

## 300W, IP66-Rated, Rugged Railway Quality AC-DC Power Supply with PFC-input PFC 65R-D3 Series (IP66)

- Electronic power factor correction (PFC)
- Packaged in waterproof IP66 enclosure
- For railway and other heavy-duty applications
- Cooling by conduction and natural convection
- Internal module ruggedized
- Full electronic protection
- N+1 redundancy available



The rugged railway quality AC-DC power supply with power factor corrected input utilizes field proven topology to generate the required output power. The unit is packaged in a rugged, waterproof, die cast aluminum IP66 enclosure, mounted on a base plate. The input and output are via sealed circular connectors, cable glands or custom connections. Cooling is by internal conduction to the walls of the IP66 enclosure and via baseplate to an external chassis, cabinet wall, or heatsink. Additional cooling is achieved by convection via the outside surface of the IP66 enclosure. This enables operation within the specified temperature range for full specification. The internal boards are fully ruggedized to provide additional immunity to shock and vibration. An optional built-in redundancy diode allows for parallel and N+1 operation. Other options include a Form C output fail alarm and remote shutdown. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to high MTBF. The power supply meets the requirements of EN50155 for electronic equipment used on railway rolling stock. The unit is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

95-264Vac universal  
47-63Hz  
Input Current: 3.8Arms max. at 95V  
Power factor is min 0.97 at full load  
for the entire input range  
Meets EN61000-3-2

#### Input Protection

Inrush current limiting  
Varistor  
Reverse polarity protection  
Internal safety fuse  
Lower voltage than the specified  
minimum input will not damage the  
unit

#### Isolation

2250Vdc input to chassis  
4300Vdc input to output  
8mm spacing  
1000Vdc output to chassis

#### Standards

Designed to meet EN62368-1  
and related standards

#### Immunity

Meets criteria as requested in  
EN50155 and EN50121-3-2 according  
to the following standards:  
EN61000-4-2 (ESD)  
EN61000-4-3 (RF Immunity)  
EN61000-4-4 (Fast Transients)  
EN50155 (Surge)  
EN61000-4-6 (Conduction Immunity)  
EN50155 (Voltage Variations)

#### EMI

EN50121-3-2

#### Hold Up Time

Minimum 5ms at full load for 5%  
drop of output voltage at nominal  
input

#### Switching Frequency

80kHz  $\pm$  3kHz

#### Output Voltage

24Vdc, 48Vdc or 110Vdc  
300W continuous  
Output is floating. Either terminal  
can be grounded  
Other outputs and higher  
output power on request

#### Redundancy Diode

Not installed.  
Available on request

#### Line/Load Regulation

$\pm$ 1% combined from zero  
load to full load

#### Dynamic Response

Max 5% voltage deviation for 10%  
to 50% load step, with better than  
1msec recovery time

#### Output Ripple/Noise

Less than 1% peak-to-peak or 0.2%  
RMS of the output voltage  
(20MHz BW)

#### Output Overload Protection

Current limiting with short circuit  
protection (No hiccup)  
Self-resetting thermostat for  
thermal protection

#### Output Overvoltage Protection

Double regulator loop

#### Efficiency

Input/output voltage dependent.  
Typically 85% at full load

#### Operating Temperature Range

-25 to +50°C temperature for full  
specification  
Extended temperature range  
available on request.

#### Temperature Drift

0.05% per °C over operating  
temperature range

#### Cooling

Conduction to customer heat-sink  
or chassis and natural convection

#### Environmental Protection

IP66 enclosure  
Internal modules ruggedized

#### Shock/Vibration

IEC61373 Cat 1 A&B

#### Humidity

5-100% non-condensing

#### MTBF

150,000 at 45°C  
Demonstrated MTBF  
is significantly higher

#### Indicators

None

#### Control Input

None  
Optional

#### Alarm Output

Not installed  
Optional output Fail Alarm

#### Package/Dimensions (W x H x D)

*Overall dimensions including  
mounting flanges/baseplate:*

160 x 94 x 406 mm  
6.3" x 3.7" x 16"

*Dimensions of enclosure body:*

160 x 90 x 360 mm  
6.3" x 3.5" x 14.2"

#### Weight

Enclosure with internal module:  
(un-potted): 4.6 kg; 10 lb

#### Connections

Internal barrier-type terminal block  
accessible via sealed cable glands.  
Optional connectors instead of cable  
glands

#### RoHS Compliance

Compliant

#### Warranty

Two years subject to application  
within good engineering practice

#### Internal Terminal Block Pin-out

| INPUT |    |    |   |   | GND      |          |          |          |          | OUTPUT |   |   |   |   |
|-------|----|----|---|---|----------|----------|----------|----------|----------|--------|---|---|---|---|
| +     | -  | +  | - | + | NOT USED | NOT USED | NOT USED | NOT USED | NOT USED | +      | - | + | - | + |
| 12    | 11 | 10 | 9 | 8 | 7        | 6        | 5        | 4        | 3        | 2      | 1 | 2 | 1 | 1 |

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0. CANADA  
Tel: +1-613-836-3511 | Fax: +1-613-836-7488

<https://absopulse.com/contact> | <https://www.absopulse.com>