



## AC/DC converter for railway applications

### Description

The 55W ABR series is designed specifically for use in railway applications, and is equally suited to both on-board and trackside applications. Housed in a rugged 3U Euro cassette, the ABR series can be installed in a rack or chassis mounted. The range is fully compliant with international railway standards and norms.

### Special features include:

- 3U Euro cassette
- Wide input range
- Hold-up time 30ms at nominal input voltage

### Input specifications

The following input voltages versions are available as standard:

110V / 230V (85 - 132, 161 - 264V) Vac (Suffix XZ)

Parameter	Detail
Input Frequency	47 to 63Hz
Input Protection	Surges and transients to EN50121.3.2 (2006)
Inrush Current	Limited to typically 5 x nominal current (after 0.1ms)
Efficiency	75% to 85% dependent on voltage combinations
Hold-up time	30ms from nominal voltage / one missing mains cycle
Input fuse	20mm cartridge style mounted on rear panel. See table overleaf for other fuse options

### Output specifications

Parameter	Detail
Maximum Output Power	55W (40W @ 85°C, see derating curve for further details)
Output Voltage	Can be specified from 5V to 48Vdc
Minimum Load	A minimum load of up to 2.5% may apply for full performance
Setting Tolerance	±0.5% at 50% load, 15°C to 25°C
Line Regulation	±0.2%
Load Regulation	±0.5%
Temperature Coefficient	<0.02% / °C



Part number	Output	
	V <sub>dc</sub>	A
ABR0500	5	8.0 <sup>1</sup>
ABR1200	12	4.5
ABR1500	15	3.5
ABR2400	24	2.2
ABR3000	30	1.8

**Note:** 1. 8.0A maximum continuous at 70°C.  
 10.0A maximum continuous can be supplied at ambient temperatures up to 55°C.



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## Output specifications (Continued)

Parameter	Detail
Output Ripple	<1% Pk-Pk of Output Voltage
Output Noise	<1% Pk-Pk superimposed (up to 20MHz)
Response Time	0.5ms to within 2% (for a 20% - 90% load change)
Indicators	Green "Output good" LED for output
Output Protection	Output and signal lines protected against indirect transients to EN50121.3.2 (2006)
Current limit	Operates at approximately 110% of full power. Auto recovery
Thermal Protection	Shuts down PSU if safe internal temperature is exceeded. Auto recovery.
Isolation (tested at dc equivalent voltage)	Input to Output 3.0kV ac Input to Chassis 1.5kV ac Output to Chassis 1.5kV ac

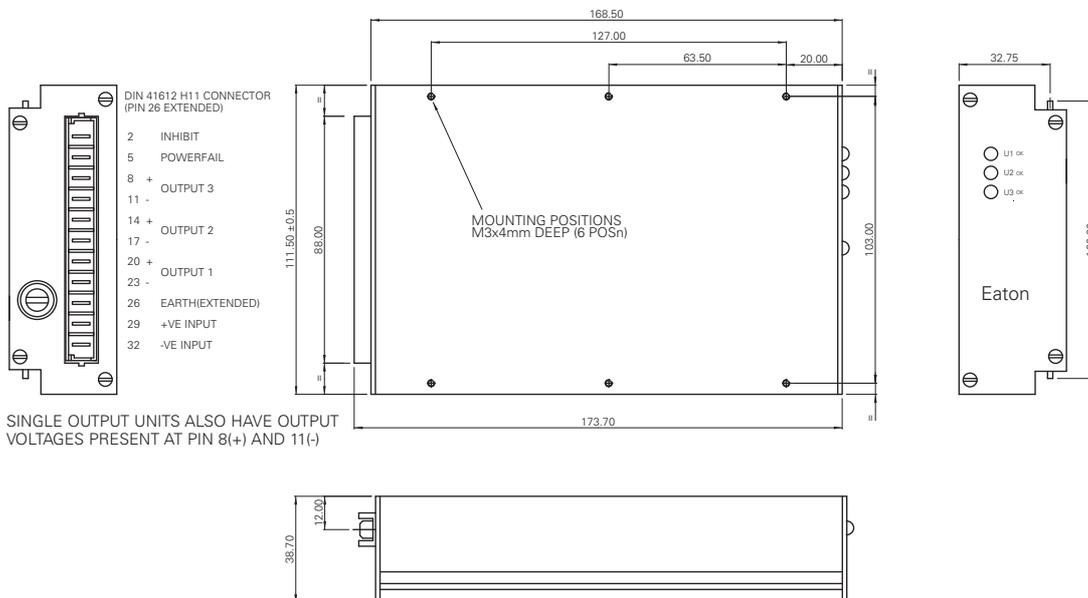
## Electrical options for ABR series

Option	Detail	Code
Input Fuse	Fitted on PCB	B
Input Fuse	Not fitted	Z
Input Fail	Operates when input falls below minimum. (Active high or Active low)	I or J
Output Fail	Operates when U1 output falls below 96% of nominal value. (Active high or Active low)	K or L
Over-voltage	Limits voltages of U1 to safe level under fault conditions	P
Inhibit	TTL high to inhibit	V
Enable	Link to U1 return to enable	W

## Environmental & mechanical options for ABR series

Option	Detail	Code
Extended temperature range	- 40°C operating - 55°C storage	T
Connector fixing	Retaining clips	H
Standard mounting plate	Bulkhead fixing Drawing 900-911	M
Alternative mounting plate	Bulkhead fixing Drawing 900-954	M4
Rack mounting Front Panel	8HP Front Panel Drawing 900-910	Q4
Connections	Flying leads (Halogen free cable)	Q6

## Technical drawing



## Environmental details

Parameter	Detail
Operating Temperature	-25°C to +70°C (no derating) (85°C for 10 mins.)
Storage Temperature	-40°C to +80°C
Cooling	Convection
Derating	Continuous operation at temperatures >71°C is possible at reduced output power. Please refer to derating curves for further details.
Relative Humidity	95% max.
Shock & Vibration	EN 50155 (EN 61373)
Environmental Protection	IP54

## Applicable norms

Parameter	Detail
EMC	EN50155 (2007), EN50121-3-2 (2006)
Other	EN50155 (2007)

## Mechanical characteristics

Parameter	Detail
Construction	Euro cassette - suitable for either rack or bulkhead mounting
Dimensions	Length = 168.5mm Width = 8TE Height = 3U
Weight	0.7kg
Connections	Connector DIN 41612 H11 Class 1 - Option for connection retaining clips - Option for cable connections
Fixings	Six M3 tapped holes in cassette side panel Option for rack mounting or bulkhead mounting plate

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