



# Quick Selection Guide

## Edition 2017

### DC-DC Converters

**Autronic**

A FORTEC GROUP MEMBER

# DC-DC Converters

## ACR-Series

PCB Mounting / Chassis Mounting



ACR45



ACR120/KS



ACR150



ACR350

### PCB Mounting / Chassis Mounting

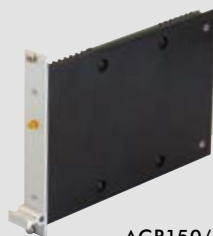
- Isolated
- Single and quad output
- Overvoltage and overtemperature shutdown
- Enable Signal
- Thermal Warning Signal
- Hold up time 10 ms (ACR350)
- According to Railway Standard EN 50155 and EN 50121-3-2
- Shock and Vibration according to EN 61373 Cat. 1B
- Safety according to EN 60950 (ACR45)
- CE marked

max. Output Power (W)	60	120	150	350
Type	ACR	ACR	ACR	ACR
Case	ACR 45	Ks	ACR 150	ACR 350/C
Dimensions (LxWxH) in mm	50.8x50.8x11	133x46x35	95x65x11	182x105x50
Outputs	1	1	1	1
Output Voltages (VDC)	5/12/15/24	24	5/12/24	24
Input Voltage Ranges (VDC)	9-36/14,4-40/ 21,6-51/ 43-101/66-154	66-154	6-20/9-36/ 14,4-40/ 43-101/66-154	14,4-67,2 / 43-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

### Chassis Mounting / Standard euro-rack size 19"



ACR150-4DB/KE



ACR150/LEC



ACR150/LEC-C

### Chassis Mounting / Standard euro-rack size 19"

#### ACR150-4DB/KE for Compact PCI

- Quad output
- Front plate 8 HP / 3 U
- Short circuit protection
- Coated assembly
- Yellow LEDs to indicate operating mode
- Inrush current limitation
- Reverse polarity protection
- Hold up time 10 ms
- Supply fail signal
- Derating Signal
- Sense

#### ACR150/LEC or LEC-C

- Single output
- Front plate 4 HP / 3 U (LEC)
- Short circuit protection
- Coated assembly
- Yellow LED to indicate operating mode
- Reverse polarity protection
- Trim Signal

max. Output Power (W)	100	150	150
Type	ACR150-4DB/KE	ACR150/LEC	ACR150/LEC-C
Case	KE	LEC	LEC-C
Dimensions (LxWxH) in mm	166.5x40.3x111	164.5x20x111	162x19,2x111
Outputs	4	1	1
Output Voltages (VDC)	+3.3, +5, ±12	12/24	12/24
Input Voltage Ranges (VDC)	14.4-36/66-154	9-36/14-40/ 43-101/66-154	9-36/14-40/ 43-101/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85

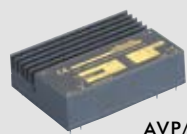
For complete data sheets  
visit [www.autronic.de](http://www.autronic.de)



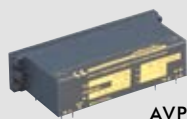
# DC-DC Converters

## AVP-Series

### PCB Mounting



AVP/J



AVP/Jsp



AVP.../Ksp



AVP.../K

### PCB Mounting

- Isolated
- Single, dual, bipolar and triple output
- Output adjustment possible
- Overvoltage and overtemperature shutdown
- Enable signal
- Parallel connection
- Encapsulated case
- According to Railway Standard EN 50155 and EN 50121-3-2
- Shock and Vibration according to EN 61373 Cat. 1B
- CE marked

max. Output Power (W)	36	41	42	51
Type	AVP-3	AVP-2	AVP	AVP-2
Case	Ksp	D/K	J	B/K
Dimensions (LxWxH) in mm	103.5x46x35	90.5x65.5x35	90.5x65.5x25	90.5x65.5x35
Outputs	3	2	1	2
Output Voltages (VDC)	+5, ±12/+5, ±15	5, 12/5, 15	5/12/15/24/30	±12/±15
Input Voltage Ranges (VDC)	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/43-101/ 66-154	9-40/15-36/ 32-74/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

max. Output Power (W)	47	51	53	75
Type	AVP-2	AVP-2	AVP	AVP
Case	D/Ksp	B/Ksp	Jsp	K
Dimensions (LxWxH) in mm	103.5x46x35	103.5x46x35	103.5x46x25	90.5x65.5x35
Outputs	2	2	1	1
Output Voltages (VDC)	5, 12/5, 15	±12/±15	5/12/15/24/30	3.3/5/12/ 15/24/30
Input Voltage Ranges (VDC)	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154	5-36/9-40/ 15-36/32-74/ 43-101/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

max. Output Power (W)	78
Type	AVP
Case	Ksp
Dimensions (LxWxH) in mm	103.5x46x35
Outputs	1
Output Voltages (VDC)	3.3/5/12/ 15/24/30
Input Voltage Ranges (VDC)	5-36/9-40/15-36/ 19-51/32-74/ 43-101/66-154
Operating Temperature in °C	-40 up to +85

# DC-DC Converters

## AVP-Series

### Chassis Mounting



AVP/Js



AVP.../Ks



AVP/KE-F  
(AVP-3/KEP-F)



AVP/KEP-F

### Chassis Mounting

- Isolated
- Single, dual, bipolar and triple output
- Output adjustment possible
- Overvoltage and overtemperature shutdown
- Enable signal
- Parallel connection
- Encapsulated case (Js, Ks)
- Case option C: For chassis mounting on power loss dissipating metal surface (heat sink)
- Case option F: For chassis mounting on no power loss dissipating surface
- According to Railway Standard EN 50155 and EN 50121-3-2
- Shock and Vibration according to EN 61373 Cat. 1B
- CE marked

max. Output Power (W)	36	47	51	53
Type	AVP-3	AVP-2	AVP-2	AVP
Case	Ks	D/Ks	B/Ks	Js
Dimensions (LxWxH) in mm	113x46x35	113x46x35	113x46x35	113x46x25
Outputs	3	2	2	1
Output Voltages (VDC)	+5, ±12/+5, ±15	5, 12/5, 15	±12/±15	5/12/15/24/30
Input Voltage Ranges (VDC)	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154	9-40/15-36/ 32-74/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

max. Output Power (W)	78	87	87	100
Type	AVP	AVP-3	AVP-3	AVP
Case	Ks	KEP-F	KEP-C	KE-F
Dimensions (LxWxH) in mm	113x46x35	200x49x112	200x39x112	200x49x112
Outputs	1	3	3	1
Output Voltages (VDC)	3.3/5/12/ 15/24/30	+5, ±12/+5, ±15	+5, ±12/+5, ±15	5/12/15/24
Input Voltage Ranges (VDC)	5-36/9-40/ 15-36/19-51/32-74/ 43-101/66-154	15-36/32-74/ 66-154	15-36/32-74/ 66-154	9-40/15-36/ 19-51/32-74/ 43-101/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

max. Output Power (W)	100	200	200
Type	AVP	AVP	AVP
Case	KE-C	KEP-F	KEP-C
Dimensions (LxWxH) in mm	200x39x112	200x64.6x112	200x43.6x112
Outputs	1	1	1
Output Voltages (VDC)	5/12/15/24	12/15/24	12/15/24
Input Voltage Ranges (VDC)	9-40/15-36/ 19-51/32-74/ 43-101/66-154	15-36/19-51/ 43-101/66-154	15-36/19-51/ 43-101/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85

For complete data sheets  
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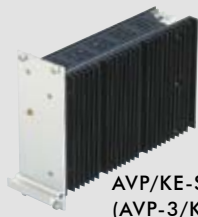


# AVP-Series

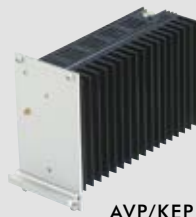
## Standard euro-rack size 19"



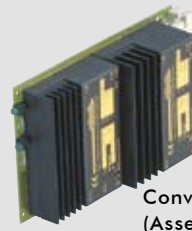
AVP/KE  
(AVP-3/KEP)



AVP/KE-S  
(AVP-3/KEP-S...)



AVP/KEP



Converter Card  
(Assembly example)

## Standard euro-rack size 19"

- Isolated
- Single, dual and triple output
- Zero load operation and short circuit protection
- Overtemperature shut down
- Remote off (inhibit) with TTL-L-signal
- Overvoltage protection in the output circuit, even in case of external supply (OVP)
- Reverse polarity protection (internal fuse)
- Fully integrated heatsink for low thermal stress
- Yellow LED for operating mode
- Conformal Coating
- Case option S: For sub racks with closed backplane
- Case option SB: For sub racks with closed backplane, metal sheet instead of front panel
- According to Railway Standard EN 50155 and EN 50121-3-2
- Shock and Vibration according to EN 61373 Cat. 1B
- CE marked

max. Output Power (W)	87	87
Type	AVP-3	AVP-3
Case	KEP	KEP-S SB
Dimensions (LxWxH) in mm	190x40.2x112	167.7x50.4x112
Outputs	3	3
Output Voltages (VDC)	+5, ±12/+5, ±15	+5, ±12/+5, ±15
Input Voltage Ranges (VDC)	15-36/ 32-74/66-154	15-36/ 32-74/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85

max. Output Power (W)	100	100	200
Type	AVP	AVP	AVP
Case	KE	KE-S	KEP
Dimensions (LxWxH) in mm	190x40.2x112	167.7x50.4x112	169.4x70.7x112
Outputs	1	1	1
Output Voltages (VDC)	5/12/15/24	5/12/15/24	12/15/24
Input Voltage Ranges (VDC)	9-40/15-36/ 19-51/32-74/ 43-101/66-154	9-40/15-36/ 19-51/32-74/ 43-101/66-154	15-36/19-51/ 43-101/66-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85

max. Output Power (W)	200	200	200	200
Type	Converter Card	Converter Card	Converter Card	Converter Card
Case	QD	MD	PD	SD
Dimensions (LxWxH) in mm	100x160	100x160	100x160	100x160
Outputs	4	1-3	1	2
Output Voltages (VDC)	depending on model	depending on model	depending on model	depending on model
Input Voltage Ranges (VDC)	depending on model	depending on model	depending on model	depending on model
Operating Temperature in °C	depending on model	depending on model	depending on model	depending on model

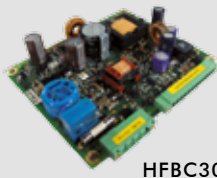


# HxxC-Series

## PCB Mounting / Chassis Mounting



HFBC20



HFBC30



HFC50

**NEW**



HFBC60-W/Ks



HFBC60

### PCB Mounting / Chassis Mounting

- Isolated
- Ultra wide input range
- Single and dual outputs
- Hold up time 10 ms
- According to Railway Standard EN 50155 and EN 50121-3-2
- Shock and Vibration according to EN 61373 Cat. 1B
- CE marked

max. Output Power (W)	20	33	50	60	60
Type	HPBC20	HFBC30-2DW/0	HFC50-W/0	HFBC60-W/Ks	HFBC60-W/0 HFBC60-2DW/0
Case	HPBC20	HFBC30	HFC50	Ks	HFBC60
Dimensions (LxWxH) in mm	65x53x20	120x100x28	100x80x27	113x46x35	146x100x32
Outputs	1	2	1	1	1/2
Output Voltages (VDC)	5/12/24	5, 12	12/24	5/12/24	24/5, 12
Input Voltage Ranges (VDC)	14,4-154	14,4-154	14,4-154	14,4-154	14,4-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85	-40 up to +85

### Chassis Mounting / Standard euro-rack size 19"



HEBC60



HEC120

**NEW**



HEC150

**NEW**



HFC150

**NEW**

### Chassis Mounting / Standard euro-rack size 19"

#### HEBC60

- Single and dual outputs
- Frontplate 8 HP / 3 U
- Overvoltage and overtemperature shutdown
- Hold up time of 10 ms
- Active Inrush Current limitation

#### HEC120 for Compact PCI

- Five outputs
- Frontplate 6 HP / 3 U
- Redundancy operation
- Hot Swap
- Overvoltage and overtemperature shutdown
- Hold up time of 10 ms
- Enable and Thermal Warning Signal

#### HFC150 / HEC150

- Single output
- Frontplate 8 HP / 3 U
- Redundancy operation
- Overvoltage and overtemperature shutdown
- Hold up time of 10 ms
- Enable and Thermal Warning Signal
- Active Reverse Polarity protection
- Active Inrush Current limitation

max. Output Power (W)	60	120	150
Type	HEBC60-W/0 HEBC60-2DW/0	HEC120-5W	HEC150-W HFC150-W
Case	HEBC60	HEC120	HEC150
Dimensions (LxWxH) in mm	166,5x40,3x111	166,5x30,5x111	166,5x40,3x111
Outputs	1/2	5	1
Output Voltages (VDC)	24/5, 12	+3,3 +5 ±12	24
Input Voltage Ranges (VDC)	14,4-154	14,4-154	14,4-154
Operating Temperature in °C	-40 up to +85	-40 up to +85	-40 up to +85

# DC-DC Converters

## Special Solutions



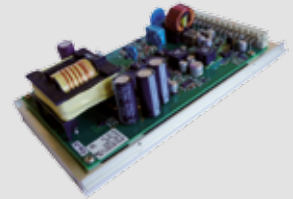
ACR42



60W DC/DC converter



HFC-3W/O



HFBC-3W/O

### Special Solutions

We are the right people to talk about particular requirements. We will develop and produce your own special converter.

Examples:

#### • ACR42

- 14,4 to 34 or 66 to 154 VDC input
- Dual output (9,5 and 24 VDC)
- Conducted emissions Class B
- Hold up time of 10 ms
- Active inrush current limitation
- Active reverse polarity protection
- -40°...85C without derating
- According EN50155 / EN 50121-3-2

For passenger information systems

#### • 60W DC/DC Converter

- 14,4 to 80 VDC input
- 120 VDC output
- 60 W continuous, 120W for 5 sec.
- -40°...85C without derating
- Device 4 HP / 3 U
- Low Ripple (ISDN-compatible)
- Redundancy operation
- Hot Swap
- Parallel operation max. 4 converters

For axle counter

#### • HFC-3W/O:

- Ultra wide input 14,4 to 154 VDC input
- Triple output
- 43 W continuous
- -40°...85C without derating
- Hold up time of 20 ms
- According EN50155, EN 50121-3-2 and IEEE Standard 1482.1 / 1478
- According RIA12 (Wave A to G)

For black boxes

#### • HFBC-3W/O:

- Ultra wide input 14,4 to 154 VDC input
- Triple output – 1 Output with constant current for LED
- 52 W continuous
- -40°...85C without derating
- Reverse polarity protection
- Inrush current limitation
- According EN50155 / EN 50121-3-2
- According RIA12 (Wave A to G)

For speed tracking

### Inquiry by fax +49 (0) 7147/24-252

Company: \_\_\_\_\_ Date: \_\_\_\_\_

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Street: \_\_\_\_\_ PO Box: \_\_\_\_\_

Zip Code: \_\_\_\_\_ City: \_\_\_\_\_

Country: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Output Voltages

Output Currents

Input Voltages

Isolation

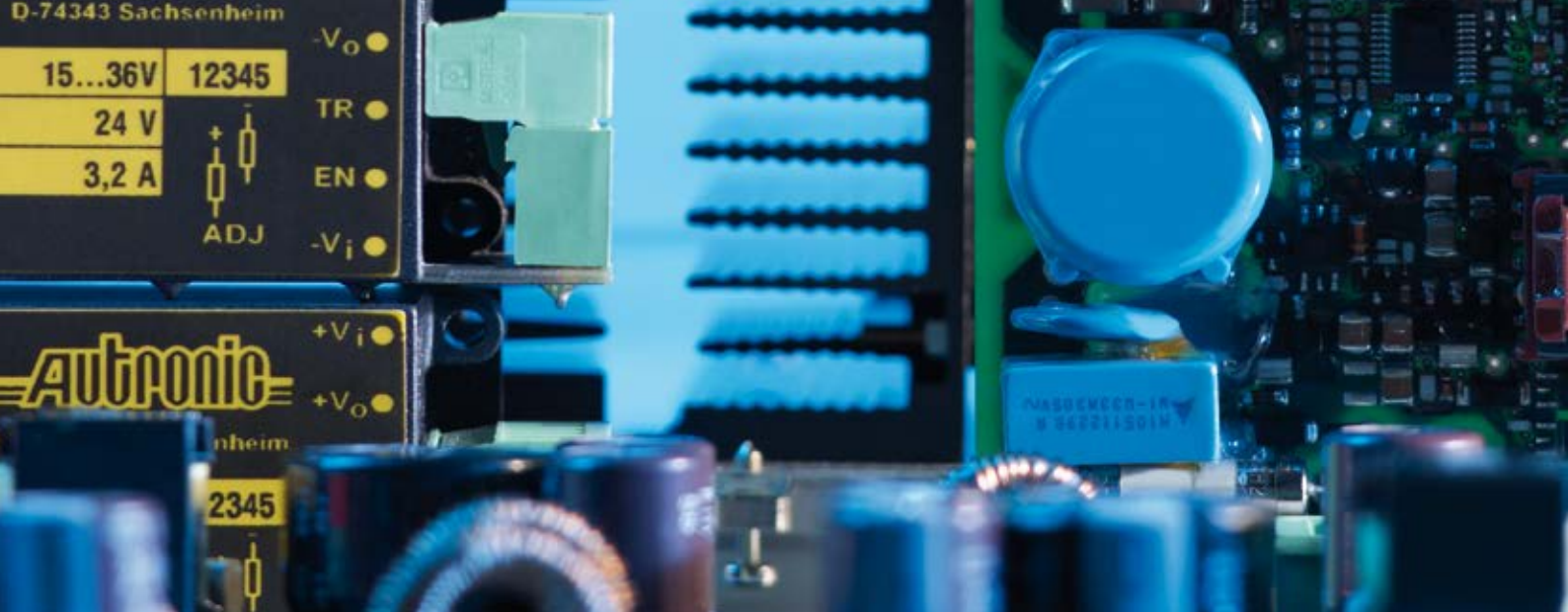
Construction/Mounting

Temperature Range

Quantity/Delivery Schedule

Remarks

For complete data sheets,  
visit [www.autronic.de](http://www.autronic.de)



For complete data sheets  
visit [www.autronic.de](http://www.autronic.de)

Other types on request.  
Specifications subject to change without notice.

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QUALITY SYSTEM



certified by DQS according to  
DIN EN ISO 9001 Reg.-No. 000510 QM08