

# thinkRF™ P120

## Vehicular Power Conditioner



Protect your expensive electronics from vehicular power transients



### COMPACT & LIGHT DESIGN

131 x 62 x 34 mm  
(5.16" x 2.44" x 1.34")  
340 g (12 oz)



### RUGGED

Water resistant.  
Packaged to deal with dirt and moisture



### MIL-STD-PRF-28800

Passed high and low temperature requirements, shock, and vibration tests



## OVERVIEW

### P120 Vehicular Power Conditioner

Enable mobile / in-vehicle  
spectrum analysis applications

1

+8 VDC to +32 VDC  
Input voltage range

2

+ 12 VDC  $\pm$  5%  
Output voltage

3

MIL-STD-PRF-28800 (Class 2)  
Shock and vibration

4

36 W  
Output power

5

131 x 62 x 34 mm  
(5.16" x 2.44" x 1.34")  
Compact

6

340 g (12 oz)  
Light



Power in-vehicle equipment  
through a standard vehicle power  
supply while protecting equipment  
from vehicular power transients.

The thinkRF™ P120 vehicular power conditioner is designed to provide regulated power to equipment used in a vehicular environment whilst protecting the equipment from vehicular power transients.

When combined with the thinkRF series of Real-Time Spectrum Analyzers, the P120 conditioner enables mobile spectrum analysis applications such as drive testing, coverage mapping, interference hunting, and regulatory monitoring. The product has been tested to meet high and low temperature requirements, shock, vibration based on MIL-STDPRF-28800.

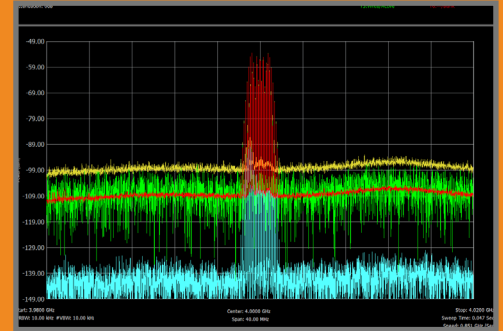
The product is designed to give a single regulated output of +12VDC under different input voltages ranging from +8V to +32V, but can easily be modified for different output voltages (please contact thinkRF for alternatives). This is all provided in a small form factor suitable for vehicular use. The inputs and outputs are provided via strain-relieved 16 AWG cables with 2-pin square ML-XT style Molex connectors. There is a choice of input using standard vehicle cigarette lighter style connector, or loose lead stranded soldered cables. The output is cable is terminated with a LEMO series connector.

# PERFORMANCE

## P120 Vehicular Power Conditioner

### 1 ENABLE MOBILE SPECTRUM ANALYSIS APPLICATIONS

The P120 powers in-vehicle equipment through a standard vehicle power supply while protecting equipment from vehicular power transients. When combined with the thinkRF series of Real-Time Spectrum Analyzers, the P120 conditioner enables mobile spectrum analysis applications such as RF drive-testing, coverage mapping, interference hunting, and regulatory monitoring.



### 2 SMALL SIZE AND WEIGHT

The P120 conditioner is compact, lightweight, and portable for easy use in any deployment scenario or vehicle, including military vehicles, vans, boats, or UAVs. Measuring 131 mm x 62 mm x 34 mm (5.16" x 2.44" x 1.34") and weighing only 340 g (12 oz), the P120 powers in vehicle equipment without adding significant size or weight to the solution.



### 3 INDUSTRY STANDARD CONNECTION POINTS AND ENCLOSURE

The inputs and outputs off the P120 conditioner are provided via strain-relieved 16 AWG cables with 2-pin square ML-XT style Molex connectors. There is a choice of input using standard vehicle cigarette lighter style connector or loose lead stranded soldered cables. The output cable is terminated with a LEMO series connector.

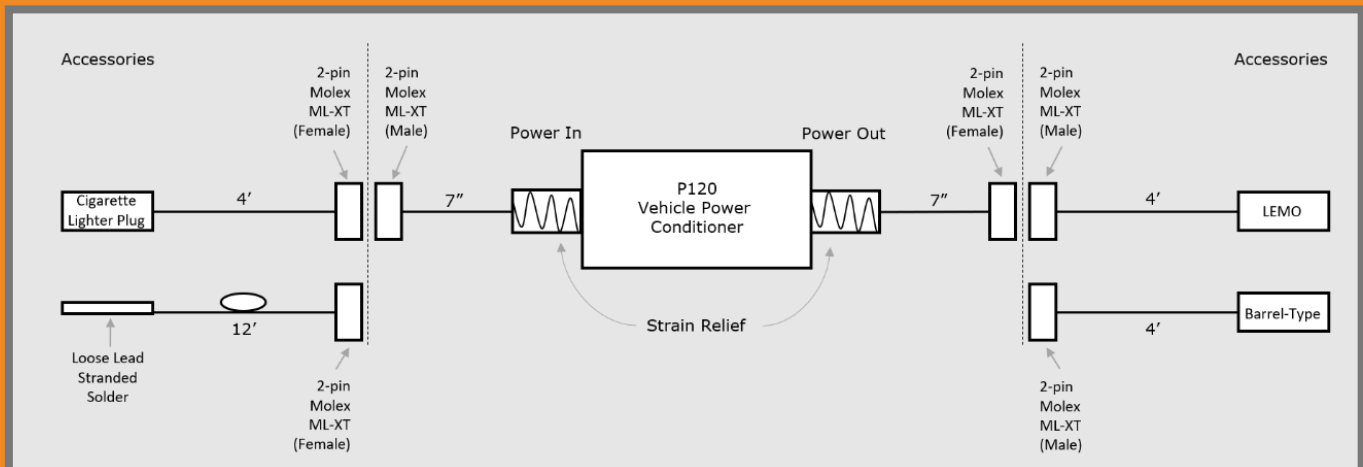


FIGURE 1: Schematic diagram of the P120 Vehicular Power Conditioner indicating connector schemes and accessories

# Specifications

Parameter		
Input Voltage Range	+8 VDC to +32 VDC	Compatible with vehicular power supplies
Input Supply Current	8.0 A maximum	
Output Voltage	+ 12 VDC $\pm$ 5%	
Output Power	36 W	
Surge Protection Level	ISO 16750-2 (sec 4.6.4) ISO 16750-2 (sec 4.3) ISO 16750-2 (sec 4.6.3)	Load Dump Overvoltage Starting Profile
Input Cable and Connector to P120	Strain relief cable on physical box terminated with male 2- Pin Molex ML-XT connector (16 AWG, 7" (17.78 cm) length)	
Output Cable and Connector from P120	Strain relief cable on physical box terminated with female 2- Pin Molex ML-XT connector (16 AWG, 7" (17.78 cm) length)	

Physical	
Operating Temperature Range	-10°C to +55°C (+14°F to +131°F)
Storage Temperature Range	-40°C to +71°C (-40°F to +160°F)
Dimensions	131 x 62 x 34 mm (5.16" x 2.44" x 1.34")
Weight	340 g (12 oz)

Environmental	
Shock & Vibration	MIL-STD-PRF-28800 Class 2 Only Sections: Non-Operating Temp (3.8.2.1) Operating Temp (3.8.2.2) Relative Humidity (3.8.2.3) Vibration Limits (3.8.4.1) Sinusoidal Vibration (3.8.4.2) Shock Functional (3.8.5.1)

# Ordering Information

Base Units	Part Number	Description
12 VDC output Vehicle Power Conditioner	P120 – 012	12VDC regulated output , +8 - 32VDC input via cigarette lighter plug or loose leads (2.4m)

## Accessories

Item*	Part Number	Description
Input Cable Cigarette Lighter Connector <sup>1</sup>	P120-012-CL	Cigarette Lighter Plug input, 1.2m length 16 AWG cable terminated with female 2-Pin Molex MX-LT connector
Input Cable, Loose Lead, Stranded Solder <sup>1</sup>	P120-012-LL	Loose Lead, Stranded Solder input 3.6 m (12 ft) length 14 AWG cable terminated with female 2-Pin Molex ML-XT connector
Output Cable with LEMO Connector <sup>2</sup>	P120-012-LE	LEMO 2B Series output 1.2 m (4 ft) length 16 AWG cable terminated with male 2-Pin Molex ML-XT connector
Output Cable with Barrel-type Connector <sup>3</sup>	P120-012-PL	Barrel type connector output 1.2 m (4 ft) length 18 AWG cable terminated with male 2- Pin Molex ML-XT connector. Barrel-type connector with 11 mm length, 5.5 mm dia. outer, 2.5 mm dia. inner with center + and outer shell - polarity

\* See Figure 1

1 One Input Cable is included in the price. Please choose from the two options.

2 One Output Cable is included in the price. This option is for only R5750 Spectrum Analyzer.

3 One Output Cable is included in the price. This option is for only R5500 and R5550 Spectrum Analyzers.

CONTACT US TODAY  
FOR A FREE DEMO!

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## Vehicular Power Conditioner



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The thinkRF P120 product line is protected by patents, (US8,675,781, US9,197,260, US9,350,404, US8,886,794) in the United States. This information is provided to satisfy the patent marking provisions including, but not limited to, the patent marking provisions of the America Invents Act (AIA) and is intended to serve as notice under 35 U.S.C. § 287(a), as amended by Section 16 of the AIA. Additional patents may be pending in the United States and/or elsewhere.

 **thinkRF™**  
monitor. detect. analyze.

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