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# Catalogue V20

**VDO**



We're focused on providing our customers with the best possible instrumentation – a goal that we've pursued since 1920. We continue to work to deliver the functionality, durability, and high quality finish that have earned our products a best-in-class reputation, worldwide. At the same time, we strive to continually pursue innovations that make our instrumentation more efficient, affordable, and useful to the people who own and operate vehicles and equipment that feature our products.

While we're aware of the vital role of our instruments as a human-machine interface and the importance of factors such as ergonomics, cost, and reliability, we haven't neglected aesthetics.

From rugged analogue gauges to sophisticated, flexible CAN bus platforms, we're working to give our customers choice, flexibility, and style for all their monitoring needs.

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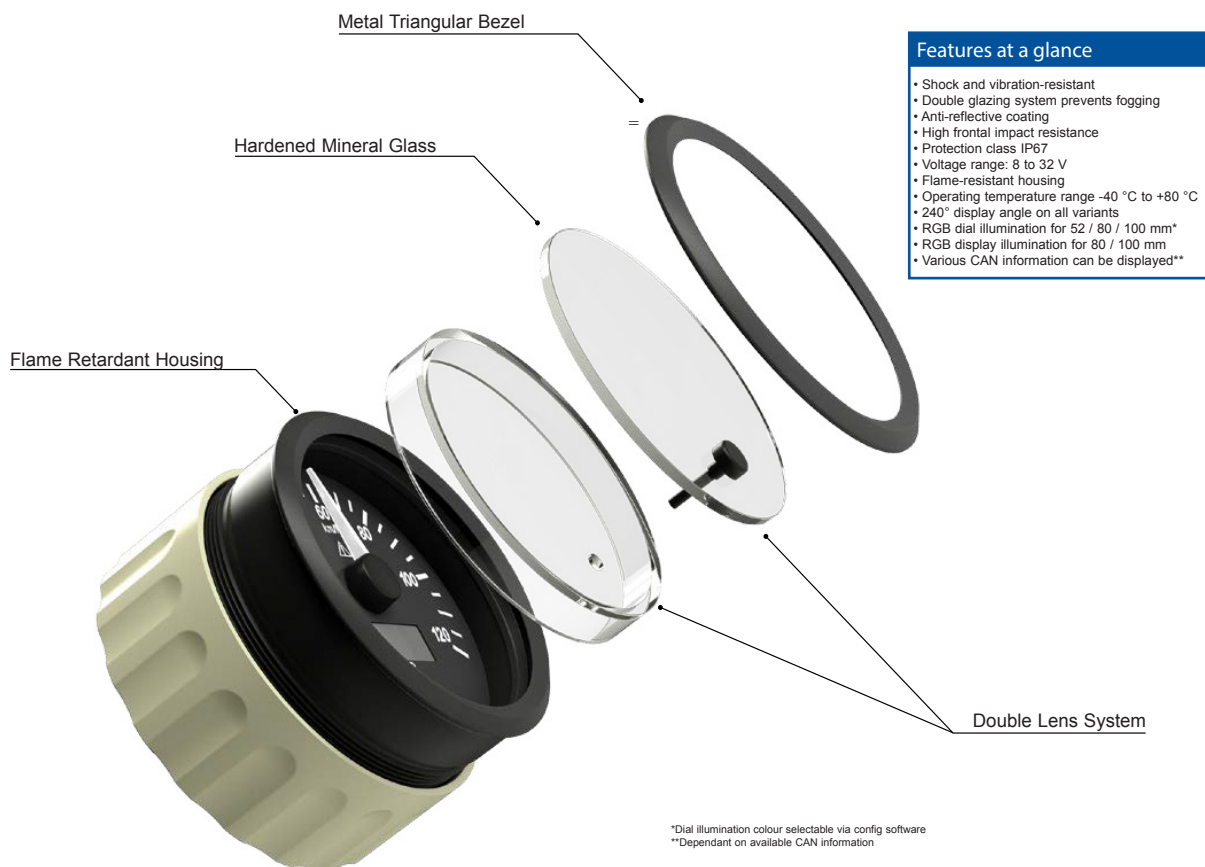
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# SingleViu

The all new SingleViu range builds on the reliability that VDO has been known for while adding advanced modern functionality. Featuring RGB LED illumination, stepper motor operation with 240deg dial sweep, built in warning light and IP67 rating. SingleViu gauges will accept both analogue and J1939 signals, ensuring compatibility in more applications than ever before! Available in 52mm, 80mm & 100mm. For more information on customisation, please contact your authorised VDO service agent.





#### Speedometer

| Part No.      | Range       | Size    | Signal |
|---------------|-------------|---------|--------|
| A2C3832890030 | 0 - 60km/h  | 80/85mm | Pulse  |
| A2C3832910030 | 0 - 120km/h | 80/85mm | Pulse  |
| A2C3832940030 | 0 - 200km/h | 80/85mm | Pulse  |
| A2C3832950030 | 0 - 300km/h | 80/85mm | Pulse  |
| A2C3832860030 | 0 - 120km/h | 100mm   | Pulse  |
| A2C3832840030 | 0 - 200km/h | 100mm   | Pulse  |
| A2C3832830030 | 0 - 300km/h | 100mm   | Pulse  |

White illumination & analogue signal as standard. 8 & 12 pin flying lead harness included.

80mm gauges incorporate stepped lip and can be fitted to 85mm cutout.

#### Tachourmeter

| Part No.       | Range        | Size    | Signal |
|----------------|--------------|---------|--------|
| A2C3833030030* | 0 - 4000 RPM | 52mm    | J1939  |
| A2C3832960030  | 0 - 2000 RPM | 80/85mm | Pulse  |
| A2C3832970030  | 0 - 2500 RPM | 80/85mm | Pulse  |
| A2C3832980030  | 0 - 3000 RPM | 80/85mm | Pulse  |
| A2C3832990030  | 0 - 4000 RPM | 80/85mm | Pulse  |
| A2C3833000030  | 0 - 5000 RPM | 80/85mm | Pulse  |
| A2C3833010030  | 0 - 6000 RPM | 80/85mm | Pulse  |
| A2C3833020030  | 0 - 8000 RPM | 80/85mm | Pulse  |
| A2C3832820030  | 0 - 2500 RPM | 100mm   | Pulse  |
| A2C3832810030  | 0 - 3000 RPM | 100mm   | Pulse  |
| A2C3832800030  | 0 - 4000 RPM | 100mm   | Pulse  |
| A2C3832790030  | 0 - 5000 RPM | 100mm   | Pulse  |

White illumination & analogue signal as standard. 8 & 12 pin flying lead harness included.

80mm gauges incorporate stepped lip and can be fitted to 85mm cutout.

\*52mm tachometer does not have LCD/Hourcounter & supports CAN only.





| Level         |                       |       |                   |
|---------------|-----------------------|-------|-------------------|
| Part No.      | Type (Symbol)         | Range | Signal            |
| A2C3833550030 | AdBlue (ISO 0245+DEF) | 0 - 1 | 3 - 180 $\Omega$  |
| A2C3832750030 | AdBlue (ISO 0245+DEF) | E - F | 240 - 33 $\Omega$ |
| A2C3833310030 | Fuel (ISO 0245)       | 0 - 1 | 3 - 180 $\Omega$  |
| A2C3833110030 | Fuel (ISO 0245)       | 0 - 1 | 90 - 5 $\Omega$   |
| A2C3833120030 | Fuel (ISO 0245)       | E - F | 3 - 180 $\Omega$  |
| A2C3833130030 | Fuel (ISO 0245)       | E - F | 240 - 33 $\Omega$ |
| A2C3833140030 | Fuel (ISO 0245)       | E - F | 0 - 90 $\Omega$   |
| A2C3833150030 | Fuel (ISO 0245)       | E - F | 90 - 5 $\Omega$   |
| A2C3916300030 | Fuel (ISO 0245)       | E - F | 0 - 5 V           |

White illumination & analogue signal as standard. 8 pin flying lead harness included.

| Pressure      |                         |             |                   |
|---------------|-------------------------|-------------|-------------------|
| Part No.      | Type (Symbol)           | Range       | Signal            |
| A2C3833440030 | Brake ('AIR')           | 0 - 10 Bar  | 10 - 180 $\Omega$ |
| A2C3833450030 | Brake (ISO 1402)        | 0 - 10 Bar  | 10 - 180 $\Omega$ |
| A2C3833271030 | Brake (ISO 1402)        | 0 - 16 Bar  | 0.5 - 4.5 V       |
| A2C3833348030 | Brake (ISO 1402)        | 0 - 150 PSI | 3 - 180 $\Omega$  |
| A2C3832730030 | Brake (ISO 1402)        | 0 - 250 PSI | 0.5 - 4.5 V       |
| A2C1800310030 | Brake (ISO 1405 '1')    | 0 - 10 Bar  | 0 - 5 V           |
| A2C1800330030 | Brake (ISO 1406 '2')    | 0 - 10 Bar  | 0 - 5 V           |
| A2C1800340030 | Brake (ISO 0238 'P')    | 0 - 10 Bar  | 0 - 5 V           |
| A2C3833460030 | Transmission (ISO 1167) | 0 - 25 Bar  | 0 - 5 V           |
| A2C3832720030 | Transmission (ISO 1167) | 0 - 30 Bar  | 10 - 180 $\Omega$ |
| A2C3833500030 | Transmission (ISO 1167) | 0 - 400 PSI | 0.5 - 4.5 V       |
| A2C3832740030 | Transmission (ISO 1167) | 0 - 500 PSI | 10 - 180 $\Omega$ |
| A2C3833160030 | Engine Oil (ISO 0248)   | 0 - 5 Bar   | 10 - 180 $\Omega$ |
| A2C3833170030 | Engine Oil (ISO 0248)   | 0 - 10 Bar  | 10 - 180 $\Omega$ |
| A2C3833230030 | Engine Oil (ISO 0248)   | 0 - 80 PSI  | 240 - 33 $\Omega$ |
| A2C3833190030 | Engine Oil (ISO 0248)   | 0 - 80 PSI  | 10 - 180 $\Omega$ |
| A2C3832690030 | Engine Oil (ISO 0248)   | 0 - 10 Bar  | 0.5 - 4.5 V       |
| A2C3833240030 | Engine Oil ('OIL')      | 0 - 150 PSI | 10 - 180 $\Omega$ |
| A2C3833300030 | Engine Oil (ISO 0248)   | 0 - 150 PSI | 10 - 180 $\Omega$ |
| A2C3832700030 | Engine Oil (ISO 0248)   | 0 - 150 PSI | 0.5 - 4.5 V       |
| A2C3833490030 | Turbo (ISO 2107)        | 0 - 2 Bar   | 10 - 180 $\Omega$ |
| A2C3833470030 | Turbo (ISO 2107)        | 0 - 60 PSI  | 10 - 180 $\Omega$ |

White illumination & analogue signal as standard. 8 pin flying lead harness included.

### Temperature

| Part No.      | Type (Symbol)            | Range        | Signal     |
|---------------|--------------------------|--------------|------------|
| A2C3833320030 | Water (ISO 0246)         | 40 - 120 °C  | 287 - 23 Ω |
| A2C3833330030 | Water (ISO 1380)         | 40 - 120 °C  | 287 - 23 Ω |
| A2C3833350030 | Water (ISO 0246)         | 100 - 250 °F | 287 - 23 Ω |
| A2C3833380030 | Engine Oil (ISO 2426)    | 50 - 150 °C  | 323 - 18 Ω |
| A2C3833390030 | Engine Oil (ISO 1375)    | 50 - 150 °C  | 323 - 18 Ω |
| A2C3833410030 | Engine Oil (ISO 2426)    | 100 - 300 °F | 323 - 18 Ω |
| A2C3833510030 | Hydraulic Oil (ISO 1414) | 40 - 120 °C  | 287 - 23 Ω |
| A2C3916310030 | Hydraulic Oil (ISO 1414) | 0 - 250 °F   | 287 - 23 Ω |
| A2C3833520030 | Cylinder Head            | 60 - 200 °C  | 482 - 14 Ω |
| A2C3833530030 | Cylinder Head            | 150 - 400 °F | 482 - 14 Ω |
| A2C3833050030 | Pyrometer (ISO 1383)     | 0 - 1000 °C  | 4 - 37 mV  |
| A2C3833304030 | Pyrometer (ISO 1383)     | 0 - 2000 °F  | 4 - 37 mV  |

White illumination & analogue signal as standard. 8 pin flying lead harness included.

### Ammeter / Voltmeter

| Part No.      | Type (Symbol)   | Range         | Signal      |
|---------------|-----------------|---------------|-------------|
| A2C3833090030 | AMP (ISO 0247)  | -30A - +30A   | -60 - +60mV |
| A2C3833080030 | AMP (ISO 0247)  | -60A - +60A   | -60 - +60mV |
| A2C3833070030 | AMP (ISO 0247)  | -100A - +100A | -60 - +60mV |
| A2C3833060030 | AMP (ISO 0247)  | -150A - +150A | -60 - +60mV |
| A2C3832770030 | VOLT (ISO 0247) | 8V - 16V      | 12 V        |
| A2C3832780030 | VOLT (ISO 0247) | 16V - 32V     | 24 V        |

White illumination & analogue signal as standard. 8 pin flying lead harness included.

### Accessories

| Part No.      | Description                                         |
|---------------|-----------------------------------------------------|
| 2910000301300 | Viewline adapter cable 8 pin                        |
| 2910000301400 | Viewline adapter cable 14 pin                       |
| 2910000301500 | WWG/Oceanline adapter cable - suit all variants     |
| 2910000301600 | CANcockpit adapter cable - one req. per gauge       |
| 2910000484200 | 8 pin terminated flying harness for 52mm            |
| 2910000484300 | 12 pin terminated flying harness for 80/100mm       |
| 2910000954200 | 8 pin connector kit incl. terminals for 52mm        |
| 2910000954300 | 8+12 pin connector kit incl. terminals for 80/100mm |



# COCKPIT VISION

## THRU DIAL ILLUMINATION

Cockpit Vision is the pinnacle of instrument technology. It represents latest advances in instrument illumination and installation techniques.

Using fibre-optic technology to illuminate the pointer and VDO's Trioptic through dial lighting we achieve superb night time illumination.

## SPEEDOMETER

Illumination through dial and pointer.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or auto-calibration function through LCD readout via reset button.

Compatible with hall effect, inductive or blocking oscillator senders.

Illumination 12V included. For 24V application, use globe 240.053 (2 required)



### Speedometer - DISCONTINUED 2021 - SEE SINGLEVIU ALTERNATIVES

| Part No.                                              | Range       | Size  | Voltage |
|-------------------------------------------------------|-------------|-------|---------|
| 437015028                                             | 0 - 200km/h | 80mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832940030</a> |             |       |         |
| 437015025                                             | 0 - 200km/h | 85mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832940030</a> |             |       |         |
| 437015029                                             | 0 - 200km/h | 100mm | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832840030</a> |             |       |         |
| 437015022                                             | 0 - 300km/h | 100mm | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832830030</a> |             |       |         |

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

### Speedometer - 140mm

| Part No.  | Range       | Size  | Voltage |
|-----------|-------------|-------|---------|
| 437015038 | 0 - 125km/h | 140mm | 12V     |
| 437025002 | 0 - 125km/h | 140mm | 24V     |

Note: 140mm Speedometer Impulse Ratio programmable 1,000-60,000 imp/Km.

8 pin plug kit part no. 340.824 recommended. Not included in kit.

Please note:

Cockpit Vision & Cockpit International speedometers and tachometers will be discontinued from Q1 2021 or while stocks last. Please see the SingleViu range for suitable alternatives or contact your VDO sales agent for more information.

## TACHOMETER

Suitable for most petrol and diesel engines. Field programmable to suit 4, 6 or 8 cyl./4 stroke ignition and alternator pick-up (terminal "W"). Single phase, not suitable for star point or magneto system. For standard points ignition system, add a 1N4004 diode in series with the signal wire (cathode towards tachometer). Illumination 12V included.

### Tachometer - Electronic

| Part No.  | Range        | Size  | Voltage |
|-----------|--------------|-------|---------|
| 333015037 | 0 - 4000rpm  | 52mm  | 12V     |
| 333015031 | 0 - 8000rpm  | 52mm  | 12V     |
| 333015038 | 0 - 4000rpm  | 80mm  | 12V     |
| 333015032 | 0 - 7000rpm  | 80mm  | 12V     |
| 333015046 | 0 - 10000rpm | 80mm  | 12V     |
| 333015033 | 0 - 7000rpm  | 85mm  | 12V     |
| 333015034 | 0 - 8000rpm  | 100mm | 12V     |

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.



## TACHOURMETER

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to suit 1-12 cyl. 4-stroke or 1-4 cyl. 2-stroke engines. ignition and alternator pick-up ("W" terminal). Also suitable for signal from generator or inductive sender unit but not suitable for magneto ignition system. Incorporated hourmeter shows true engine hours. Operating hours 99,999.9. Pulse range 0.5-200 pulses per rev. Illumination 12V included. For 24V application use globe 240.053 (2 required).

### Tachourmeter - DISCONTINUED 2021 - SEE SINGLEVIU ALTERNATIVES

| Part No.                                                       | Range       | Size  | Voltage |
|----------------------------------------------------------------|-------------|-------|---------|
| 333015035                                                      | 0 - 7000rpm | 85mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3833020030 (8k RPM)</a> |             |       |         |
| 333015047                                                      | 0 - 3000rpm | 100mm | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832810030</a>          |             |       |         |

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

#### Please note:

Cockpit Vision & Cockpit International speedometers and tachourmeters will be discontinued from of Q1 2021 or while stocks last. Please see the SingleViu range for suitable alternatives or contact your VDO sales agent for more information.

## FUEL GAUGES

Suitable for use with most petrol, diesel fuel, and LPG systems.

Illumination 12V included. For 24V application add N05801180 dropping resistor & globe



| Fuel Gauge - Float Arm |                                                       |                | 52mm    |
|------------------------|-------------------------------------------------------|----------------|---------|
| Part No.               | Description                                           | Specifications | Voltage |
| 301010011              | Fuel gauge (float arm)                                | 3 - 180 ohms   | 12V     |
| 301.001                | Fuel gauge (float arm)                                | 3 - 180 ohms   | 24V     |
| 301.105                | Fuel gauge for USA application                        | 240 - 33 ohms  | 12V     |
| 301010010              | Fuel gauge<br>Also suitable for most LPG tank senders | 5 - 90 ohms    | 12V     |

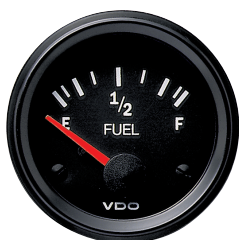
Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.



Adjustable Float Arm Sender 220.003

| Sender - Adjustable Float Arm |                |             |
|-------------------------------|----------------|-------------|
| Part No.                      | Specifications | Length      |
| 220.003                       | 3 - 180 ohms   | 150 - 600mm |
| 220.004                       | 5 - 90 ohms    | 150 - 600mm |
| 220.005                       | 240 - 33 ohms  | 150 - 600mm |

Note: Full range of fuel level senders on page 48



| Fuel Gauge - Tubular (Adjustable Range) |                      |        |        |         |
|-----------------------------------------|----------------------|--------|--------|---------|
| Part No.                                | Description          | Ohms   |        | Voltage |
|                                         |                      | Empty  | Full   |         |
| 301010009                               | Fuel gauge (tubular) | 110/50 | 2 ohms | 12V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.



Tubular Tank Sender

### Tubular Type Sender

See complete listing of tubular type senders on page 63.

Note: Mounting kit part no. N05801432 not included in kit.



| Fuel Gauge - |                                                 |                |         |
|--------------|-------------------------------------------------|----------------|---------|
| Part No.     | Description                                     | Specifications | Voltage |
| 301010015    | Suits OE senders                                | 73 - 10 ohms   | 12V     |
| Holden       | HJ - HX - HZ - LH - LX                          |                |         |
| Ford         | XR - XT - XW - XY - XA - XB - XC - 2F - 2G - 2H |                |         |

## 500 Kpa PRESSURE GAUGE, electrical

Suitable for use with most petrol, diesel fuel, and LPG systems.

Illumination 12V included, for 24V use globe 800005003 and N05801180 resistor

| Electric Pressure Gauge - 500Kpa |                             |                       | 52mm    |
|----------------------------------|-----------------------------|-----------------------|---------|
| Part No.                         | Description                 | Specifications        | Voltage |
| 350010016                        | Oil pressure symbol on dial | 500Kpa<br>10-184 ohms | 12V     |

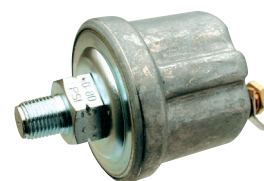
Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.



| Sender        |                      |             | 10-180 ohms |
|---------------|----------------------|-------------|-------------|
| Part No.      | Range                | Thread      | Terminal    |
| 360.001       | 500Kpa               | 1/8"-27NPTF | Spade       |
| 360.004       | 500Kpa               | 1/4"-18NPTF | Button      |
| 360.016       | 500Kpa               | 1/8"-28BSBT | Button      |
| 360.018       | 500Kpa               | 1/8"-27NPTF | M4 thread   |
| 360081030049K | 5 Bar / 7 psi SW N/C | 1/8"-27NPTF | M4 thread   |

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500 Kpa = 5 Bar = 72.5 psi



Sender 360.001

## 1000 Kpa PRESSURE GAUGE, electrical

| Electric Pressure Gauge - 1,000Kpa |             |                | 52mm    |
|------------------------------------|-------------|----------------|---------|
| Part No.                           | Description | Specifications | Voltage |
| 350010017                          | 1000kPa     | 10 - 180 OHMS  | 12V     |
| 350020001                          | 1000kPa     | 10 - 180 OHMS  | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.



| Senders       |                   |             | 10-180 ohms |
|---------------|-------------------|-------------|-------------|
| Part No.      | Range             | Thread      | Terminal    |
| 360.002       | 1000kPa           | 1/8"-27NPTF | Spade       |
| 360.019       | 1000kPa           | 1/8"-27NPTF | M4 thread   |
| 360081030052C | 10 Bar / 7 psi SW | 1/8"-27NPTF | M4 thread   |

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 1000 Kpa = 10 Bar = 145 psi



Sender 360.002



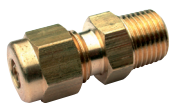
Sender 360.086



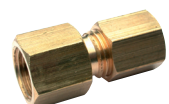
Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025

## PSI PRESSURE GAUGE, electrical

Suitable for most vehicles.

Illumination 12V included, for 24V use globe 800005003 & drop resistor N

| Pressure Gauge - 100psi |               |               | 52mm    |
|-------------------------|---------------|---------------|---------|
| Part No.                | Description   | Specification | Voltage |
| 350010021               | Oil Gauge     | 100psi        | 12V     |
| 360.086                 | Sender 100psi | 1/8"-27NPTF   | 12/24V  |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

| Pressure Gauge - 400psi |               |               | 52mm    |
|-------------------------|---------------|---------------|---------|
| Part No.                | Range         | Specification | Voltage |
| 350010001               | Trans Gauge   | 400psi        | 12V     |
| 360081038003C           | Sender 400psi | 1/8"-27NPTF   | 12/24V  |
| 360081038008C           | Sender 400psi | 1/8"-27NPTF   | 12/24V  |

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 2800 Kpa = 28 Bar = 406 psi

\* (0 - 25 Bar Sender is insulated return and can be used for 400 Psi gauge application)

## PRESSURE GAUGES, mechanical

Suitable for most vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included, for 24V use globe 800005003.

| Pressure Gauge - Air, Oil & Water |            |  | 52mm |
|-----------------------------------|------------|--|------|
| Part No.                          | Range      |  | Size |
| 150077027                         | 0 - 100psi |  | 52mm |
| 150077026                         | 0 - 150psi |  | 52mm |
| 150077020                         | 0 - 700Kpa |  | 52mm |

| Accessories |                                                      |
|-------------|------------------------------------------------------|
| Part No.    | Description                                          |
| 230.012     | 1.8m fitting kit - 3/16" PVC tubing & engine fitting |
| 230.013     | 5m fitting kit - 3/16" PVC tubing & engine fitting   |

| Fitting Kit |                                                   |
|-------------|---------------------------------------------------|
| Part No.    | Description                                       |
| 230.008     | Nut and cone for 3/16" PVC Tubing, M12x1.5 thread |
| 230.024     | Engine fitting 1/8"-27NPTF male, 3/16" tubing     |
| 230.025     | Nut and cone 1/8"-27NPTF nut                      |
| 230.015     | Air/Fuel pressure restrictor                      |

## BOOST GAUGES, mechanical

Suitable for diesel vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included, for 24V use globe 800005003.

| Boost Gauge |          | 52mm |
|-------------|----------|------|
| Part No.    | Range    | Size |
| 150077010   | 0-15 psi | 52mm |
| 150077011   | 0-30 psi | 52mm |

Note: Use airline kit 230.012 or 230.013



## TURBO CHARGER GAUGE, mechanical

Suitable for petrol vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included, for 24V use globe 800005003.

| Turbo Charger Gauge |               | 52mm |
|---------------------|---------------|------|
| Part No.            | Range         | Size |
| 150077004           | -30"Hg/+25psi | 52mm |

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013



## VACUUM GAUGE, mechanical

Suitable for most vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included, for 24V use globe 800005003.

| Vacuum Gauge |          | 52mm |
|--------------|----------|------|
| Part No.     | Range    | Size |
| 150077005    | -30-0"Hg | 52mm |

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013



| Accessories |                                                    |
|-------------|----------------------------------------------------|
| Part No.    | Description                                        |
| 230.013     | 5m fitting kit - 3/16" PVC tubing & engine fitting |





a.



b.



c.



a.



d.



## TEMPERATURE GAUGE, electric

Suitable for most vehicles.

12V Illumination included.

| Temperature Gauge - Water |                               |                           | 52mm    |
|---------------------------|-------------------------------|---------------------------|---------|
| Part No.                  | Description                   | Specifications            | Voltage |
| 310010014                 | Water temp.<br>symbol on dial | 40 - 120°C<br>287-23 ohms | 12V     |
| 310020001                 | Water temp.                   | 40 - 120°C                | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included with gauge.

| Recommended Temperature Sender |            |             |           |           |
|--------------------------------|------------|-------------|-----------|-----------|
| Part No.                       | Range      | Thread      | Terminal  | Body Type |
| 320.002                        | 40 - 120°C | 1/8"-27NPTF | button    | a         |
| 320.093                        | 40 - 120°C | 1/8"-27NPTF | M4 thread | b         |
| 320.022                        | 40 - 120°C | 1/2"-14NPTF | spade     | c         |
| 320.004                        | 40 - 120°C | M16x1.5mm   | button    | a         |

For more senders, see page 35

| Temperature Gauge - Oil |                                    |                           | 52mm    |
|-------------------------|------------------------------------|---------------------------|---------|
| Part No.                | Description                        | Specifications            | Voltage |
| 310010015               | Engine oil temp.<br>symbol on dial | 50 - 150°C<br>323-18 ohms | 12V     |
| 310020002               | Oil temp.                          | 50 - 150°C                | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included with gauge.

| Temperature Sender |            |             |           |           |
|--------------------|------------|-------------|-----------|-----------|
| Part No.           | Range      | Thread      | Terminal  | Body Type |
| 320.021            | 50 - 150°C | 1/8"-27NPTF | button    | a         |
| 320.092            | 50 - 150°C | 1/8"-27NPTF | M4 thread | b         |

For more senders, see page 35

## TEMPERATURE GAUGE, mechanical

Suitable for most vehicles.

12V Illumination included, for 24V use globe 800005003.

Temperature is transmitted via fluid filled capillary tube.

| Temperature Gauge - Water |            | 52mm             |
|---------------------------|------------|------------------|
| Part No.                  | Range      | Capillary Length |
| 180077022                 | 40 - 120°C | 1600mm           |
| 180077023                 | 40 - 120°C | 2600mm           |
| 180077021                 | 40 - 120°C | 4000mm           |

Note: Thermo well included - Replacement Part No. 180.059

| Temperature Gauge - Oil |            | 52mm             |
|-------------------------|------------|------------------|
| Part No.                | Range      | Capillary Length |
| 180077020               | 50 - 150°C | 1600mm           |
| 180077019               | 50 - 150°C | 4000mm           |

Note: Thermo well included - Replacement Part No. 180.059



Thermowell 180.059

## EXHAUST TEMPERATURE / PYROMETER, electrical

Suitable for most exhaust systems.

Thermocouple connection is by 1/4"-18NPTF compression fitting.

Temperature is transmitted via K-type compensating cable.

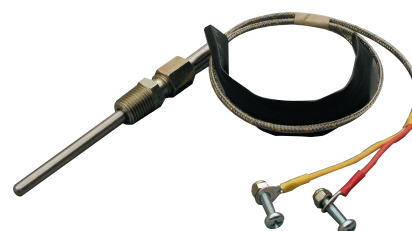
Illumination 12V included.

| Pyrometer - Electrical Kit |                          | 52mm    |
|----------------------------|--------------------------|---------|
| Part No.                   | Range                    | Voltage |
| 310.159                    | 0 - 900°C (37.6mV@900°C) | 12V     |

Note: Cutting or adding length of loom will not affect calibration.

| Spare Parts for 310.159 exhaust temperature/pyrometer kit |                                                                                           |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Part No.                                                  | Description                                                                               |
| 310015009                                                 | Instrument                                                                                |
| 320.714                                                   | Thermocouple 1/4"-18 NPTF non bonded junction "K" type to be fitted 100mm after the turbo |
| 240.035                                                   | Loom, 5m                                                                                  |
| 320.059                                                   | Weld boss 1/4"-18 NPTF                                                                    |

Note: p/n 320.714 probe length = 62 mm, adjustable. Loom length ~ 500 mm



Thermocouple 320.714



## VOLTMETER

Suitable for most engines/vehicles where battery and charging systems need to be monitored.

| Voltmeter |          | 52mm    |
|-----------|----------|---------|
| Part No.  | Range    | Voltage |
| 332010004 | 8 - 16V  | 12V     |
| 332020001 | 18 - 32V | 24V     |

Note: Plug and pin kit part no. 240.031 recommended. Not included in kit.

## AMMETERS, with internal shunt

Suitable for most engines which require battery and charging system monitoring.

Voltage independent - suitable for 12V or 24V.

Ammeters with internal shunt are easily identified by the heavy duty threaded terminals on the back of the instrument.

Illumination 12V included, for 24V use globe 800005003.

| Ammeter with Internal Shunt - metal body |                   |                | 52mm    |
|------------------------------------------|-------------------|----------------|---------|
| Part No.                                 | Description       | Specifications | Voltage |
| 190077006                                | 30-0-30 amp gauge | use 6mm wire   | 12V     |
| 190077007                                | 60-0-60 amp gauge | use 6mm wire   | 12V     |

## AMMETERS, with external shunt

Suitable for monitoring high output charging system or remote installation.

Illumination 12V included.

| Ammeter with External Shunt |                       |                 | 52mm    |
|-----------------------------|-----------------------|-----------------|---------|
| Part No.                    | Description           | Specifications  | Voltage |
| 190.504                     | 150-0-150 ammeter kit |                 | 12V     |
| 190075004                   | Gauge only - 52mm     |                 |         |
| 190.080                     | Shunt only - 150 amps | 50mV @ 150 amps |         |

Note: For installation use 10mm wire.

## CLOCK, analogue

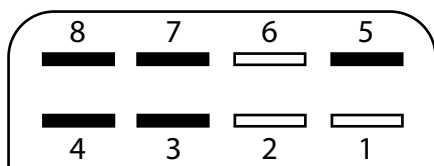
Suitable for most vehicles.

Features LED illumination and quartz movement for high accuracy.

| Clock    |                  | 52mm    |
|----------|------------------|---------|
| Part No. |                  | Voltage |
| 370.001  | LED Illumination | 12/24V  |

## WIRING DIAGRAMS

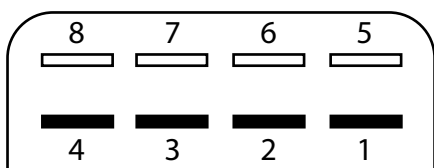
### 80/85/100mm Speedo & Tachourmeter



- 1) Not Used
  - 2) Not Used
  - 3) Ground
  - 4) +12/24V Switched
- \*model dependant

- 5) +12/24V Battery\*
- 6) Not Used
- 7) Two-wire Sensor Ground
- 8) Signal Input

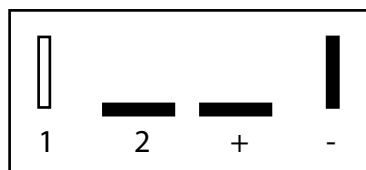
### 80/85/100mm Tachometer



- 1) +24V Switched\*
  - 2) +12V Switched\*
  - 3) Ground
  - 4) Signal Input
- \*model dependant

- 5) Not Used
- 6) Not Used
- 7) Not Used
- 8) Not Used

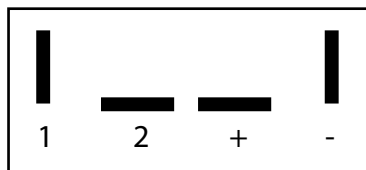
### 52mm Tachometer



- 1) Not Used
- 2) Signal Input

- + ) +12V Switched
- ) Ground

### 52mm Ammeter & Pyrometer

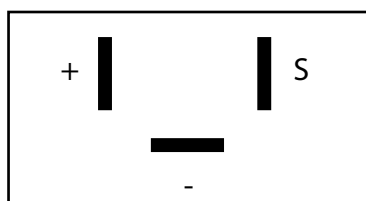


- 1) Signal +
- 2) Signal -

- + ) +12V Switched
- ) Ground

\*Note: Pyro sensor positive is Yellow, Negative is Red.

### 52mm Level, Temperature, Pressure & Voltage



- + ) +12/24V Switched\*
  - S) Signal (not used on volt meters)
  - ) Ground
- \*model dependant

For additional information or other installation data, please contact us.



# COCKPIT INTERNATIONAL

OLD STYLE LIGHTING AROUND THE EDGE OF THE DIAL

## SPEEDOMETER

Floodlit illumination. 12V globes included, for 24V, use 240.053 (2 required)

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or

auto-calibration function through LCD readout via reset button.

Compatible with hall effect, inductive or blocking oscillator senders.

### Speedometer - DISCONTINUED 2021 - SEE SINGLEVIU ALTERNATIVES

| Part No.  | Range       | Size | Voltage |
|-----------|-------------|------|---------|
| 437035016 | 0 - 120km/h | 85mm | 12/24V  |

[SingleViu alternative - A2C3832910030](#)

## TACHOMETER

Suitable for most petrol and diesel engines. Field programmable

to 4, 6 or 8 cyl./4-stroke ignition and alternator pick-up ("W" terminal).

Single phase not suitable for star point or magneto system.

Illumination included.

### Tachometer

| Part No.  | Range   | Size  | Voltage |
|-----------|---------|-------|---------|
| 333035002 | 4000rpm | 80mm  | 12V     |
| 333045002 | 4000rpm | 80mm  | 24V     |
| 333035004 | 3000rpm | 85mm  | 12V     |
| 333055001 | 3000rpm | 100mm | 12V     |
| 333065001 | 3000rpm | 100mm | 24V     |

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

## TACHOURMETER

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to suit 1-12 cyl. 4-stroke or 1-4 cyl. 2-stroke engines. ignition and alternator pick-up ("W" terminal). Also suitable for signal from generator or inductive sender unit but not suitable for magneto ignition system. Incorporated hourmeter shows engine hours. Pulse range 0.5-200 pulses per rev. 12V globes included. For 24V application use globe #240.053 (2 required).

### Tachourmeter - DISCONTINUED 2021 - SEE SINGLEVIU ALTERNATIVES

| Part No.                                              | Range   | Size  | Voltage |
|-------------------------------------------------------|---------|-------|---------|
| 333035010                                             | 3000rpm | 80mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832980030</a> |         |       |         |
| 333035011                                             | 4000rpm | 80mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832990030</a> |         |       |         |
| 333035025                                             | 3000rpm | 85mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832980030</a> |         |       |         |
| 333035013                                             | 4000rpm | 85mm  | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832990030</a> |         |       |         |
| 333055002                                             | 3000rpm | 100mm | 12/24V  |
| <a href="#">SingleViu alternative - A2C3832810030</a> |         |       |         |

Please note:

Cockpit Vision & Cockpit International speedometers and tachourmeters will be discontinued from Q1 2021 or while stocks last. Please see the SingleViu range for suitable alternatives or contact your VDO sales agent for more information.

# FUEL GAUGES, electrical

Suitable for use with most petrol, diesel fuel, and LPG systems.

| Fuel Gauge - 3-180 ohms |       | 52mm |         |
|-------------------------|-------|------|---------|
| Part No.                | Range | Size | Voltage |
| 301030001               | 0-1/1 | 52mm | 12V     |
| 301040001               | 0-1/1 | 52mm | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

| Sender - Adjustable Float Arm |                |             |
|-------------------------------|----------------|-------------|
| Part No.                      | Specifications | Length      |
| 220.003                       | 3 - 180 ohms   | 150 - 600mm |

Note: Mounting kit part no. N05801432 not included in kit.

## Arm Type Fuel Sender

See complete listing of arm type fuel senders on page 62.

Note: Mounting kit part no. N05801432 not included in kit.

Suitable for 3 - 180 and 10 - 180 Ohms

## Reed Switch Sender Fuel & Water

Just for 3 - 180 ohms gauges.

See complete listing of arm reed switch senders on page 62.

Note: Mounting kit part no. N05801432 not included in kit.

Suitable for 3 - 180 and 10 - 180 Ohms

| Fuel Gauge - Tubular |       | 52 mm |         |
|----------------------|-------|-------|---------|
| Part No.             | Range | Size  | Voltage |
| 301030002            | 0-1/1 | 52mm  | 12V     |
| 301040002            | 0-1/1 | 52mm  | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

With ISO symbol.

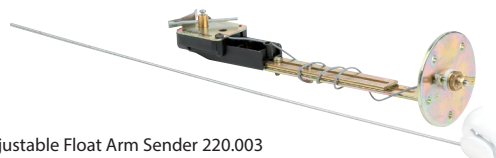
For tubular tank units, adjustable resistance.

## Tubular Type Sender

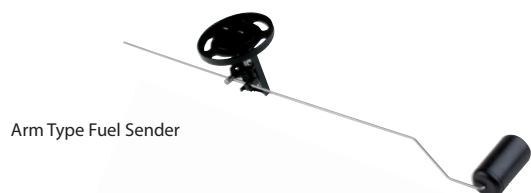
See complete listing of tubular type senders on page 63.

Note: Mounting kit part no. N05801432 not included in kit.

| Accessories |                     |      |
|-------------|---------------------|------|
| Part No.    | Description         | PCD  |
| N05801432   | Flange mounting kit | 54mm |



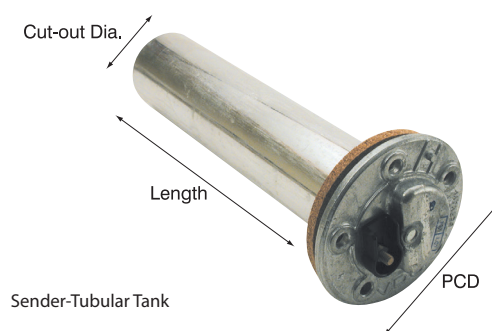
Adjustable Float Arm Sender 220.003



Arm Type Fuel Sender



Reed Switch Sender



Sender-Tubular Tank



## PRESSURE GAUGES, mechanical

Suitable for most vehicles and machines. Can be used on most non-aggressive gases and liquids. Supplied with nut and cone for 3/16" PVC tubing. Illumination 12V included, for 24V use globe 800005003.

| Pressure Gauge |             | 52mm    |
|----------------|-------------|---------|
| Part No.       | Range       | Voltage |
| 150035020      | 0 - 1000Kpa | 12V     |
| 150035022      | 0 - 2500Kpa | 12V     |



## PRESSURE GAUGES, mechanical dual pointer

Suitable for most vehicles and machines running dual brake pressure systems. Two independent pointers indicate separate pressures on one scale. Illumination 12V and 24V globes included.



| Dual Pressure Gauge |                                        |      |
|---------------------|----------------------------------------|------|
| Part No.            | Range                                  | Size |
| 150.316             | 0 - 1000Kpa                            | 60mm |
| 151.910             | 0 - 150 psi                            | 52mm |
| 230.068             | Nut and cone for 150.316 (2x required) |      |
| 230.025             | Nut and cone for 150.910 (2x required) |      |



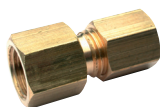
Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025

| Accessories |                                                      |
|-------------|------------------------------------------------------|
| Part No.    | Description                                          |
| 230.012     | 1.8m fitting kit - 3/16" PVC tubing & engine fitting |
| 230.013     | 5m fitting kit - 3/16" PVC tubing & engine fitting   |
| 230.008     | Nut and cone for 3/16" PVC tubing, M12x1.5 thread    |
| 230.024     | Engine fitting 1/8"-27NPTF male, 3/16" PVC tubing    |

# PRESSURE GAUGES, electrical

Suitable for most vehicles and machines. Illumination 12V or 24V included.

Note: Not recommended for petrol.

| Pressure Gauge - Engine Oil Pressure |            | 52mm    |
|--------------------------------------|------------|---------|
| Part No.                             | Range      | Voltage |
| 350030016                            | 0 - 500Kpa | 12V     |
| 350040016                            | 0 - 500Kpa | 24V     |
| 350030003                            | 0 - 5Bar   | 12V     |
| 350040003                            | 0 - 5Bar   | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
500Kpa = 5Bar = 72.5 psi

| Sender - 500Kpa |        | 10-180 ohms |           |
|-----------------|--------|-------------|-----------|
| Part No.        | Range  | Thread      | Terminal  |
| 360.001         | 500Kpa | 1/8"-27NPTF | Spade     |
| 360.004         | 500Kpa | 1/4"-18NPTF | Button    |
| 360.016         | 500Kpa | 1/8"-28BSBT | Button    |
| 360.018         | 500Kpa | 1/8"-27NPTF | M4 thread |

Note: 500 Kpa = 5 Bar = 72.5 psi  
Refer to your engine manufacturers manual for correct oil pressure ratings.

| Pressure Gauge - Engine Oil Pressure |             | 52mm    |
|--------------------------------------|-------------|---------|
| Part No.                             | Range       | Voltage |
| 350030017                            | 0 - 1000Kpa | 12V     |
| 350040017                            | 0 - 1000Kpa | 24V     |
| 350030004                            | 0 - 10Bar   | 12V     |
| 350040004                            | 0 - 10Bar   | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
1000Kpa = 10 Bar = 145 psi

| Senders       |                   | 10-180 ohms |           |
|---------------|-------------------|-------------|-----------|
| Part No.      | Range             | Thread      | Terminal  |
| 360.002       | 1000Kpa           | 1/8"-27NPTF | Spade     |
| 360.019       | 1000Kpa           | 1/8"-27NPTF | M4 thread |
| 360081030052C | 10 Bar / 7 psi SW | 1/8"-27NPTF | M4 thread |

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 1000 Kpa = 10 Bar = 145 psi

| Pressure Gauge - Transmission Oil Pressure |           | 52mm    |
|--------------------------------------------|-----------|---------|
| Part No.                                   | Range     | Voltage |
| 350030005                                  | 0 - 25bar | 12V     |
| 350040005                                  | 0 - 25bar | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
2500Kpa = 25bar = 406psi

| Senders       |                                                    | Insulated Return 2 terminal |
|---------------|----------------------------------------------------|-----------------------------|
| Part No.      | Description                                        | Specifications              |
| 360081038003C | 0 - 25 bar 400 psi single station insulated return | 1/8"-27 NPTF                |

For thread adaptors see page 61. For additional pressure senders see page 30-31.  
For calibration specs, see page 88.



Sender 360.001



Sender 360.002



Sender 360 081 038 003C



a.



b.



c.



d.



e.



## TEMPERATURE GAUGES, electrical

Suitable for most vehicles and machines.

Illumination 12V or 24V included.

For matching sender units refer to page 60.

| Temperature Gauge - Water |            | 52mm |         |
|---------------------------|------------|------|---------|
| Part No.                  | Range      | Size | Voltage |
| 310030002                 | 40 - 120°C | 52mm | 12V     |
| 310040002                 | 40 - 120°C | 52mm | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

With ISO symbol.

40 - 120°C = 100 - 250°F

| Senders  |            |             |           |           |
|----------|------------|-------------|-----------|-----------|
| Part No. | Range      | Thread      | Terminal  | Body Type |
| 320.002  | 40 - 120°C | 1/8"-27NPTF | button    | a         |
| 320.093  | 40 - 120°C | 1/8"-27NPTF | M4 thread | b         |
| 320.022  | 40 - 120°C | 1/2"-14NPTF | spade     | c         |
| 320.004  | 40 - 120°C | M16x1.5mm   | button    | a         |

Note: 40 - 120°C = 100 - 250°F

For thread adaptors see page 36. For calibration specs, see page 35

| Temperature Gauge - Engine Oil |            | 52mm |         |
|--------------------------------|------------|------|---------|
| Part No.                       | Range      | Size | Voltage |
| 310030003                      | 50 - 150°C | 52mm | 12V     |
| 310040003                      | 50 - 150°C | 52mm | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

With ISO symbol.

50 - 150°C = 120 - 300°F

| Sender   |            |             |           |           |
|----------|------------|-------------|-----------|-----------|
| Part No. | Range      | Thread      | Terminal  | Body Type |
| 320.021  | 50 - 150°C | 1/8"-27NPTF | button    | a         |
| 320.092  | 50 - 150°C | 1/8"-27NPTF | M4 thread | b         |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

50 - 150°C = 120 - 300°F

For calibration specs, see page 88.

| Temperature Gauge - Transmission Oil |            | 52mm |         |
|--------------------------------------|------------|------|---------|
| Part No.                             | Range      | Size | Voltage |
| 310030004                            | 60 - 200°C | 52mm | 12V     |
| 310040004                            | 60 - 200°C | 52mm | 24V     |

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

With ISO symbol.

60 - 200°C = 140 - 392°F

| Sender   |            |             |          |           |
|----------|------------|-------------|----------|-----------|
| Part No. | Range      | Thread      | Terminal | Body Type |
| 320.006  | 60 - 200°C | 1/8"-27NPTF | button   | a         |
| 320.020  | 60 - 200°C | 1/8"-27NPTF | button   | e         |

For calibration specs, see page 88.

## TEMPERATURE GAUGES, mechanical

Suitable for most vehicles and machines.

Process connection is 1/8"-27NPTF threaded removable thermowell.

Temperature is transmitted via fluid-filled capillary tube.

Coil up excess capillary tubing - do not cut to shorten!

Illumination 12V included. For 24V application use globe part no. 240.053.

| Temperature Gauge |            | 52mm             |
|-------------------|------------|------------------|
| Part No.          | Range      | Capillary Length |
| 180035002         | 40 - 120°C | 1600mm           |
| 180035004         | 40 - 120°C | 2600mm           |
| 180035005         | 40 - 120°C | 4000mm           |
| 180035008         | 50 - 150°C | 2600mm           |



## PYROMETER, electrical

Suitable for most exhaust systems.

Thermocouple connection is by 1/4"-18NPTF compression fitting.

Illumination 12V included.

For 24V application use dropping resistor part no. N05801180

and globe part no. 240.053.

| Pyrometer - Electric Kit |                          | 52mm    |
|--------------------------|--------------------------|---------|
| Part No.                 | Range                    | Voltage |
| 397015003                | 0 - 900°C (37.6mV@900°C) | 12V     |

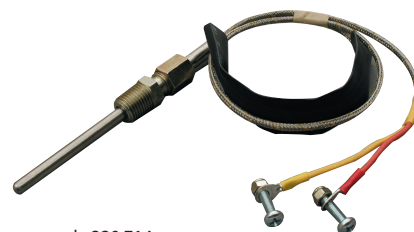
Complete kit - consisting of instrument, thermocouple, 5m loom & weld boss.

Note: Cutting or adding length of loom will not effect calibration.



| Spare Parts for 397 015 003 Pyrometer Kit |                                                             |      |
|-------------------------------------------|-------------------------------------------------------------|------|
| Part No.                                  | Description                                                 |      |
| 310035001                                 | Instrument 0 - 900°C (37.6mv)                               | 52mm |
| 320.714                                   | Thermocouple 1/4" NPTF non bonded junction "K" type         |      |
| 240.035                                   | Loom, 5 meter                                               |      |
| 320.059                                   | Weld boss 1/4"-18 NPTF                                      |      |
| 800005002                                 | Globe & Socket 12V (800005003 Globe & Socket 24V not incl.) |      |

Note: p/n 320.714 probe length = 62 mm, adjustable. Loom length ~ 500 mm



Thermocouple 320.714



## AMMETERS, with internal shunt

Suitable for most engines which requires battery charging system, monitoring.  
Voltage independent - suitable for 12V or 24V.

Ammeters with internal shunt are easily identified by the heavy duty threaded terminals. Heavy duty wire must be used for wiring.

Illumination 12V included. For 24V application use globe #240.053.

| Ammeter with Internal Shunt |               | 52mm    |
|-----------------------------|---------------|---------|
| Part No.                    | Range         | Voltage |
| 190037002                   | 60-0-60 amp   | 12V     |
| 190037003                   | 100-0-100 amp | 12V     |



## VOLTMETERS

Suitable for all engines and machines.

Monitors charge and battery condition.

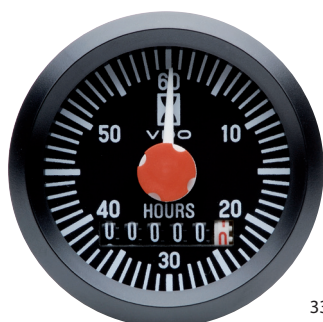
Dial colour coded.

Illumination 12V or 24V included.



| Voltmeter | 52mm     |         |
|-----------|----------|---------|
| Part No.  | Range    | Voltage |
| 332030001 | 8 - 16V  | 12V     |
| 332040001 | 18 - 32V | 24V     |

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.  
With ISO symbol.



331032004

## HOURLMETERS, round

Suitable for all vehicles and machines.

Available with 360° minute hand sweep or as hour counters only.

12V globe included.

| Hourmeter - Black bezel |                |                 | 52mm    |
|-------------------------|----------------|-----------------|---------|
| Part No.                | Range          | Illumination    | Voltage |
| 331032004               | 0 - 99999.9hrs | Non-Illuminated | 12V     |



331032001

| Hourmeter - Black bezel |                |                 | 52mm    |
|-------------------------|----------------|-----------------|---------|
| Part No.                | Range          | Illumination    | Voltage |
| 331032001               | 0 - 99999.9hrs | Non-illuminated | 12V     |
| 331810012004            | 0 - 99999.9hrs | Illuminated     | 12V     |
| 331810012007            | 0 - 99999.9hrs | Illuminated     | 24V     |

| Hourmeters - Counter type - Black bezel 52mm |                |                 |         |
|----------------------------------------------|----------------|-----------------|---------|
| Part No.                                     | Range          | Illumination    | Voltage |
| 331.601                                      | 0 - 99999.9hrs | Not illuminated | 10/80V  |
| (3-hole mounting, Flange 71mm)               |                |                 |         |



331.601

| Hourmeter - Counter type - With Operation Indicator - Chrome bezel 52m |                |                 |         |
|------------------------------------------------------------------------|----------------|-----------------|---------|
| Part No.                                                               | Range          | Illumination    | Voltage |
| 331.602                                                                | 0 - 99999.9hrs | Not illuminated | 10/80V  |



331.602

| Hourmeter - Counter type - With Operation Indicator - Black bezel 52m |                |                 |         |
|-----------------------------------------------------------------------|----------------|-----------------|---------|
| Part No.                                                              | Range          | Illumination    | Voltage |
| 331.600                                                               | 0 - 99999.9hrs | Not illuminated | 10/80V  |



331.600

## HOURLMETERS, rectanuglar

Suitable for all vehicles and machines.

Overall Dimension 53 X 32mm.

| Hourmeter |                |             |         |
|-----------|----------------|-------------|---------|
| Part No.  | Range          | Size        | Voltage |
| 331.534   | 0 - 99999.9hrs | 37mm x 25mm | 10/80V  |



## HOURLMETER, LCD (RE-SETTABLE)

| Hourmeter |                |                 |         |
|-----------|----------------|-----------------|---------|
| Part No.  | Range          | Illumination    | Voltage |
| 331.535   | 0 - 99999.9hrs | Not illuminated | 10/277V |

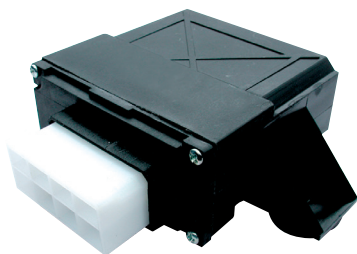




Switch Box 410.060



Switch Box 410.061



Switch Box 410.063

\*Converts any resistance range from 0 – 1,000 OHMS  
or 1,000 – 0 OHMS

## GAUGE WARNING LIGHT INTERFACE

Designed to be used in conjunction with VDO electric temp or pressure gauges with senders, or can be used using VDO senders only (extra resistor 1K, 1W required).

Ideal for switching warning lams, buzzers, external relays, thermofan and other devices.

Features 5 amp N/O or N/C Relay contact output.

| Adjustable Electronic Switch Boxes |                                                       | 12/24V                                                        |
|------------------------------------|-------------------------------------------------------|---------------------------------------------------------------|
| Part No.                           | Description                                           | Specification                                                 |
| 410.060                            | Suitable for 1 warning function<br>1 input - 1 output | 2000-10 ohms input<br>5 amp relay output                      |
| 410.061                            | Suitable for 3 separate warning functions             | 2000-10 ohms input<br>Transistor Output<br>3 input - 3 output |

## GAUGE OHMS CONVERSION BOX 12/24V

The 410.063 has been designed to correct the problem that occurs when an original vehicle sender is not available to match a particular gauge and vice versa. Another example is where the level sender in an LPG tank can be used to accurately drive the original (petrol) fuel gauge in a vehicle. Or the unit could be automatically switched to read between petrol and gas.

It can also 'copy' the signal from an existing gauge/sender combination so that the fuel level may also be observed at a different location. In this case, one sender can be used to drive three or four matching gauges. Because the unit is effectively a 'resistance converter' it can also be used on temperature or pressure gauges to correct where the original sender is no longer available for a gauge. A further advantage is the 8 point conversion curve built in to the unit. This allows it to be used where the resistance graph is a curve, as in large and irregular shaped fuel tanks on trucks and off-road vehicles.

Setting up is extremely simple and can be done on site with almost all applications. Alternately the modules can be pre-programmed if necessary to fit a particular application.

Suitable for 12/24V applications.

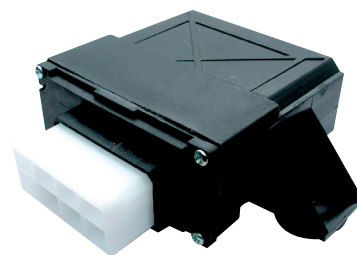
| Signal Amplifier/Divider |                                | 12/24V |
|--------------------------|--------------------------------|--------|
| Part No.                 | Description                    |        |
| 410.063                  | Gauge ohm range conversion box |        |

## ELECTRONIC RATIO BOX

The VDO Electronic Ratio Box is designed to divide or multiply an input frequency by a fixed ratio. The input signal could be a speedometer or tachometer signal from a magnetic pickup, alternator pickup or Hall effect sender. Typical applications include correcting the speedometer on a vehicle which has had the diff ratio changed, or calibrating a tachometer which has no calibration adjustment.

Suitable for 12/24V applications.

| Signal Amplifier/Divider |                      | 12/24V                            |
|--------------------------|----------------------|-----------------------------------|
| Part No.                 | Description          | Specification                     |
| 411.105                  | Electronic Ratio box | Input: Hall effect, 0.7-10V p-p   |
|                          |                      | Inductive, 1.5-50V                |
|                          | Output:              | Square wave 0-10V p-p or V supply |
|                          |                      | Output: Triangular wave output    |



Switch Box 411.105

## SIGNAL AMPLIFIER/DIVIDER

The VDO Signal Amplifier/Divider is a general purpose module designed to work with most speedometer and tachometer signals. This box will amplify a low voltage signal to a 10V peak to peak square wave. This can be useful when a signal is too low to drive a speedometer, tacho, cruise control or any other such device or to utilise a two wire inductive sender where a hall effect signal is required. The output signal may also be divided in frequency by a factor of 1, 2, 4, 8, or 16 to allow easier integration to another instrument.

| Signal Amplifier/Divider |                                       | 12/24V                                                     |
|--------------------------|---------------------------------------|------------------------------------------------------------|
| Part No.                 | Description                           | Specification                                              |
| 411.096                  | Signal amplifier/divider programmable | Signal input: 2+V p-p 0-10khz<br>Output: 10.0V square wave |



Signal Amplifier 411.096

## MULTI-FREQUENCY SWITCH BOX

The VDO Speed & RPM switch has been designed to work with all standard ignition systems, and will provide a negative output once a predetermined Speed/RPM has been reached. In standard format the signal will turn off once the input signal falls below the pre-set point.

| RPM Switch                |                   |                                                                                                      |
|---------------------------|-------------------|------------------------------------------------------------------------------------------------------|
| Part No.                  | Description       | Specification                                                                                        |
| 660.990                   | 12/24V RPM switch | 3 amp relay output<br>RPM range 0-12000 rpm                                                          |
| *Will work off alternator |                   | 4/6/8cyl                                                                                             |
| 411.101                   | 12/24V RPM switch | Switch range 2Hz - 9,990 Hz<br>5 amp relay contact output, 2 channels.<br>Sine & Square wave inputs. |



Switch Box 660.990



Switch Box 411.101



2910002302700 - 1080P Monitor



2910002314400 - 1080P DVR



2910002304700 - 1080P Camera

## MONITORS & MONITOR KITS

New range for 2020 including High Definition 1080P variants.

All monitor models feature 12/24V operation, PAL/NTSC camera support, external input switching (reverse etc) and built-in regulated camera power supply.

All cameras are IP69K rated and feature infrared night vision (range varies).

### Full High Definition (FHD) 1080P Camera Systems - NEW FOR 2020!

| Part No.      | Description                                   |
|---------------|-----------------------------------------------|
| 2910002302700 | HD 1080P 10.1" Touch Screen Monitor           |
| 2910002302800 | HD 1080P 10.1" Quad View Touch Screen Monitor |
| 2910002304700 | HD 1080P Heavy Duty Camera 130° with 10m IR   |
| 2910002314400 | HD 1080P 4CH Digital Video Recorder with GPS  |

### Monitor & Camera Kits

| Part No.      | Description                                       |
|---------------|---------------------------------------------------|
| 2910000300600 | 7" Monitor with 120° IP69K CMOS Camera            |
| 2910000117200 | 7" Monitor with 120° IP69K CCD Camera             |
| 2910000117300 | 7" IP69K Monitor with 120° IP69K CCD Camera       |
| 2910000117500 | 7" Wireless Monitor with 120° IP69K CCD Camera    |
| 2910000244200 | 7" Wireless Quad Monitor with 4x 120° CCD Cameras |
| 2910000117400 | 9" Monitor with 120° IP69K CCD H/D Camera         |



2910000244200



2910000300600



2910000117500



2910000299900



2910000979800

### Monitors

| Part No.      | Description                                             |
|---------------|---------------------------------------------------------|
| 2910000299900 | 7" Monitor, 3 input, 1024x600 res                       |
| 2910000118100 | 7" Monitor, 3 input, 1024x600 res, touch sense buttons  |
| 2910000118200 | 9" Monitor, 3 input, 800x480 res, touch sense buttons   |
| 2910001187300 | 7" Monitor, 3 input, 800x480 res, IP69K, touch screen   |
| 2910000979800 | 7" Quad View, 4 input, 800x480 res                      |
| 2910000118400 | 7" Quad View, 4 input, 800x480 res, IP69K, touch screen |
| 2910000118500 | 9" Quad View, 4 input, 800x480 res, touch sense buttons |
| 2910000118600 | 7" Wireless Monitor, 4ch input, 800x480 res             |
| 2910000244300 | 7" Wireless Quad View Monitor, 800x480 res              |

## CAMERAS & ACCESSORIES

| Wired Cameras |                               |                                                              |
|---------------|-------------------------------|--------------------------------------------------------------|
| Part No.      | Description                   | Features                                                     |
| 2910000118700 | Light Duty Wired Camera       | 120° Angle, CMOS, PAL, IP69K, 10m IR, Grey                   |
| 2910000854700 | Light Duty Wired Camera       | 120° Angle, CMOS, NTSC, IP69K, 10m IR, Black                 |
| 2910000119000 | Heavy Duty Wired Camera       | 120° Angle, CCD, PAL, IP69K, 10m IR, Grey                    |
| 2910000118800 | Extra Heavy Duty Wired Camera | 150° Angle, CCD, PAL, IP69K, 10m IR, Grey, Motorised Shutter |
| 2910000119100 | Heavy Duty Side View Camera   | 150° Angle, CCD, PAL, IP69, 5m IR, Black                     |



2910000118700



2910000854700



2910000118800



2910000119100

| Wireless Cameras |                               |                                                                      |
|------------------|-------------------------------|----------------------------------------------------------------------|
| Part No.         | Description                   | Features                                                             |
| 2910000119500    | Wireless Heavy Duty Camera    | 120° Angle, CCD, PAL, IP69K, 10m IR, Suit 2910000118600 only         |
| 2910000119600    | Wireless Heavy Duty Camera    | 120° Angle, CCD, PAL, IP69K, 10m IR, Suit 2910000244300 Quad only    |
| 2910000814500    | Wireless Forklift Tine Camera | 45° Angle, CCD, PAL, IP69K, Metal Body, Suit 2910000244300 Quad only |



2910000814500



2910000119500

| Camera Accessories |                                  |                                                                       |
|--------------------|----------------------------------|-----------------------------------------------------------------------|
| Part No.           | Description                      | Features                                                              |
| 2910000814500      | Rechargeable Battery Pack        | IP65, 7800mAh, 8 hour charge, 14 hour run, Suits all wireless cameras |
| Part No. TBA       | AC Wall Charger for Battery Pack |                                                                       |
| 2910000120200      | Wireless Camera Conversion Kit   | Convert wired camera system to wireless, 1 set required per camera    |
| 2910000120100      | Wireless Camera Receiver         | Add wireless camera to wired camera system, 1 required per camera     |
| 2910000120000      | Wireless Camera Transmitter      | Add wired camera to wireless camera system, 1 required per camera     |
| 2910000463400      | 3M Camera Extension Cable        | Suits all current VDO wired cameras and monitors                      |
| 2910000119600      | 5M Camera Extension Cable        | Suits all current VDO wired cameras and monitors                      |
| 2910000119700      | 10M Camera Extension Cable       | Suits all current VDO wired cameras and monitors                      |
| 2910000119800      | 20M Camera Extension Cable       | Suits all current VDO wired cameras and monitors                      |



Camera Battery Pack



Wireless Transceiver Kit



Camera Extension Cable



## RADIOS

### RDS Tuner, USB, AUX, MP3/WMA

| Part No.      | Model No.     | Illumination | Voltage |
|---------------|---------------|--------------|---------|
| 101.270       | TR711U-BU     | Bue          | 12V     |
| 101.271       | TR722U-BU     | Blue         | 24V     |
| A2C6253521466 | TR7422U-OR/19 | Orange       | 24V     |

1 Din, 188x58.5x114.7, RDS Clock, 4x10w  
Battery Back Up. Steering Wheel Control,  
Front AUX input & Front USB.

### RDS Tuner, USB, AUX, MP3/WMA, Bluetooth

| Part No.      | Model No.      | Illumination | Voltage |
|---------------|----------------|--------------|---------|
| 101.264       | TR712UB-BU     | Blue         | 12V     |
| 101.265       | TR722UB-BU     | Blue         | 24V     |
| A2C6253521366 | TR7412UB-OR    | Orange       | 12V     |
| A2C6253521566 | TR7423UB-OR/19 | Orange       | 24V     |

1 Din, 188x58.5x114.7, RDS Clock, 4x10w  
Battery Back Up. Steering Wheel Control,  
Front AUX input & Front USB.

### DAB+/RDS Tuner, USB, AUX, MP3/WMA, Bluetooth

| Part No.      | Model No.    | Illumination | Voltage |
|---------------|--------------|--------------|---------|
| 2910000430600 | TRD7412UB-OR | Orange       | 12V     |

1 Din, 188x58.5x114.7, RDS Clock, 4x10w  
Battery Back Up. Steering Wheel Control,  
Rear AUX input & Front USB.

### RDS Tuner, USB, AUX, CD, MP3/WMA

| Part No.      | Model No.     | Illumination | Voltage |
|---------------|---------------|--------------|---------|
| 101.268       | CD716U-BU     | Blue         | 12V     |
| 101.269       | CD726U-BU     | Blue         | 24V     |
| A2C6253520766 | CD7426U-OR/19 | Orange       | 24V     |

1 Din, 188x58.5x114.7, RDS Clock, 4x10w  
Battery Back Up. Steering Wheel Control,  
Rear AUX input & Front USB.

### DAB+/RDS Tuner, USB, AUX, CD, MP3/WMA, Bluetooth

| Part No.      | Model No.       | Illumination | Voltage |
|---------------|-----------------|--------------|---------|
| 101.266       | CDD718UB-BU     | Blue         | 12V     |
| 101.267       | CDD728UB-BU     | Blue         | 24V     |
| 2910000080600 | CD7416UB-OR     | Orange       | 12V     |
| 2910000080900 | CD7426UB-OR/19  | Orange       | 24V     |
| A2C6253520866 | CDD7418UB-OR    | Orange       | 12V     |
| A2C6253520966 | CDD7428UB-OR/19 | Orange       | 24V     |

1 Din, 188x58.5x114.7, RDS Clock, 4x10w  
Battery Back Up. Steering Wheel Control,  
Rear AUX input & Front USB.

# SPEAKERS

## Pair of Speakers

| Part No. | Description                  | Watts    |
|----------|------------------------------|----------|
| 101.350  | Pair of speakers 100mm 2 way | 50 Watts |

2-way coaxial system  
 2 Black grilles with VDO logo and zinc plating pre-treatment  
 Diameter: 100 mm  
 Power handling: 12 – 50 Watts  
 Frequency range: 120 – 18,000 Hz  
 Sensitivity dB/W/m: 90  
 Mounting kit  
 101.350 is labelled HP1021



## Pair of Speakers

| Part No. | Description                  | Watts    |
|----------|------------------------------|----------|
| 101.351  | Pair of speakers 130mm 2 way | 60 Watts |

2-way coaxial system  
 2 Black grilles with VDO logo and zinc plating pre-treatment  
 Diameter: 130 mm  
 Power handling: 15 – 60 Watts  
 Frequency range: 100 – 18,000 Hz  
 Sensitivity dB/W/m: 89  
 Mounting kit  
 101.351 is labelled HP1321



## Pair of Speakers

| Part No. | Description                                | Watts    |
|----------|--------------------------------------------|----------|
| 101.352  | Pair of speakers 130mm 2 way white grilles | 60 Watts |

2-way coaxial system  
 2 white grilles with VDO logo and zinc plating pre-treatment  
 Diameter: 130 mm  
 Power handling: 15 – 60 Watts  
 Frequency range: 100 – 18,000 Hz  
 Sensitivity dB/W/m: 88  
 Mounting kit  
 101.352 is labelled HPW1321



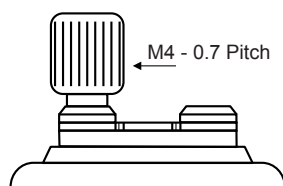
## Pair of Speakers

| Part No. | Description                                | Watts     |
|----------|--------------------------------------------|-----------|
| 101.353  | Pair of speakers 130mm 2 way white grilles | 150 Watts |

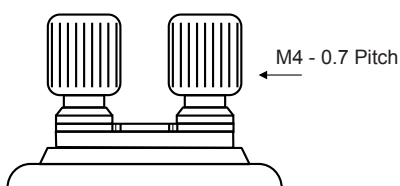
Pair of unblock waterproof speakers  
 ABS ABS777B with treatment against UB (ASA)  
 2 speakers per box  
 2 way coaxial system  
 Diameter: 130 mm  
 Power handling: 30 – 150 Watts  
 Frequency range: 80 – 20,000 Hz  
 Sensitivity dB/W/m: 87  
 Mounting kit : with rubber gasket, screws and Iso cables  
 101.353 is labelled 051-018-011



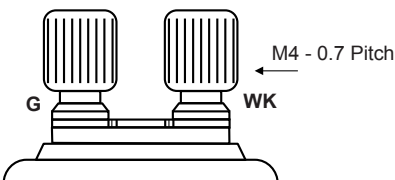
A



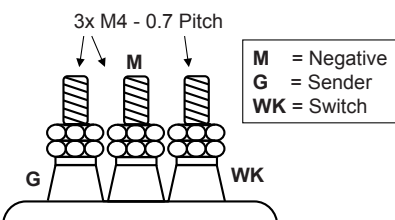
B



C



D



## OIL PRESSURE SENDER / SWITCHES

| Pressure Sender - Oil / Air |                    |                |                           | Single Station |               |
|-----------------------------|--------------------|----------------|---------------------------|----------------|---------------|
| Part No.                    | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture        | Ohms<br>Range |
| 360081032025C               | 0 - 2 Bar (30)     | 1/8"-27NPTF    | ---                       | B              | 10 - 180      |
| 360081032011C               | 0 - 2 Bar (30)     | M 12x1.5       | ---                       | B              | 10 - 180      |

| Pressure Sender - Oil / Air |                    |                |                           | Single Station |               |
|-----------------------------|--------------------|----------------|---------------------------|----------------|---------------|
| Part No.                    | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture        | Ohms<br>Range |
| 360081032001C               | 0 - 5 Bar (75)     | 1/8"-27NPTF    | ---                       | B              | 10 - 180      |
| 360081032002C               | 0 - 5 Bar (75)     | M10x1.0        | ---                       | B              | 10 - 180      |

| Pressure Sender & Switch - Oil / Air |                    |                |                           | Single Station |               |
|--------------------------------------|--------------------|----------------|---------------------------|----------------|---------------|
| Part No.                             | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture        | Ohms<br>Range |
| 360081030001K                        | 0 - 5 Bar (75)     | M10x1.0        | 0.25 Bar (3.5)            | C              | 10 - 180      |
| 360081030002K                        | 0 - 5 Bar (75)     | M10x1.0        | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030028K                        | 0 - 5 Bar (75)     | M14x1.5        | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030049K                        | 0 - 5 Bar (75)     | 1/8"-27NPTF    | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030014C                        | 0 - 5 Bar (75)     | M10x1.0        | 0.6 bar (8.5)             | C              | 10 - 180      |
| 360081030010C                        | 0 - 5 Bar (75)     | 1/8"-27NPTF    | 1.4 Bar (11.5)            | C              | 10 - 180      |
| 360081039002C                        | 0 - 5 Bar (75)     | 1/8"-27NPTF    | 11.5 Psi                  | D              | 10 - 180      |
| 360081039004C                        | 0 - 5 Bar (75)     | 1/8"-27NPTF    | 10 Psi                    | D              | 10 - 180      |

| Pressure Sender & Switch - Oil / Air |                    |                |                           | Single Station |               |
|--------------------------------------|--------------------|----------------|---------------------------|----------------|---------------|
| Part No.                             | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture        | Ohms<br>Range |
| 360081030009K                        | 0 - 10 Bar (150)   | M10x1.0        | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030022C                        | 0 - 10 Bar (150)   | M12x1.5        | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030052C                        | 0 - 10 Bar (150)   | 1/8"-27NPTF    | 0.5 Bar (7)               | C              | 10 - 180      |
| 360081030039C                        | 0 - 10 Bar (150)   | M10x1.0        | 0.75 Bar (10.7)           | C              | 10 - 180      |
| 360081030015C                        | 0 - 10 Bar (150)   | 1/8"-27NPTF    | 0.8 Bar (11.5)            | C              | 10 - 180      |
| 360081030017C                        | 0 - 10 Bar (150)   | M10x1.0        | 0.9 Bar (12)              | C              | 10 - 180      |
| 360081039003                         | 0 - 10 Bar (150)   | 1/8"-27NPTF    | 0.8 Bar (11.5)            | D              | 10 - 180      |

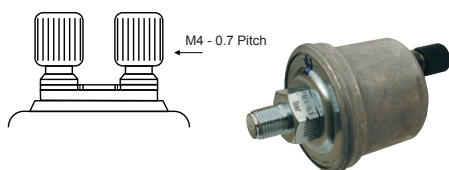
| Pressure Sender - Oil / Air |                    |                |                           | Single Station |               |
|-----------------------------|--------------------|----------------|---------------------------|----------------|---------------|
| Part No.                    | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture        | Ohms<br>Range |
| 360081038008C               | 0 - 30 Bar (400)   | 1/8"-27NPTF    | ---                       | B              | 10 - 180      |
| 360081032014C               | 0 - 10 Bar (150)   | 1/8"-27NPTF    | ---                       | B              | 10 - 180      |
| 360081038003C               | 0 - 25 Bar (350)   | 1/8"-27NPTF    | ---                       | B              | 10 - 180      |

| Pressure Sender - Oil / Air |                    |                |                           | Dual Station |               |
|-----------------------------|--------------------|----------------|---------------------------|--------------|---------------|
| Part No.                    | Range<br>Bar (Psi) | Thread<br>Size | Switch Point<br>Bar (Psi) | Picture      | Ohms<br>Range |
| 362081001001K               | 0 - 5 Bar (75)     | 1/8"-27NPTF    | ---                       | B            | 5 - 90        |
| 362081001002K               | 0 - 10 Bar (150)   | 1/8"-27NPTF    | ---                       | B            | 5 - 90        |
| 362081003002K               | 0 - 10 Bar (150)   | 1/8"-27NPTF    | ---                       | A            | 5 - 90        |
| 362081002001K               | 0 - 25 Bar (350)   | 1/8"-27NPTF    | ---                       | B            | 5 - 90        |
| 362081004001C               | 0 - 25 Bar (350)   | 1/8"-27NPTF    | ---                       | A            | 5 - 90        |

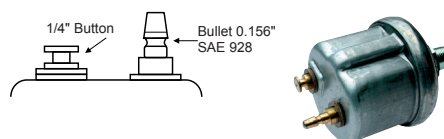
# OIL PRESSURE SENDERS

| Oil Pressure Senders for various applications |           |           |                |                  |             |                     |
|-----------------------------------------------|-----------|-----------|----------------|------------------|-------------|---------------------|
| Part No.                                      | Gauge KPa | Gauge PSI | Ohms           | Light Switch KPa | Thread      | Terminal            |
| 360.001                                       | 500 KPa   | 75psi     | 10-180 ohms    | -                | 1/8"27NPTF  | Blade (F)           |
| 360.002                                       | 1000 KPa  | 150psi    | 10-184 ohms    | -                | 1/8"27NPTF  | Blade (F)           |
| 360.003                                       | 700 KPa   | 100psi    | 73-10 ohms     | -                | 1/4"18NPT   | Blade (F)           |
| 360.004                                       | 500 KPa   | 75 psi    | 10-180 ohms    | -                | 1/4"18NPT   | Blade (F)           |
| 360.005                                       | 500 KPa   | 75 psi    | 73-10 ohms     | -                | 1/4"18NPT   | Blade (F)           |
| 360.006                                       | 600 KPa   | 87 psi    | 292-40 ohms    | -                | 1/8"-28BSP  | Blade (F)           |
| 360.008                                       | 800 KPa   | 116 psi   | 0-90 ohms      | -                | 1/8"-27NPTF | M4 Post (K)         |
| 360.013                                       | 700 KPa   | 100psi    | 10-180 ohms    | -                | 1/4"18NPT   | Button (G)          |
| 360.014                                       | 600 KPa   | 87 psi    | 10-180 ohms    | -                | 1/8"27NPTF  | Blade (F)           |
| 360.016                                       | 500 KPa   | 75 psi    | 10-180 ohms    | -                | 1/8"28BSP   | Button (G)          |
| 360.017                                       | 600 KPa   | 87 psi    | 10-180 ohms    | 50 KPa           | 1/8"28BSP   | Bullet & Button (J) |
| 360.018                                       | 500 KPa   | 75 psi    | 10-180 ohms    | -                | 1/8"27NPTF  | M4 Post (K)         |
| 360.019                                       | 1000 KPa  | 150 psi   | 10-184 ohms    | -                | 1/8"27NPTF  | M4 Post (K)         |
| 360.020                                       | 600 KPa   | 87 psi    | 10-180 ohms    | -                | 1/8"27NPTF  | M4 Post (K)         |
| 360.022                                       | 500 KPa   | 75 psi    | 10-183 ohms    | 30 KPa           | M10 x 1.0   | M4 Post (B)         |
| 360.024                                       | 875 KPa   | 125 psi   | 0-5 volt (ecu) | -                | M14x1.5     | 3 pin plug          |
| 360.048                                       | 10 bar    | 150 psi   | 0-5 Volts      | -                | M12x1.5     | 4 pin Bayonet       |
| 360.050                                       | 5 bar     | 80 psi    | 240-33 ohms    | -                | 1/8"-27NPT  | M4 Post (K)         |
| 360.086                                       | 700KPa    | 100 psi   | 10-180 ohms    | -                | 1/8"27NPTF  | M4 Post (K)         |

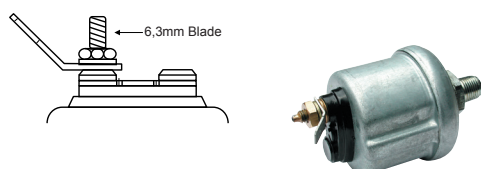
B



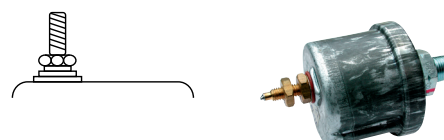
J



F



K



G



360.022

360.048

360.050

## NOT SURE?

VDO Gauge Check can be found on page 52. Handy workshop tool used to test gauges and measure variable resistance required for replacement senders. Simply connect to the sender terminals and use the dial to simulate gauge movement. Resistance can then be recorded to help match with the correct replacement sender.



105.001

## PRESSURE SWITCHES

VDO Pressure Switches are robust, compact and designed to operate in harsh environments at various pressures and in extended duty applications.

Because of its special internal design, this switch can tolerate high pressure spikes inherent in many pressure systems. The switch is factory calibrated but in the case that adjustment is needed in the field, the switch offers an adjustment screw to facilitate any fine tuning required within the given set point range. The standard polyimide diaphragm (Kapton), makes it compatible with many gases, oils, jet fuels and similar hydrocarbons media. Standard screw type electrical terminals are available. Also included with the switch are screw to blade converters.

The overall ruggedness of the VDO Pressure Switch makes it a popular choice for many OEM and aftermarket

### 230 Series Pressure Switches - Heavy Duty Stainless Steel - Single Pole Double Throw (SPDT)

| Part No. | Description                      | Preset | Range      | Thread Type |
|----------|----------------------------------|--------|------------|-------------|
| 230.990  | Press Sw 3 Term NC/NO 1.1 - 3psi | 15psi  | 1.1 - 3psi | 1/8"-27NPFT |
| 230.993  | Press Sw 3 Term NC/NO 3.1 - 7psi | 150psi | 3.1 - 7psi | 1/8"-27NPFT |

Working Pressure

### 330 Series Pressure Switches - Medium Duty Brass - Single Pole Single Throw (SPST)

| Part No.  | Description                     | Preset | Range           | Thread Type |
|-----------|---------------------------------|--------|-----------------|-------------|
| 330.102   | Press Sw 2 Term N/O 1.1 - 3psi  | 2psi   | 1.1 - 3psi N/O  | 1/8"-27NPFT |
| 330.102C  | Press Sw 2 Term N/C 1.1 - 3psi  | 2psi   | 1.1 - 3psi N/C  | 1/8"-27NPFT |
| 330.104   | Press Sw 2 Term N/O 3.1 - 7psi  | 4psi   | 3.1 - 7psi N/O  | 1/8"-27NPFT |
| 330.104C  | Press Sw 2 Term N/C 3.1 - 7psi  | 4psi   | 3.1 - 7psi N/C  | 1/8"-27NPFT |
| 330.110   | Press Sw 2 Term N/O 8 - 13psi   | 10psi  | 8 - 13psi N/O   | 1/8"-27NPFT |
| 330.110C  | Press Sw 2 Term N/C 8 - 13psi   | 10psi  | 8 - 13psi N/C   | 1/8"-27NPFT |
| 330.115   | Press Sw 2 Term N/O 14 - 24psi  | 15psi  | 14 - 24psi N/O  | 1/8"-27NPFT |
| 330.115C  | Press Sw 2 Term N/C 14 - 24psi  | 15psi  | 14 - 24psi N/C  | 1/8"-27NPFT |
| 330.135   | Press Sw 2 Term N/O 25 - 50psi  | 35psi  | 25 - 50psi N/O  | 1/8"-27NPFT |
| 330.135C  | Press Sw 2 Term N/C 25 - 50psi  | 35psi  | 25 - 50psi N/C  | 1/8"-27NPFT |
| 330.160   | Press Sw 2 Term N/O 51 - 90psi  | 60psi  | 51 - 90psi N/O  | 1/8"-27NPFT |
| 330.160C  | Press Sw 2 Term N/C 51 - 90psi  | 60psi  | 51 - 90psi N/C  | 1/8"-27NPFT |
| 330.1100  | Press Sw 2 Term N/O 91 - 150psi | 100psi | 91 - 150psi N/O | 1/8"-27NPFT |
| 330.1100C | Press Sw 2 Term N/C 91 - 150psi | 100psi | 91 - 150psi N/C | 1/8"-27NPFT |

N/O = Contacts are open and will close above set point.

N/C = Contacts are closed and will open above set point.

Working pressure: 150psi for 0.5 - 24psi, 250psi for 25 - 150psi.

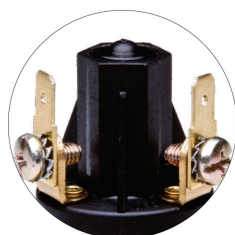
Burst pressure: 750psi for 0.5 - 24psi, 1250psi for 25 - 150psi.

### 430 Series Pressure Switches - Medium Duty Brass - Single Pole Double Throw (SPDT)

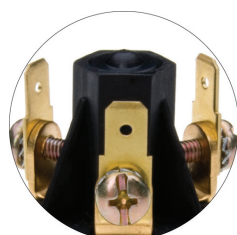
| Part No. | Description                      | Preset | Range       | Thread Type |
|----------|----------------------------------|--------|-------------|-------------|
| 430.102  | Press Sw 3 Term NC/NO 1.1 - 3psi | 2psi   | 1.1 - 3psi  | 1/8"-27NPFT |
| 430.104  | Press Sw 3 Term NC/NO 3.1 - 7psi | 4psi   | 3.1 - 7psi  | 1/8"-27NPFT |
| 430.110  | Press Sw 3 Term NC/NO 8 - 13psi  | 10psi  | 8 - 13psi   | 1/8"-27NPFT |
| 430.115  | Press Sw 3 Term NC/NO 14-24 psi  | 15psi  | 14 - 24psi  | 1/8"-27NPFT |
| 430.135  | Press Sw 3 Term NC/NO 25-50 psi  | 35psi  | 25 - 50psi  | 1/8"-27NPFT |
| 430.160  | Press Sw 3 Term NC/NO 51-90 psi  | 60psi  | 51 - 90psi  | 1/8"-27NPFT |
| 430.1100 | Press Sw 3 Term NC/NO 91-150 psi | 100psi | 91 - 150psi | 1/8"-27NPFT |

### Cover

| Part No. | Description                                                                |
|----------|----------------------------------------------------------------------------|
| 330.100  | Rubber dust boot to suit 230, 330 & 430 series universal pressure switches |



SPST - 2 Terminals

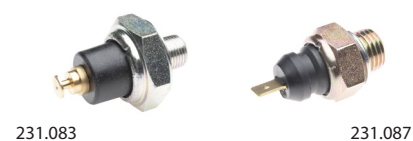


SPDT - 3 Terminals

# OIL PRESSURE SWITCHES

## Oil Pressure Switches - Light Duty

| Part No. | Thread Type | Terminal     | Switch Kpa | Switch | Voltage |
|----------|-------------|--------------|------------|--------|---------|
| 231.081  | 1/4"-18NPTF | Button       | 25 kpa     | NC     | 12/24v  |
| 231.082  | 1/8"-27NPTF | Spade        | 21 kpa     | NC     | 12/24v  |
| 231.083  | 1/8"-27NPTF | Button       | 55 kpa     | NC     | 12/24v  |
| 231.084  | 1/8"-28BSPT | Button       | 21 kpa     | NC     | 12/24v  |
| 231.085  | M10x1.0     | Spade        | 25 kpa     | NC     | 12/24v  |
| 231.086  | 1/8"-28BSPT | Bullet       | 21 kpa     | NC     | 12/24v  |
| 231.087  | M14x1.5     | Spade        | 21 kpa     | NC     | 12/24v  |
| 231.088  | 1/4"-18NPTF | Plug (3 pin) | ECU        | ECU    | 5v      |
| 231.102  | 1/8"-28BSPT | Spade        | 50 kpa     | NC     | 12/24v  |
| 231.106  | 1/4"-18NPTF | Spade        | 40 kpa     | NC     | 12/24v  |



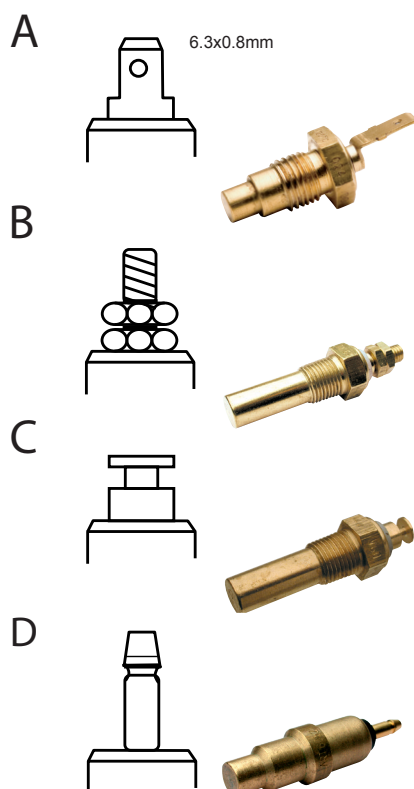
Full range of threaded adapters on page 36

## Universal Pressure Switches - Heavy Duty

| Part No. | Switch Point Bar (Psi) | Thread Type      | Terminals | Picture | Switch |
|----------|------------------------|------------------|-----------|---------|--------|
| 230.044  | 0.5 Bar (7) Fixed      | 1/8"-27NPTF      | Screw x 2 | M       | N/C    |
|          |                        | Insulated Return |           |         |        |
| 230.041  | 0.7 Bar (10) Fixed     | 1/8"-27NPTF      | Screw x 1 | M       | N/C    |
|          |                        | Earth Return     |           |         |        |
| 230.043  | 0.7 Bar (10) Fixed     | 1/8"-27NPTF      | Screw x 1 | M       | N/O    |
|          |                        | Earth Return     |           |         |        |

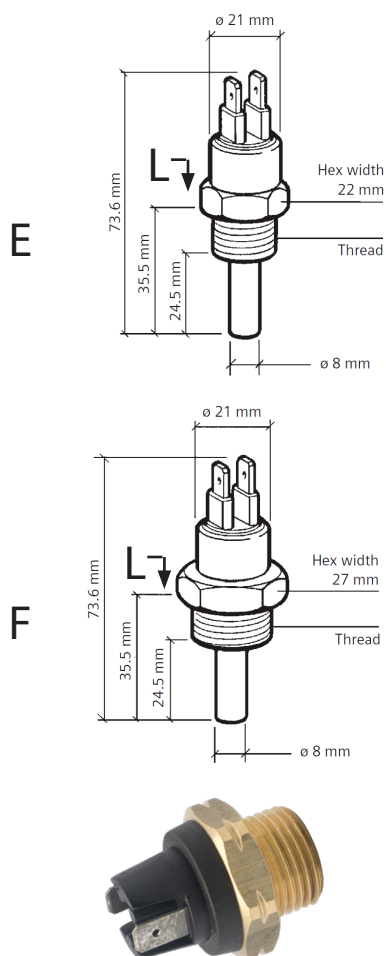


## TEMPERATURE SWITCHES



| Temp Switch - Normally Open Contact - Single Terminal |              |             |       | 3 Watt      |           |             |
|-------------------------------------------------------|--------------|-------------|-------|-------------|-----------|-------------|
| Part No.                                              | Switch Point | Thread Size | Term. | Body Length | Max Temp. | Probe Diam. |
| 232011017087D                                         | 40±3°C       | M14x1.5     | D     | 29 mm       | 120       | 10          |
| 232011017038D                                         | 55±3°C       | M14x1.5     | A     | 29 mm       | 120       | 10          |
| 232011017017D                                         | 85±3°C       | M14x1.5     | A     | 29 mm       | 120       | 10          |
| 230.046                                               | 90±3°C       | M10x1.5     | B     | 38.5 mm     | 120       | 6.9         |
| 232011017016D                                         | 95±3°C       | M14x1.5     | A     | 29 mm       | 150       | 10          |
| 230.051                                               | 95±3°C       | 1/2-14 NPTF | A     | 29 mm       | 120       | 10          |
| 230.045                                               | 96±3°C       | 1/8-27 NPTF | B     | 33 mm       | 120       | 10          |
| 232011017080D                                         | 97±3°C       | M14x1.5     | A     | 29 mm       | 120       | 10          |
| 232011017034D                                         | 100±3°C      | M14x1.5     | A     | 29 mm       | 160       | 10          |
| 232011017041D                                         | 105±3°C      | 1/2-14 NPTF | A     | 29 mm       | 120       | 10          |
| 232011017010D                                         | 110±3°C      | M14x1.5     | A     | 29 mm       | 160       | 10          |
| 232011017032D                                         | 120±3°C      | M14x1.5     | A     | 29 mm       | 130       | 10          |
| 232011017103D                                         | 130±3°C      | M14x1.5     | A     | 29 mm       | 150       | 10          |
| 232011005027D                                         | 150±5°C      | M10x1.5     | C     | 38.5 mm     | 200       | 6.9         |
| 232011005017D                                         | 150±5°C      | M10x1.5     | B     | 38.5 mm     | 200       | 6.9         |
| 232011005004D                                         | 170±5°C      | M10x1.5     | B     | 38.5 mm     | 220       | 6.9         |

Note: All above switches are normally open (N/O)



| Temp Switch - N/O Contact (except * N/C) |              |             |       | Dual Terminal | 100 Watt  |             |
|------------------------------------------|--------------|-------------|-------|---------------|-----------|-------------|
| Part No.                                 | Switch Point | Thread Size | Term. | Body Length L | Max Temp. | Probe Diam. |
| X10232001002                             | 82±3°C       | M18x1.5     | E     | 35.5 mm       | 110       | 8           |
| X10232001003                             | 86±3°C       | M18x1.5     | E     | 35.5 mm       | 110       | 8           |
| X10232001004                             | 92±3°C       | M18x1.5     | E     | 35.5 mm       | 110       | 8           |
| X10232001005                             | 96±3°C       | M18x1.5     | E     | 35.5 mm       | 110       | 8           |
| X10232001006                             | 96±3°C       | 1/2-14 NPTF | E     | 43.5 mm       | 110       | 8           |
| X10232001007                             | 96±3°C       | M14x1.5     | E     | 35.5 mm       | 110       | 8           |
| X10232001008                             | 96±3°C       | M22x1.5     | F     | 35.5 mm       | 110       | 8           |
| X10232001009                             | 100±3°C      | M18x1.5     | E     | 35.5 mm       | 110       | 8           |
| 230.112NO                                | 70±3°C       | 1/8-27NPTF  | E     | 30.0 mm       | 110       | 8           |
| 230.113NC                                | 75±3°C       | 1/8-27NPTF  | E     | 30.0 mm       | 110       | 8           |
| 230.114NC                                | 95±3°C       | 1/8-27NPTF  | E     | 30.0 mm       | 110       | 8           |
| 230.115NO                                | 95±3°C       | 1/8-27NPTF  | E     | 30.0 mm       | 110       | 8           |
| 230.115NC                                | 105±3°C      | 1/8-27NPTF  | E     | 30.0 mm       | 120       | 8           |

Note: Temp Switches 230.112 to 230.115 include a rubber boot.

| Temp Control Switch |              |             |       | 100 Watt      |          |             |
|---------------------|--------------|-------------|-------|---------------|----------|-------------|
| Part No.            | Switch Point | Thread Size | Term. | Body Length L | Max Temp | Probe Diam. |
| 230.079             | 95±3°C       | 1/2-14 BSP  | E     | 13 mm         | 120      | 12          |
| 230.080             | 102±3°C      | 1/2-14 BSP  | E     | 13 mm         | 120      | 12          |

Note: VDO Switches are N/O (normally open) with the exception of p/n 230.xxx marked "NC"

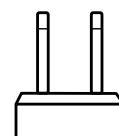
230.079

# TEMPERATURE SENDERS & SWITCHES

| Temp Sender & Switch N/O |              |             | 40 - 120 Deg. C |             |                      |
|--------------------------|--------------|-------------|-----------------|-------------|----------------------|
| Part No.                 | Switch Point | Thread Size | Term            | Body Length | Ohms Range 40-120 °C |
| 323803001004D            | 90±3°C       | M14x1.5     | H               | 40mm        | 287-23 ohms          |
| 323803001006D            | 96±3°C       | M14x1.5     | H               | 40mm        | 287-23 ohms          |
| 323803001008D            | 110±3°C      | M14x1.5     | H               | 40mm        | 287-23 ohms          |
| 323803001011D            | 95±3°C       | 5/8-18 NF-3 | H               | 40mm        | 287-23 ohms          |
| 323803001002D            | 98±3°C       | 5/8-18 NF-3 | H               | 40mm        | 287-23 ohms          |
| 323803001019D            | 95±3°C       | 1/2-14 NPTF | H               | 40mm        | 287-23 ohms          |
| 323803001013D            | 106±3°C      | M14x1.5     | H               | 40mm        | 287-23 ohms          |

Note: All temp switches are N/O (normally open) rated 3 Watts

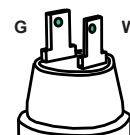
G



2x 6.3x0.8mm



H

1x 6.3x0.8mm  
1x 4.8x0.8mm

## TEMPERATURE SENDERS

| Temp Sender   |               | 40 - 120 Deg. C |             |                      |
|---------------|---------------|-----------------|-------------|----------------------|
| Part No.      | Thread Size   | Term            | Body Length | Ohms Range 40-120 °C |
| 323801001006K | M14x1.5       | A               | 29mm        | 287-23 ohms          |
| 323801001040N | M16x1.5       | A               | 29mm        | 287-23 ohms          |
| 323801001010K | 1/2-14 NPTF   | A               | 29mm        | 287-23 ohms          |
| 323801001008N | 5/8-18 UNF-3A | A               | 29mm        | 287-23 ohms          |
| 323805001001K | M14x1.5       | G               | 29mm        | 287-23 ohms          |
| 323805001015N | M18x1.5       | G               | 29mm        | 287-23 ohms          |
| 323805001004K | 1/2-14 NPTF   | G               | 29mm        | 287-23 ohms          |
| 323805001005N | 3/8-18 NPTF   | G               | 29mm        | 287-23 ohms          |
| 323805001002C | 5/8-18 UNF-3A | G               | 29mm        | 287-23 ohms          |

| Temp Sender - Dual Station (2 gauges) |             | 40 - 120 Deg. C |             |                      |
|---------------------------------------|-------------|-----------------|-------------|----------------------|
| Part No.                              | Thread Size | Term            | Body Length | Ohms Range 40-120 °C |
| 325805003001C                         | 1/4-18NPT   | G               | 40mm        | 144-12 ohms          |

| Temp Sender - Various Applications |          |          |          |               |             |           |          |
|------------------------------------|----------|----------|----------|---------------|-------------|-----------|----------|
| Part No.                           | Range    | Ohms (Ω) | Ω@ 100°C | Thread        | Body Length | Insulator | Terminal |
| 320.002                            | 40-120°C | 287-23   | 38.6     | 1/8"-27 NPTF  | 29.0mm      | white     | button   |
| 320.004                            | 40-120°C | 287-23   | 38.6     | M16x1.5       | 29.0mm      | white     | button   |
| 320.006                            | 60-200°C | 550-14   | 148.8    | 1/8"- 27 NPTF | 29.0mm      | red       | button   |
| 320.020                            | 60-200°C | 550-14   | 148.8    | 1/8"-27 NPTF  | 10.5mm      | black     | button   |
| 320.021                            | 50-150°C | 323-18   | 62.2     | 1/8"-27 NPTF  | 29.0mm      | yellow    | button   |
| 320.022                            | 40-120°C | 287-23   | 38.6     | 1/2"-14 NPTF  | 29.0mm      | white     | spade    |
| 320.039                            | 40-120°C | 145-17   | 31.5     | use old nut   | 17.0mm      | black     | bullet   |
| 320.043                            | 40-120°C | 184-17   | 32.0     | M16x1.5       | 22.0mm      | black     | spade    |
| 320.044                            | 40-120°C | 313-22   | 41.2     | M16x1.5       | 27.0mm      | black     | spade    |
| 320.046                            | 40-120°C | 380-30   | 54.0     | 5/8"-18 UNF   | 29.0mm      | red       | spade    |
| 320.067                            | 40-120°C | 232-22   | 65.9     | M8x0.75       | 22.0mm      | black     | bullet   |
| 320.068                            | 40-120°C | 175-20   | 32.4     | M16x1.5       | 22.0mm      | black     | bullet   |
| 320.088                            | 40-120°C | 192-30   | 52.0     | 1/8"-28 BSPT  | 22.0mm      | black     | spade    |
| 320.092                            | 50-150°C | 323-18   | 62.2     | 1/8"-27NPTF   | 29.0mm      | green     | thread   |
| 320.093                            | 40-120°C | 287-23   | 38.6     | 1/8"-27NPTF   | 29.0mm      | black     | thread   |
| 320.107                            | 250°F    | 450-30   |          | 1/8"-27NPT    |             |           | spade    |

Note: Not all the above temperature senders are suitable for cockpit gauges.  
Some temp senders are used in OEM applications.



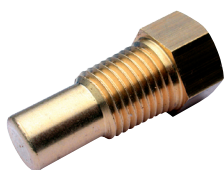
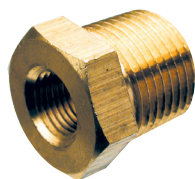
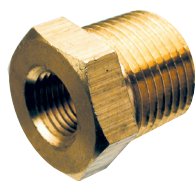
Sender 320.002



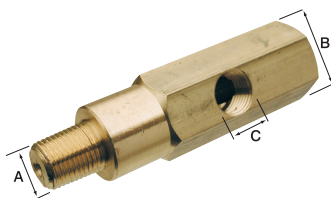
Sender 320.093



Sender 320.107



Thermowell 180.059



## SENDER THREAD ADAPTORS

Suitable for pressure sensor & some temperature senders & switches with 1/8"-27NPTF thread. Mechanical temperature gauges with 1/8"-27NPTF thermowell (180.059). Oil line kits (230.012 & 230.013) for mechanical pressure gauges.

| Adaptors Brass |                 |                 |                |
|----------------|-----------------|-----------------|----------------|
| Part No.       | Internal Thread | External Thread | Overall Length |
| 320.050        | 1/8"-27NPTF     | 1/4"-18NPTF     | 20mm           |
| 320.051        | 1/8"-27NPTF     | 3/8"-18NPTF     | 20mm           |
| 320.053        | 1/8"-27NPTF     | 1/2"-14NPTF     | 20mm           |
| 320.052        | 1/8"-27NPTF     | 5/8"-18UNF      | 20mm           |
| 320.054        | 1/8"-27NPTF     | M14x1.5         | 20mm           |
| 320.055        | 1/8"-27NPTF     | M16x1.5         | 20mm           |
| 320.056        | 1/8"-27NPTF     | M18x1.5         | 20mm           |

| Adaptors Brass |                 |                 |                |
|----------------|-----------------|-----------------|----------------|
| Part No.       | Internal Thread | External Thread | Overall Length |
| 320.058        | 5/8"-18UNF      | 1/2"-14NPTF     | 20mm           |
| 320.101        | 1/4"-14NPTF     | 1/2"-14NPTF     | 20mm           |

| Adaptors Brass                     |                 |                 |                |
|------------------------------------|-----------------|-----------------|----------------|
| Part No.                           | Internal Thread | External Thread | Overall Length |
| 320.105                            | M12x1.5         | 1/8"NPT         | 30mm           |
| To suit mechanical pressure gauges |                 |                 |                |

| Adaptors Stainless Steel |                 |                 |                |
|--------------------------|-----------------|-----------------|----------------|
| Part No.                 | Internal Thread | External Thread | Overall Length |
| 320.074                  | 1/8"-27NPTF     | 1/8"BSPT        | 30mm           |
| 320.075                  | 1/4"-18NPTF     | 3/8"BSPT        | 30mm           |
| 320.076                  | 1/8"-27NPT      | M12x1.25        | 30mm           |

| Adaptors Brass                        |                 |                 |                |
|---------------------------------------|-----------------|-----------------|----------------|
| Part No.                              | Internal Thread | External Thread | Overall Length |
| 180.059                               | Thermowell      | 1/8"-27NPTF     | 40mm           |
| To suit mechanical temperature gauges |                 |                 |                |

## T-PIECE ADAPTORS, brass

Suits oil line kits and oil pressure sender units with 1/8"-27 NPTF male thread, while at the same time retaining the existing oil warning light switch.

| Adaptors Brass |             |             |             |        |
|----------------|-------------|-------------|-------------|--------|
| Part No.       | Thread A    | Thread B    | Thread C    | Length |
| 230.031        | 1/8"-27NPTF | 1/8"-27NPTF | 1/8"-27NPTF | 66mm   |
| 230.032        | 1/4"-18NPTF | 1/4"-18NPTF | 1/8"-27NPTF | 66mm   |
| 230.033        | M10x1.0     | M10x1.0     | 1/8"-27NPTF | 66mm   |
| 230.035        | M14x1.5     | M14x1.5     | 1/8"-27NPTF | 66mm   |
| 230.036        | 1/8"-28BSPT | 1/8"-28BSPT | 1/8"-27NPTF | 66mm   |



## SPEED SENSORS - HALL EFFECT

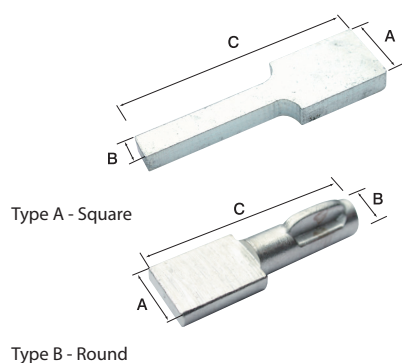
Mechanically driven - Requires male drive pilot or drive key adaptor

| Part No.      | Voltage | Thread     | Pic | Type | Imp/Rev | Plug Kit |
|---------------|---------|------------|-----|------|---------|----------|
| K46004        | 12V     | 7/8"-18UNF | 1   | H/E  | 8       | K72221   |
| K46020        | 12/24V  | M22x1.5    | 1   | H/E  | 8       | K72221   |
| K46021        | 12/24V  | 7/8"-18UNF | 1   | H/E  | 8       | K72221   |
| K70450        | 12V     | M22x1.5    | 2   | H/E  | 8       | K72222   |
| K70451        | 12V     | 7/8"18UNF  | 2   | H/E  | 8       | K72222   |
| 340.808       | 12V     | M22x1.5    | 3   | H/E  | 8       | N/A      |
| 340808001004G |         | 7/8"18UNF  | 4   | Gen  | 4       | N/A      |

## DRIVE KEYS

Drive Keys - To suit mechanically driven hall effect & generator sensors

| Part No. | Dimension A<br>Diam. | Dimension B | Dimension C | Type   |
|----------|----------------------|-------------|-------------|--------|
| K72103   | 2.6 x 8mm            | 2.6mm       | 26mm        | Type A |
| K72113   | 2.6 x 8mm            | 5.2mm       | 26mm        | Type A |
| 230.061  | 3.0 x 8mm            | 3.0mm       | 26mm        | Type B |
| 230.062  | 2.6 x 8mm            | 3.8mm       | 26mm        | Type B |
| 230.063  | 2.6 x 8mm            | 4.7mm       | 26mm        | Type B |
| 230.064  | 2.6 x 8mm            | 5.0mm       | 26mm        | Type B |



## SPEED SENSORS - PROXIMITY

Proximity Senders (Hall Effect) - 4 Blade Bayonet Type

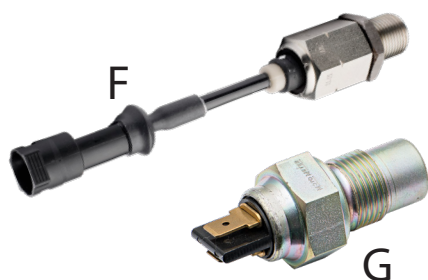
| Part No.     | Imp/Rpm                  | Thread               | Length | Voltage |
|--------------|--------------------------|----------------------|--------|---------|
| K70452       | 2 x 8 (180 out of Phase) | M18x1.5              | 90mm   | 12V     |
| K70453       | 2 x 8 (180 out of Phase) | M18x1.5 (Volvo Type) | 25mm   | 12V     |
| 340216001024 | 2 x 8 (180 out of Phase) | M18x1.5 (Volvo Type) | 63mm   | 12V     |
| 215950003101 | 2 x 8 (180 out of Phase) | M18x1.5              | 20mm   | 12V     |
| 215950004301 | 2 x 8 (180 out of Phase) | M18x1.5              | 25mm   | 12V     |
| 215950004501 | 2 x 8 (180 out of Phase) | M18x1.5              | 35mm   | 12V     |
| 215920102301 | 2 x 8 (180 out of Phase) | M18x1.5              | 25mm   | 12V     |

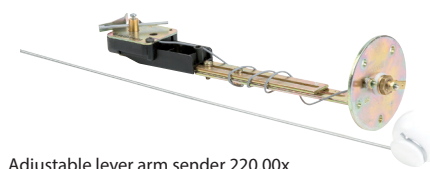


## RPM SENSORS - PROXIMITY

2 Wire Reluctor (Inductive)

| Part No.     | Thread<br>Size | L1<br>mm | L2<br>mm | L3<br>mm   | L4<br>mm | Picture |
|--------------|----------------|----------|----------|------------|----------|---------|
| 340.007      | M18x1.5        |          | 25       |            |          | F       |
| 340.008      | 3/4-16 UNF-2A  |          | 44       |            |          | G       |
| 340.009      | M18x1.5        |          | 84       |            |          | G       |
| 340804007019 | M18x1.5        | 18.2     | 70.7     | 71.8 ± 0.1 | 79.7     | G       |





Adjustable lever arm sender 220.00x


Plastic senders do not include gasket.  
Use 2250234 or 36373/9A

## LEVER ARM LEVEL SENDERS

| Fully adjustable universal |                        | PCD 54mm    |
|----------------------------|------------------------|-------------|
| Part No.                   | Description            | Range E-F   |
| 220.003                    | 150 - 535mm adjustable | 3-180 Ohms  |
| 220.004                    | 150 - 535mm adjustable | 0-90 Ohms   |
| 220.005                    | 150 - 535mm adjustable | 240-33 Ohms |

| Adjustable height, adjustable float - Insulated return |                        | PCD 54mm   |
|--------------------------------------------------------|------------------------|------------|
| Part No.                                               | Description            | Range E-F  |
| 226801015001C                                          | 150 - 600mm adjustable | 3-180 Ohms |

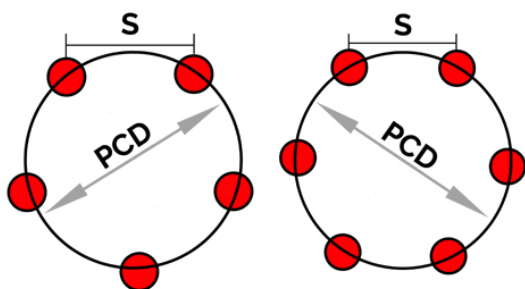
| Fixed height, adjustable float - Insulated return |                                     | PCD 54mm    |
|---------------------------------------------------|-------------------------------------|-------------|
| Part No.                                          | Description                         | Range E-F   |
| A2C59510171                                       | Lever Arm fuel sender               | 3 -180 Ohms |
| A2C59510165                                       | Lever Arm fuel sender w/ low switch | 3 -180 Ohms |

## REED SWITCH LEVEL SENDERS

Vertical arrangement allows use in tanks with limited space ie. baffles or walls. All stainless body offers compatibility with harsh fuels, detergents and water and only one moving part means the sensing element is not exposed, ensuring significantly longer life compared to exposed variable resistor style senders. All reed switch senders include NBR gasket and weatherproof mating connector.

| Reed Switch Senders |             |        | PCD 54mm |
|---------------------|-------------|--------|----------|
| Part No.            | Range E - F | Length | LFW      |
| 220.150-180         | 3-180 Ohms  | 150 mm |          |
| 220.180-180         | 3-180 Ohms  | 180 mm |          |
| 220.230-180         | 3-180 Ohms  | 230 mm | Yes      |
| 220.250-180         | 3-180 Ohms  | 250 mm | Yes      |
| 220.260-180         | 3-180 Ohms  | 260 mm | Yes      |
| 220.270-180         | 3-180 Ohms  | 270 mm | Yes      |
| 220.300-180         | 3-180 Ohms  | 300 mm | Yes      |
| 220.330-180         | 3-180 Ohms  | 330 mm | Yes      |
| 220.350-180         | 3-180 Ohms  | 350 mm | Yes      |
| 220.600-180         | 3-180 Ohms  | 600 mm | Yes      |
| 220.660-180         | 3-180 Ohms  | 660 mm | Yes      |
| 220.900-180         | 3-180 Ohms  | 900 mm | Yes      |

Note: 'LFW' - Low fuel warning - Normally open switch (N/O).

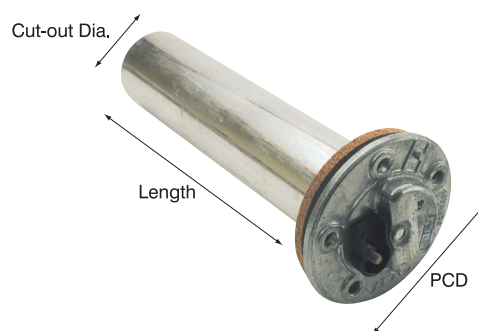


### TIP:

PCD stands for Pitch Circle Diameter. It is the measurement of the circular centre line of all mounting holes. PCD can be estimated by measuring the distance between two adjacent holes (S). For 5 holes, multiply this value by 1.7012. For 6 holes, multiply this value by 2.

## TUBULAR FLOAT LEVEL SENDERS

| Tubular Float - 41mm cut-out dia. |               |                    | PCD 54 mm           |
|-----------------------------------|---------------|--------------------|---------------------|
| Part No.                          | Sender Length | Resistance at Full | Resistance at Empty |
| 224011000015G                     | 150mm         | 4.5                | 69                  |
| 224011000018G                     | 180mm         | 3                  | 64                  |
| 224011000020G                     | 200mm         | 3                  | 68                  |
| 224011000022G                     | 220mm         | 3                  | 80                  |
| 224011000024G                     | 240mm         | 3                  | 65.5                |
| 224011000026G                     | 260mm         | 2.5                | 72                  |
| 224011000028G                     | 280mm         | 2.5                | 75.5                |
| 224011000030G                     | 300mm         | 2.5                | 82.8                |
| 224011000034G                     | 340mm         | 2.5                | 74                  |
| 224011000038G                     | 380mm         | 2.5                | 73                  |
| 224011000040G                     | 400mm         | 2.5                | 74.9                |
| 224011000045G                     | 450mm         | 2.5                | 84.3                |
| 224011000050G                     | 500mm         | 2.5                | 75.4                |
| 224011000055G                     | 550mm         | 2.5                | 77.6                |
| 224011000060G                     | 600mm         | 2.5                | 85.3                |
| 224011000065G                     | 650mm         | 2.5                | 82.2                |
| 224011000070G                     | 700mm         | 2                  | 81.6                |
| 224011000075G                     | 750mm         | 2                  | 82                  |
| 224011000080G                     | 800mm         | 2                  | 68.5                |



## FUEL LEVEL SENDER ACCESSORIES

| Accessories |                                    |      |
|-------------|------------------------------------|------|
| Part No.    | Description                        | PCD  |
| 2250234     | Gasket - cork (suit diesel only)   | 54mm |
| 36373/9A    | Gasket - neoprene rubber           | 54mm |
| 220.777     | Gasket - neoprene rubber           | 68mm |
| 2251016     | Gasket - neoprene rubber           | 80mm |
| N05801432   | Flange mounting kit for soft tanks | 54mm |
| CTA0200KIT  | Tank flange reducer 6-5 Hole       | 68mm |
| CTA0201KIT  | Tank flange reducer 6-5 Hole       | 68mm |
| CTA0202KIT  | Tank flange reducer 6-5 Hole       | 80mm |

Note: CTA020x reducers suit 54mm PCD sender. Includes large gasket and mounting hardware. Sender & sender gasket not included.

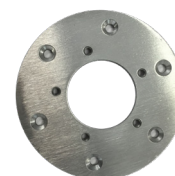
Neoprene Rubber Gasket 36373/9A



Flange Mounting Kit N05801432  
Suits all 54mm PCD senders for installation in plastic/fibreglass tanks.



Tank adapter plate CTA020x  
For installation of new 54mm PCD sender in a 68mm/80mm application.



## NOT SURE?

VDO Gauge Check can be found on page 52. Handy workshop tool used to test gauges and measure variable resistance required for replacement senders. Simply connect to the sender terminals and use the dial to simulate gauge movement. Resistance can then be recorded to help match with the correct replacement sender.



105.001

## VEHICLE SENDERS APPLICATION LISTING

| AUDI  |                              |       |        |            | Oil Light | Temp Sender | Pressure Sender |
|-------|------------------------------|-------|--------|------------|-----------|-------------|-----------------|
| Model | Series                       | Year  | Engine | Capacity   |           |             |                 |
| 80    | CC, 1.8E Quattro, 2.0 & 2.0S | 86-87 | 4 Cyl  | 1.8L, 2.0L |           |             | 360.022         |
| A4    | 4D Hatchback, Turbo          | 95-01 | 4 Cyl  | 1.8L       |           |             | 360.022         |

| CHRYSLER |        |       |              |            | Oil Light | Temp Sender | Pressure Sender |
|----------|--------|-------|--------------|------------|-----------|-------------|-----------------|
| Model    | Series | Year  | Engine       | Capacity   |           |             |                 |
| Valiant  | All    | 62-81 | 6 Cyl, 8 Cyl | All        | 231.083   | 320.002     | 360.001         |
| Charger  | All    | 62-81 | 6 Cyl, 8 Cyl | All        | 231.083   | 320.002     | 360.001         |
| Centura  | KB     | 75-77 | 4 Cyl        | 2.0L       | 230.089   |             |                 |
| Centura  | KB, KC | 75-78 | 6 Cyl        | 3.5L, 4.0L | 231.083   |             |                 |
| Galant   | All    | 71-77 | 4 Cyl        | All        | 231.083   |             |                 |

| DAEWOO  |                    |       |        |            | Oil Light | Temp Gauge | Pressure Gauge |
|---------|--------------------|-------|--------|------------|-----------|------------|----------------|
| Model   | Series             | Year  | Engine | Capacity   |           |            |                |
| Cielo   | 1.5 SOHC           | 94-95 | 4 Cyl  | 1.5L       |           | 320.008    |                |
| Cielo   | 1.5 SOHC, 1.5 DOHC | 95-98 | 4 Cyl  | 1.5L       |           | 320.095    |                |
| Kalos   | 1.5L SOHC          | 03-04 | 4 Cyl  | 1.5L       |           | 320.098    |                |
| Lacetti | All                | 03-04 | 4 Cyl  | 1.8L       |           | 320.095    |                |
| Lanos   | All                | 97-03 | 4 Cyl  | 1.5L, 1.6L |           | 320.095    |                |
| Leganza | All                | 97-02 | 4 Cyl  | 2.0L, 2.2L |           | 320.095    |                |
| Matiz   | All                | 99-04 | 3 Cyl  | 0.8L       |           | 320.095    |                |
| Nubira  | J100               | 97-99 | 4 Cyl  | 1.6L       |           | 320.098    |                |
| Nubira  | J100               | 97-99 | 4 Cyl  | 2.0L       |           | 320.099    |                |
| Nubira  | J150               | 99-03 | 4 Cyl  | 2.0L       |           | 320.095    |                |
| Tacuma  | Wagon              | 00-04 | 4 Cyl  | 2.0L       |           | 320.095    |                |

| DAIHATSU |                     |       |        |          | Oil Light | Temp Sender | Pressure Sender |
|----------|---------------------|-------|--------|----------|-----------|-------------|-----------------|
| Model    | Series              | Year  | Engine | Capacity |           |             |                 |
| Applause | A101                | 89-99 | 4 Cyl  | 1.6L     | 231.084   |             |                 |
| Charade  | G10, G11, G11 Turbo | 80-87 | 3 Cyl  | 1.0L     | 231.084   | 320.068     |                 |
| Charade  | G100, G100 Turbo    | 87-93 | 3 Cyl  | 1.0L     | 231.084   | 320.068     |                 |
| Charade  | G102                | 88-93 | 4 Cyl  | 1.3L     | 231.084   | 320.068     |                 |

| FORD             |                   |       |              |            | Oil Light | Temp Sender | Pressure Sender |
|------------------|-------------------|-------|--------------|------------|-----------|-------------|-----------------|
| Model            | Series            | Year  | Engine       | Capacity   |           |             |                 |
| Capri            | All               | 74-84 | 4 Cyl, 6 Cyl | 1.6L, 3.0L |           | 320.067     |                 |
| Courier          | PC 4WD            | 87-98 | 4 Cyl        | 2.6L       | 231.084   | 320.067     |                 |
| Courier          | PE, PG, PH        | 99-on | 4 Cyl        | 2.6L       | 231.084   | 320.067     |                 |
| Courier          | PH                | 99-on | 4 Cyl        | 2.6L       | 231.084   | 320.067     |                 |
| Econovan         | 1.4L, 1.8L        | 84-97 | 4 Cyl        | 1.4L, 1.8L | 231.084   |             |                 |
| Econovan         | 1.6L              | 84-97 | 4 Cyl        | 1.6L       | 231.084   | 320.068     |                 |
| Econovan         | 1.8L, 2.0L        | 03-06 | 4 Cyl        | 1.8L, 2.0L |           | 320.067     |                 |
| Econovan         | Diesel            | 81-84 | 4 Cyl        | 2.2L       | 231.084   | 320.068     |                 |
| Econovan         | Diesel            | 84-90 | 4 Cyl        | 2.2L       | 231.084   |             |                 |
| Econovan         | Diesel            | 90-97 | 4 Cyl        | 2.2L       | 231.084   | 320.067     |                 |
| F100, F250, F350 | RWD, 4WD          | 70-90 | 6 Cyl        | 4.1L       | 231.106   |             |                 |
| F100             | 4WD EFI, RWD EFI  | 85-87 | 8 Cyl        | 4.9L       | 231.106   |             |                 |
| F150             | 4WD EFI, RWD EFI, | 87-90 | 8 Cyl        | 4.9L       | 231.106   |             |                 |
| F250             | RWD Carb,         | 87-90 | 8 Cyl        | 4.9L       | 231.106   |             |                 |
| F350             | RM RWD EFI        | 01-02 | 8 Cyl        | 5.4L       | 231.106   |             |                 |

## VEHICLE SENDERS APPLICATION LISTING

| FORD (cont.) |                                                                       |       |              |                           | Oil                | Temp    | Pressure |
|--------------|-----------------------------------------------------------------------|-------|--------------|---------------------------|--------------------|---------|----------|
| Model        | Series                                                                | Year  | Engine       | Capacity                  | Light              | Sender  | Sender   |
| Fairlane     | ZA, ZG                                                                | 67-76 | 6 Cyl, 8 Cyl | 4.1L, 4.9L                | 231.081            |         |          |
| Fairlane     | ZJ, ZK, EFI, Carb.                                                    | 79-83 | 6 Cyl, 8 Cyl | 4.1L, 4.9L                | 231.106            |         |          |
| Fairlane     | ZH                                                                    | 76-79 | 8 Cyl        | 4.9L, 5.8L                | 231.081            |         | 360.003  |
| Fairlane     | ZL Leaded                                                             | 84-86 | 6 Cyl        | 4.1L                      | 231.106            |         |          |
| Fairlane     | ZL Unleaded                                                           | 86-88 | 6 Cyl        | 4.1L                      | 231.106            |         |          |
| Fairlane     | NA, NC, NF, NL                                                        | 88-98 | 6 Cyl        | 3.9L, 4.0L                | 231.081            |         |          |
| Fairlane     | NC, NF, NL                                                            | 91-98 | 8 Cyl        | 5.0L                      | 231.106            |         |          |
| Fairlane     | AU, AU II                                                             | 99-02 | 6 Cyl        | 3.9L, 4.0L                | 231.081            |         |          |
| Fairlane     | BA, BF, XR6, XR8, UTE                                                 | 03-07 | 6 Cyl, 8 Cyl | 4.0L, 5.0L                |                    |         | 360.001  |
| Falcon       | XK, XP, XR, XT, XW, XY                                                | 60-72 | 6 Cyl, 8 Cyl | All                       | 231.081            |         |          |
| Falcon       | XL, XM,                                                               | 61-65 | 6 Cyl        | All                       | 231.081            |         |          |
| Falcon       | XT Carb, XW Carb, XW GTHO<br>Phase 1 & 2, XY Carb,<br>XY GTHO Phase 3 | 68-72 | 8 Cyl        | 5.0L, 5.8L,<br>4.9L       | 231.081            |         |          |
| Falcon       | XA, XB, XC, XC Carb                                                   | 72-79 | 6 Cyl, 8 Cyl | All                       | 231.081            |         | 360.003  |
| Falcon       | XD, XE, UTE                                                           | 79-84 |              | 3.3L, 4.1L                | 231.106            |         | 360.013  |
| Falcon       | XF, UTE, EFI Carb                                                     | 84-88 | 6 Cyl        | 4.1L                      | 231.106            |         | 360.013  |
| Falcon       | EA, EA II, EB, ED                                                     | 89-94 | 6 Cyl, 8 Cyl | 3.2L, 3.9L,<br>4.0L, 5.0L | 231.106            |         | 360.013  |
| Falcon       | EF, EFII, EL                                                          | 94-98 | 6 Cyl        | 4.0L                      | 231.106            |         |          |
| Falcon       | EF, EFII, EL                                                          | 94-98 | 8 Cyl        | 5.0L                      | 231.106            |         |          |
| Falcon       | AU, AUII, AUIII, UTE, XR6,<br>XR6 UTE                                 | 98-02 | 6 Cyl,       | 4.0L                      | 231.106            |         |          |
| Falcon       | AU, AUII, AUIII, XR8, UTE,<br>XR8 UTE, AU TE50                        | 98-02 | 8 Cyl        | 5.0L                      | 231.106            |         |          |
| Falcon       | XH Ute / Van                                                          | 96-98 | 6 Cyl, 8 Cyl | 4.0L, 5.0L                | 231.106            |         |          |
| Festiva      | WA                                                                    | 91-93 | 4 Cyl        | 1.3L                      | 231.084            |         |          |
| Festiva      | WA                                                                    | 93-94 | 4 Cyl        | 1.3L                      | 231.084            |         |          |
| Festiva      | WB, WD                                                                | 94-97 | 4 Cyl        | 1.3L                      | 231.102            |         |          |
| Festiva      | WF                                                                    | 94-03 | 4 Cyl        | 1.3L                      | 231.084<br>231.102 |         |          |
| Festiva      | WD, WF                                                                | 97-01 | 4 Cyl        | 1.5L                      | 231.102            |         |          |
| Laser        | KA, KB, KC, KF, TX3, 4WD                                              | 81-91 | 4 Cyl        | 1.6L                      | 231.084            | 320.067 |          |
| Laser        | KC, KH, KJ, TX3                                                       | 91-99 | 4 Cyl        | 1.6L                      | 231.082            |         |          |
| Laser        | KA, KB Incl Turbo                                                     | 81-85 | 4 Cyl        | 1.3L, 1.5L                |                    | 320.067 |          |
| Laser        | KC, KC Carb                                                           | 85-87 | 4 Cyl        | 1.3L                      |                    | 320.067 |          |
| Laser        | KC Carb                                                               | 85-87 | 4 Cyl        | 1.6L                      | 231.084            | 320.067 |          |
| Laser        | KE Carb                                                               | 87-90 | 4 Cyl        | 1.3L                      |                    | 320.067 |          |
| Laser        | KE Carb, EFI                                                          | 87-90 | 4 Cyl        | 1.6L                      | 231.084            |         |          |
| Laser        | KE Carb, EFI                                                          | 89-90 | 4 Cyl        | 1.6L                      | 231.084            | 320.067 |          |
| Laser        | KE EFi Turbo, EFI 16V 4x4 Turbo                                       | 87-90 | 4 Cyl        | 1.6L                      |                    | 320.067 |          |
| Laser        | KE EFi Turbo, EFI 16V 4x4 Turbo                                       | 88-90 | 4 Cyl        | 1.6L                      |                    | 320.067 |          |
| Laser        | KF Carb, EFI, EFI 16V                                                 | 90-91 | 4 Cyl        | 1.6L, 1.8L                |                    | 320.097 |          |
| Laser        | KF EFI Turbo                                                          | 90-91 | 4 Cyl        | 1.8L                      | 231.102            | 320.097 |          |
| Laser        | KH, TX3 EFI                                                           | 91-94 | 4 Cyl        | 1.6L                      |                    | 320.097 |          |
| Laser        | KH TX3 EFI Turbo                                                      | 91-93 | 4 Cyl        | 1.8L                      | 231.084            | 320.097 |          |
| Laser        | KJ EFI                                                                | 94-96 | 4 Cyl        | 1.6L                      |                    | 320.097 |          |
| Laser        | KJ EFI                                                                | 96-98 | 4 Cyl        | 1.6L, 1.8L                |                    |         |          |
| Laser        | KJ EFI                                                                | 94-96 | 4 Cyl        | 1.8L                      |                    | 320.097 |          |
| Laser        | KN                                                                    | 99-01 | 4 Cyl        | 1.6L                      |                    |         |          |

## VEHICLE SENDERS APPLICATION LISTING

| FORD (cont.) |                          |       |              |                  | Oil     | Temp    | Pressure |
|--------------|--------------------------|-------|--------------|------------------|---------|---------|----------|
| Model        | Series                   | Year  | Engine       | Capacity         | Light   | Sender  | Sender   |
| Laser        | KN                       | 99-01 | 4 Cyl        | 1.8L             |         |         |          |
| Laser        | KQ                       | 01-02 | 4 Cyl        | 1.6L, 1.8L, 2.0L |         |         |          |
| LTD          | FD                       | 83-84 | 6 Cyl        | 4.1L             | 231.106 |         |          |
| LTD          | FE                       | 84-88 | 6 Cyl        | 4.1L             | 231.106 |         |          |
| LTD          | DA (MPI)                 | 88-91 | 6 Cyl        | 3.9L             | 231.106 |         |          |
| LTD          | DC                       | 91-94 | 6 Cyl, 8 Cyl | 4.0L, 5.0L       | 231.106 |         |          |
| LTD          | DF                       | 94-96 | 6 Cyl, 8 Cyl | 4.0L, 5.0L       | 231.106 |         |          |
| LTD          | DL                       | 96-98 | 6 Cyl, 8 Cyl | 4.0L, 5.0L       | 231.106 |         |          |
| LTD          | AU, AU II                | 98-02 | 6 Cyl, 8 Cyl | 4.0L, 5.0L       | 231.106 |         |          |
| Maverick     | (Carb)                   | 88-93 | 6 Cyl        | 4.2L             |         |         |          |
| Meteor       | GA, GB, GC               | 82-85 | 4 Cyl        | 1.5L, 1.6L       | 231.084 |         |          |
| Meteor       | GC                       | 85-87 | 4 Cyl        | 1.6L             | 231.084 |         |          |
| Probe        | ST, SU, SV               | 94-98 | V6           | 2.5L             |         |         |          |
| Raider       | UV                       | 91-96 | 4 Cyl        | 2.6L             |         |         |          |
| Telstar      | AR (Carb), AT(Carb)      | 83-89 | 4 Cyl        | 2.0L             | 231.084 | 320.067 |          |
| Telstar      | AS Inc TX5, Turbo        | 85-87 | 4 Cyl        | 2.0L             | 231.084 | 320.067 |          |
| Telstar      | AT EFI Inc TX5, Turbo    | 87-89 | 4 Cyl        | 2.2L             | 231.084 | 320.067 |          |
| Telstar      | AV, AV EFI-Turbo         | 90-92 | 4 Cyl        | 2.2L             |         |         |          |
| Telstar      | AX DOHC, AY DOHC         | 92-96 | 4 Cyl, 6 Cyl | 2.0L, 2.5L       |         |         |          |
| Trader       | 0409, 0509               | 79-89 | 4 Cyl        | 2.0L, 3.0L, 3.5L | 231.084 |         |          |
| Trader       | 0711, 0811 Diesel        | 81-95 | 4 Cyl        | 4.1L             | 231.084 |         |          |
| Trader       | 0811, 0812, Turbo Diesel | 87-92 | 4 Cyl        | 3.5L             | 231.084 |         |          |
| Transit      |                          | 73-81 | 6 Cyl        | 4.1L             | 231.081 |         |          |

| HOLDEN    |                            |       |              |                  | Oil     | Temp    | Pressure |
|-----------|----------------------------|-------|--------------|------------------|---------|---------|----------|
| Model     | Series                     | Year  | Engine       | Capacity         | Light   | Sender  | Sender   |
| Apollo    | JK, JL Carb                | 89-93 | 4 Cyl        | 2.0L             | 231.102 |         |          |
| Apollo    | JK, JL (EFI)               | 89-91 | 4 Cyl        | 2.0L             | 231.102 |         |          |
| Astra     | LB, LC                     | 84-89 | 4 Cyl        | 1.5L, 1.6L       | 231.087 | 320.039 |          |
| Astra     | LD                         | 87-89 | 4 Cyl        | 1.6L             | 231.087 | 320.039 |          |
| Barina    | MB, MF, ML                 | 85-91 | 4 Cyl        | 1.3L             | 231.084 |         |          |
| Barina    | MH                         | 91-94 | 4 Cyl        | 1.3L             | 231.084 |         |          |
| Camira    | JB, JD, JE                 | 82-89 | 4 Cyl        | 1.6L, 1.8L, 2.0L | 231.087 |         |          |
| Commodore | VC, VH                     | 80-81 | 4 Cyl        | 1.9L             | 231.081 |         |          |
| Commodore | VB, VC, VH, VK EFI         | 78-86 | 6 Cyl        | 2.8L, 3.3L       | 231.081 |         | 360.004  |
| Commodore | VB, VC, VH, VK EFI         | 78-86 | 8 Cyl        | 3.3L             | 231.081 |         | 360.004  |
| Commodore | VL, VL Turbo               | 86-88 | 6 Cyl        | 3.0L             |         |         | 360.017  |
| Commodore | VN, VP, VQ, VR             | 88-95 | 6 Cyl, 8 Cyl | 3.8L, 5.0L       | 231.088 |         |          |
| Commodore | VS, VS Supercharged, Ute   | 95-96 | 6 Cyl        | 3.8L,            | 231.088 |         |          |
| Commodore | VS Series II               | 96-98 | 8 Cyl        | 5.0L             | 231.088 |         |          |
| Commodore | VT, VT I Supercharged, GTS | 97-99 | 6 Cyl        | 3.8L,            | 231.088 |         |          |
| Commodore | VT                         | 97-99 | 8 Cyl        | 5.0L             | 231.088 |         |          |
| Commodore | VT II                      | 99-00 | 8 Cyl        | 5.7L             | 231.088 |         |          |
| Commodore | Ute VG, VX, VY, VU         | 97-04 | 6 Cyl, 8 Cyl | 3.8L, 5.0L       | 231.088 |         |          |
| Commodore | VX                         | 00-01 | 6 Cyl        | 3.8L             | 231.088 |         |          |
| Commodore | VX                         | 00-01 | 8 Cyl        | 5.7L             |         |         |          |
| Commodore | VX Series II               | 01-02 | 6 Cyl        | 3.8L             | 231.088 |         |          |
| Commodore | VX Series II               | 01-02 | 8 Cyl        | 5.7L             |         |         |          |
| Commodore | VY                         | 02-03 | 6 Cyl        | 3.8L             | 231.088 |         |          |
| Commodore | VY                         | 02-03 | 8 Cyl        | 5.7L             |         |         |          |
| Commodore | VY Series II               | 03-04 | 6 Cyl        | 3.8L             | 231.088 |         |          |

## VEHICLE SENDERS APPLICATION LISTING

| Holden (cont.) |                             |       |              |                  | Oil     | Temp    | Pressure |
|----------------|-----------------------------|-------|--------------|------------------|---------|---------|----------|
| Model          | Series                      | Year  | Engine       | Capacity         | Light   | Sender  | Sender   |
| Commodore      | VY Series II                | 03-04 | 8 Cyl        | 5.7L             |         |         |          |
| Commodore      | VZ                          | 04-06 | 6 Cyl        | 3.6L             |         |         |          |
| Commodore      | VZ                          | 04-06 | 8 Cyl        | 5.7L,6.0L        |         |         |          |
| Commodore      | VE                          | 06-09 | 6 Cyl        | 3.6L             |         |         |          |
| Commodore      | VE                          | 06-09 | 8 Cyl        | 6.0L             |         |         |          |
| Commodore      | VE Series II                | 09-13 | 6 Cyl        | 6.0L             |         |         |          |
| Gemini         | TX, TC, TE, TF, TG          | 75-85 | 4 Cyl        | 1.6L, 1.8L D     | 231.084 |         |          |
| Gemini         | RB FWD                      | 75-85 | 4 Cyl        | 1.6L, 1.8L D     | 231.084 |         |          |
| Drover         | QB                          | 85-87 | 4 Cyl        | 1.3L             |         | 320.044 |          |
| Holden         | EH, HD, HR, HK, HT          | 53-68 | 6 Cyl        | All              | 231.084 | 320.002 |          |
| Holden         | HK, HT, HG, HQ              | 68-76 | 6 Cyl        | All              | 231.084 | 320.002 | 360.004  |
| Holden         | HJ, HX, HZ, WB              | 76-85 | 8 Cyl        | All              | 231.081 |         | 360.005  |
| Jackaroo       | UBS16, UBS17 Petrol, Diesel | 85-92 | 4 Cyl        | 2.6L             | 231.084 |         |          |
| Jackaroo       | UBS81, UBS521 Turbo Diesel  | 81-88 | 4 Cyl        | 2.2L             | 231.084 |         |          |
| Jackaroo       | UBS55 Turbo Diesel          | 88-92 | 4 Cyl        | 2.8L             | 231.084 |         |          |
| Jackaroo       | UBS69 Turbo Diesel          | 92-98 | 4 Cyl        | 3.1L             | 231.084 |         |          |
| Jackaroo       | UBS73 Turbo Diesel          | 98-04 | 4 Cyl        | 3.0L             | 231.084 |         |          |
| Monaro         | VX, VY, CV6 Supercharged    | 01-04 | 6 Cyl        | 3.8L             | 231.088 |         | 360.004  |
| Monaro         | VY                          | 02-04 | 8 Cyl        | 5.7L             |         |         |          |
| Monaro         | VZ                          | 04-06 | 8 Cyl        | 5.7L             |         |         |          |
| Nova           | LE, LF, EFI                 | 89-94 | 4 Cyl        | 1.4L, 1.6L, 1.8L | 231.084 |         |          |
| Rodeo          | KB25, KB26, KB40, KB41      | 78-82 | 4 Cyl        | 1.4L, 1.6L       | 231.084 |         |          |
| Rodeo          | KB47, KB48, KB49            | 83-84 | 4 Cyl        | 1.8L, 1.9L, 2.3L | 231.084 |         |          |
| Rodeo          | KB43, KB49                  | 85-88 | 4 Cyl        | 2.3L             | 231.084 |         |          |
| Rodeo          | TFR54, TFS54                | 88-93 | 4 Cyl        | 2.5L             | 231.084 |         |          |
| Rodeo          | TFR25                       | 98-98 | 4 Cyl        | 2.3L             | 231.084 |         |          |
| Rodeo          | Diesel                      | 79-82 | 4 Cyl        | 2.0L             | 231.084 |         |          |
| Rodeo          | KBD42, KBD43, KBD47         | 83-88 | 4 Cyl        | 2.0L             | 231.084 | 320.067 |          |
| Rodeo          | KBD27, KBD28                | 83-88 | 4 Cyl        | 2.2L             | 231.084 |         |          |
| Rodeo          | Diesel                      | 91-01 | 4 Cyl        | 2.8L             | 231.084 |         |          |
| Rodeo          | RA03                        | 03-on | 4 Cyl        | 3.0L             | 231.084 |         |          |
| Rodeo          | RA Turbo Diesel             | 03-06 | 4 cyl        | 3.0L             | 231.084 |         |          |
| Rodeo          | RA                          | 03-06 | 6 cyl        | 3.5L             | 231.086 | 320.044 |          |
| Statesman      | VQ                          | 90-94 | 8 Cyl        | 5.0L             | 231.088 |         |          |
| Statesman      | VR                          | 93-95 | 6 Cyl, 8 Cyl | 3.8L, 5.0L, 5.7L | 231.088 |         |          |
| Statesman      | VS                          | 95-96 | 6Cyl, 8Cyl   | 3.8L, 5.0L, 5.7L | 231.088 |         |          |
| Statesman      | WH                          | 99-01 | 6 Cyl        | 3.8L             | 231.088 |         |          |
| Statesman      | WH (inc. Grange)            | 99-01 | 8 Cyl        | 5.7L             |         |         |          |
| Statesman      | WH Series II (inc. Grange)  | 01-03 | 8 Cyl        | 5.7L             |         |         |          |
| Statesman      | WK                          | 03-04 | 6 Cyl        | 3.8L             | 231.088 |         |          |
| Statesman      | WK                          | 03-04 | 8 Cyl        | 5.7L             |         |         |          |
| Statesman      | WL                          | 04-06 | 6 Cyl        | 3.6L             |         |         |          |
| Statesman      | WL                          | 04-06 | 8 Cyl        | 5.7L             |         |         |          |
| Statesman      | WL                          | 04-06 | 8 Cyl        | 6.0L             |         |         |          |
| Statesman      | WM - I + II                 | 06-10 | 6 Cyl        | 3.6L             |         |         |          |
| Statesman      | WM - I + II                 | 06-10 | 8 Cyl        | 6.0L, 6.2L       |         |         |          |
| Sunbird        | LX, UC                      | 76-80 | 4 Cyl        | 1.9L             | 231.081 | 320.004 |          |
| Torana         | LH, LX                      | 74-76 | 4 Cyl        | 1.9L             | 231.087 |         |          |
| Torana         | LC, LH, LJ, LX, UC          | 69-79 | 6 Cyl        | All              | 231.081 |         |          |
| Torana         | LH, LX                      | 69-79 | 8 Cyl        | All              | 231.081 |         | 360.005  |

## VEHICLE SENDERS APPLICATION LISTING

| HONDA | Model    | Series        | Year  | Engine | Capacity   | Oil Light | Temp Sender | Pressure Sender |
|-------|----------|---------------|-------|--------|------------|-----------|-------------|-----------------|
|       | Accord   | SJD, SJFR     | 77-78 | 4 Cyl  | 1.6L       | 231.086   | 320.068     |                 |
|       | Civic    | ED, EE        | 87-91 | 4 Cyl  | 1.5L       | 231.086   | 320.068     |                 |
|       | Civic    | EG, EH        | 91-95 | 4 Cyl  | 1.5L, 1.6L | 231.086   | 320.068     |                 |
|       | Civic    | EK4, VTi R    | 91-95 | 4 Cyl  | 1.5L, 1.6L | 231.086   | 320.068     |                 |
|       | Concerto | MA EX-I       | 88-93 | 4 Cyl  | 1.6L       | 231.086   | 320.068     |                 |
|       | Legend   | KA7, KA8, KA9 | 91-96 | 6 Cyl  | 2.7L, 3.2L | 231.102   | 320.068     |                 |
|       | Legend   | KA9           | 96-05 | 6 Cyl  | 3.5L       | 231.102   |             |                 |
|       | Odyssey  | RA1           | 95-97 | 4 Cyl  | 2.2L       | 231.086   | 320.068     |                 |
|       | Prelude  | BA8, BB2      | 91-96 | 4 Cyl  | 2.2L, 2.3L | 231.086   | 320.068     |                 |

| HYUNDAI | Model          | Series      | Year  | Engine       | Capacity   | Oil Light | Temp Sender | Pressure Sender |
|---------|----------------|-------------|-------|--------------|------------|-----------|-------------|-----------------|
|         | Accent         |             | 00-02 | 4 Cyl        | 1.5L       |           | 320.067     |                 |
|         | Accent         | LC,LS       | 00-06 | 4 Cyl        | 1.6L       |           |             |                 |
|         | Accent         | MC          | 06-09 | 4 Cyl VVT    | 1.6L       |           |             |                 |
|         | Coupe RD, RDII | FX, SX, SFX | 96-02 | 4 Cyl        | 1.8L, 2.0L |           | 320.067     |                 |
|         | Elantra        | XD          | 00-03 | 4 Cyl        | 1.8L, 2.0L |           |             |                 |
|         | Elantra        | XD MY04     | 03-06 | 4 Cyl        | 2.0L       |           |             |                 |
|         | Elantra Elite  | HD          | 06-on | 4 Cyl VVT    | 2.0L       |           |             |                 |
|         | Elantra        | Lavita      | 01-03 | 4 Cyl        | 1.8L       |           |             |                 |
|         | Excel          | X1 (Carb)   | 86-89 | 4 Cyl        | 1.5L       |           | 320.067     |                 |
|         | Excel          | X2,         | 90-94 | 4 Cyl        | 1.5L       |           | 320.067     |                 |
|         | Excel          | X3 SOHC     | 94-98 | 4 Cyl        | 1.5L       |           | 320.067     |                 |
|         | Excel          | X3, DOHC    | 98-00 | 4 Cyl        | 1.4L       |           |             |                 |
|         | Getz           | TB          | 02-05 | 4 Cyl        | 1.5L       |           | 320.067     |                 |
|         | Getz           | TB          | 03-05 | 4 Cyl        | 1.3L       |           |             |                 |
|         | Getz           | TB MY06     | 05-07 | 4 Cyl        | 1.4L       |           |             |                 |
|         | Getz           | TB MY06     | 05-on | 4 Cyl        | 1.6L       |           |             |                 |
|         | Getz           | TB SXi      | 06-on | 4 Cyl        | 1.6L       |           |             |                 |
|         | Lantra         | KF2, KF3    | 91-95 | 4 Cyl        | 1.6L, 1.8L |           | 320.044     |                 |
|         | Lantra         | J2          | 95-98 | 4 Cyl        | 1.8L       |           | 320.044     |                 |
|         | Lantra         | L3          | 99-00 | 4 Cyl        | 1.8L, 2.0L |           | 320.067     |                 |
|         | Santa - Fe     | CM          | 06-09 | 4 Cyl T/D    | 2.2L       |           |             |                 |
|         | S-Coupe        | UE2, UE3    | 90-91 | 4 Cyl        | 1.5L       |           | 320.044     |                 |
|         | S-Coupe        | UE3, UE4    | 92-95 | 4 Cyl        | 1.5L       |           | 320.044     |                 |
|         | S-Coupe        | UE3, UE4    | 92-95 | 4 Cyl        | 1.5L       |           | 320.044     |                 |
|         | Sonata         | AF2, AF3    | 89-92 | 4 Cyl        | 2.4L       |           | 320.067     |                 |
|         | Sonata         | AF2, AF3    | 90-93 | 4 Cyl        | 2.4L       |           | 320.044     |                 |
|         | Sonata         | DF2, DF4    | 93-96 | 4 Cyl        | 2.0L       | 213.137   | 320.044     |                 |
|         | Sonata         | DF3, DF4    | 93-98 | 6 Cyl        | 3.0L       |           | 320.044     |                 |
|         | Sonata         | EF          | 98-00 | 4 Cyl        | 2.0L       |           | 320.067     |                 |
|         | Sonata         | EF          | 98-01 | 6 Cyl        | 2.5L       |           | 320.067     |                 |
|         | Sonata         | EF-B        | 01-05 | 4 Cyl        | 2.4L       |           | 320.044     |                 |
|         | Trajet         | GLS Wagon   | 00-07 | 6 Cyl        | 2.7L       |           |             |                 |
|         | Tucson         | Elite Wagon | 04-on | 4 Cyl, 6 Cyl | 2.0L, 2.7L |           |             |                 |

## VEHICLE SENDERS APPLICATION LISTING

| KIA<br>Model | Series   | Year  | Engine | Capacity  | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|--------------|----------|-------|--------|-----------|--------------|----------------|--------------------|
| Carens       |          | 00-02 | 4 Cyl  | 1.8L DOHC | 231.102      |                |                    |
| Carnival     | UP       | 99-06 | 6 Cyl  | 2.5L      | 231.102      | 320.067        |                    |
| Pregio Van   |          | 02-on | 4 Cyl  | 2.7L      |              | 320.067        |                    |
| Rio          | BC       | 00-on | 4 Cyl  | 1.5L      | 231.102      |                |                    |
| Shuma        | FB       | 99-01 | 4 Cyl  | 1.8L      | 231.102      | 320.067        |                    |
| Spectra      | 5D Hatch | 01-04 | 4 Cyl  | 1.8L      | 231.102      |                |                    |
| Sportage     | JA       | 96-04 | 4 Cyl  | 2.0L      | 231.102      | 320.067        |                    |

| LEXUS<br>Model | Series  | Year  | Engine | Capacity | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|----------------|---------|-------|--------|----------|--------------|----------------|--------------------|
| ES300          | VCV10R  | 92-96 | 6 Cyl  | 3.0L     |              | 320.067        |                    |
| ES300          | MCV20R  | 96-on | 6 Cyl  | 3.0L     |              | 320.088        |                    |
| GS300          | JZS160R | 97-05 | 6 Cyl  | 3.0L     |              |                |                    |

| MAZDA<br>Model | Series                         | Year  | Engine       | Capacity         | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|----------------|--------------------------------|-------|--------------|------------------|--------------|----------------|--------------------|
| 1.2L - 1.8L,   |                                | 68-77 | 4 Cyl        | 1.5L, 1.6L, 1.8L | 231.084      |                |                    |
| B1500, B1600   | Petrol                         | 70-82 | 4 Cyl        | 1.5L, 1.6L, 1.8L | 231.084      |                |                    |
| B1800          | Petrol                         | 70-82 | 4 Cyl        | 1.5L, 1.6L, 1.8L | 231.084      |                |                    |
| B2000          | Petrol                         | 82-88 | 4 Cyl        | 2.0L             | 231.084      |                |                    |
| B2200          | Bravo Incl. MANUAL (Carb)      | 88-93 | 4 Cyl        | 2.2L             | 231.102      |                |                    |
| B2200          | Bravo Incl. AUTO               | 88-91 | 4 Cyl        | 2.2L             | 231.102      |                |                    |
| B2500, B2600   | RWD, 4WD, Diesel, Turbo Diesel | 96-on | 4 Cyl        | 2.5L, 2.6L       | 231.102      |                |                    |
| B2600 EFI      | Bravo, 4WD                     | 90-02 | 4 Cyl        | 2.6L             | 231.084      |                |                    |
| Capella        |                                | 70-78 | 4 Cyl        | 1.6L             | 231.084      |                |                    |
| E1300, E1400   |                                | 78-86 | 4 Cyl        | 1.3L, 1.5L       | 231.084      |                |                    |
| E1600          |                                | 78-86 | 4 Cyl        | 1.6L             | 231.084      |                |                    |
| E2000          |                                | 98-on | 4 Cyl        | 2.0L             | 231.102      |                |                    |
| E2500          |                                | 97-on | 4 Cyl        | 2.5L             | 231.102      |                |                    |
| 121            | CD2                            | 76-79 | 4 Cyl        | 1.8L             | 231.084      | 320.068        |                    |
| 121            | DA                             | 87-90 | 4 Cyl        | 1.3L             | 231.102      | 320.088        |                    |
| 121            | DB1031,                        | 90-97 | 4 Cyl        | 1.3L             | 231.102      | 320.088        |                    |
| 323            | FA, BD, BF, BW, 4WD, Turbo     | 77-89 | 4 Cyl        | 1.3L, 1.5L, 1.6L | 231.102      |                |                    |
| 323            | BG, BJ, Astina, Protege`       | 89-04 | 4 Cyl        | 1.6L, 1.8L       | 231.102      | 320.067        |                    |
| 626            | CB2                            | 78-83 | 4 Cyl        | 2.0L             | 231.084      |                |                    |
| 626            | GC Diesel, GD-Turbo            | 84-91 | 4 Cyl        | 2.0L, 2.2L       | 231.084      |                |                    |
| 626            | GV10-Wagon, GE, GF             | 88-02 | 4 Cyl        | 2.0L, 2.2L       | 231.102      | 320.067        |                    |
| 626            | GE                             | 92-97 | 6 Cyl        | 2.5L             | 231.102      | 320.067        |                    |
| 808            |                                | 72-78 | 4 Cyl        | 1.3L, 1.6L       | 231.084      |                |                    |
| 929            | HBSHE                          | 82-87 | 4 Cyl        | 2.0L             | 231.084      |                |                    |
| 929            | HC10E1, HC10E2                 | 87-91 | 6 Cyl        | 3.0L             | 231.084      |                |                    |
| 929            | HC10E2 - 4WS                   | 90-96 | 6 Cyl        | 3.0L             | 231.102      | 320.067        |                    |
| MPV            | LV                             | 93-94 | 6 Cyl        | 3.0L             | 231.084      | 320.067        |                    |
| MPV            | LV II                          | 94-99 | 6 Cyl        | 3.0L             | 231.084      | 231.067        |                    |
| MX5            | NA (DOHC)                      | 93-98 | 4 Cyl        | 1.8L             | 231.102      | 320.067        |                    |
| MX5            | NB (DOHC), Incl Turbo          | 98-05 | 4 Cyl        | 1.8L             | 231.102      | 320.067        |                    |
| MX6            | GD Turbo, 2WD, 4WD             | 87-97 | 4 Cyl, 6 Cyl | 2.0L, 2.2L, 2.5L | 231.102      | 320.067        |                    |
| MX6            | GE10, GE20, 2WD, 4WD           | 94-97 | 4 Cyl, 6 Cyl | 2.0L, 2.2L, 2.5L | 231.102      | 320.067        |                    |

## VEHICLE SENDERS APPLICATION LISTING

| MAZDA (cont.)  |                       |       |              |            | Oil Light | Temp Sender | Pressure Sender |
|----------------|-----------------------|-------|--------------|------------|-----------|-------------|-----------------|
| Model          | Series                | Year  | Engine       | Capacity   |           |             |                 |
| Premacy        | CP Wagon              | 01-03 | 4 Cyl        | 1.8L       | 231.102   |             |                 |
| R100           |                       | 69-71 | Rotary Eng   |            | 231.084   |             |                 |
| RX2, 3, 4, 5   |                       | 70-79 | Rotary Eng   | 1.1L, 1.3L | 231.084   |             |                 |
| RX7            | SA22 Series 1, 2, 3   | 79-85 | Rotary Eng   | 1.1L       | 231.084   |             |                 |
| RX7            | FC10 IV               | 86-89 | Rotary Eng   | 1.3L       |           | 320.067     |                 |
| T2000          |                       | 81-82 | 4 Cyl        | 2.0L       |           | 320.067     |                 |
| T3500, T4000   | Diesel, Turbo         | 84-00 | 4 Cyl, 6 Cyl | 3.5L, 4.0L | 231.084   | 320.067     |                 |
| T4100          | Diesel                | 84-91 | 4 Cyl        | 4.0L, 4.1L |           | 320.067     |                 |
| T4600          | Diesel                | 92-on | 4 Cyl        | 4.6L       | 231.084   | 320.067     |                 |
| Traveller      | L, LX, LT, 1800, 2000 | 86-88 | 4 Cyl        | 1.8L       |           |             |                 |
| Eunos 30X      | EC DOHC               | 96-97 | 6 Cyl        | 1.8L       | 231.102   | 320.067     |                 |
| Eunos 500      | CA                    | 92-96 | 6 Cyl        | 2.0L       | 231.102   | 320.044     |                 |
| Eunos 500      | CA                    | 96-99 | 6 Cyl        | 2.0L       | 231.102   | 320.067     |                 |
| Eunos 800      | TA                    | 94-96 | 6 Cyl        | 2.5L       |           | 320.038     |                 |
| Eunos 800M     | TA                    | 94-96 | 6 Cyl        | 2.3L       |           | 320.038     |                 |
| Eunos 800M     | TA3, TA5, TB3         | 96-00 | 6 Cyl        | 2.3L       | 231.102   | 320.067     |                 |
| Eunos Millenia |                       | 00-02 | 6 Cyl        | 2.3L       | 231.102   | 320.067     |                 |

| MERCEDES-BENZ              |                     |       |        |                  | Oil Light | Temp Sender | Pressure Sender |
|----------------------------|---------------------|-------|--------|------------------|-----------|-------------|-----------------|
| Model                      | Series              | Year  | Engine | Capacity         |           |             |                 |
| 190                        | E 1.8, E 2.0, E 2.3 | 82-87 | 4 Cyl  | 1.8L, 2.0L, 2.3L | 231.087   | 320.035     |                 |
| 190, 190D                  | E 1.8, E 2.0, E 2.3 | 88-93 | 4 Cyl  | 1.8L, 2.0L, 2.3L | 231.087   | 320.035     |                 |
| 200D, 220D, 240D, 140, 160 | E, CE, TD, TE       | 74-86 | 4 Cyl  | 1.8L, 2.0L, 2.3L | 231.087   | 320.002     |                 |

| MITSUBISHI          |                                  |       |              |                  | Oil Light | Temp Sender | Pressure Sender |
|---------------------|----------------------------------|-------|--------------|------------------|-----------|-------------|-----------------|
| Model               | Series                           | Year  | Engine       | Capacity         |           |             |                 |
| 3000 GT             |                                  | 92-96 | 6 Cyl        | 3.0L             | 231.102   | 320.044     |                 |
| Fuso Canter         | FC212, FC432                     | 81-92 | 4 Cyl        | 2.6L             | 230.089   | 320.067     |                 |
| Challenger          |                                  | 98-on | 6 Cyl        | 3.0L, 3.5L       | 230.089   | 320.067     |                 |
| Colt                | RA, RB, RC                       | 80-84 | 4 Cyl        | 1.4L, 1.5L       | 230.089   |             |                 |
| Colt                | RC, RD, RE                       | 84-90 | 4 Cyl        | 1.4L, 1.5L       | 231.102   |             |                 |
| Galant              | HG                               | 89-90 | 4 Cyl        | 2.0L             | 231.102   | 320.044     |                 |
| L200                | MA, MB, MD 4WD                   | 79-86 | 4 Cyl        | 2.0L, 2.3L       | 230.089   |             |                 |
| L200                | MC, MD                           | 82-86 | 4 Cyl        | 1.6L             | 231.102   |             |                 |
| L300 Express        | SA, SB, SC, SD, SE 4WD           | 80-86 | 4 Cyl        | 1.6L, 1.8L       | 231.102   |             |                 |
| Starwagon           | SJ, 4WD, EFI, Diesel             | 86-94 | 4 Cyl        | 2.0L, 2.4L       | 231.102   |             |                 |
| Starwagon           | SF (EFI), SG (EFI), SH (EFI)     | 86-94 | 4 Cyl        | 2.4L             | 231.102   |             |                 |
| Express / Starwagon | SF, SG, SH, SJ, 4WD, EFI, Diesel | 86-94 | 4 Cyl        | 2.0L, 2.4L       | 231.102   |             |                 |
| Express/ Starwagon  | SJ                               | 94-04 | 4 Cyl        | 2.0L, 2.4L       | 231.102   | 320.044     |                 |
| Express/ Starwagon  | WA, EFI                          | 94-98 | 4 Cyl, 6 Cyl | 2.0L, 2.4L, 3.0L | 231.102   | 320.044     |                 |
| Lancer              | CA, CB, CC                       | 88-96 | 4 Cyl        | 1.5L, 1.6L, 1.8L | 231.102   | 320.044     |                 |
| Lancer              | CC                               | 92-96 | 4 Cyl        | 1.8L             | 231.102   | 320.067     |                 |
| Lancer              | CE, CG                           | 96-04 | 4 Cyl        | 1.5L, 1.6L, 1.8L | 231.102   | 320.067     |                 |
| Magna               | TM, TN, TP, TR                   | 85-94 | 4 Cyl        | 2.6L             | 231.084   | 320.067     |                 |
| Magna               | TM, TN, TP, TR                   | 85-94 | 6 Cyl        | 3.0L             | 231.102   | 320.067     |                 |
| Magna               | TS Carb, TS EFI                  | 94-97 | 4 Cyl        | 2.6L             | 231.084   | 320.044     |                 |

## VEHICLE SENDERS APPLICATION LISTING

| MITSUBISHI (cont.) |                            |       |              |            | Oil     | Temp    | Pressure |
|--------------------|----------------------------|-------|--------------|------------|---------|---------|----------|
| Model              | Series                     | Year  | Engine       | Capacity   | Light   | Sender  | Sender   |
| Magna              | TS, EFI                    | 94-97 | 6 Cyl        | 3.0L       | 231.102 | 320.044 |          |
| Magna              | TE, TF, EFI                | 96-97 | 4 Cyl        | 2.4L       |         | 320.067 |          |
| Magna              | TF, EFI                    | 97-99 | 6 Cyl        | 3.0L       | 231.102 | 320.067 |          |
| Magna              | TH, TJ                     | 99-03 | 6 Cyl        | 3.0L, 3.5L | 231.102 | 320.067 |          |
| Magna              | TL, TW                     | 03-04 | 6 Cyl        | 3.0L       | 231.102 | 320.067 |          |
| Mirage             | CE                         | 96-05 | 4 Cyl        | 1.5L       |         | 320.067 |          |
| Nimbus             | UA, UB                     | 84-87 | 4 Cyl        | 2.0L       | 231.102 | 320.038 |          |
| Nimbus             | UC                         | 87-92 | 4 Cyl        | 2.0L       |         | 320.038 |          |
| Nimbus             | UC                         | 87-92 | 4 Cyl        | 2.0L       | 231.102 | 320.038 |          |
| Nimbus             | UF                         | 92-98 | 4 Cyl        | 2.4L       | 231.102 | 320.038 |          |
| Nimbus             | UG                         | 98-04 | 4 Cyl        | 2.4L       |         | 320.067 |          |
| Outlander          | ZE, LS-XLS                 | 03-04 | 4 Cyl        | 2.4L       |         | 320.067 |          |
| Pajero             | NA, NB, NC, ND             | 83-87 | 4 Cyl        | 2.6L       | 231.102 |         |          |
| Pajero             | ND Auto                    | 86-87 | 4 Cyl        | 2.6L       | 231.102 | 320.038 |          |
| Pajero             | NE, NF, NG                 | 87-91 | 4 Cyl        | 2.6L       | 231.102 | 320.038 |          |
| Pajero             | NK,                        | 96-00 | 6 Cyl        | 3.5L       | 231.102 | 320.067 |          |
| Pajero             | NL                         | 96-00 | 6 Cyl        | 3.0L, 3.5L | 231.102 | 320.067 |          |
| Pajero             | NJ                         | 93-96 | 6 Cyl        | 2.8L       | 231.102 | 320.044 |          |
| Pajero             | NH, Intercooler            | 91-93 | 6 Cyl        | 2.5L       | 231.102 |         |          |
| Pajero iO          | QA                         | 99-03 | 4 Cyl        | 1.8L       | 231.102 |         |          |
| Scorpion           | GE                         | 78-79 | 4 Cyl        | 2.0L       |         |         |          |
| Scorpion           | GJ, GK, GL                 | 80-85 | 4 Cyl        | 2.6L       |         |         |          |
| Sigma              | GE, GH, GJ, GK             | 77-85 | 4 Cyl        | 1.6L, 2.0L | 231.102 |         |          |
| Sigma              | GK, GN                     | 84-87 | 4 Cyl        | 1.6L, 2.0L | 231.102 |         |          |
| Triton             | ME, MF, MG, MH, MJ, Petrol | 86-94 | 4 Cyl        | 2.6L       | 231.102 |         |          |
| Triton             | ME, MF, MG, MH, MJ, Diesel | 86-96 | 4 Cyl, 6 Cyl | 2.5L, 3.0L | 231.102 |         |          |
| Triton             | MH, MJ, 4WD                | 90-96 | 6 Cyl        | 3.0L       | 231.102 | 320.038 |          |
| Triton             | MK, 4WD                    | 96-05 | 6 Cyl        | 3.0L       |         | 320.067 |          |
| Verada             | KR, KS                     | 91-94 | 6 Cyl        | 3.0L       | 231.102 |         |          |
| Verada             | KE, KF, KH, KJ, KL, KW     | 96-05 | 6 Cyl        | 3.0L, 3.5L |         |         |          |

| NISSAN        |                          |       |        |                        | Oil     | Temp    | Pressure |
|---------------|--------------------------|-------|--------|------------------------|---------|---------|----------|
| Model         | Series                   | Year  | Engine | Capacity               | Light   | Sender  | Sender   |
| 120Y          | B210                     | 74-79 | 4 Cyl  | 1.2L                   | 231.086 |         |          |
| 180B, 200B    | 610, 810                 | 72-81 | 4 Cyl  | 1.8L                   | 231.086 |         |          |
| 240, 260, 280 | C, K, Z, ZX              | 70-84 | 6 Cyl  | 2.4L, 2.6L, 2.8L       | 231.086 |         |          |
| 300ZX         | Z31 Turbo                | 84-89 | 6 Cyl  | 3.0L                   | 231.086 |         |          |
| 520, 620, 720 | RWD, FWD, Petrol, Diesel | 71-85 | 4 Cyl  | 1.5L, 1.8L, 2.2L, 2.3L | 231.086 |         |          |
| Bluebird      | Series I, II             | 81-85 | 4 Cyl  | 2.0L                   |         |         |          |
| Gazelle       | S12                      | 84-88 | 4 Cyl  | 2.0L                   | 231.086 |         |          |
| Infinity      | Q45                      | 93-97 | 8 Cyl  | 4.5L                   |         | 320.039 |          |
| Maxima        | J30 SOHC FWD             | 90-92 | 6 Cyl  | 3.0L                   |         |         |          |
| Maxima        | A31 SOHC FWD             | 93-95 | 6 Cyl  | 3.0L                   |         | 320.039 |          |
| Maxima        | A32 DOHC FWD             | 95-99 | 6 Cyl  | 3.0L                   |         | 320.096 |          |
| Maxima        | A33 DOHC FWD             | 99-03 | 6 Cyl  | 3.0L                   |         | 320.096 |          |
| Micra         | K11E                     | 95-97 | 4 Cyl  | 1.3L                   |         |         |          |
| Navara        | 2X4, 4X4, Petrol, Diesel | 86-88 | 4 Cyl  | 2.0L, 2.4L             | 231.086 |         |          |
| Navara        | D21 Diesel DI 4WD, RWD   | 86-98 | 4 Cyl  | 2.5L                   |         | 320.104 |          |
| Navara        | D21 RWD                  | 86-95 | 4 Cyl  | 2.0L                   |         | 320.104 |          |

## VEHICLE SENDERS APPLICATION LISTING

| NISSAN (cont.) |                                    |       |        |            | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|----------------|------------------------------------|-------|--------|------------|--------------|----------------|--------------------|
| Model          | Series                             | Year  | Engine | Capacity   |              |                |                    |
| Navara         | D21 Carb 4WD, RWD                  | 86-92 | 4 Cyl  | 2.4L       |              | 320.039        |                    |
| Navara         | D22 Diesel RWD, 4WD                | 97-99 | 4 Cyl  | 3.2L       |              | 320.096        |                    |
| Navara         | D22 DIESEL RWD                     | 97-99 | 4 Cyl  | 2.7L       |              | 320.096        |                    |
| Navara         | D22 SOHC                           | 97-99 | 4 Cyl  | 2.4L       |              | 320.096        |                    |
| Navara         | D21 SOHC 4WD, RWD EFI              | 92-97 | 4 Cyl  | 2.4L       |              | 320.039        |                    |
| Navara         | D21 Diesel DI 4WD, RWD             | 88-92 | 4 Cyl  | 2.5L       |              | 320.039        |                    |
| Navara         | D21 Diesel DI 4WD, RWD             | 88-97 | 4 Cyl  | 2.7L       |              | 320.039        |                    |
| Navara         | D21 SOHC MPFI                      | 92-97 | 6 Cyl  | 3.0L       |              | 320.039        |                    |
| Navara         | D22 Series II 4WD, RWD             | 99-01 | 4 Cyl  | 2.4L       |              | 320.096        |                    |
| Navara         | D22 Series II Diesel 4WD, RWD      | 99-01 | 4 Cyl  | 3.2L       |              | 320.096        |                    |
| Navara         | D22                                | 99-01 | 6 Cyl  | 3.0L       |              | 320.096        |                    |
| Navara         | D22 Diesel Turbo                   | 01-on | 4 Cyl  | 3.0L       |              | 320.096        |                    |
| Navara         | D22 SOHC                           | 03-06 | 6 Cyl  | 3.3L       |              | 320.096        |                    |
| Nomad          | GC22                               | 97-92 | 4 Cyl  | 2.4L       |              |                |                    |
| NX/NX-R        | B13                                | 91-95 | 4 Cyl  | 2.0L       |              | 320.039        |                    |
| Pathfinder     | Carb                               | 86-92 | 4 Cyl  | 2.4L       |              | 320.039        |                    |
| Pathfinder     | D21 Carb 4WD MPFI                  | 92-95 | 6 Cyl  | 3.0L       |              |                |                    |
| Pathfinder     | R50 Series I                       | 95-98 | 6 Cyl  | 3.3L       |              | 320.096        |                    |
| Pathfinder     | R50 Series II                      | 99-05 | 6 Cyl  | 3.3L       |              | 320.096        |                    |
| Patrol         | G60, MQ                            | 65-87 | 6 Cyl  | 2.8L, 4.0L | 231.086      | 320.039        |                    |
| Patrol         | G60, MQ, Turbo                     | 80-87 | 6 Cyl  | 3.3L       | 231.086      | 320.090        |                    |
| Patrol         | GQ OHV Diesel Series I             | 87-93 | 6 Cyl  | 4.2L       |              |                |                    |
| Patrol         | GQ OHV Diesel, Series I, Series II | 88-97 | 6 Cyl  | 4.2L       |              |                |                    |
| Patrol         | GQ OHC Carb                        | 88-95 | 6 Cyl  | 4.2L       |              |                |                    |
| Patrol         | GQ OHC Carb                        | 92-99 | 6 Cyl  | 4.2L       |              |                |                    |
| Patrol         | GQ Series II OHV EFI               | 92-97 | 6 Cyl  | 4.2L       |              | 320.039        |                    |
| Patrol         | GQ Series II SOHC Carb             | 92-97 | 6 Cyl  | 3.0L       |              |                |                    |
| Patrol         | GQ Series II SOHC Turbo Diesel     | 95-97 | 6 Cyl  | 2.8L       |              | 320.039        |                    |
| Patrol         | GU OHV Diesel                      | 99-00 | 6 Cyl  | 4.2L       |              |                |                    |
| Patrol         | GU SOHC MPFI                       | 97-00 | 6 Cyl  | 4.5L       |              |                |                    |
| Patrol         | GU SOHC Turbo Diesel               | 98-00 | 6 Cyl  | 2.8L       |              | 320.096        |                    |
| Pintara        | R31 Sedan RWD                      | 86-90 | 4 Cyl  | 2.0L       |              | 320.096        |                    |
| Pintara        | U12 Sedan FWD                      | 89-92 | 4 Cyl  | 2.0L       |              | 320.096        |                    |
| Pintara        | U12 SOHC                           | 89-92 | 4 Cyl  | 2.4L       |              |                |                    |
| Prairie        | M10 SOHC Carb                      | 82-86 | 4 Cyl  | 1.5L       | 231.084      | 320.039        |                    |
| Pulsar         | N10                                | 80-81 | 4 Cyl  | 1.4L       | 231.086      |                |                    |
| Pulsar         | N12, EXA - ET                      | 83-87 | 4 Cyl  | 1.5L       | 231.102      |                |                    |
| Silvia         | Imported S12 Turbo                 | 84-88 | 4 Cyl  | 1.8L       |              |                |                    |
| Skyline        | C210                               | 78-81 | 6 Cyl  | 2.4L       | 231.086      |                |                    |
| Stanza         | A10                                | 78-83 | 4 Cyl  | 1.6L       | 231.086      |                |                    |
| Terrano II     | R20, R20 Turbo Diesel              | 97-00 | 4 Cyl  | 2.4L, 2.7L |              |                |                    |
| Urvan          | E20, E23                           | 74-82 | 4 Cyl  | 1.6L, 2.0L | 231.086      |                |                    |
| Urvan          | E24, Diesel                        | 87-92 | 4 Cyl  | 2.7L       | 231.086      |                |                    |
| X Trail        | T30 DOHC                           | 01-03 | 4 Cyl  | 2.5L       |              | 320.096        |                    |

| SUBARU        |        |       |        |            | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|---------------|--------|-------|--------|------------|--------------|----------------|--------------------|
| Model         | Series | Year  | Engine | Capacity   |              |                |                    |
| Brumby        |        | 78-94 | 4 Cyl  | 1.6L, 1.8L | 231.102      | 320.043        |                    |
| DL, GL, Leone |        | 76-95 | 4 Cyl  | 1.6L, 1.8L | 231.102      | 320.043        |                    |
| Fiori         |        | 89-92 | 4 Cyl  |            | 231.102      |                |                    |
| Forester      |        | 97-02 | 4 Cyl  | 2.0L       | 231.102      | 320.067        |                    |

## VEHICLE SENDERS APPLICATION LISTING

| SUBARU (cont.) |             |       |        |                  | Oil Light | Temp Sender | Pressure Sender |
|----------------|-------------|-------|--------|------------------|-----------|-------------|-----------------|
| Model          | Series      | Year  | Engine | Capacity         |           |             |                 |
| Impreza        | LX, GX, AWD | 93-98 | 4 Cyl  | 1.6L, 1.8L       | 231.102   | 320.067     |                 |
| Impreza        | GX, RV, RX  | 00-on | 4 Cyl  | 2.0L             | 231.102   | 320.067     |                 |
| Impreza        | WRX, Turbo  | 94-on | 4 Cyl  | 2.0L             | 231.102   | 320.067     |                 |
| Liberty        | All         | 91-03 | 4 Cyl  | 2.0L, 2.2L, 2.5L | 231.102   | 320.067     |                 |
| Liberty        | BC/BD       | 89-97 | 4 Cyl  | 2.2L             | 231.102   | 320.067     |                 |
| Liberty        | BD/BF Turbo | 92-93 | 4 Cyl  | 2.0L             | 231.102   | 320.067     |                 |
| Liberty        | BD/BG       | 96-00 | 4 Cyl  | 2.5L             | 231.102   | 320.067     |                 |
| Liberty        |             | 98-on | 4 Cyl  | 2.0L             | 231.102   | 320.067     |                 |
| Liberty        |             | 98-on | 4 Cyl  | 2.5L             | 231.102   | 320.067     |                 |
| Outback        |             | 96-00 | 4 Cyl  | 2.5L             | 231.102   | 320.067     |                 |
| Vortex         | XT, Turbo   | 85-89 | 4 Cyl  | 1.8L             | 231.102   | 320.043     |                 |

| SUZUKI |                             |       |              |          | Oil Light | Temp Sender | Pressure Sender |
|--------|-----------------------------|-------|--------------|----------|-----------|-------------|-----------------|
| Model  | Series                      | Year  | Engine       | Capacity |           |             |                 |
| Sierra | SJ413                       | 84-98 | 4 Cyl        | 1.3L     |           | 320.044     |                 |
| Carry  | ST80, ST90                  | 78-85 | 4 Cyl        |          |           | 320.068     |                 |
| Swift  | SOHC, GTi, Carb. & EFI, 4WD | 84-00 | 3 Cyl, 4 Cyl | All      |           | 320.044     |                 |
| Vitara | SOHC, Carb. & EFI           | 88-98 | 4 Cyl        | 1.6L     |           | 320.044     |                 |
| X90    | 4X4 EL                      | 96-98 | 4 Cyl        | 1.6L     |           | 320.067     |                 |

| TOYOTA       |                               |       |        |                  | Oil Light | Temp Sender | Pressure Sender |
|--------------|-------------------------------|-------|--------|------------------|-----------|-------------|-----------------|
| Model        | Series                        | Year  | Engine | Capacity         |           |             |                 |
| 4Runner      | YN60, YN63, YN130             | 84-90 | 4 Cyl  | 2.0L, 2.2L       |           | 320.044     |                 |
| 4Runner      | RN130R                        | 90-96 | 4 Cyl  | 2.4L             |           | 320.044     |                 |
| 4Runner      | LN60, LN61, Diesel            | 84-89 | 4 Cyl  | 2.4L, 2.8L       | 231.084   | 320.044     |                 |
| Camry        | SV11, SV20                    | 83-89 | 4 Cyl  | 1.8L, 2.0L       | 231.102   | 320.044     |                 |
| Camry        | SV21, SV22                    | 87-91 | 4 Cyl  | 2.0L             | 231.102   | 320.067     |                 |
| Camry        | SDV10, SXV10                  | 93-98 | 4 Cyl  | 2.2L             |           |             |                 |
| Camry        | VZV20, VZV21                  | 88-93 | 6 Cyl  | 2.5L             | 231.102   |             |                 |
| Camry Vienta | VZV20, VZV21                  | 88-93 | 6 Cyl  | 2.5L             | 231.102   |             |                 |
| Celica       | RA23, RA28, TA22, TA23        | 71-77 | 4 Cyl  | 1.6L, 2.0L       |           | 320.043     |                 |
| Celica       | RA60R, SA63                   | 81-84 | 4 Cyl  | 2.0L             |           | 320.044     |                 |
| Celica       | ST184R                        | 89-94 | 4 Cyl  | 2.2L             | 231.102   |             |                 |
| Celica       | ST185R                        | 90-92 | 4 Cyl  | 2.0L             | 231.102   | 320.044     |                 |
| Celica       | ST204R, SX, ZR                | 94-99 | 4 Cyl  | 2.2L             |           | 320.088     |                 |
| Celica       | ST205, GT                     | 94-94 | 4 Cyl  | 2.0L             |           |             |                 |
| Corolla      | KE10                          | 66-70 | 4 Cyl  | 1.1L             |           | 320.043     |                 |
| Corolla      | KE20                          | 70-74 | 4 Cyl  | 1.2L             | 231.102   | 320.043     |                 |
| Corolla      | KE30, KE35, KE36, KE50        | 74-78 | 4 Cyl  | 1.2L             | 231.102   | 320.043     |                 |
| Corolla      | KE38, KE55                    | 78-79 | 4 Cyl  | 1.3L             | 231.102   | 320.043     |                 |
| Corolla      | KE38, KE55, KE70R             | 78-85 | 4 Cyl  | 1.3L             | 231.102   | 320.044     |                 |
| Corolla      | AE71, AE80, AE82, DOHC        | 78-89 | 4 Cyl  | 1.3L, 1.6L       | 231.102   |             |                 |
| Corolla      | AE90                          | 89-92 | 4 Cyl  | 1.4L             |           |             |                 |
| Corolla      | AE92, Carb                    | 89-92 | 4 Cyl  | 1.4L             | 231.084   | 320.067     |                 |
| Corolla      | AE92, AE92R, EFI, 4WD         | 89-94 | 4 Cyl  | 1.6L             | 231.084   | 320.067     |                 |
| Corolla      | AE93                          | 92-94 | 4 Cyl  | 1.8L             |           | 320.088     |                 |
| Corolla      | AE95R, 4WD                    | 88-95 | 4 Cyl  | 1.6L             | 231.084   | 320.067     |                 |
| Corolla      | AE101R, AE102R, AE102X, AE112 | 94-01 | 4 Cyl  | 1.8L             |           | 320.088     |                 |
| Corona       | RT40, RT72, RT80, RT81        | 64-74 | 4 Cyl  | 1.5L, 1.6L, 1.9L | 231.084   | 320.043     |                 |
| Corona       | MX10, MX13, MX22, MX23, RT104 | 72-79 | 4 Cyl  | 2.0L, 2.3L, 2.6L | 231.084   | 320.043     |                 |
| Corona       | RT104, RT118, XT130           | 77-83 | 4 Cyl  | 2.0L, 2.3L, 2.6L | 231.084   | 320.043     |                 |

## VEHICLE SENDERS APPLICATION LISTING

| TOYOTA (cont.) |                                    |       |              |                        | Oil     | Temp    | Pressure |
|----------------|------------------------------------|-------|--------------|------------------------|---------|---------|----------|
| Model          | Series                             | Year  | Engine       | Capacity               | Light   | Sender  | Sender   |
| Corona         | RT132                              | 79-82 | 4 Cyl        | 2.0L                   |         | 320.044 |          |
| Corona         | RT133                              | 82-83 | 4 Cyl        | 2.0L                   | 231.102 | 320.044 |          |
| Cressida       | MX73R                              | 84-85 | 6 Cyl        | 2.8L                   | 231.084 | 320.044 |          |
| Cressida       | MX73R-DOHC                         | 85-88 | 6 Cyl        | 2.8L                   | 231.084 | 320.044 |          |
| Cressida       | MX83R                              | 90-93 | 6 Cyl        | 3.0L                   | 231.084 | 320.044 |          |
| Crown          | RS56, MS65, MS83, MS85, MS111      | 68-80 | 4Cyl, 6 Cyl  | 2.0L, 2.8L             |         | 320.043 |          |
| Crown          | MS112                              | 80-83 | 6 Cyl        | 2.8L                   | 231.084 | 320.044 |          |
| Crown          | MS123                              | 83-87 | 6 Cyl        | 2.8L                   | 231.084 | 320.044 |          |
| Crown          | MS125                              | 83-88 | 6 Cyl        | 2.8L                   | 231.084 | 320.044 |          |
| Estima         | TCR10W, TCR11W, TCR20W             | 93-99 | 4 Cyl        | 2.4L                   |         |         |          |
| Hiace          | RH: 10, 11, 15, 16, 20, 30, 32     | 67-85 | 4 Cyl        | 1.5L, 1.6L             |         | 320.043 |          |
| Hiace          | YH: 50, 51, 53, 60, 61, 63, 71, 73 | 83-89 | 4 Cyl        | 1.8L, 2.0L, 2.2L       |         | 320.044 |          |
| Hiace          | RZH103R, RXZH113R, EFI             | 98-05 | 4 Cyl        | 2.4L                   |         |         |          |
| Hiace          | LH: 20, 30, 50, 51, 60, 61, 70, 71 | 81-89 | 4 Cyl Diesel | 2.2L, 2.4L             |         | 320.044 |          |
| Hiace          | LH103R, LH113R, LH125R             | 89-00 | 4 Cyl Diesel | 2.8L                   | 231.084 |         |          |
| Hiace          | LHR172R, LHR184R                   | 99-05 | 4 Cyl Diesel | 3.0L                   | 231.084 |         |          |
| Hilux          | YN: 55, 56, 57, 58, 65, 67         | 83-88 | 4 Cyl        | 1.6L, 1.8L, 2.0L, 2.2L |         | 320.044 |          |
| Hilux          | RN85R, RN90R, RN105R               | 90-92 | 4 Cyl        | 2.4L                   | 231.102 |         |          |
| Hilux          | All 2.2L engines                   | 78-83 | 4 Cyl Diesel | 2.2L                   |         |         |          |
| Hilux          | All 2.4L engines                   | 83-91 | 4 Cyl Diesel | 2.4L                   | 231.084 | 320.044 |          |
| Hilux          | LN86R, LN106R, LN 107R             | 88-97 | 4 Cyl Diesel | 2.8L                   | 231.084 | 320.044 |          |
| Hilux          | LN147R, LN167R, LN172R             | 97-05 | 4 Cyl Diesel | 3.0L                   | 231.084 | 320.044 |          |
| Kluger         | MCU28R                             | 03-on | 6 Cyl        | 3.3L                   |         |         |          |
| Landcruiser    | FJ: 40, 45, 55, FJ60               | 70-75 | 6 Cyl        | 3.9L                   | 231.102 | 320.043 |          |
| Landcruiser    | FJ: 40, 45, 55, FJ60               | 75-84 | 6 Cyl        | 4.2L                   | 231.102 | 320.043 |          |
| Landcruiser    | FJ60 Petrol                        | 80-84 | 6 Cyl        | 4.2L                   | 231.104 |         |          |
| Landcruiser    | HJ60 Diesel                        | 81    | 6 Cyl        | 4.0L                   | 231.104 |         |          |
| Landcruiser    | BJ70 Diesel                        | 84-90 | 6 Cyl        | 3.4L                   | 231.102 |         |          |
| Landcruiser    | FJ62                               | 84-90 | 6 Cyl        | 4.0L                   |         | 320.044 |          |
| Landcruiser    | FJ70,FJ73, FJ80                    | 84-91 | 6 Cyl        | 4.0L                   | 231.084 | 320.044 |          |
| Landcruiser    | FZJ80R                             | 92-98 | 6 Cyl        | 4.5L                   | 231.084 |         |          |
| Landcruiser    | UZJ100R                            | 00-on | 8 Cyl        | 4.7L                   | 231.104 | 320.088 |          |
| Landcruiser    | UZJ100                             | 98-07 |              |                        | 231.084 |         |          |
| Landcruiser    | HZJ75RV                            | 90-91 | 6 Cyl        | 4.2L                   | 231.084 | 320.094 |          |
| Landcruiser    | HZJ78R, HZJ79R                     | 04-on | 6 Cyl        | 4.2L                   | 231.084 | 320.094 |          |
| Landcruiser    | FZJ80, HZJ80, HDJ80                | 95-98 | 6 Cyl        | 4.5L, 4.2L, 4.2LTD     | 231.084 | 320.094 |          |
| Landcruiser    | FZJ105,                            | 98-07 | 6 Cyl        | 4.5L                   | 231.084 | 320.094 |          |
| Landcruiser    | HZJ105 Diesel                      | 98-07 | 6 Cyl        | 4.2L                   | 231.084 | 320.094 |          |
| Landcruiser    | VDJ76R                             | 07-on | 8 Cyl        | 4.5L                   |         | 320.094 |          |
| Landcruiser    | VDJ78R/VDJ79R                      | 07-on | 8 Cyl        | 4.5L                   | 231.104 |         |          |
| Lexen          | All models VN-VS                   | 89-97 | 6 Cyl        | 3.8L                   | 231.088 |         |          |
| Lightace       | KM20, KM36                         | 80-92 | 4 Cyl        | 1.3L, 1.5L             | 231.102 | 320.044 |          |
| Lightace       | YM21, YM30, YM40, YM41             | 84-88 | 4 Cyl        | 1.8L, 2.0L             | 231.102 | 320.044 |          |
| Lightace       | All models with 1C engine          | 83-92 | 4 Cyl Diesel | 1.8L                   | 231.084 | 320.044 |          |
| MR2            | SW20R                              | 90-94 | 4 Cyl        | 2.0L                   | 231.102 | 320.044 |          |
| MR2            | SW20R                              | 95-99 | 4 Cyl        | 2.0L                   | 231.102 |         |          |
| MR2            | ZZW30R                             | 00-on | 4 Cyl        | 2.0L                   | 231.104 |         |          |
| Paseo          | EL44R, EL54R                       | 91-95 | 4 Cyl        | 1.5L                   | 231.104 | 320.067 |          |

## VEHICLE SENDERS APPLICATION LISTING

| TOYOTA (cont.) |                                |       |              |                  | Oil<br>Light | Temp<br>Sender | Pressure<br>Sender |
|----------------|--------------------------------|-------|--------------|------------------|--------------|----------------|--------------------|
| Model          | Series                         | Year  | Engine       | Capacity         |              |                |                    |
| Paseo          | EL44R, EL54R                   | 95-99 | 4 Cyl        | 1.5L             | 231.104      | 320.088        |                    |
| Prado          | RZJ95R, RZJ120R                | 96-04 | 4 Cyl        | 2.7L             | 231.104      | 320.088        |                    |
| Prado          | VZJ95R, GRJ120R                | 99-04 | 6 Cyl        | 3.4L, 4.0L       | 231.104      |                |                    |
| Prado          | KZJ95R, KZJ120R                | 99-04 | 6 Cyl        | 3.4L, 4.0L       | 231.104      | 320.088        |                    |
| Prius          | NHW11R, NHW20R                 | 01-on | 4 Cyl        | 1.5L             | 231.104      |                |                    |
| RAV4           | SX10R, SXA11R                  | 94-00 | 4 Cyl        | 2.0L             | 231.104      |                |                    |
| RAV4           | ACA20R, ACA21R, ACA22R, ACA23R | 94-00 | 4 Cyl        | 2.0L, 2.4L       | 231.104      |                |                    |
| Soarer         | JZZ30, JZZ31                   | 91-00 | 6 Cyl        | 2.5L, 3.0L       | 231.104      |                |                    |
| Soarer         | UZZ30, UZZ31, UZZ32            | 91-00 | 8 Cyl        | 2.5L, 3.0L, 4.0L | 231.104      |                |                    |
| Spacia         | YR22R                          | 93-98 | 4 Cyl        | 2.2L             | 231.104      |                |                    |
| Spacia         | SR40R                          | 98-01 | 4 Cyl        | 2.0L             | 231.104      |                |                    |
| Starlet        | EP91R                          | 96-99 | 4 Cyl        | 1.3L             | 231.104      | 320.067        |                    |
| Tarago         | YR20                           | 83-84 | 4 Cyl        | 1.8L             |              | 320.044        |                    |
| Tarago         | CR21                           | 83-88 | 4 Cyl Diesel | 2.0L             | 231.084      | 320.044        |                    |
| Tarago         | TCR10R, TCR11R                 | 90-00 | 4 Cyl        | 2.4L             | 231.104      |                |                    |
| Tarago         | TCR20R, TCR21R                 | 90-03 | 4 Cyl        | 2.4L             | 231.102      | 320.044        |                    |
| Tarago         | ACR30R                         | 00-on | 4 Cyl        | 2.4L             | 231.104      |                |                    |

## NOT SURE?

VDO Gauge Check can be found on page 52. Handy workshop tool used to test gauges and measure variable resistance required for replacement senders. Simply connect to the sender terminals and use the dial to simulate gauge movement. Resistance can then be recorded to help match with the correct replacement sender.



105.001

## LOW COOLANT ALARM

The Low Coolant Alarm monitors current continuity while the low water level probe is submerged in water. The location of the probe in the radiator or header tank determines the critical water level. Warning occurs within a few seconds of this level being reached. The warning light and buzzer can only be cancelled by switching off the engine and includes a delay to avoid premature triggering.

### Low Water Alarm

| Part No. | Description             | Voltage |
|----------|-------------------------|---------|
| 410.007  | Low Coolant Warning Kit | 12/24V  |

Kit contents - Electronic module, 30mm probe, solder bush, threaded bush, LED warning lamp, buzzer, wiring connector & terminals.

### Accessories

| Part No. | Description       | Specification   |
|----------|-------------------|-----------------|
| 410.006  | Electronic Module | 110 X 67 X 35mm |
| 230.058  | Water level probe | 30mm Long       |
| 230.059  | Water level probe | 90mm Long       |
| 230.016  | Soldering Bush    |                 |
| 230.017  | Threaded Bush     | M14 X1.5 Round. |

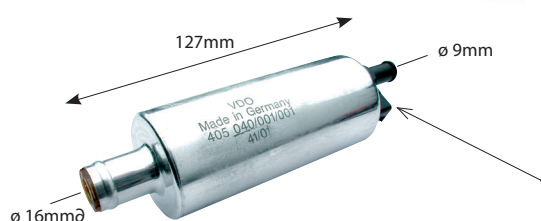




DT2236



105.001



Globe &amp; holder 800005002

## WORKSHOP TOOLS

### Digital Hand Held Tachometers

| Part No. | Description                               |
|----------|-------------------------------------------|
| DT2236   | Digital Hand Held Tachometer (Photo/Mech) |

### Accessories

| Part No.      | Description                         |
|---------------|-------------------------------------|
| DT2234/36TAPE | Spare Reflective tape for phototach |

### Gauge Check

| Part No. | Description                            |
|----------|----------------------------------------|
| 105.001  | Tester for resistive gauges 2-500 ohms |

Used to check functionality and confirm the resistance range of most gauges for more accurate sensor matching.

\*Not suitable for capacitive, bi-metallic or 0-5V systems.

## TYRE PRESSURE GAUGE

For the conscientious driver who likes to retain a consistent Tyre pressure. Supplied in a handy leather pouch. Dual scale bar/psi.

### Tyre Pressure Gauge

| Part No. | Range                  |
|----------|------------------------|
| 150.050  | 0 - 4.5bar (0 - 64psi) |

## OIL PUMP

Electric Oil pump suitable for engine or gear oil.

### Oil pump 12V

| Part No.     | Description         |
|--------------|---------------------|
| 405040001001 | 160 Litres per hour |

Note: 100°C to 150°C working temperature, 4 bar pressure.  
Polarity is written on the socket.

## GLOBES & HOLDERS

### T10 Wedge Globe & Holder to suit most Cockpit Vision & International Gauges

| Part No.  | Description        | Specification |
|-----------|--------------------|---------------|
| 800005002 | 12V Globe & Holder | 12V 3W        |
| 800005003 | 24V Globe & Holder | 24V 3W        |
| 240.052   | Globe Only         | 12V 2W        |
| 240.053   | Globe Only         | 24V 2W        |

Note: 52mm Level, Pressure & Temp gauges use 1x 3W globe

80, 85, 100mm Speedos & Tachos use 2x 2W globes

## GAUGE MOUNTING HARDWARE

Suitable for Vision range of instruments.

### Clamp Rings & Stud Kits

| Part No.    | Description                                                                    |
|-------------|--------------------------------------------------------------------------------|
| 800.005.015 | Spin lock clamp ring for 52mm instruments                                      |
| 800.005.005 | Spin lock clamp ring for 80mm instruments                                      |
| 800.005.006 | Spin lock clamp ring for 85mm instruments                                      |
| 800.005.007 | Spin lock clamp ring for 100mm instruments                                     |
| 600.402     | Stud kit for 52mm electric gauges<br>(not for speedo, tachometer or pyrometer) |



Spin lock clamp 800.005.015



Stud kit 600.402

## GAUGE MOUNTING BRACKETS

Suitable for 52mm instruments.

### Various Mounting Hardware

| Part No. | Description                    |
|----------|--------------------------------|
| 230.001  | 45deg. Single Bracket          |
| 230.005  | 90deg. Single Bracket          |
| 230.006  | 90deg. Double Bracket          |
| 230.007  | 90deg. Triple Bracket          |
| 230.037  | 15deg. Single Spacer           |
| 230.038  | 52mm blanking cap - Plastic    |
| 230.004  | 60-52mm Reduction Ring - Metal |



Bracket 230.001



Single gauge panel 230.005



Angled spacer 230.037



Blank 230.038



Reduction ring 230.004



Twin gauge panel 230.006

## WIRING ACCESSORIES

### Wiring Kits

| Part No. | Description                                                  | Specifications        |
|----------|--------------------------------------------------------------|-----------------------|
| 240.030  | 3 way plug kit<br>Suit electric pressure, temp & volt gauges | Plug + 3<br>terminals |
| 340.824  | 8 way plug kit<br>Suit 80, 85 & 100mm speedos & tachos       | Plug + 8<br>terminals |

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| A2C3833140030             | 4    | X10232001002  | 34     |
| A2C3833150030             | 4    | X10232001003  | 34     |
| A2C3833160030             | 4    | X10232001004  | 34     |
| A2C3833170030             | 4    | X10232001005  | 34     |
| A2C3833190030             | 4    | X10232001006  | 34     |
| A2C3833230030             | 4    | X10232001007  | 34     |
| A2C3833240030             | 4    | X10232001008  | 34     |
| A2C3833271030             | 4    | X10232001009  | 34     |
| A2C3833300030             | 4    |               |        |
| A2C3833304030             | 5    |               |        |

## TEMPERATURE CHARTS

| Range 40 - 120 Deg. C |       | Range 50 - 150 Deg. C |       |
|-----------------------|-------|-----------------------|-------|
| Deg. C                | Ohms  | Deg. C                | Ohms  |
| 20                    | 676.9 | 40                    | 481.5 |
| 30                    | 439   | 60                    | 221.2 |
| 40                    | 291.5 | 75                    | 128   |
| 50                    | 197.3 | 82.5                  | 102   |
| 60                    | 134   | 87.5                  | 89.3  |
| 70                    | 97.1  | 92.5                  | 76.8  |
| 80                    | 70.1  | 97.5                  | 66    |
| 87                    | 54    | 102.5                 | 58    |
| 94                    | 45    | 107.5                 | 50    |
| 100                   | 38.5  | 115                   | 41    |
| 107                   | 32.5  | 125                   | 32.2  |
| 114                   | 28    | 135                   | 26    |
| 120                   | 22.4  | 145                   | 21    |
| 130                   | 17.4  | 160                   | 15.1  |
| 140                   | 13.8  | 180                   | 10.2  |

## PRESSURE CHARTS

| Range 0 - 2 Bar (200 Kpa) |        | Range 0 - 5 Bar (500 Kpa) |        |
|---------------------------|--------|---------------------------|--------|
| Bar                       | Ohms   | Bar                       | Ohms   |
| 0                         | 9.63   | 0                         | 10.65  |
| 0.3                       | 37.45  | 0.75                      | 37.8   |
| 0.5                       | 55.69  | 1.25                      | 55.65  |
| 0.7                       | 73.7   | 1.75                      | 73.3   |
| 0.9                       | 91.4   | 2.25                      | 90.83  |
| 1.05                      | 104.53 | 2.675                     | 105.6  |
| 1.15                      | 113.2  | 2.875                     | 112.44 |
| 1.25                      | 121.8  | 3.125                     | 121    |
| 1.35                      | 130.36 | 3.5                       | 133.77 |
| 1.45                      | 138.85 | 3.75                      | 142.2  |
| 1.55                      | 147.3  | 4                         | 150.62 |
| 1.65                      | 155.6  | 4.25                      | 158.97 |
| 1.75                      | 163.9  | 4.5                       | 167.3  |
| 1.85                      | 172.2  | 4.75                      | 175.55 |
| 2                         | 184.4  | 5                         | 183.77 |

| Range 0 - 10 Bar (1000 Kpa) |        | Range 0 - 25 Bar (2500 Kpa) |        |
|-----------------------------|--------|-----------------------------|--------|
| Bar                         | Ohms   | Bar                         | Ohms   |
| 0                           | 10.241 | 0                           | 9.9    |
| 1.2                         | 35.4   | 3                           | 36.7   |
| 2                           | 51.55  | 5                           | 53.4   |
| 2.8                         | 67.15  | 7                           | 69.21  |
| 3.5                         | 80.37  | 9                           | 84.25  |
| 4.1                         | 91.4   | 10.6                        | 95.75  |
| 4.7                         | 102.1  | 12.2                        | 106.83 |
| 5.3                         | 112.52 | 13.8                        | 117.5  |
| 5.9                         | 122.64 | 15.4                        | 127.82 |
| 6.5                         | 132.47 | 17                          | 137.8  |
| 7.1                         | 142    | 18.6                        | 147.5  |
| 7.7                         | 151.24 | 20.2                        | 156.93 |
| 8.4                         | 161.65 | 21.8                        | 166.14 |
| 9.2                         | 173.04 | 23.4                        | 175.17 |
| 10                          | 183.9  | 25                          | 184.03 |

## CONVERSION TABLES

| Temperature |            |
|-------------|------------|
| Celsius     | Fahrenheit |
| 40          | 104        |
| 50          | 122        |
| 60          | 140        |
| 70          | 158        |
| 80          | 176        |
| 90          | 194        |
| 100         | 212        |
| 110         | 230        |
| 120         | 248        |

| Pressure |      |      |
|----------|------|------|
| Kpa      | PSI  | BAR  |
| 10       | 1.45 | 0.1  |
| 50       | 7.25 | 0.5  |
| 100      | 14.5 | 1    |
| 200      | 29   | 2    |
| 350      | 50.7 | 3.5  |
| 600      | 86.9 | 6    |
| 850      | 123  | 8.5  |
| 1750     | 254  | 17.5 |
| 2500     | 363  | 25   |

| Thread Sizes & Turns Per Inch |         |          |
|-------------------------------|---------|----------|
| Thread                        | Size    | Diameter |
| NPT                           | 1/8"-27 | 10.287mm |
|                               | 1/4"-18 | 13.716mm |
|                               | 3/8"-18 | 17.145mm |
|                               | 1/2"-14 | 21.336mm |
| BSP                           | 1/8"-28 | 9.728mm  |
|                               | 1/4"-19 | 13.157mm |
|                               | 3/8"-19 | 16.662mm |
|                               | 1/2"-14 | 20.995mm |
| SAE(UNF)                      | 5/8"-18 | 15.875mm |

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