

# Sensor Expansion Module (SEM)



Networkfleet's® industry leading Sensor Expansion Module (SEM) offers fleet managers additional diagnostic data on their vehicles. The SEM senses various voltage events occurring within the vehicle such as: PTO engagement/disengagement, secondary engine on/off, and door open/close.

Innovative in both design and functionality, the SEM is backwards compatible with all hardware in Networkfleet's 3500 product line\*. The expansion module connects directly between the 3500 hardware device and the accompanying harness cable. Like all other Networkfleet products, the SEM is manufactured in the U.S. and built with automotive grade components designed for environmental and automotive robustness. The SEM is hermetically sealed and designed to comply with SAE J1455 environmental standards. The airtight nature of the SEM allows for maximum functionality in extreme environmental conditions.

## Contact Networkfleet

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## Physical Specifications

Size	1.82" W x 0.58" H x 2.80" L (46.3mm x 14.8mm x 71.0mm)
Weight	1.59 oz (45g)

## General Specifications

Input Voltage	+8 to +30 VDC
SEM Input Voltage	-30 to +30 VDC
Power Consumption	
Normal Operating Mode	1.3 mA (typ) @ 12V 1.9 mA (max) @ 12V
Fault Protection	Reversed battery, over-voltage, loss-of-ground
Fuse	Internal 0.3 A trip point, self-resetting
Communication Interface	115200 baud serial (TTL levels)
SEM Detection Thresholds	
Off	$(-3V < x < +3V)$
On	$(-24V < x < -5V \text{ or } +5V < x < +24)$
Undefined	$(-5V < x < -3V \text{ or } +3V < x < +5V)$

## Environmental Specifications

Temperature	
Operating	-40 C to +85 C
Non-Operating	-40 C to +105 C
Humidity	5% to 95% RH



\*Some 3500 devices may require an over-the-air upgrade to properly function with the SEM.