performance Curves

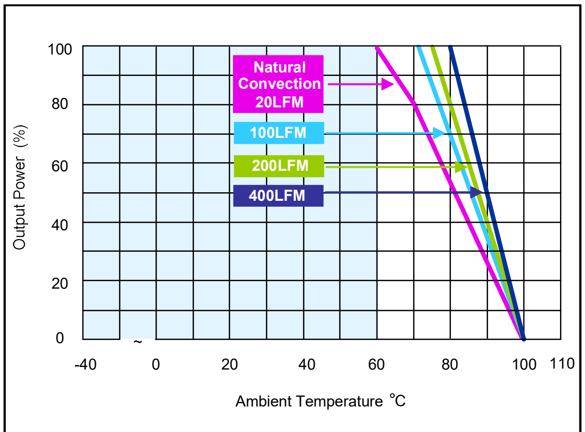


Figure 27: AXA00B18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to 0.83A

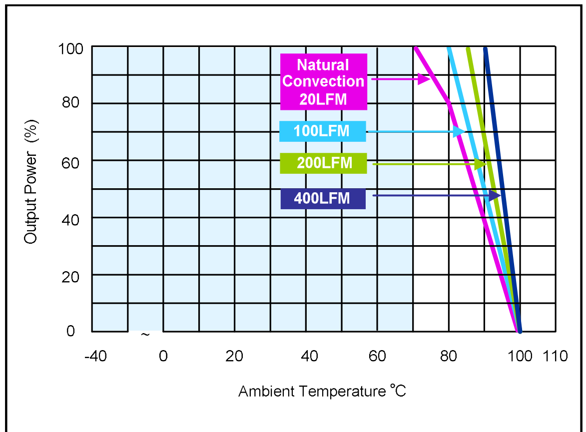


Figure 28: AXA00B18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to 0.83A

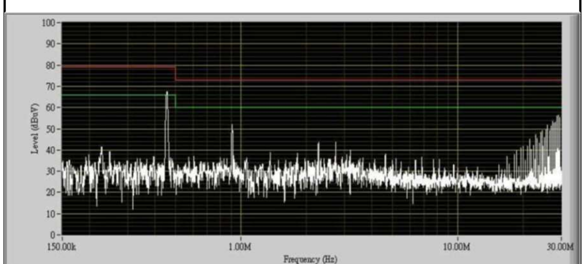


Figure 29: AXA00B18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = 0.83A

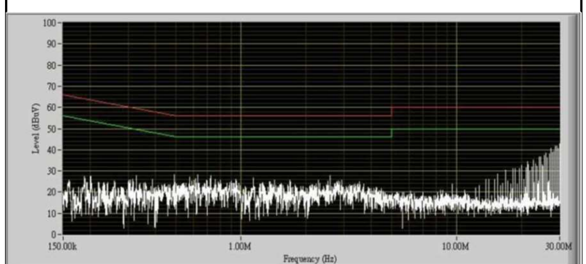


Figure 30: AXA00B18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = 0.83A

Note - All test conditions are at 25 ^{O}C

AXA00C18-L Performance Curves

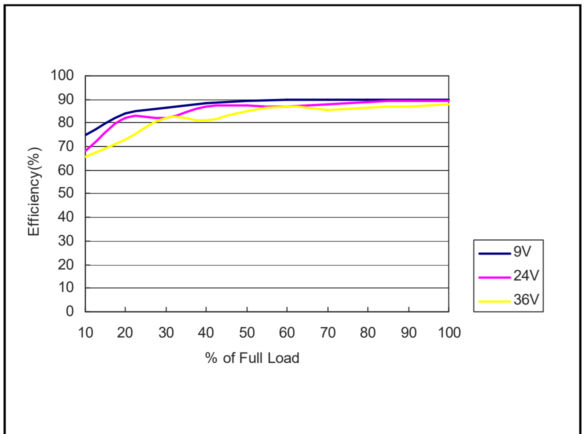


Figure 31: AXA00C18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 0.67A

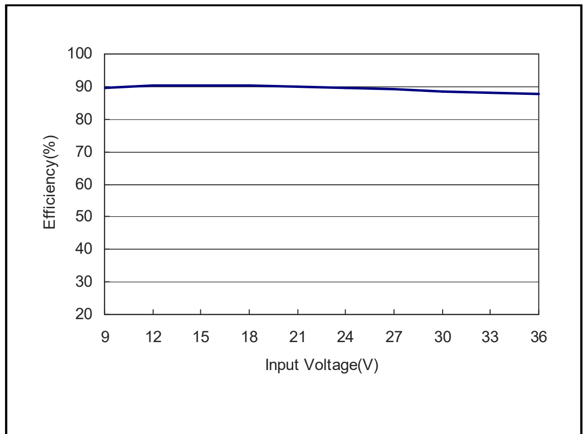


Figure 32: AXA00C18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 0.67A

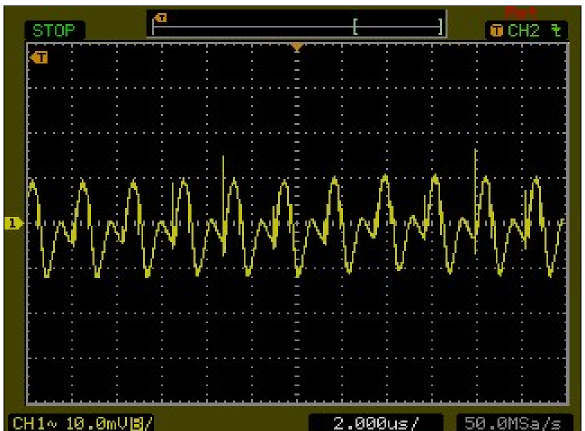


Figure 33: AXA00C18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 0.67A
Ch 1: Vo

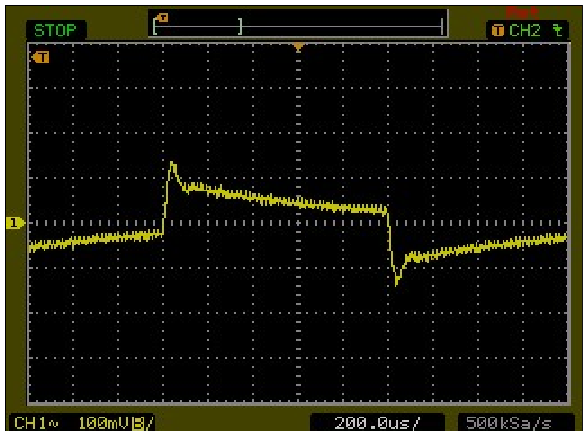


Figure 34: AXA00C18-LTransient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

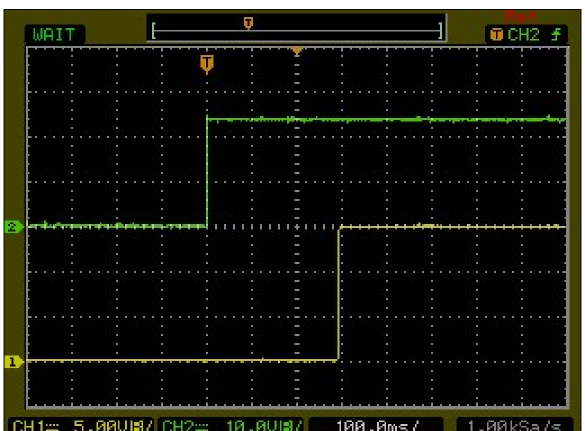


Figure 35: AXA01C18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = 1.33A
Ch1: Vo Ch2: Remote On/Off

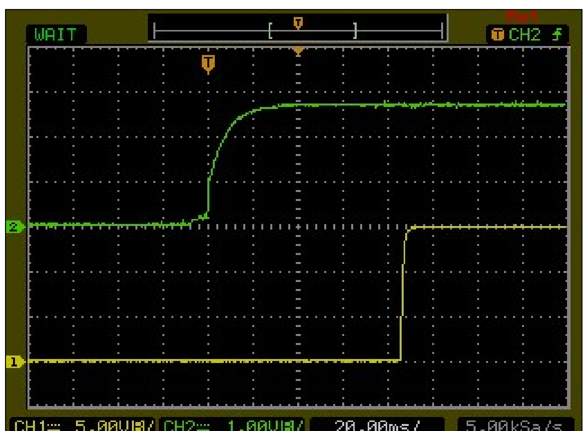


Figure 36: AXA01C18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 1.33A
Ch1: Vo Ch2: Vin

AXA00C18-L Performance Curves

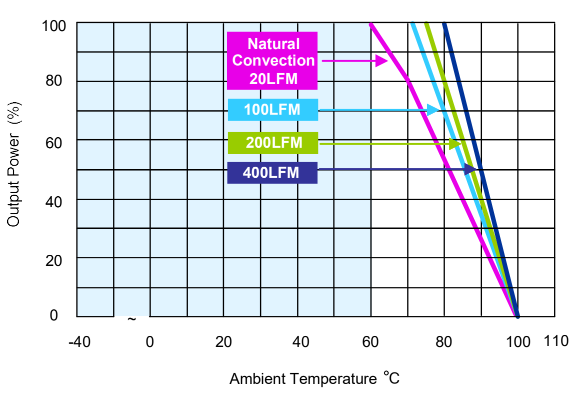


Figure 37: AXA00C18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to 0.67A

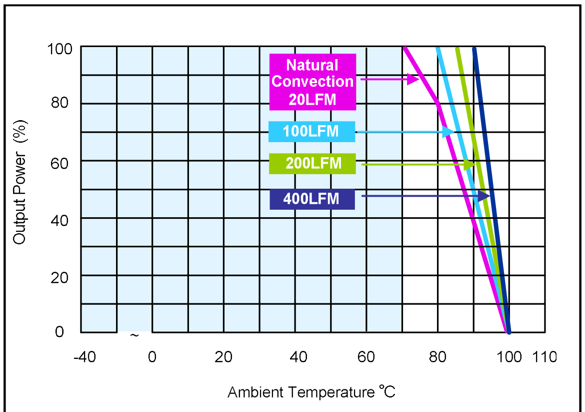


Figure 38: AXA00C18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to 0.67A

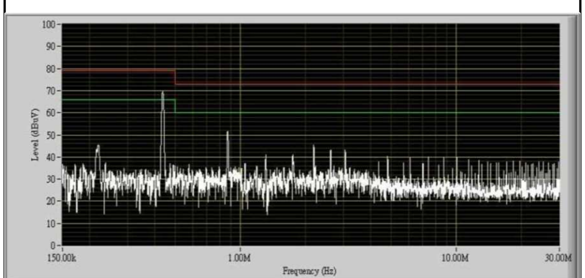


Figure 39: AXA00C18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = 0.67A

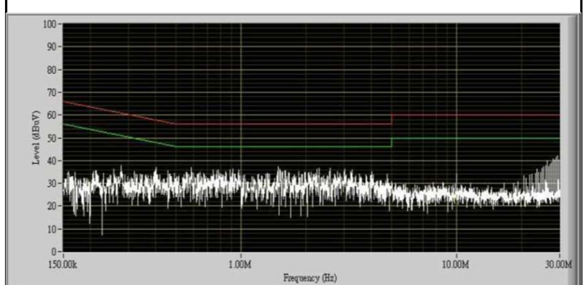


Figure 40: AXA00C18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = 0.67A

Note - All test conditions are at 25 ^{O}C

AXA000H18-L Performance Curves

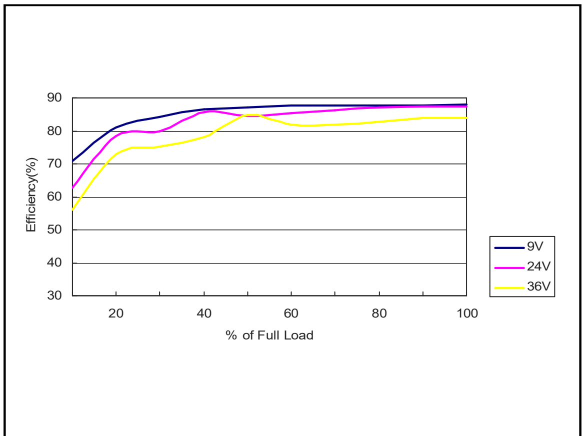


Figure 41: AXA000H18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 0.41A

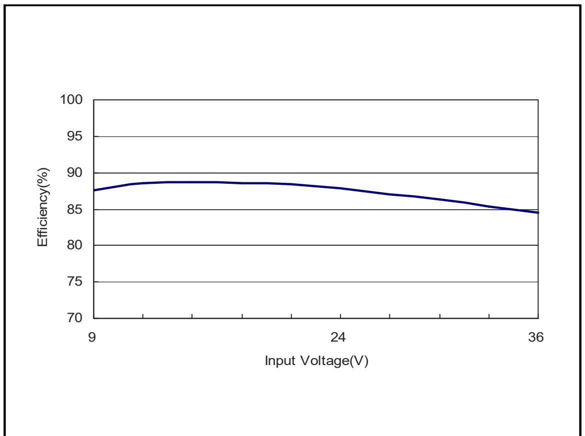


Figure 42: AXA000H18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 0.41A

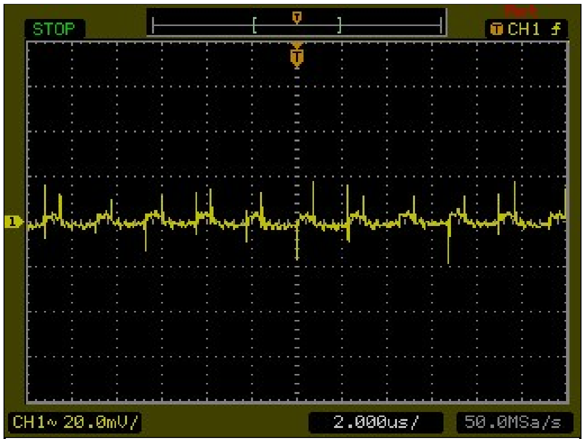


Figure 43: AXA00H18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 0.41A
Ch 1: Vo

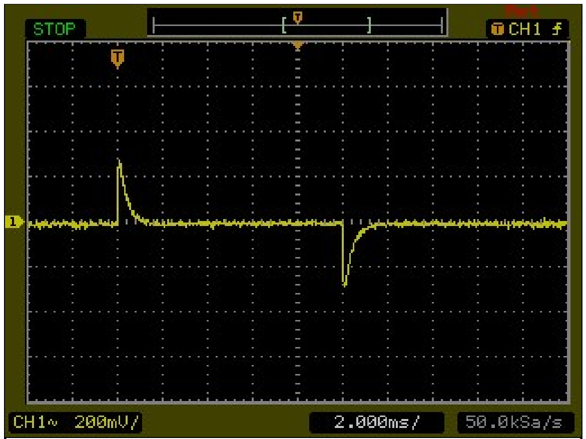


Figure 44: AXA00H18-L Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

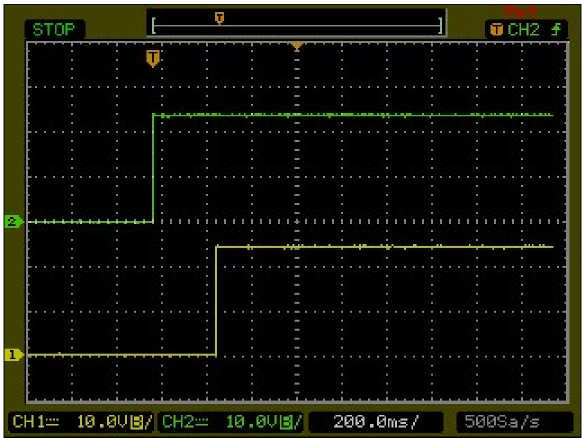


Figure 45: AXA00H18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = 0.41A
Ch1: Vo Ch2: Remote On/Off

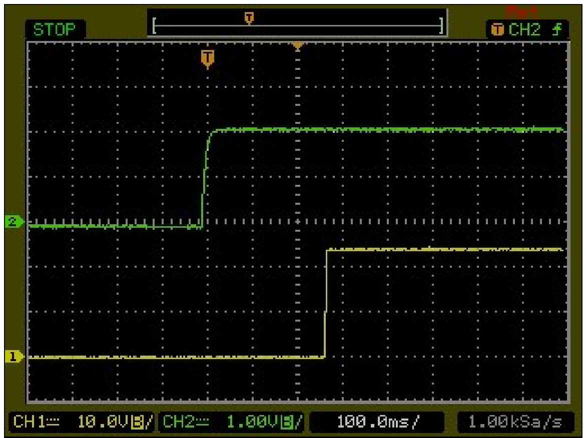


Figure 46: AXA00H18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 0.41
Ch1: Vo Ch2: Vin

AXA000H18-L Performance Curves

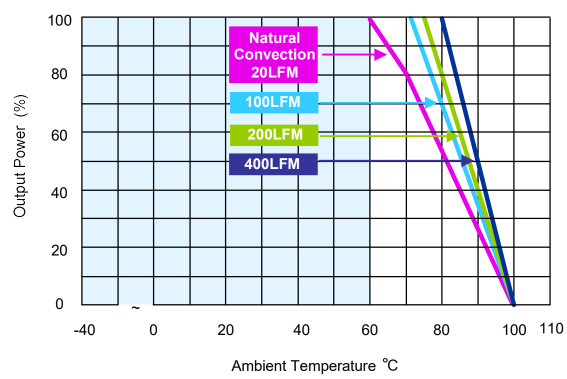


Figure 47: AXA000H18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to 0.41A

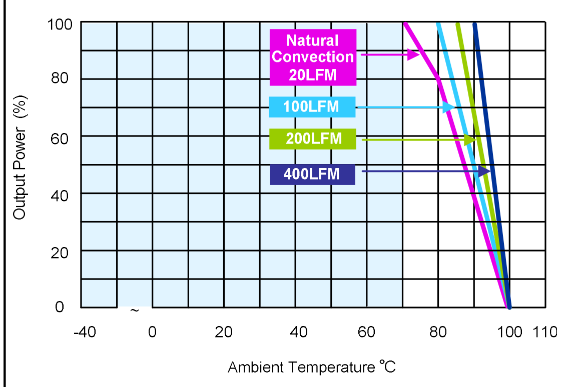


Figure 48: AXA000H18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to 0.41A

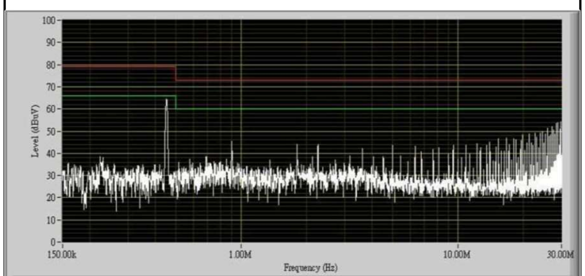


Figure 49: AXA000H18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = 0.41A

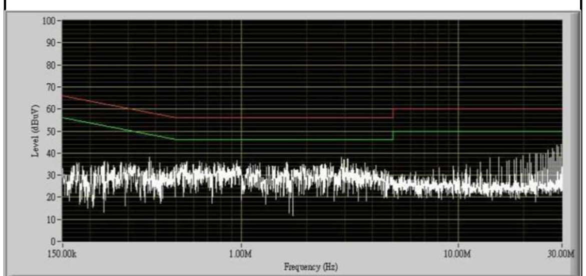


Figure 50: AXA000H18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = 0.41A

Note - All test conditions are at 25 ^{O}C

AXA00AA18-L Performance Curves

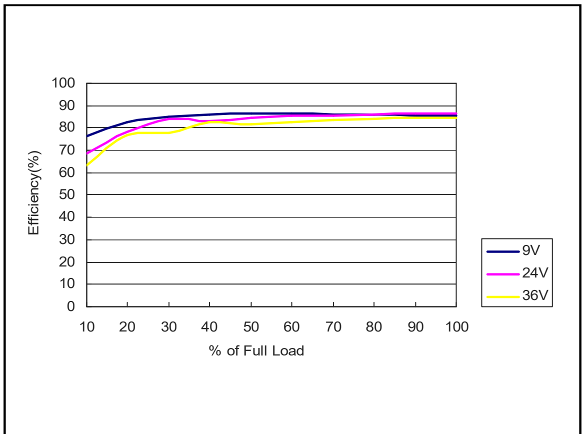


Figure 51: AXA00AA18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to ±1 A

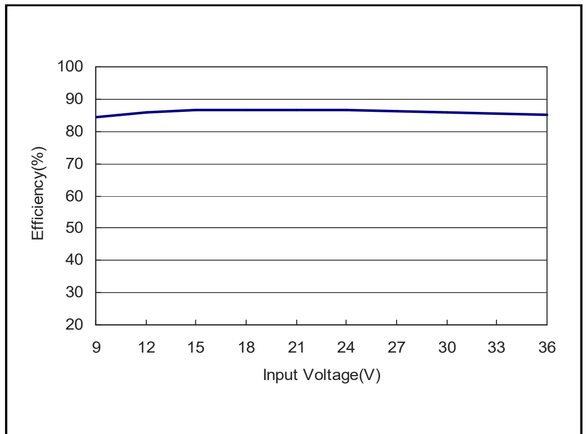


Figure 52: AXA00AA18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = ±1 A

Figure 53: AXA00AA18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = ±1A
Ch 1: Vo1 Ch2: Vo2

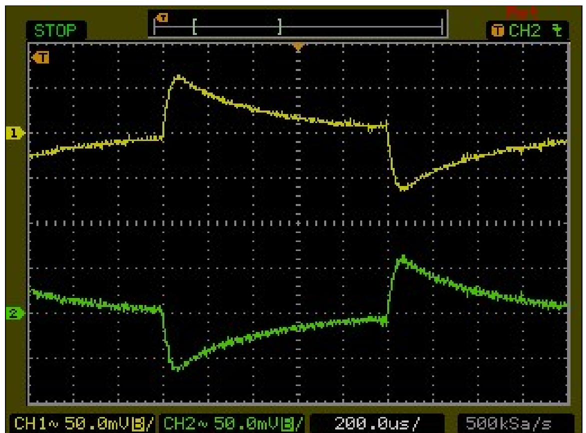


Figure 54: AXA00AA18-L Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch2: Vo2

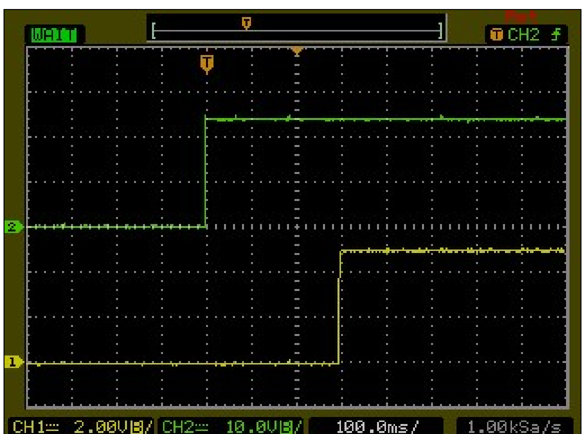


Figure 55: AXA00AA18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = ±1A
Ch1: Vo Ch2: Remote On/Off

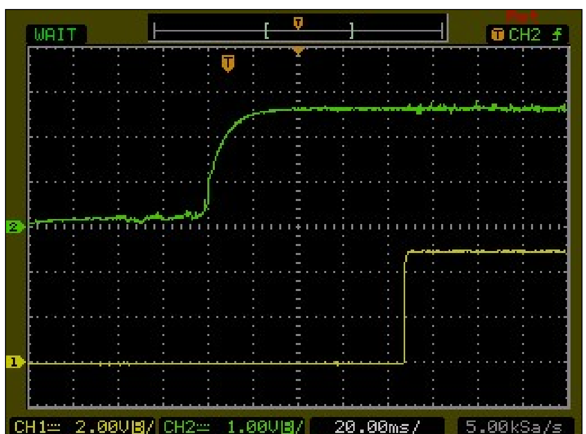


Figure 56: AXA00AA18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = ±1 A
Ch1: Vo Ch2: Vin

AXA00AA18-L Performance Curves

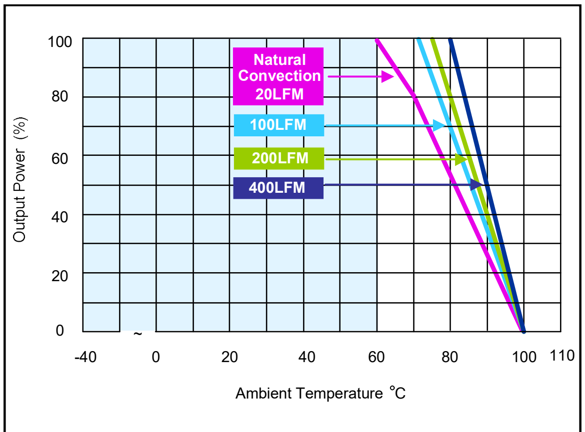


Figure 57: AXA00AA18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to ±1 A

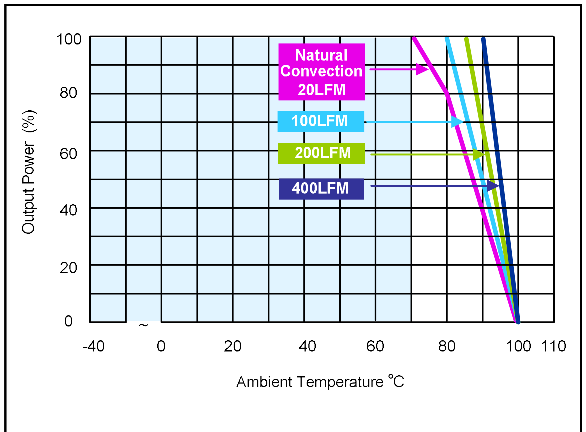


Figure 58: AXA00AA18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to ±1 A

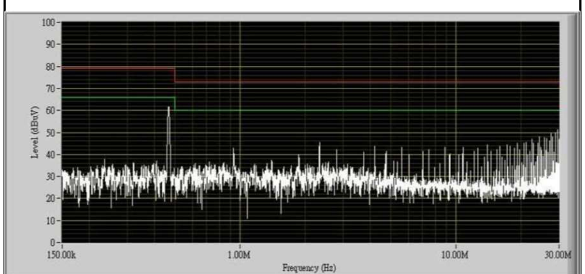


Figure 59: AXA00AA18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = ±1 A

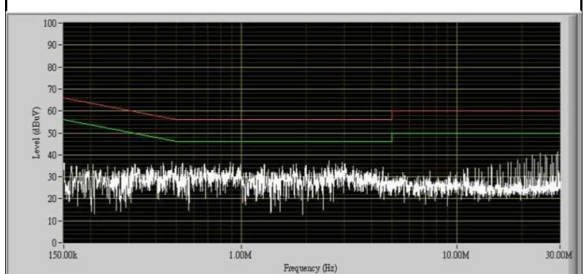


Figure 60: AXA00AA18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = ±1 A

Note - All test conditions are at 25 °C

AXA000BB18-L Performance Curves

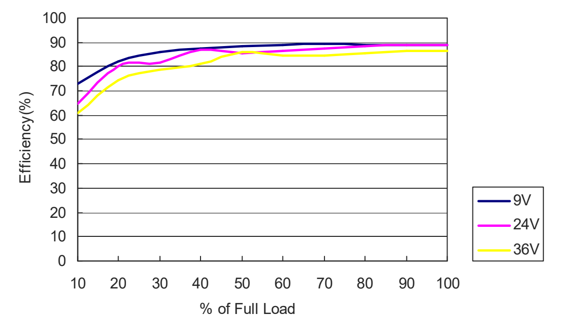


Figure 61: AXA000BB18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to ±0.41 A

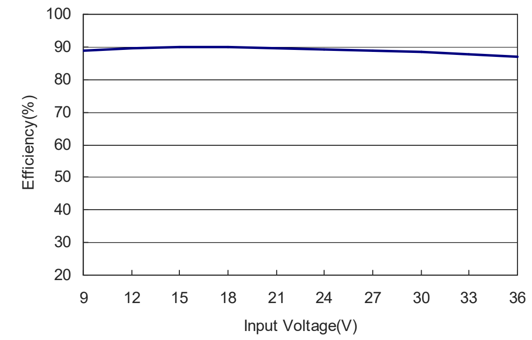


Figure 62: AXA000BB18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = ±0.41 A

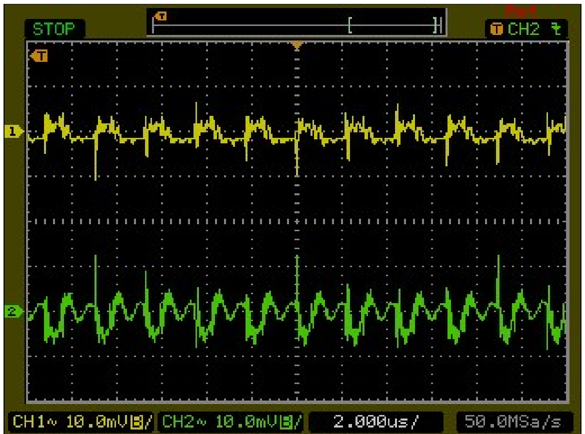


Figure 63: AXA000BB18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = ±0.41 A
Ch 1: Vo1 Ch2: Vo2

Figure 64: AXA000BB18-L Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch2: Vo2

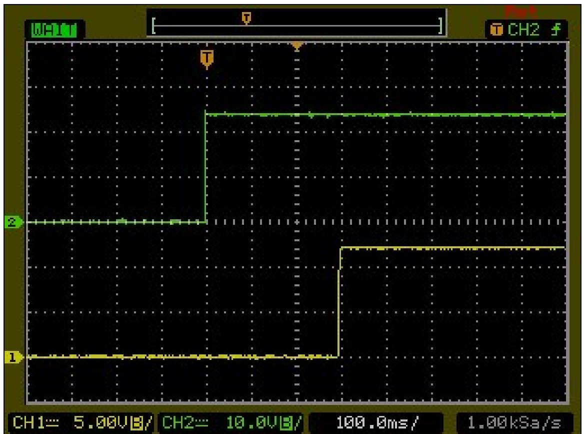


Figure 66: AXA000BB18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = ±0.41 A
Ch1: Vo Ch2: Remote On/Off

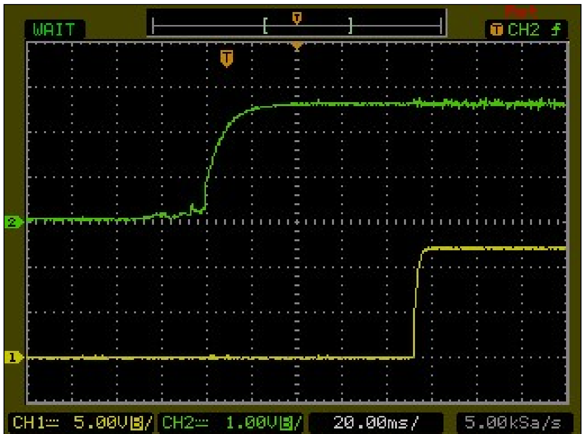


Figure 65: AXA000BB18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = ±0.41 A
Ch1: Vo Ch2: Vin

AXA000BB18-L Performance Curves

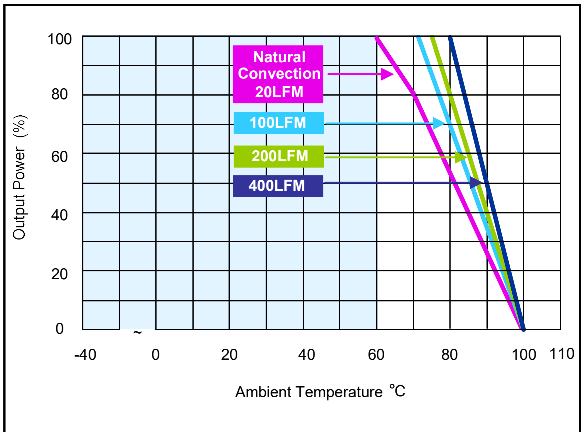


Figure 67: AXA000BB18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to ±0.41 A

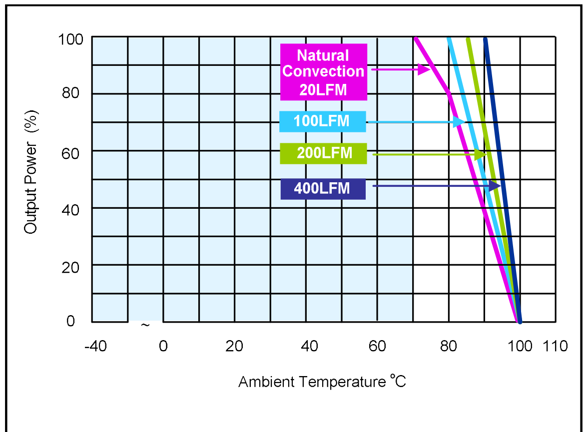


Figure 68: AXA000BB18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to ±0.41 A

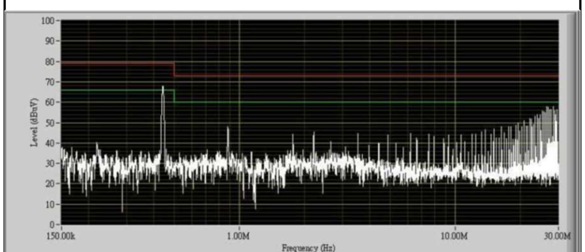


Figure 69: AXA000BB18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = ±0.41 A

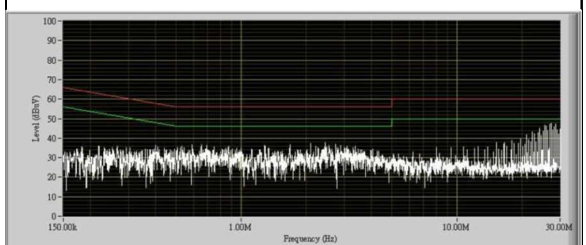


Figure 70: AXA000BB18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = ±0.41 A

Note - All test conditions are at 25 ^{O}C

AXA000CC18-L Performance Curves

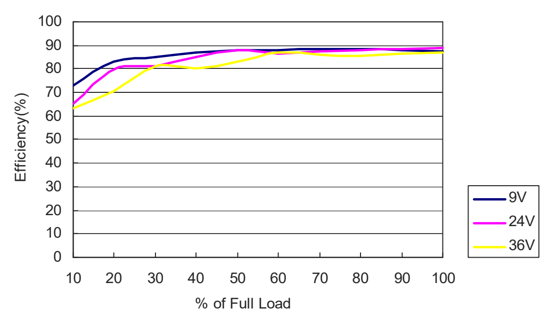


Figure 71: AXA000CC18-L Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to ±0.33 A

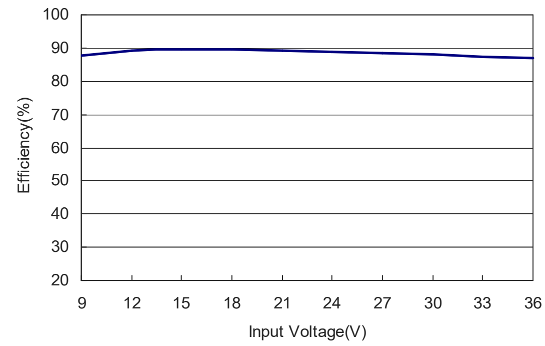


Figure 72: AXA000CC18-L Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = ±0.33 A

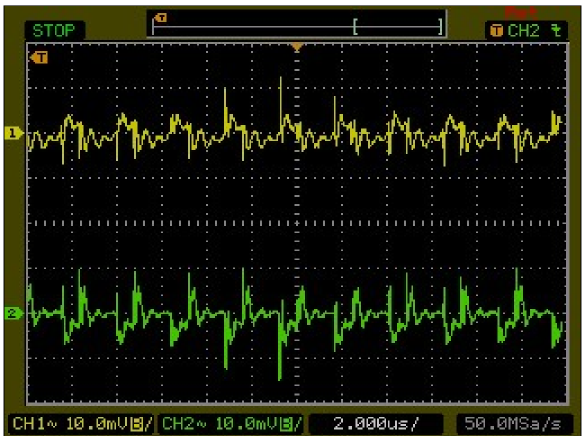


Figure 73: AXA000CC18-L Ripple and Noise Measurement
Vin = 24Vdc Load: Io = ±0.33 A
Ch 1: Vo1 Ch2: Vo2

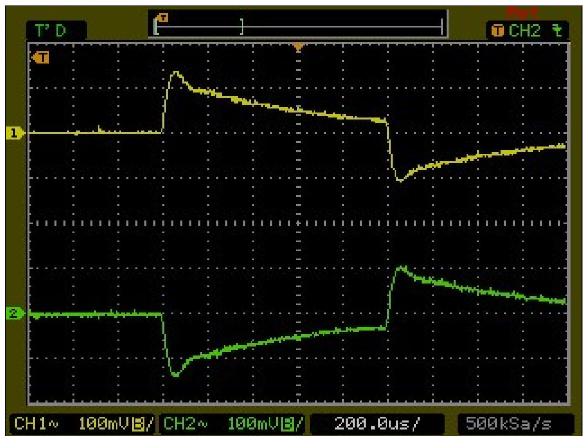


Figure 74: AXA000CC18-L Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch2: Vo2

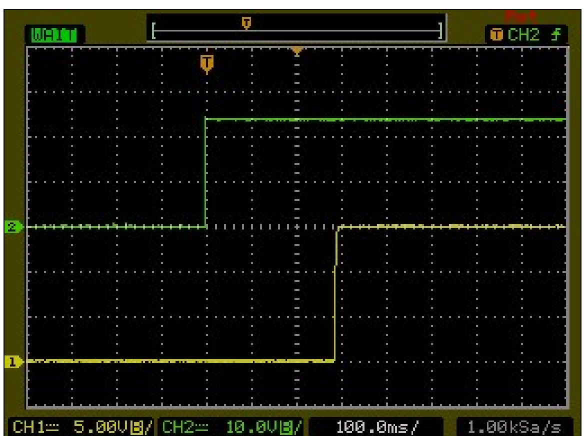


Figure 75: AXA000CC18-L Output Voltage Startup Characteristic by ON/OFF
Vin = 24Vdc Load: Io = ±0.33 A
Ch1: Vo Ch2: Remote On/Off

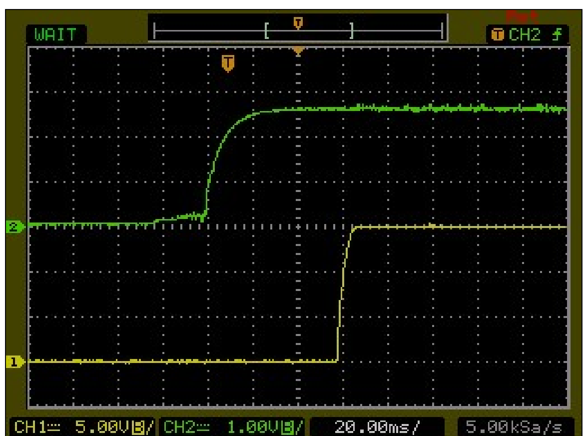


Figure 76: AXA000CC18-L Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = ±0.33 A
Ch1: Vo Ch2: Vin

AXA000CC18-L Performance Curves

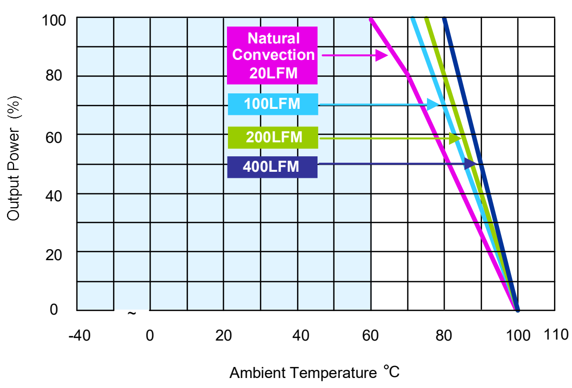


Figure 77: AXA000CC18-L Derating Curves (without heatsink)
Vin = 24Vdc Load: Io = 0 to ±0.33 A

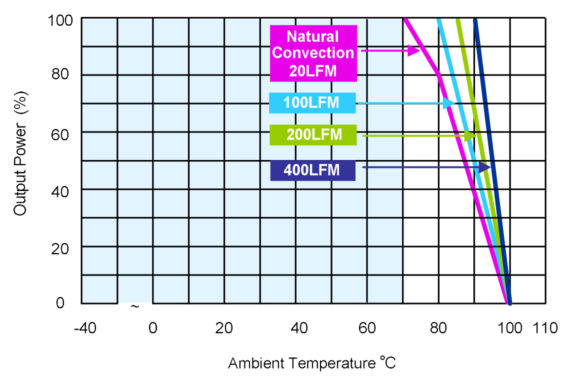


Figure 78: AXA000CC18-L Derating Curves (with heatsink)
Vin = 24Vdc Load: Io = 0 to ±0.33 A

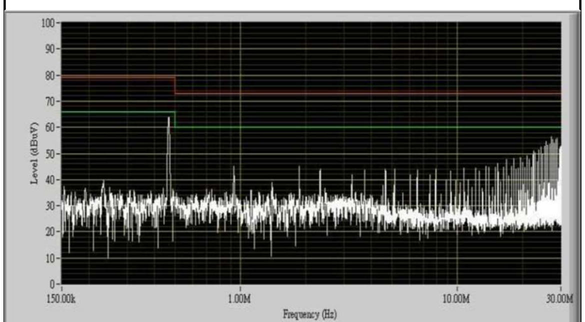


Figure 79: AXA000CC18-L Conduction Emission of EN550122 Class A
Vin = 24Vdc Load: Io = ±0.33 A

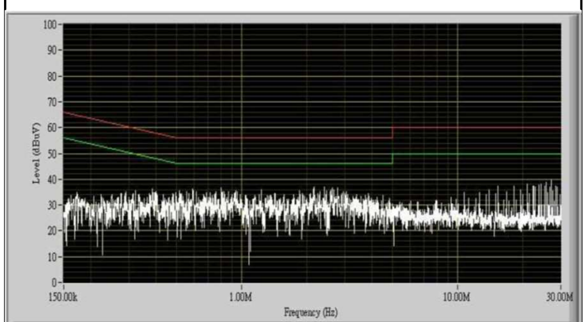


Figure 80: AXA000CC18-L Conduction Emission of EN550122 Class B
Vin = 24Vdc Load: Io = ±0.33 A

Note - All test conditions are at 25 ^{O}C

AXA02F36-L Performance Curves

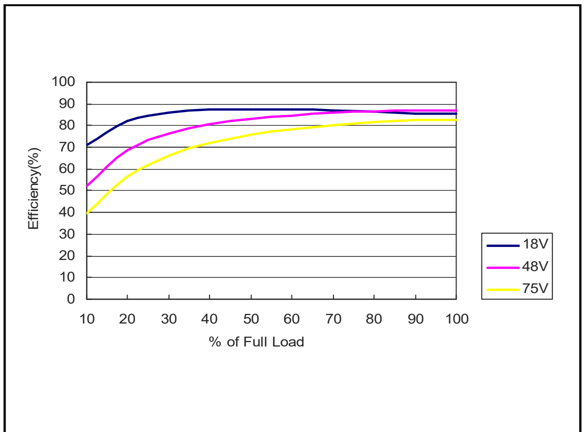


Figure 81: AXA02F36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 2.2A

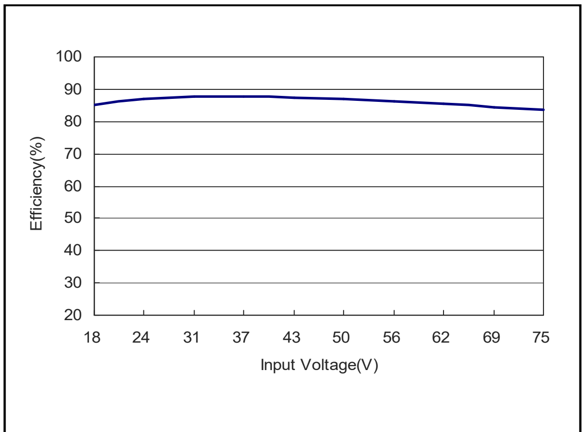


Figure 82: AXA02F36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 2.2 A

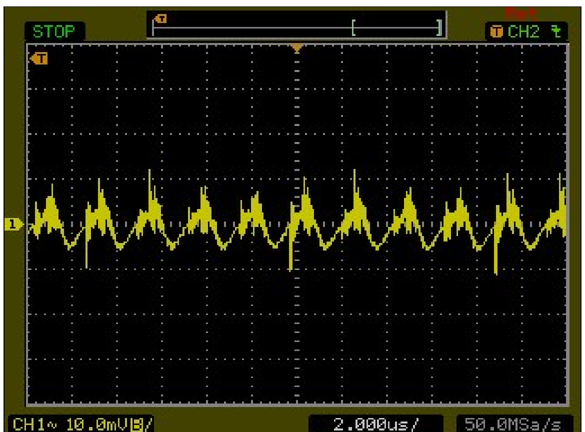


Figure 83 AXA02F36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 2.2A
Ch 1: Vo

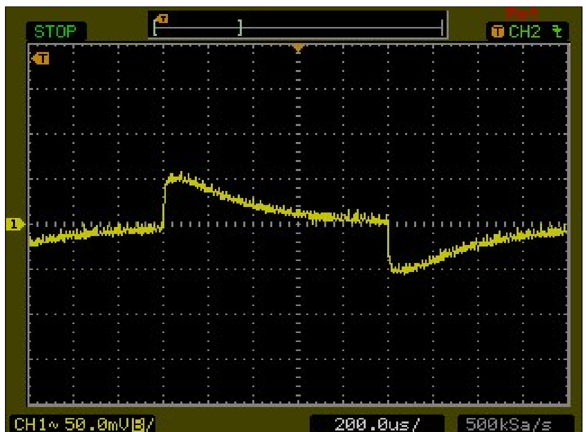


Figure 84: AAXA02F36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

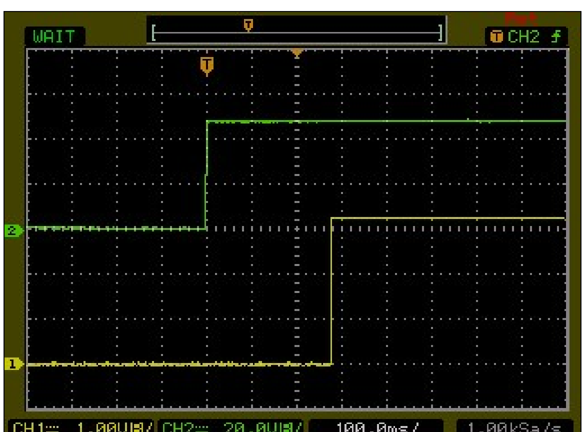


Figure 85: AXA02F36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = 2.2A
Ch1: Vo Ch2: Remote On/Off

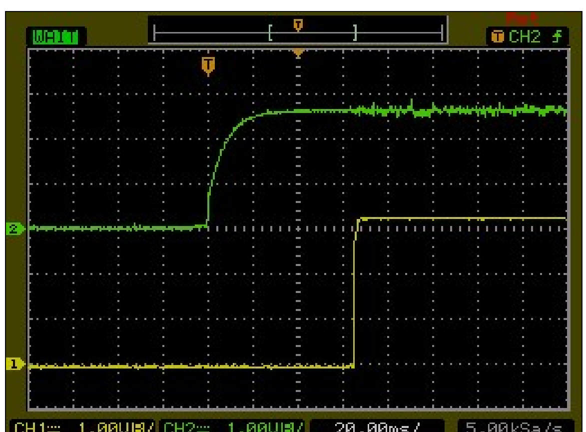


Figure 86: AXA02F36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 2.2A
Ch1: Vo Ch2: Vin

AXA02F36-L Performance Curves

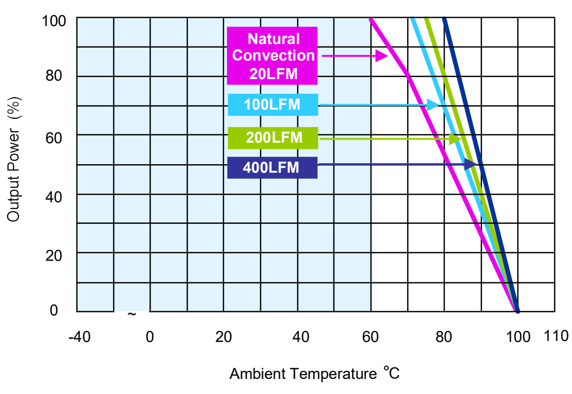


Figure 87: **AXA02F36-L Derating Curves (without heatsink)**
Vin = 48Vdc Load: Io = 0 to 2.2A

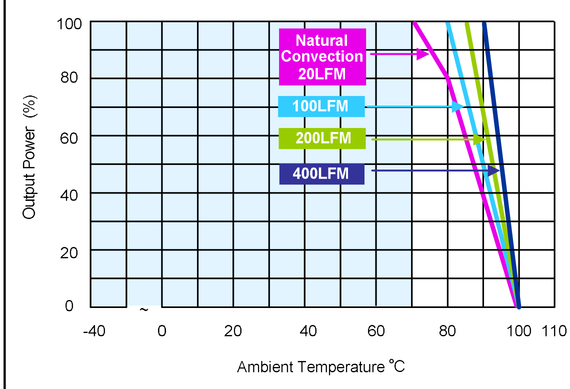


Figure 88: **AXA02F36-L Derating Curves (with heatsink)**
Vin = 48Vdc Load: Io = 2.2A

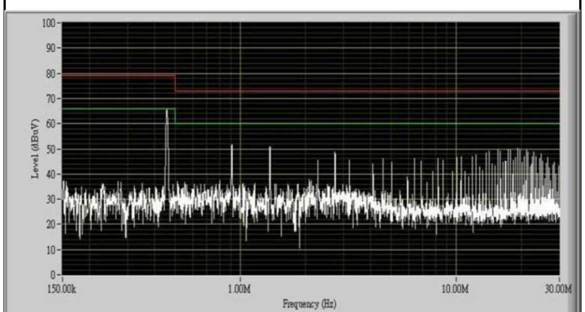


Figure 89: **AXA02F36-L Conduction Emission of EN550122 Class A**
Vin = 24Vdc Load: Io = 2.2A

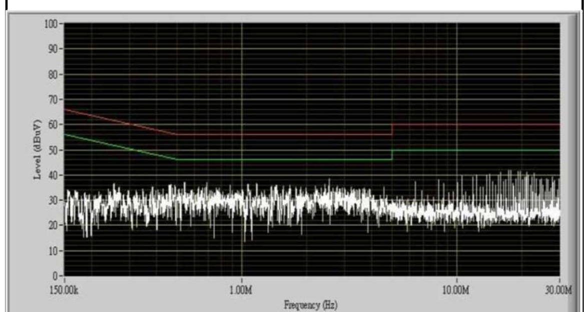


Figure 90: **AXA02F36-L Conduction Emission of EN550122 Class B**
Vin = 24Vdc Load: Io = 2.2A

Note - All test conditions are at 25 ^{O}C

AXA02A36-L Performance Curves

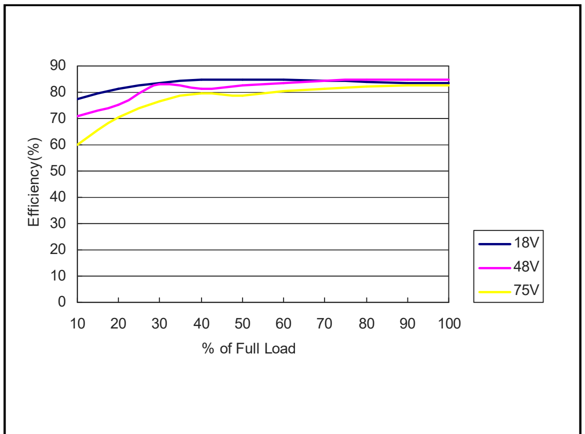


Figure 91: AXA02A36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 2A

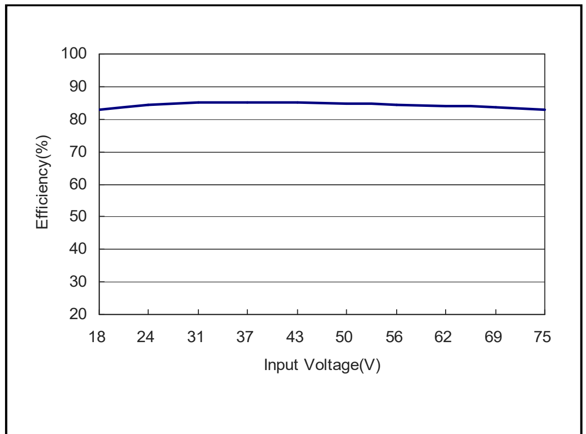


Figure 92: AXA02A36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 2A

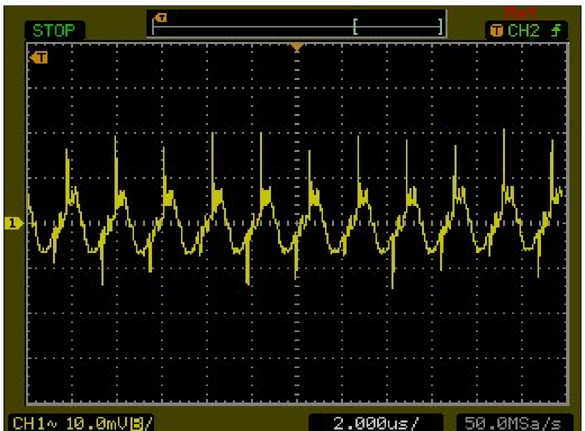


Figure 93: AXA02A36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 2A
Ch 1: Vo

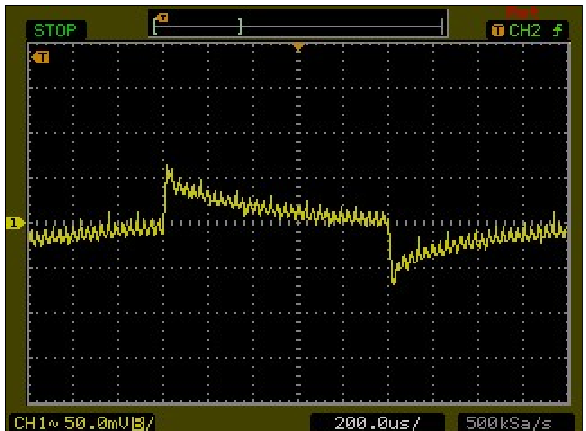


Figure 94: AXA02A36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

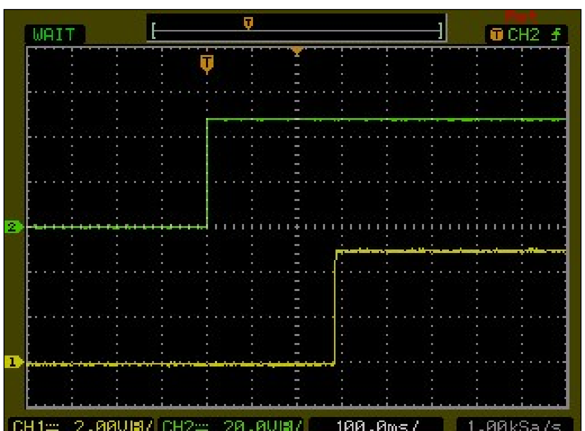


Figure 95: AXA02A36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = 2A
Ch1: Vo Ch2: Remote On/Off

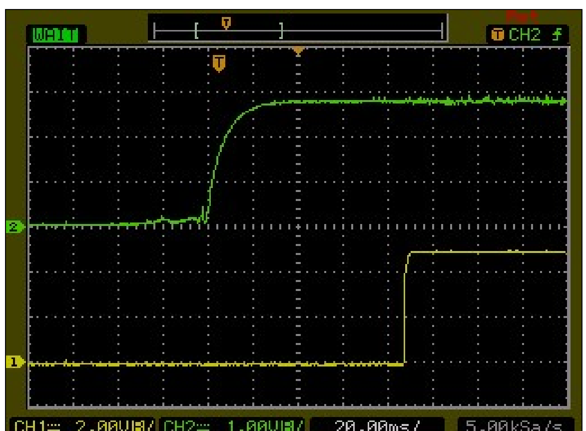


Figure 96: AXA02A36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 2A
Ch1: Vo Ch2: Vin

AXA02A36-L Performance Curves

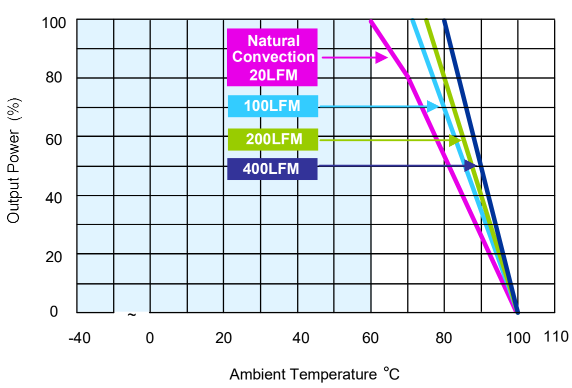


Figure 97: AXA02A36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to 2A

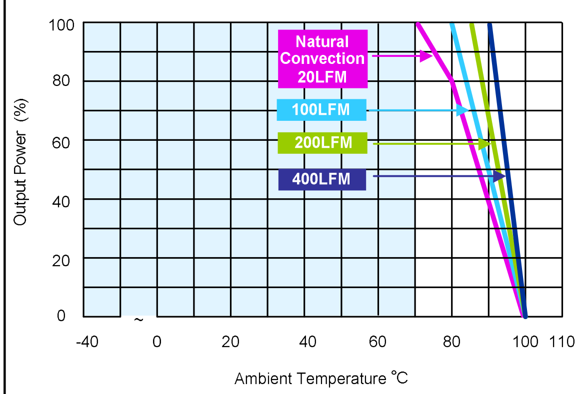


Figure 98: AXA02A36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to 2A

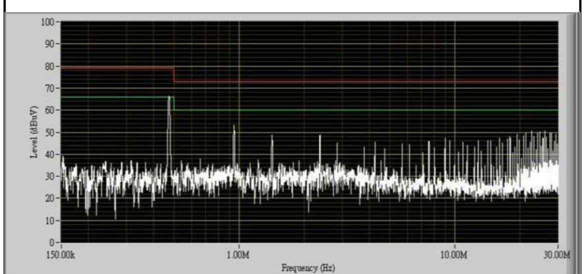


Figure 99: AXA02A36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io = 2A

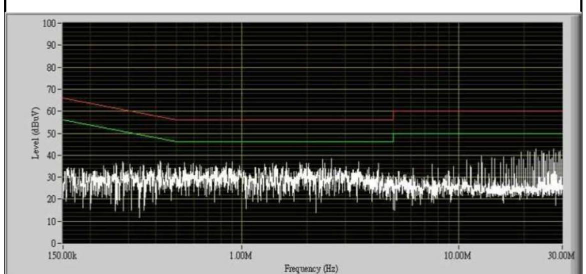


Figure 100: AXA02A36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io = 2A

Note - All test conditions are at 25 °C

AXA00B36-L Performance Curves

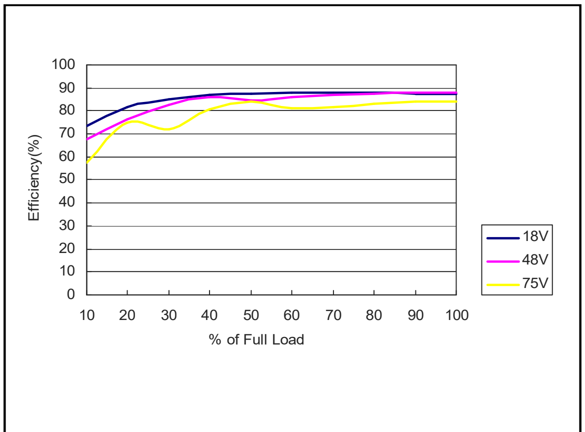


Figure 101: AXA00B36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 0.83A

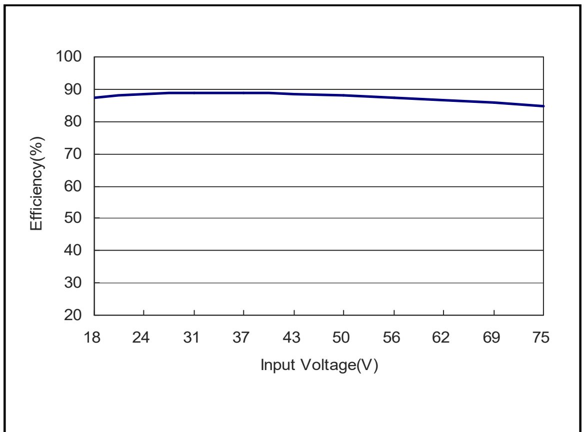


Figure 102: AXA00B36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 0.83A

Figure 103: AXA00B36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 0.83A
Ch 1: Vo

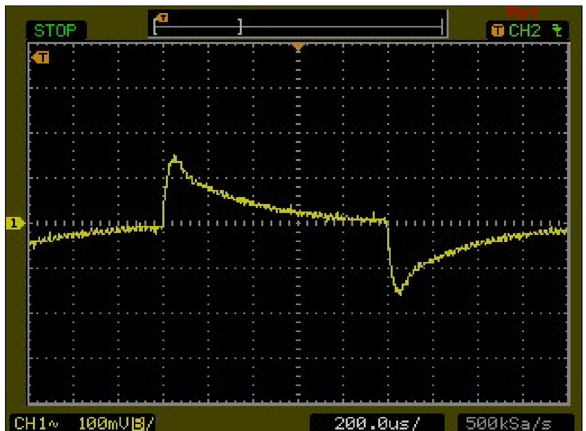


Figure 104: AXA00B36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

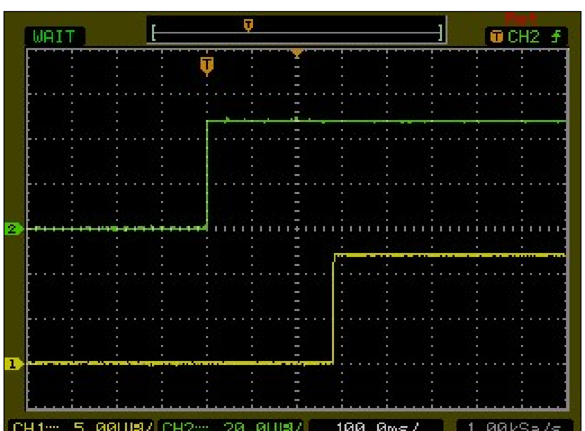


Figure 105: AXA00B36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = 0.83A
Ch1: Vo Ch2: Remote On/Off

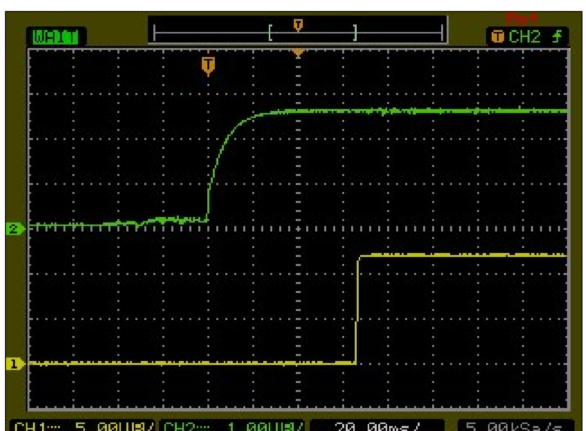


Figure 106: AXA00B36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 0.83A
Ch1: Vo Ch2: Vin

AXA00B36-L Performance Curves

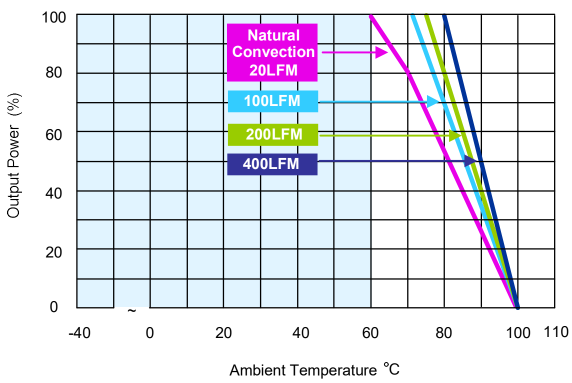


Figure 107: AXA00B36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to 0.83 A

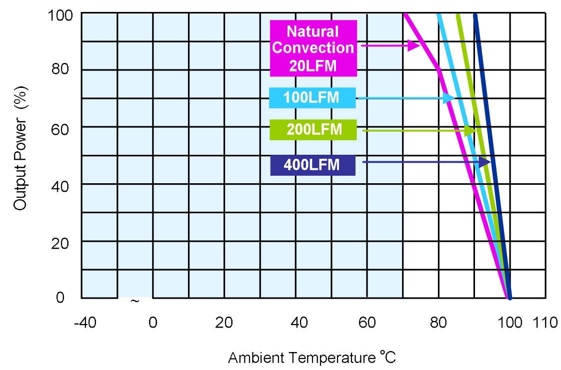


Figure 108: AXA00B36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to 0.83 A

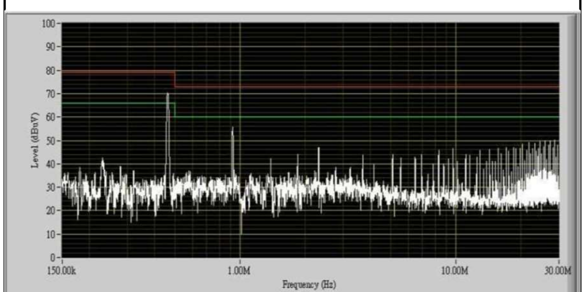


Figure 109: AXA00B36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io = 0.83 A

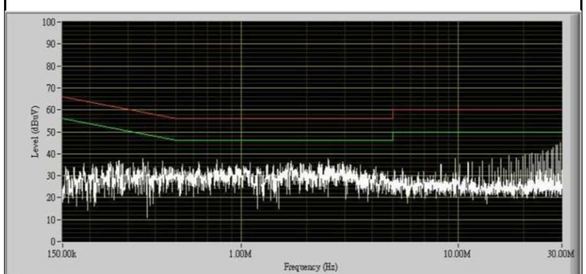


Figure 110: AXA00B36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io = 0.83 A

Note - All test conditions are at 25 ^{O}C

AXA00C36-L Performance Curves

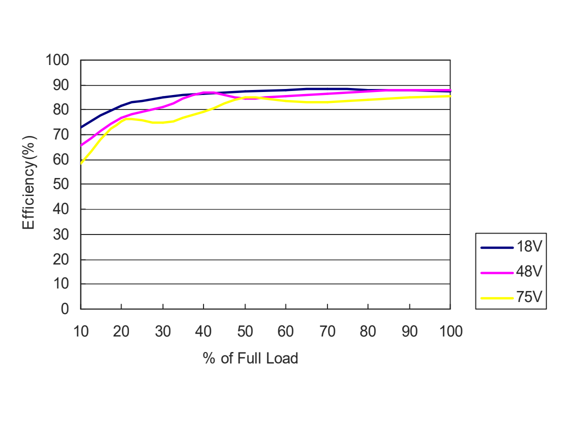


Figure 111: AXA00C36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 1.33A

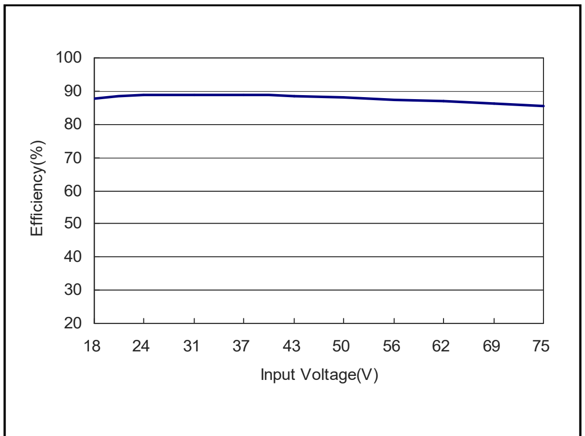


Figure 112: AXA00C36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 0.67A

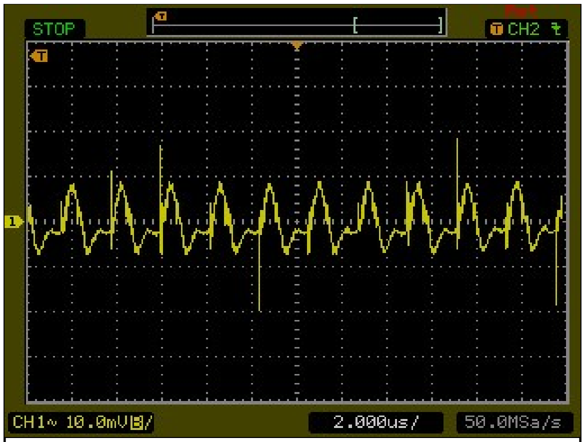


Figure 113 : AXA00C36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 0.67A
Ch 1: Vo

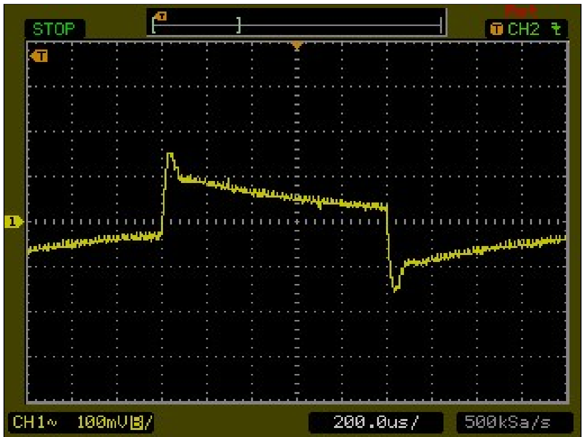


Figure 114: AXA00C36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

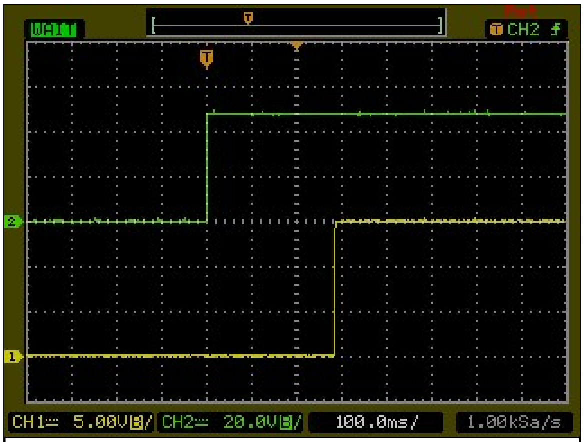


Figure 115: AXA00C36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = 0.67A
Ch1: Vo Ch2: Remote On/Off

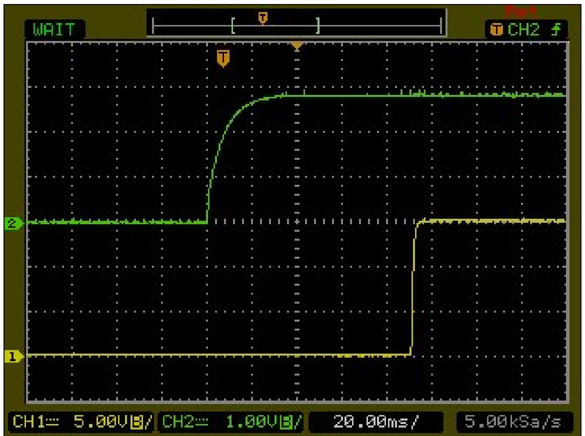


Figure 116: AXA00C36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 0.67A
Ch1: Vo Ch2: Vin

AXA00C36-L Performance Curves

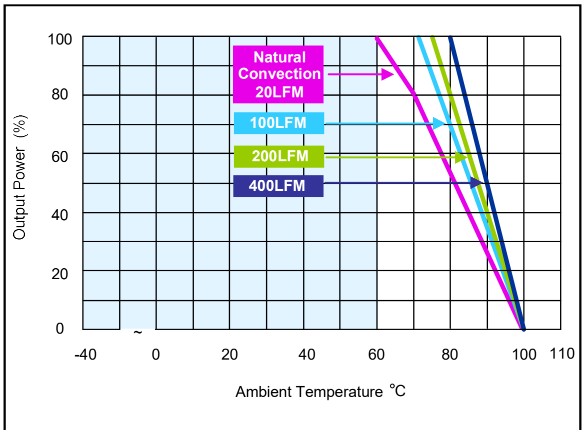


Figure 117: AXA00C36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to 0.67A

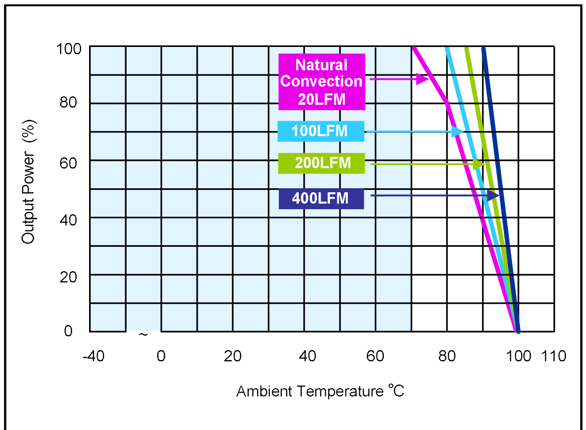


Figure 118: AXA00C36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to 0.67 A

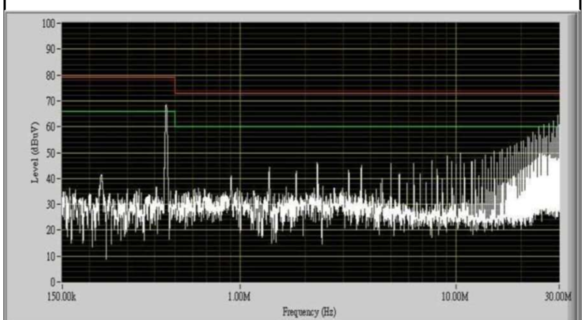


Figure 119: AXA00C36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io =0.67 A

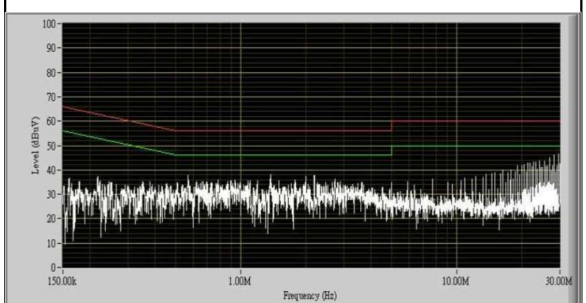


Figure 120: AXA00C36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io =0.67 A

Note - All test conditions are at 25 ^{O}C

AXA000H36-L Performance Curves

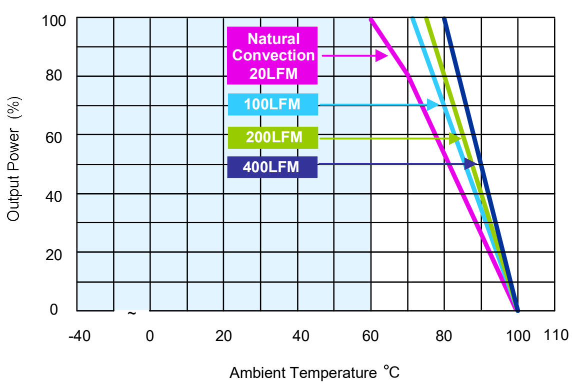


Figure 127: AXA000H36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to 0.41 A

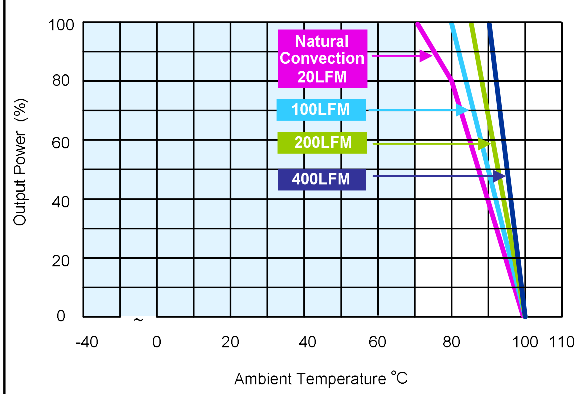


Figure 128: AXA000H36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to 0.41 A

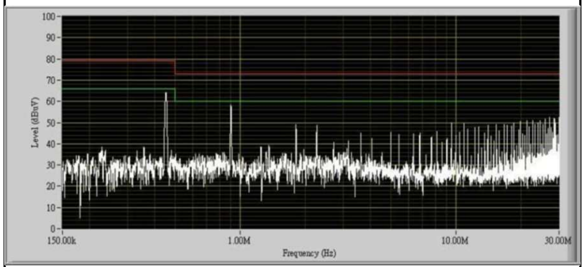


Figure 129: AXA000H36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io =0.41 A

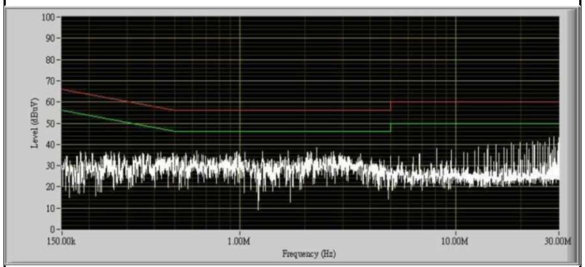


Figure 130: AXA000H36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io =0.41 A

Note - All test conditions are at 25 ^{O}C

AXA00AA36-L Performance Curves

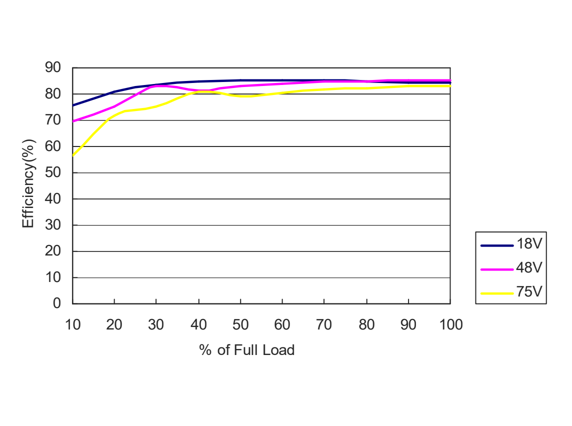


Figure 131: AXA00AA36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to ±1 A

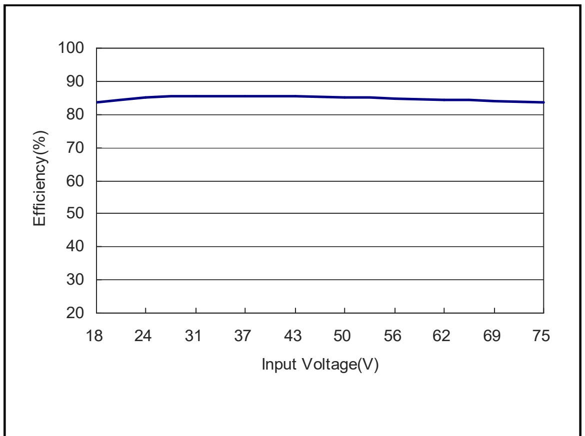


Figure 132: AXA00AA36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = ±1 A

Figure 133: AXA00AA36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = ±1A
Ch 1: Vo1 Ch2:Vo2

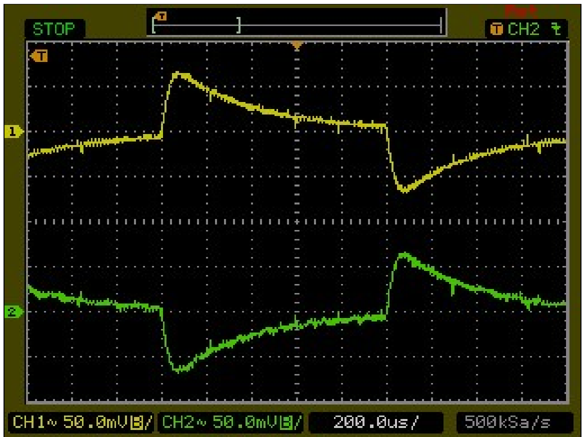


Figure 134: AXA00AA36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch2:Vo2

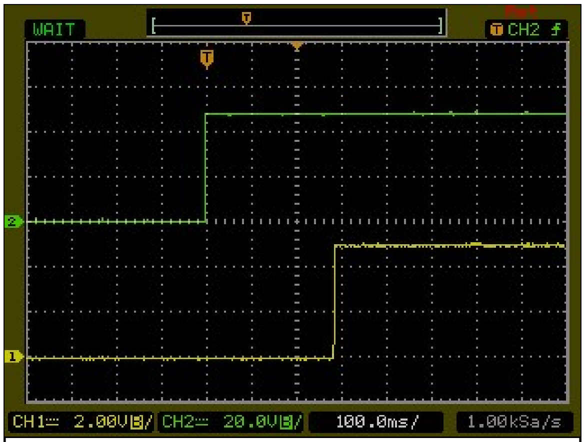


Figure 135: AXA00AA36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = ±1 A
Ch1: Vo Ch2: Remote On/Off

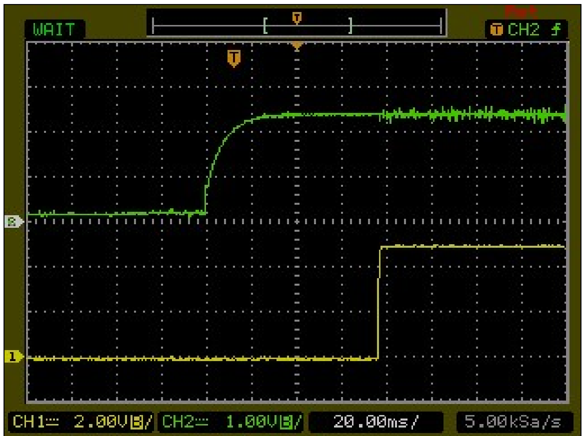


Figure 136: AXA00AA36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = ±1A
Ch1: Vo Ch2: Vin

AXA00AA36-L Performance Curves

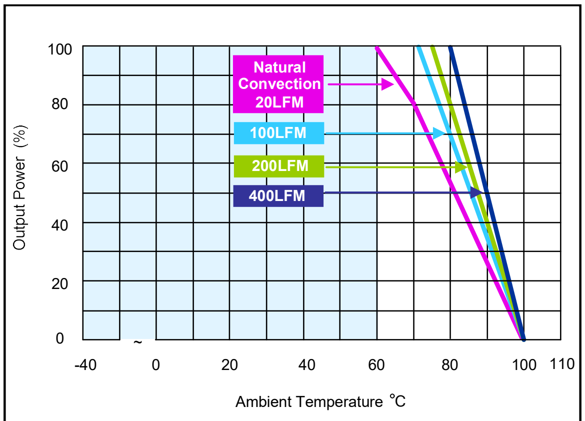


Figure 137: AXA00AA36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to ±1 A

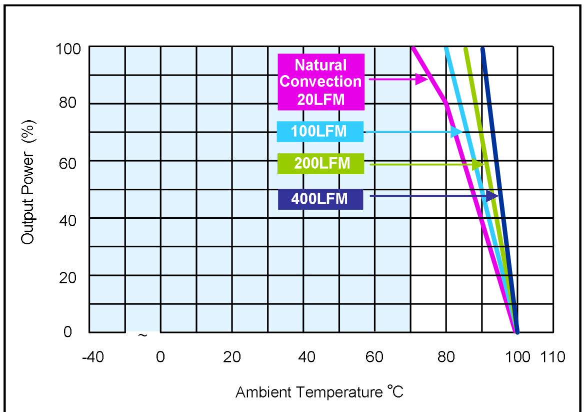


Figure 138: AXA00AA36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to ±1 A

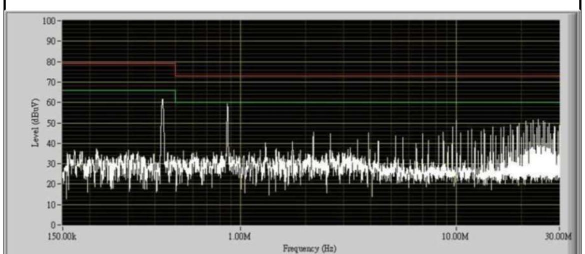


Figure 139: AXA00AA36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io = ±1 A

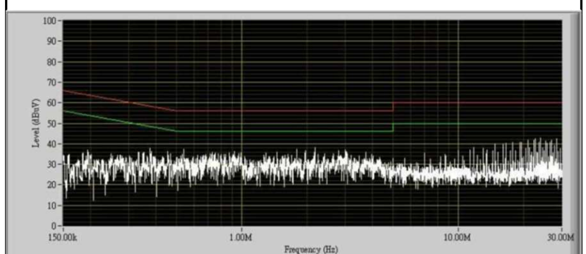


Figure 140: AXA00AA36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io = ±1 A

Note - All test conditions are at 25 ^{O}C

AXA000BB36-L Performance Curves

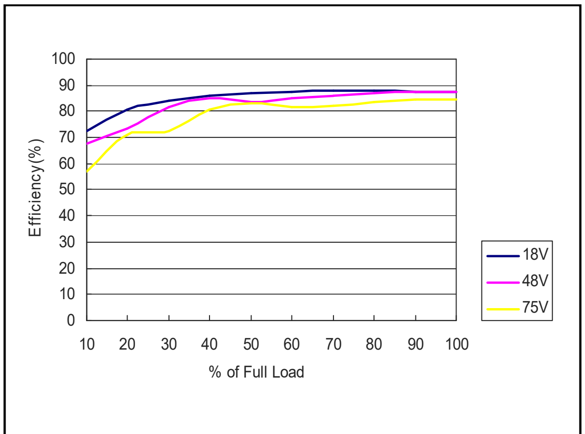


Figure 141: AXA000BB36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to ±0.41 A

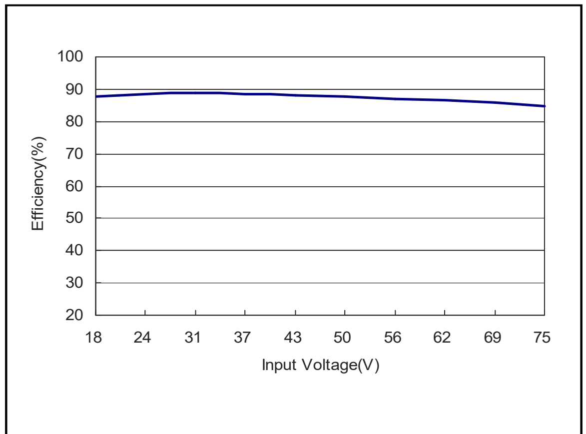


Figure 142: AXA000BB36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = ±0.41 A

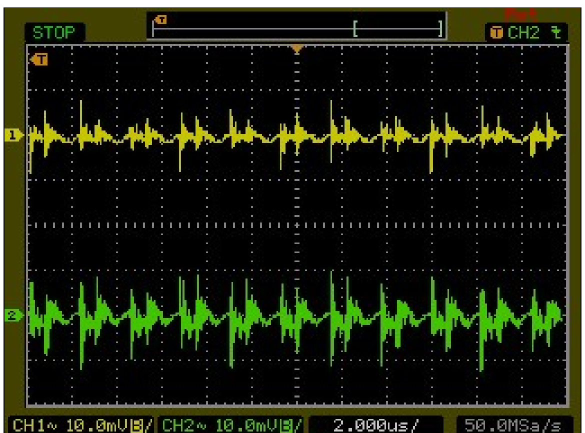


Figure 143: AXA000BB36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = ±0.41A
Ch 1: Vo

Figure 144: AXA000BB36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

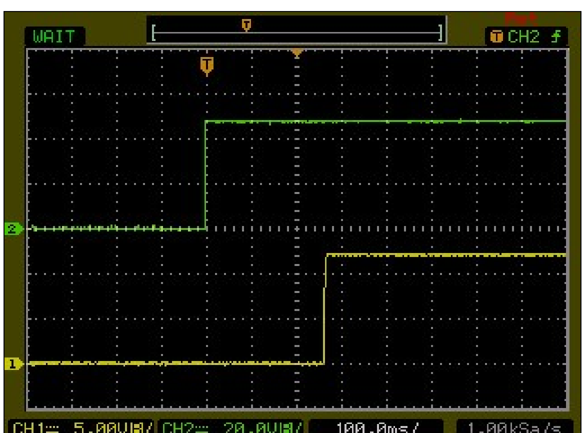


Figure 145: AXA000BB36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = ±0.41 A
Ch1: Vo Ch2: Remote On/Off

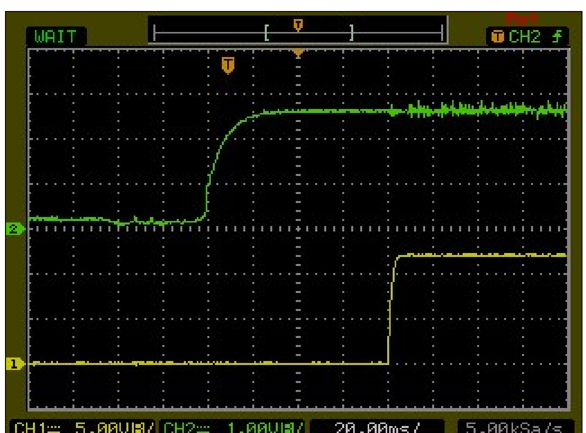


Figure 146: AXA000BB36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = ±0.41 A
Ch1: Vo Ch2: Vin

AXA000BB36-L Performance Curves

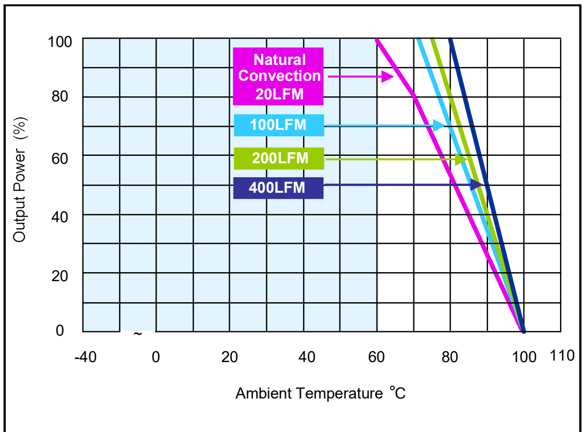


Figure 147: AXA000BB36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to ±0.41 A

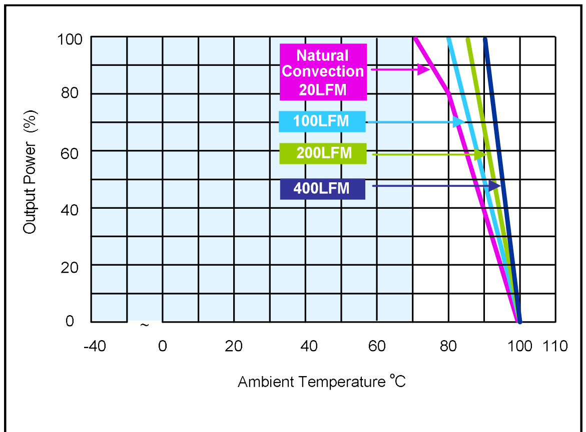


Figure 148: AXA000BB36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to ±0.41 A

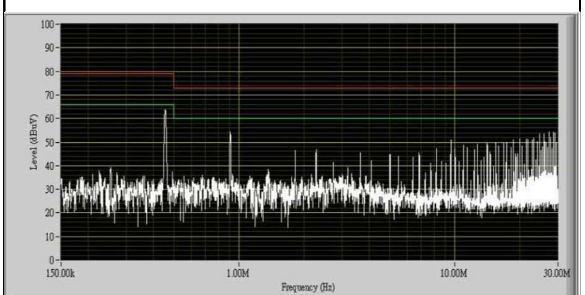


Figure 149: AXA000BB36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io = ±0.41 A

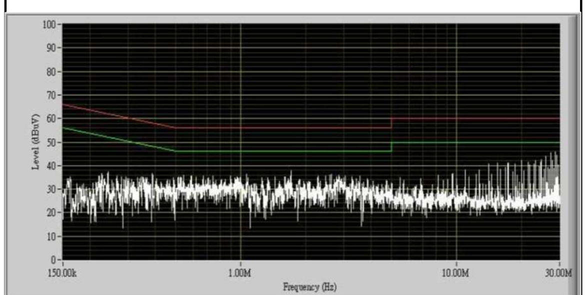


Figure 150: AXA000BB36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io = ±0.41 A

Note - All test conditions are at 25 ^{O}C

AXA000CC36-L Performance Curves

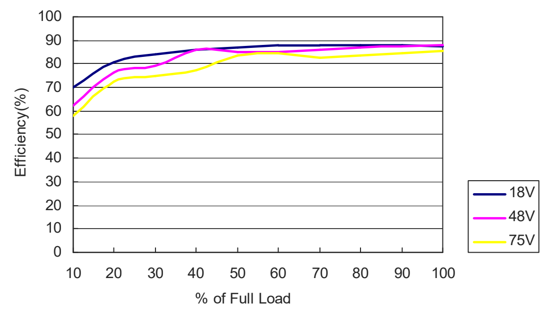


Figure 151: AXA000CC36-L Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to ±0.33 A

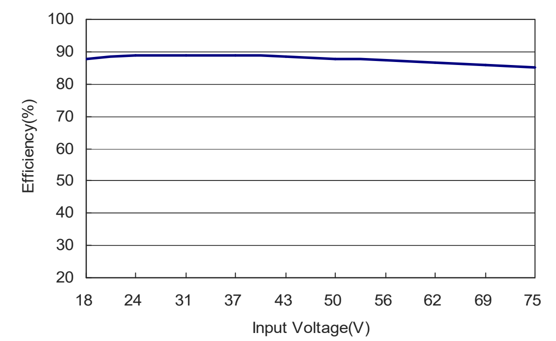


Figure 152: AXA000CC36-L Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = ±0.33 A

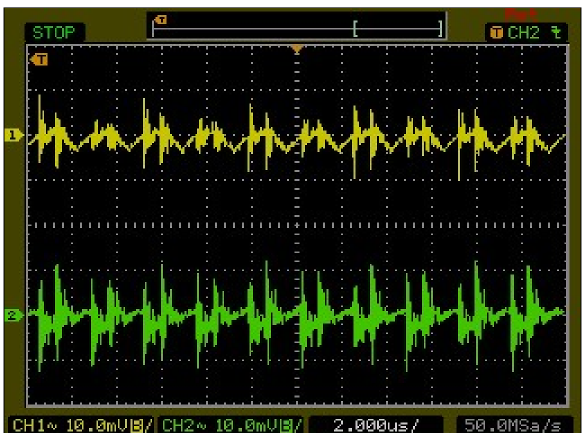


Figure 153: AXA000CC36-L Ripple and Noise Measurement
Vin = 48Vdc Load: Io = ±0.33A
Ch 1: Vo

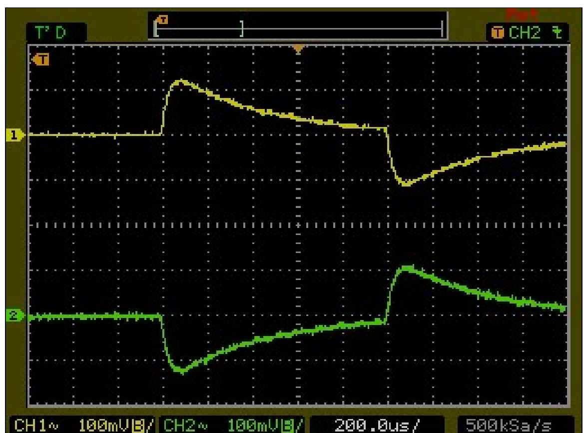


Figure 154: AXA000CC36-L Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

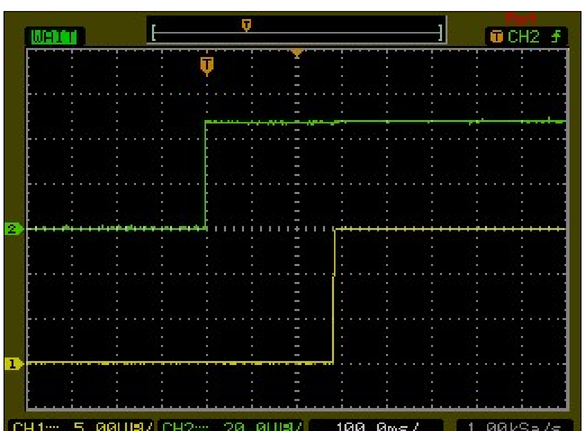


Figure 155: AXA000CC36-L Output Voltage Startup Characteristic by ON/OFF
Vin = 48Vdc Load: Io = ±0.33 A
Ch1: Vo Ch2: Remote On/Off

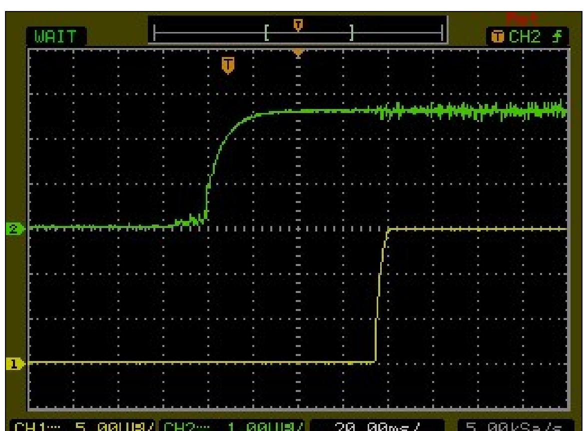


Figure 156: AXA000CC36-L Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = ±0.33A
Ch1: Vo Ch2: Vin

AXA000CC36-L Performance Curves

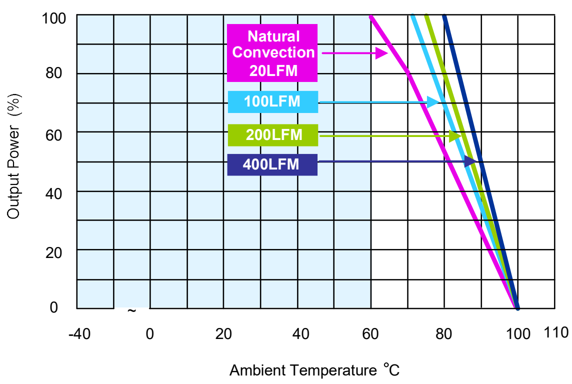


Figure 157: AXA000CC36-L Derating Curves (without heatsink)
Vin = 48Vdc Load: Io = 0 to ±0.33 A

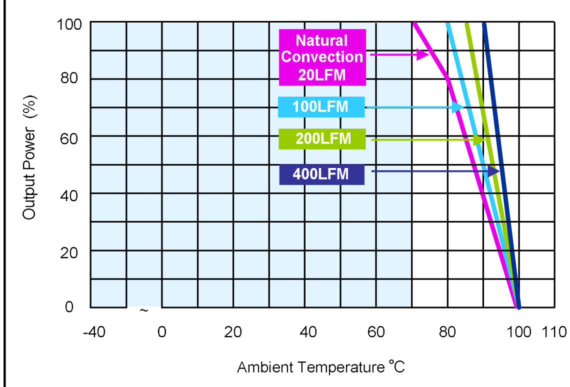


Figure 158: AXA000CC36-L Derating Curves (with heatsink)
Vin = 48Vdc Load: Io = 0 to ±0.33 A

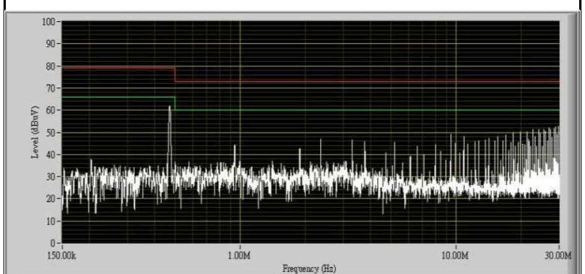


Figure 159: AXA000CC36-L Conduction Emission of EN550122 Class A
Vin = 48Vdc Load: Io = ±0.33 A

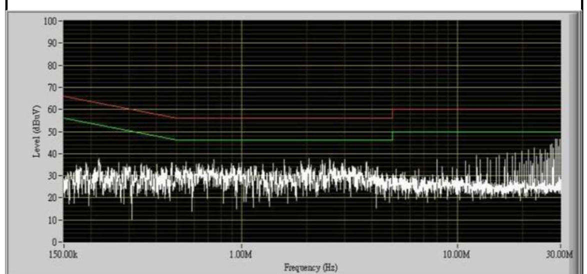
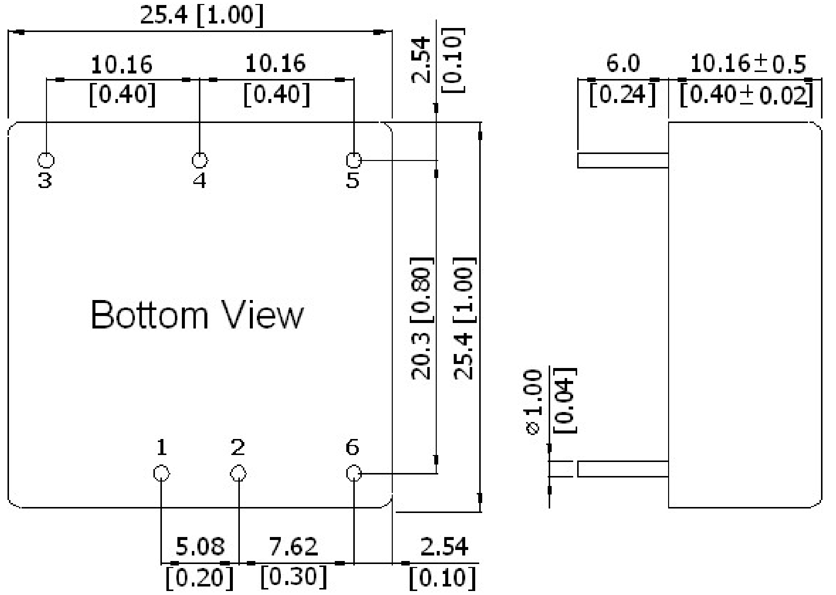


Figure 160: AXA000CC36-L Conduction Emission of EN550122 Class B
Vin = 48Vdc Load: Io = ±033 A

Note - All test conditions are at 25 ^{O}C

Mechanical Specifications

Mechanical Outlines



Note:
1.All dimensions in mm (inches)
Tolerance: X.X±0.25 (X.XX±0.01)
X.XX±0.13 (X.XXX±0.005)
2.Pin pitch tolerance:±0.25 (±0.01")
3.Pin diameter 1.0 ±0.05 (0.04±0.002)

Pin Connections

Single output

Pin 1 – +Vin
Pin 2 – -Vin
Pin 3 – +Vout
Pin 4 – No Pin
Pin 5 – -Vout
Pin 6 – Remote On/Off

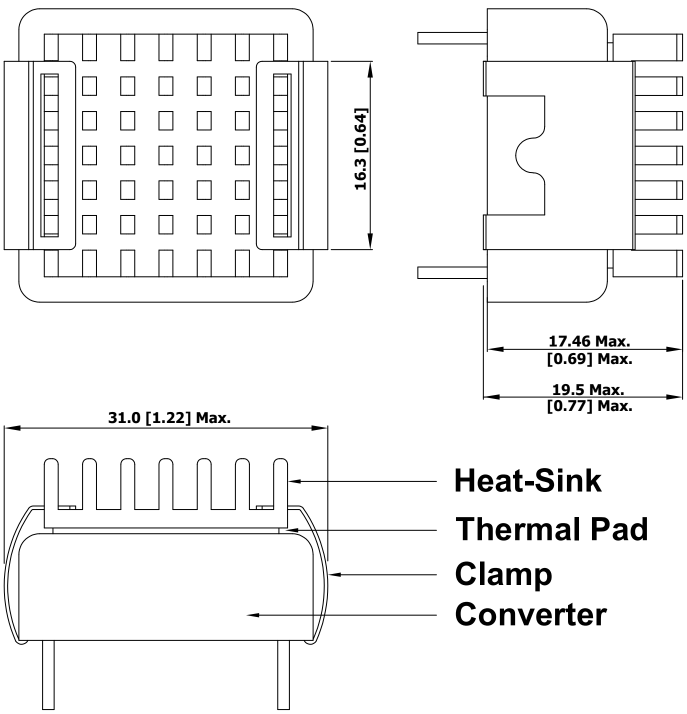
Dual Output

Pin 1 – +Vin
Pin 2 – -Vin
Pin 3 – +Vout
Pin 4 – Common
Pin 5 – -Vout
Pin 6 – Remote On/Off

Physical Characteristics

Device code suffix	L
Case Size	25.4x25.4x10.16mm (1.0x1.0x0.4 inches)
Case Material	Aluminium Alloy, Black Anodized Coating
Base Material	FR4 PCB (flammability to UL 94V-0 rated)
Pin Material	Copper Alloy with Gold Plate Over Nickel Subplate
Weight	15g

Heatsink (Option –HS)



Heatsink Material: Aluminum

Finish: Anodoc treatment (Black)

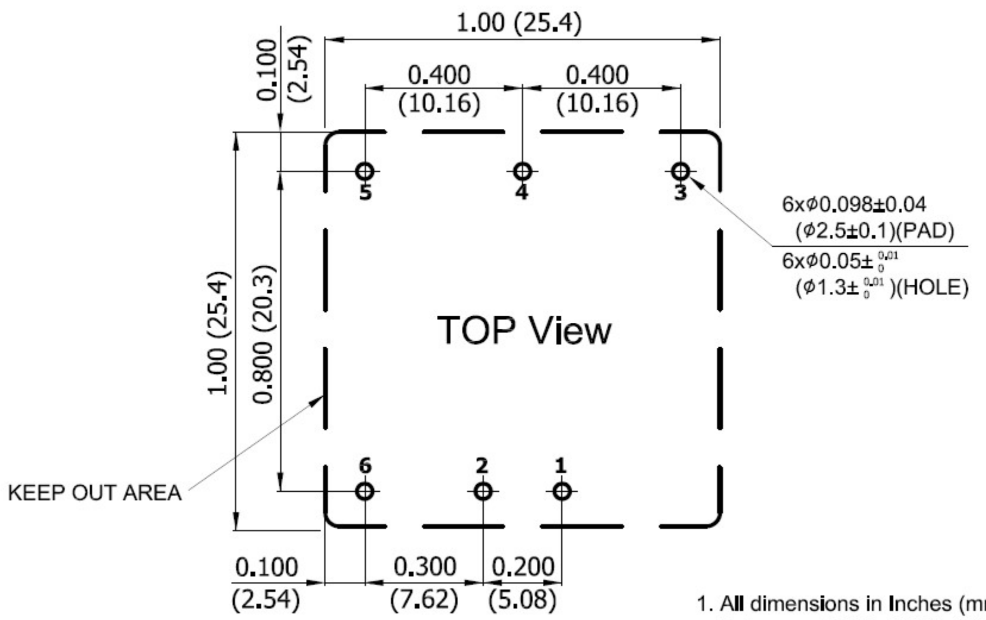
Weight: 2g

The advantages of adding a heatsink are:

1. To improve heat dissipation and increase the stability and reliability of the DC/DC converters at high operating temperatures.

2. To increase operating temperature of the DC/DC converter, please refer to derating curve.

Recommended Pad Layout for Single & Dual Output Converter

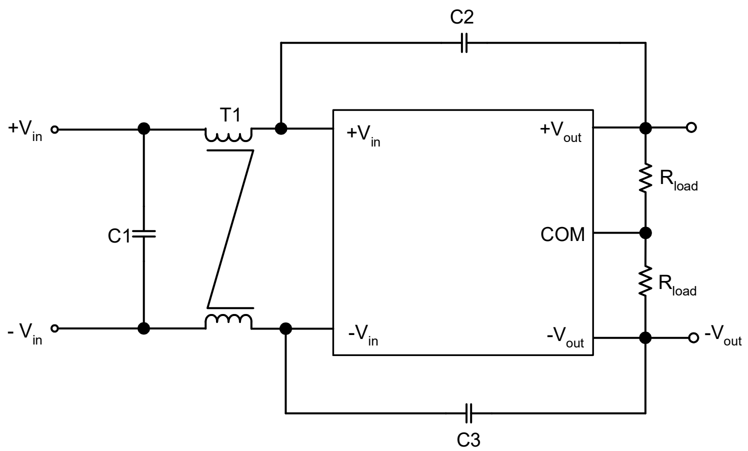


1. All dimensions in Inches (mm)
   Tolerance: X.XX±0.02" (X.X±0.5)
   X.XXX±0.01" (X.XX±0.25mm)
2. Pin pitch tolerance:±0.01" (±0.25mm)
3. Pin dimension tolerance:±0.004" (±0.1mm)

EMC Considerations

EMI-Filter to meet EN 55022, class B, FCC part 15, level

Conducted and radiated emissions EN55022 Class B



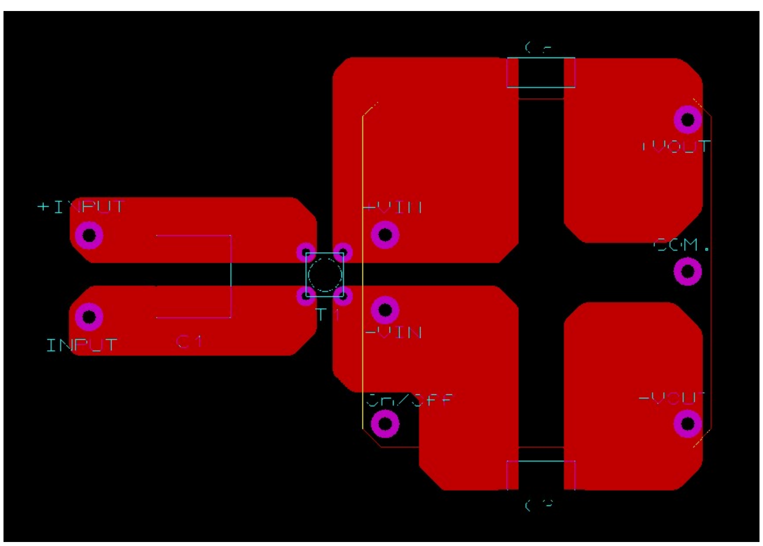


Table 4. Conducted EMI emission specifications

Model	Component	Value
AXAXXX18-L	C1	4.7µF/50V 1210 X7R
	C2	470pF/2KV 1808 X7R
	T1	3.3mH ; Wurth Elektronik NO.744822233
AXAXXX36-L	C1	2.2µF/100V 1210 X7R
	C2	680pF/2KV 1808 X7R
	T1	3.3mH ; Wurth Elektronik NO.744822233

Safety Certifications

The AXA 10W power supply is intended for inclusion in other equipment and the installer must ensure that it is in compliance with all the requirements of the end application. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.

Table 5. Safety Certifications for AXA series power supply system

Document	Description
cUL/UL 60950-1 (CSA certificate)	US and Canada Requirements
IEC/EN 60950-1 (CB-scheme)	European Requirements

MTBF and Reliability

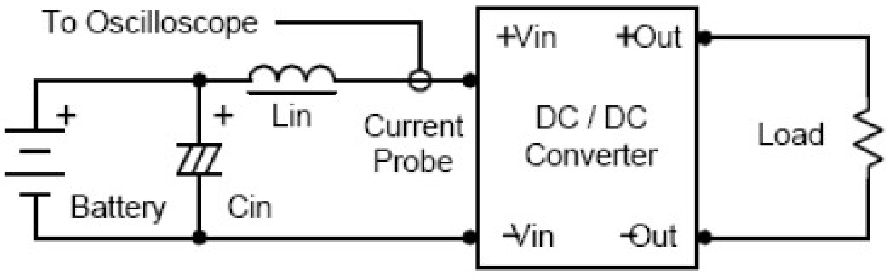
The MTBF of AXA10W series of DC/DC converters has been calculated using MIL-HDBK 217F NOTICE2, Operating Temperature 25 ^{O}C, Ground Benign.

Model	MTBF	Unit
AXA02F18-L	848104	Hours
AXA02A18-L	849907	
AXA00B18-L	922254	
AXA00C18-L	926012	
AXA000H18-L	976849	
AXA00AA18-L	803665	
AXA000BB18-L	812942	
AXA000CC18-L	839983	
AXA02F36-L	874508	
AXA02A36-L	847529	
AXA00B36-L	924044	
AXA00C36-L	927816	
AXA000H36-L	985999	
AXA00AA36-L	791139	
AXA000BB36-L	832362	
AXA000CC36-L	832362	

Application Notes

Input Reflected-Ripple Current Test Setup

Input reflected-ripple current is measured with a inductor Lin (4.7μH) and Cin (220uF, ESR < 1.0Ω at 100 KHz) to simulate source impedance. Capacitor Cin, offsets possible battery impedance. Current ripple is measured at the input terminals of the module, measurement bandwidth is 0-500 KHz.

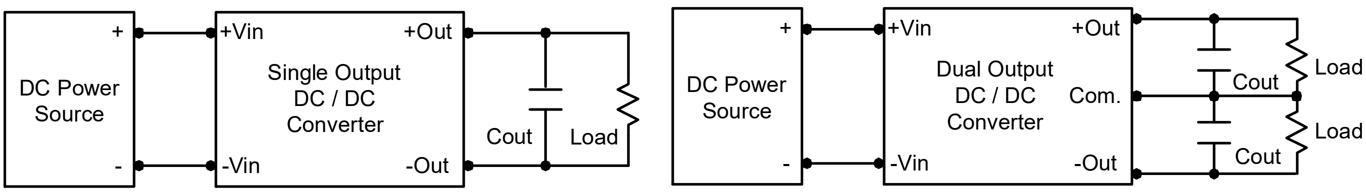


Component	Value	Reference
Lin	4.7μH	-
Cin	220uF (ESR<1.0Ω at 100KHz)	Aluminum Electrolytic Capacitor

.

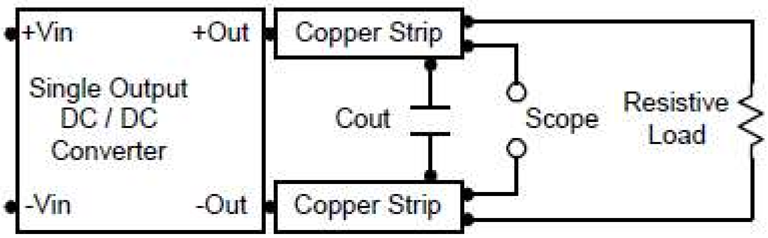
Output Ripple Reduction

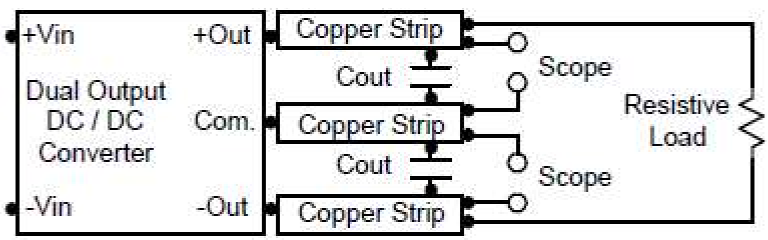
A good quality low ESR capacitor placed as close as practicable across the load will give the best ripple and noise performance. To reduce output ripple, it is recommended to use 4.7uF capacitors at the output.

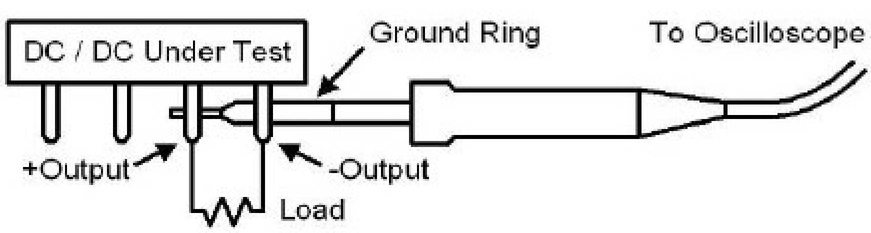


Peak-to-Peak Output Noise Measurement Test

Use a 1uF ceramic capacitor and a 10uF tantalum capacitor. Scope measurement should be made by using a BNC socket, measurement bandwidth is 0-20MHz. Position the load between 50 mm and 75 mm from the DC/DC Converter

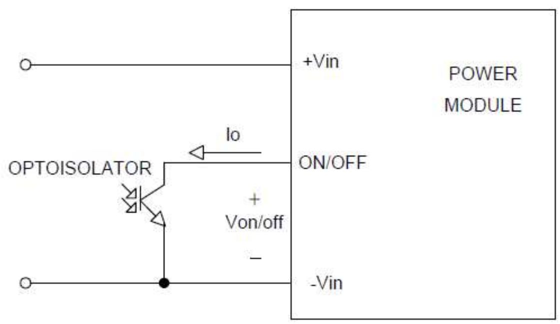




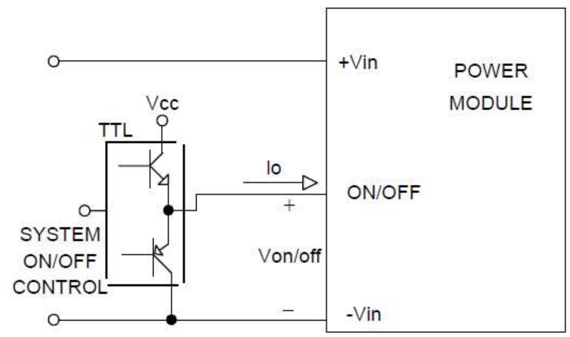


Remote ON/OFF

Positive logic remote on/off turns the module on during a logic high voltage or floating on the remote on/off pin, and off during a logic low. To turn the power module on and off, the user must supply a switch to control the voltage between the on/off terminal and the -Vin terminal. The switch can be an open collector or equivalent. A logic low is 0V to 1V. A logic high is 2.5V to 50V. The maximum sink current at the on/off terminal (Pin 6) during a logic low is -500μA. The maximum allowable leakage current of a switch connected to the on/off terminal (Pin 6) at logic high (3.5V to 12V) is 10mA.



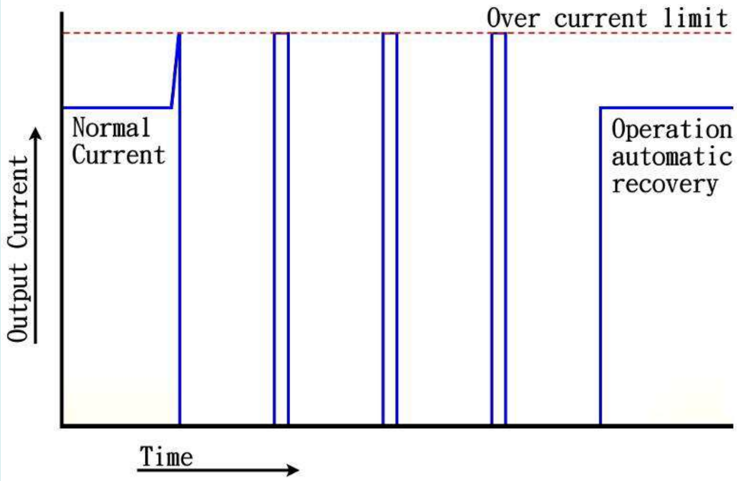
Isolated-Closure Remote ON/OFF



Level Control Using TTL Output

Overcurrent Protection

The AXA10W series converters contain hiccup mode output over current protection that prevents damage to the product in the event of an overload or a short circuit. Normally, over current is maintained at approximately 150 percent of rated current for AXA10W series. Depending upon the converter design, there are other ways of protecting the converter against over current conditions such as the constant current limiting or current foldback methods. With “hiccup” over current protection, the converter shuts off upon an occurrence of an over current condition. After a brief time interval, it automatically tries to restart the converter. If the restart is successful, normal operation continues. If the over current condition still exists, the converter will shut off again. With a sustained over current condition, such as a short circuit on the output, this automatic retry behavior will result in periodic pulses of current and voltage on the output. The output current waveform with hiccup over current protection is shown in figure below.



Hiccup operation has none of the drawbacks of the other two protection methods, although its circuit is more complicated because it requires a timing circuit. The excess heat due to overload lasts for only a short duration in the hiccup cycle, hence the junction temperature of the power devices is much lower. The hiccup operation can be done in various ways. For example, one can start hiccup operation any time once an over-current event is detected; or prohibit hiccup during a designated start-up is usually larger than normal operation and it is easier for an over-current event is detected; or prohibit hiccup during a designated start-up interval (usually a few milliseconds). The reason for the latter operation is that during start-up, the converter needs to provide extra current to charge up the output capacitor. Thus the current demand during start-up is usually larger than during normal operation and it is easier for an over-current event to occur. If the converter starts to hiccup once there is an over-current, it might never start up successfully. Hiccup mode protection will give the best protection for a converter against over current situations, since it will limit the average current to the load at a low level, so reducing power dissipation and case temperature in the power devices..

Short Circuitry Protection

Continuous, hiccup and auto-recovery mode.

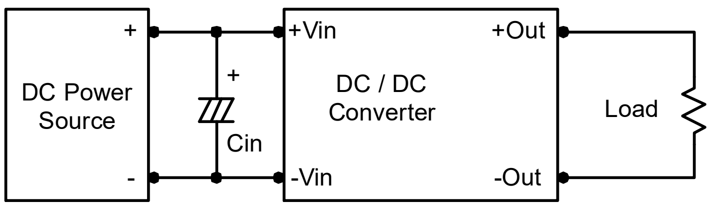
During short circuit, converter still shut down, The average current during this condition will be very low and the device will be safe in this condition.

Input Source Impedance

The power module should be connected to a low ac-impedance input source. Highly inductive source impedances can affect the stability of the power module.

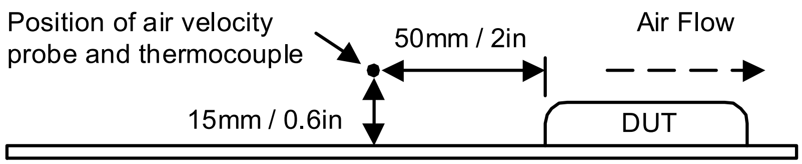
In applications where power is supplied over long lines and output loading is high, it may be necessary to use a capacitor at the input to ensure startup.

Capacitor mounted close to the power module helps ensure stability of the unit, it is recommended to use a good quality low Equivalent Series Resistance (ESR < 1.0Ω at 100 KHz) capacitor of a 10µF for the 24V and 48V devices



Thermal Considerations

Many conditions affect the thermal performance of the power module, such as orientation, airflow over the module and board spacing. To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 105^{O}C. The derating curves are determined from measurements obtained in a test setup.

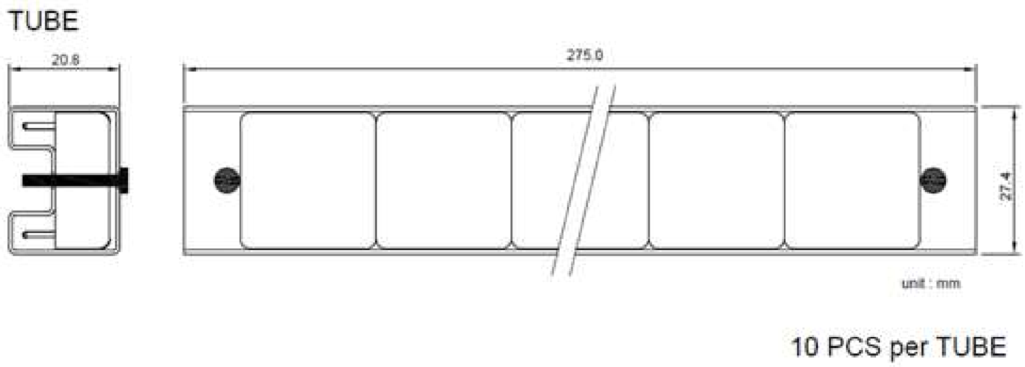


Maximum Capacitive Load

The AXA10W series has limitation of maximum connected capacitance at the output. The power module may be operated in current limiting mode during start-up, affecting the ramp-up and the startup time. The maximum capacitance can be found in the data sheet.

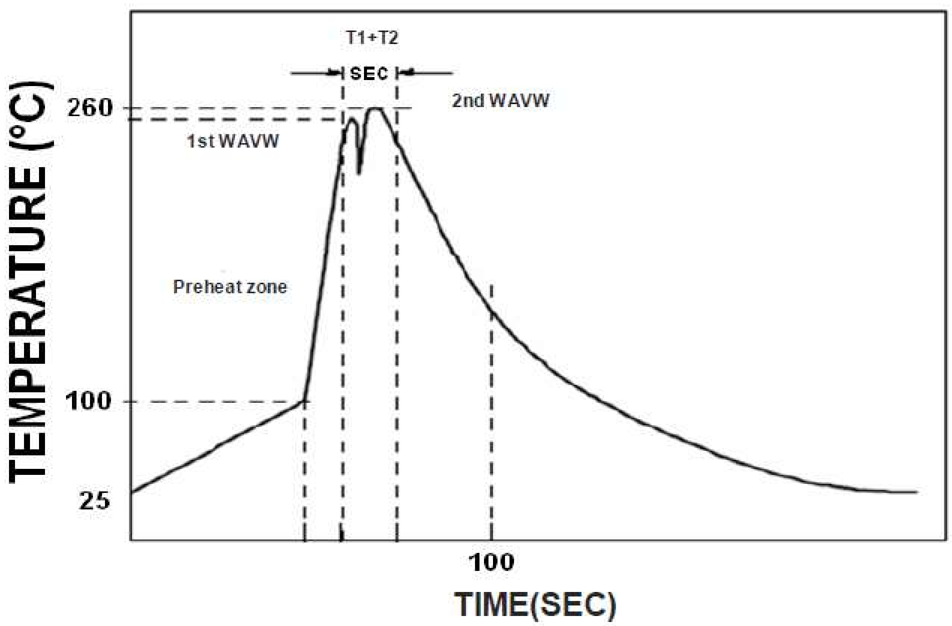
.

Packaging Information



Soldering and Reflow Considerations

Lead free wave solder profile for AXA10W Series



Zone	Reference Parameter
Preheat zone	Rise temp speed：3^{O}C/sec max.
	Preheat temp : 100~130^{O}C
Actual heating	Peak temp: 250~260^{O}C Peak Time
	Peak time(T1+T2)：4~6 sec

Reference Solder: Sn-Ag-Cu：Sn-Cu：Sn-Ag
Hand Welding: Soldering iron：Power 60W
Welding Time: 2~4 sec
Temp.: 380~400 ^{O}C

Weight

The AXA10W series weight is 15g maximum.

Record of Revision and Changes

Issue	Date	Description	Originators
1.0	09.09.2015	First Issue	K. Wang
1.1	09.08.2016	Update the description of remote on: add floating in it.	K. Wang
1.2	10.13.2020	Add minimum load	K. Wang

WORLDWIDE OFFICES

Americas
2900 South Diablo Way
Suite B100
Tempe, AZ 85282
USA
+1 888 412 7832

Europe (UK)
Ground Floor Offices
Barberry House, 4 Harbour Buildings
Waterfront West, Brierley Hill
West Midlands, DY5 1LN, UK
+44 (0) 1384 842 211

Asia (HK)
14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
+852 2176 3333

ARTESYN™
An Advanced Energy Company
www.artesyn.com

For more information: www.artesyn.com
For support: productsupport.ep@artesyn.com