

VME 19" SERIES

DC/DC VME Power Supply Series for Railway Applications



VME 19" series power supplies are 19" 3U 8TE open card plug-in modules tested according to EN50155 railway standard. At the rear there is DIN41612 H15 connector. Standard output voltages are 5VDC and 12VDC and three different input versions are available for typical railway battery system voltages.

Input, output and ground are isolated from each other; isolation level is 1000 VACrms 50 Hz, 1 min. The outputs are well load and line regulated. When the input voltage is switched off the +5 VDC output holds up for 100 ms. The power supply stands wrong polarity connection in the input.

The VME power supply is high reliable and meets following environmental requirements based on EN50155 railway standard.

Operating temperature	EN 50155 class TX: -40 ... +75°C
Cooling test	EN 50155/EN 60068-2-1 Ad: -40°C 2h, power off, performance check in low temp.
Dry heat test	EN 50155/EN 60068-2-2 Bd: 6h +70°C, 10 min +85°C, power on
Damp heat	EN 50155/HD 323.2.30 Db: +55/+25°C, 2 cycles, 2x24 h.
Conformal coating	Acrylics, UL approved, MIL-I-46058C (advisable: Concoat 1B73EPA)
Vibration	EN 50155: 5-150 Hz, 20 m/s ² .
Shock	EN 50155/EN 60068-2-27 Ea: 30m/s ² , duration 50 ms

19" VME POWER SUPPLY MODELS					
Type	Input Voltage	Nominal outputs (Peak current +120...160%)	Max Power	Dimensions (Width/Height/Depth)	Connector
DDC4930	17-30 VDC	5VDC/6A, 12VDC/ 0.8A	60 W	8TE / 3U / 160 mm	DIN41612 H15
DDC7510	51-90 VDC	5VDC/11A, 12VDC/ 0.8A	80 W	8TE / 3U / 160 mm	DIN41612 H15
DDC4780	77-138VDC	5VDC/11A, 12VDC/ 0.8A	80 W	8TE / 3U / 160 mm	DIN41612 H15

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INPUT

Voltage range		-30% +25% to nominal value (see first page) 0,1 s -40% +40%
Efficiency	$U_{in} = \text{nom}, P_{out} = \text{nom}$	>75%
Safety		According to EN60950, Class I
Hold up time	Only Output 1 available	80-100ms
Isolation		
- Input / ground		500VAC RMS 50Hz, 1min
- Input / outputs		500VAC RMS 50Hz, 1min
- Output / ground		500VAC RMS 50Hz, 1min
Inrush current protection		Limited by NTC 4R7
Wrong polarity protection		FET
Input current protection		n/a

EMC

Conducted emission	EN 55011 class A
Radiated emission	EN 55011 class A
Radiated electromagnetic field immunity, AM	EN 61000-4-3, 20V/m
Electrical fast transient immunity	EN 61000-4-4, 2kV (1kV line to gnd)
Surge immunity	EN 61000-4-5, 2kV line to gnd

OUTPUTS

		5VDC	12VDC
Nominal output voltage		5,15VDC	12,10VDC
Ripple voltage	$f = 20\text{Hz} \dots 300\text{kHz}, T_{amb} = 25^\circ\text{C}$	< 10mV _{rms}	< 10mV _{rms}
Load regulation	$I_{out} = 10 \dots 100\%$	+/- 2 %	+/- 2 %
Line regulation	$U_{in} = U_{min} \dots U_{max}$	+/- 1 %	+/- 0,5 %
Temperature coefficient		< 0.02 % / °C	< 0.02 % / °C
Nom output current I_{nom}		6A or 11A	0,8A
Max output current I_{max}		8,5A or 13A	1,25A
Short circuit current		< 22A	
Output voltage hold-on		80ms	shut down
Voltage feedback by sense pin		Yes	No

SIGNALS AND INDICATIONS

Output OK LED	Green LED on the front panel, when the output is OK
AC FAIL SIGNAL	activates 10ms after input break
SYSRESET SIGNAL	Open collector output activates 80ms after ACFAIL\ Deactivates minimum 200ms after +5V is up

MECHANICAL

Construction		EURO I
Dimensions		
	Width	8 TE
	Height	3 U
	Depth	160 mm
Weight		0,5 kg
Enclosure		Open card
Connector		DIN 41612 H15, silver plating