# 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

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 ($R_n$) | 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 ($R_p$) | 2 x 1.7 kΩ ± 20 % |
| Recommended wiper current | ≤ 100 µA |
| Maximum wiper current | 15 mA for 1 min |
| Recommended load impedance | ≥ 100 $R_n$ |

| 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



For technical questions, contact: mcbprecisionpot@vishay.com

## SAP PART NUMBERING GUIDELINES - PMR410 / PMR420

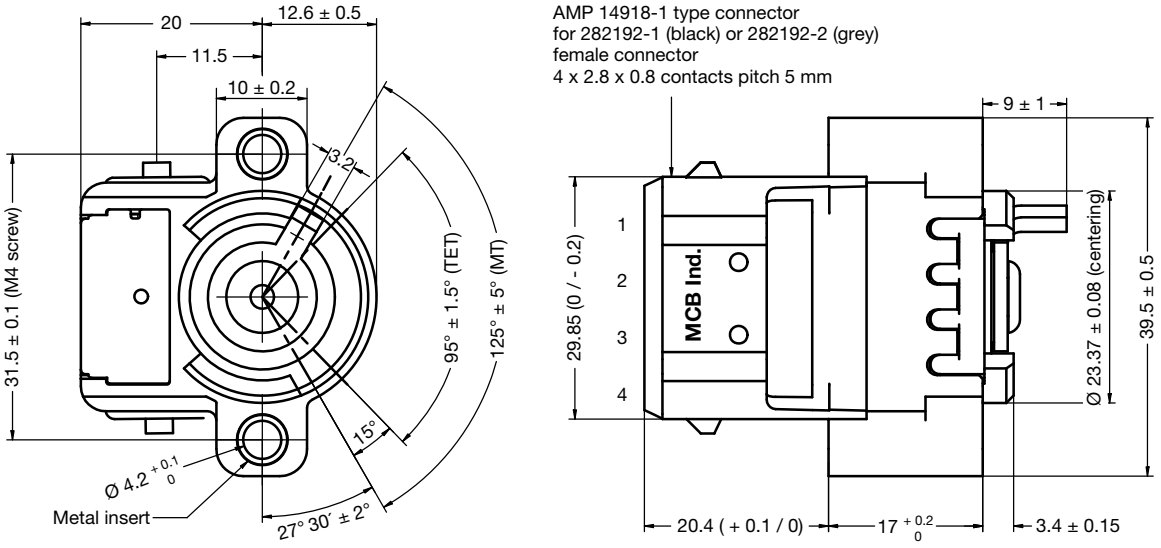
| MODEL | TYPE | LEVER TYPE | VALUE | ANGLE | LEADS | PACKAGING |
|---|---|---|---|---|---|---|
| PMR4 | 10 = redundant with integrated connector output<br><br>20 = redundant with wires output | A = lever A<br>C = lever C | 202 = 2K0<br>(2 x 4 kΩ in //) | 095 | I = integrated connector (for PMR410)<br>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

## CONNECTIONS

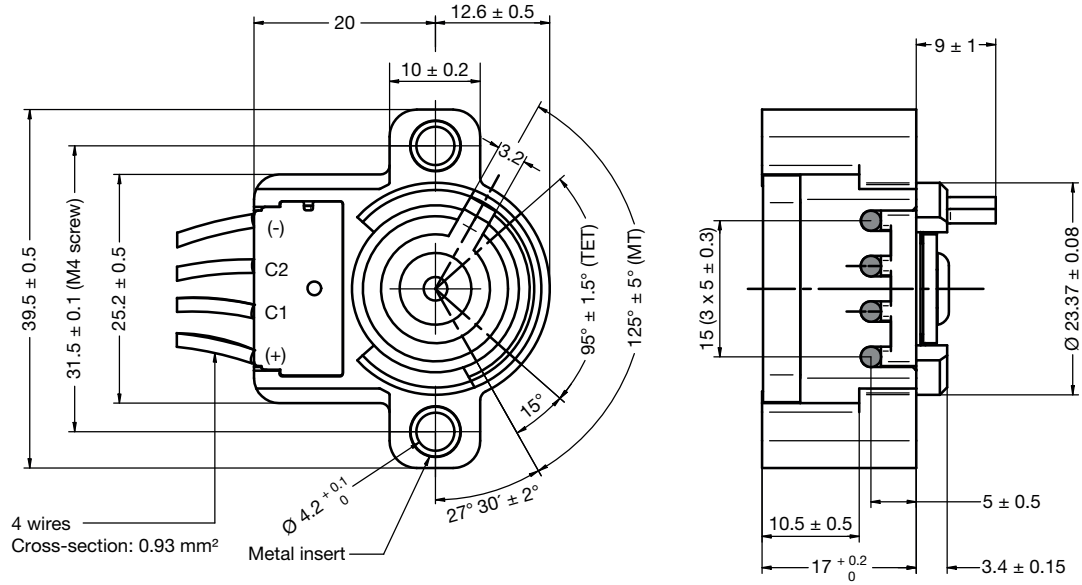
**Type PMR410:** AMP 142918-1 type integrated connector outputs
**Type PMR420:** Wire outputs (RoHS compliance to confirm in function of wires)

## DIMENSIONS in millimeters

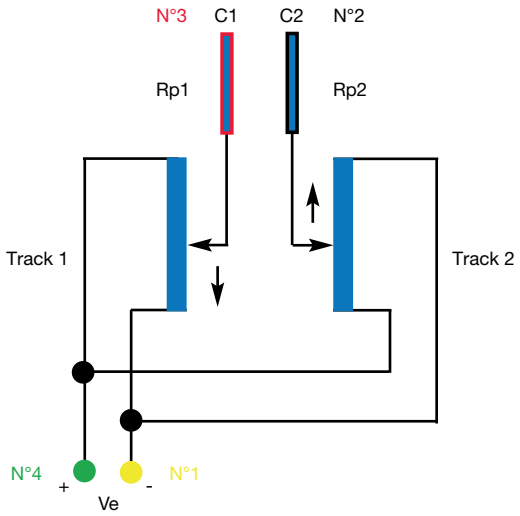
**PMR410**

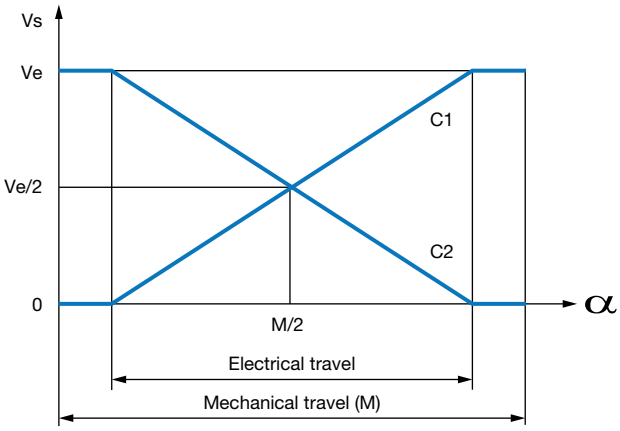



**PMR420**



## ELECTRICAL DIAGRAM




## OPTIONS (on request)

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

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