

DATA SHEET

## Vibro-Meter®

### APF196 24 V<sub>DC</sub> 3 A power supply



#### KEY FEATURES AND BENEFITS

- From the Vibro-Meter® product line
- Input: 85 to 277 V<sub>AC</sub> or 80 to 370 V<sub>DC</sub>
- Output: 24 V<sub>DC</sub> 3 A
- Status indicators
- Rugged compact design
- Metal enclosure with DIN-rail mounting adaptor

#### APPLICATIONS

- Outputs can be connected in parallel for increased output current or power supply redundancy
- Ideal for use with VM600 and/or VibroSmart® machinery monitoring systems

#### DESCRIPTION

The APF196 is a high-performance 24 V<sub>DC</sub> 3 A power supply for use in industrial applications such as machinery monitoring.

A single APF196 power supply can be used to power any equipment requiring a 24 V<sub>DC</sub> up to 3 A (72 W), for example, external hardware such as GS112x galvanic separation units or VibroSmart® devices. Up to five APF196 power supplies can be connected in parallel in order to increase performance.

The APF196 is a compact and robust switched-mode power supply that works with either AC or DC inputs. It includes a front-panel LED (DC OK) to indicate the status of the power supply locally and a relay that can be used to monitor the status of the power supply remotely.

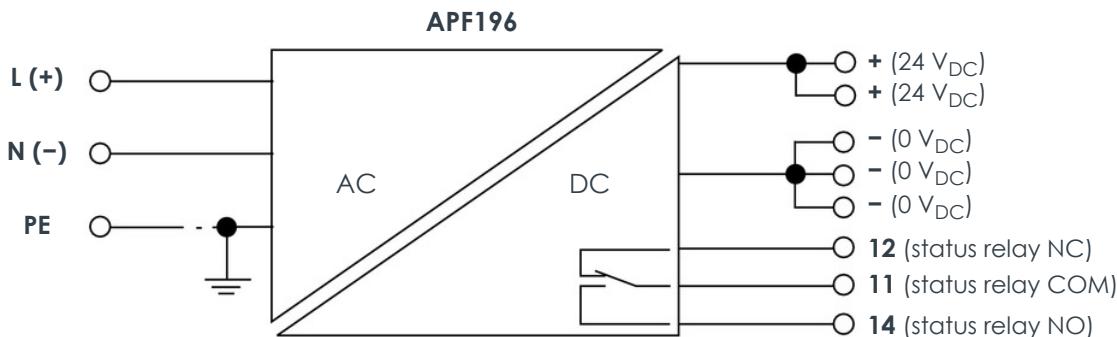
The APF196 is DIN-rail mounting and is typically installed in a cubicle containing other equipment such as VM600 and/or VibroSmart® monitoring systems.

For specific applications, contact your local Meggitt representative.



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## SYSTEM OVERVIEW



### Notes

The APF196 power supply accepts either an AC or a DC input. When using a DC input, ensure that the correct input polarity is observed (+ and – inputs as shown above).

Up to five APF196 power supplies can be connected and operated in parallel:

- APF196 power supplies can be connected with a common input voltage connection if increased output current is required, with no redundancy.
- APF196 power supplies can be connected with separate input voltage connections if APF196 power supply redundancy is required.

External diodes are not required when operating APF196 power supplies in parallel as they are included internally. However, the individual output voltages should be the same ( $\pm 50 \text{ mV}$ ) and the wiring should be symmetrical in order to ensure an even current distribution.

## SPECIFICATIONS

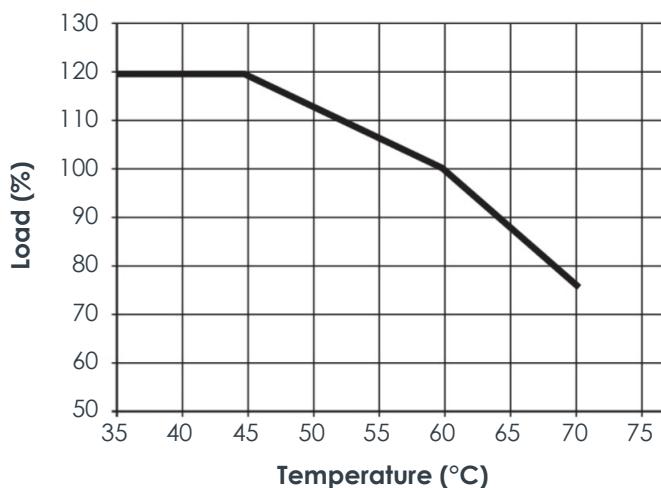
### Electrical

Rated Input voltage	: 100 to 240 V <sub>AC</sub>
Input voltage	<ul style="list-style-type: none"> <li>• AC : 85 to 277 V<sub>AC</sub> (45 to 65 Hz)</li> <li>• DC : 80 to 370 V<sub>DC</sub></li> </ul>
Current consumption	<ul style="list-style-type: none"> <li>• AC : 1 A at 230 V<sub>AC</sub> / 1.5 A at 115 V<sub>AC</sub></li> <li>• DC : 1 A at 370 V<sub>DC</sub> / 1.5 A at 120 V<sub>DC</sub></li> </ul>
Efficiency	: 89% typ.
Inrush current	: 15 A max.
Input fuse	: Yes (internal)
Surge protection	: Varistor (internal). Note: The internal varistor found in a switch-mode power supply does not replace the need for surge protection within a system.
Nominal output	
• Voltage	: 24 V <sub>DC</sub>
• Current	: 3 A
• Power	: 72 W
Output stability (regulation)	: $\pm 1\%$
Residual ripple	: <50 mV <sub>PK-PK</sub>
Output voltage range	: 22.5 to 29.5 V <sub>DC</sub> (adjustable via front-panel potentiometer)

## SPECIFICATIONS (continued)

Continuous output current (at 24 V <sub>DC</sub> )	
• At 45°C (113°F)	: 3.6 A
• At 60°C (140°F)	: 3 A. Note: Output power derating is required above 60°C (see <b>Derating curve on page 3</b> ).
• At 70°C (158°F)	: 2.25 A
Parallel connection	: Yes, up to a maximum of five APF196 power supplies (see <b>System overview on page 2</b> )
Short-circuit protection	: Yes
Inverse-voltage protection	: Yes
Protection against reverse voltages	: Yes
Protection against over-heating	: Yes. Automatic shut off at over-temperature with automatic restart after cooling. Note: Output power derating is required above 60°C (see <b>Derating curve on page 3</b> ).

## Derating curve



Note: Output power derating of 2.5%/°C is required for operating temperatures above 60°C (140°F).

## Environmental

Temperature	
• Operating	: -25 to 70°C (-13 to 158°F)
• Storage	: -40 to 85°C (-40 to 185°F)
Humidity	: 5 to 95% RH (non-condensing)
Protection rating (according to IEC 60529)	: IP20
MTBF (according to IEC 61709 (SN 29500))	: >500000 hours
Vibration (according to IEC 60068-2-6)	: 2.3 g
Shock acceleration (according to IEC 60068-2-27)	: 30 g (in all directions)

## SPECIFICATIONS (continued)

### Approvals

Conformity

: CE marking, European Union (EU) declaration of conformity.  
EAC marking, Eurasian Customs Union (EACU) certificate/  
declaration of conformity.

Other standards

: cULus, cURus and TÜV Rheinland

Electromagnetic compatibility

: EN 61000-3-2 and EN 61000-3-3.  
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,  
EN 61000-4-6, EN 61000-4-8 and EN 61000-4-11.  
IEC 61204.

Electrical safety

: EN 60204

Extra-low voltage systems

: SELV, according to EN 60950.  
PELV, according to EN 60204.

Environmental management

: RoHS compliant (2011/65/EU)

### Control inputs

Adjust potentiometer

: To adjust the output voltage.

### Status indicators

DC OK LED

: Green indicates normal operation.  
Red indicates a power supply problem such as output out of  
normal range, short-circuit, overload and/or over-heating.

Status relay  
(single-pole double-throw)

: Energised indicates normal operation.  
De-energised indicates an output problem.  
Note: The status relay supports signals and resistive loads up to  
30 V<sub>AC/DC</sub> and 1 A.

### Connectors

Screw-terminal connector  
(bottom front)

: Three contacts for the power supply input:  
L(+) for live, N(–) for neutral and PE for protective earth.

Screw-terminal connector  
(top front)

: Five contacts for the power supply output:  
+, + for 24 V<sub>DC</sub> and –, –, – for 0 V<sub>DC</sub>.

Screw-terminal connector  
(top front)

: Three contacts for the status relay:  
12, 11 and 14 for relay COM, NC and NO contacts.  
Note: See **System overview on page 2**.

Input conductor cross-section

: 0.22 to 4 mm<sup>2</sup>

- Flexible

: 0.18 to 6 mm<sup>2</sup>

- Rigid

: 26 to 10

- AWG

Output conductor cross-section

: 0.5 to 4 mm<sup>2</sup>

- Flexible

: 0.5 to 6 mm<sup>2</sup>

- Rigid

: 26 to 12

- AWG

Insulation stripping length

: 6 mm

Tightening torque

: 0.5 to 0.6 N•m

## SPECIFICATIONS (continued)

### Physical

Housing	: Corrosion resistant metal
Mounting	: Mounts on a TH 35 DIN rail (according to EN 50022 / IEC 60715). For example, TH 35-15 or TH 35-7.5. Note: 50 mm (1.97 in) of vertical clearance at the top and bottom of the housing is required for air circulation (cooling). No horizontal clearance is required so APF196 power supplies can be mounted directly side-by-side (adjacent to each other).
Dimensions (height × width × depth)	: 130 × 32 × 125 mm (5.12 × 1.26 × 4.92 in)
Weight	: 650 g (1.4 lb) approx.

### ORDERING INFORMATION

To order please specify

Type	Designation	Ordering number (PNR)
APF196	24 V <sub>DC</sub> 3 A power supply	957.07.21.2002

### RELATED PRODUCTS

APF195	24 V <sub>DC</sub> 0.26 A power supply	Refer to corresponding data sheet
APF197	24 V <sub>DC</sub> 5 A power supply	Refer to corresponding data sheet
APF198	24 V <sub>DC</sub> 7.5 A power supply	Refer to corresponding data sheet
APF200	24 V <sub>DC</sub> 3.75 A power supply with Ex certification	Refer to corresponding data sheet
APF201	24 V <sub>DC</sub> 7.5 A power supply with Ex certification	Refer to corresponding data sheet
APF202	24 V <sub>DC</sub> 5 A power supply with Ex certification	Refer to corresponding data sheet
ASPS	VM600 auxiliary sensor power supply	Refer to corresponding data sheet

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