COSEL

2024

SHORT FORM CATALOG

POWER SUPPLIES / EMI FILTERS

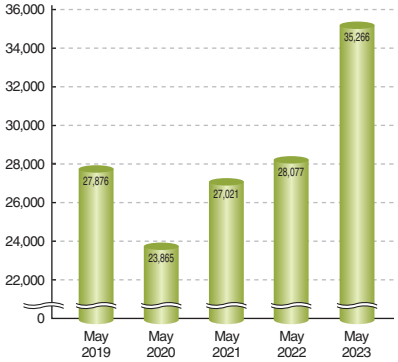
Company Guidance

- Established : July 26, 1969.
- Paid Capital : 2,055 Million Yen
- CEO : Morio Saito
- Annual Sales (Consolidated) : 35,266 Million Yen (As of May 2023)
- Employees : 707(As of May 2023)
- Subsidiaries : COSEL U.S.A., INC.
  COSEL EUROPE GmbH
  COSEL ASIA LTD.
  COSEL (SHANGHAI) ELECTRONICS CO., LTD.
  WUXI COSEL ELECTRONICS CO., LTD.
  SHANGHAI COSEL INTERNATIONAL TRADING CO., LTD.
  COSEL VIETNAM CO., LTD
  POWERBOX INTERNATIONAL AB
- History :

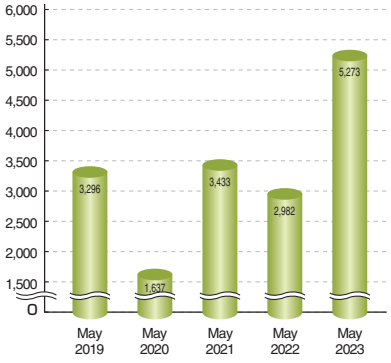
Jul. 1969	Established ELCO CO., LTD.
Apr. 1978	Introduced QC circle activities.
Jun. 1978	Became Pure-Power Supply Buisness-Play.
May. 1982	Introduced TQC activities (Now changed to TQM activities).
Jun. 1983	Introduced Hoshin Management (Business Goal Management) activities.
Mar. 1988	Introduced Toyota Production System activities.
Mar. 1989	Tateyama Factory completed.
Apr. 1990	Established COSEL U. S. A., INC. (Former U. S. ELCO INC.) in San Jose, USA.
Apr. 1992	Changed company name to COSEL CO., LTD. from ELCO CO., LTD.
Jun. 1993	Acquired ISO9001.
May. 1995	Set a representative in Hong Kong, China.
May. 1996	Introduced TPM (Total Plant Maintenance) activities.
Jul. 1997	Established COSEL EUROPE GmbH in Frankfurt, Germany.
May. 1998	Established COSEL ASIA LTD. in Hong Kong, China.
Jan. 1999	Shares listed on the Second Sections of the Tokyo Stock Exchange and Nagoya Stock Exchange both.
Dec. 1999	Acquired ISO14001.
May. 2000	Shares listed on the First Section of the Tokyo Stock Exchange.
Nov. 2002	Established COSEL (SHANGHAI) ELECTRONICS CO., LTD. in Shanghai, China.
Mar. 2005	Entering EMI filter Business.
Feb. 2006	Successfully completed the RoHS Directive conformity.
Nov. 2011	Established SHANGHAI COSEL INTERNATIONAL TRADING CO., LTD. in Shanghai, China.
Dec. 2011	Established WUXI COSEL ELECTRONICS CO., LTD. in Wuxi, China.
Aug. 2015	Established COSEL VEITNAM CO., LTD in Ho Chi Minh City, Vietnam.
Jun. 2018	Acquired POWERBOX INTERNATIONAL AB.
Oct. 2018	Began operations at R&D Center.

Data

Annual sales
(Consolidated)
(Unit: Million Yen)



Ordinary income
(Consolidated)
(Unit: Million Yen)



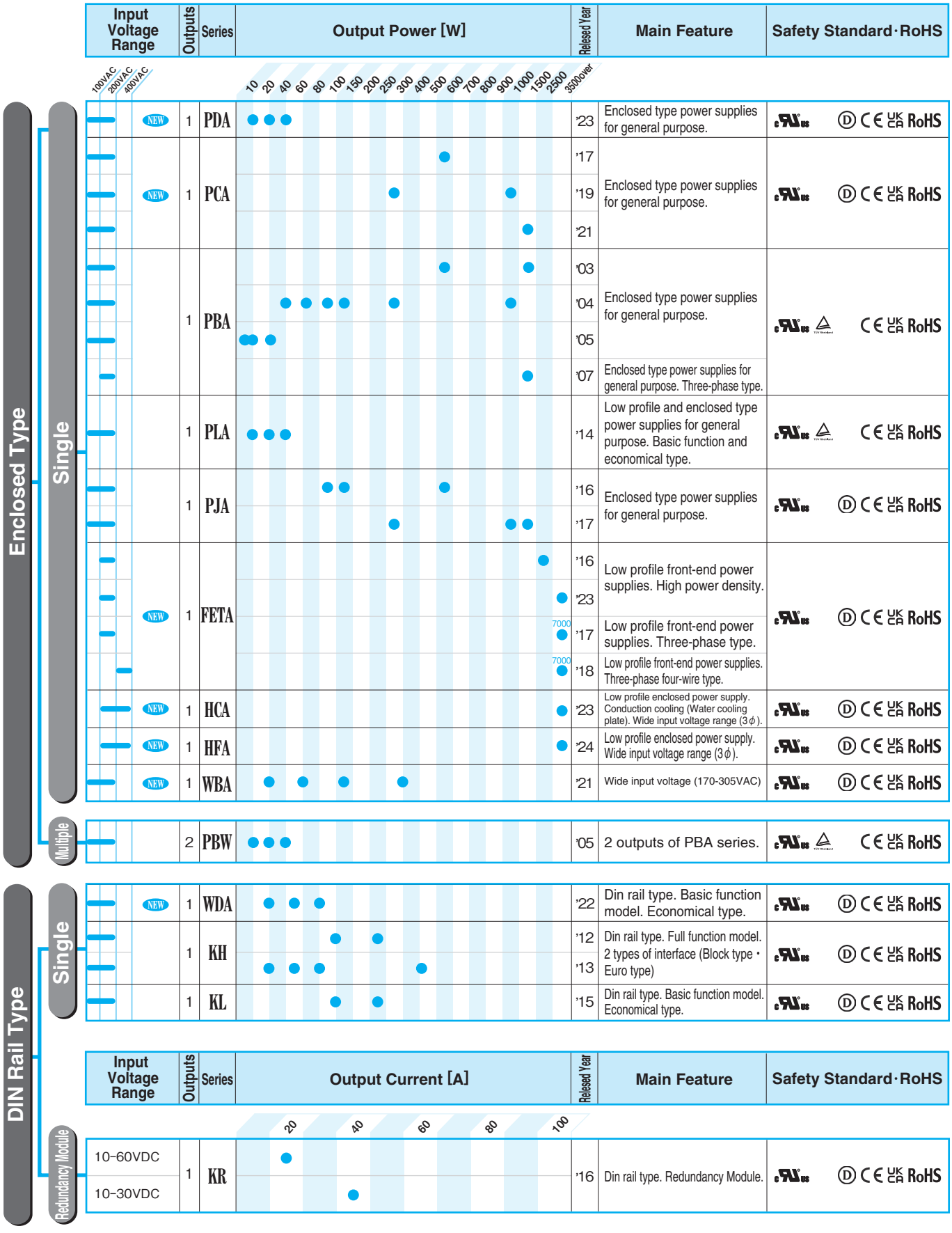
COSEL

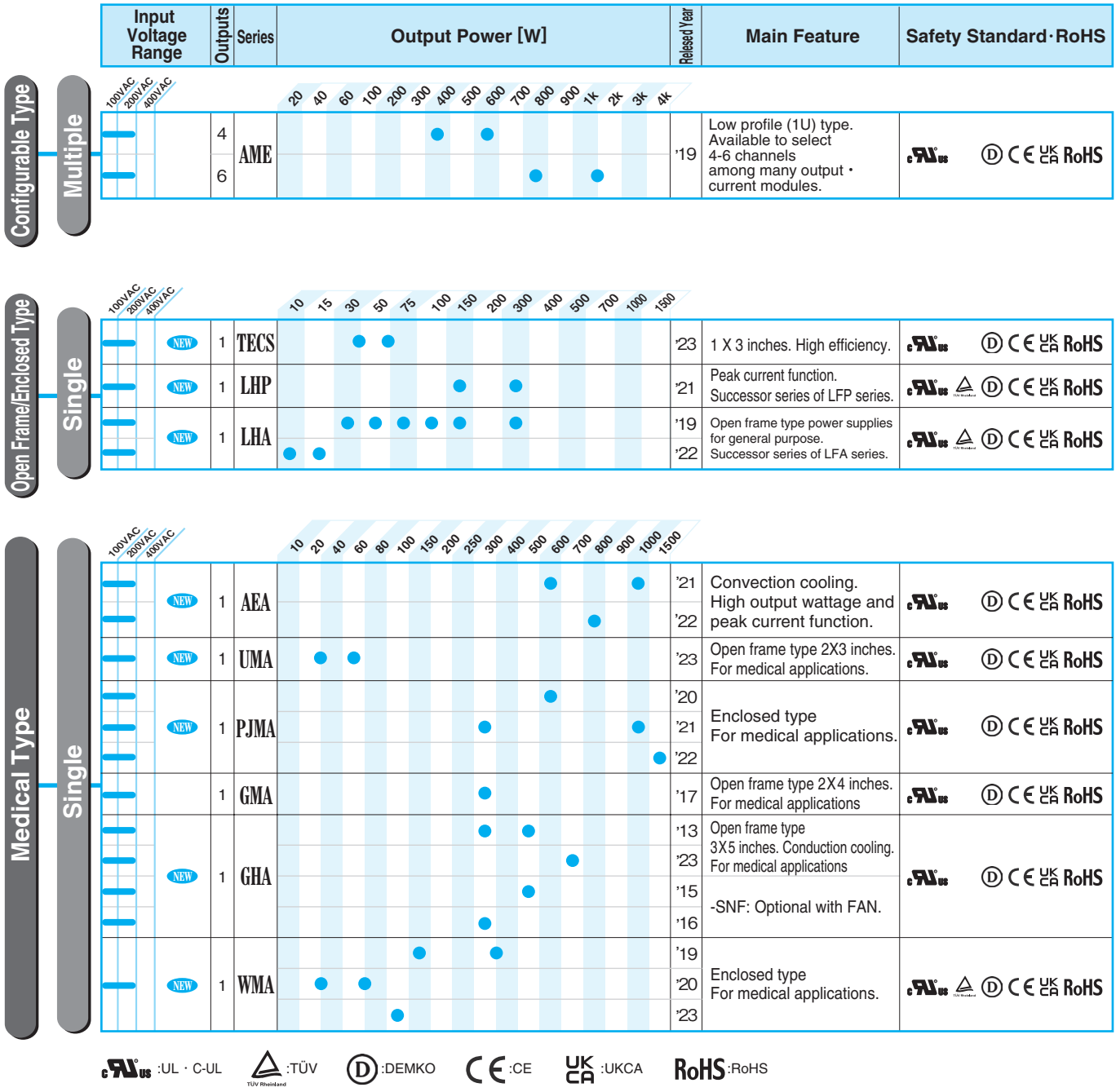
Table of contents

The catalog is not listed some products for "Not recommended for new design" and "Not enough time till Last Time Buy". If you'd like to see all product information, please visit our website.

If you'd like to know details of the listed products, please scan the QR code on the catalog page with your smartphone to access the website.

COSEL Selection Guide





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POL Type

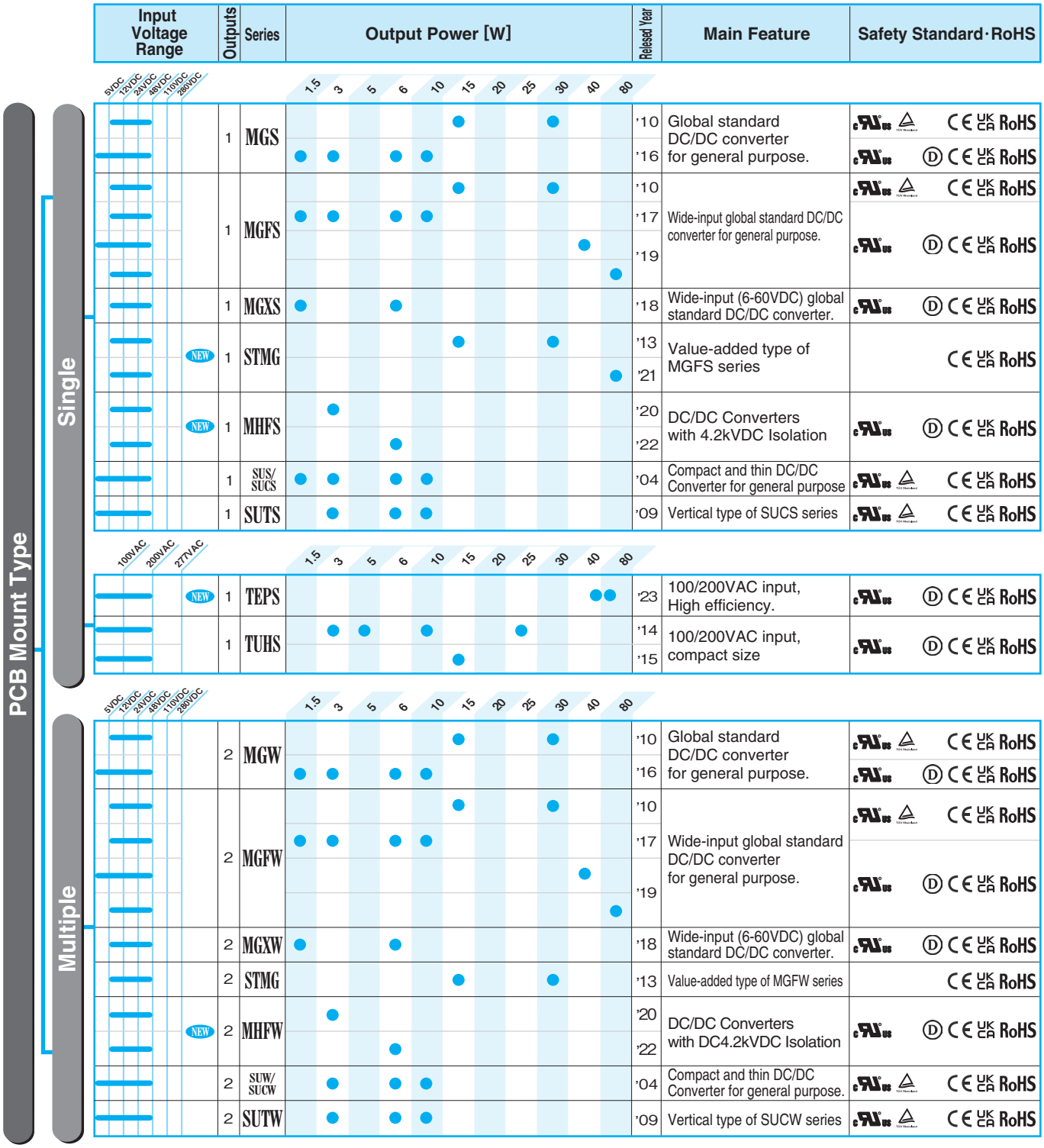
Single

Input Voltage Range	Outputs	Series	Output Current [A]	Released Year	Main Feature	Safety Standard·RoHS
3-14.4VDC	1	BRNS	6 12 20	'13	Compact size・Wide input	cULus TÜV CE UKCA RoHS
4.5-14.0VDC	1	BRFS	30 40 60 100	'13	Compact size・Fast transient response	cULus TÜV CE UKCA RoHS
				'14		
			120 150	'18		
4.5-14.0VDC	1	BRDS	40 60 100	'17	Compact size・Fast transient response, PMBus	cULus TÜV CE UKCA RoHS
			120 150	'18		

Bus Converter・Power Module Type

Single

Input Voltage Range	Outputs	Series	Output Power [W]	Released year	Main Feature	Safety Standard·RoHS
5VDC 12VDC 24VDC 48VDC 110VDC 280VDC	1	CHS	40 80 100 150 200 300 400 500 1000 1500	'17	24VDC input,1/16 brick size	cULus TÜV CE UKCA RoHS
				'15	24VDC input,1/8 brick size	
				'18	24VDC input,1/4 brick size	
				'14	48VDC input,1/32 brick size	
				'11	48VDC input, 1/16 brick size	
				'16		
				'11	48VDC input, 1/8 brick size	
				'13		
				'17		
				'13	48VDC input, 1/4 brick size	
				'14		
				'18		cULus TÜV CE UKCA RoHS
	1	CQHS		'14	48VDC input, 1/8 brick size	cULus TÜV CE UKCA RoHS
				'10	48VDC input, 1/4 brick size	
				'13		
	1	DHS		'10	110VDC input, small brick size	cULus TÜV CE UKCA RoHS
				'09	280VDC input, small brick size	
	1	DBS		'03	110VDC input, full function and full brick size	cULus TÜV CE UKCA RoHS
				'00	280VDC input, full function and full brick size	
100VAC 200VAC 305VAC	1	TUXS	40 80 100 150 200 300 400 500 1000 1500	'15	100/200VAC input. High efficiency. Complied with harmonic regulations. Isolated type.	cULus CE UKCA RoHS
				'17		
	1	TUNS		'12	100/200VAC input. Complied with harmonic regulations. Isolated type. Brick size	cULus TÜV CE UKCA RoHS
				'14		
				'15		
				'20	85-305VAC input.full function Complied with harmonic regulations	cULus CE UKCA RoHS
	1	DPG		'10	100/200VAC input. Compact size. Complied with harmonic regulations.	cULus TÜV CE UKCA RoHS
	1	DPF		'00	100/200VAC input. High wattage. Complied with harmonic regulations.	cULus TÜV CE UKCA RoHS



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COSEL Selection Guide by Type/Function

Configurable type

AME
400/600/
800/1200W
85-264VAC

Downsize/
High
Functionality

ACE
300/450/
650/900W
85-264VAC

Open Frame type

LHA NEW
10-300W
85-264VAC

LHP NEW
150/300W
85-264VAC
Peak Power

Downsize

Downsize

LFA
10-300W
85-264VAC

LFP
100-300W
85-264VAC
Peak Power

LMA
100/150/240W
85-264VAC
Medical

Inch Size

TECS NEW
45/65W
85-264VAC
Class II
1" x 3"

GMA
300W
85-264VAC
Medical
2" x 4"

UMA NEW
30/60W
85-264VAC
Medical
2" x 3"

GHA NEW
300/500/700W
85-264VAC
Medical
3" x 5"

Enclosed type

PJMA NEW
300-1500W
85-264VAC
Medical

Medical Ver.

PJA
100-1500W
85-264VAC

PDA NEW
15/30/50W
85-264VAC

PCA NEW
300-1500W
85-264VAC
Digital Communication

Simple
Functionality

Downsize/
High Functionality

WMA NEW
150-350W
85-264VAC
Medical

Medical Ver.

PLA
15/30/50W
85-264VAC

Simple
Functionality

PBA
10-1500W
85-264VAC

PBW
15/30/50W
85-264VAC
Dual Outputs

Wide
Input Range

WBA NEW
35-350W
170-305VAC

Peak Power

AEA NEW
600-1000W
85-264VAC
Peak Power

Downsize

ADA
600-1000W
85-264VAC
Peak Power

3 Phase Input

HCA NEW
3500W
180-528VAC(3Φ)
Conduction Cooling

HFA NEW
3500W
180-528VAC(3Φ)
Forced Air Cooling

FETA NEW
2500/3000/7000W
170-264VAC
(2500/3000W 1Φ, 7000W 3Φ)
Forced Air Cooling

DIN Rail type

KH
30-480W
85-264VAC
Multifunction

Simple
Functionality

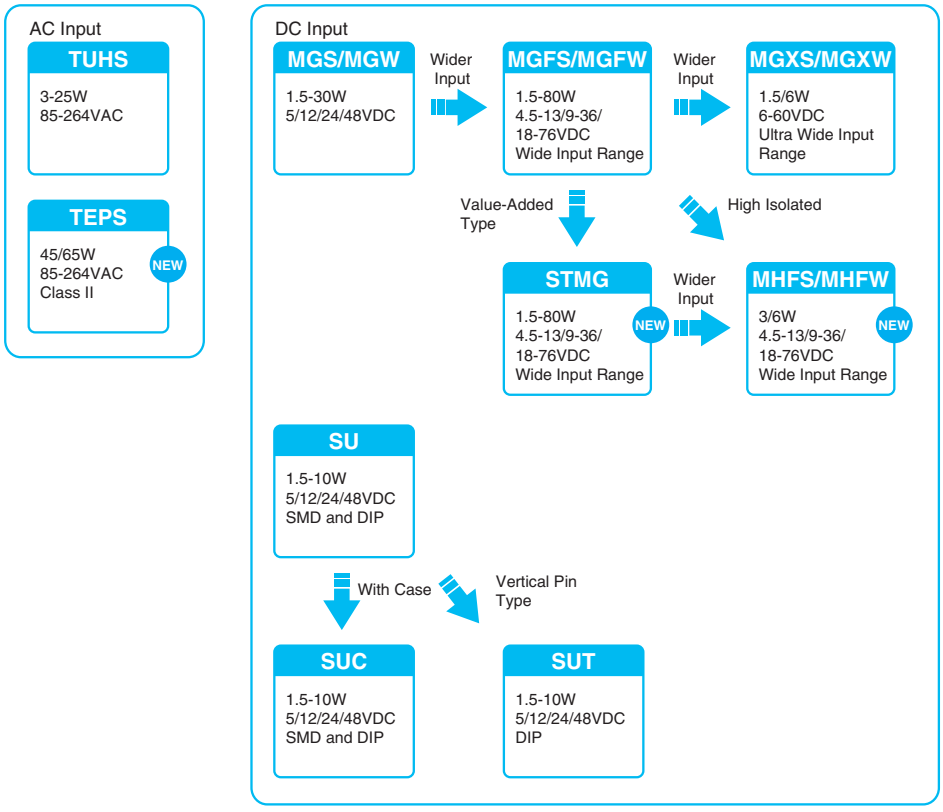
KL
120/240W
85-264VAC

Simple
Functionality

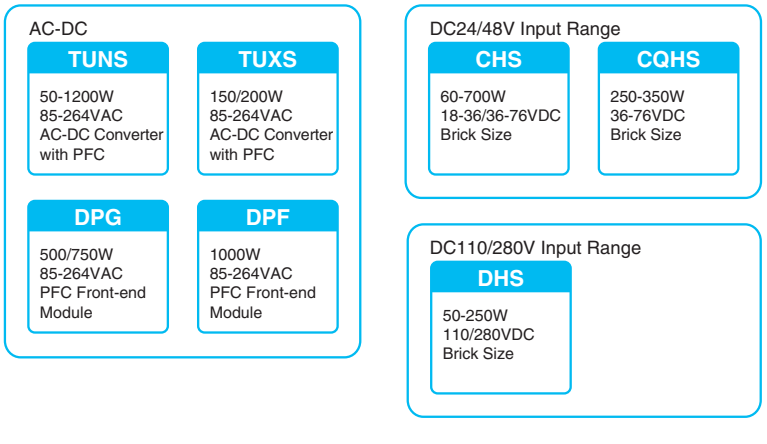
WDA NEW
30-90W
85-264VAC

KR
20-40A
10-60VDC
10-30VDC
Redundancy Module

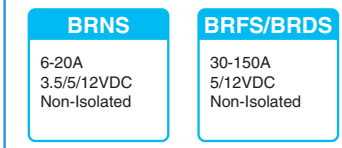
PCB Mount type



Bus Converter/Power Module type

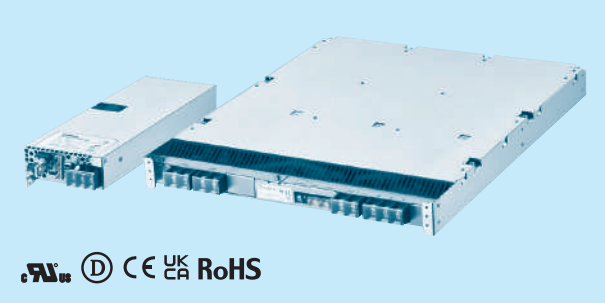


POL type



COSEL AC-DC Power Supplies Enclosed Type

FETA-Series



FETA

Feature

High power density (2.09W/cm³ FETA3000BA-48)
Low profile (Meets 1U height)
High output voltage
(FETA3000BC-250, FETA7000T-144, FETA7000ST-144)
High efficiency (93.0%typ FETA3000BA-48, 230VACin, 50% load)
High-speed response (FETA3000BC)
Harmonic attenuator
(FETA2500BA, 3000BA, 3000BC, 7000ST : Complies with IEC61000-3-2 Class A)
FETA7000T : Complies with IEC61000-3-12)
Complies with SEMI F47
Parallel Operation / Parallel Redundancy Operation
Alarm signals, Remote ON / OFF and other functions

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC Part15-A, CISPR32-A, EN55011-A, EN55032-A, VCCI-A (FETA7000ST External EMI filter is required.)

EMS Compliant : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

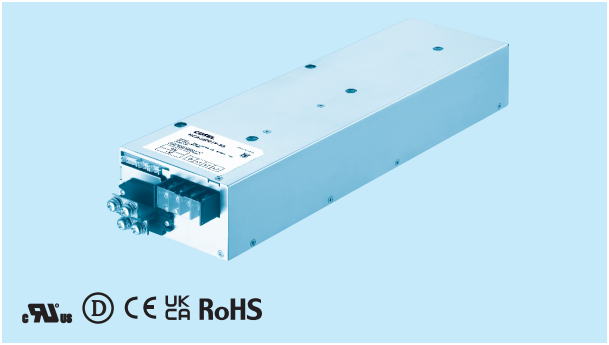
3-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
			170-180VACin	180-264VACin		
FETA2500BA	170-264VAC 1φ	36	Derating is required	55	102•41•340 (4.02•1.61•13.39)	2.3
		48		52		
FETA3000BA		48		62		
FETA3000BC		250		12		
FETA7000T	170-264VAC 3φ	48	Derating is required	148.2	388•43•475 (15.28•1.69•18.70)	11
		144		52		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
			300-320VACin	320-480VACin		
FETA7000ST	300-480VAC 3φ 4-Wire	48	Derating is required	148.2	388•43•475 (15.28•1.69•18.70)	11
		144		52		

COSEL AC-DC Power Supplies Enclosed Type

HCA-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
HCA3500TF	180-528VAC 3φ	48	73	110•65•420 (4.33•2.56•16.54)	5
		65	54		

*Output derating is required at 180-200VAC. Please see cosel website (https://en.cosel.co.jp) for the detail.

HCA

Feature

Low profile (Meets 1.5U height)
Wide input voltage range
High efficiency
Parallel operation / N+1 redundancy operation
Built-in AUX power (12V 1A)
Built-in alarm
Built-in ORING MOSFET
Remote ON/OFF function
Fanless (Conduction cooling)
Complies with SEMI F47

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC Part 15-A, FCC Part 18-A, CISPR11-A, CISPR32-A, EN55011-A, EN55032-A, VCCI-A

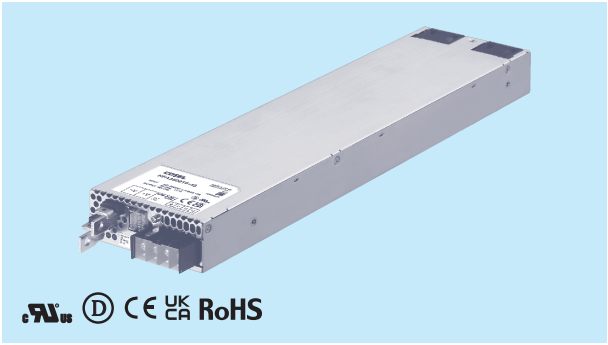
EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Enclosed Type

HFA-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
HFA3500TF	180-528VAC 3φ	48	73	110•41•468 (4.33•1.61•18.43)	3
		65	54		

*Output derating is required at 180-200VAC. Please see cosel website (https://en.cosel.co.jp) for the detail.

HFA

Feature

Low profile (Meets 1U height)
Wide input voltage range
High efficiency
Parallel operation / N+1 redundancy operation
Built-in AUX power (12V 1A)
Built-in alarm
Built-in ORING MOSFET
Remote ON/OFF function
Complies with SEMI F47

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC Part 15-A, FCC Part 18-A, CISPR11-A, CISPR32-A, EN55011-A, EN55032-A, VCCI-A

EMS Compliance : EN61204-3, EN61000-6-2

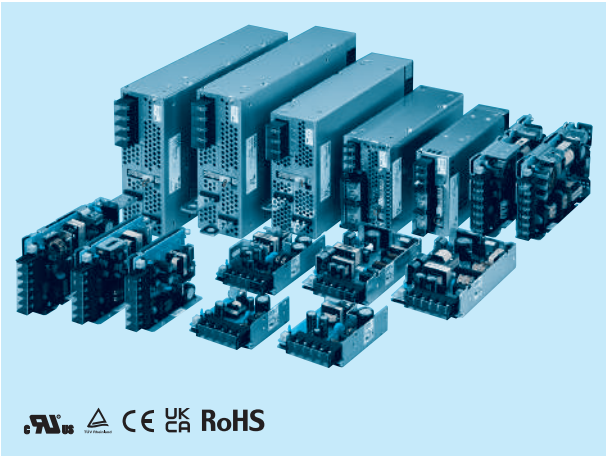
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MEMO

COSEL AC-DC Power Supplies Enclosed Type

PBA, PBW-Series



PBA PBW

Feature

Universal input (85-264VAC) : PBA1500T(170-264VAC 3φ)
Parallel and parallel redundancy operations
(PBA300F-1500F, PBA1500T)
Fan alarm, Remote ON/OFF and other functions
(PBA300F-1500F, PBA1500T)

Safety agency approvals

UL60950-1, C-UL(CSA60950-1), EN62368-1,
UL508 (PBA10F-30F: 5, 12, 24V, PBA50F-150F: 24V With Cover) (PBA1500F, PBA1500T: External EMI filter is required.)
Complies with DEN-AN

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
PBA10F	85-264VAC 1φ or 110-370VDC	5	2	31·78·68 (1.22·3.07·2.68)	150
		12	0.9		
		24	0.5		
PBA15F	85-264VAC 1φ or 110-370VDC	3.3	3	31·78·85 (1.22·3.07·3.35)	200
		5	3		
		9	1.7		
		12	1.3		
		15	1		
		24	0.7		
		48	0.35		
PBA30F	85-264VAC 1φ or 110-370VDC	3.3	6	31·78·103 (1.22·3.07·4.06)	270
		5	6		
		9	3.4		
		12	2.5		
		15	2		
		24	1.3		
		48	0.65		
PBA50F	85-264VAC 1φ or 120-370VDC	3.3	10	31·82·120 (1.22·3.23·4.72)	280
		5	10		
		9	5.6		
		12	4.3		
		15	3.5		
		24	2.2		
		36	1.4		
		48	1.1		
PBA75F	85-264VAC 1φ or 120-370VDC	3.3	15	32·82·135 (1.26·3.23·5.31)	350
		5	15		
		9	8.4		
		12	6.3		
		15	5		
		24	3.2		
		36	2.1		
		48	1.6		
PBA100F	85-264VAC 1φ or 120-370VDC	3.3	20	32·93·147 (1.26·3.66·5.79)	440
		5	20		
		9	10.5		
		12	8.5		
		15	7		
		24	4.5		
		36	2.8		
		48	2.1		
PBA150F	85-264VAC 1φ or 120-370VDC	3.3	30	34·93·168 (1.34·3.66·6.61)	560
		5	30		
		9	16.7		
		12	13		
		15	10		
		24	6.5		
		36	4.3		
		48	3.3		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
			100VACin	200VACin		
PBA300F	85-264VAC 1φ or 120-350VDC	3.3	60	60	102·42·170 (4.02·1.65·6.69)	1.0
		5	60	60		
		7.5	40	40		
		12	27	27		
		15	22	22		
		24	14	14(16.5)*		
		36	9	9		
		48	7	7		
PBA600F	85-264VAC 1φ or 120-350VDC	3.3	120	120	120·61·190 (4.72·2.4·7.48)	1.6
		5	120	120		
		7.5	80	80		
		12	53	53		
		15	43	43		
		24	27	27(31)*		
		36	18	18		
		48	13	13		
PBA1000F	85-264VAC 1φ or 120-350VDC	3.3	200	200	150·61·240 (5.91·2.4·9.45)	2.2
		5	200	200		
		7.5	134	134		
		12	88	88		
		15	70	70		
		24	44	44(51)*		
		36	29	29		
		48	22	22		
PBA1500F	85-264VAC 1φ or 120-370VDC	3.3	300	300	178·61·268 (7.01·2.4·10.55)	3.4
		5	300	300		
		7.5	200	200		
		12	125	125		
		15	100	100		
		24	65	70(105)*		
		36	42	47(70)*		
		48	32	35		
PBA1500T	170-264VAC 3φ	5	-	300	178·61·268 (7.01·2.4·10.55)	3.4
		12	-	125		
		24	-	70(105)*		
		48	-	35		

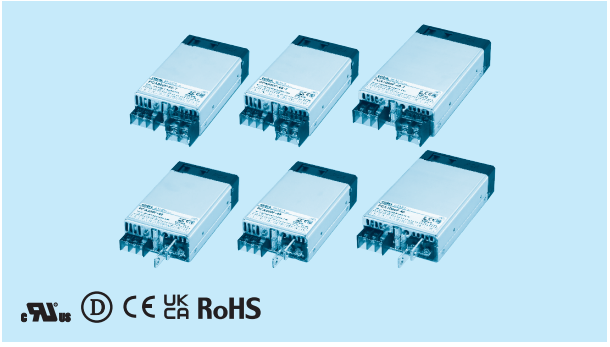
*Peak current.

MODEL	INPUT VOLTAGE	MAX OUTPUT WATTAGE [W]	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A] CURRENT1	OUTPUT CURRENT [A] CURRENT2	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
PBW15F	85-264VAC 1φ or 110-370VDC	16.8	±12 (+24)	0.7	1.4	31•78•85 (1.22•3.07•3.35)	200
		15.0	±15 (+30)	0.5	1.0		
PBW30F	85-264VAC 1φ or 110-370VDC	15.0	±5 (+10)	1.5	2.0	31•78•103 (1.22•3.07•4.06)	270
		31.2	±12 (+24)	1.3	1.7		
		30.0	±15 (+30)	1.0	1.4		
PBW50F	85-264VAC 1φ or 120-370VDC	30.0	±5 (+10)	3.0	4.0	31•82•120 (1.22•3.23•4.72)	280
		50.4	±12 (+24)	2.1	2.7		
		51.0	±15 (+30)	1.7	2.4		

*The sum of +power and -power must be less than output power. For details, please see Cosel website. (https://en.cosel.co.jp).

COSEL AC-DC Power Supplies Enclosed Type

PCA-Series



PCA

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A] 100VACin	OUTPUT CURRENT [A] 230VACin	CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
PCA300F	85-264VAC 1φ or 88-370VDC	5	60		89•41•152 (3.50•1.61•5.98)	0.84
		12	27			
		15	22			
		24	14			
		32	10			
		48	7			
PCA600F	85-264VAC 1φ or 88-370VDC	5	120		89•41•152 (3.50•1.61•5.98)	0.84
		12	53			
		15	43			
		24	27			
		32	20			
		48	13			
PCA1000F	85-264VAC 1φ	5	200		102 · 41 · 178 (4.02•1.61•7.01)	1.2
		12	88			
		15	70			
		24	44			
		32	33			
		48	22			
PCA1500F	85-264VAC 1φ	5	300	300	140•41•203 (5.51•1.61•7.99)	2.0
		12	125	125		
		15	100	100		
		24	65	70		
		32	47	52		
		48	32	35		

*Input derating is required. Please see cosel website (https://en.cosel.co.jp) for the detail.

Feature

Low profile (41mm, 1.61 inches = Meets 1U height)
Universal input (85-264VAC)
Operating input voltage: 88-370VDC (Excl. PCA1000F and PCA1500F.)
For medical applications (ANSI/AAMI ES60601-1,EN60601-1 3rd, IEC60601-1-2 4th Ed.)
2MOPP
AUX output 12V 0.1A (Voltage adjustable range 5-12V)
Constant current function
Output voltage can be adjusted to approximately 0V
Many alarm functions
Parallel and N+1 parallel redundancy operations
Monitoring function by communication.

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1, ANSI/AAMI EN60601-1, EN60601-1 3rd, IEC60601-1-2 4th
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B
(PCA1000F and PCA1500F : External EMI filter is required to meet Class B.
Only PCA1000F and PCA1500F : Class A)

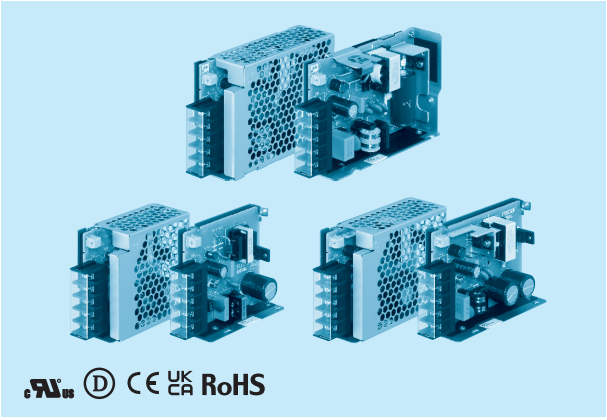
EMS Compliance : EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Enclosed Type

PDA-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
PDA15F	85-264VAC 1φ	5	3	31•78•85 (1.22•3.07•3.35)	180
		12	1.3		
		24	0.7		
PDA30F	85-264VAC 1φ	5	6	31•78•103 (1.22•3.07•4.06)	250
		12	2.5		
		24	1.3		
PDA50F	85-264VAC 1φ	5	10	31•82•120 (1.22•3.23•4.72)	330
		12	4.3		
		24	2.2		

*For further information, please see Cosel website (https://en.cosel.co.jp).

PDA

Feature

High efficiency
Low noise
Complies with SEMI F47
Harmonic attenuator (Complies with IEC61000-3-2)
Universal input (85-264VAC)
Built-in inrush current, overcurrent and overvoltage protection circuits

Safety agency approvals

UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-1B, FCC Part 15-B, FCC Part 18-B, VCCI-B

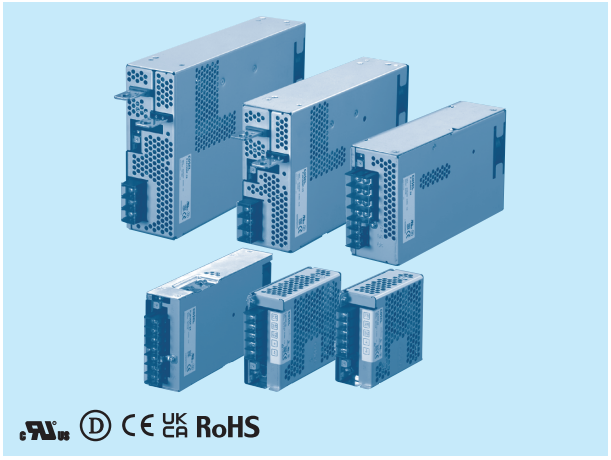
EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty (refer to Instruction Manual)

COSEL AC-DC Power Supplies Enclosed Type

PJA-Series



PJA

Feature

Low profile
Wide operating ambient temperature (-20℃ to +70℃, Derating is required)
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Universal input (85-264VAC, Derating is required)
Low power consumption at no load
Complies with SEMI F-47

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1,
UL508 (PJA100F and PJA150F, Except option -J) approved
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B
(PJA1500F: External EMI filter is required to meet Class B. Only PJA1500F: Class A)

EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

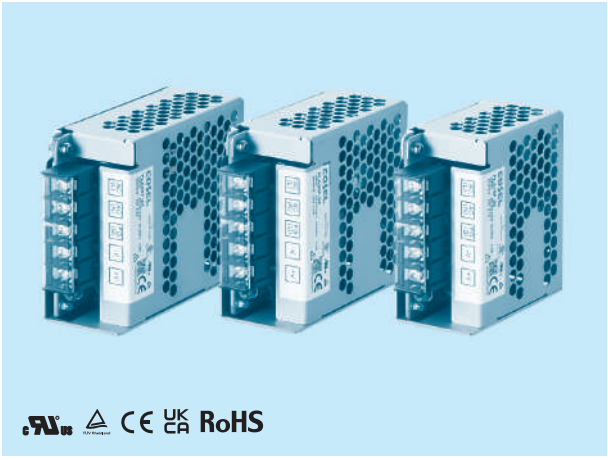
5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
			85-115VACin	115-264VACin		
PJA100F	85-264VAC 1φ	12	Derating is required	8.4	41•97•109 (1.61•3.82•4.29)	0.5
		15		6.7		
		24		4.3		
		36		2.8		
		48		2.1		
PJA150F	85-264VAC 1φ	12	Derating is required	12.5	41•97•129 (1.61•3.82•5.08)	0.6
		15		10		
		24		6.4		
		36		4.2		
		48		3.2		
PJA300F	85-264VAC 1φ	5	Derating is required	50	102•41•190 (4.02•1.61•7.48)	1.0
		12		25		
		15		20		
		24		12.5		
		36		8.4		
		48		6.3		
PJA600F	85-264VAC 1φ	5	Derating is required	100	120•61•215 (4.72•2.40•8.46)	2.0
		12		50		
		15		40		
		24		25		
		36		16.7		
		48		12.5		
PJA1000F	85-264VAC 1φ	12	Derating is required	84	150•61•240 (5.91•2.40•9.45)	2.8
		15		67		
		24		42		
		36		28		
		48		21		
PJA1500F	85-264VAC 1φ	12	Derating is required	125	178•61•268 (7.01•2.40•10.55)	3.5
		15		100		
		24		64		
		36		42		
		48		32		

*For furhter information, please see Cosel website. (https://en.cosel.co.jp).

COSEL AC-DC Power Supplies Enclosed Type

PLA-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
			85-115VACin	115-264VACin		
PLA15F	85-264VAC 1φ	5	Derating is required	3	38•80•73 (1.50•3.15•2.87)	0.25
		12		1.3		
		15		1		
		24		0.7		
PLA30F	85-264VAC 1φ	5	Derating is required	6	38•80•88 (1.50•3.15•3.46)	0.33
		12		2.5		
		15		2		
		24		1.3		
PLA50F	85-264VAC 1φ	5	Derating is required	8	38•80•99 (1.50•3.15•3.90)	0.4
		12		4.3		
		15		3.5		
		24		2.2		

∗For further information, Please see cosel website (https://en.cosel.co.jp) for the detail.

PLA

Feature

Low profile
Wide operating ambient temperature (-20℃ to +70℃, Derating is required)
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Universal input (85-264VAC, Derating is required)
Low power consumption at no load

Safety agency approvals

UL60950-1, C-UL (CSA60950-1), EN62368-1,
UL508 (Except option -J) approved
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

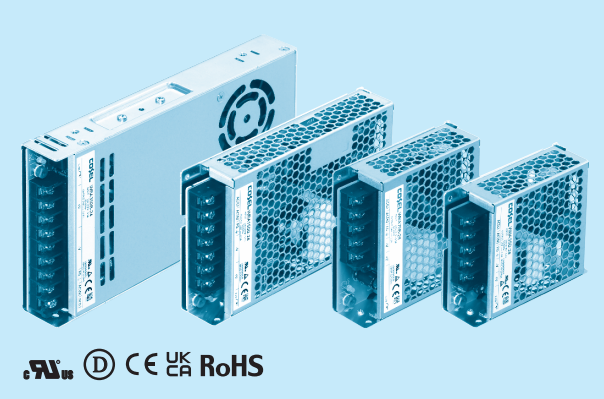
EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Enclosed Type

WBA-Series



WBA

* This product is only available in Asia and Oceania (excluding Japan).

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
WBA35B	170-305VAC 1φ	5	7	30•82•99 (1.18•3.23•3.90)	200
		12	3		
		24	1.5		
		48	0.8		
WBA75B		12	6	30•97•99 (1.18•3.82•3.90)	250
		24	3.2		
		48	1.6		
WBA150B		12	12.5	30•97•159 (1.18•3.82•6.26)	500
		24	6.5		
		48	3.3		
WBA350B		12	29	115•30•215 (4.53•1.18•8.46)	800
		24	14.6		
		36	9.7		
		48	7.3		

Feature

Wide input 170-305VAC (Accepts 230/277VAC Nominal inputs)
Wide temperature range (-20℃ to +70℃, Derating is required)
Operating altitude up to 5000 meters
4kV isolation
Low-profile
Economical design
Complies with SEMI F47

Safety agency approvals

UL62368-1, EN62368-1, C-UL (CAN/CSA-C22.2 No.62368-1)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

EMI

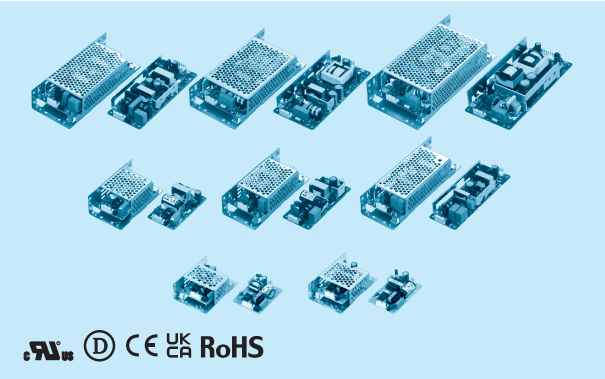
Complies with CISPR32-B, EN55032-B and EN55011-B (WBA350B: Class A In radiated noise, it can meet class B by additional EMI/EMC filter.)

EMS Compliance: EN61204-3, EN61000-6-2
IEC60601-1-2 (2014),
EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

COSEL AC-DC Power Supplies Open Frame Type

LHA-Series



LHA

Feature

EN62477-1 (OVC III) : LHA150F, 300F
Low profile
Compact open frame type
High efficiency
Low noise
Harmonic attenuator (Complies with IEC61000-3-2)
Power factor correction (LHA75F-300F)
Universal input (85-264VAC)
Inrush current, overcurrent and overvoltage protection

Safety agency approvals

UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
EN62477-1 (OVC III) : LHA150F, 300F
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B

EMS Compliance: EN61204-3, EN61000-6-2

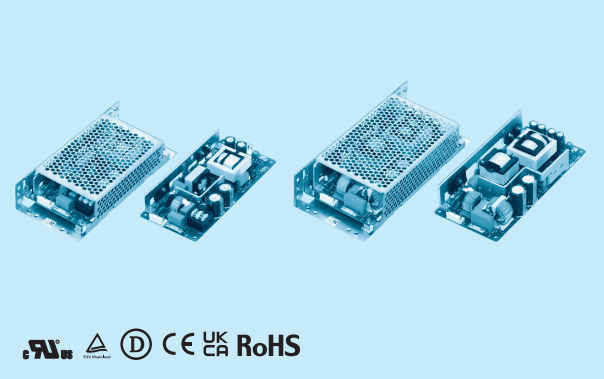
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
LHA10F	85-264VAC 1φ	3.3	2	50•21.5•62.5 (1.97•0.85•2.46)	45
		5	2		
		12	0.9		
		15	0.7		
		24	0.5		
LHA15F	85-264VAC 1φ	3.3	3	50•21.5•73.5 (1.97•0.85•2.89)	60
		5	3		
		12	1.3		
		15	1		
		24	0.7		
LHA30F	85-264VAC 1φ	3.3	6	50•27•87.5 (1.97•1.07•3.44)	100
		5	6		
		12	2.5		
		15	2		
		24	1.3		
LHA50F	85-264VAC 1φ	3.3	8	50•27•112 (1.97•1.07•4.41)	140
		5	8		
		12	4.3		
		15	3.5		
		24	2.1		
		36	1.4		
		48	1.1		
LHA75F	85-264VAC 1φ	3.3	12	50•27•150 (1.97•1.07•5.91)	190
		5	12		
		12	6.3		
		15	5		
		24	3.2		
		36	2.1		
		48	1.6		
LHA100F	85-264VAC 1φ	5	15	62•27•155 (2.44•1.07•6.10)	250
		12	8.5		
		15	6.7		
		24	4.3		
		36	2.8		
		48	2.1		
LHA150F	85-264VAC 1φ	12	12.5	75•27•160 (2.95•1.07•6.30)	320
		24	6.3		
		36	4.2		
		48	3.2		
LHA300F	85-264VAC 1φ	12	25	84•37•180 (3.31•1.46•7.09)	580
		24	12.5		
		48	6.3		

COSEL AC-DC Power Supplies Open Frame Type

LHP-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
LHP150F	85-264VAC 1φ	24	6.3(12.6)*	75•27•160 (2.95•1.07•6.30)	320
		30	5.0(10.0)*		
		36	4.2(8.4)*		
		42	3.6(7.2)*		
		48	3.2(6.4)*		
LHP300F	85-264VAC 1φ	24	12.5(25.0)*	84•37•180 (3.31•1.46•7.09)	580
		30	10.0(20.0)*		
		36	8.4(16.8)*		
		42	7.2(14.4)*		
		48	6.3(12.6)*		

*Peak current.

LHP

Feature

OVC III
High power and high peak power
High efficiency
Low profile
Active power factor correction
Harmonic attenuator (Complies with IEC61000-3-2)
Universal input (85-264VAC)
Built-in inrush current, overcurrent and overvoltage protection

Safety agency approvals

UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
EN62477-1 (OVC III)
Complies with DEN-AN
UL508 (Optional)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B

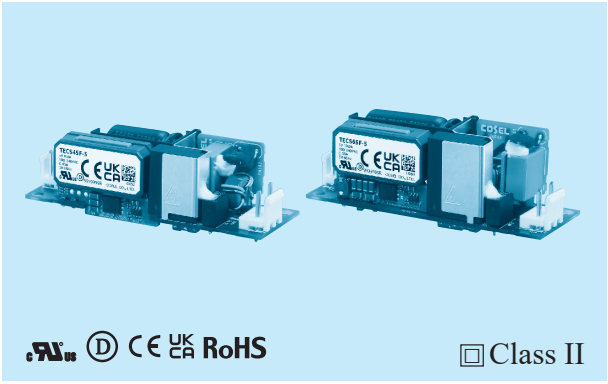
EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Open Frame Type

TECS-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
TECS45F	85-264VAC 1φ	5	8	25.4•23.5•76.2 (1.00•0.93•3.00)	60
		12	3.8		
		24	1.9		
TECS65F	85-264VAC 1φ	5	10	25.4•27.0•76.2 (1.00•1.06•3.00)	70
		12	5.45		
		24	2.75		

TECS

Feature

Small and lightweight
High efficiency
Harmonic attenuator (Complies with IEC61000-3-2)
Universal input (85-264VAC)
Built-in inrush current, overcurrent and overvoltage protection circuits

Safety agency approvals

UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-B, VCCI-B

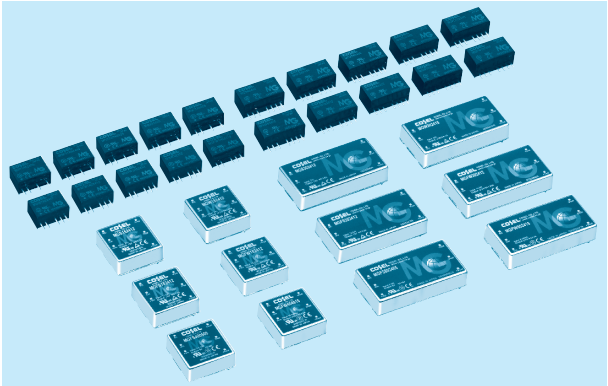
EMS Compliant : EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL DC-DC Converters PCB Mount Type

MG-Series



RoHS (MG15/30)

RoHS (MG1R5/3/6/10/40/80)

MGS MGFS MGW MGFW

MGXS MGXW

Feature

Industrial standard SIP6 (MG1R5/3), SIP8 (MG6/10), 1"X1" (MG15/MG40), 1"X2" (MG30/MG80)
Wide input 9-36VDC/18-76VDC (MGFS/MGFW)
Ultra wide input 6-60VDC (MGXS/MGXW)
6 sided shield (MG15/30/40/80)
I/O Isolation voltage 1,500VDC (1minute)
Overcurrent protection (Auto recovery type)
Overvoltage protection (MG30/40/80)
Remote ON/OFF (MG6/10/15/30/40/80)
Output voltage adjustable by external variable resister (MG15/30/40/80 Single output)
High reliability: No built-in aluminum and tantalum electrolytic capacitor

Safety agency approvals

UL60950-1, C-UL, EN62368-1 (MG1R5/3/6/10/15/30)
UL62368-1, C-UL, EN62368-1 (MG40/80)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

10-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A] 3.3[V]	5[V]	12[V]	15[V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
MGXS1R5	6-60VDC	0.4	0.3	0.13	0.1	17·12·8.5 (0.67·0.48·0.34)	4
MGXS6	6-60VDC	1.6	1.2	0.5	0.4	22·12·9.5 (0.87·0.48·0.38)	7

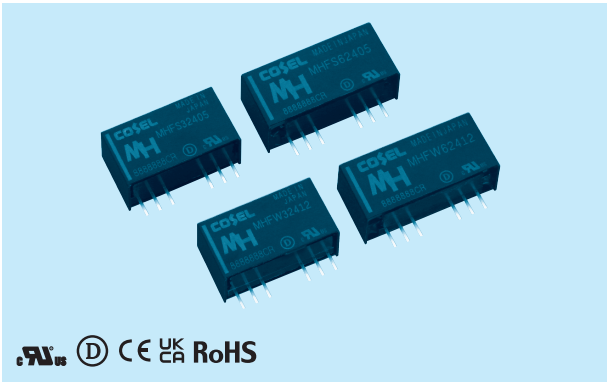
MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A] ±5 (+10) [V]	±12 (+24) [V]	±15 (+30) [V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
MGXW1R5	6-60VDC	-	0.065	0.05	17·12·8.5 (0.67·0.48·0.34)	4
MGXW6	6-60VDC	-	0.25	0.2	22·12·9.5 (0.87·0.48·0.38)	7

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A] 3.3[V]	5[V]	12[V]	15[V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
MGS1R5	4.5-9VDC	0.4	0.3	0.13	0.1	17·12·8.5 (0.67·0.48·0.34)	4
	9-18VDC	0.4	0.3	0.13	0.1		
	18-36VDC	0.4	0.3	0.13	0.1		
	36-76VDC	0.4	0.3	0.13	0.1		
MGS3	4.5-9VDC	0.8	0.6	0.25	0.2	17·12·8.5 (0.67·0.48·0.34)	4
	9-18VDC	0.8	0.6	0.25	0.2		
	18-36VDC	0.8	0.6	0.25	0.2		
	36-76VDC	0.8	0.6	0.25	0.2		
MGS6	4.5-9VDC	1.6	1.2	0.5	0.4	22·12·9.5 (0.87·0.48·0.38)	7
	9-18VDC	1.6	1.2	0.5	0.4		
	18-36VDC	1.6	1.2	0.5	0.4		
	36-76VDC	1.6	1.2	0.5	0.4		
MGS10	4.5-9VDC	2.6	2	0.9	0.7	22·12·9.5 (0.87·0.48·0.38)	7
	9-18VDC	2.6	2	0.9	0.7		
	18-36VDC	2.6	2	0.9	0.7		
	36-76VDC	2.6	2	0.9	0.7		
MGS15	9-18VDC	4	3	1.3	1	25.4·9.9·25.4 (1·0.39·1)	20
	18-36VDC	4	3	1.3	1		
	36-76VDC	4	3	1.3	1		
MGS30	9-18VDC	8	6	2.5	2	25.4·9.9·50.8 (1·0.39·2)	40
	18-36VDC	8	6	2.5	2		
	36-76VDC	8	6	2.5	2		
MGFS1R5	9-36VDC	0.4	0.3	0.13	0.1	17·12·8.5 (0.67·0.48·0.34)	4
	18-76VDC	0.4	0.3	0.13	0.1		
MGFS3	9-36VDC	0.8	0.6	0.25	0.2	17·12·8.5 (0.67·0.48·0.34)	4
	18-76VDC	0.8	0.6	0.25	0.2		
MGFS6	9-36VDC	1.6	1.2	0.5	0.4	22·12·9.5 (0.87·0.48·0.38)	7
	18-76VDC	1.6	1.2	0.5	0.4		
MGFS10	9-36VDC	2.6	2	0.9	0.7	22·12·9.5 (0.87·0.48·0.38)	7
	18-76VDC	2.6	2	0.9	0.7		
MGFS15	9-36VDC	4	3	1.3	1	25.4·9.9·25.4 (1·0.39·1)	20
	18-76VDC	4	3	1.3	1		
MGFS30	9-36VDC	7.5	6	2.5	2	25.4·9.9·50.8 (1·0.39·2)	40
	18-76VDC	7.5	6	2.5	2		
MGFS40	4.5-13VDC	8	6	2.5	2	25.4·9.9·25.4 (1·0.39·1)	30
	9-36VDC	10	8	3.4	2.7		
	18-76VDC	10	8	3.4	2.7		
MGFS80	9-36VDC	18	16	6.7	5.4	25.4·9.9·50.8 (1·0.39·2)	50
	18-76VDC	18	16	6.7	5.4		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A] ±5 (+10) [V]	±12 (+24) [V]	±15 (+30) [V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
MGW1R5	4.5-9VDC	-	0.065	0.05	17·12·8.5 (0.67·0.48·0.34)	4
	9-18VDC	-	0.065	0.05		
	18-36VDC	-	0.065	0.05		
	36-76VDC	-	0.065	0.05		
MGW3	4.5-9VDC	-	0.13	0.1	17·12·8.5 (0.67·0.48·0.34)	4
	9-18VDC	-	0.13	0.1		
	18-36VDC	-	0.13	0.1		
	36-76VDC	-	0.13	0.1		
MGW6	4.5-9VDC	-	0.25	0.2	22·12·9.5 (0.87·0.48·0.38)	7
	9-18VDC	-	0.25	0.2		
	18-36VDC	-	0.25	0.2		
	36-76VDC	-	0.25	0.2		
MGW10	4.5-9VDC	-	0.42	0.34	22·12·9.5 (0.87·0.48·0.38)	7
	9-18VDC	-	0.42	0.34		
	18-36VDC	-	0.42	0.34		
	36-76VDC	-	0.42	0.34		
MGW15	9-18VDC	1.5	0.65	0.5	25.4·9.9·25.4 (1·0.39·1)	20
	18-36VDC	1.5	0.65	0.5		
	36-76VDC	1.5	0.65	0.5		
MGW30	9-18VDC	2.5	1.25	1	25.4·9.9·50.8 (1·0.39·2)	40
	18-36VDC	2.5	1.25	1		
	36-76VDC	2.5	1.25	1		
MGFW1R5	9-36VDC	-	0.065	0.05	17·12·8.5 (0.67·0.48·0.34)	4
	18-76VDC	-	0.065	0.05		
MGFW3	9-36VDC	-	0.13	0.1	17·12·8.5 (0.67·0.48·0.34)	4
	18-76VDC	-	0.13	0.1		
MGFW6	9-36VDC	-	0.25	0.2	22·12·9.5 (0.87·0.48·0.38)	7
	18-76VDC	-	0.25	0.2		
MGFW10	9-36VDC	-	0.42	0.34	22·12·9.5 (0.87·0.48·0.38)	7
	18-76VDC	-	0.42	0.34		
MGFW15	9-36VDC	1.5	0.65	0.5	25.4·9.9·25.4 (1·0.39·1)	20
	18-76VDC	1.5	0.65	0.5		
MGFW30	9-36VDC	2	1.25	1	25.4·9.9·50.8 (1·0.39·2)	40
	18-76VDC	2	1.25	1		
MGFW40	4.5-13VDC	-	1.3	1	25.4·9.9·25.4 (1·0.39·1)	30
	9-36VDC	-	1.7	1.4		
	18-76VDC	-	1.7	1.4		
MGFW80	9-36VDC	-	3.4	2.7	25.4·9.9·50.8 (1·0.39·2)	50
	18-76VDC	-	3.4	2.7		

COSEL DC-DC Converters PCB Mount Type

MH-Series



MHFS MHFW

Feature

Industry Standard SIP8
Wide input range 4.5-18VDC/9-36VDC/18-76VDC
I/O isolation voltage 3,000VAC (1 minute), 4,200VDC (1 minute)
Built-in overcurrent protection circuits (recovers automatically)
Built-in remote ON/OFF
Output voltage adjustable by external variable resistor (MHFS3/MHFS6)
For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd)
Medical Isolation Grade 2MOOP (250VAC)
High reliability : not built-in aluminum and tantalum electrolytic capacitor

Safety agency approvals

UL62368-1, EN62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), ANSI/AAMI ES60601-1, EN60601-1 3rd, C-UL (equivalent to CAN/CSA-C22.2 No.60601-1)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

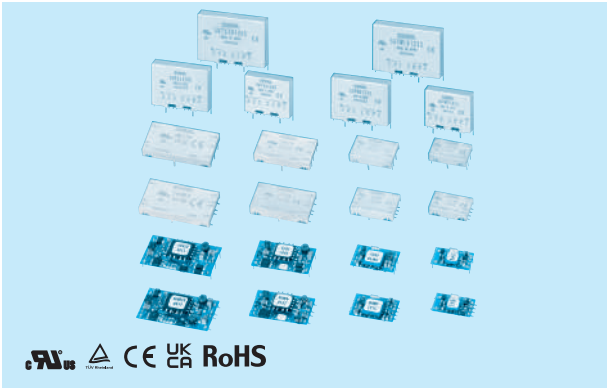
5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]					CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		3.3[V]	5[V]	9[V]	12[V]	15[V]		
MHFS3	4.5-18VDC	0.8	0.6	0.33	0.25	0.2	22•12•9.5 (0.87•0.48•0.38)	7
	9-36VDC	0.8	0.6	0.33	0.25	0.2		
	18-76VDC	0.8	0.6	0.33	0.25	0.2		
MHFS6	4.5-18VDC	1.6	1.2	0.66	0.5	0.4	26•12•9.5 (1.03•0.48•0.38)	8
	9-36VDC	1.6	1.2	0.66	0.5	0.4		
	18-76VDC	1.6	1.2	0.66	0.5	0.4		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		±12 (+24) [V]	±15 (+30) [V]		
MHFW3	4.5-18VDC	0.13	0.1	22•12•9.5 (0.87•0.48•0.38)	7
	9-36VDC	0.13	0.1		
	18-76VDC	0.13	0.1		
MHFW6	4.5-18VDC	0.25	0.2	26•12•9.5 (1.03•0.48•0.38)	8
	9-36VDC	0.25	0.2		
	18-76VDC	0.25	0.2		

COSEL DC-DC Converters PCB Mount Type

SU,SUC,SUT-Series



SUS SUCS SUW SUCW

SUTS SUTW

Feature

SMD mounting type and through-hole mounting type
High efficiency (synchronous rectifier circuit)
Remote ON/OFF (SU/SUC/SUT 3-10)
High reliability : No built-in aluminum and tantalum electrolytic capacitor

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]				CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		3.3[V]	5[V]	12[V]	15[V]		
SUTS3	4.5-9VDC	0.6	0.6	0.25	0.2	30•23.4•9.15 (1.18•0.92•0.36)	8
	9-18VDC	0.6	0.6	0.25	0.2		
	18-36VDC	0.6	0.6	0.25	0.2		
	36-76VDC	0.6	0.6	0.25	0.2		
SUTS6	4.5-9VDC	1.2	1	0.5	0.4	37.6•26.4•9.15 (1.48•1.04•0.36)	11
	9-18VDC	1.35	1.2	0.5	0.4		
	18-36VDC	1.35	1.2	0.5	0.4		
	36-76VDC	1.35	1.2	0.5	0.4		
SUTS10	4.5-9VDC	2.6	2	0.9	0.7	45.2•29.3•9.15 (1.78•1.15•0.36)	14
	9-18VDC	2.6	2	1	0.8		
	18-36VDC	2.6	2	1	0.8		
	36-76VDC	2.6	2	1	0.8		

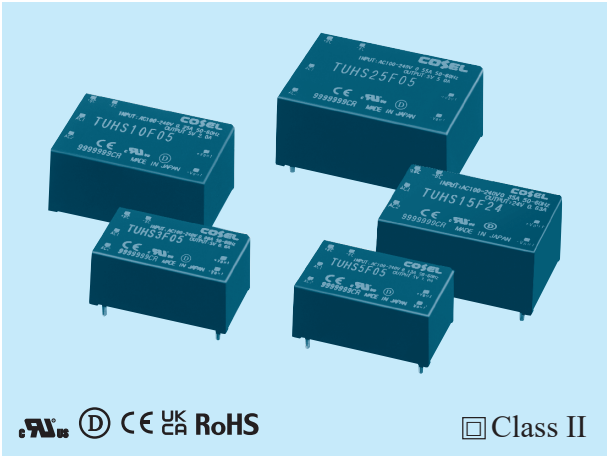
MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		±12 (+24) [V]	±15 (+30) [V]		
SUTW3	4.5-9VDC	0.13	0.1	30•23.4•9.15 (1.18•0.92•0.36)	8
	9-18VDC	0.13	0.1		
	18-36VDC	0.13	0.1		
	36-76VDC	0.13	0.1		
SUTW6	4.5-9VDC	0.25	0.2	37.6•26.4•9.15 (1.84•1.04•0.36)	11
	9-18VDC	0.25	0.2		
	18-36VDC	0.25	0.2		
	36-76VDC	0.25	0.2		
SUTW10	4.5-9VDC	0.45	0.35	45.2•29.3•9.15 (1.78•1.15•0.36)	14
	9-18VDC	0.45	0.35		
	18-36VDC	0.45	0.35		
	36-76VDC	0.45	0.35		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]				CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		3.3[V]	5[V]	12[V]	15[V]		
SUS1R5	4.5-9VDC	0.4	0.3	0.13	0.1	21.4•6.5•12.2 (0.84•0.26•0.48)	2
	9-18VDC	0.4	0.3	0.13	0.1		
	18-36VDC	0.4	0.3	0.13	0.1		
	36-76VDC	0.4	0.3	0.13	0.1		
SUS3	4.5-9VDC	0.6	0.6	0.25	0.2	24•6.5•15.1 (0.94•0.26•0.59)	3
	9-18VDC	0.6	0.6	0.25	0.2		
	18-36VDC	0.6	0.6	0.25	0.2		
	36-76VDC	0.6	0.6	0.25	0.2		
SUS6	4.5-9VDC	1.2	1	0.5	0.4	31.6•6.5•18.1 (1.24•0.26•0.71)	4
	9-18VDC	1.35	1.2	0.5	0.4		
	18-36VDC	1.35	1.2	0.5	0.4		
	36-76VDC	1.35	1.2	0.5	0.4		
SUS10	4.5-9VDC	2.6	2	0.9	0.7	39.2•6.5•21.0 (1.54•0.26•0.83)	6
	9-18VDC	2.6	2	1	0.8		
	18-36VDC	2.6	2	1	0.8		
	36-76VDC	2.6	2	1	0.8		
SUCS1R5	4.5-9VDC	0.4	0.3	0.13	0.1	22.4•7.0•13.2 (0.88•0.28•0.52)	3
	9-18VDC	0.4	0.3	0.13	0.1		
	18-36VDC	0.4	0.3	0.13	0.1		
	36-76VDC	0.4	0.3	0.13	0.1		
SUCS3	4.5-9VDC	0.6	0.6	0.25	0.2	25•7.0•16.1 (0.98•0.28•0.63)	5
	9-18VDC	0.6	0.6	0.25	0.2		
	18-36VDC	0.6	0.6	0.25	0.2		
	36-76VDC	0.6	0.6	0.25	0.2		
SUCS6	4.5-9VDC	1.2	1	0.5	0.4	32.6•7.0•19.1 (1.28•0.28•0.75)	7
	9-18VDC	1.35	1.2	0.5	0.4		
	18-36VDC	1.35	1.2	0.5	0.4		
	36-76VDC	1.35	1.2	0.5	0.4		
SUCS10	4.5-9VDC	2.6	2	0.9	0.7	40.2•7.0•22.0 (1.58•0.28•0.87)	10
	9-18VDC	2.6	2	1	0.8		
	18-36VDC	2.6	2	1	0.8		
	36-76VDC	2.6	2	1	0.8		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		±12 (+24) [V]	±15 (+30) [V]		
SUW1R5	4.5-9VDC	0.065	0.05	21.4•6.5•12.2 (0.84•0.26•0.48)	2
	9-18VDC	0.065	0.05		
	18-36VDC	0.065	0.05		
	36-76VDC	0.065	0.05		
SUW3	4.5-9VDC	0.13	0.1	24•6.5•15.1 (0.94•0.26•0.59)	3
	9-18VDC	0.13	0.1		
	18-36VDC	0.13	0.1		
	36-76VDC	0.13	0.1		
SUW6	4.5-9VDC	0.25	0.2	31.6•6.5•18.1 (1.24•0.26•0.71)	4
	9-18VDC	0.25	0.2		
	18-36VDC	0.25	0.2		
	36-76VDC	0.25	0.2		
SUW10	4.5-9VDC	0.45	0.35	39.2•6.5•21.0 (1.54•0.26•0.83)	6
	9-18VDC	0.45	0.35		
	18-36VDC	0.45	0.35		
	36-76VDC	0.45	0.35		
SUCW1R5	4.5-9VDC	0.065	0.05	22.4•7.0•13.2 (0.88•0.28•0.52)	3
	9-18VDC	0.065	0.05		
	18-36VDC	0.065	0.05		
	36-76VDC	0.065	0.05		
SUCW3	4.5-9VDC	0.13	0.1	25•7.0•16.1 (0.98•0.28•0.63)	5
	9-18VDC	0.13	0.1		
	18-36VDC	0.13	0.1		
	36-76VDC	0.13	0.1		
SUCW6	4.5-9VDC	0.25	0.2	32.6•7.0•19.1 (1.28•0.28•0.75)	7
	9-18VDC	0.25	0.2		
	18-36VDC	0.25	0.2		
	36-76VDC	0.25	0.2		
SUCW10	4.5-9VDC	0.45	0.35	40.2•7.0•22.0 (1.58•0.28•0.87)	10
	9-18VDC	0.45	0.35		
	18-36VDC	0.45	0.35		
	36-76VDC	0.45	0.35		

COSEL AC-DC Power Supplies PCB Mount Type

TUHS-Series



Class II

TUHS

Feature

PCB mount type AC-DC converter
A lot of design flexibility about hold-up time and expected life
Small size
Overcurrent and overvoltage protection
High efficiency by synchronous rectification technology (TUHS25)
No built-in aluminum and tantalum electrolytic capacitor

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low voltage directive
RoHS Directive

UKCA marking

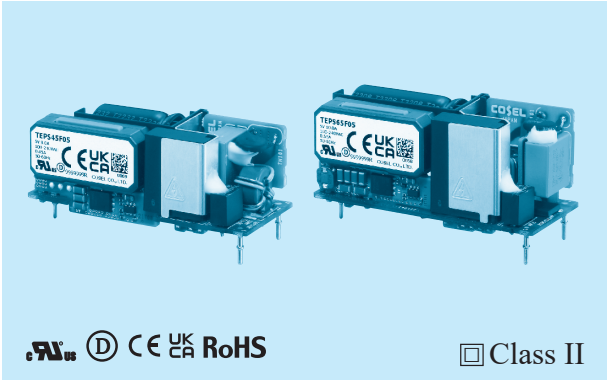
Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
TUHS3	85-264VAC 1φ or 120 - 370VDC	5	0.6	28.7•12.7•17.5 (1.13•0.50•0.69)	15
		12	0.25		
		15	0.20		
		24	0.13		
TUHS5	85-264VAC 1φ or 120 - 370VDC	5	1	28.7•12.7•17.5 (1.13•0.50•0.69)	15
		12	0.45		
		15	0.34		
		24	0.22		
TUHS10	85-264VAC 1φ or 120 - 370VDC	5	2	33.0•15.0•22.0 (1.3•0.59•0.86)	25
		12	0.9		
		15	0.67		
		24	0.45		
TUHS15	85-264VAC 1φ or 120 - 370VDC	12	1.25	33.0•15.0•22.0 (1.3•0.59•0.86)	25
		15	1		
		24	0.63		
TUHS25	85-264VAC 1φ or 120 - 370VDC	5	5	36.0•16.5•25.4 (1.42•0.65•1.0)	40
		12	2.1		
		15	1.7		
		24	1.1		

COSEL AC-DC Power Supplies PCB Mount Type

TEPS-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
TEPS45F	85-264VAC 1φ	5	8	25.4•24.0•58.5 (1.00•0.94•2.30)	60
		12	3.8		
		24	1.9		
TEPS65F	85-264VAC 1φ	5	10	25.4•27.5•58.5 (1.00•1.08•2.30)	70
		12	5.45		
		24	2.75		

TEPS

Feature

Small and lightweight
High efficiency
Harmonic attenuator (Complies with IEC61000-3-2)
Universal input (85-264VAC)
Built-in inrush current, overcurrent and overvoltage protection circuits

Safety agency approvals

UL62368-1, C-UL(equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
Complies with DEN-AN

CE marking

Low voltage directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B
FCC Part 15-B, FCC Part 18-B, VCCI-B

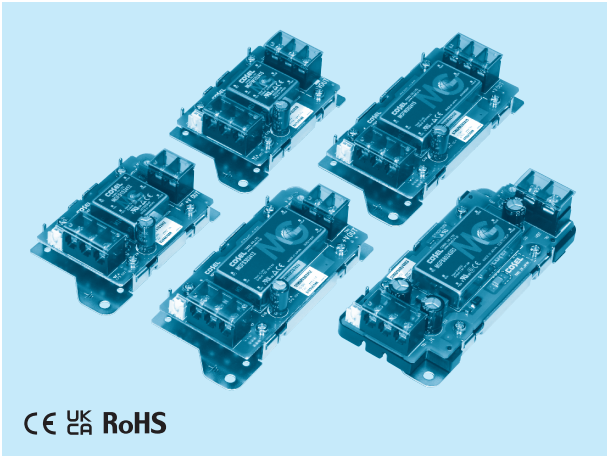
EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL DC-DC Converters PCB Mount Type Value-added Type

STMG-Series



STMGFS STMGFW

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]				CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		3.3[V]	5[V]	12[V]	15[V]		
STMGFS15	9-36VDC	4	3	1.3	1	52•27•93 (2.05•1.06•3.66)	110
	18-76VDC	4	3	1.3	1		
STMGFS30	9-36VDC	7.5	6	2.5	2	52•27•117 (2.05•1.06•4.61)	140
	18-76VDC	7.5	6	2.5	2		
STMGFS80	9-36VDC	18	16	6.7	5.4	52•29•117 (2.05•1.14•4.61)	170
	18-76VDC	18	16	6.7	5.4		

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE[V]/ OUTPUT CURRENT[A]			CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
		±5 (+10) [V]	±12 (+24) [V]	±15 (+30) [V]		
STMGFW15	9-36VDC	1.5	0.65	0.5	52•27•93 (2.05•1.06•3.66)	110
	18-76VDC	1.5	0.65	0.5		
STMGFW30	9-36VDC	2	1.25	1	52•27•117 (2.05•1.06•4.61)	140
	18-76VDC	2	1.25	1		

Feature

Isolated PCB mount type DC-DC converter
Wide input 9-36VDC/18-76VDC
Connector interface available (Option)
Case cover available (Option)
DIN rail attachment available (Option)
Overcurrent protection (Auto recovery type)
Overvoltage protection (STMG30/STMG80)
Remote ON/OFF
Output voltage adjustment (Single output only, ±10%)

Safety agency approvals

UL60950-1, C-UL, EN62368-1, Complies (STMG15/STMG30)
UL62368-1, C-UL, EN62368-1, Complies (STMG80)

CE marking

Low Voltage Directive
RoHS Directive

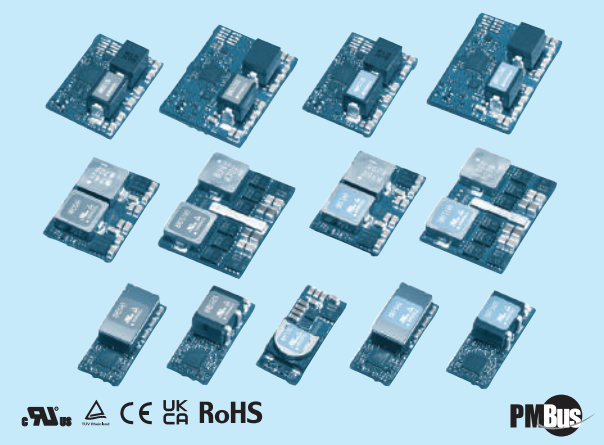
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL DC-DC Converters POL Type

BRFS/BRDS-Series



BRFS BRDS

Feature

Small size and high efficiency non-isolated DC-DC converter
Wide input 4.5VDC to 14.0VDC
Fast transient response by robust control
Remote ON/OFF, power good, start-up sequence
Overcurrent and thermal protection (Auto recovery type)
PMBus (BRDS series)

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
BRFS30	4.5-14.0VDC	0.8-3.63	30	33.0•9.5•13.5 (1.30•0.37•0.53)	10
BRFS40		0.6-2.0	40	33.0•10.9•13.5 (1.30•0.43•0.53)	12
BRFS60		0.7-2.0	60	33.0•8.0•22.9 (1.30•0.31•0.90)	15
BRFS60S		0.6-2.0	60	33.0•12.7•13.5* (1.30•0.5•0.53)*	12*
BRFS100		0.7-2.0	100	38.0•8.5•27.7 (1.50•0.33•1.09)	22
BRFS120		0.6-1.8	120	33.0•12.7•22.9 (1.30•0.50•0.90)	14
BRFS150			150	38.0•13.8•27.7 (1.50•0.54•1.09)	21
BRDS40	4.5-14.0VDC	0.6-2.0	40	33.0•10.9•13.5 (1.30•0.43•0.53)	12
BRDS60		0.7-2.0	60	33.0•8.0•22.9 (1.30•0.31•0.90)	15
BRDS60S		0.6-2.0	60	33.0•12.7•13.5* (1.30•0.5•0.53)*	12*
BRDS100		0.7-2.0	100	38.0•8.5•27.7 (1.50•0.33•1.09)	22
BRDS120		0.6-1.8	120	33.0•12.7•22.9 (1.30•0.50•0.90)	14
BRDS150			150	38.0•13.8•27.7 (1.50•0.54•1.09)	21

*Small type: BRFS60S, BRDS60S

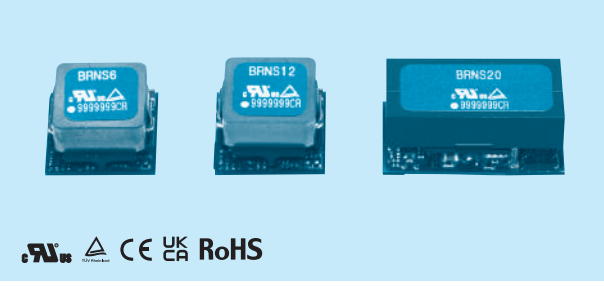
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL DC-DC Converters POL Type

BRNS-Series



BRNS

Feature

Small size and high efficiency non-isolated DC-DC converter
Wide input voltage 3.0VDC to 14.4VDC
No need adjustment of gain control by external capacitor
Remote ON/OFF, power good, frequency synchronization
Overcurrent and thermal protection (Auto recovery type)

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
BRNS6	3.0-14.4VDC	0.6-5.5	6	12.2•7.2•12.2 (0.48•0.28•0.48)	4
BRNS12			12	12.2•7.2•12.2 (0.48•0.28•0.48)	4
BRNS20			20	20.3•8.5•11.4 (0.80•0.35•0.45)	6

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

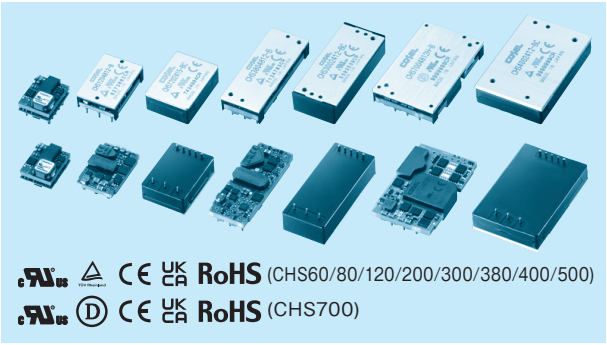
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL DC-DC Converters Bus Converter/Power Module Type

CHS-Series



RoHS (CHS60/80/120/200/300/380/400/500)
RoHS (CHS700)

CHS

Feature

High efficiency 96% (CHS7004812H)
For telecommunication, server and factory automation market
High density
High reliability : No built-in aluminum and tantalum electrolytic capacitor
Overcurrent, overvoltage and thermal protection
Remote ON/OFF
PMBus (Option : -I)
(CHS3004810/CHS3004812/CHS4004812/CHS5004812)

Safety agency approvals

UL60950-1, C-UL, EN62368-1 approved
UL62368-1, C-UL, EN62368-1 approved (Only CHS700)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

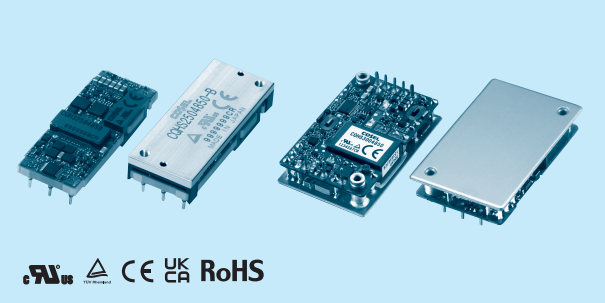
5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
CHS60	36-76VDC	3.3	18	19.05•12.7•23.36 (0.75•0.50•0.92)	15
		5	12		
		12	6		
CHS80	36-76VDC	3.3	25	33•10.5•22.76 (1.30•0.41•0.90)	21
		5	16		
		12	7.5		
CHS120	18-36VDC	5	24	33•10.5•22.86 (1.30•0.41•0.90)	19
		12	10	33.5•12.7•23.36* (1.32•0.50•0.92)*	28*
		15	8		
		24	4.2	36.5•12.7•26.5** (1.44•0.50•1.04)**	32**
	36-76VDC	3.3	30	33•10.5•22.86 (1.30•0.41•0.90)	19
		5	24		
		12	10	33.5•12.7•23.36* (1.32•0.50•0.92)	28*
		15	8		
		24	4.2		
CHS200	36-76VDC	3.3	50	57.9•10.5•22.76 (2.28•0.41•0.90)	30
		5	40	58.4•12.7•23.26* (2.30•0.50•0.92)*	45*
		12	16		
CHS300	18-36VDC	5	40	58.4•11.0•22.86 (2.30•0.43•0.90)	38
		12	16.7		
		15	13.5	58.9•12.7•23.26* (2.32•0.50•0.92)*	50*
		24	10.5		
		28	9	61.1•14.3•26.1** (2.41•0.56•1.03)**	57**
		32	7.9		
		48	5.3		
	36-76VDC	10	30	58.4•11.0•22.86 (2.30•0.43•0.90)	38
		12	25		
		15	20		
		24	12.5	58.9•12.7•23.26* (2.32•0.50•0.92)*	50*
		28	10.8		
		32	9.4		
		48	6.3		
CHS380	36-76VDC	10	38	58.4•11.0•22.86 (2.30•0.41•0.90)	38
		12	32	58.9•12.7•23.26* (2.32•0.50•0.92)*	50*
CHS400	18-36VDC	12	26.5	58.4•9.5•36.8 (2.30•0.37•1.45)	60
		15	26.5		
		24	14.5		
		28	12.5		
		32	11		
		48	6.3		
	36-76VDC	10	40	58.9•12.7•37.3* (2.32•0.50•1.47)*	90*
		12	33		
		15	26.5	61.6•12.7•40.3** (2.43•0.50•1.59)**	90**
		24	16.5		
		28	14		
		32	12.5		
		48	8.4		
CHS500	36-76VDC	12	42	58.4•9.5•36.8 (2.30•0.37•1.45)	60
				58.9•12.7•37.3* (2.32•0.50•1.47)*	90*
CHS700	36-76VDC	12	58.5	58.4•10.5•36.8 (2.30•0.41•1.45)	72
				58.9•12.7•37.3* (2.32•0.50•1.47)*	100*

*Baseplate option.
**Baseplate and case option

COSEL DC-DC Converters Bus Converter/Power Module Type

CQHS-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
CQHS250	36-76VDC	32	7.9	57.9 •10.5 •22.76 (2.28 •0.41 •090) 58.4 •12.7 •23.26* (2.30 •0.50 •0.92)*	30 45*
		50	5		
CQHS300	36-76VDC	32	9.4	57.9 •12.7 •36.8 (2.28•0.5•1.45)	75
		50	6		
CQHS350	36-65VDC	32	11	57.9 •12.7 •36.8 (2.28•0.5•1.45)	75
		50	7.0		

*Baseplate option.

CQHS

Feature

For telecommunication market
High efficiency (Synchronous rectifier circuit)
High density
High reliability : No built-in aluminum and tantalum electrolytic capacitor
Overcurrent, overvoltage and thermal protection
Remote ON/OFF

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

Optional parts

Heat sink (CQHS300/350)

5-year warranty

COSEL DC-DC Converters Bus Converter/Power Module Type

DHS-Series

DHS

Feature

Ideal for distributed power systems
Thin and small size
Overcurrent, overvoltage and thermal protection
Remote ON/OFF
Mounting hole (M3 tapped)

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

Optional parts

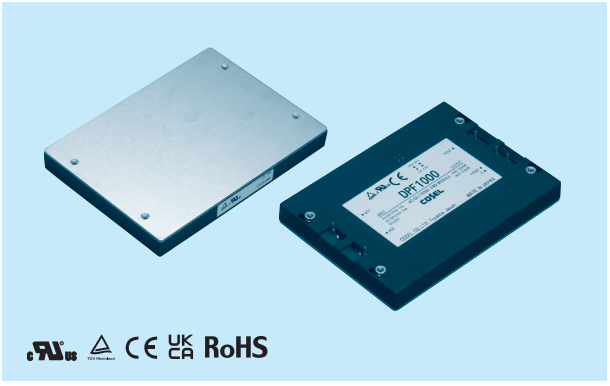
Heat sink

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
DHS50A	60-160VDC	5	10	58.4•12.7•37.3 (2.3•0.5•1.47)	60
		12	4.2		
		15	3.4		
		24	2.1		
DHS100A	60-160VDC	5	20	58.4•12.7•37.3 (2.3•0.5•1.47)	60
		12	8.4		
		15	6.7		
		24	4.2		
DHS200A	60-160VDC	5	40	58.4•12.7•61 (2.3•0.5•2.4)	100
		12	16.7		
		15	13.4		
		24	8.4		
DHS50B	200-400VDC	3.3	10	58.4•12.7•37.3 (2.3•0.5•1.47)	60
		5	10		
		12	4.2		
		15	3.4		
		24	2.1		
		28	1.8		
DHS100B	200-400VDC	3.3	20	58.4•12.7•37.3 (2.3•0.5•1.47)	60
		5	20		
		12	8.4		
		15	6.7		
		24	4.2		
		28	3.6		
DHS250B	200-400VDC	3.3	50	58.4•12.7•61 (2.3•0.5•2.4)	100
		5	50		
		7.5	33		
		12	21		
		15	16.5		
		24	10.5		
		28	9		
		48	5.2		

COSEL AC-DC Power Supplies Bus Converter/Power Module Type

DPF-Series



MODEL	INPUT VOLTAGE	MAX OUTPUT WATTAGE [W]	OUTPUT VOLTAGE [V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
DPF1000	85-264VAC 1φ	1000	DC360	118.6•12.7•85 (4.67•0.5•3.35)	200
	170-264VAC 1φ	1500			

DPF

Power factor correction module

Feature

Harmonic attenuator (Complies with IEC61000-3-2)
High efficiency 90% (100VAC), 95% (200VAC)
Universal input voltage (85-264VAC)
Inrush current protection
Parallel operation (Current balancing function)
Overvoltage and thermal protection
Inverter operation monitoring (IOG)
Enable signal (ENA)
Auxiliary power supply for external signal (AUX)
Ideal for distributed power systems

Safety agency approvals

UL609501-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

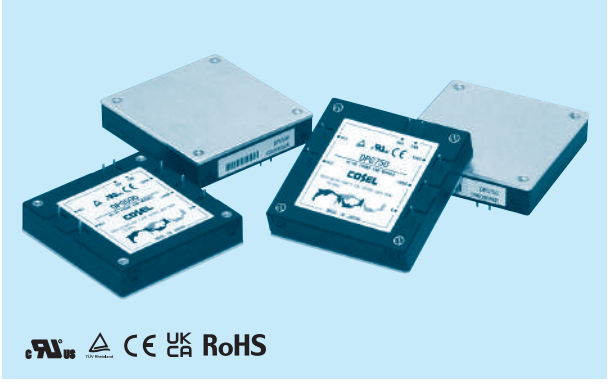
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL AC-DC Power Supplies Bus Converter/Power Module Type

DPG-Series



MODEL	INPUT VOLTAGE	OUTPUT WATTAGE [W]	OUTPUT VOLTAGE [V]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
DPG500	85-264VAC 1φ	300	360	58.4•12.7•61 (2.3•0.5•2.4)	100
	170-264VAC 1φ	500	360		
DPG750	85-264VAC 1φ	500	360	58.4•12.7•61 (2.3•0.5•2.4)	100
	170-264VAC 1φ	750	360		

DPG

Power factor correction module

Feature

Harmonic attenuator (Complies with IEC61000-3-2)
High efficiency 93% (100VAC), 96% (200VAC)
Universal input (85-264VAC)
Inrush current protection
Overvoltage and thermal protection
Enable signal (ENA)
Auxiliary power supply for external signal (AUX)
Ideal for distributed power systems

Safety agency approvals

UL609501-1, C-UL , EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

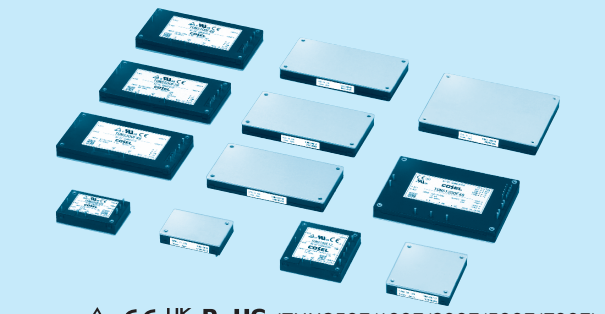
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL AC-DC Power Supplies Bus Converter/Power Module Type

TUNS-Series



RoHS (TUNS50F/100F/300F/500F/700F)
RoHS (TUNS1200F)

TUNS

Feature

AC-DC power module type converter
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Thin and small size
Overcurrent, overvoltage and thermal protection
Universal input 85-264VAC (TUNS50F/100F/300F/500F/700F)
Wide input 85-305VAC (TUNS1200F)
For medical applications (TUNS1200F)
Constant current function (TUNS1200F)
Output voltage can be adjusted to approximately 0V (TUNS1200F)
Parallel operation (TUNS1200F) (-P option : TUNS700F)

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
TUNS50F	85-264VAC 1φ	5	10	58.4•12.7•37.3 (2.3•0.5•1.47)	80
		12	4.2		
		24	2.1		
TUNS100F	85-264VAC 1φ	5	20	58.4•12.7•61.0 (2.3•0.5•2.4)	120
		12	8.4		
		24	4.2		
TUNS300F	85-264VAC 1φ	12	25	117.3•12.7•61.5 (4.62•0.5•2.42)	190
		28	11		
		48	6.5		
TUNS500F	85-264VAC 1φ	12	42 (55)*	117.3•12.7•61.5 (4.62•0.5•2.42)	190
		28	18 (24)*		
		48	10.5 (14)*		
TUNS700F	85-264VAC 1φ	12	58.4	117.3•12.7•61.5 (4.62•0.5•2.42)	190
		28	25		
		48	14.6		
TUNS1200F	85-305VAC 1φ	12	84	117.3•12.7•86.8 (4.62•0.5•3.42)	280
		28	43		
		48	25		
		65	18.5		

*Peak current.

Safety agency approvals

UL60950-1, C-UL, EN62368-1 (TUNS50F/100F/300F/500F/700F)
UL62368-1, C-UL, EN62368-1 (TUNS1200F)
ANSI/AAMI ES60601-1, EN60601-1 3rd (TUNS1200F)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

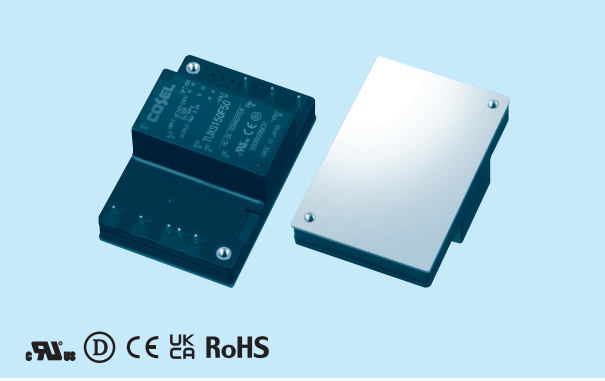
Optional parts

Heat sink (TUNS50F/TUNS100F)

5-year warranty

COSEL AC-DC Power Supplies Bus Converter/Power Module Type

TUXS-Series



RoHS

TUXS

Feature

AC-DC power module type converter
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Overcurrent, overvoltage and thermal protection
PMBus (Option : -I / TUXS200F50)

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
TUXS150F	85-264VAC 1φ	50	3	76.2•28.5•50.8 (3.0•1.12•2.0)	150
TUXS200F	85-264VAC 1φ	50	4	76.2•28.5•50.8 (3.0•1.12•2.0)	150
		42	4.7		
		32	6.2		
		28	7		
		24	8.3		

Safety agency approvals

UL60950-1, C-UL, EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

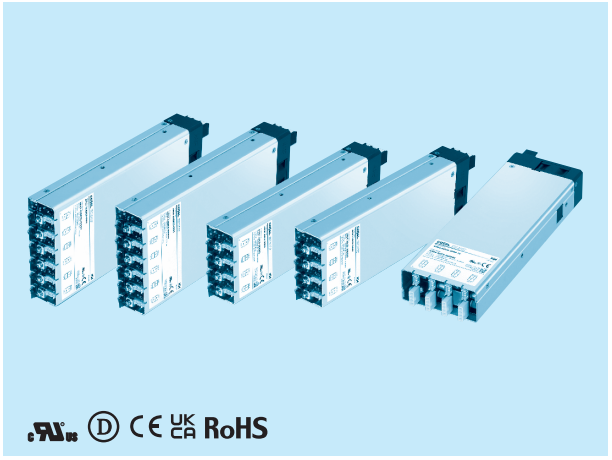
UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

5-year warranty

COSEL AC-DC Power Supplies Configurable Type

AME-Series



AME

Feature

Configurable type power supply
Low profile (41mm, 1.61 inches = Meets 1U height)
Universal input (85-264VAC)
For medical applications
(ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
AUX output 5V 1A
Global inhibit, remote ON/OFF control
Connector type (Output terminal) (Option)

Safety agency approvals

UL62368-1, ANSI/AAMI ES60601-1
C-UL (CAN/CSA62368-1), C-UL (CAN/CSA60601-1)
EN62368-1, EN60601-1 3rd

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR32-B,
EN55011-B, EN55032-B, VCCI-B

EMS Compliance: EN61204-3, EN61000-6-2
IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL [TYPE]	INPUT VOLTAGE	NUMBER OF SLOT	TOTAL OUTPUT WATTAGE [W]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
AME400F (AM04)	85-264VAC 1φ	4	250 (90-150VACin) 400 (170-264VACin)	89·41·257 (3.50·1.61·10.12)	1.2
AME600F (AM06)	85-264VAC 1φ	4	400 (90-150VACin) 600 (170-264VACin)	89·41·257 (3.50·1.61·10.12)	1.2
AME800F (AM08)	85-264VAC 1φ	6	600 (90-150VACin) 800 (170-264VACin)	127·41·257 (5.00·1.61·10.12)	1.8
AME1200F (AM12)	85-264VAC 1φ	6	1000 (90-150VACin) 1200 (170-264VACin)	127·41·257 (5.00·1.61·10.12)	1.8

OUTPUT MODULE

OUTPUT				
CODE	VOLTAGE[V]		CURRENT[A]	
J	3.3		15.2	
A	5		12	
K	7.5		12	
B	12		8.5	
L	15		8	
C	24		5	
M	36		3.4	
D	48		2.5	
R	V1:24	V2:24	3	3
E4	3.3		32	
E	5		32	
S	7.5		24	
F4	7.5		20	
F	12		20	
T	15		16	
G4	15		10 (15)*	
G	24		10 (15)*	
U	36		6.7 (10)*	
H4	36		5 (7.5)*	
H	48		5 (7.5)*	
V4	65		3	
V	75		3	
V5	100		2.25	

*Peak current.

COSEL AC-DC Power Supplies DIN Rail Type

KH-Series

KH

Feature

DIN (35mm) rail type (Full function series)
Attachment available with DIN EN60715
TH35 (35×7.5mm) (Top hat shaped DIN rail)
Convection cooling
Wide operating ambient temperature (Derating is required)
2 types of I/O terminal (Euro style and barrier blocks style)
Overcurrent protection, overvoltage protection
-KHEA30F/60F/90F, KHNA30F/60F/90F
Low power consumption at no load
Complies with SEMI F-47 (Derating is required)
-KHEA120F/240F/480F, KHNA120F/240F/480F
Remote ON/OFF
Relay signal for checking output voltage
Complies with SEMI F-47

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
KHEA30F/ KHNA30F	85-264VAC 1φ or 88-370VDC	5	5	22.5•75•90 (0.89•2.95•3.54)	165
		12	2.3		
		24	1.3		
KHEA60F/ KHNA60F	85-264VAC 1φ or 88-370VDC	12	4.5	32•90•90 (1.26•3.54•3.54)	270
		24	2.5		
KHEA90F/ KHNA90F	85-264VAC 1φ or 88-250VDC	12	6.8	50•90•90 (1.97•3.54•3.54)	405
		24	3.8		
KHEA120F/ KHNA120F	85-264VAC 1φ or 88-370VDC	24	5 (7.5)*	37•124•117 (1.46•4.88•4.61)	580
KHEA240F/ KHNA240F	85-264VAC 1φ or 88-370VDC	24	10 (15)*	50•124•117 (1.97•4.88•4.61)	900
KHEA480F/ KHNA480F	85-264VAC 1φ or 88-350VDC	24	20 (30)*	70•124•117 (2.76•4.88•4.61)	1200
		48	10 (15)*		

*Peak current.

Safety agency approvals

30-90F: <AC input>
UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (NEC Class2 per UL1310)※, ANSI/ISA12.12.01, ATEX
Complies with DEN-AN
※90F: Only option -E
<DC input>
UL60950-1, C-UL(CSA60950-1), EN62368-1
120-480F: <AC input>
UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508, ANSI/ISA12.12.01, GL (Except 480F-48), ATEX
Complies with DEN-AN
<DC input>
UL60950-1, C-UL (CSA60950-1), EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

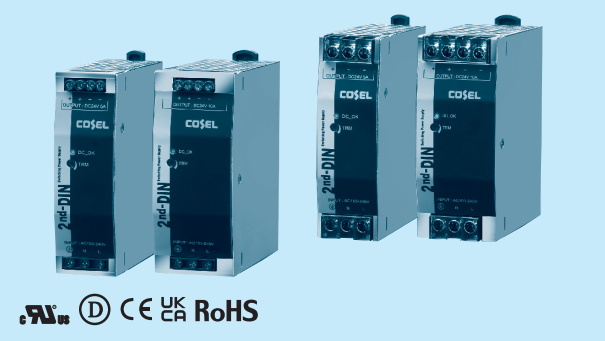
Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B,VCCI-B

EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

COSEL AC-DC Power Supplies DIN Rail Type

KL-Series



KL

Feature

DIN (35mm) rail type (Basic function series)
Attachment available with DIN EN60715
TH35 (35×7.5mm) (Top hat shaped DIN rail)
Convection cooling
Wide operating ambient temperature (Derating is required)
2 types of I/O terminal (Euro style and barrier blocks style)
Harmonic attenuator (Complies with IEC61000-3-2 Class A)
Overcurrent and overvoltage protection

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
KLEA120F/ KLNA120F	85-264VAC 1φ	24	5	38•124•117 (1.50•4.88•4.61)	580
		48	2.5		
KLEA240F/ KLNA240F	85-264VAC 1φ	24	10	50•124•117 (1.97•4.88•4.61)	750
		48	5		

Safety agency approvals

UL60950-1, UL508, C-UL (CSA60950-1), EN62368-1
Complies with DEN-AN

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL Redundancy Module DIN Rail Type

KR-Series

KR

Feature

DIN(35mm) rail type (Redundancy module)
Attachment available with DIN EN60715
TH 35 (35 x 7.5 mm) (Top hat shaped DIN rail)
Convection cooling
Wide operating ambient temperature (Derating is required)
LED signal for checking input voltage balance
Relay signal for checking input voltage

Safety agency approvals

UL60950-1, UL508, C-UL (CSA60950-1), EN62368-1

MODEL	INPUT VOLTAGE	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
KRE-20A	10-60VDC	20 (30)*	38•124•117 (1.50•4.88•4.61)	480
KRE-40A	10-30VDC	40 (60)*		610

*Peak current.

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6

5-year warranty

COSEL AC-DC Power Supplies DIN Rail Type

WDA-Series

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
WDA30F	85-264VAC 1φ	5	6	32•90•90 (1.26•3.54•3.54)	200
		12	2.5		
		24	1.3		
		48	0.7		
WDA60F		12	5	32•90•90 (1.26•3.54•3.54)	250
		24	2.5		
		48	1.3		
WDA90F		12	7.5	50•90•90 (1.97•3.54•3.54)	350
		24	3.8		
		48	1.9		

WDA

Feature

For DIN (35mm) Rail products
Built-in overcurrent protection, overvoltage protection circuits
Economical design

Safety agency approvals

UL62368-1
C-UL (equivalent to CAN/CSA-C22.2 No.62368-1)
EN62368-1

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR32-B, EN55032-B and EN55011-B

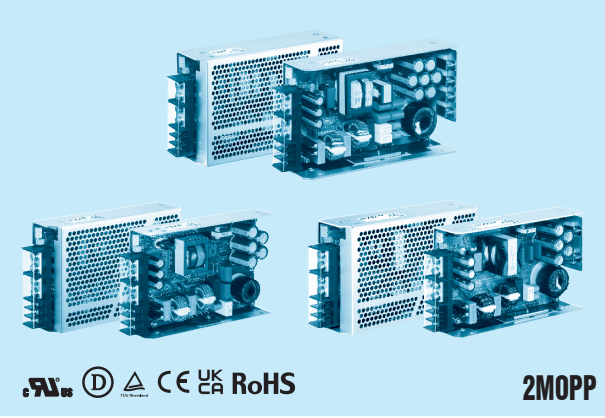
EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Medical Type

AEA-Series



AEA

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT (Peak current) [A]			CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
				100VACin	230VACin		
AEA600F	85 - 264VAC 1φ	24	Convection	14.0 (42.0)	17.5 (52.5)	41•127•186 (1.61•5•7.32)	1.0
			Forced air	20.0 (42.0)	25.0 (52.5)		
		32	Convection	10.5 (31.5)	13.2 (39.4)		
			Forced air	15.0 (31.5)	18.8 (39.4)		
		36	Convection	9.4 (28.0)	11.7 (35.0)		
			Forced air	13.4 (28.0)	16.7 (35.0)		
		48	Convection	7.0 (21.0)	8.8 (26.3)		
			Forced air	10.0 (21.0)	12.5 (26.3)		
AEA800F		24	Convection	17.6 (54.3)	23.5 (72.5)	50•127•203.2 (1.97•5•8)	1.3
			Forced air	25.5 (54.3)	34.0 (72.5)		
		36	Convection	11.7 (36.3)	15.7 (48.4)		
			Forced air	17.0 (36.3)	22.7 (48.4)		
		48	Convection	8.8 (27.2)	11.8 (36.3)		
			Forced air	12.7 (27.2)	17.0 (36.3)		
AEA1000F		24	Convection	22.5 (75.0)	30.0 (100.0)	50•127•228.6 (1.97•5•9)	1.5
			Forced air	31.5 (75.0)	42.0 (100.0)		
		36	Convection	15.0 (50.0)	20.0 (66.7)		
			Forced air	21.0 (50.0)	28.0 (66.7)		
		48	Convection	11.3 (37.5)	15.0 (50.0)		
			Forced air	15.8 (37.5)	21.0 (50.0)		

Feature

High power and high peak power
High efficiency
Low profile (41mm, 1.61 inch = meet to 1U hight)
For medical electrical equipment (ANSI/AAMI ES60601, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
Suitable for FB application (Output-FG: 1MOPP, Input-Output: 2MOPP)
OVC III (according to EN62477-1)
Complies with SEMI F47 (Refer to Instruction Manual)
UL508 (Optional)

Safety agency approvals

UL62368-1, ANSI/AAMI ES60601-1
C-UL (CSA62368-1, CAN/CSA60601-1)
EN62368-1, EN60601-1 3rd
Complies with IEC60601-1-2 4th Ed.
EN62477-1 (OVC III)
UL508 (Optional)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B

EMS Compliance

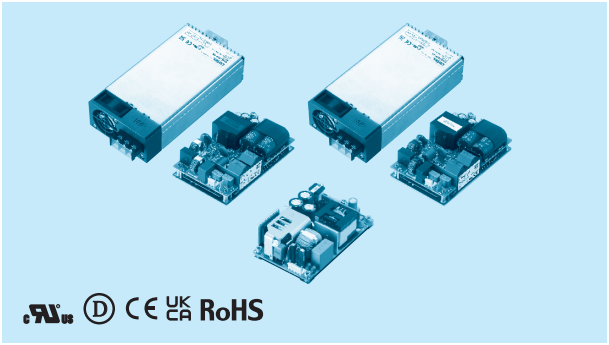
: EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Medical Type

GHA-Series



GHA

Feature

Wattage 700W max
Conduction cooling (GHA500F, GHA700F)
3"X5"standard footprint
Less than 1U high
ITE and Medical safety approvals
Low leakage current
Suitable for BF application
(Output-FG: 1MOPP, Input-Output: 2MOPP) (GHA700F)
With Remote ON/OFF (Optional)
With AUX1 (12V) (Optional Excluding GHA700F-12)
With AUX2 (5V) (Optional)
With FAN (GHA300F-SNF, GHA500F-SNF)

Safety agency approvals

UL60950-1 (GHA300F, 500F), UL62368-1 (GHA700F),
ANSI/AAMI ES60601-1, C-UL, EN62368-1, EN60601-1 3rd,
Complies with IEC60601-1-2 4th
DEN-AN(GHA300F, 500F)
EN61558-2-16 (GHA700F)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR11-B, CISPR32-B, EN55011-B,
EN55032-B, VCCI-B

EMS Compliance : EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

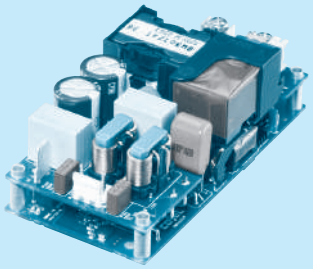
5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
GHA300F	90-264VAC 1φ	12	Forced air	25	76.2•35•127 (3.0•1.4•5.0)	400
			Convection	4.5		
		24	Forced air	12.5		
			Convection	2.2		
		48	Forced air	6.3		
			Convection	1.1		
GHA500F	90-264VAC 1φ	12	Forced air	41.7	76.2•35•127 (3.0•1.4•5.0)	420
			Convection	9.2		
			Conduction	16.7		
		15	Forced air	33.4		
			Convection	7.4		
			Conduction	13.4		
		24	Forced air	21		
			Convection	4.6		
			Conduction	8.4		
		30	Forced air	16.7		
			Convection	3.7		
			Conduction	6.7		
		48	Forced air	10.5		
			Convection	2.3		
			Conduction	4.2		
		56	Forced air	9		
			Convection	1.9		
			Conduction	3.6		
GHA700F	85-264VAC 1φ	12	Forced air	54.2	76.2•38.1•127 (3.0•1.5•5.0)	570
			Convection	22.2		
			Conduction	33.4		
		24	Forced air	29.2		
			Convection	11.1		
			Conduction	16.7		
		30	Forced air	23.3		
			Convection	8.9		
			Conduction	13.4		
		48	Forced air	14.6		
			Convection	5.6		
			Conduction	8.4		
		56	Forced air	12.5		
			Convection	4.8		
			Conduction	7.2		
GHA300F-SNF	90-264VAC 1φ	12	25		85.2•41•165.3 (3.35•1.61•6.5)	620
		24	12.5			
		48	6.3			
GHA500F-SNF	90-264VAC 1φ	12	37.5		85.2•41•165.3 (3.35•1.61•6.5)	660
		15	33.4			
		24	21			
		30	16.7			
		48	10.5			
		56	9			

∗For further information, please see Cosel website. (https://en.cosel.co.jp).

COSEL AC-DC Power Supplies Medical Type

GMA-Series



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]		CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
GMA300F	85-264VAC 1φ	12	Forced air	25	50.8•37•101.6 (2.00•1.46•4.00)	230
		24	Forced air	12.5		
		48	Forced air	6.3		
		56	Forced air	5.4		

GMA

Feature

Maximum 300W
For medical applications (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
For type BF medical applications
(Output-FG : 1MOPP, Input-Output : 2MOPP)
2"X4"standard footprint
Remote ON/OFF (Option)
AUX1(12V 1A), AUX2(5V 1A) (Option)

Safety agency approvals

UL62368-1, ANSI/AAMI ES60601-1
C-UL (CSA62368-1, CAN/CSA60601-1)
EN62368-1, EN60601-1 3rd
Complies with IEC60601-1-2 4th Ed.

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B

EMS Compliance

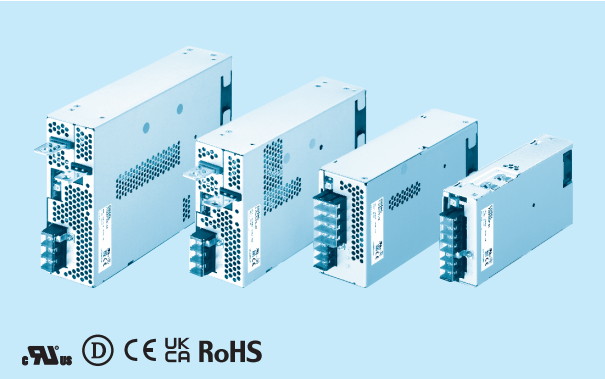
: EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

COSEL AC-DC Power Supplies Medical Type

PJMA-Series



PJMA

Feature

4kV isolation
Economical design
Suitable for BF application (Output-FG : 1MOPP, Input-Output : 2MOPP)
Wide temperature range (-20℃ to +70℃, Derating is required)
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Universal input (85-264VAC, Derating is required)
Low power consumption at no load

Safety agency approvals

ANSI/AAMI ES60601-1, EN60601-1 3rd

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B
(PJMA1500F: Class A. In conducted noise, it can meet class B by additional EMI/EMC filter.)

EMS Compliance: EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

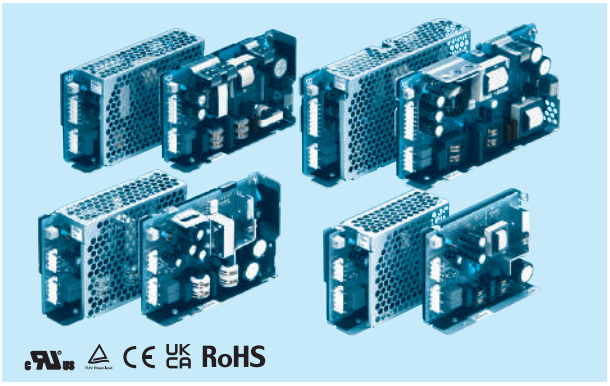
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [kg]
PJMA300F	85-264VAC 1φ	12	25	102•41•190 (4.02•1.61•7.48)	1.0
		24	12.5		
		36	8.4		
		48	6.3		
PJMA600F		12	50	120•61•215 (4.72•2.4•8.46)	2.0
		24	25		
		36	16.7		
		48	12.5		
PJMA1000F		12	84	150•61•240 (5.91•2.4•9.45)	2.8
		24	42		
		36	28		
		48	21		
PJMA1500F		12	125	178•61•268 (7.01•2.4•10.55)	3.5
		24	64		
		36	42		
		48	32		

COSEL AC-DC Power Supplies Medical Type

PMA-Series



PMA

Feature

For medical applications
Internal dual fuses
High efficiency by synchronous rectification technology
(PMA60F, PMA100F)

Safety agency approvals

UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1

EMI

FCC-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B,
VCCI-B

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMS Compliance: EN61204-3, EN61000-6-2

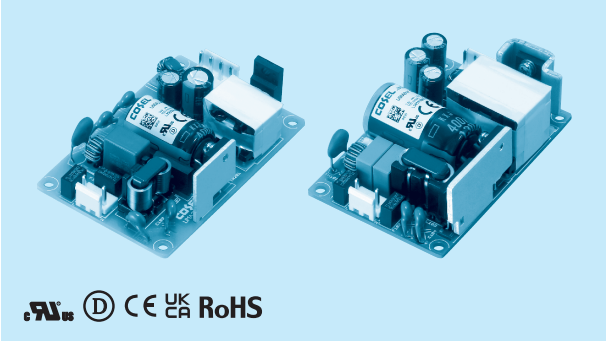
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5 (Common mode Level4, Differential mode Level2)
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
PMA15F	85-264VAC 1φ	3.3	3	31•78•103 (1.22•3.07•4.06)	230
		5	3		
		12	1.3		
		15	1		
		24	0.7		
PMA30F	85-264VAC 1φ	3.3	6	31·82·120 (1.22•3.23•4.72)	240
		5	6		
		12	2.5		
		15	2		
		24	1.3		
PMA60F	85-264VAC 1φ	3.3	12	32·82·135 (1.26•3.23•5.31)	350
		5	12		
		12	5		
		15	4		
		24	2.5		
PMA100F	85-264VAC 1φ	3.3	20	34·93·168 (1.34•3.66•6.61)	560
		5	20		
		12	8.5		
		24	4.5		
		48	2.1		

COSEL AC-DC Power Supplies Medical Type

UMA-Series



UMA

Feature

For medical electric equipment
Medical Isolation Grade 2MOPP
4kV isolation
Suitable for BF application
Low leakage current
2"× 3" standard footprint
Economical design

Safety agency approvals

ANSI/AAMI ES60601-1, EN60601-1 3rd,
C-UL (CAN/CSA-C22.2 No.60601-1),
UL62368-1, EN62368-1,
C-UL (CAN/CSA-C22.2 No.62368-1),
Complies with EN60335

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR11-1, CISPR32-1, EN55011-B,
EN55032-B, FCC Part 15-B and FCC Part 18-B

EMS Compliance : EN61204-3, EN61000-6-2,
IEC60601-1-2 (2014), EN60601-1-2 (2015)

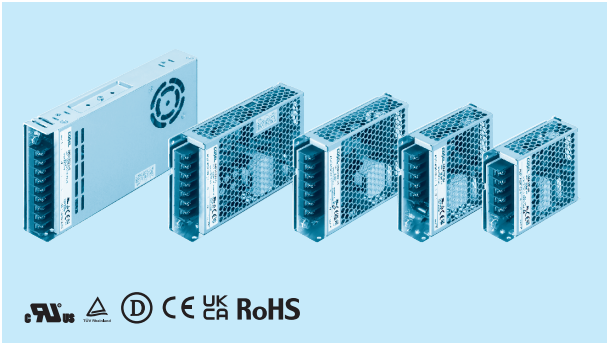
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
UMA30F	85-264VAC 1φ	5	3	50.8•21.7•76.2 (2.0•0.85•3.0)	80
		12	2.5		
		15	2		
		24	1.3		
		36	0.85		
		48	0.65		
UMA60F		5	6	50.8•24.2•76.2 (2.0•0.95•3.0)	120
		7.5	5.5		
		12	4.5		
		15	3.5		
		24	2.5		
		36	1.7		
		48	1.25		

COSEL AC-DC Power Supplies Medical Type

WMA-Series



WMA

Feature

For medical electric equipment
(ANSI/AAMI ES60601-1, EN60601-1 3rd)
Medical Isolation Grade 2MOPP
4kV isolation
Low-profile
Economical design
Complies with SEMI F47

Safety agency approvals

ANSI/AAMI ES60601-1, EN60601-1 3rd,
C-UL (CAN/CSA-C22.2 No.60601-1),
UL62368-1, EN62368-1,
C-UL (CAN/CSA-C22.2 No.62368-1),
EN61558-2-16 (OVC III)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with CISPR11-B, CISPR32-B, EN55011-B,
EN55032-B, FCC Part 15-B and FCC Part 18-B

EMS Compliance : EN61204-3, EN61000-6-2, IEC60601-1-2 (2014), EN60601-1-2 (2015)

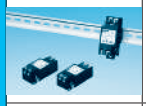
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

5-year warranty

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]	CASE SIZE W·H·D [mm] (inches)	WEIGHT [g]
WMA35F	85-264VAC 1 ϕ	5	7	30•82•99 (1.18•3.23•3.90)	200
		12	3		
		24	1.5		
		48	0.8		
WMA75F		12	6	30•97•99 (1.18•3.82•3.90)	250
		24	3.2		
		48	1.6		
WMA100F		12	8.4	30•97•129 (1.18•3.82•5.08)	300
		24	4.3		
		48	2.1		
WMA150H	85-132VAC 1 ϕ / 170-264VAC 1 ϕ (Selectable by switch)	12	12.5	30•97•159 (1.18•3.82•6.26)	500
		24	6.5		
		48	3.3		
WMA350H		12	29	115•30•215 (4.53•1.18•8.46)	800
		24	14.6		
		36	9.7		
		48	7.3		

EMI/EMC Filter Selection Guide by Type

Refer to EMI/EMC filter selection flow chart for options.

	Series		Features			Rated Voltage (voltage range max)	Rated Current (A)
Single-phase EMI/EMC filter	 **EA Series** 1-stage filter	Small size	Screw type	EAC: Attenuation for low frequency band (150kHz to 1MHz) EAM: Low leakage current EAP: Outside impulse attenuation		250VAC	3A 6A 10A 16A 20A 30A
	 **ES Series** 1-stage filter		Screwless type	ESC: Attenuation for low frequency band (150kHz to 1MHz) ESM: Low leakage current ESP: Outside impulse attenuation		250VAC	3A 6A 10A 16A
	 **NA Series** 1-stage filter	General purpose	Screw type	NAC: High-attenuation for low frequency band (150kHz to 1MHz) NAM:Low leakage current NAH: Ultra high-attenuation for ultra low frequency band (9kHz to 1MHz) NAP: Outside impulse high-attenuation		250VAC	4A 6A 10A 16A 20A 30A * NAH only, 6A to 30A
						277VAC (305VAC) 300VDC (400VDC)	40A 50A 60A
	 **NB Series** 2-stage filter	High-attenuation		NBC: High-attenuation for low frequency band (150kHz to 1MHz) NBM:Low leakage current, Withstand voltage 4,000VAC NBH: Ultra high-attenuation and broadband (9kHz to 10MHz)		250VAC	6A 10A 16A 20A 30A
Three-phase EMI/EMC filter three-wire	 **JAC Series** 1-stage filter	Compact and low profile	General purpose	High-attenuation for low frequency band (150kHz to 1MHz)		500VAC (528VAC)	6A 10A 20A 30A 40A 50A 60A
	 **TAC Series** 1-stage filter	Low profile		High-attenuation for low frequency band (150kHz to 1MHz)		500VAC (528VAC)	4A 6A 10A 20A 30A 50A 60A 80A 100A 150A 200A 250A 300A
	 **TAH Series** 1-stage filter			Ultra high-attenuation for ultra low frequency band (9kHz to 10MHz)		500VAC (528VAC)	4A 6A 10A 20A 30A 50A 60A 80A 100A 150A
	 **TBC Series** 2-stage filter		High-attenuation	High-attenuation for low frequency band (150kHz to 1MHz)		500VAC (528VAC)	50A 60A 80A 100A 150A 200A 250A 300A
	 **FTA Series** 1-stage filter	Book type (Space-saving type)	General purpose	High-attenuation for low frequency band (150kHz to 1MHz)		500VAC (528VAC)	40A 50A 60A 80A 100A 125A 150A
	 **FTB Series** 2-stage filter		High-attenuation	Ultra high-attenuation for low frequency band (150kHz to 1MHz)		500VAC (528VAC)	80A 100A 150A
	 **FSB Series** 2-stage filter		Saturation resistance type	EMI/EMC Filter for motor drive system (AC servo) Improve saturation resistance		500VAC (528VAC)	10A 20A 30A 40A 50A 60A 80A 100A 150A
	 **TSC Series** multi-stage filter	Low profile	Ultra high-attenuation	Ultra high-attenuation from 150kHz to 1MHz		500VAC (528VAC)	400A 600A
	 **TSD Series** multi-stage filter		Saturation resistance type	Ultra high-attenuation from 150kHz to 1MHz		500VAC (528VAC)	400A 600A 800A 1000A
four-wire	 **YAC Series** 1-stage filter	General purpose		High-attenuation for low frequency band (150kHz to 1MHz)		500/289VAC (528/305VAC)	25A 36A 64A 80A
DC EMI/EMC filter	 **SNA Series** 1-stage filter	Ripple noise attenuation for switch mode power supplies		For ±V output power supply		DC±50V	1A 3A 6A
	 **SNR Series** 1-stage filter			For +V output power supply (Peak load)		DC50V	10A

EMI/EMC Filter Selection Guide by Function

Refer to EMI/EMC filter selection flow chart for options.

Three-phase EMI/EMC Filter

Low profile

Book type (Space-saving type)

1-stage filter

JAC
6A to 60A
High-attenuation for low frequency band (150kHz to 1MHz)

Compact size

TAC
4A to 300A
Shape
High-attenuation for low frequency band (150kHz to 1MHz)

Ultra low frequency band

TAH
4A to 150A
Ultra high-attenuation for ultra low frequency band (9kHz to 10MHz)

High-attenuation (2-stage filter)

2-stage filter

TBC
50A to 300A
Shape
High-attenuation for low frequency band (150kHz to 1MHz)

Large capacity (Multi-stage filter)

multi-stage filter

TSC
400A 600A
Ultra high-attenuation for low frequency band (150kHz to 1MHz)

Saturation resistance

TSD
400A to 1000A
NEW
Ultra high-attenuation type for moter drive system (Multi-functional regenerative converter)
Improve saturation resistance

FTA
40A to 150A
High-attenuation for low frequency band (150kHz to 1MHz)

High-attenuation (2-stage filter)

FTB
80A to 150A
High-attenuation for low frequency band (150kHz to 1MHz)

Saturation resistance

FSB
10A to 150A
EMI/EMC filter for moter drive system (AC servo)
Improve saturation resistance

Three-phase four-wire EMI/EMC filter

1-stage filter

YAC
25A to 80A
NEW
High-attenuation for low frequency band (150kHz to 1MHz)
YAC

Single-phase EMI/EMC Filter

Push down type terminal block

Screw type

Torque management unnecessary

Screwless

Screwless

1-stage filter

EA□ *1
3A to 30A
Screw type
Interface
ES□ *1
3A to 16A
Screwless
Installation compatible ①

Small size

NA□ *2
4A to 30A
Screw type
Large capacity
NA□ *2
40A to 60A
NEW
Screw type

2-stage filter

High-attenuation (2-stage filter)

NBC/NBM *3
6A to 30A
Screw type
Installation compatible ②

Broad -band

NBH
6A to 30A
Screw type
Ultra high-attenuation and broadband (9kHz to 10MHz)

NAC NAM NAH NAP

*1 EAC/ESC : Attenuation type from 150kHz to 1MHz
EAM/ESM : Low leakage current type
EAP/ESP : Outside impulse attenuation

*2 NAC : High-attenuation type from 150kHz to 1MHz
NAM : Low leakage current type
NAH : Ultra high-attenuation from 9kHz to 1MHz
NAP : Outside impulse high-attenuation

*3 NBC : High-attenuation type from 150kHz to 1MHz
NBM : Low leakage current, Withstand voltage 4,000VAC

DC EMI/EMC Filter

Ripple noise attenuation for switch mode power supplies

1-stage filter

SNA
1A 3A
For ±V output power supply

6A
Large capacity

SNR
10A
For +V output power supply (Peak load)
Installation compatible ③

Diagram of Sample application

Main root / Three-phase
JAC/TAC/TAH/FTA/YACSeries (1-stage filter : General purpose)
TBC/FTB Series (2-stage filter : High-attenuation)
TSC Series (Multi-stage filter : Ultra high-attenuation)
☆TSD Series (Multi-stage filter : Saturation resistance)

Conductive noise low
Conductive noise high

★ : When using long shielded cables for motor drive

☆ : Using Large Multi-functional regenerative converter, when its capacity is large

Three-phase
FTA Series (1-stage filter : Book type, General purpose)
FTB Series (2-stage filter : Book type, High-attenuation)
★FSB Series (2-stage filter : Book type, High-attenuation)

Servo drivers
<Robot driver unit>
Servo motor

Three-phase
JAC/TAC/TAH Series (1-stage filter : Low profile, General purpose)
TBC Series (2-stage filter : Low profile, High-attenuation)
★FSB Series (2-stage filter : Book type, High-attenuation)

Inverter drivers
<Carrier drive unit>
Inverter motor

Single-phase
EAC/EAM Series (1-stage filter : Small)
ESC/ESM Series (1-stage filter : Small, Screwless)
NAC/NAM/NAH Series (1-stage filter : General purpose)
NBC/NBM/NBH Series (2-stage filter : High-attenuation)

Inverter drivers
<Compact carrier drive unit>
Inverter motor

Single-phase
EAC/EAM Series (1-stage filter : Small)
ESC/ESM Series (1-stage filter : Small, Screwless)
NAC/NAM/NAH Series (1-stage filter : General purpose)
NBC/NBM/NBH Series (2-stage filter : High-attenuation)

<24V input>
Switching Power Supply
DC
SNR/SNA Series (1-stage filter)
<Heat cooling unit>
Fan motors
<Control unit>
DC/DC converter
Control circuit on PCB

<12V input>
Switching Power Supply
DC
SNR/SNA Series (1-stage filter)
<Control unit>
I/O Power supply
In : Sensor and etc.
Out : Relay ,solenoid valve and etc.

Single-phase
EAP Series (1-stage filter : Small)
ESP Series (1-stage filter : Small, Screwless)
NAP Series (1-stage filter : General purpose)

PLC

EMI/EMC Filter Selection flow chart

By using the flow chart below, you can easily select the model you need.

START

- For ripple noise attenuation for switch mode power supplies(DC line)
- For AC line
  - Three-phase input type
    - Three-phase three-wire system ※Can also be used as single-phase input
      - Low profile
        - Book type (Space-saving type)
          - High-attenuation (2-stage filter)
            - General purpose (1-stage filter)
              - When using long motor cables (Over 10m)
              - When using normal length motor cables(10m or less)
      - High-attenuation (2-stage filter or more)
        - General purpose (1-stage filter)
          - Compact size
            - General purpose (1-stage filter)
              - For ultra low frequency band
              - For low frequency band
    - Single-phase input type
    - Three-phase four-wire system

Three-phase EMI/EMC filter

YAC series(1-stage filter)	FTA series(1-stage filter)	FTB series(2-stage filter)	FSB series(2-stage filter)
			
(25 to 80A) Three-phase four-wire system EMI/EMC filter ideal for High-power office equipment and Energy storage systems	(40 to 150A) EMI/EMC filter for anti-conducted emission of servomotor and device having inverter General purpose from 150kHz to 1MHz	(80 to 150A) EMI/EMC filter for anti-conducted emission of servomotor and device having inverter High-attenuation from 150kHz to 1MHz	(10 to 150A) EMI/EMC filter for motor drive system (AC servo) Improve saturation resistance
■Option -	■Option -H, -U, -G, -S(80 to 150A)	■Option -H, -L, -S	■Option -H, -U, -HU, -S(80 to 150A)
■Use:High-power office equipment, UPS, Renewable energy, Lighting, Medical equipment, etc	■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc	■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc	■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc

TAC series(1-stage filter)	TAH series(1-stage filter)	JAC series(1-stage filter)
		
(4 to 300A) EMI/EMC filter for anti-conducted emission of servomotor and device having inverter General purpose from 150kHz to 1MHz	(4 to 150A) EMI/EMC filter for anti-conducted emission of servomotor and device having inverter General purpose from 9kHz to 1MHz (Ultra low frequency band)	(6 to 60A) EMI/EMC filter for anti-conducted emission of servomotor and device having inverter General purpose from 150kHz to 1MHz Compact size
■Option -D(4 to 30A), -U(50 to 300A)	■Option -D(4 to 30A), -U(50 to 150A)	■Option -D(6 to 30A), -H, -U
■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc	■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc	■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc

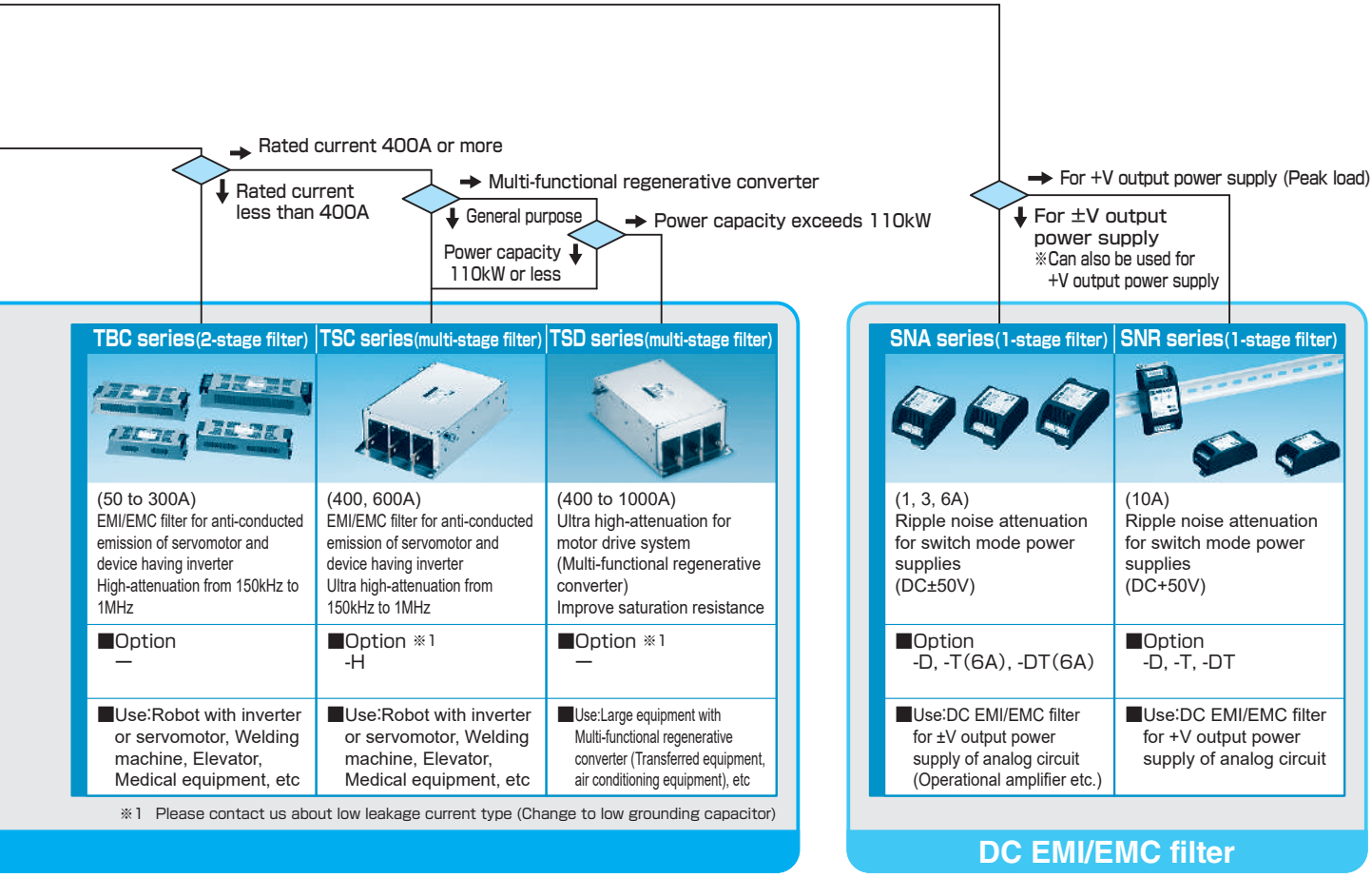
- For conduction noise attenuation
  - For outside impulse attenuation
    - Small size
      - General purpose
      - Screwless type
        - Screw type
    - Medical equipment (Low leakage current type)
      - General purpose
        - High-attenuation (2-stage filter)
          - General purpose (1-stage filter)
            - Small size
              - General purpose
              - Screwless type
                - Screw type
            - For ultra low frequency band
              - For low frequency band

Single-phase EMI/EMC filter

NAP series(1-stage filter)	EAP series(1-stage filter)	ESP series(1-stage filter)
		
(4 to 60A) EMI/EMC filter for anti-malfunction by external noise Outside impulse high-attenuation ※Including 4,000VAC withstand voltage model (Medical equipment)	(3 to 30A) EMI/EMC filter for anti-malfunction by external noise Outside impulse attenuation Small size	(3 to 16A) EMI/EMC filter for anti-malfunction by external noise Outside impulse attenuation Small size, Screwless terminal type
■Option -D (4 to 30A) -F (40 to 60A)	■Option -D	■Option -D
■Use:PLC, industrial equipment with computer, etc	■Use:PLC, industrial equipment with computer, etc	■Use:PLC, industrial equipment with computer, etc

NAC series(1-stage filter)	NAH series(1-stage filter)(★)	EAC series(1-stage filter)	ESC series(1-stage filter)
			
(4 to 60A) EMI/EMC filter for anti-conducted emission General purpose from 150kHz to 1MHz ※Including 4,000VAC withstand voltage model (Medical equipment)	(6 to 60A) EMI/EMC filter for anti-conducted emission General purpose from 9kHz to 1MHz (Ultra low frequency band) ※Including 4,000VAC withstand voltage model (Medical equipment)	(3 to 30A) EMI/EMC filter for anti-conducted emission General purpose from 150kHz to 1MHz Small size	(3 to 16A) EMI/EMC filter for anti-conducted emission General purpose from 150kHz to 1MHz Small size, Screwless terminal type
■Option -D (4 to 30A) -F (40 to 60A)	■Option -D (6 to 30A) -F (40 to 60A)	■Option -D	■Option -D
■Use:Using multiple switching power supplies, single-phase inverter, etc	■Use:Using multiple switching power supplies, single-phase inverter, robot with servo motor, medical equipment, etc	■Use:Using multiple switching power supplies, single-phase inverter, etc	■Use:Using multiple switching power supplies, single-phase inverter, etc

■Option
-D : DIN rail installation type
-G : With switch of line to ground capacitor
-L : Ultra high-attenuation type for EU
-T : Terminal block type
-F : High input voltage (Rated voltage 500VAC/600VDC)
-H : Ultra high-attenuation type
-S : Hexagon socket head cap screw (Standard type is Hexagon head screw)
-U : Improve differential mode attenuation (Rated voltage 250V)



TBC series(2-stage filter)

(50 to 300A)
EMI/EMC filter for anti-conducted emission of servomotor and device having inverter
High-attenuation from 150kHz to 1MHz

■Option
—

■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc

TSC series(multi-stage filter)

(400, 600A)
EMI/EMC filter for anti-conducted emission of servomotor and device having inverter
Ultra high-attenuation from 150kHz to 1MHz

■Option ※1
-H

■Use:Robot with inverter or servomotor, Welding machine, Elevator, Medical equipment, etc

TSD series(multi-stage filter)

(400 to 1000A)
Ultra high-attenuation for motor drive system (Multi-functional regenerative converter)
Improve saturation resistance

■Option ※1
—

■Use:Large equipment with Multi-functional regenerative converter (Transferred equipment, air conditioning equipment), etc

※1 Please contact us about low leakage current type (Change to low grounding capacitor)

SNA series(1-stage filter)

(1, 3, 6A)
Ripple noise attenuation for switch mode power supplies
(DC±50V)

■Option
-D, -T(6A), -DT(6A)

■Use:DC EMI/EMC filter for ±V output power supply of analog circuit (Operational amplifier etc.)

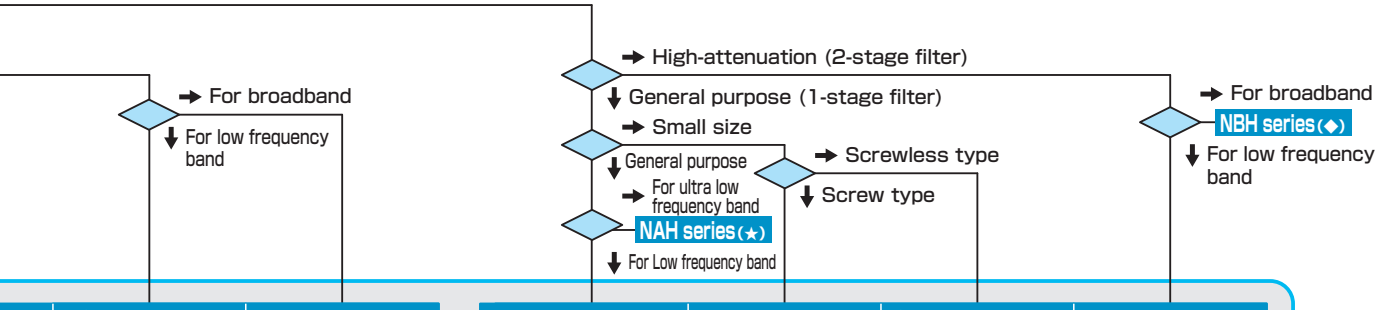
SNR series(1-stage filter)

(10A)
Ripple noise attenuation for switch mode power supplies
(DC+50V)

■Option
-D, -T, -DT

■Use:DC EMI/EMC filter for +V output power supply of analog circuit

DC EMI/EMC filter



NBC series(2-stage filter)

(6 to 30A)
EMI/EMC filter for anti-conducted emission
High-attenuation from 150kHz to 1MHz

■Option
-D

■Use:Using multiple switching power supplies, single-phase inverter, etc

NBH series(2-stage filter(◆))

(6 to 30A)
EMI/EMC filter for anti-conducted emission
Ultra high-attenuation and broadband from 9kHz to 10MHz
※Including 4,000VAC withstand voltage model (Medical equipment)

■Option
-D

■Use:Using multiple switching power supplies, single-phase inverter, robot with servo motor, medical equipment, etc

NAM series(1-stage filter)

(4 to 60A)
EMI/EMC filter for medical applications
Low leakage current type
General purpose from 150kHz to 1MHz
※Including 4,000VAC withstand voltage model

■Option
-D (4 to 30A)

■Use:A case when using multiple switching power supplies, or for medical applications like endoscope, etc

EAM series(1-stage filter)

(3 to 30A)
EMI/EMC filter for medical applications
Low leakage current type
General purpose from 150kHz to 1MHz
Small size

■Option
-D

■Use:A case when using multiple switching power supplies, or for medical applications like endoscope, etc

ESM series(1-stage filter)

(3 to 16A)
EMI/EMC filter for medical applications
Low leakage current type
General purpose from 150kHz to 1MHz
Small size, Screwless terminal type

■Option
-D

■Use:A case when using multiple switching power supplies, or for medical applications like endoscope, etc

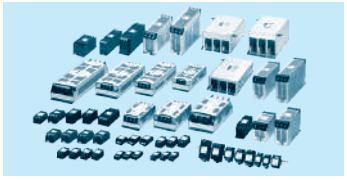
NBM series(2-stage filter)

(6 to 30A)
EMI/EMC filter for medical applications
Low leakage current type
General purpose from 150kHz to 1MHz with stand voltage 4,000VAC

■Option
-D

■Use:A case when using multiple switching power supplies, or for medical applications like endoscope, etc

EMI/EMC Filter Contents



5-year Warranty

■ Single-phase type

	Rated voltage	Series	Rated current [A] 3A	4A	6A	10A	16A	20A	30A	40A	50A	60A	Released year	Option D	Option F
1-stage	AC250V	**EAC**	●	–	●	●	●	●	●	–	–	–	'10	●	–
	AC250V	**EAM**	●	–	●	●	●	●	●	–	–	–	'10	●	–
	AC250V	**EAP**	●	–	●	●	●	●	●	–	–	–	'10	●	–
	AC250V	**ESC**	●	–	●	●	●	–	–	–	–	–	'10	●	–
	AC250V	**ESM**	●	–	●	●	●	–	–	–	–	–	'10	●	–
	AC250V	**ESP**	●	–	●	●	●	–	–	–	–	–	'10	●	–
	AC250V	**NAC**	–	●	●	●	●	●	●	–	–	–	'05	●	–
	AC250V	**NAM**	–	●	●	●	●	●	●	–	–	–	'05	●	–
	AC250V	**NAH**	–	–	●	●	●	●	●	–	–	–	'06	●	–
	AC250V	**NAP**	–	●	●	●	●	●	●	–	–	–	'05	●	–
	AC277V DC300V	**NAC**	–	–	–	–	–	–	–	●	●	●	NEW '21	–	●
	AC277V DC300V	**NAM**	–	–	–	–	–	–	–	●	●	●	NEW '21	–	–
	AC277V DC300V	**NAH**	–	–	–	–	–	–	–	●	●	●	NEW '21	–	●
	AC277V DC300V	**NAP**	–	–	–	–	–	–	–	●	●	●	NEW '21	–	●
2-stage	AC250V	**NBH**	–	–	●	●	●	●	●	–	–	–	'07	●	–
	AC250V	**NBC**	–	–	●	●	●	●	●	–	–	–	'07	●	–
	AC250V	**NBM**	–	–	●	●	●	●	●	–	–	–	'07	●	–

Option -D: DIN rail installation type -F: High input voltage (Rated voltage 500VAC/600VDC)

■ Three-phase type

		Rated voltage	Series	Rated current [A] 4A	6A	10A	20A	25A	30A	36A	40A	50A	60A	64A	80A	100A	125A	150A	200A	250A	300A	400A	600A	800A	1000A	Released year	Option D	G	H	L	S	U
1-stage	three-wire	AC500V	**JAC**	–	●	●	●	–	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	'14	●	–	●	–	–	●
				–	–	–	–	–	–	–	●	●	●	–	–	–	–	–	–	–	–	–	–	–	–	'19	–	–	●	–	–	●
		AC500V	**TAC**	●	●	●	●	–	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	'05	●	–	–	–	–	–
		AC500V	**TAH**	●	●	●	●	–	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	'06	●	–	–	–	–	–
		AC500V	**TAC**	–	–	–	–	–	–	–	–	●	●	–	●	●	–	●	–	–	–	–	–	–	–	'08	–	–	–	–	–	●
		AC500V	**TAH**	–	–	–	–	–	–	–	–	●	●	–	●	●	–	●	–	–	–	–	–	–	–	'16	–	–	–	–	–	●
		AC500V	**TAC**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	●	–	–	–	–	'09	–	–	–	–	–	●
		AC500V	**FTA**	–	–	–	–	–	–	–	●	●	●	–	–	–	–	–	–	–	–	–	–	–	–	'13	–	●	●	–	–	●
				–	–	–	–		–	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	–	'11	–	●	●	–	●	●
	four-wire	AC500V	**YAC**	–	–	–	–	●	–	●	–	–	–	●	●	–	–	–	–	–	–	–	–	–	–	NEW '23	–	–	–	–	–	–
2-stage		AC500V	**TBC**	–	–	–	–	–	–	–	–	●	●	–	●	●	–	●	–	–	–	–	–	–	–	'08	–	–	–	–	–	–
				–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	●	–	–	–	–	'09	–	–	–	–	–	–
		AC500V	**FTB**	–	–	–	–	–	–	–	–	–	–	–	●	●	–	●	–	–	–	–	–	–	–	'11	–	–	●	●	●	–
		AC500V	**FSB**	–	–	●	●	–	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	'16	–	–	●	–	–	●
				–	–	–	–	–	–	–	●	●	●	–	–	–	–	–	–	–	–	–	–	–	–	'18	–	–	●	–	–	●
				–	–	–	–	–	–	–	–	–	–	–	●	●	–	●	–	–	–	–	–	–	–	'17	–	–	●	–	●	●
multi-stage		AC500V	**TSC**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	–	–	'13	–	–	●	–	–	–
		AC500V	**TSD**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	–	–	NEW '21	–	–	–	–	–	–
				–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	NEW '23	–	–	–	–	–	–

Option -D: DIN rail installation type
-L: Ultra high-attenuation type for EU
-G: With switch of line to ground capacitor
-S: Hexagon socket head cap screw (Standard type is Hexagon head screw)
-H: Ultra high-attenuation type
-U: Improve differential mode attenuation (Rated voltage 250V)

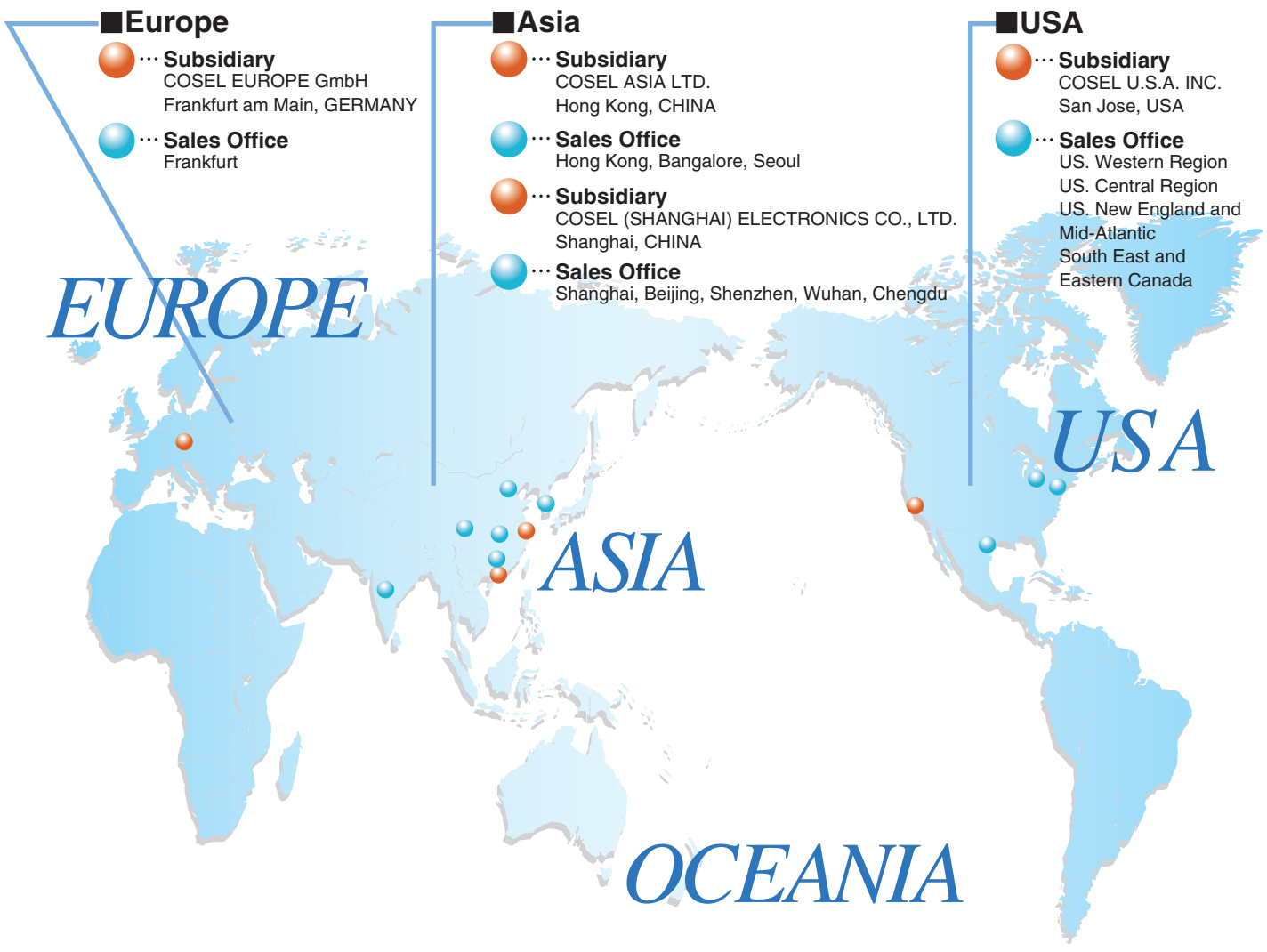
■ DC type

	Rated voltage	Series	Rated current [A] 1A	3A	6A	10A	Released year	Option D	Option T
1-stage	DC±50V	**SNA**	●	●	●	–	'05	●	● (Excluding 1A and 3A)
	DC50V	**SNR**	–	–	–	●	'07	●	●

Option -D: DIN rail installation type -T: Terminal block type

Sales Network

Worldwide Sales Bases



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