



# Pressure Display Error Eliminator

January 2014



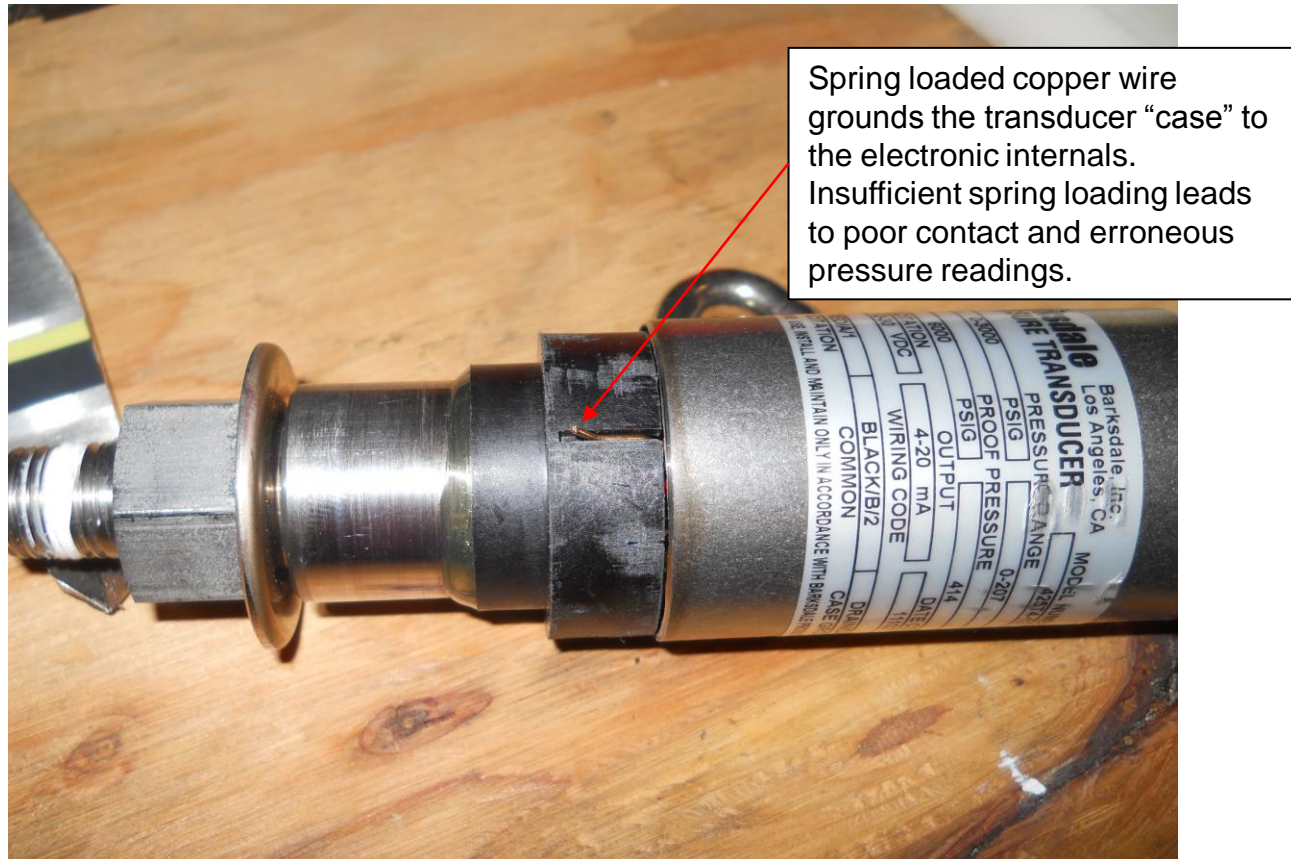
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# Problem Identification

- The Barksdale 425 pressure transducer relies on incidental ground contact inside its metal case for EMI protection.
- Ground contact failure leads to electromagnetic interference susceptibility in the form of large display error.
- 330psi error has been observed, by running the engine cooling system. External sources of EMI could cause even-greater display error.
- Unresolved pressure display error exceeding 100psi could destroy an aircraft on a Mark 4 Launcher.
- Replacing the sensor sometimes fixes the problem.
- Failure rate of this component is approximately 5%.

# Barksdale Transducer Design Flaw

- Failed case ground inside the Barksdale transducer can cause pressure display error exceeding 300 psi, for example, when the engine cooling system is running.
- The Pressure Display Error Eliminator provides a redundant ground path, which converts failed transducers to healthy ones. Operators enjoy reliable performance from unreliable sensors. Healthy transducers remain unaffected.



Spring loaded copper wire grounds the transducer “case” to the electronic internals. Insufficient spring loading leads to poor contact and erroneous pressure readings.

# Proven Fix

Controlled Testing with Known Good System, Zero Pressure In System

Baseline system



Error Eliminator Installed



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# Retrofit Kit

As Installed



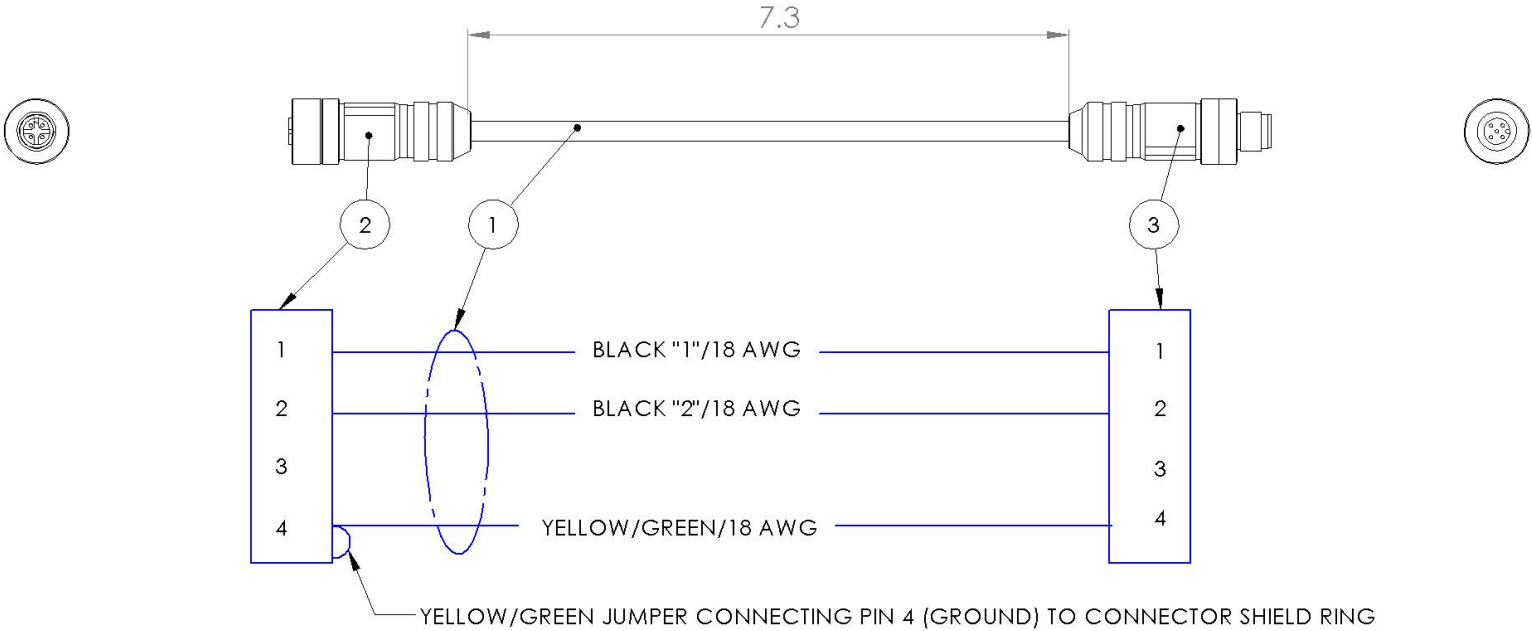
As Shipped from Hood Tech



- Tool free installation (instructions included).
- Case ground is jumpered to Pin 4 internally, so NEMA4X backshell rating is maintained.
- TPE-E insulated, polyurethane jacket (PVC-free construction).

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PINOUT		
PIN	WIRE	WIRE COLOR
1	PRESSURE TRANS + EXCITATION	BLACK "1"
2	PRESSURE TRANS - EXCITATION	BLACK "2"
3	NOT USED	NA
4	GROUND	YELLOW/GREEN



BOM		
Ref	description	qty
1	3 conductor cable, 18/3, TPE-E insulation, polyurethane jacket, 18 AWG	1
2	SS, M12 female connector, 4 pin	1
3	SS, M12 male connector, 4 pin	1
not shown	cable ties	2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/128 ANGULAR: MACH ± 1 BEND ±1 ONE PLACE DECIMAL ±.060 TWO PLACE DECIMAL ±.010 THREE PLACE DECIMAL ±.005	DRAWN	NAME	DATE
INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED	RFH	12/5/2013
MATERIAL	ENG APPR.		
FINISH	MFG APPR.		
	Q.A.		
	COMMENTS:		

Hood Tech Corp.  
Mechanical Inc.

TITLE: Transducer grounding retrofit kit

SIZE	DWG. REV.	PART REV.
<b>A</b>	A-03	
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

**PROPRIETARY AND CONFIDENTIAL**

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