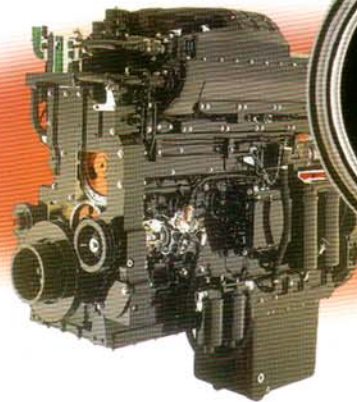


# VDO



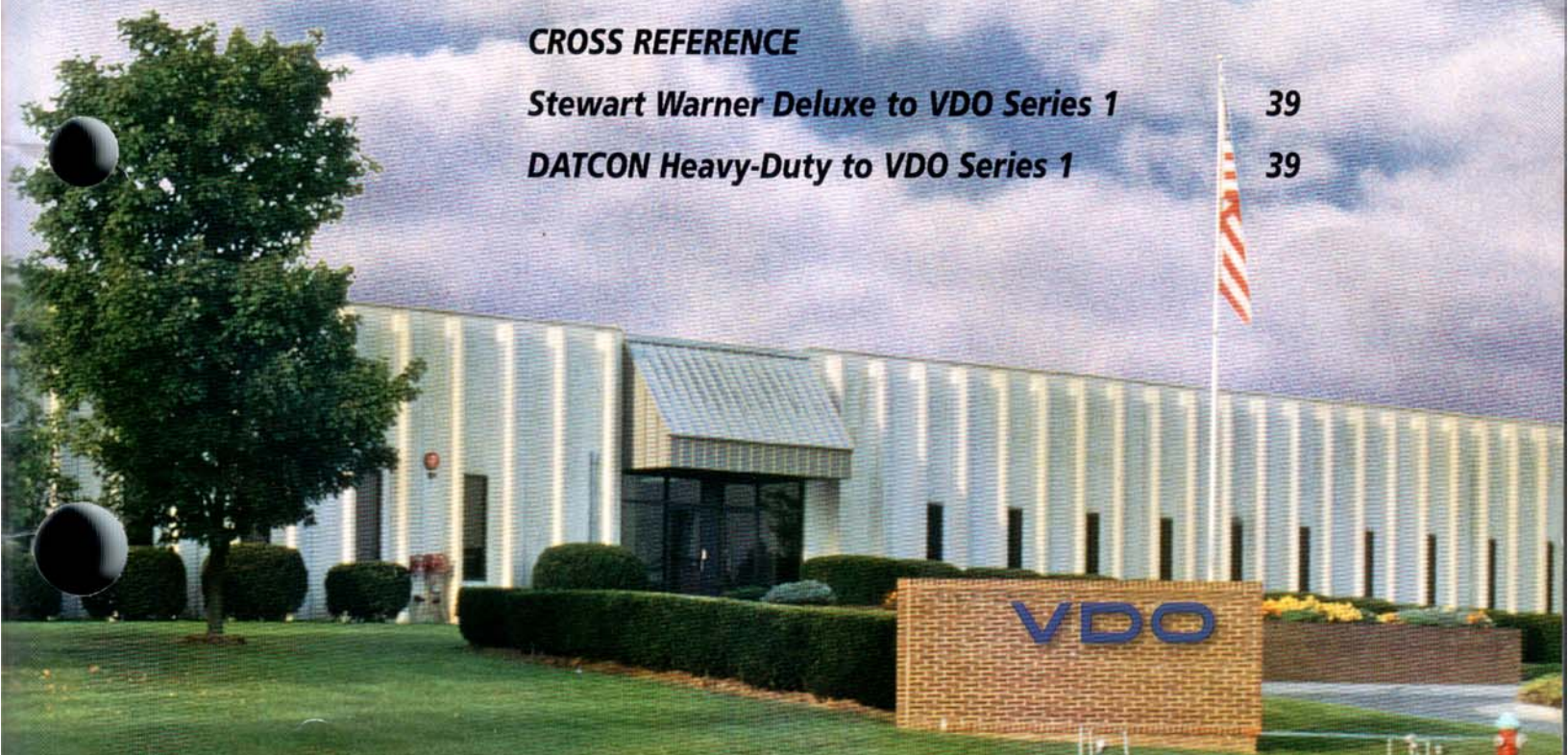
## **HEAVY DUTY INDUSTRIAL INSTRUMENTS**



VDO North America

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# VISION

VDO Vision represents a true technological advancement in instrument illumination. Using Trioptic™ lighting technology, VDO has illuminated the instrument's pointer for an unmatched level of readability.

Nighttime readability is further enhanced by the easy-to-read backlit dial. The newly designed Spin-Lok™ Mounting System uses a spin-on clamp

which makes installation easy and holds the instruments in place with 360° of force, preventing panel warping or gauge rotation. Vision offers you VDO's air core electric movements and stepper motor technology for highly accurate readings.

Optional stud mount kits are available. Vision instruments are available for most U.S. senders.

## SPEEDOMETERS

Vision speedometers feature a unique auto-calibration function, allowing for easy adjustment through the LCD display. Odometer and trip odometer are clearly displayed in the LCD window, and the operator may toggle between these modes with the push of a button. The non-volatile memory chip stores information and settings even without power.

### Programmable, 12/24V, w/ resettable LCD trip odometer.

For use with hall-effect, inductive, OEM electronic output, and generator senders.

Description	Size	Dwg.	Part No.
120 MPH	3 1/8" (80mm) dia.	A	437 151
85 MPH / 130 kmh	3 3/8" (85mm) dia.	A	437 152
120 MPH	3 3/8" (85mm) dia.	A	437 153
130 KMH / 85 mph	3 3/8" (85mm) dia.	A	437 157
85 MPH / 130 kmh	4" (100mm) dia.	A	437 154*
120 MPH	4" (100mm) dia.	A	437 155*
130 KMH / 85 mph	4" (100mm) dia.	A	437 156*

For 24V applications, use bulb number 600 826 (2 per instrument). See sending unit application page 29. \* Inquire for availability.



437 152

## TACHOMETERS

### Programmable, 12/24V, w/ LCD hourmeter.

For use with all current electronic control units (DDEC, etc.), inductive, alternator, standard ignition, electronic ignition, and hall-effect applications. Engine hours are displayed in the LCD window. Non-volatile memory chip stores hours even without power.

Description	Size	Dwg.	Part No.
3,000 RPM	3 3/8" (85mm) dia.	B	333 162
4,000 RPM	3 3/8" (85mm) dia.	B	333 163
6,000 RPM	3 3/8" (85mm) dia.	B	333 164
3,000 RPM	4" (100mm) dia.	B	333 165*
7,000 RPM	4" (100mm) dia.	B	333 166*

For 24 volt applications use bulb number 600 826 (2 per instrument).



333 163

### Programmable, 12V, 4 | 6 | 8 cylinder, w/o hourmeter.

For use with alternator, ignition, and 12V square wave applications.

Description	Size	Dwg.	Part No.
4,000 RPM	2 1/16" (52mm) dia.	D	333 156
6,000 RPM	2 1/16" (52mm) dia.	D	333 158
8,000 RPM	2 1/16" (52mm) dia.	D	333 159
7,000 RPM	3 1/8" (80mm) dia.	C	333 151
3,000 RPM	3 3/8" (85mm) dia.	C	333 152
4,000 RPM	3 3/8" (85mm) dia.	C	333 153
6,000 RPM	3 3/8" (85mm) dia.	C	333 154
7,000 RPM	3 3/8" (85mm) dia.	C	333 155
3,000 RPM	4" (100mm) dia.	C	333 161*
4,000 RPM	4" (100mm) dia.	C	333 173*
8,000 RPM	4" (100mm) dia.	C	333 160*

For 24V applications, use resistor #391 101 and bulb #600 826 (2 per instrument).



333 152

**TEMPERATURE GAUGES**

**Electrical, 2 1/16" (52mm) dia., 12V**

Description	On Dial	Dwg	Part No.
240°F U.S. Ω range	"Water"	E	310 108
250°F VDO Ω range	"Water"	E	310 105
280°F U.S. Ω range	"Water"	E	310 109
300°F VDO Ω range	"Oil"	E	310 106
320°F U.S. Ω range	"Oil"	E	310 110
400°F VDO Ω range	"Trans"	E	310 107

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 25.

**Mechanical, 110°F – 265°F, 2 1/16" (52mm) dia., on dial: "Water"**

Description	Dwg	Part No.
72" capillary tubing	H	180 101
96" capillary tubing	H	180 102

**Mechanical, 120°F – 340°F, 2 1/16" (52mm) dia., on dial: "Oil"**

Description	Dwg	Part No.
72" capillary tubing	H	180 105
96" capillary tubing	H	180 106

**Mechanical, 40°C – 130°C, 2 1/16" (52mm) dia., on dial: "Water"**

Description	Dwg	Part No.
72" capillary tubing	H	180 121
96" capillary tubing	H	180 122

For 24V applications, use bulb #600 826.

**Adapters**

Description	Dwg	Part No.
1/2-14 NPT	-	180 066
3/8-18 NPT	-	180 067

**OUTSIDE TEMPERATURE GAUGE**

**Electrical, 2 1/16" (52mm) dia., 12V**

Description	Dwg	Part No.
Complete kit, Fahrenheit (-10°F – 120°F)	N	397 154
Gauge only, Fahrenheit	N	397 153
Complete kit, Celsius (-20°C – 40°C)	N	397 152
Gauge only, Celsius	N	397 151

For 24V applications, use resistor #391 101 and bulb #600 829.

**PYROMETER**

**Electrical, 2 1/16" (52mm) dia., 250°F – 1650°F**

Description	Dwg	Part No.
12' Kit	O	310 153
Gauge only	O	310 151
30' extension	-	240 092

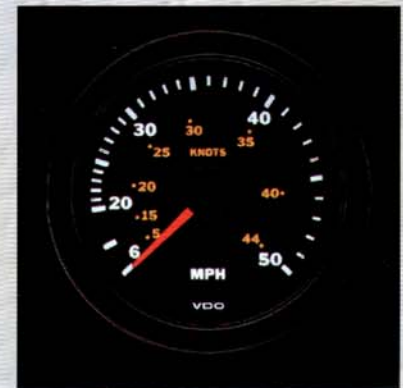
For 24V applications, use resistor #391 101 and bulb #600 829.



310 106



310 151



*Trioptic™ technology for superior illumination.*



*VDO's Spin-Lok™ mounting system secures the instrument with 360° of force.*

**PRESSURE GAUGES**

**Electrical, 2 1/16" (52mm) dia., on dial: "Oil"**

Description	Dwg	Part No.
80 PSI 10 – 180 Ω (VDO)	E	350 104
80 PSI 240 – 33 Ω (U.S.)	E	350 105
100 PSI 10 – 180 Ω (VDO)	E	350 106
100 PSI 240 – 33 Ω (U.S.)	E	350 107
150 PSI 10 – 180 Ω (VDO)	E	350 108
150 PSI 240 – 33 Ω (U.S.)	E	350 109



350 104

**Electrical, 2 1/16" (52mm) dia., on dial: "Trans"**

Description	Dwg	Part No.
400 PSI 10 – 180 Ω (VDO)	E	350 110

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 26.

**Mechanical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
15 PSI	"Boost"	I	150 101
30 PSI	"PSI"	I	150 102
30 PSI	"Boost"	I	150 103
30 PSI	"Oil"	I	150 104
100 PSI	"Oil"	I	150 107
150 PSI	"Front"	I	150 105
150 PSI	"Rear"	I	150 106
150 PSI	"Oil"	I	150 111
150 PSI	"Air"	I	150 112

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.



301 104

**FUEL GAUGE, Electrical, 2 1/16" (52mm) dia, on dial: "Fuel"**

Description	Dwg	Part No.
For VDO sender, 10 – 180 Ω	E	301 104
For US sender, 240 – 33 Ω	E	301 105
For GM sender, 0 – 90 Ω	E	301 106
Adjustable, for tube type sender only	E	301 107

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 28.



150 111

**TURBO GAUGE, Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
0 – 30 in. hg. to 0 – 25 PSI	"TURBO"	I	150 121

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.

**VACUUM GAUGE, Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
0 – 30 in. hg.	"VACUUM"	I	150 131

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.



150 121

**VOLTMETER, 2 1/16" (52mm) dia., 12V only**

Description	On Dial	Dwg	Part No.
8 - 16V	"Volt"	E	332 103



332 103

**AMMETER (Non-Shunted)**

*Electrical, 2 1/16" (52mm) dia., on dial: "Amp"*

Description	Dwg	Part No.
30 Amp	L	190 103
60 Amp	L	190 104
100 Amp	L	190 105

*For 24V applications, use bulb #600 826.*

**AMMETER (Shunted)**

*Electrical, 2 1/16" (52mm) dia., on dial: "Amp"*

Description	Dwg	Part No.
150 Amp, complete kit	M	190 153
250 Amp, complete kit	M	190 154

**Accessories**

150 Amp, gauge only	M	190 151
250 Amp, gauge only	M	190 152
150 Amp, shunt only	-	391 007
250 Amp, shunt only	-	391 008

*For 24V applications, use resistor #391 101 and bulb #600 829.*



190 104

**CLOCK**

*Electrical, 2 1/16" (52mm) dia.*

Description	Dwg	Part No.
Quartz movement with sweep second hand	J	370 152

*For 24V applications, use bulb #600 829.*



190 152

**HOURMETER**

*Electrical, 2 1/16" (52mm) dia., quartz, 12/24V*

Description	On Dial	Dwg	Part No.
Illuminated		J	331 151
Non-illuminated	"Pump"	J	331 153
Non-illuminated	"Aerial"	J	331 154

*For 24V applications, use bulb #600 829.*

*See Page 24 for a complete hourmeter listing.*



370 152



*Photo courtesy Pierce Manufacturing Inc.*

# COCKPIT INTERNATIONAL

VDO Cockpit International instruments feature standard and metric scales with international symbols to accommodate applications around the world. The bezels are black-plated brass, and all housings are constructed of zinc-plated steel and have stud-type mounting connections except

where noted in the technical specification and dimensions section at the back of this catalog. These rugged and reliable instruments utilize edge-lit lighting and feature white easy-to-read numerals and red pointers on black dials.

## SPEEDOMETERS

Cockpit International speedometers feature a unique auto-calibration function, allowing for easy adjustment through the LCD display. Odometer and trip odometer are clearly displayed in the LCD window, and the operator may toggle between these modes with the push of a button. The non-volatile memory chip stores information and settings even without power.

**Programmable, 12/24V, w/ resettable LCD trip odometer.**

For use with hall-effect, inductive, OEM electronic output, and generator senders.



437 950

Description	Size	Dwg	Part No.
45 MPH / 75 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 950
85 MPH / 130 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 952
130 KMH / 85 mph	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 956
120 MPH / 200 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 954
85 MPH / 130 kmh	4" (100mm) dia.	A	437 951*
130 KMH / 85 mph	4" (100mm) dia.	A	437 953*

For 24V applications, use bulb number 600 826 (2 per instrument).

See sending unit application page 29.

\*Inquire for availability.

## TACHOMETERS

**Programmable, 12/24V, w/ LCD hourmeter.\***

For use with all current electronic control unit (DDEC, etc.), inductive, alternator, standard ignition, electronic ignition, and hall-effect applications. Engine hours are displayed in the LCD window. Non-volatile memory chip stores hours even without power.



333 963

Description	Size	Dwg	Part No.
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	B	333 962
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	B	333 963
3,000 RPM	4" (100mm) dia.	B	333 960*
4,000 RPM	4" (100mm) dia.	B	333 961*

For 24 volt applications, use bulb number 600 826 (2 per instrument).

**Programmable, 12V, 4 | 6 | 8 cylinder, w/o hourmeter.**

For use with alternator, ignition, and 12V square wave applications.



333 952

Description	Size	Dwg	Part No.
4,000 RPM	2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	D	333 965
6,000 RPM	2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	D	333 958
8,000 RPM	2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	D	333 959
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 952
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 953
6,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 954
3,000 RPM	4" (100mm) dia.	C	333 966*
4,000 RPM	4" (100mm) dia.	C	333 967*

For 24V applications, use resistor number 391 101 and bulb #600 826 (2 per instrument).

See sending unit application page 29.

\*Inquire for availability.

**TEMPERATURE GAUGES**

**Electrical, 12V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
240°F / 110°C U.S. Ω range	G	310 907
250°F / 120°C VDO Ω range	G	310 909
280°F / 140°C U.S. Ω range	G	310 911
300°F / 150°C VDO Ω range	G	310 915
320°F / 160°C U.S. Ω range	G	310 917
400°F / 200°C VDO Ω range	G	310 919

See sending unit application page 25.



310 909

**Electrical, 24V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
240°F / 110°C U.S. Ω range	G	310 908
250°F / 120°C VDO Ω range	G	310 910
280°F / 140°C U.S. Ω range	G	310 912
300°F / 150°C VDO Ω range	G	310 916
320°F / 160°C U.S. Ω range	G	310 918
400°F / 200°C VDO Ω range	G	310 920

See sending unit application page 25.



310 915

**Mechanical, 110°F – 265°F / 40°C – 130°C, 2 1/16" (52mm) dia., 12V illumination w/ISO symbol**

Description	Dwg	Part No.
72" capillary tubing	H	180 901
96" capillary tubing	H	180 902
144" capillary tubing	H	180 903
180" capillary tubing	H	180 907

For 24V applications, use bulb number 600 826.

**Mechanical, 120°F – 340°F / 50°C – 170°C, 2 1/16" (52mm) dia., 12V illumination w/ISO symbol**

Description	Dwg	Part No.
72" capillary tubing	H	180 911
96" capillary tubing	H	180 912
144" capillary tubing	H	180 913
180" capillary tubing	H	180 917

For 24V applications, use bulb number 600 826.



180 901

**OUTSIDE TEMPERATURE GAUGE**

Description	Dwg	Part No.
Complete kit, Fahrenheit (-10°F – 120°F)	N	397 954
Gauge only, Fahrenheit	N	397 953
Complete kit, Celsius (-20°C – 40°C)	N	397 952
Gauge only, Celsius	N	397 951

For 24V applications, use resistor #391 101 and bulb #600 829.

**PYROMETER**

**Complete kit, 250° – 1650°F, 2 1/16" (52mm) dia.**

Description	Dwg	Part No.
12' kit	O	310 953
Gauge only	O	310 951
30' extension	-	240 092

For 24V applications, use resistor #391 101 and bulb #600 829.



310 951



**PRESSURE GAUGES**

**Electrical, 12V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
80 PSI / 5 bar	10 - 180 Ω (VDO)	G 350 901
80 PSI / 5 bar	240 - 33 Ω (U.S.)	G 350 903
100 PSI / 7 bar	10 - 180 Ω (VDO)	G 350 905
100 PSI / 7 bar	240 - 33 Ω (U.S.)	G 350 907
150 PSI / 10 bar	10 - 180 Ω (VDO)	G 350 909
150 PSI / 10 bar	240 - 33 Ω (U.S.)	G 350 911

See sending unit application page 26.



350 901

**Electrical, 12V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
400 PSI	10-180 Ω (VDO)	G 350 913

See sending unit application page 26.

**Electrical, 24V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
80 PSI / 5 bar	10 - 180 Ω (VDO)	G 350 902
80 PSI / 5 bar	240 - 33 Ω (U.S.)	G 350 904
100 PSI / 7 bar	10 - 180 Ω (VDO)	G 350 906
100 PSI / 7 bar	240 - 33 Ω (U.S.)	G 350 908
150 PSI / 10 bar	10 - 180 Ω (VDO)	G 350 910
150 PSI / 10 bar	240 - 33 Ω (U.S.)	G 350 912

See sending unit application page 26.



350 909

**Electrical, 24V, 2 1/16" (52mm) dia. w/ISO symbol**

Description	Dwg	Part No.
400 PSI / 25 bar	10 - 180 Ω (VDO)	G 350 914

See sending unit application page 26.

**Mechanical, 2 1/16" (52mm) dia., 12V illumination w/ISO symbol**

Description	On Dial	Dwg	Part No.
15 PSI / 1 bar	"Boost"	I	150 901
30 PSI / 2 bar	"Boost"	I	150 902
100 PSI / 7 bar	Oil symbol	I	150 903
150 PSI / 10 bar	Oil symbol	I	150 904
150 PSI / 10 bar	Brake symbol	I	150 905
400 PSI / 25 bar	Oil symbol	I	150 906

For 24V applications, use bulb #600 826.

Tubing kit not included, see page 31.



150 904

**VACUUM**

**2 1/16" (52mm) dia., w/ISO symbol**

Description	On Dial	Dwg	Part No.
30" Hg. / 1 bar	"Vacuum"	I	150 931

For 24V applications, use bulb #600 826.

Tubing kit not included, see page 31.

**TURBO 2 1/16" (52mm) dia., w/ISO symbol**

Description	Dwg	Part No.
30" Hg. / 20 PSI	I	150 921

For 24V applications, use bulb #600 826.

Tubing kit not included, see page 31.



150 921

**FUEL LEVEL GAUGES**

**Electrical, 12V, 2 1/16" (52mm) dia. w/ ISO symbol**

Description	Dwg	Part No.
For VDO sender, 10 – 180 Ω	G	301 901
For U.S. sender, 240 – 33 Ω	G	301 903
Adjustable, for tube type sender only See sending unit application page 28.	G	301 905



301 901

**Electrical, 24V, 2 1/16" (52mm) dia. w/ ISO symbol**

Description	Dwg	Part No.
For VDO sender, 10 – 180 Ω	G	301 902
For U.S. sender, 240 – 33 Ω	G	301 904
Adjustable, for tube type sender only See sending unit application page 28.	G	301 906

**VOLTMETERS**

**Electrical, 2 1/16" (52mm) dia., w/ ISO symbol**

Description	Dwg	Part No.
12V, 8 – 15V	G	332 901
24V, 18 – 32V	G	332 902



332 901

**AMMETERS (Non-shunted)**

**2 1/16" (52mm) dia., On dial: "Amp"**

Description	Dwg	Part No.
30 Amp	L	190 903
60 Amp	L	190 904
100 Amp	L	190 905

For 24V applications, use bulb #600 826.

**AMMETER (Shunted)**

**2 1/16" (52mm) dia., Complete kit with shunt, on dial: "Amp"**

Description	Dwg	Part No.
150 Amp kit	M	190 964
250 Amp kit	M	190 965
300 Amp kit	M	190 966

For 24V applications, use resistor #391 101 and bulb #600 829.



190 904

**Accessories**

Description	Dwg	Part No.
150 Amp, gauge only	M	190 961
250 Amp, gauge only	M	190 962
300 Amp, gauge only	M	190 963
150 Amp, shunt only	-	391 007
250 Amp, shunt only	-	391 008
300 Amp, shunt only	-	391 009

**CLOCK, 12/24V**

**2 1/16" (52mm) dia.**

Description	Dwg	Part No.
Quartz movement, 9 – 28 volt For 24V applications, use bulb #600 829.	J	370 951



331 951

**HOURLMETER, 12/24V**

Description	Dwg	Part No.
Electrical, 2 1/16" (52mm) dia., 9 – 28V For 24V applications, use bulb #600 829.	J	331 951

# SERIES 1

VDO Series 1 instruments feature standard scales with step-type, chrome-plated brass bezels. Series 1 instruments utilize edge-lit dials and feature easy-to-read white numerals and pointers on black faces. All housings are constructed of

zinc-plated steel and have U-bracket mounting and stud-type connections except where noted in the technical specifications and dimensions section of this catalog.

See page 24 for a complete hourmeter listing.

## SPEEDOMETERS

Series 1 speedometers feature a unique auto-calibration function, allowing for easy adjustment through the LCD display. Odometer and trip odometer readings are clearly displayed in the LCD window, and the operator may toggle between these modes with the push of a button. The non-volatile memory chip stores information and settings even without power.

**Programmable, 12/24V, with resettable LCD trip odometer.**  
For use with hall-effect, inductive, OEM electronic output, and generator senders.

Description	Size	Dwg.	Part No.
85 MPH / 130 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 352
120 MPH	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 353

For 24V applications, use bulb #600 826 (2 per instrument).  
See sending unit application page 29.

**Mechanical, 12V illumination w/o trip odometer,**  
**5/8-18 thread, 1.0 ratio**

Description	Size	Dwg.	Part No.
120 MPH / 200 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	120 302
85 MPH / 130 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	120 304
130 KMH / 85 mph	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	120 305



437 352

## TACHOMETERS

**Programmable, 12/24V, with LCD hourmeter.**  
For use with all current electronic control unit (DDEC, etc.), inductive, alternator, standard ignition, electronic ignition, and hall-effect applications. Engine hours are displayed in the LCD window. Non-volatile memory chip stores hours even without power.

Description	Size	Dwg.	Part No.
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	B	333 362
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	B	333 363

For 24V applications, use bulb #600 826 (2 per instrument).

**Programmable, 12V, 4 / 6 / 8 cylinder, without hourmeter.**  
For use with alternator, ignition, and 12V square wave applications.

Description	Size	Dwg.	Part No.
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 352
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 353
6,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 354
7,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 355
10,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	C	333 302*

For 24V applications, use resistor #391 101 and bulb #600 826.  
See sending unit application page 29.

\* Ignition use only.



333 352

**TEMPERATURE GAUGES**

**Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
240°F U.S. Ω range		G	310 320
250°F VDO Ω range		G	310 317
250°F VDO Ω range	"Water"	G	310 304
280°F U.S. Ω range		G	310 321
300°F VDO Ω range	"Oil"	G	310 312
300°F VDO Ω range	"Fwd Axle"	G	310 318
300°F VDO Ω range	"Rear"	G	310 319
300°F VDO Ω range	"Trans Temp"	G	310 305
320°F U.S. Ω range		G	310 322
400°F VDO Ω range	"Transmission"	G	310 303
120°C VDO Ω range		G	310 380
150°C VDO Ω range		G	310 381
200°C VDO Ω range	"Fwd"	G	310 383

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 25.



310 304

**Mechanical, 110° - 265°F, 2 1/16" (52mm) dia., 1/2" adapter included, on dial: "Water"**

Description	Dwg	Part No.
48" capillary tubing	I	180 310
60" capillary tubing	I	180 311
72" capillary tubing	I	180 301
96" capillary tubing	I	180 304
120" capillary tubing	I	180 312
144" capillary tubing	I	180 302
180" capillary tubing	I	180 303
216" capillary tubing	I	180 313
288" capillary tubing	I	180 308
360" capillary tubing	I	180 309
600" capillary tubing	I	180 307



310 312

**Mechanical, water temperature, 50° - 130°C, 2 1/16" (52mm) dia., 1/2" adapter included, On dial: "Water"**

Description	Dwg	Part No.
72" capillary tubing	I	180 380
96" capillary tubing	I	180 381



180 301

**Mechanical, oil temperature, 120°F - 340°F, 2 1/16" (52mm) dia., 1/2" adapter included, on dial: "Oil"**

Description	Dwg	Part No.
72" capillary tubing	I	180 315
96" capillary tubing	I	180 316
144" capillary tubing	I	180 317

For 24V applications, use bulb #600 826.

**Adapters**

Description	Part No.
1/2-14 NPT	180 066
3/8-18 NPT	180 067

**Cylinder Head Temperature**

Description	Dwg	Part No.
600°F, complete kit	P	310 913
600°F, gauge only	P	310 302
300°C, complete kit	P	310 981
300°C, gauge only	P	310 382
14 mm dia. thermal sender (included in kit)	-	323 701
12 mm dia. thermal sender	-	323 705

For 24V applications, use bulb #600 807.



310 913

**PRESSURE GAUGES**

**Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
30 PSI	10 - 180 Ω (VDO)	G	350 301
80 PSI	10 - 180 Ω (VDO)	"Oil"	G 350 303
80 PSI	240 - 33 Ω (U.S.)	G	350 302
80 PSI	0 - 90 Ω (GM)	"Oil"	G 350 304
100 PSI	10 - 180 Ω (VDO)	"Oil"	G 350 306
100 PSI	240 - 33 Ω (U.S.)	"Oil"	G 350 307
150 PSI	10 - 180 Ω (VDO)	"Oil"	G 350 305
5 bar	10 - 180 Ω (VDO)	"Oil"	G 350 380
10 bar	10 - 180 Ω (VDO)	G	350 381

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 26.



350 303

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

Description	On Dial	Dwg	Part No.
15 PSI	"Fuel"	I	150 303
30 PSI		I	150 331
100 PSI	"Oil"	I	150 330
150 PSI	"Oil"	I	150 306
150 PSI	"Air"	I	150 307
400 PSI		I	150 304

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.



150 306

**DUAL AIR PRESSURE GAUGE**

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

Description	On Dial	Dwg	Part No.
150 PSI	"Air" & "lbs. / sq. in."	-	151 301

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.



151 301

**TURBOCHARGER GAUGE**

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

Description	On Dial	Dwg	Part No.
30 in. hg. to 15 PSI	"Turbo"	I	150 361

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.

**VACUUM GAUGE**

**Mechanical, 2 1/16" (52mm) dia., 1/8 - 27 NPT connection**

Description	On Dial	Dwg	Part No.
0-30 in. hg., complete kit	"Vacuum" & "in. / hg."	I	150 302
0-30 in. hg., gauge only	"Vacuum" & "in. / hg."	I	150 301

For 24V applications, use bulb 600 826.  
Tubing kit not included, see page 31.



150 302

**FUEL GAUGES**

**Electrical, 2 1/16" (52mm) dia., on dial: "Fuel", except where noted**

Description	Dwg	Part No.
For VDO senders #226 001 & #226 002	G	301 301
For U.S. sender, 240 - 33 Ω	G	301 302
For GM sender, 0 - 90 Ω (from 1965)	G	301 303
For VW beetle O.E. sender, or VDO #221 012	G	301 304
For GM sender, 0 - 90 Ω, "Unleaded Fuel"	G	301 305

*For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 28.*



301 301

**VOLTMETERS**

**Electrical, 2 1/16" (52mm) dia., 12V, on dial: "Volts"**

Description	Dwg	Part No.
8 - 16 volts	G	332 341
8 - 16 volts w/ color band	G	332 342



332 341

**AMMETERS (Non-shunted)**

**Electrical, 2 1/16" (52mm) dia., on dial: "Amps"**

Description	Dwg	Part No.
30 Amp	L	190 302
60 Amp	L	190 301
100 Amp	L	190 304

*For 24V applications, use bulb #600 826.*

**CLOCK**

**Electrical, 2 1/16" (52mm) dia., 12/24V**

Description	Dwg	Part No.
Quartz movement with sweep second hand <i>For 24V applications, use bulb #600 829.</i>	K	370 301



370 301

**HOURMETER**

**Quartz movement, 2 1/16" (52mm) dia., 12/24V, on dial: "Hours"**

Description	Dwg	Part No.
Illuminated	K	331 301
Non-illuminated	K	331 302

*For 24V applications, use bulb #600 829.  
See page 24 for a complete hourmeter listing.*



331 302



*Photo courtesy of John Deere*

# INDUSTRIAL

The Industrial Line of instruments is one of VDO's largest and most versatile range of instruments. Industrial Line instruments are specifically designed for industrial, commercial, and automotive applications.

These instruments feature dual scales showing standard and metric readings. Black or chrome-plated brass bezels are available. Pointers, primary and secondary numerals are white.

## SPEEDOMETERS

Industrial speedometers feature a unique auto-calibration function, allowing for easy adjustment through the LCD display. Odometer and trip odometer are clearly displayed in the LCD window, and the operator may toggle between these modes with the push of a button. The non-volatile memory chip stores information and settings even without power.

### Programmable, 12/24V, w/ resettable LCD trip odometer.

For use with hall-effect, inductive, OEM electronic output, and generator senders.

Description	Size	Dwg	Chrome	Black
85 MPH / 130 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 553	437 552
120 MPH / 200 kmh	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	437 555	437 556

For 24 volt applications use bulb #600 826 (2 per instrument).  
See sending unit application page 29.



437 552

## TACHOMETERS

### Programmable, 12/24V, w/ LCD hourmeter.

For use with all current electronic control unit (DDEC, etc.), inductive, alternator, standard ignition, electronic ignition, and hall-effect applications. Engine hours are displayed in the LCD window. Non-volatile memory chip stores hours even without power.

Description	Size	Dwg	Chrome	Black
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	333 561	333 562
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	A	333 563	333 564

For 24V applications, use bulb #600 826 (2 per instrument).  
See sending unit application page 29.



333 563

### Programmable, w/o hourmeter

For use with magnetic pickups.

Description	Size	Dwg	Chrome	Black
3,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	333 531	333 532
4,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	333 533	333 534

See sending unit application page 29.

### Programmable, 12/24V, ignition hook-up w/o hourmeter

Description	Size	Dwg	Chrome	Black
6,000 RPM	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	333 535	333 536

For 24V applications, use bulb #600 807.

### Alternator hook-up, 4,000 RPM w/o hourmeter

Description	Size	Dwg	Chrome	Black
12V	2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	-	333 515	333 516
24V	2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	-	333 517	333 518

### Mechanical, 3,500 RPM, w/ rev. counter, 12V only

Description	Size	Dwg	Chrome	Black
1:1 Ratio	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	128 503	128 504
1:2 Ratio	3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	-	128 501	128 502



333 536

**TEMPERATURE GAUGES**

**Electrical, 2 1/16" (52mm) dia., 12V, w/ISO symbol**

Description	On Dial	Dwg	Chrome	Black
100°F – 220°F / 40°C – 100°C, U.S. Ω range		F	310 521	310 522
100°F – 250°F / 40°C – 120°C, VDO Ω range	"Water"	F	310 501	310 502
100°F – 250°F / 40°C – 120°C, VDO Ω range	"Engine Oil"	F	310 509	310 510
150°F – 300°F / 50°C – 150°C, VDO Ω range		F	310 503	310 504
150°F – 300°F / 50°C – 150°C, VDO Ω range	"Engine Oil"	F	310 511	310 512
90°F – 400°F / 32°C – 200°C, VDO Ω range		F	310 505	310 506
90°F – 400°F / 32°C – 200°C, VDO Ω range	"TRANS OIL"	F	310 513	310 514
90°F – 400°F / 32°C – 200°C, VDO Ω range		F	310 507	310 508

For 24V applications, use resistor kit #391-704.  
See sending unit application page 25.



310 502

**Mechanical, 110°F – 265°F, 40°C – 130°C, 2 1/16" (52mm) dia., 1/2" adapter included, w/ISO symbol**

Description	Dwg	Chrome	Black
72" capillary tubing	H	180 501	180 502
144" capillary tubing	H	180 503	180 504
180" capillary tubing	H	180 505	180 506

For 24V applications, use bulb #600 802.

**PRESSURE GAUGES**

**Electrical, 2 1/16" (52mm) dia., 12V, w/ISO symbol**

Description	On Dial	Dwg	Chrome	Black
0 – 30 PSI / 0 – 2 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)		F	350 501	350 502
0 – 80 PSI / 0 – 5 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)	"Engine Oil"	F	350 515	350 516
0 – 80 PSI / 0 – 5 kp/cm <sup>2</sup> 240 – 33 Ω (U.S.)		F	350 505	350 506
0 – 80 PSI / 0 – 5 kp/cm <sup>2</sup> 0 – 90 Ω (GM)		F	350 503	350 504
0 – 100 PSI / 0 – 7 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)	"Engine Oil"	F	350 519	350 520
0 – 150 PSI / 0 – 10 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)	"Engine Oil"	F	350 507	350 508
0 – 150 PSI / 0 – 10 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)	"Air"	F	350 509	350 510
0 – 350 PSI / 0 – 25 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)		F	350 511	350 512
0 – 350 PSI / 0 – 25 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)	"Converter Oil"	F	350 517	350 518
0 – 400 PSI, 0 – 28 kp/cm <sup>2</sup> 10 – 180 Ω (VDO)		F	350 513	350 514

For 24V applications, use resistor kit #391-704.  
See sending unit application page 26.



350 505



350 506



## Pressure Gauges Continued

Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connections, w/ ISO symbol

Description	On Dial	Dwg	Chrome	Black
15 PSI / 0 - 1 kp/cm <sup>2</sup>		I	150 503	150 504
30 PSI / 0 - 2 kp/cm <sup>2</sup>		I	150 505	150 506
100 PSI / 0 - 7 kp/cm <sup>2</sup>		I	150 507	150 508
150 PSI / 0 - 10 kp/cm <sup>2</sup>		I	150 509	150 510
150 PSI / 0 - 10 kp/cm <sup>2</sup>	"Air"	I	150 513	150 514
400 PSI / 0 - 28 kp/cm <sup>2</sup>		I	150 511	150 512
400 PSI / 0 - 28 kp/cm <sup>2</sup>	"Lube Oil"	I	150 515	150 516
0 - 30 in. hg. to 15 PSI	"Boost"	I	150 521	150 522
150 PSI / 0 - 10 kp/cm <sup>2</sup>	"Front Air"	I	150 517	150 518
150 PSI / 0 - 10 kp/cm <sup>2</sup>	"Rear Air"	I	150 519	150 520

For 24V applications, use bulb #600 807.  
Tubing kit not included, see page 31.



150 507

## VACUUM GAUGE

Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection, On dial: "Vac", w/ ISO symbol

Description	Dwg	Chrome	Black
0 - 30 in. hg., 0 - 1.0 kp/cm <sup>2</sup>	I	150 501	150 502

For 24V applications, use bulb #600 807.  
Tubing kit not included, see page 31.



151 501

## DUAL AIR PRESSURE GAUGE

Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection, w/ ISO symbol

Description	On Dial	Dwg	Chrome	Black
0 - 150 PSI / 0 - 10 kp/cm <sup>2</sup>	"Air"	-	151 501	151 502

Tubing kit not included, see page 31.



301 503

## FUEL GAUGES

Electrical, 2 1/16" (52mm) dia., 12V, w/ ISO symbol, On dial: "Fuel"

Description	Dwg	Chrome	Black
For VDO sender #226 001	F	301 501	301 502
For GM sender, 0 - 90 Ω	F	301 503	301 504
For U.S. sender, 240 - 33 Ω	F	301 505	301 506
Adjustable, for tube type sender only, 90 - 0 Ω	F	301 509	301 510

For 24V applications, use resistor kit #391 704. See sending unit application page 28.

## VOLTMETERS

Electrical, 2 1/16" (52mm) dia., w/ ISO symbol, on dial: "Volt"

Description	Dwg	Chrome	Black
12V, 8 - 16 volt range	F	332 501	332 502
24V, 18 - 32 volt range	F	332 503	332 504
32V, 24 - 40 volt range	F	332 505	332 506

## AMMETERS (Non-shunted)

Electrical, 2 1/16" (52mm) dia., w/ ISO symbol, on dial: "Amp"

Description	Dwg	Chrome	Black
60 Amp	L	190 501	190 502
100 Amp	L	190 505	190 506

For 24V applications, use bulb #600 826.



332 502

**AMMETERS (Shunted)**

Description	Dwg	Chrome	Black
150 amp, complete kit	M	190 953	190 954
150 amp, shunted ammeter only	M	190 511	190 512
150 amp, shunt only	-	391 003	-
200 amp, complete kit	M	190 955	190 956
200 amp, shunted ammeter only	M	190 513	190 514
200 amp, shunt only	-	391 005	-

For 24V applications, use resistor #391 101 and bulb #600 829.



370 501

**CLOCK, 12/24V**

**Quartz movement with sweep second hand.**

Description	Dwg	Chrome	Black
2 1/16" (52mm) dia.	K	370 501	370 502

For 24V applications, use bulb #600 807.

**HOURMETERS, 12/24V**

**Quartz movement, 9 - 28 volt, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Chrome	Black
Illuminated	"Engine Hours"	K	331 501	331 502
Non-illuminated		K	331 503	331 504
Non-illuminated, waterproof		K	331 511	331 512
Non-illuminated, waterproof, three hole flange		K	-	331 514
Illuminated	"Pump Hours"	K	331 517	331 518
Illuminated	"Generator Hours"	K	331 519	331 520
Non-illuminated	"Aerial Hours"	K	331 521	331 522

For 24V applications, use bulb #600 807.

See page 24 for a complete hourmeter listing.



331 501



Photo courtesy Mack Trucks Inc.

# COCKPIT (SERVICE PARTS)

Years of research have revealed the best combination of colors for readability and reduced eye fatigue. The result: VDO's Cockpit Series – excellent readability with uncompromising VDO quality.

The Cockpit Series features:

- Highly visible fire-red pointer for instant recognition
- Flat black dial for contrast Crisp, white numerals for excellent readability

- Roof-style bezel to shield the dial from sunlight
- Unique air core electric movements and stepper motor technology for highly accurate readings.
- Available for most common US senders
- Tested and used in some of the toughest applications in the world
- State-of-the-art quality control in production of all gauges

## SPEEDOMETERS

Cockpit speedometers feature a unique auto-calibration function, allowing for easy adjustment through the LCD display. Odometer and trip odometer readings are clearly displayed in the LCD window, and the operator may toggle between these modes with the push of a button. The non-volatile memory chip stores information and settings even without power.

**Electronic, Programmable, 12/24V, w/ resettable LCD tripodometer.**

Description	Size	Dwg.	Part No.
120 MPH	3 1/8" (80mm) dia.	A	437 050
85 MPH / 130 kmh	3 3/8" (85mm) dia.	A	437 051
120 MPH	3 3/8" (85mm) dia.	A	437 052
160 MPH	3 3/8" (85mm) dia.	A	437 053

For 24V applications, use bulb #600 826 (2 per instrument).  
See sending unit application page 29.



437 052

## TACHOMETERS

**Electronic, ignition hook-up w/ shiftpoint indicator, 12V only**

Description	Size	Dwg.	Part No.
<b>4 / 6 / 8 cylinder</b>			
7,000 RPM	3 1/8" (80mm) dia.	-	333 051
7,000 RPM	3 3/8" (85mm) dia.	-	333 055
10,000 RPM	3 3/8" (85mm) dia.	-	333 056

**Programmable, w/o hourmeter, 12/24V**

Suitable for signal output for DDEC, magnetic pick-up, alternator hook-up, and VDO generator sender.

Description	Size	Dwg.	Part No.
3,000 RPM	3 3/8" (85mm) dia.	-	333 006
4,000 RPM	3 3/8" (85mm) dia.	-	333 007

For 24V applications, use bulb #600 807 (2 per instrument).



333 055

**Alternator hook-up, 12V only**

Description	Size	Dwg.	Part No.
3,000 RPM	2 1/16" (52mm) dia.	-	333 011
6,000 RPM	2 1/16" (52mm) dia.	-	333 054

See sending unit application page 29.

**TEMPERATURE GAUGES**

**Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg.	Part No.
250°F VDO Ω range	"Water"	E	310 039
300°F VDO Ω range	"Oil"	E	310 012
400°F VDO Ω range	"Transmission"	E	310 015
300°F VDO Ω range		E	310 016
320°F GM Ω range	"Water"	E	310 040
250°F VDO Ω range	"Water" w/symbol	E	310 041
120°C VDO Ω range	"Water"	E	310 080
150°C VDO Ω range		E	310 081
200°C VDO Ω range		E	310 083

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 25.

**Mechanical, 2 1/16" (52mm) dia., 1/2" adapter included,  
Water temperature, 110° - 265°F, on dial: "Water"**

Description	Dwg.	Part No.
72" capillary tubing	H	180 040
96" capillary tubing	H	180 041

**Water temperature, 50° - 130°C, On dial: "Water"**

Description	Dwg.	Part No.
63" capillary tubing	H	180 080
72" capillary tubing	H	180 081
96" capillary tubing	H	180 082
102" capillary tubing	H	180 083
157" capillary tubing	H	180 084

For 24V applications, use bulb #600 826.

**Adapters**

Description	Dwg.	Part No.
1/2-14 NPT		180 066
3/8-18 NPT		180 067

**Cylinder Head Temperature, 2 1/16" (52mm) dia.  
On dial: "Cylinder Head Temperature"**

Description	Dwg.	Part No.
600°F, complete kit	P	310 901
600°F, gauge only	P	310 033
300°C, complete kit	P	310 980
300°C, gauge only	P	310 082

For 24V applications, use bulb #600 807.

**Replacement parts**

Description	Dwg.	Part No.
14 mm dia. thermal sender (incl. in kit)	-	323 701
12 mm dia. thermal sender	-	323 705
15' lead wire	-	240 701

**OUTSIDE TEMPERATURE GAUGE**

**Electrical, 2 1/16" (52mm) dia.**

Description	Dwg.	Part No.
-13°F - 105°F, complete kit	N	397 036
Sender (included in kit)	N	323 087

For 24V applications, use resistor #391 101 and bulb #600 829.



310 039



310 015



180 040



397 036

**PRESSURE GAUGES**

**Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
80 PSI 10 - 180 Ω (VDO)	"Oil"	E	350 040
80 PSI 0 - 90 Ω (GM)	"Oil"	E	350 063
80 PSI 240 - 33 Ω (U.S.)	"Oil"	E	350 064
80 PSI 10 - 180 Ω (VDO)	"Oil" w/symbol	E	350 066
100 PSI 10 - 180 Ω (VDO)	"Oil"	E	350 065
150 PSI 10 - 180 Ω (VDO)	"lbs. / sq. in."	E	350 041
5 bar 10 - 180 Ω (VDO)	"Bar"	E	350 080
10 bar 10 - 180 Ω (VDO)	"Bar"	E	350 081

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 26.

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

Description	On Dial	Dwg	Part No.
15 PSI	"Boost"	I	150 051
30 PSI	"Boost"	I	150 052
30 PSI	"PSI"	I	150 031
100 PSI	"Oil"	I	150 030
150 PSI	"Oil"	I	150 046
150 PSI	"Air"	I	150 047
10 bar	"Oil"	I	150 082

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.

**TURBOCHARGER GAUGE**

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

**On dial: "Turbo"**

Description	Dwg	Part No.
0-30 in. hg. - 15 PSI	I	150 061

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.

**DUAL AIR PRESSURE GAUGE**

**Mechanical, 2 1/16" (52mm) dia., 1/8-27 NPT connection**

**On dial: "Air" & "lbs. / sq. in."**

Description	Dwg	Part No.
150 PSI	-	151 001

Tubing kit not included, see page 31.

**VACUUM GAUGE**

**Mechanical, 2 1/16" (52mm) dia. 1/8-27 NPT connection**

**with colorband, on dial: "Inches" & "Vacuum"**

Description	Dwg	Part No.
0-30 in. hg., Complete kit	I	150 042
0-30 in. hg., Gauge only	I	150 045

For 24V applications, use bulb #600 826.  
Tubing kit not included, see page 31.



150 030



150 046



150 061



150 042

**FUEL GAUGES**

**Electrical, 2 1/16" (52mm) dia.**

Description	On Dial	Dwg	Part No.
For VDO sender #226 001 or #226 002	"Fuel"	E	301 015
For VDO sender #221 012	"Fuel"	E	301 020
For U.S. sender, 240 – 33 Ω	"Fuel"	E	301 029
For GM sender, 0 – 90 Ω (from 1965)	"Tank"	E	301 030
For GM sender, 0 – 30 Ω (till 1965)		E	301 031
For Ford / AMC sender, 73 – 10 Ω	"Fuel"	E	301 032
Adjustable, for tube type senders only, 90 – 0 Ω	"Tank"	E	301 035
LP fuel, 0 – 90 Ω	"LP Fuel"		
	& ISO symbol	E	301 036
For GM 0-90 Ω	"Unleaded Only"		
	& ISO symbol	E	301 038
For late model Ford 16-158 Ω,	"Unleaded Fuel Only"	E	301 037

For 24V applications, use resistor #391 102 and bulb #600 826.  
See sending unit application page 28.



301 015

**VOLTMETERS**

**Electrical, 2 1/16" (52mm) dia., on dial: "Volt"**

Description	Dwg	Part No.
12V, with colorband, 8 – 16V	E	332 041
12V, with colorband and symbol, 8 – 16V	E	332 054
24V, 18 – 32V	E	332 042



332 041

**AMMETERS (Non-shunted)**

**Electrical, 2 1/16" (52mm) dia., on dial: "Amps"**

Description	Dwg	Part No.
30 Amp	L	190 030
60 Amp	L	190 031
100 Amp	L	190 905

For 24V applications, use bulb #600 826.



190 031

**AMMETERS (Shunted)**

**Electrical 2 1/16" (52mm) dia., 12/24V, on dial: "Amps"**

Description	Dwg	Part No.
150 Amp, complete kit	M	190 901

For 24V applications, use resistor #391 101 and bulb #600 829.

**Accessories**

150 Amp, shunted ammeter only	M	190 040
150 Amp, shunt only	-	391 003

**CLOCK**

**Electrical, 2 1/16" (52mm) dia., 12/24V**

Description	Dwg	Part No.
Quartz movement with sweep second hand	K	370 021

For 24V applications, use bulb #600 807.



370 021

# HOURMETERS

**Electrical, 2 1/16" (52mm) dia., 12/24V**

Description	Dwg	Part No.
Quartz movement, 9 – 28 volt illuminated	K	331 020
Quartz movement, 9 – 28 volt illuminated, with minute hand	K	331 022

For 24V applications, use bulb #600 829.  
See page 24 for a complete hourmeter listing.

**Vision\***

Description	On Dial	Dwg	Part No.
Illuminated		J	331 151
Non-illuminated	"Pump"	J	331 153
Non-illuminated	"Aerial"	J	331 154

**Cockpit International\***

Description	Dwg	Part No.
Illuminated	J	331 951

**Series 1\*\***

Description	Dwg	Part No.
Illuminated	K	331 301
Non-illuminated	K	331 302

**Industrial\*\***

Description	On Dial	Dwg	Chrome	Black
Illuminated	"Engine Hours"	K	331 501	331 502
Non-illuminated		K	331 503	331 504
Illuminated	"Pump Hours"	K	331 517	331 518
Illuminated	"Generator Hours"	K	331 519	331 520
Non-illuminated	"Aerial Hours"	K	331 521	331 522

**Waterproof**

Description	Dwg	Chrome	Black
Non-illuminated, waterproof	-	331 511	331 512

**Cockpit\*\***

Description	Dwg	Part No.
Illuminated	K	331 020
Illuminated w/ minute hand	K	331 022

**Three-hole flange**

Description	Part No.
Non-illuminated, waterproof	331 514

**Mini Hourmeter**

Description	Dwg	Part No.
Rectangular, non-illuminated	Q	331 534

\*For 24V applications, use bulb #600 826.  
\*\* For 24V applications, use bulb #600 807.  
See page 34 for technical drawings & specifications.



331 502



331 022



331 511



331 514



331 534

# PRESSURE AND TEMPERATURE SENDERS

All senders are standard ground (sender case to common ground) unless otherwise noted. Floating ground indicates the presence of an additional terminal to be used as a ground (isolated terminal to common ground).

Please note: VDO senders have tapered threads. DO NOT use teflon tape or pipe sealant. This will interfere with grounding.

## Individual Temperature Senders

Range	Thread	Warning Contact	#On Sender	Part No.
250°F (120°C)	1/8-27 NPT		801/5/1	323 095*
250°F	1/4-18 NPT		801/1/9	323 420*
250°F	3/8-18 NPT		801/1/17	323 094*
250°F	3/8-18 NPT		801/1/38	323 421▲
250°F	1/2-14 NPT		801/1/10	323 093*
250°F	1/2-14 NPT		801/1/16	323 419▲
250°F	1/2-14 NPT	195°F ± 5°F	803/1/37	323 097*
250°F	1/2-14 NPT	205°F ± 5°F	803/1/19	323 098*
250°F	1/2-14 NPT	217°F ± 5°F	803/1/25	323 099*
250°F	1/2-14 NPT	230°F ± 5°F	803/1/32	323 100*
250°F	5/8-18 NF-3	209°F ± 5°F	803/1/2	323 026*
250°F	5/8-18 NF-3	212°F ± 5°F	803/1/12	323 027*
250°F	5/8-18 UNF		801/1/25	323 422▲
250°F	5/8-18 NF-3	203°F ± 5°F	803/1/11	323 487*
250°F	M10X1		801/17/1	323 088*
250°F	M14X1.5		801/1/26	323 416▲
250°F	M16X1.5	230 ± 5°F	803/1/17	323 028*
250°F	M16X1.5		801/1/29	323 417▲
300°F (150°C)	1/8-27 NPT		801/9/1	323 057*
300°F	1/4-18 NPT		801/4/17	323 058▲
300°F	3/8-18 NPT		801/1/15	323 059*
300°F	1/2-14 NPT		801/4/6	323 060▲
300°F	1/2-14 NPT	250F ± 5°F	-	323 120*
300°F	1/2-20 USS		801/4/23	323 787▲
300°F	5/8-18 UNF		801/4/9	323 061▲
300°F	M10X1		801/9/3	323 423*
300°F	M12X1.5		801/10/3	323 092*
300°F	M14X1.5		801/4/35	323 055▲
300°F	M16X1.5		801/12/1	323 056▲
400°F (200°C)	1/8-27 NPT (5/8" PROBE)		801/13/1	323 050*
400°F	1/8-27 NPT (3/8" PROBE)		801/18/1	323 086*
400°F	M10X1.5		801/3/1	323 091*
400°F	M10X1		801/3/2	323 090*

NOTE: Temperature senders are to be used with temperature gauges marked "VDO Ohm Range" only.

\* = Spade terminal s = Screw cap

## Universal Temperature Sender Kits

Universal Sender Kits take the guess work out of finding the right sender for your application. **NOTE: Failure to match gauge and sender temperatures will result in incorrect gauge readings.**

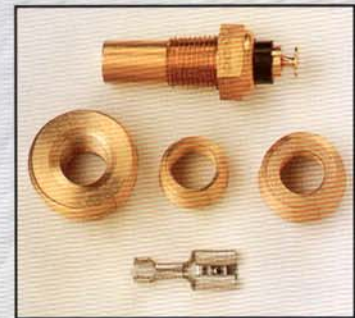
Range	Part No.
250°F (120°C)	323 900
300°F (150°C)	323 905

Includes 1/8-27 NPT temperature sender, 1/4-18" bushing, 3/8-18" bushing, 1/2-14" bushing and 1/4" spade terminal.

**ALL SENDERS HAVE SAE TAPERED THREADS.  
DO NOT USE SEALING TAPES! YOU MUST MATCH THE GAUGE  
PRESSURE RANGE AND SENDER PRESSURE RANGE.**



Screw Cap Spade Terminal



323 900



**Individual Pressure Senders**

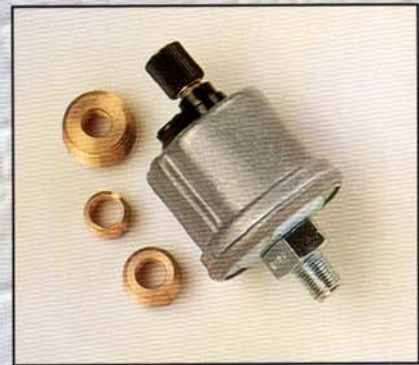
Range	Thread	Warning Contact	#On Sender	Part No.
0 - 30 PSI (2 bar)	1/8-27 NPT		32/25	360 043**
0 - 80 PSI (5 bar)	1/8-27 NPT		29/4	360 003
0 - 80 PSI	1/8-27 NPT	7.0 PSI	30/23	360 009
0 - 80 PSI	1/4-18 NPT		29/8	360 005
0 - 80 PSI	1/4-18 NPT	8.0 PSI	30/20	360 019
0 - 80 PSI	1/8-27 NPT		-	360 801*
0 - 80 PSI	1/8-28 BSP		29/61	360 080
0 - 80 PSI	1/8-28 BSP	5.7 PSI	30/65	360 082
0 - 80 PSI	3/8-18 NPTF		32/5	360 429
0 - 80 PSI	M10X1K		29/1	360 001
0 - 80 PSI	M10X1K	7.0 PSI	30/2	360 006
0 - 80 PSI	M12X1.5		29/2	360 002
0 - 80 PSI	M12X1K	5.7 PSI	30/26	360 022
0 - 80 PSI	M12X1.5	8.5 PSI	30/6	360 007
0 - 80 PSI	M14x1.5		29/26	360 027
0 - 80 PSI	M14x1.5	7.1 PSI	30/28	360 028
0 - 100 PSI (2 bar)	1/8-27 NPT		-	360 086
0 - 100 PSI	1/8-27 NPT		-	360 811*
0 - 150 PSI (10 bar)	1/8-27 NPT		29/12	360 004
0 - 150 PSI	1/8-27 NPT	11.4 PSI	30/15	360 025
0 - 150 PSI	1/8-28 BSP		29/62	360 081
0 - 150 PSI	1/8-28 BSP	7.0 PSI	30/66	360 083
0 - 150 PSI	1/4-18 NPT		29/20	360 021
0 - 150 PSI	1/4-18 NPT	19.9 PSI	30/13	360 026
0 - 150 PSI	M10X1K		29/10	360 015
0 - 150 PSI	M10X1K		30/9	360 023
0 - 150 PSI	M10X1K	29.6 PSI	30/41	360 033
0 - 150 PSI	M12X1.5		29/13	360 016
0 - 150 PSI	M12X1.5	7.0 PSI	30/22	360 024
0 - 150 PSI	M14X1.5		29/33	360 039
0 - 150 PSI	M18X1.5		29/34	360 040
0 - 350 PSI (25 bar)	1/8-27 NPT		38/3	360 431
0 - 350 PSI	3/8-18 NPT		38/2	360 432
0 - 350 PSI	M14x1.5		38/1	360 442
0 - 400 PSI (28 bar)	1/8-27 NPT		38/8	360 406**

NOTE: All pressure senders have screw caps for eyelet terminals.  
All pressure senders are 10 - 180 Ω unless otherwise noted.

\* = 240 - 33 Ω      \*\* = Floating ground



Pressure Sender



360 900

**Universal Pressure Sender Kits**

Universal Sender Kits take the guess work out of finding the right sender for your application. **Note: Failure to match gauge and sender pressures will result in incorrect gauge readings.**

Description	Part No.
80 PSI (5 Bar)	360 900
150 PSI (10 BAR)	360 905

Includes 1/8-27 NPT pressure sender, 1/4-18" bushing, 3/8-18" bushing and 1/2-14" bushing.

**ALL SENDERS HAVE SAE TAPERED THREADS.**  
**DO NOT USE SEALING TAPES! YOU MUST MATCH THE GAUGE PRESSURE RANGE AND SENDER PRESSURE RANGE.**

**Universal Bushing Kit, inside diameter 1/8-27 NPT.**  
For use with all pressure and temperature senders.

Description	Part No.
Includes 1/4-18", 3/8-18" & 1/2-14" Bushings	240 903



240 903

# HEAVY DUTY PRESSURE SWITCHES

**SINGLE CIRCUIT; 1 TERMINAL, THREAD GROUND**

**Normally Open**

Range	Part No.
4 PSI	230 204
15 PSI	230 215
60 PSI	230 260

**Normally Closed**

Range	Part No.
4 PSI	230 304
15 PSI	230 315
60 PSI	230 360



230 204

**SINGLE CIRCUIT; 2 TERMINALS, INSULATED GROUND**

**Normally Open**

Range	Part No.
4 PSI	230 404
15 PSI	230 415
60 PSI	230 460

**Normally Closed**

Range	Part No.
4 PSI	230 504
15 PSI	230 515
60 PSI	230 560



230 404

**DUAL CIRCUIT; 3 TERMINALS; 1 NORMALLY OPEN, 1 NORMALLY CLOSED, 1 ISOLATED GROUND**

Range	Part No.
4 PSI	230 604
15 PSI	230 615
60 PSI	230 660

**Note:** For the Dual Circuit switch, the N.C. circuit is the primary reference circuit and the N.O. circuit is not adjusted. The expected dead band between the two circuits is listed below:

Contact Setting	Dead Band
4-7 PSI	2.5 PSI
8-13 PSI	3.5 PSI
14-24 PSI	8.0 PSI
25-50 PSI	15.0 PSI
51-90 PSI	23.0 PSI



230 604

**Pressure Switch Specifications –**

*Normally open - Contacts open until pressure rises which then completes the circuit.*

*Normally closed - Contacts closed until pressure rises which then breaks the circuit.*

*Direct action blade contact pressure switches with adjustable contact ranges:*

4 – 7 PSI ± 1; 14 – 24 PSI ± 3; 51 – 90 PSI ± 7

**Contacts:** Silver alloy, gold plated

**Operating Pressure (Set Point Range):**

4-24 PSI = 150 PSI    25-90 PSI = 250 PSI

**Proof Pressure:** 500 PSI

**Burst Pressure (Set Point Range)**

4-24 PSI = 750 PSI    25-90 PSI = 1,250 PSI

**Base:** Brass

**Diaphragm:** Polyimide film

**Cover:** Glass reinforced polyester

**Electrical Ratings:**

*Resistive:* 15 Amp 6 VDC

8 Amp 12 VDC

4 Amp 24 VDC

*Inductive:* 1 Amp - 120 VAC

5 Amp - 240 VAC

**Temperature Range:** -40F – 250F

**Terminals:** 1/4" blade, #8-32 screws

**Thread size:** 1/8-27 NPT

# FUEL LEVEL SENDERS

## Lever Arm Fuel Level Senders

Adjustable for tank depths from 6" to 23".  
Right or left hand applications.

Description	Part No.
10 – 180 Ω, without installation kit (226 451)	226 001
10 – 180 Ω, with installation kit (226 451)	226 002
240 – 33 Ω, GM, without installation kit	226 007
0 – 90 Ω, GM, without installation kit	226 008



226 001

## Fuel Sender Installation Kits

For 2 1/8" (54 mm) bolt circles. Includes flange, gasket, and assorted mounting hardware. Required on all fuel tanks where sender mounting holes are not provided.

Description	Part No.
Bolt-on kit	226 451
Ford flange kit	226 902

## Replacement Gasket

2 1/8" (54mm), Neoprene	226 053
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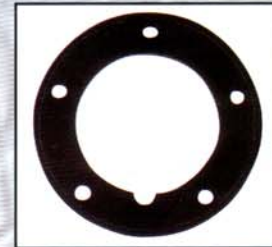
226 451

## Tube Type Fuel Level Sender with Negative Ground

For use with adjustable fuel level gauges. All lengths listed are for installation depth.

### 2 1/8" (54 mm) Bolt Circle

Length	# On Sender	Part No.
5 1/8" (131.5 mm)	82/8/17	224 058
6 9/16" (166.5 mm)	82/8/18	224 059
8 11/16" (221.5 mm)	82/8/21	224 061
9 15/16" (251.5 mm)	82/6/97	224 062
11" (279.5 mm)	82/7/22	224 055
12 1/4" (310.5 mm)	82/5/136	224 063
13 7/16" (341.5 mm)	82/5/137	224 064
14 5/8" (372 mm)	82/7/4	224 065
15 15/16" (404.5 mm)	82/5/142	224 054
17 1/16" (433.5 mm)	82/5/98	224 066
18 1/4" (463.5 mm)	82/5/44	224 053
19 5/8" (498.5 mm)	82/5/117	224 067
22" (559 mm)	82/7/58	224 003
23 7/16" (596 mm)	82/7/17	224 069
27 1/4" (692 mm)	82/5/11	224 004
31" (787.5 mm)	82/5/72	224 049
32 7/8" (835 mm)	82/5/34	224 051



226 053

## Tube Type Fuel Level Senders with Insulated Return

### 3 1/8" (80 mm) Bolt Circle

Length	# On Sender	Part No.
21 3/32" (536 mm)	82/21/1	224 076
23 7/16" (596 mm)	82/21/2	224 077
31 5/8" (803 mm)	82/21/4	224 056
41 1/8" (1045 mm)	82/21/5	224 079

## Tube Type Fuel Sender Replacement Gaskets

Length	Part No.
2 1/8" (54 mm) bolt circle – Neoprene	226 053
3 1/8" (80 mm) bolt circle – Cork	600 525



224 055



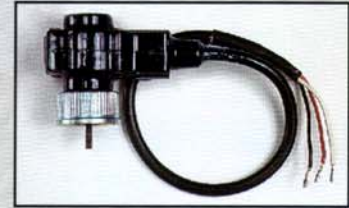
224 079

# SPEEDOMETER AND TACHOMETER SENDERS

## Hall-Effect

For electronic, programmable speedometers,  
7/8-18 thread, 16 pulse

Description	Part No.
Standard, GM	340 011
GM, Through-drive, for cruise control hook-up	340 012
Ford, plug-in	340 013
Ford, plug-in, through-drive	340 014

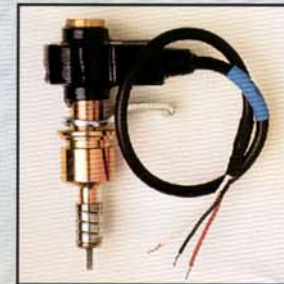


340 011

## Inductive / Magnetic Pick-Up Sender

For inductive and programmable speedometers and tachometers

Description	Part No.
2" long, 3/4-16 thread	340 020
3 1/2" long, 3/4-16 thread	340 021



340 013

## Generator Senders

For use with VDO speedometers and tachometers designated as generator-type

### Without odometer / revolution counter terminal

Description	Part No.
7/8-18 thread	340 001
M22x1.5 thread	340 002

### With odometer / revolution counter terminal

Description	Part No.
7/8-18 thread	340 008
M22x1.5 thread	340 007



340 020

### Drive keys for generator senders listed above

Description	Part No.
.152" - tang	340 060
.187" - tang	340 061
.203" - tang	340 062
.195" - square	NLA
.104" - square	340 065
.200" - Perkins	340 064



340 008



Photo courtesy of Simon-Duplex, Inc.



340 060

**GAUGE ACCESSORIES**

**Resistors**

For conversion of 12V electrical instruments (except clocks and hourmeters) to 24V systems. Conversion of instruments to 24V systems may require installing a new bulb. See page 33 for bulb listings.

Description	Part No.
Resistor only for tachometers without hourmeters, 2 <sup>1</sup> / <sub>16</sub> (52 mm) dia. tachometers, outside temperature gauges, pyrometers, and shunted ammeters.	391 101

Resistor only for all 2 <sup>1</sup> / <sub>16</sub> (52 mm) dia. instruments <b>except</b> clocks, hourmeters, 52mm dia tachometers, outside temperature gauges, pyrometers and shunted ammeters. Includes additional terminals for use with stud terminal instruments.	391 102
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**Resistor Kit**

For Industrial Line instruments only.

Description	Part No.
Resistor and 24V bulb	391 704



391 704

**Stud Mounting Kits**

For converting Spin-Lok™ mounted instruments to stud type mounting.

Gauge Diameter	Part No.
2 <sup>1</sup> / <sub>16</sub> " (52 mm)	600 402
3 <sup>1</sup> / <sub>8</sub> " (80 mm), 3 <sup>3</sup> / <sub>8</sub> " (85 mm),	600 401
4" (100 mm)	600 403



600 402

**Replacement Spin-Lok™ Mounting Rings**

Gauge Diameter	Part No.
2 <sup>1</sup> / <sub>16</sub> " (52 mm)	600 404
3 <sup>1</sup> / <sub>8</sub> " (80 mm)	600 405
3 <sup>3</sup> / <sub>8</sub> " (85 mm)	600 406
4" (100 mm)	600 407



600 405

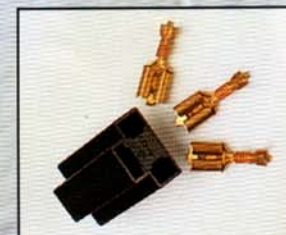
**Push-On Connectors**

Provides convenient installation for 2<sup>1</sup>/<sub>16</sub>" (52mm) dia. temperature, pressure and fuel gauges with three-prong connectors.

Description	Part No.
With crimp connectors	240 026
Without crimp connectors	600 814



600 404



240 026

# MOUNTING ACCESSORIES

## Tubing Kits

Includes tubing, 1/8-27 NPT and 1/4-18 NPT adapters. For direct mounting to turbo, use copper tubing.

Description	Part No.
6' plastic tubing	150 851
16' plastic tubing	150 855
6' copper tubing	150 856



Tubing Kits

## Wiring Kits

Includes necessary wire and terminals.

Description	Part No.
For all instruments except ammeters	240 023
For non-shunted ammeters	240 021



Wiring Kits

## Pressure Sender Adapters

Includes hose adapter and clamp for remote mounting pressure senders. Designed especially for high vibration applications.

Length	Part No.
1/8-27 NPT	240 902
1/8-28 BSP	150 754



Pressure Sender Adapters

## Angle Adapters

Length	Part No.
Male M10 x 1 / Female M10 x 1	240 041
Male M12 x 1.5 / Female 10 x 1	240 043
Male 1/4-18 NPT / Female 1/8-27 NPT	240 859
Male 1/8-27 NPT / Female 1/8-27 NPT	240 828

## T - Adapters

Length	Part No.
Male 1/8-27 NPT	240 855
Male M10 x 1	240 850



T-Adapters

## Shock Mount Grommet

Length	Part No.
For 2 1/16" (52mm) diameter instruments	240 832

## Safety Mount Brackets for 2 1/16" (52mm) diameter instruments.

Made of a flexible, rubber material for cockpit safety. Matte black.

Length	Dimensions (HxDxL)	Part No.
1 opening	3 7/8" x 1 1/4" x 2 1/2"	240 802
2 openings	3 7/8" x 1 1/4" x 4 7/8"	240 803
3 openings	3 7/8" x 1 1/4" x 7 1/2"	240 804



Shock Mount Grommet

## Mounting Cups

Steel mounting cups with smooth black or polished chrome finish.

Description	Chrome	Black
For 2 1/16" (52mm) dia. gauge	240 017*	240 016*
For 3 3/8" (85mm) dia. gauge	240 019	240 018

\*Will not work with 2 1/16" dia. clocks, tachs, outside temperature gauges or pyrometers.



Safety Mount Brackets



Mounting Cups

**Mounting Brackets for 2<sup>1</sup>/<sub>16</sub>" (52mm) dia. instruments.**

VDO mounting brackets are metal with smooth black or chrome finishes. 1, 2 and 3 opening units

Description	Dimensions (HxD)	Chrome	Black
1 opening	2 <sup>7</sup> / <sub>8</sub> " x 2 <sup>1</sup> / <sub>16</sub> "	240 034	240 027
2 openings	2 <sup>7</sup> / <sub>8</sub> " x 5 <sup>3</sup> / <sub>16</sub> "	240 035	240 028
3 openings	2 <sup>7</sup> / <sub>8</sub> " x 7 <sup>1</sup> / <sub>2</sub> "	240 036	240 029

**Custom Console for 2<sup>1</sup>/<sub>16</sub>" (52mm) dia. instruments.**

Made of durable ABS plastic, these consoles feature a black leather-like finish and molded indents for mounting screws (not included). Consoles are angled toward the driver for maximum readability. Surface mount for a clean, original equipment look.

Description	Dimensions (HxDxL)	Part No.
1 opening	4 <sup>1</sup> / <sub>4</sub> " x 3 <sup>3</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>8</sub> "	110 869
2 openings	6 <sup>1</sup> / <sub>8</sub> " x 3 <sup>3</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>8</sub> "	110 870
3 openings	9 <sup>3</sup> / <sub>4</sub> " x 3 <sup>3</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>8</sub> "	110 871

**Custom Mini Console for 2<sup>1</sup>/<sub>16</sub>" (52mm) dia. instruments.**

Consoles are made of durable ABS plastic with black leather-like finish. Can be surface mounted to nearly any flat surface, horizontally or vertically. Consoles are angled toward driver for maximum readability.

Description	Dimensions (HxDxL)	Part No.
1 opening	2" x 3 <sup>1</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>2</sub> "	110 860
2 openings	2" x 3 <sup>3</sup> / <sub>8</sub> " x 8"	110 861
3 openings	2" x 3 <sup>3</sup> / <sub>8</sub> " x 11 <sup>1</sup> / <sub>2</sub> "	110 862

PLEASE NOTE: An additional 2<sup>1</sup>/<sub>2</sub>" of depth is required beneath console to ensure proper installation of gauges.

**Adjustable mounting cups**

In durable ABS plastic with matte black finish.

Description	Part No.
For all 2 <sup>1</sup> / <sub>16</sub> " dia. electrical gauges, except outside temp. gauge, pyrometer, clock, ammeter, and 2 <sup>1</sup> / <sub>16</sub> " dia. tach.	240 100
2 <sup>1</sup> / <sub>16</sub> " dia., long version for outside temp. gauge, pyrometer, clock, ammeter and 2 <sup>1</sup> / <sub>16</sub> " dia. tach.	240 101
For 3 <sup>1</sup> / <sub>8</sub> " dia. tachometer.	240 102

**Ring Mount**

Constructed of black finished steel.

Description	Part No.
For 2 <sup>1</sup> / <sub>16</sub> " dia. instruments	240 070

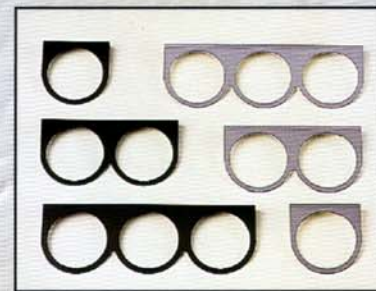
**Dimmer Rings**

Dual purpose, flexible, rubber-like black rings allow angular installation of instruments. Or, ring can be reversed to serve as a sun shroud. Two can be used together to do both. Lip angle is 12°.

Description	Part No.
Dimmer Rings (set of 2)	240 005

**Blind Cover**

Description	Part No.
2 <sup>1</sup> / <sub>16</sub> " (52mm) dia.	240 864
3 <sup>1</sup> / <sub>8</sub> " (80mm) dia.	240 865
3 <sup>3</sup> / <sub>8</sub> " (85mm) dia.	240 866



Mounting Brackets



Custom Consoles



Custom Mini Consoles



Adjustable Mounting Cups



Ring Mount



Dimmer Ring

# LIGHT BULBS AND SOCKETS

**Type A:** Fits sockets #600 813, #600 816, and #600 817.

Description	Part No.
9/32" 12V 2W	600 802
9/32" 12V 3W	600 803
9/32" 24V 3W	600 807

**Type B:** Fits sockets #600 818 and #600 819.

Description	Part No.
11/32" 12V 2W	600 804
11/32" 12V 4W	600 806

**Type C:** Fits socket #600 821.

Description	Part No.
3/8" 12V 2W	600 820

**Type D:** (peanut type): Fits socket #600 808.

Description	Part No.
Peanut bulb, 12V, 1.2W	600 809
Peanut bulb, 24V, 1.2W	600 829

**Type E:** Fits socket #600 839

Description	Part No.
Wedge-base bulb, 12V	600 815
Wedge-base bulb, 24V	600 826

## INSULATED LIGHT BULB SOCKETS

Description	Part No.
3/8", uses bulb type A	600 813
15/32", uses bulb type B	600 819
Uses peanut-type bulb D	600 808
Uses wedge-type bulb E	600 840

## LIGHT BULB SOCKETS

Description	Part No.
3/8" steel, uses bulb type A	600 816
3/8" brass, uses bulb type A	600 817
5/8" steel, uses bulb type C	600 821
15/32" steel, uses bulb type B	600 818

## LIGHT DIFFUSERS

The easy and convenient way to change the lighting color in your VDO gauge. Simply slips over light bulb to give your dash a whole new color at night.

Description	Part No.
Red, Type A, 9/32" bulb	600 853
Green, Type A, 9/32" bulb	600 856
Red, Type B, 11/32" bulb	600 857
Green, Type B, 11/32" bulb	600 858
Red, Type D, "peanut" bulb	600 859
Green, Type D, "peanut" bulb	600 860
Red, Types E and C bulbs	600 861
Green, Types E and C bulbs	600 862

## WARNING LIGHTS

12V snap-in warning lights with bulb. Requires 9/32" hole.

Description	Part No.
Red lens	600 844
Green lens	600 845
Yellow lens	600 846
Blue lens	600 847

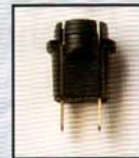


## LIGHT BULB SOCKETS



600 813

600 819



600 808

600 840



600 816

600 817



600 821

600 818

## LIGHT DIFFUSERS



## WARNING LIGHTS





# Technical Specifications and Dimensions

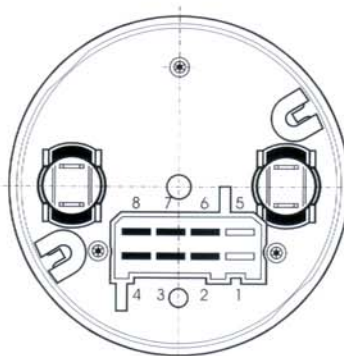
# VDO

## A Programmable Speedometer

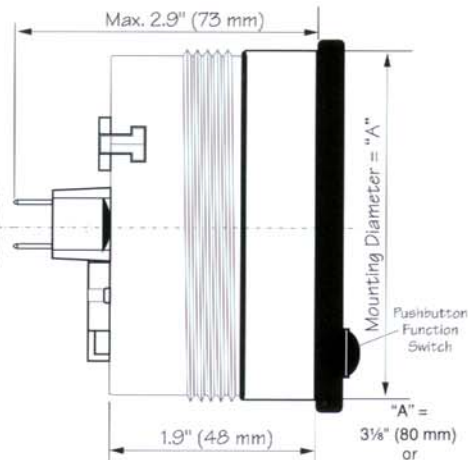
### Specifications

(Common to all Programmable Speedometers)

<b>Operating Temperature:</b>	-4° F... +158° F (-20° C... +70° C)
<b>Storage Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Illumination:</b>	2 push-in, wedge-type lamp sockets; 12 volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	Tin-plated brass blade connectors (6.3 x 0.8 mm)
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm).
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Operating Voltage:</b>	10.8 volts to 32 volts
<b>Nominal Voltage:</b>	12v -24v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Connections vary depending on application



Dimensions in inches (millimeters)

Mounting hole dimension: 3 1/8" (80 mm); or 3 3/8" (85 mm); or 4" (100 mm)

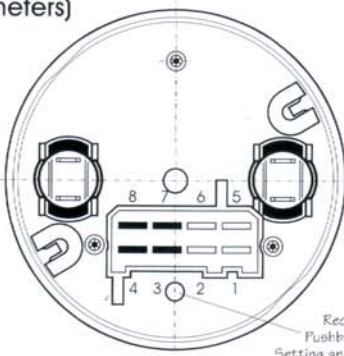
Mounting Diameter = "A" =  
3 1/8" (80 mm)  
or  
3 3/8" (85 mm)  
or  
4" (100 mm)

## B Programmable Tachometers (with hourmeters)

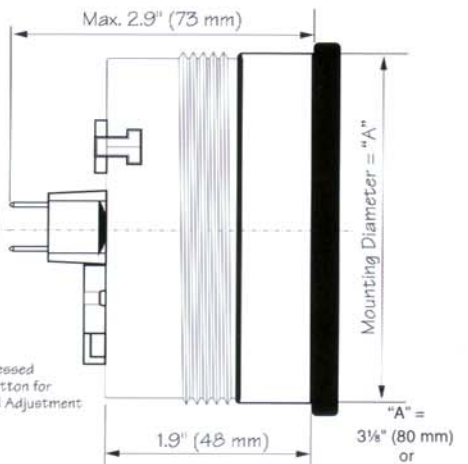
### Specifications

(Common to all Tachometers with Engine Hourmeter)

<b>Operating Temperature:</b>	-4° F... +158° F (-20° C... +70° C)
<b>Storage Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Illumination:</b>	2 push-in, wedge-type lamp sockets; 12 volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	Tin-plated brass blade connectors (6.3 x 0.8 mm)
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm).
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Operating Voltage:</b>	10.8 volts to 32 volts
<b>Nominal Voltage:</b>	12v -24v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Connections vary depending on application



Dimensions in inches (millimeters)

Mounting hole dimension: 3 1/8" (80 mm); or 3 3/8" (85 mm); or 4" (100 mm)

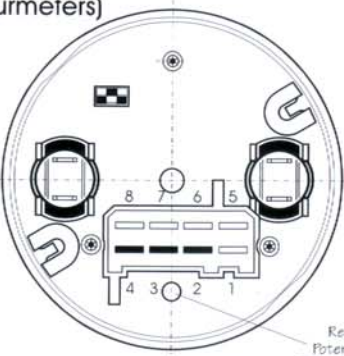
Mounting Diameter = "A" =  
3 1/8" (80 mm)  
or  
3 3/8" (85 mm)  
or  
4" (100 mm)

## C Programmable Tachometers (without hourmeters)

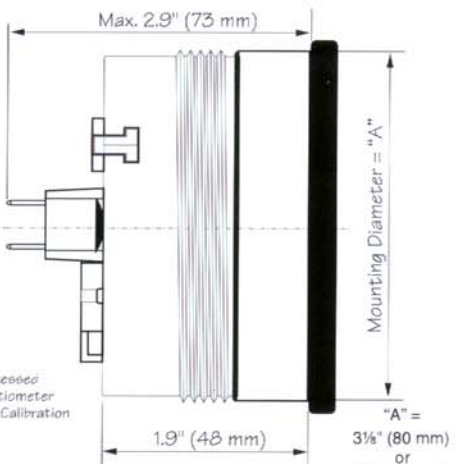
### Specifications

(Common to all Tachometers without Engine Hourmeters)

<b>Operating Temperature:</b>	-4° F... +158° F (-20° C... +70° C)
<b>Storage Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Illumination:</b>	2 push-in, wedge-type lamp sockets; 12 volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	Tin-plated brass blade connectors (6.3 x 0.8 mm)
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm).
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Operating Voltage:</b>	10.8 to 16 volts
<b>Nominal Voltage:</b>	12v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Connections vary depending on application



Dimensions in inches (millimeters)

Mounting hole dimension: 3 1/8" (80 mm); or 3 3/8" (85 mm); or 4" (100 mm)

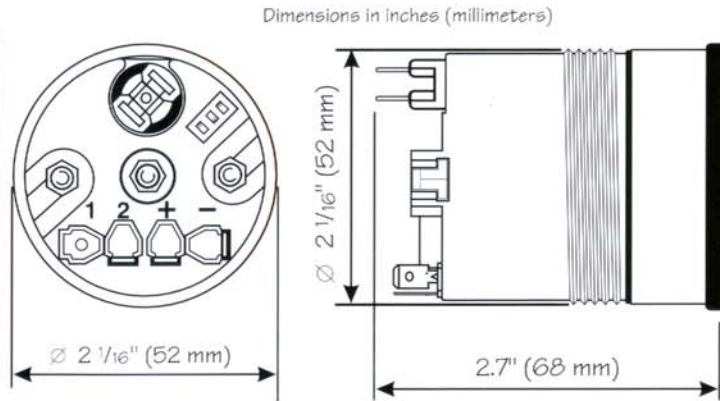
Mounting Diameter = "A" =  
3 1/8" (80 mm)  
or  
3 3/8" (85 mm)  
or  
4" (100 mm)

# Technical Specifications and Dimensions

# VDO

## D Electronic Tachometer (2 1/16" (52 mm))

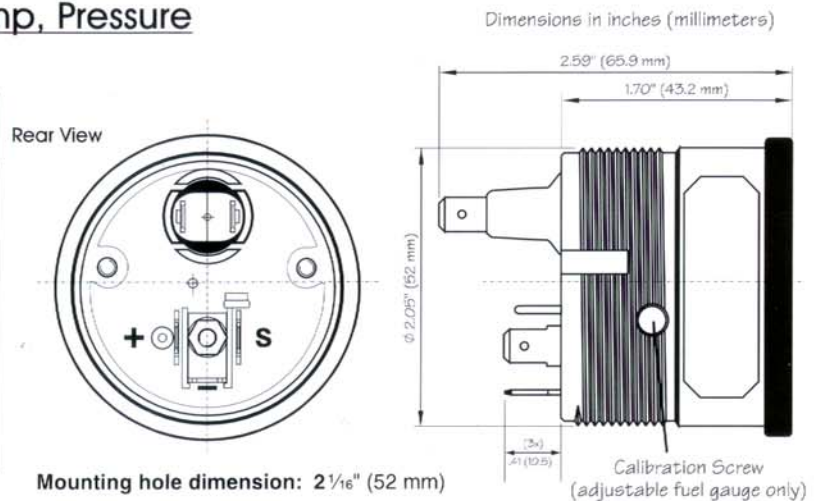
Specifications	
(Common to all 2 1/16" [52 mm] Tachometers)	
<b>Operating Temperature:</b>	-4° F... +158° F (-20° C... +70° C)
<b>Storage Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Illumination:</b>	Push-in, wedge-type lamp sockets; 12 volt: VDO #600 809 24 volt: VDO #600 829
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Connection:</b>	1/4" brass blade
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0-1/2" (0-12mm)
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90°
<b>Operating Voltage:</b>	10.8 to 16 volts
<b>Nominal Voltage:</b>	12v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Mounting hole dimension: 2 1/16" (52 mm)

## E Electric Fuel, Volt, Temp, Pressure (Spin-Lok™ clamp mount)

Specifications	
(Common to all Electric 2 1/16" (52 mm.) Instruments with VDO's Spin-Lok™ Mounting Clamp)	
<b>Operating Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Storage Temperature:</b>	-40° F... +221° F (-40° C... +105° C)
<b>Illumination:</b>	Push-in wedge-base sockets, 12 volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	1/4" brass blade
<b>Mounting:</b>	Housing with 16 threads/inch, Class 2A fit and rotating plastic Spin-Lok™ clamp
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	NPD - 90°
<b>Operating Voltage:</b>	11-16 volts (12 v) or 21.5 - 30 volts (24 v)
<b>Nominal Voltage:</b>	12v or 24v, insulated return (floating ground)
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)

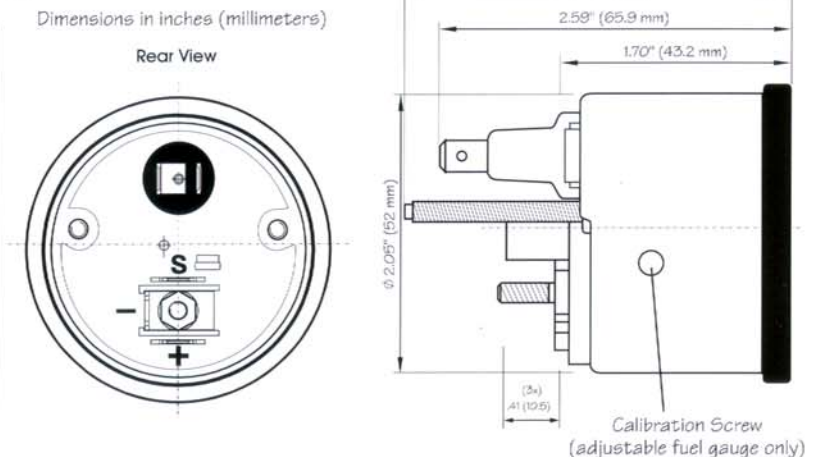


Mounting hole dimension: 2 1/16" (52 mm)

Calibration Screw (adjustable fuel gauge only)

## F Electric Fuel, Volt, Temp, Pressure (stud mount [Industrial Line Only])

Specifications	
(Common to all Electric 2 1/16" (52 mm) Gauges with Stud Terminals and Stud Mounting)	
<b>Operating Temperature:</b>	-22° F... +185° F (-30° C... +85° C)
<b>Storage Temperature:</b>	-40° F... +194° F (-40° C... +90° C)
<b>Illumination:</b>	Push-in wedge type lamp socket; 12 volt: VDO #600 802 24 volt: VDO #600 807
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	1/4" brass blade
<b>Mounting Bracket:</b>	Steel, zinc chromate plated
<b>Mounting Nut:</b>	Hexagon; steel, zinc chromate plated
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristic
<b>Nominal Position:</b>	0 - 90°
<b>Operating Voltage:</b>	11 - 16 volts (12v)
<b>Nominal Voltage:</b>	12v, insulated return (floating ground)
<b>Torque Values:</b>	For M4 nuts: 2.2 - 4.2 in. lb. (.25 - .47 Nm)



Mounting hole dimension: 2 1/16" (52 mm)

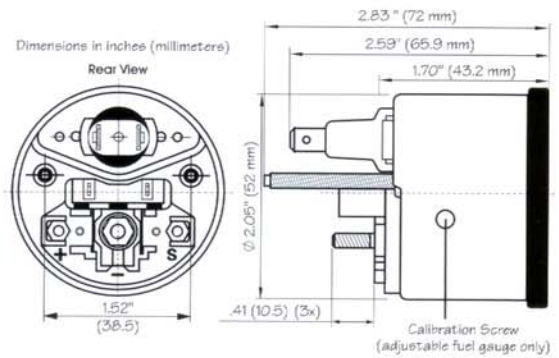
Calibration Screw (adjustable fuel gauge only)

# Technical Specifications and Dimensions

**VDO**

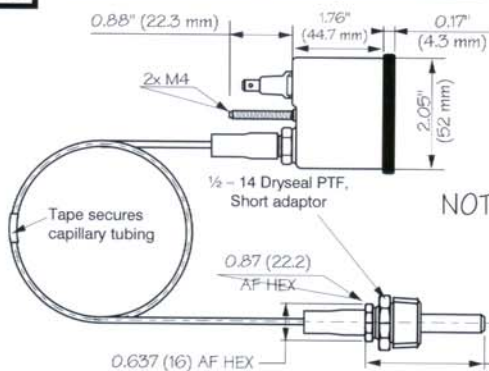
## G Electric Fuel, Volt, Temp, Pressure (stud mount)

Specifications	
(Common to all Electric 2 1/16" (52 mm) Gauges with Stud Terminals and Stud Mounting)	
<b>Operating Temperature:</b>	-22° F...+185° (-30° C...+85° C)
<b>Storage Temperature:</b>	-40° F...+194° F (-40° C...+90° C)
<b>Illumination:</b>	Push-in wedge-type lamp socket; 12 volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Dial Graphics:</b>	See product line for specific information
<b>Connection:</b>	M4 Stud
<b>Mounting Bracket:</b>	Steel, zinc chromate plated
<b>Mounting Nut:</b>	Hexagon; steel, zinc chromate plated
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0 - 90°
<b>Operating Voltage:</b>	11 - 16 volts (12v.) or 21.5 - 30 volts (24v.)
<b>Nominal Voltage:</b>	12 volts or 24 volts, insulated return (floating ground)
<b>Torque Values:</b>	For M4 nuts: 2.2 - 4.2 in.lb. (.25 - .47 Nm)



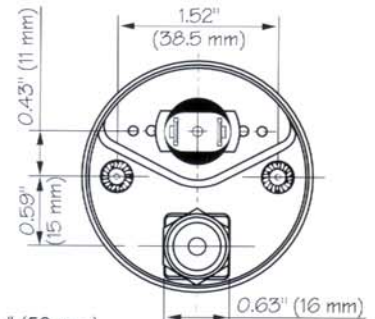
Mounting hole dimension: 2 1/16" (52 mm)

## H Mechanical Temperature

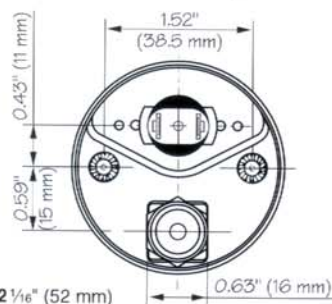


NOTE: See product line sections for available capillary tube lengths.

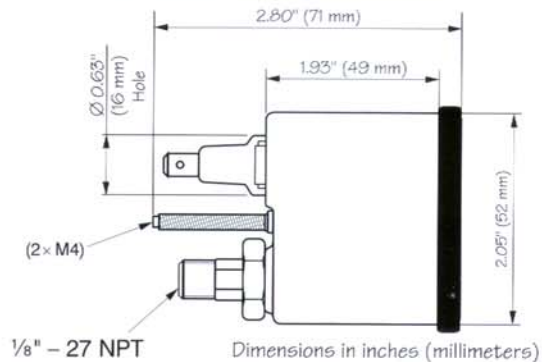
Mounting hole dimension: 2 1/16" (52 mm)



## I Mechanical Pressure



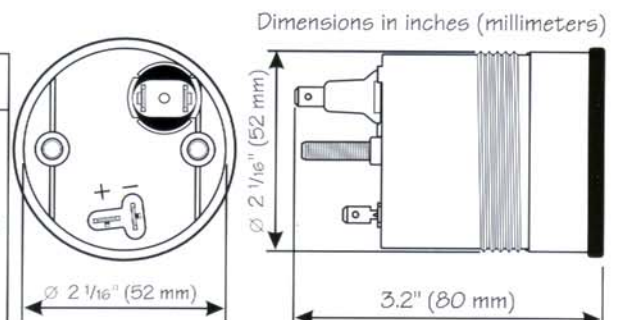
Mounting hole dimension: 2 1/16" (52 mm)



## J Clocks & Hourmeters

(Cockpit International and Vision Lines Only)

Specifications	
(Common to all 2 1/16" [52 mm] Clocks and Hourmeters)	
<b>Operating Temperature:</b>	-4° F...+158° F (-20° C...+70° C)
<b>Storage Temperature:</b>	-22° F...+185° F (-30° C...+85° C)
<b>Illumination:</b>	Push-in, wedge-type lamp sockets; 12volt: VDO #600 815 24 volt: VDO #600 826
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Connection:</b>	1/2 brass blade
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0 - 1/2" (0-12mm)
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90°
<b>Operating Voltage:</b>	10.8 volts to 32 volts
<b>Nominal Voltage:</b>	12v - 24v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Mounting hole dimension: 2 1/16" (52 mm)

# Technical Specifications and Dimensions

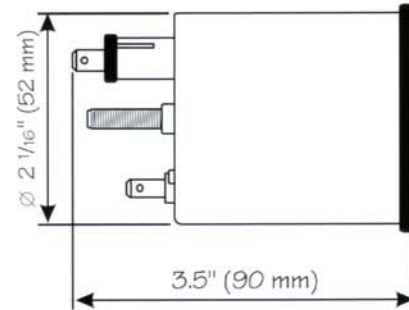
# VDO

## K Clocks & Hourmeters

(Series 1, Industrial and Cockpit Lines Only)

Dimensions in inches (millimeters)

Specifications	
(Common to all 2 1/16" [52 mm] Clocks and Hourmeters)	
<b>Operating Temperature:</b> -4° F...+158° F (-20° C...+70° C)	
<b>Storage Temperature:</b> -22° F...+185° F (-30° C...+85° C)	
<b>Illumination:</b> Push-in, wedge-type lamp sockets;	
12 volt: VDO #600 802	
24 volt: VDO #600 807	
<b>Bezel Material:</b> See product line for specific information	
<b>Lens:</b> Window glass, clear	
<b>Connection:</b> 1/4" brass blade	
<b>Mounting Bracket:</b> Steel, zinc chromate plated	
<b>Mounting Nut:</b> Hexagon, steel, zinc chromate plated	
<b>Product Marking:</b> Date of manufacture (Julian); part number;	
nominal voltage; gauge characteristics	
<b>Nominal Position:</b> 0° to 90° ↺	
<b>Operating Voltage:</b> 10.8 volts to 16 volts	
<b>Nominal Voltage:</b> 12v with insulated return	
<b>Current Consumption:</b> < 100 mA, without illumination	
<b>Torque Values:</b> For M4 Nuts: 2.2 - 4.2 in. lb. (.25 - .47 Nm)	



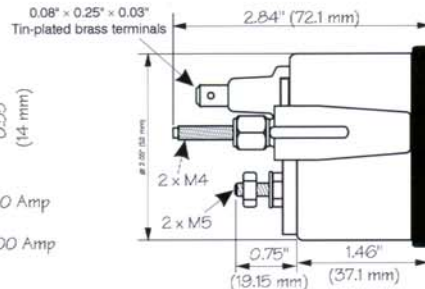
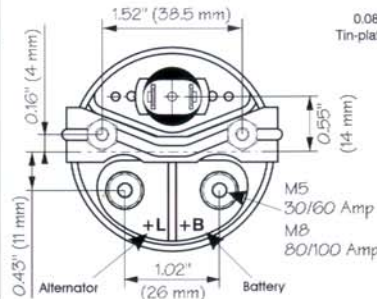
Mounting hole dimension: 2 1/16" (52 mm)

## L Ammeter

Mounting hole dimension: 2 1/16" (52 mm)

Dimensions in inches (millimeters)

Specifications	
(Common to all Ammeters)	
<b>Operating Temperature:</b> -22° F...+185° F (-30° C...+85° C)	
<b>Storage Temperature:</b> -40° F...+194° F (-40° C...+90° C)	
<b>Illumination:</b> 12 volt: VDO #600 815	
24 volt: VDO #600 826	
<b>Bezel Material:</b> See product line for specific information	
<b>Lens:</b> Window glass, clear	
<b>Dial Graphics:</b> See product line for specific information	
<b>Connection:</b> Stud	
<b>Mounting Bracket:</b> Steel, zinc chromate plated	
<b>Mounting Nut:</b> Hexagon, steel, zinc chromate plated	
<b>Product Marking:</b> Date of manufacture (Julian); part number;	
nominal voltage; gauge characteristic	
<b>Nominal Position:</b> 0 - 90° ↺	
<b>Torque Values:</b> For M4 nuts: 2.2 - 4.2 in. lb. (.25 - .47 Nm)	

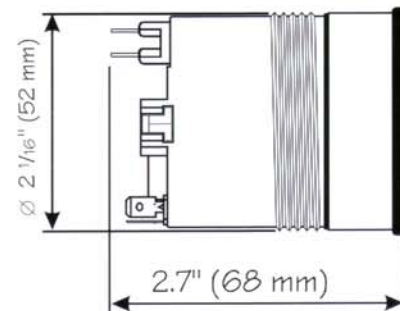


## M Shunted Ammeter

Mounting hole dimension: 2 1/16" (52 mm)

Dimensions in inches (millimeters)

Specifications	
(Common to all 2 1/16" [52 mm] Shunted Ammeters)	
<b>Operating Temperature:</b> -4° F...+158° F (-20° C...+70° C)	
<b>Storage Temperature:</b> -22° F...+185° F (-30° C...+85° C)	
<b>Illumination:</b> Push-in, wedge-type lamp sockets;	
12 volt: VDO #600 809	
24 volt: VDO #600 829	
<b>Bezel Material:</b> See product line for specific information	
<b>Lens:</b> Window glass, clear	
<b>Connection:</b> 1/4" brass blade	
<b>Mounting:</b> Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0 - 1/2" (0-12mm)	
<b>Product Marking:</b> Date of manufacture (Julian); part number;	
nominal voltage; gauge characteristics	
<b>Nominal Position:</b> 0° to 90° ↺	
<b>Operating Voltage:</b> 10.8 to 16 volts	
<b>Nominal Voltage:</b> 12v with insulated return	
<b>Current Consumption:</b> < 100 mA, without illumination	
<b>Torque Values:</b> For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 lb. ft. (3 - 8 Nm)	



# Technical Specifications and Dimensions

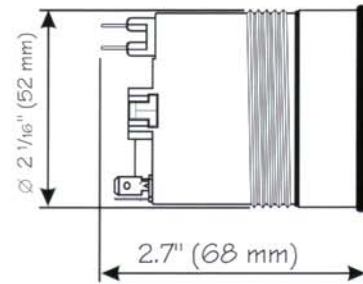
# VDO

## N Outside Temperature

Specifications	
(Common to all 2 1/16" [52 mm] Outside Temperature Gauges)	
<b>Operating Temperature:</b>	-4° F...+158° F (-20° C...+70° C)
<b>Storage Temperature:</b>	-22° F...+185° F (-30° C...+85° C)
<b>Illumination:</b>	Push-in, wedge-type lamp sockets, 12 volt: VDO #600 809 24 volt: VDO #600 829
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Connection:</b>	1/4" brass blade
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0-1/2" (0-12mm)
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Operating Voltage:</b>	10.8 to 16 volts
<b>Nominal Voltage:</b>	12v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



Mounting hole dimension: 2 1/16" (52 mm)



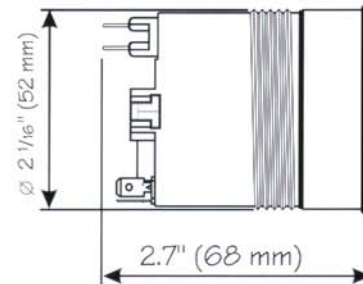
Dimensions in inches (millimeters)

## O Pyrometer

Specifications	
(Common to all 2 1/16" [52 mm] Pyrometers)	
<b>Operating Temperature:</b>	-4° F...+158° F (-20° C...+70° C)
<b>Storage Temperature:</b>	-22° F...+185° F (-30° C...+85° C)
<b>Illumination:</b>	Push-in, wedge-type lamp sockets, 12 volt: VDO #600 809 24 volt: VDO #600 829
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Connection:</b>	1/4" brass blade
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0-1/2" (0-12mm)
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Operating Voltage:</b>	10.8 to 16 volts
<b>Nominal Voltage:</b>	12v with insulated return
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



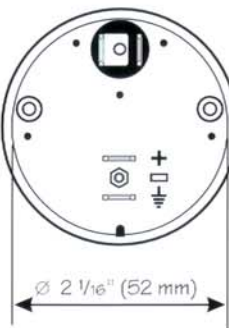
Mounting hole dimension: 2 1/16" (52 mm)



Dimensions in inches (millimeters)

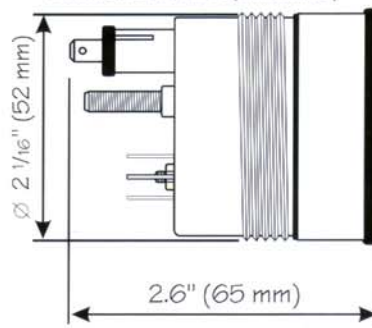
## P Cylinder Head Temperature Gauge

Specifications	
(Common to all 2 1/16" [52 mm] Cylinder Head Temperature Gauges)	
<b>Operating Temperature:</b>	-4° F...+158° F (-20° C...+70° C)
<b>Storage Temperature:</b>	-22° F...+185° F (-30° C...+85° C)
<b>Illumination:</b>	Push-in bulb, 12 volt: VDO #600 802 24 volt: VDO #600 807
<b>Bezel Material:</b>	See product line for specific information
<b>Lens:</b>	Window glass, clear
<b>Connection:</b>	1/4" brass blade
<b>Mounting:</b>	Mounting clamp. Clamping range: 0 - 0.8" (0 - 20 mm). Or, with optional 2 brackets with 2 bolts (M4x45) and nuts (M4x10). Clamping range: 0-1/2" (0-12mm)
<b>Product Marking:</b>	Date of manufacture (Julian); part number; nominal voltage; gauge characteristics
<b>Nominal Position:</b>	0° to 90° ±
<b>Current Consumption:</b>	< 100 mA, without illumination
<b>Torque Values:</b>	For Spin-Lok™ Mounting Clamp: 2.2 - 2.4 ft. lb. (3 - 8 Nm)



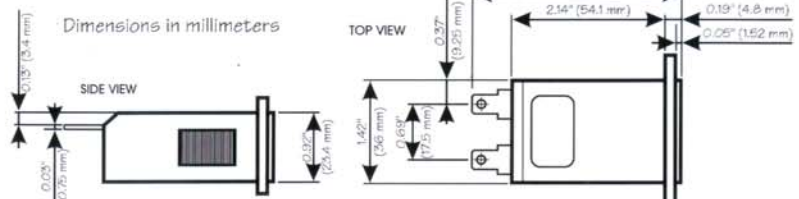
Mounting hole dimension: 2 1/16" (52 mm)

Dimensions in inches (millimeters)



## Q Mini Hourmeter

Specifications	
(Common to all Mini Hourmeters)	
<b>Temperature:</b>	-40° F...+185° F (-40° C...+85° C)
<b>Vibration Resistance:</b>	Withstands 10 to 75 Hz at 1 to 8 g's
<b>Terminations:</b>	6.35 mm Male Blade Terminals
<b>Protected From:</b>	Alternator Load Dump, Inductive Switching and Reverse Polarity
<b>Mounting:</b>	Panel Mount with 2 holes (front or back)
<b>Gauge Face:</b>	White Characters on black background
<b>Identification:</b>	VDO P/N (1 763 003 213A) and description stamped on label; position of label as shown



# Cross Reference

## Stewart Warner Deluxe to VDO Series 1

Stewart Warner	VDO	Stewart Warner	VDO
106A	340 008	82321	150 331
279A	360 801	82323	150 330
279B-F	360 811	82326-48	180 310
385 (All)	226 007	82326-60	180 311
391 (All)	226 007	82326-72	180 301
76052	230 415	82326-96	180 304
76054	230 460	82326-120	180 312
76062	230 515	82326-144	180 302
76064	230 560	82326-216	180 313
76072	230 615	82326-288	180 308
76074	230 660	82326-360	180 309
76575	230 404	82327-72	180 315
76577	260 504	82327-96	180 316
76579	230 604	82327-144	180 317
78143	230 204	82328	150 301
78145	230 215	82329	150 307
78147	230 260	82332	151 301
78150	230 304	82339	370 301
78152	230 315	82340	150 361
78154	230 360	82341	301 301
82121	150 304	82365	333 363
82162B	333 355	82637,	
82303	301 302	(85 MPH / 130 kmh)	437 352
82304	350 302	82677,	
82305	350 307	(85 MPH / 130 kmh)	120 301
82306	310 320	82688	128 301
82307	310 321	82689	128 302
82308	310 322	85093-03	331 512
82309	332 341	85094-12	331 534
82310	190 302	85097-02	331 514
82311	190 301	85342-03	331 511

## Datcon Heavy-Duty (polished bezel) to VDO Series 1

Datcon	VDO	Datcon	VDO
103 746	333 355	101 870	150 361
103 734	333 353	101 869	150 301
101 891	310 320	101 833	350 302
101 892	310 321	101 886	350 307
101 893	310 322	101 862	150 303
101 897	301 302	101 863	150 331
101 898	301 303	101 865	150 330
102 055	180 310	101 860	150 307
101 871	180 301	101 908	332 341
101 872	180 304	101 910	332 342
101 873	180 312	101 902	190 302
80 302	101 874	101 904	190 301
05 799	180 313	102 163	331 302