Williams Controls
WCS-351614
Williams Customer Specification

Revision A: 1/11/07

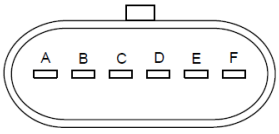
FEATURES

- 45° pedal
- FMVSS-124 and 302 compliant
- Ratiometric APS output
- Form C IVS output
- Isolated APS/IVS sealed
- Electronics IP66 sealed
- +5V operation
- -40°C to +85°C operation
- Integral preload spring
- Metripak 150-series compatible connector
- Protected against electrical misconnection (indefinite duration)

APPLICATIONS

- Truck throttle with position sensor for off-highway applications
- Sensor Commonly applied to:
  - Cummins
  - Detroit Diesel III, IV, & V
  - International
  - Mack
  - MB NAFTA

Connector Pinout



View Facing Connector End

Pin	Function	Pin	Function
A	APSOUT	D	IVSVNO
B	APSGND	E	IVSNC
C	APSVCC	F	IVSCOM

Mating Connector – Delphi-Metripak P/N **12066317** or equivalent

DESCRIPTION

The EFPA is designed to provide a signal to the engine fuel control system in response to the driver's request for engine power. A sensor is employed which provides a voltage proportional to the angular displacement of the treadle

CURTISS-WRIGHT		PROCEDURE NAME:	**DEPT:**		**030**		
		Williams Customer Specification Form					
DOCUMENT NUMBER:	**WQF-030-021**	Revision Level	A	Date Effective	11/13/07	DAF#	00396
QEMS Representative	Mary Knight	Process Owner	Michael Cooper		Department Manager	Scott Thiel	

ABSOLUTE MAXIMUM ELECTRICAL/MECHANICAL RATINGS

Supply Voltage (APSVCC, IVSCOM)	-5V to +5V
Output Current (APS1, APS2 output)	+/- 10mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
APS Short Circuit Duration to ground	Indefinite
APS short Circuit duration to VCC	Indefinite

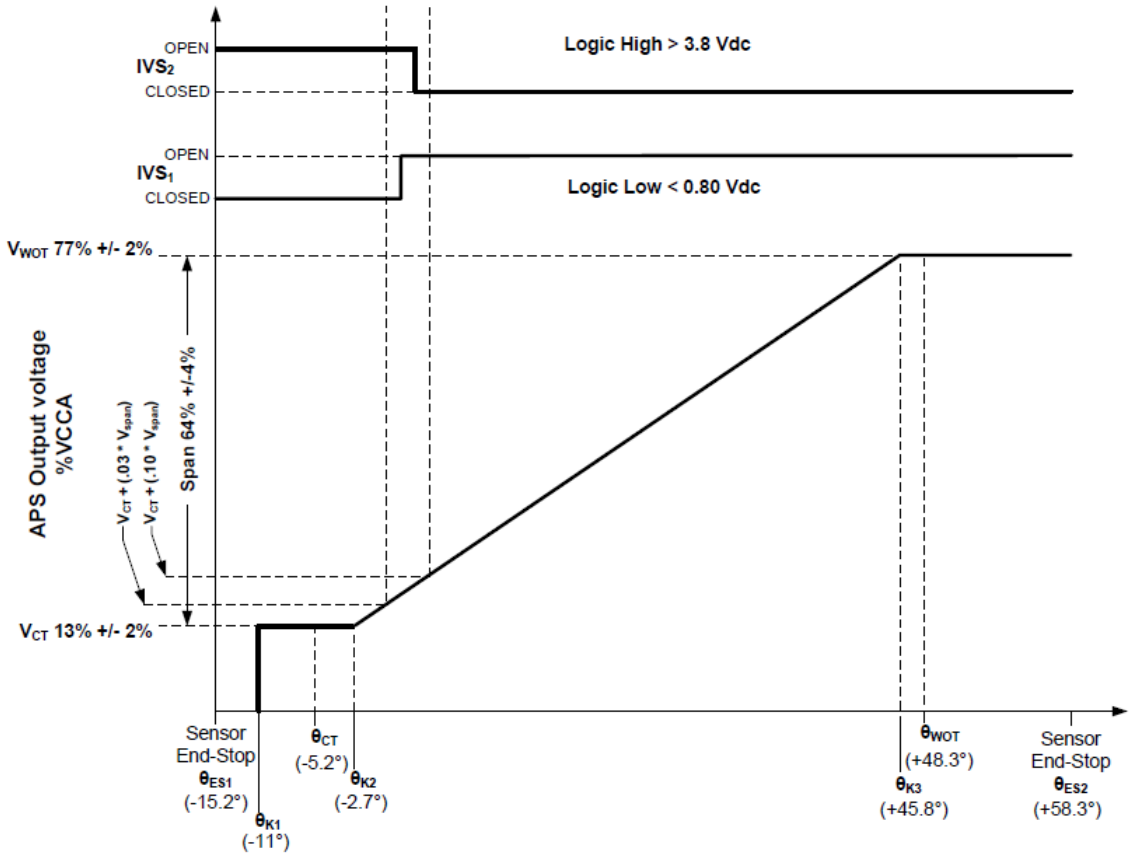
Operation of this device beyond absolute maximum ratings may result in permanent damage.

ENVIRONMENTAL VALIDATION

Pedal Validation	
FMVSS-124 RTI Cerification	Per Federal Regulations
FMVSS-302 Flammability	Per Federal Regulations
Ultimate Strength	With Force vs displacement plots
Side Load Deflection	
Full Stroke Endurance/Durability	With continuously monitored electrical output
Thermal Cycle	SAE J1455 85°C to -40°C
Thermal Shcok	-40°C to 85°C
Humidity	120 hour exposure to 95% humidity and 27°C to 75°C
Mechanical Vibration	Swept sine resonant frequency search
Mechanical Vibration	Random broadband 5-500 Hz, 4.0G's
Salt Spray Exposure	ASTM B-117 96hr Exposure
Dust Exposure	24Hr Exposure, pedals cycled
Chemical Exposure	Diesel, brake fluid, antifreeze, and plastic protectant exposure.
Pressure Wash	250 psig detergent, 1000 psig water at 140°F – 40 minute exposure, 0.05RPM
Mechanical Shock	SAE J1455: One meter drop to concrete with additional harness drop test

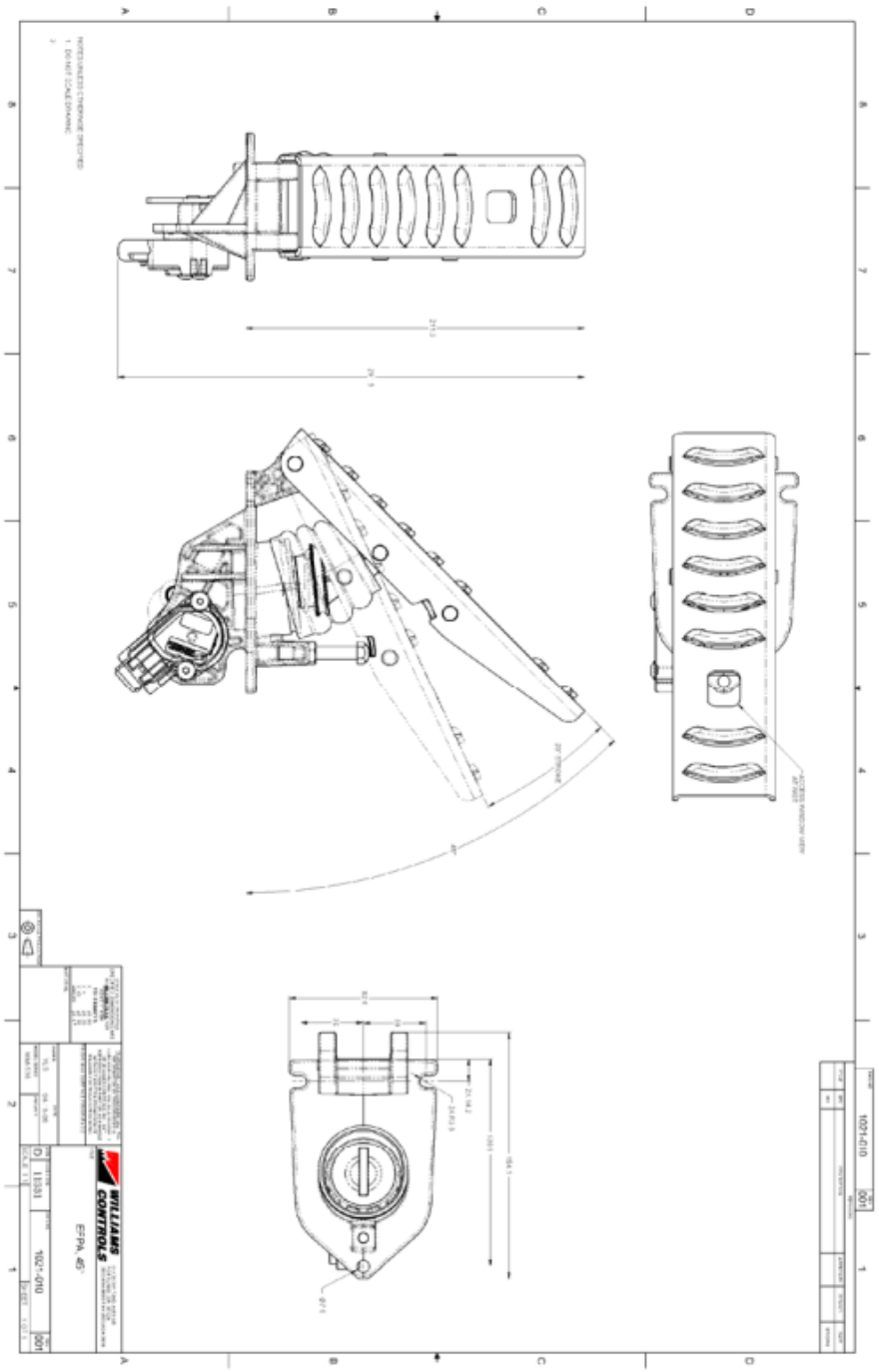
Sensor Validation	
Endurance Cycling to 10 Million Cycles	Sensors cycled over temperature, -40C to 85C; continuously monitored electrical output
Dither Testing	Sensors cycled to 80 million cycles at 28 Hz with periodic monitoring
EMC Testing	Sensors tested per SAE J1113 Class C for EMI

TYPICAL OUTPUT CHARACTERISTICS

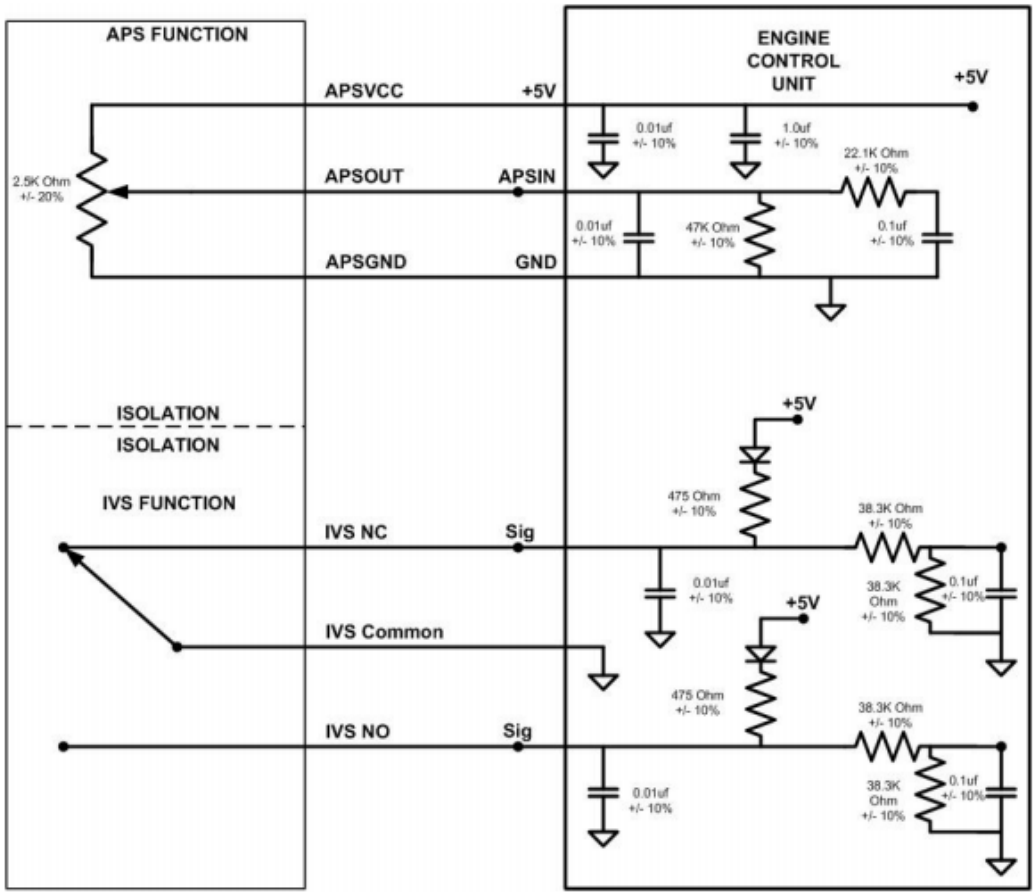


MECHANICAL DIMENSIONS AND CHARACTERISTICS (FOR REFENCE ONLY)

Measurements in mm



APPLICATIONS INFORMATION:



REFERENCED DOCUMENTS

- Williams Controls DWG #351214
- Williams Controls Specification #WDS-010B
- SAE J1113-1 – Electromagnetic Compatibility Measurement Procedures and Limits from Components of Vehicles, Boats, and Machines
- FMVSS-124, 302

REVISION HISTORY

Rev	Date	ECN#	Checked	Approved	Changes/Comments
A	01/11/07				New Release

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