

## Analog Displacement Sensors for Off-Road Applications



### FEATURES

- Conductive plastic potentiometer technology
- Use in engine compartment
- Wire or connector outputs
- Lever drive with return spring
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS

[click logo to get started](#)
**3D**  
Models  
Available

### QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by integrated connector or wires
Market appliance	Transportation
Dimensions	39.5 mm x 31.5 mm x 23.37 mm

### ELECTRICAL SPECIFICATIONS

PARAMETER		
Total electrical travel		95° ± 1.5°
Independent linearity		± 1.5 %
Inter-linearity		± 3 %
Total resistance (R <sub>n</sub> )		2 x 4 kΩ ± 20 % in //
Output smoothness		< 0.1 % (NFC 93255)
Power rating at +40 °C		0.5 W
Power rating at +125 °C		0.05 W
Wiper current limiting resistance (R <sub>p</sub> )		2 x 1.7 kΩ ± 20 %
Recommended wiper current		≤ 100 μA
Maximum wiper current		15 mA for 1 min
Recommended load impedance		≥ 100 R <sub>n</sub>

### MECHANICAL SPECIFICATIONS

PARAMETER		
Mechanical rotation		125° ± 5°
Lever return torque at start of travel		≥ 1.5 N cm
Lever return torque at end of travel		≤ 8.5 N cm
Stop strength		60 N cm
Lever return		Anti-clockwise
Protection class		IP 67
Mounting screw tightening torque		2.3 N m maximum

### PERFORMANCE

PARAMETER		
Operating temperature range		-40 °C to +125 °C
Storage temperature range		-55 °C to +135 °C
Vibrations		Severity 10 Hz to 2000 Hz, 10 mm or 50 g
Life		5M cycles (TET)
Micro-movements (dither stroke)		> 50M cycles

#### Note

- Nothing stated herein shall be construed as a guarantee of quality or durability

### SAP PART NUMBERING GUIDELINES - PMR410 / PMR420

MODEL	TYPE	LEVER TYPE	VALUE	ANGLE	LEADS	PACKAGING
PMR4	10 = redundant with integrated connector output  20 = redundant with wires output	A = lever A C = lever C	202 = 2K0 (2 x 4 kΩ in //)	095	l = integrated connector (for PMR410)  W = wire (for PMR420)	C = 20 pcs G = 100 pcs M = 400 pcs

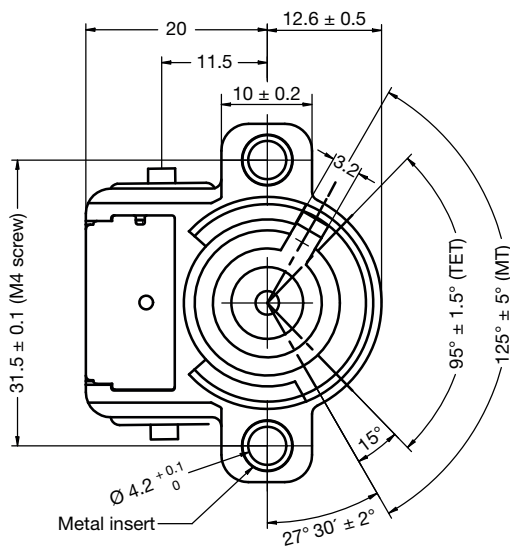
### CONNECTIONS

**Type PMR410:** AMP 142918-1 type integrated connector outputs

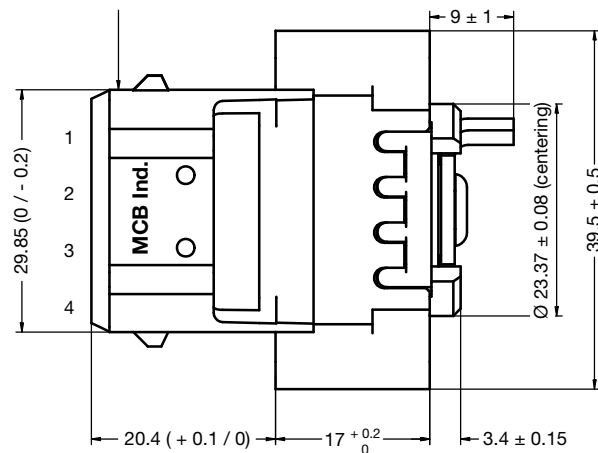
**Type PMR420:** Wire outputs (RoHS compliance to confirm in function of wires)

### DIMENSIONS in millimeters

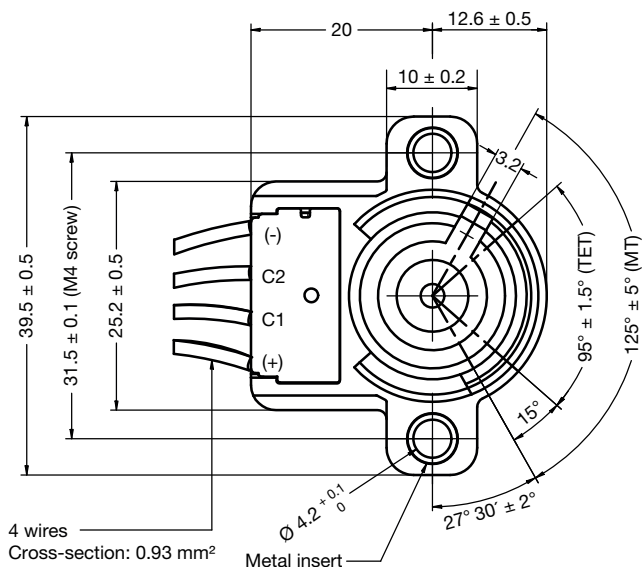
#### PMR410



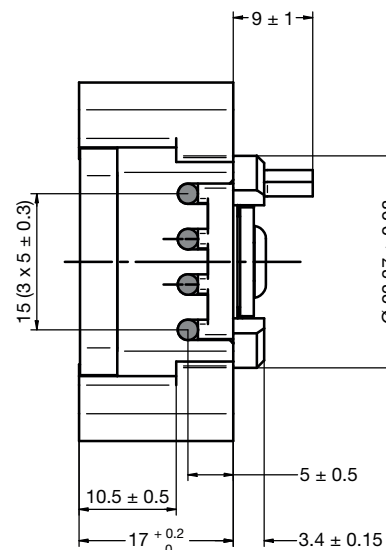
AMP 14918-1 type connector  
for 282192-1 (black) or 282192-2 (grey)  
female connector  
4 x 2.8 x 0.8 contacts pitch 5 mm



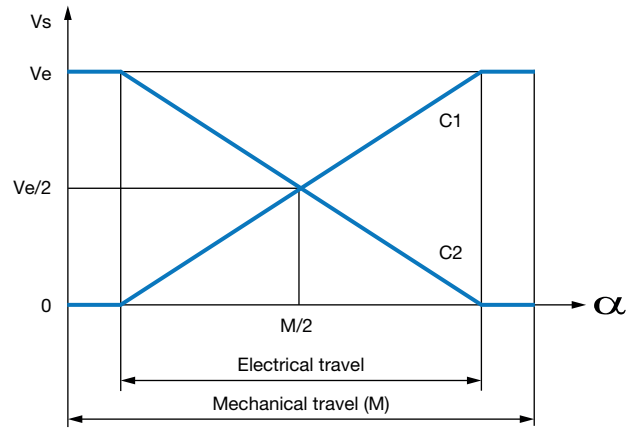
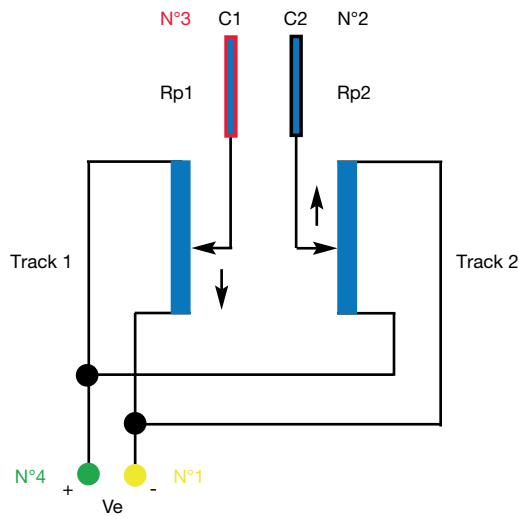
#### PMR420



4 wires  
Cross-section: 0.93 mm<sup>2</sup>



## ELECTRICAL DIAGRAM



### OPTIONS (on request)

- Other electrical travel
- Other total resistance
- Other linearity
- No protection resistance ( $R_p$ )
- Other lever



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