

Railway-Grade DC-DC Converters Tout Value, Wide Operating Ranges

Targeting railway and industrial applications, [Aimtec's](#) AM20CWR-ZK 20-W dc-dc converter series is said to offer greater cost effectiveness due to material normalization and production automation, which also lead to improved reliability and performance. TEM Electronic Components, a distributor, lists unit pricing at \$50.44 in quantities of 100. The series as a whole covers a wide input voltage range of 13 V to 176 V by offering models with either 13-V to 70-V or 42-V to 176-V input. Output voltage range is 3.3 V to 15 V for single-output models or ± 5 V to ± 15 V for dual-output models (see the table).

Thanks to a built-in heat sink, the converters also offer wider operating temperature ranges, from -40°C to 100°C with full power output up to 61°C . It also features an isolation of 3000 Vdc for improved reliability and system safety. Furthermore, a high MTBF of 190,000 hours, output short circuit protection (OSCP), output overcurrent protection (OCP) and output overvoltage protection (OVP) come standard with the series in a 1-in. X 1-in. package (see the figure).

This series also comes standard with on/off control, is designed to meet EN50155 and has a built-in EMI filter (EN50121-3-2 ClassA). For more information see the [datasheet](#) or the homepage of the company [website](#).

Table. The AM20CWR-ZK series includes single-output and dual-output models with operation from 13 to 70 V or 42 to 176 V.

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current max (mA)	Output Current max (A)	Isolation (VDC)	Maximum capacitive Load (μF)	Efficiency (%)
AM20CWR-2403SZK	24 (13 - 70)	3.3	711	4.5	3000	7000	87
AM20CWR-2405SZK	24 (13 - 70)	5	947	4	3000	5000	88
AM20CWR-2412SZK	24 (13 - 70)	12	936	1.67	3000	850	89
AM20CWR-2415SZK	24 (13 - 70)	15	926	1.33	3000	700	90
AM20CWR-11003SZK	110 (42 - 176)	3.3	157	4.5	3000	7000	86
AM20CWR-11005SZK	110 (42 - 176)	5	204	4	3000	5000	89
AM20CWR-11012SZK	110 (42 - 176)	12	211	1.67	3000	850	86
AM20CWR-11015SZK	110 (42 - 176)	15	211	1.33	3000	700	86

Dual Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current max (mA)	Output Current max (A)	Isolation (VDC)	Maximum capacitive Load (μF)	Efficiency (%)
AM20CWR-2405DZK	24 (13 - 70)	± 5	969	± 2.0	3000	± 1000	86
AM20CWR-2412DZK	24 (13 - 70)	± 12	926	± 0.833	3000	± 680	90
AM20CWR-2415DZK	24 (13 - 70)	± 15	926	± 0.666	3000	± 470	90
AM20CWR-11005DZK	110 (42 - 176)	± 5	216	± 2.0	3000	± 1000	84
AM20CWR-11012DZK	110 (42 - 176)	± 12	209	± 0.833	3000	± 680	87
AM20CWR-11015DZK	110 (42 - 176)	± 15	209	± 0.666	3000	± 470	87



Figure. Housed in 1-in. x 1-in. packages, the AM20CWR-ZK 20-W dc-dc converters for railway and industrial applications are said to offer much greater cost effectiveness due to material normalization and production automation, which also lead to improved reliability and performance.