

Tracking & Alerts

In This Section

Monitoring Systems

A range of monitoring systems including coolant level, engine, speed area, speed alert & RPM for automotive and off road vehicles.



Alarms/Switches/Tachometers

A range of alarms, switches & tachometers such as the gauge adjustable alarm, speed switches, temperature switches, multifunction alarms & the handheld digital tachometer.



Moisture & Temperature Meters

A range of agricultural moisture & temperature meters for the use of measuring hay, grain, silage & cotton. Probes also available.



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FLEXIBLE DRIVE
AGENCIES



Coolant Level Monitor

DATATRON
MONITORING SYSTEMS



2103406 SEN0315 WL601P

Effectively monitors coolant levels in all automotive and industrial vehicles and stationary engines. The ELB100 Coolant Level Monitor is designed and made in Australia. The unit is protected against reverse polarity. An AC signal on the probe prevents scale or other deposits building up on the probe. A 7 second slosh delay prevents vehicle movement falsely setting off the alarm. A fail safe circuit will sound the alarm when the low coolant level is detected or in the case of a broken lead on the sensor connection, also a self check function checks and sounds the alarm for a short time each time you start your engine. 12/24 volt.

Kit Includes

Inbuilt relay, audible alarm, expandable rubber bush type probe & output for a warning light or shutdown. Optional solder in type brass bush and threaded probe available.

Part No.....ELB100

Accessories

Part No.	Description
2103406.....	35mm radiator hose insert and expandable probe optional
SEN0315.....	Screw in type probe with solder in bush - optional
WL601P.....	Probe
SEN0310.....	Probe

Engine Monitor

DATATRON
MONITORING SYSTEMS



The CP310F Engine Monitor is designed for use with vehicles and stationary engines to monitor the following:

- High Engine Temperature - Low Oil Pressure
- Loss Of Coolant Water - Alternator Failure - 2 Spare Inputs

The system consists of electrical switches attached to the engine and is suitable for a variety of applications such as trucks, buses, boats and agricultural machinery. All sensor connections are Fail Safe for reliable operation. For engines with shut down a time delay bypasses the switches to allow for engine start up. An audible alarm will sound when a fault condition occurs. When a sensor detects a fault condition or a problem with the switch circuit such as a broken wire or loose connection, this will register and be stored in the memory as a fault. When the fault is registered the indicating LED will latch on and no other subsequent fault conditions will be registered for that function. The last six functions of the monitor are held in a permanent memory and can be recalled at any time for diagnostic purposes.

Part No.....CP310F

NOTE: Can select NO (normally open) or NC (normally closed) switches.

Electronic Ratio Box

DATATRON
MONITORING SYSTEMS



Modern vehicles of today now operate with an electronic speedo and engine management system. Any alteration to the ratio by the fitment of different size tyres, gearbox or diff, may affect the performance or accuracy of the speedo and odometer. The Datatron ERB203 will accept the incorrect input pulses and by setting the dip switches will then change the output to give the original number of pulses per kilometre at which the speedo was calibrated. Unit is 12/24 volt.

Part No.....ERB203

Speed Area Monitor

DATATRON
MONITORING SYSTEMS



A compact Speed/Area Monitor ideal for recording speed and acreage for all agricultural applications. Programming is easy, all that is required is to enter your vehicle's wheel circumference and implement width, which once entered is retained in the monitors memory regardless of power. This innovative monitor continuously updates from the Hall effect sensor to give you accurate information that can be displayed by using the tactile push buttons.

Specifications

Range: 1 to 60 KPH
Area: 999.9 Ha
Power: 12V to 24V
Sensor Input: Hall effect.

Part No.	Description
FMD300SH4.....	Area Monitor
WHR1035.....	Wiring Harness 3 Metre
WHR1075.....	Wiring Harness 7 Metre
SHE200S.....	Sensor

Speed Alert Monitor

DATATRON
MONITORING SYSTEMS



The Datatron Speed Alert is ideally suited for forklifts, ATV's or any mobile plant. The Speed Alert indicates that you are travelling at unsafe speeds and helps reduce the risk of accidents and damaged goods. It is a microprocessor based speed indicator with two adjustable alarm points that can be set to speed limits within your workplace.

Specifications

Sensor Input: Hall effect.

Range: 1 to 60 KPH

Power: 12V to 24V

Part No.	Description
FMD300SA5.....	Speed Alert
WHR1017.....	Wiring Harness 1 Metre
WHR1047.....	Wiring Harness 4 Meter
WHR1097.....	Wiring Harness 9 Metre
SHE200S.....	Sensor

RPM Monitor

DATATRON
MONITORING SYSTEMS



The RPM Monitor aids the operator of vehicles such as tractor or any implement used for spraying, planting, harvesting and seeding that has a rotating shaft that requires monitoring.

Specifications

Input: Hall effect

Range: 20 to 9000 RPM

Display: 20 - 99 increments in 1 RPM
100 - 999 increments in 10 RPM
1000 - 9000 increments in 50 RPM

Power: 12V to 24V

Part No.	Description
FMD300R.....	RPM Monitor
WHR3123.....	Wiring Harness 2 Metre
WHR3143.....	Wiring Harness 4 Metre
WHR3173.....	Wiring Harness 7 Metre
SHE200S.....	Sensor

RPM Alert Monitor

DATATRON
MONITORING SYSTEMS



This unit is ideally suited to any machine where the shaft speeds need monitoring. It has two adjustable alarm points to alert the operator if a shaft is spinning too slow or too fast. Simply set the low speed output to just below where you want the shaft to spin and the high speed output to just above and an output will trigger an optional alarm or flashing light when either setting exceeded.

Part No.	Description
FMD300RPM.....	RPM Alert Monitor
WHR1017.....	Wiring Harness 1 Metre
WHR1047.....	Wiring Harness 4 Meter
WHR1097.....	Wiring Harness 9 Metre
SHE200S.....	Sensor

Timer Module - 12/24V

DATATRON
MONITORING SYSTEMS



The TM301 Timer Module is a multi function timing module designed to give normally open and normally closed volt-free contact output in 12 or 24 volt DC circuits.

Four ranges may be chosen...1-30 & 2-60 seconds or 1-30 & 2-60 minutes simply by selecting the appropriate DIP switches.

Typical applications are preheat (glow-plug) circuits in diesel engines, alarms before shutdown timers, cool down time for turbochargers, fixed time on for reversing alarms & warm up and cool down timers on automatic start systems.

Dual range timers and other variations are also available.

Part No.....TM301

Gauge Adjustable Alarm

DATATRON
MONITORING SYSTEMS



The EA101 Three Gauge Adjustable Alarm is designed to give an alarm output when the reading on any one of three gauges passes a predetermined fault level. The unit will switch on falling resistance. As long as the sensing unit is a variable resistance to ground, and the signal being measured is a variable DC voltage, this may be used to give an alarm output from any brand of gauge-sender combination. Three twenty five turn potentiometers are fitted, allowing fine adjustment across the full scale of most known gauges. Alarm output is via a transistor switch, switching the output to earth internally upon a fault condition. Typically application would be as an alarm control for diesel engines giving protection and early warning for low engine oil pressure, high engine temperature & low gearbox oil pressure. The EA101 has 3 separate alarm outputs. This unit may also be used without gauges if necessary ie: with sender only. 12/24 volt.

Part No.....EA101

Speed Switch

DATATRON
MONITORING SYSTEMS



The SS501 Speed Switch is a microprocessor controlled electronic switch module can be programmed for a number of different functions. Typically used to monitor road speed, engine RPM, or the RPM of any rotating shaft for commercial applications. The module can be utilised to switch an alarm or a buzzer or even to control a solenoid. 12/24 volt. With two separate signal inputs switching two separate output relays there can be a number of combinations of monitoring possibilities eg:

- Two input frequencies giving two outputs
- Two input frequencies giving one output
- One output frequency giving two outputs
- One input frequency giving one output

Part No.....SS501

Part No.....SS301.....Single Input/Output

Multifunction Alarm

DATATRON
MONITORING SYSTEMS



The FL301 Multifunction Alarm is designed to give an alarm output when the reading on a particular gauge passes a predetermined level. The unit may be set to switch on either a falling or rising level for any type of gauge as long as the sensing unit is a variable resistance. A twenty five turn pot is fitted, allowing fine adjustment across the full scale for most gauges. Alarm output is via normally open relay contacts, which switch to earth internally. Contact rating is 12VDC 1.5 Amp resistive. It also has an adjustable hysteresis which can be set over the full scale of the gauge. Typically applications are...

- Thematic fan switch control for electric fan cooled engines
- Low fuel level alarm for 4WD vehicles
- High temperature alarm for commercial, industrial & marine engines
- Low engine oil pressure alarm for commercial, industrial & marine engines
- Low gearbox oil pressure alarm for marine engines
- Low airbag pressure alarm for double bogey suspension systems
- This unit may also be used without a gauge if necessary ie: with sender only.

Part No.....FL301

Signal Amplifier/Divider

DATATRON
MONITORING SYSTEMS



The DB1-128 Signal Amplifier/Divider is a general purpose module designed to work with most standard automotive or diesel speedo's and tachometers as used in marine, automotive and commercial vehicles, tractors, generator sets etc. These are usually driven by a magnetic pickup, alternator AC connection or electronic ignition auxiliary signal.

This unit will take the weaker signals often received from these systems and boost them to a 12v p-p square wave suitable for most inputs. The signal may also be reduced in frequency by factor of 1, 2, 4, 8, 16, 32, 64 or 128 so as to allow easier adjustment of the driven instrument.

We recommend this unit be fitted by a qualified automotive electrician or instrument technician. Every care has been taken to ensure this is a universal signal processor and will work trouble free with as many systems as possible. 12/24 volt.

Part No.....DB128

Solenoid Timer

DATATRON
MONITORING SYSTEMS



This unit has been designed to prevent burn out of the pull-in coil and provide safe and automatic operation for the entire range of 12 or 24 volt FDA solenoids. The pull-in coil is energized for a precise period of time and the solenoid is automatically switched to the hold mode. Burn out of pull-in coil due to excessive time taken in applying power is eliminated. E.g. when wired to a faulty or slow starting engine via the starter relay.

Part No.....FD2001

Hall Effect Sensor

FLEXIBLE DRIVE AGENCIES



Durable sensor used in conjunction with speed, area and RPM monitors.
Voltage Range 12 to 24VDC

Part No.....SHE200S

Temperature Switch

FLEXIBLE DRIVE AGENCIES



Huge range of temperature switches to suit many applications.

Part No.	Setting	Thread	Part No.	Setting	Thread
SEN2007NC.....	70° C NC.....	3/8 BSP	SEN2010NONPTF.....	100° NO.....	1/8 NPT
SEN2007NO.....	70° C NO.....	3/8 BSP	SEN2007ANC.....	70° C NC.....	surface mount
SEN2010NC.....	100° NC.....	3/8 BSP	SEN2007ANO.....	75° C NO.....	surface mount
SEN2010NO.....	100° NO.....	3/8 BSP	SEN2010ANC.....	100° NC.....	surface mount
SEN2010NC12M.....	100° NC.....	12 MM	SEN2010ANO.....	100° NO.....	surface mount
SEN201058.....	100° NC.....	5/8 UNF	SEN2010NCNPTF.....	100° NC.....	1/8 NPT
SEN2010NCNPTF.....	100° NC.....	1/8 NPT	SEN2012ANO.....	120° NO.....	surface mount
SEN2012NC.....	120° NC.....	3/8 BSP	SEN2012ANC.....	20° NC.....	surface mount
SEN2012NO.....	120° NO.....	3/8 BSP			
SEN2015NCNPTF.....	150° NC.....	3/8 BSP			
SEN20105NC18.....	105° NC.....	1/8 NPT			

Switches available as air switches not mounted in a housing NC = Normally Closed - NO = Normally Open

Liquid Level Alert

FLEXIBLE DRIVE AGENCIES



The LL Series Liquid Level Alert is designed and made in Australia. A relay is activated as soon as the liquid level being monitored drops below the level of the sensor which in turn can shut down a solenoid or activate warning lights. The sensor is very sensitive and will not activate until all liquid has disbursed from the optical sensor. The unit is protected against reverse polarity. A fail safe circuit detects any broken circuits and will activate the relay in the case of a broken lead on the sensor connection. Ideal for monitoring all oils, diesels and coolants. Not suitable for applications where splash type lubrication is used.

Part No.....LL100

Distance Counter With Speedo Function

HALE electronic



- Two independent counters
- Resettable to zero counter
- Speedometer function
- Total distance
- Accurate display to 1 metre (dependant on calibration)

Part No.....MEZ05

Handheld Digital Tacho

FLEXIBLE DRIVE AGENCIES



- Rugged, durable, light weight plastic housing
- Shaped to fit comfortably in either hand
- Wide measuring range and high resolution
- Digital LCD display
- Memory recall function
- Packaged in protective case
- Laser beam operation
- Monitor any rotating shaft speeds

Part No.....QM1448

24 Hour Digital Countdown Timer

FLEXIBLE DRIVE AGENCIES



Application

Accurate time delays from 1 Minute to 24 Hrs. Easily set by programming the front panel, once set the time delay can be called up without reprogramming. The CLK2400 Series can be used in many applications where a battery or D.C. Voltage is the only power source and accurate timing is required. Features a unique countdown time lock, 3000 hour battery reserve, large range of control voltages, 16A contact rating.

Specifications

Contact Rating: 16A Resistive
Timing Range: 1 Minute to 24 Hrs

Part No.	Description
CLK2412.....	12V DC 24 Hr Digital Count Down Timer

24 Hour Timer Switch

FLEXIBLE DRIVE AGENCIES



- 24 Hour Timer Switch
- Change-over contact single pole
- 16A/250V
- Mechanical - No power required

Part No.....KS5524HOUR

Instruments

In This Section

Hour Meters

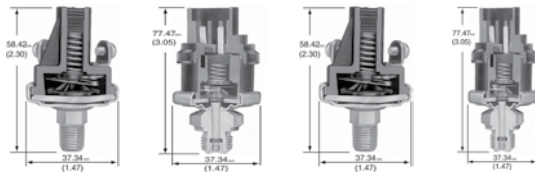
A variety of Hour Meters available for automotive applications.



Pressure & Vacuum Switches

A large range of Pressure & Vacuum Switches including:

- Ultra duty/extended duty pressure switches
- Extended duty piston pressure switches
- High pressure premium HPS Series.



Gauges/Gauge Accessories

A large range of gauges for automotive applications.



Senders

A range of senders for assorted automotive & industrial applications.



Ratio Boxes/Drive Joints



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Honeywell

**FLEXIBLE DRIVE
AGENCIES**

SYMBOL OF
SW
EXCELLENCE

VDO

200 Series Hour Meters

Honeywell



Part No.	Format	Bezel	Mount	Type	Digits	Voltage	Current	Terminal
20016	Round	Black	3 screw	Electro mechanical	6	108-132V	AC 50 hertz	Screw
20017	Round	Black	3 screw	Electro mechanical	6	108-132V	AC 60 hertz	Screw
20018	Round	Black	3 screw	Electro mechanical	6	216-264V	AC 50 hertz	Screw
20029	Rectangle	Black	2 screw	Electro mechanical	6	216-264V	AC 50 hertz	Screw

850 Series Hour Meters

Honeywell



Part No.	Format	Bezel	Mount	Type	Digits	Voltage	Current	Terminal
85093	Round	Black	Flush cup	Electro mechanical	5	10-80V	DC	Screw
85094	Rectangle	Black	2 Screw	Electro mechanical	5	10-80V	DC	Screw
85097	Round	Black	3 screw	Electro mechanical	5	12-60V	DC	Screw
85098	Round	Chrome	Flush cup	Electro mechanical	5	10-80V	DC	Screw

851 Series Hour Meters

Honeywell



Part No.	Format	Bezel	Mount	Type	Digits	Voltage	Current	Terminal
85100	Rectangle	Black	2 screw	Electro mechanical	6	12-24V	DC	Lug
85103	Round	Black	Flush cup	Electro mechanical	6	12-24V	DC	Lug
85127	Rectangle	Black	2 screw	Electro mechanical	6	12-60V	DC	Lug

983 Series Hour Meters

Honeywell



Part No.	Format	Bezel	Mount	Type	Digits	Voltage	Current	Terminal
98302	Round	Black	Flush cup	Digital LCD	6	9-64V	DC	Lug
98303	Rectangle	Black	2 screw	Digital LCD resettable	6	9-64V	DC	Lug
98310	Rectangle	Black	2 screw	Digital LCD	6	9-64V	DC	Lug
98312	Round	Black	2 screw	Digital LCD	6	9-64V	DC	Lug
98322	Round	Black	Flush cup	Digital LCD	6	9-64V	DC	Lug
98323	Rectangle	Black	2 screw	Digital LCD	6	9-64V	DC	Lug

987 Series Hour Meters

Honeywell



Part No.	Product Type	Type	Digits	Voltage	Current	Terminal
98704	Count Module	Digital LCD resettable	6	9-64V	4 Lug	Screw
98706	Hour Module	Digital LCD resettable	6	9-64V	DC	Lug

NOTE: 5 Digits = 10,000 hr 6 digits = 100,000 hr

Volt/Hour Meter

Honeywell



The Volt/Hour meter combines two important instruments in one rugged, sealed package. It accurately monitors the condition of battery electrical systems and simultaneously measure the total elapsed run time of equipment in which they are installed. During operation, the microcontroller based movement will cycle the LCD between voltage and hours indication at the rate of 15 seconds on for voltage and 1 second on for total hours. The high impact polycarbonate case is sealed against dust and moisture. Available in various bezel and mounting configurations, Honeywell Hobbs Volt/Hour meters are the perfect choice for variety of applications.

Voltage Range: 7-19 VDC
Voltage Meter Accuracy: +/- 0.1 VDC
Hour Meter Accuracy: +/- 0.02 %
Current Consumption: 8 mA at 12 Vdc
Termination: 1/4 in Blade
Case material: Polycarbonate
Temperature Range: -40 °C to 85 °C

Combination Volt/Hour Meter Part No.	Volt Meter Part No.	Description
98100	98105	2 Screw - Standard Bezel
98103	98108	2 Screw - Delux Bezel
98101	98106	Rectangular - Retainer Mount
98102	98109	Round - Cup Mount - Black Bezel
98111	98110	Round - Cup Mount - Chrome Bezel

Products may vary in appearance

GBO Vibration Hour Meters

FLEXIBLE DRIVE AGENCIES



Description

Vibration hour meters RZ provide exact times of operation in hours and minutes and can be used for any form of mobile or stationary vehicle or device/equipment. Suitable for most activity fields, for on and off road vehicles, especially when they are out on hire, the RZ meters guarantee the necessary cost transparency, security and information for economical decisions. Simple to install - no wires, no cables. The RZ meters use shocks and vibrations to collect the operation times.

Type

RZ 52 h horizontal mounting
 RZ 52 v vertical mounting

Technical information

Dimensions: RZ 52 58 x 75 mm
Panel cut outs: 52 mm
Mounting depth: 67.5mm
Weight: 145g
Operating temperature: 15 °C to 60 °C
Protection quality: IP 65, front panel dust and water proof
Moving force: vibration
Accuracy: 1 -3% during uninterrupted operation
Counting range: 99999h

Part No.....RZ52H.....Horizontal

Limitless Wireless Switch

well



Features

- Radio (licence-free and global*): WPAN 802.15.4, 2.4 GHz, point-to-point
- In Excess of 305m (1000ft) line-of-sight communication
- Reliable, flexible and secure wireless transmission

Benefits

- Reduces installation / maintenance costs with no wires, conduit, strain relief, clips, connectors or connection boxes
- Consumes ultra-low power to prolong battery life (replaceable)

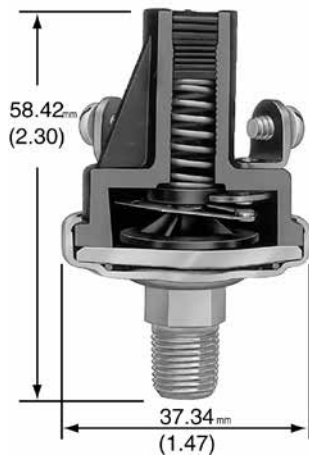
Applications

- Construction / Ag machines
- Conveyors / Cranes
- Door position
- Grain diverters
- Lifts / Presses
- Valve position
- Hose attachment verification
- Movable machinery

More information.....There are many options, accessories and configurations available, to learn more about Honeywell Limitless Wireless Switches call our sales department or visit www.honeywell.com/limitless

5000 Series Ultra Duty Pressure Switch

Honeywell



Set Points from 10-400 psi

Honeywell Sensing and Control has designed a high pressure/low set point pressure switch for applications that see sudden pressure spikes and high system pressures that can result in early switch failures. This series had been strengthened to prevent cracking of the base with plated steel and screw machined components in a 3-piece design. Modifications to the effective area of the pressure cavity and size of the diaphragm button and diaphragm o-ring are what makes the switch capable of handling sudden pressure transients and high system pressures that are common in applications such as braking, transmission and hydraulic systems.

In comparison to our 5000 Series Switch the burst rating has significantly increased from 1250 psi to over 4000 psi on the new design.

Specifications

- Type: Direct action blade contact
- Contacts: Silver alloy, gold plated
- Set Point Pressure: 10-400 PSI
- Operating Pressure: 500 PSI
- Proof Pressure: 2000 PSI
- Burst Pressure: 4000 PSI
- Base: Plated steel - Screw machined 3-piece construction
- Diaphragm: Polyimide Film
- Connector: 1/8-27 NPT Male Thread
- Temperature Range: 40°F to +250°F
- Terminal: #8-32 screws, 1/4" blade, 280 series metripack
- Circuitry: SPST-N.O., N.C., SPDT
- Cover: Glass Reinforced Polyester
- Options: Base connector sizes, wire leads, N.O./N.O dual circuit and N.C./N.C. dual circuit.

Ratings	Approximate Dead Band Standard Switches	Metric-Pack Switches
Resistive..... 15 AMP - 6 VDC	Contact Setting Dead Band	10 - 30 PSI..... 20 - 35 PSI
8 AMP - 12 VDC	10 - 35 PSI..... 15 - 25 PSI	30 - 65 PSI..... 35 - 55 PSI
4 AMP - 24 VDC	35 - 75 PSI..... 25 - 35 PSI	65 - 125 PSI..... 60 - 85 PSI
Inductive..... 1 AMP - 120 VAC	75 - 150 PSI..... 40 - 60 PSI	125 - 200 PSI..... 85 - 115 PSI
0.5 AMP - 240 VAC	150 - 250 PSI..... 50 - 70 PSI	200 - 400 PSI..... 150 - 200 PSI
	250 - 400 PSI..... 80 - 100 PSI	

5000 Series Ultra Duty Pressure Switches			2 Terminals		Metri-Pack Integral Connector (see Note at bottom of page)			
Contact Setting	Factory Set At	Circuitry	Screw Part No.	Blade Part No.	Contact Setting	Factory Set At	Circuitry	Part No.
10-35 PSI +- 4 psi	20 PSI	N.O.	83298	83313	10-30 PSI +- 4 psi	20 PSI	N.O.	83328
		N.C.	83299	83314			N.C.	83329
		DC*	83300	83315			DC*	83330
33-75 PSI +- 6 psi	60 PSI	N.O.	83301	83317	30-65 PSI +- 5 psi	45 PSI	N.O.	83331
		N.C.	83302	83318			N.C.	83332
		DC*	83303	83319			DC*	83333
75-150 PSI +- 10 psi	100 PSI	N.O.	83307	83322	65-125 PSI +- 7 psi		N.O.	83334
		N.C.	83305	83320			N.C.	83335
		DC*	83306	83321			DC*	83336
150-250 PSI +- 15 psi	200 PSI	N.O.	83307	83322	125-200 PSI	165 PSI	N.O.	83337
		N.C.	83308	83323			N.C.	83338
		DC*	83309	83324			DC*	83339
250-400 PSI +- 20 psi	300 PSI	N.O.	83310	83325	200-400 PSI +- 15 psi	300 PSI	N.O.	83340
		N.C.	83311	83326			N.C.	83341
		DC*	83312	83327			DC*	83342

NOTE: Mating connector for N.O. and N.C. is Packard Part No. 15300027; Mating connector for DC is Packard Part No. 12034147.
 DC* - the N.C. is the reference circuit for the DC switch; the N.O. circuit is not adjusted. The approximately dead band between the N.C. and N.O. circuit is shown in the charts. For applications requiring the N.O. circuit as the reference circuit, the N.C. Circuit is not adjusted.

5000 Series Extended Duty Pressure Switch With Direct Action Blade Contacts

Honeywell

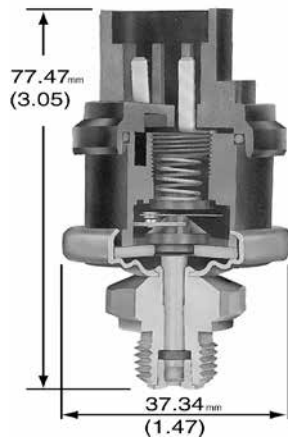
Set Points from 0.5 to 150 psi

The 5000 Series switch is specifically designed to stand up to extended duty applications. The switch is factory set but capable of field adjustment. It features a Kapton diaphragm for compatibility with a wide variety of fluids, and various terminations including a Metri-Pack connector that forms a tight seal when connected. Among the outstanding design benefits are its durable construction, compact size, and enhanced set point integrity.

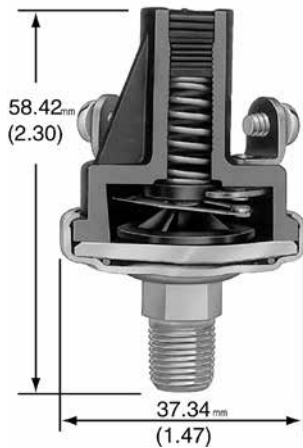
Standard Specifications

- Type: Direct action blade contact
- Contacts: Silver alloy, gold plated
- Set Point: Factory set from 0.5 to 150 PSI
- Operating Pressure: 150 PSI for 0.5-24 PSI set point range, 250 PSI for 25-150 PSI set point range
- Proof Pressure: 500 PSI
- Burst Pressure: 750 PSI for 0.5-24 PSI set point range, 1250 PSI for 25-150 PSI set point range.

Honeywell



5000 Series Switch with Metri-Pack Terminal



5000 Series Switch with Screw Terminals



Switch Boot for Vacuum & Pressure

5000 Series Extended Duty Pressure Switch With Direct Action Blade Contacts

Ratings

Resistive: 15 AMP - 6 VDC
 8 AMP - 12 VDC
 4 AMP - 24 VDC
 Inductive: 1 AMP - 120 VAC
 0.5 AMP - 240 VAC

Diaphragm: Polyimide film

Temperature Range: -40° F to + 250° F

Connector: 1/8 -27 NPT male thread

Terminals: #8-32 screws, 1/4" blade, 280 Series Metri-Pack

Circuitry: SPST - N.O., N.C., 1 circuit adjustable dual circuit, or 2 circuits adjustable dual circuit. Also available are N.O./N.O. dual circuit and N.C./N.C. dual circuit.

Base: Plated Steel

Cover: Glass reinforced polyester

Options: Brass, plastic or stainless steel base; various base connector thread sizes; wire leads (potted & sealed).

5000 Series Pressure Switch With Standard Terminals

Contact Settings	Factory Set At	Circuitry	Single Circuit 1 Terminal		Single Circuit 2 Terminals		Dual Circuit One circuit adjustable ¹		Dual Circuit Both circuits adjustable ²		
			Part No.		Part No.		Part No.		Contact Setting ³	Part No.	
			Screw	Blade	Screw	Blade	Screw	Blade	Screw	Blade	
0.5-1 PSI	1 PSI	N.O.	78630	78631	78628	78629	78711	78712	3-4 PSI	76081	76086
±0.3		N.C.	78634	78635	78632	78633			±0.5		
1.1-3 PSI	2 PSI	N.O.	78142	78399	76051	76056	76071	76076	5-8 PSI	76582	76590
±0.5		N.C.	78149	78406	76061	76066			±1		
3.1-7 PSI	4 PSI	N.O.	78143	78400	76575	76583	76579	76587	9-24 PSI	76082	76087
±1		N.C.	78150	78407	76577	76585			±2		
8-13 PSI	10 PSI	N.O.	78144	78401	76576	76584	76580	76588	25-50 PSI	76083	76088
±2		N.C.	78151	78408	76578	76586			±3		
14-24 PSI	15 PSI	N.O.	78145	78402	76052	76057	76072	76077	51-90 PSI	76084	76089
±3		N.C.	78152	78409	76062	76067			+ 5/-2		
25-50 PSI	35 PSI	N.O.	78146	78403	76053	76058	76073	76078	91-150 PSI	76085	76090
±5		N.C.	78153	78410	76063	76068			+ 8/-2		
51-90 PSI	60 PSI	N.O.	78147	78404	76054	76059	76074	76079			
±7		N.C.	78154	78411	76064	76069					
91-150 PSI	100 PSI	N.O.	78148	78405	76055	76060	76075	76080			
±10		N.C.	78155	78412	76065	76070					

5000 Series Pressure Switch With Metri-Pack Terminal

Contact Setting	Factory Set At	Circuitry	Single Circuit		Dual Circuit	Dual Circuit	
			(Mates with Packard Part No. 15300027)		One circuit adjustable ¹ (Mates with Packard Part No. 120 34147)	One circuit adjustable ² (Mates with Packard Part No. 12034147)	
			Part No.	Part No.	Part No.	Contact Setting ³	Part No.
1-3 PSI	2 PSI	N.O.	77029		77038	3-4 PSI	77047
±0.5		N.C.	77020			±0.5	
4-6 PSI	5 PSI	N.O.	77030		77039	5-10 PSI	77048
±1		N.C.	77021			±1	
7-12 PSI	10 PSI	N.O.	77031		77040	11-24 PSI	77049
±2		N.C.	77022			±2	
13-24 PSI	20 PSI	N.O.	77032		77041	25-46 PSI	77050
±3		N.C.	77023			±3	
25-46 PSI	35 PSI	N.O.	77033		77042	47-76 PSI	77051
±5		N.C.	77024			+ 5/ -2	
47-76 PSI	60 PSI	N.O.	77034		77043	77-100 PSI	77052
±6		N.C.	77025			+ 7/-2	
77-100 PSI	85 PSI	N.O.	77035		77044	101-126 PSI	77053
±7		N.C.	77026			+ 9/-2	
101-126	115 PSI	N.O.	77036		77045	127-150 PSI	77054
±9		N.C.	77027			+ 10/-2	
127-150 PSI	135 PSI	N.O.	77037		77046		
±10		N.C.	77028				

Part No.79380..... Switch Boot for Vacuum & Pressure

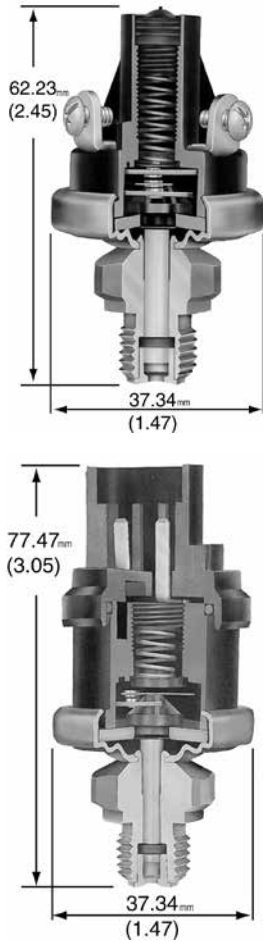
NOTE: Expected Dead Band (Higher than N.C. circuit)

NOTE: operating media (pressure switch)

The pressure switch is designed to operate with air, motor oils, transmission oils, jet fuels and their similar hydrocarbon media.

5000 Series Extended Duty Piston Switches With Direct Action Blade Contacts

Honeywell



Set Points From 200 To 1000 Psi

The 5000 Series piston switch is specifically designed for extended duty applications with set point requirements from 200 to 1000 PSI. This switch is factory set with various terminations available including a Metri-Pack connector that forms a tight seal when connected. Among the outstanding design benefits are its durable construction, compact size, and enhanced set point integrity. This switch has a wide media compatibility making it ideal for a number of applications.

Standard Specifications

Type: Direct action blade contact
Contacts: Silver alloy, gold plated
Set Point: Factory set
Pressure Operating: 200 - 1000 PSI
Pressure: 1000 PSI
Proof Pressure: 2000 PSI
Burst Pressure: 3000 PSI

Ratings

Resistive..... 15 AMP - 6 VDC
 8 AMP - 12 VDC
 4 AMP - 24 VDC
 Inductive..... 1 AMP - 120 VAC
 0.5 AMP - 240 VAC

Standard Seal: Nitrile (others available)
Temperature Range: -40°F to +250°F
Connector: 1/2 - 20 UNF (o-ring fitting)
Terminals: #8-32 screws, 1/4" blade, 280 Series Metri-Pack
Circuitry: SPST-N.O., N.C., D.C.
Base: Steel
Cover: Glass reinforced polyester
Options: Brass, stainless steel base; o-ring fittings; seal for brake fluid; wire leads (potted and sealed); boot

Piston Switch with Standard Terminal			Single Circuit		Dual Circuit *one circuit adjustable	
Contact Setting Range	Approximate Differential	Circuitry	Part No.		Part No.	
			Screw	Blade	Screw	Blade
200-400 ±30	30-100	N.O.	79700	79701	79712	79713
		N.C.	79702	79703		
401-800 ±60	40-125	N.O.	79704	79705	79714	79715
		N.C.	79706	79707		
801-1000 ±90	50-180	N.O.	79708	79709	79716	79717
		N.C.	79710	79711		

Piston Switch with Metric Terminal			Single Circuit (Mates with Packard P/N 15300027)	Dual Circuit * one circuit adjustable (Mates with Packard Part No.12034147)
Contact Setting Range	Approximate Differential	Circuitry	Part No.	
			Part No.	Part No.
200-350	30-100	N.O.	79718	79724
		N.C.	79719	
351-500	40-125	N.O.	79720	79725
		N.C.	79721	
501-750	50-150	N.O.	79722	79726
		N.C.	79723	

* **NOTE:** The N.C. circuit is the reference circuit for the dual circuit switch; the normally open circuit is not adjusted. For applications requiring the normally open circuit as the reference circuit, the N.C. circuit is not adjusted. Specify: 1. Set point. 2. Actuate on increasing or descending pressure. 3. SPST N.O. OR N.C. SPDT.

HPS Series High Pressure Premium (continued over page)

Honeywell



Description

150psi to 4500psi. The Honeywell Pressure Switches, High Pressure Premium, HPS Series is a portfolio of durable, reliable electromechanical gauge pressure on/off switches that are available with either single pole single throw (SPST) normally open or normally closed circuitry, or single pole double throw (SPDT) circuitry. The HPS Series' IP67 environmental sealing and high proof pressure and burst pressure ratings allow for use in a variety of rugged applications that require the making or breaking of an electrical connection in response to a pressure change of the system media. The media (gas or liquid) pressure is applied via the port of the switch. The media pushes against a piston. There is a pre-tensioned spring on the other side of the piston. If the force resulting from the pressure is greater than the tension on the spring, then the piston will move the electrical contacts within the switch. If the contacts are normally open when no pressure is applied, they close on increasing pressure when the set point is reached. On decreasing pressure, the contacts will open again at a pressure somewhat less than the set switching point. The difference between the activation point on increasing pressure and the deactivation point on decreasing pressure is called hysteresis. The set point pressure for the switch can be configured such that the switch will actuate on increasing or decreasing system pressure.

HPS Series High Pressure Premium (continued)

Honeywell



Performance Specifications

Characteristic: Parameter
Output types: NO, NC, SPDT (NO/NC)
Contacts: Gold-plated
Contact ratings: 5 mA to 5 A
Sealing: IP67
System operating pressure (max.): 5000 psi [345 bar]
Proof pressure: 10000 psi [689 bar]
Burst pressure: 20000 psi [1379 bar]
Set point (factory set): 150 psi to 4500 psi [10.34 bar to 310.26 bar]
Set point accuracy: up to ±2 %
Pressure ports: M14 x 1.5, 9/16-18 UNF, 3/4-16 UNF, 1/2-20 UNF

Termination

- Spade terminals
- Screw terminals
- Cable
- Deutsch DT04-3P
- AMP Superseal 1.5
- Cable with Deutsch DT04-3P
- Cable with Deutsch DT04-2P
- Cable with AMP Superseal 1.5
- Cable with Packard Metripak 150
- Cable with DIN 4365D-C
- Cable with M12 x 1
- 150 mm cable with Packard weatherpack male terminal

Spike damping: Achieved via a snubber mechanism

Diameter: 27 mm [1.06 in]

Length without mating connector: 80,21 mm [3.16 in]

Operating temperature range: -40 °C to 120 °C [-40 °F to 248 °F]

Vibration - swept sine: 10 Hz to 2000 Hz @ 15 g, 20 min/sweep

Weight: ~4.7 oz [-133 g]

Part Numbering System

HP	R	09500	P	F	N	S	P	G	AA
-----------	----------	--------------	----------	----------	----------	----------	----------	----------	-----------

HP	Series	HP Series High Pressure Premium Switch
R	Set Point	R = Rising F = Falling
09500	Pressure Set Point	10.34 bar to 310.26 bar (150 psi to 4500 psi) NOTE: Pressure set point is always ve digits. For bar, the set point value will be multiplied by 100 and entered in the listing. For example, 15.45 Bar is noted as 01545. This allows for 2 decimal places. For psi, the set point value will be multiplied by 10 and entered in the listing. For example, 245.5 psi is noted as 02455. This allows for 1 decimal place.
P	Pressure Unit	P = psig B = bar
F	Port Type	C = 1/2-20 UNF* F = M14 x 1.5** G = 9/16-18 UNF** H = 3/4-16 UNF * not applicable for 10.3 bar to 67.2 bar (150 psi to 975 psi) ** not applicable for 10.3 bar to 24.1 bar (150 psi to 350 psi)
N	Output	N = NO, gold plated contacts C = NC, gold plated contacts D = NO/NC, gold plated contacts
S	Differential	S = Standard E = Extended
P	Actuation/Application	N = Petroleum-based hydraulic fluid (Nitrile) P = Glycol-based fluid (EPDM)
G	Connector Type	A = Spade terminals B = Screw terminals C = Deutsch DT04-3P D = AMP Superseal 1.5 E = Cable F = Cable w/ Deutsch DT04-3P G = Cable with AMP Superseal 1.5 H = Cable with Metripak 150 J = Cable with DIN4365D-C K = Cable with M12 x 1 L = 150 mm cable w/ Packard weatherpack male terminal M = Cable with Deutsch DT04-2P
AA	Options	AA = Standard Switch AB = Customised Switch

Switch Definitions & Terminology

Pressure/Vacuum Switch - A device that senses a change in pressure/vacuum and opens or closes an electrical circuit when the set point is reached.

Set Point - The pre-determined pressure/vacuum value that is required to open or close the electrical contacts in the switch.

Electrical Contacts - The elements in the switch that electrically respond to the media applied to the actuator. Snap action contacts with a "self-cleaning" wiping effect are used in Series III and Series V switches. Direct action blade contacts are used in the 5000 Series.

Pressure Switch Actuator - The member in the switch which receives the media and ultimately strokes the electrical contacts to open or close at the designated set point. The actuator in the Series III is a beryllium copper or silicone rubber diaphragm. An elastomeric diaphragm or piston actuator is used in the Series V. The 5000 Series uses a polyimide film diaphragm.

Normally Open (SPST-N.O.) - A normally open switch does not conduct an electrical signal until the actuator is moved by the media causing the contacts to close.

Normally Closed (SPST-N.C.) - A normally closed switch conducts electricity until the actuator is moved by the media causing the contacts to open.

Dual Circuit (SPDT) - A normally open and normally closed circuit are contained in a switch.

Dual Circuit (N.O./N.O.) - Switch contains two normally open circuits.

Dual Circuit (N.C./N.C.) - Switch contains two normally closed circuits.

System Pressure/Vacuum - This is the normal pressure/vacuum that would be present at the switch actuator. This value is important in order to apply the proper switch configuration. Even though the set point may be relatively low, the system pressure would continue to be applied to the switch actuator in most cases.

Proof Pressure - This specification is the maximum over-pressure condition that the switch can have for a specified period of time and still maintain set point integrity.

Burst Pressure - This specification is the maximum over pressure condition that the switch can withstand without experiencing leakage.

Dry Circuit Load - Typically this would be a very low electrical load associated with microprocessors when the open circuit voltage is .03V or less and the current is 40mA or less.

Resistive Load - A load in which the voltage is in phase with the current.

Inductive Load - A load in which the voltage leads the current.

Motor Load - The load of a motor at rated horsepower and speed.

Capacitive Load - A load which the current leads the voltage.

Differential - The difference between opening (actuation) pressure and the closing (de-actuation) set points. This is also referred to as "dead band". For example, a switch set at 150 PSI to open on increasing pressure and close at 95 PSI on decreasing pressure would have a differential of 55 PSI (150-95=55).

Conversion Factors

Convert	To	Multiply By
kPa	PSI	0.145
PSI	kPa	6.894
BARS	PSI	14.5
PSI	BARS	0.069
Hg"	PSI	0.491
PSI	Hg"	2.036

Conversion Factors

Convert	To	Multiply By
H2O"	PSI	0.036
PSI	H2O"	27.677
H2O"	Hg"	0.073
Hg"	H2O"	13.596
C°	F°	1.8 (C° + 17.78)
F°	C°	F - 32 ÷ 1.8

FLEXIBLE DRIVE AGENCIES



Direct Read Fuel Gauge

Truck or prime-mover fuel tanks, oil heating fuel tanks, agricultural fuel tanks.

Installation

Designed for installing into both fixed or portable fuel tanks, vertically or horizontally.

Features

- Rugged construction
- External surfaces corrosion protected by enamelled & chrome finishes.
- Direct coupling for reliable indication.
- Triple sealing of lens prevents moisture penetration.
- Silicone damped pointer, eliminates flutter.
- High tensile float arm.
- Brass float to prevent long term saturation.

Dimensions

External diameter of flange 89mm (3 1/2").

NOTE: For new installation of fuel level gauge, flange mounting kit G-18010 is available.

Side of Tank

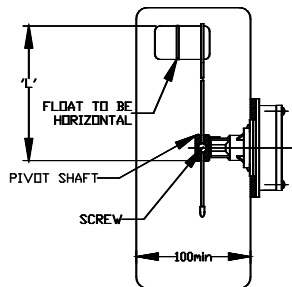


FIGURE 1.

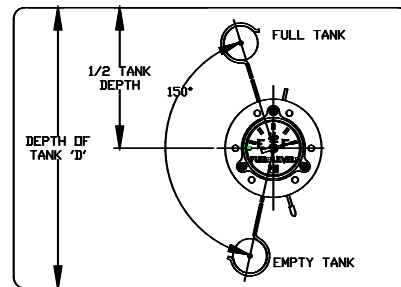


FIGURE 2.

Depth of tank 'D'	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	650	700
Dimensions 'L' mm	56	61	66	71	76	81	86	91	96	101	106	116	126	136	146	156	181	206	221	256	281	306	331	356

NOTE: Length 'L' may be calculated for any depth of tank using the formula. $L = 0.501D + 6\text{mm}$.

Part No.	Tank Depth	Mounting
A183HU	0.1 to 1.17m (4" to 46")	Side of tank
A183HA	1200-2000mm (48" -80 ")	Side of tank

Top of Tank

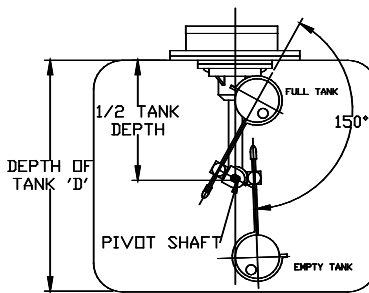


FIGURE 1A

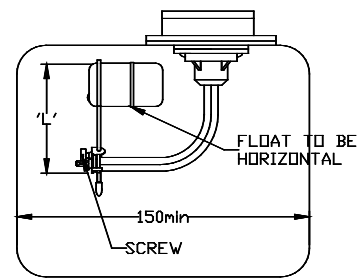


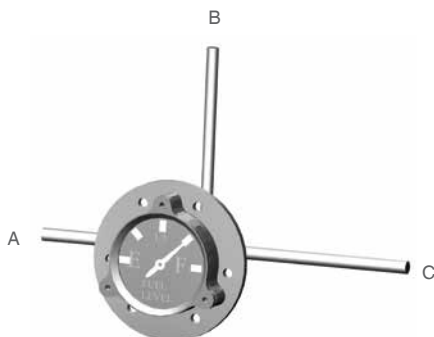
FIGURE 2A

Part No.	Tank Depth	Mounting	Pipe Orientation
A183VM	140mm (5.5")	Top of tank	C
A183VH	152mm (6")	Top of tank	C
A183VA	254mm (10")	Top of tank	A
A183VC	305mm (12")	Top of tank	A
A183VK	400mm (16")	Top of tank	A
A183VE	482mm (19")	Top of tank	A
A183VF	635mm (25")	Top of tank	B

We can "make to order" gauges for your specific requirements

Hole Size For Tapping

Thread	Tank Thickness Mm		
	2.0 - 3.2	3.2 - 6.3	Above 6.3
No, 10-24 UNC	3.75 - 3.90	3.80 - 3.95	3.85 - 4.00
No, 10-32 UNF	4.00 - 4.10	4.05 - 4.15	4.10 - 4.20
M5 X 0.8	4.15 - 4.25	4.20 - 4.30	4.25 - 4.35



Instruments families: STD - Standard, HD - Heavy Duty, WINGS - Wings Series, DLX - Deluxe, HD+ - Heavy Duty Plus, TF - Track Force

Mechanical Pressure 2-30 PSI Manifold, Fuel & Water Pressure 2 1/16"



Part No.	Family	Dial Graphics
82320	DLX	Fuel Pressure

Mechanical Pressure 0-50 PSI Pressure 2 1/32"



Part No.	Family	Dial Graphics	Characteristic
82207	STD	PSI Pressure	Non-illuminated/sealed case

Mechanical Pressure 5-80 PSI Oil Pressure 2 1/32"



82322



82208

Part No.	Family	Dial Graphics	Characteristic
82322	DLX	Oil Pressure	
82208	STD	PSI Pressure	Non-illuminated/sealed case/ 2 1/32" case

Mechanical Pressure 2-100 PSI Air Suspension 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82396	DLX	Air Suspension PSI	Waterproof Case/Black Bezel/ Non-illuminated
82484	WINGS	Air Suspension	Black Facial

Mechanical Pressure 5-100 PSI Oil Pressure 2 1/16"



82323 & 284D



82741



82392

Part No.	Family	Dial Graphics	Characteristic
82323	DLX	Oil Pressure	
284D	HD	Oil PSI	
82741	HD+	PSI kPa Oil	Dual Scale/English Dominant
82392	DLX	kPa	Metric Deluxe

Mechanical Pressure 10-150 PSI Air Pressure 2 1/16"



82329



82742

Part No.	Family	Dial Graphics	Characteristic
82329	DLX	Air Pressure	
82742	HD+	PSI Air kPa	Dual Scale/English Dominant

Mechanical Pressure 10-150 PSI Dual Air Pressure 2 1/16"



82332



82746

Part No.	Family	Dial Graphics	Characteristic
82332	DLX	Air Pressure	
82746	HD+	kPa Air psi	Dual Scale/English Dominant

All Stewart Warner gauges are 12V unless otherwise specified. For 24V applications use a dropping resistor - See page 135.

Mechanical Pressure 10-200 PSI Oil & Fuel Pressure 2 1/16"



82324

Part No.	Family	Dial Graphics
82324	DLX	Oil Pressure

Mechanical Pressure 20-300 PSI Transmission Oil & Drive Oil Pressure 2 1/16"



82120



82743

Part No.	Family	Dial Graphics	Characteristic
82120	DLX	Drive Oil	Marine Deluxe
82743	HD+	PSI/kPa	Dual Scale/English Dominant

Mechanical Pressure 25-400 PSI Transmission Oil & Drive Oil Pressure 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82121	DLX	Drive Oil	Marine Deluxe

Mechanical Vacuum/Turbo & Air Restriction 0-30 HG Mechanical Vacuum/Turbo & Air Restriction 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
284AH	HD	Vacuum In. Hg.	Dual Scale/English Dominant
82328	DLX	Vacuum In Hg.	
82745	HD+	Vacuum In Hg./Mm Hg	

Mechanical Temperature 100-250°F Water Temperature



Part No.	Family	Dial Graphics	Characteristic
82210	STD	Temperature	Sealed Case/Non-illuminated/ tube* lengths in inches - 36,48,60,72,144

Mechanical Temperature 100-265°F Water Temperature 2 1/16"



82326



82394

Part No.	Family	Dial Graphics	Characteristic
82326*	DLX	Water Temp	Capillary length inches - 48,60,72,96,120
82394*	DLX	C°	Metric deluxe tube length - 72,96,144

* Must indicate tube lengths when ordering

Mechanical Temperature 100-265°F Water Temperature 2 5/8"



Part No.	Family	Dial Graphics	Characteristic
82409*	DLX	Water Temp	Capillary length inches - 60,72,144

* Must indicate tube lengths when ordering

Mechanical Temperature 140-325°F Oil Temperature 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
284C*	HD	Oil F°	Tube length inches - 36,72,144
82327*	DLX	Oil Temp	Tube length inches -60,72,96,144,216
82410*	DLX	Oil Temp	Tube length inches -60,72

* Must indicate tube lengths when ordering

All Stewart Warner gauges are 12V unless otherwise specified. For 24V applications use a dropping resistor - See page 135.

Mechanical Speedo 5/85 MPH/0-130KM/H Mechanical Speedometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82677	DLX	KM/H MPH	Odometer/Dual Scale/English Dominant

Mechanical Speedo 0-140 KM/H/5-85 MPH Mechanical Speedometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82695	HD+	KM/H	Metric Odometer/Dual Scale Metric Dominant

Mechanical Speedo 0-140 KM/H Mechanical Speedometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82697	DLX	KM/H	Metric Odometer/Full Metric Deluxe

Mechanical Speedo 0-160 Mph Mechanical Speedometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82663	Wings	MPH	Odometer/White Facedial

Mechanical Tachometers 0-3000 RPM Tachometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82696	HD+	RPM X 100	.5:1 ratio/Hourmeter

Mechanical Tachometers 0-3500 RPM Tachometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82689	DLX	RPM X 100	.5:1 Ratio
82691	DLX	RPM X 100	1:1 Ratio

Electrical Pressure 0-16 PSI Fuel Pressure (82504-F Sender) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82333	DLX	Fuel Pressure	

Electrical Pressure 0-80 PSI Fuel Pressure (82504-F Sender) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82304	DLX	Oil Pressure	
82113	DLX	Oil Pressure	Marine Deluxe

Electrical Pressure 0-100 PSI Oil & Fuel Pressure (279A Or 82893* Sender) 2 1/16"



82305 & 82116*



82728



82387

Part No.	Family	Dial Graphics	Characteristic
82305	DLX	Oil Pressure	
82116*	DLX	Oil Pressure	Marine Deluxe
82728	HD+	Oil PSI/KPA	Dual Scale/English Domiant
82387	DLX	KPA	Metric Deluxe

*Use 82893 Sender with 100 psi Fuel Pressure Guages for Marine Applications

Electrical Pressure 0-100 PSI Electric Oil Pressure (Sender 279B-F) 2 1/32" Commander Series 24 Volt Line



Part No.	Family	Dial Graphics	Characteristic
463R	24 Volt	KPA/PSI	Dual Scale/Metric Dominant

Electrical Temperature 100-240°F Water Temperature (Sender 280EA) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82114	DLX	Water Temperature	Marine Deluxe
82306	DLX	Water Temperature	

Electrical Temperature 100-240°F Water Temperature (Sender 280EC) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82389	DLX	°C	Metric Deluxe
82730	DH+	°F °C Coolant	Dual Scale/English Dominant

Electrical Temperature 100-280°F Water Temperature (Sender 280ED-F) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
284J	DLX	Oil Temperature	
82115	HD+	°F °C Trans	Dual Scale/English Dominant
82307	DLX	°C	Metric Deluxe

Electrical Temperature 140-320°F Oil Temperature (Sender 280EE-F) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82308	DLX	Oil Temperature	
82390	DLX	°C	Metric Deluxe
82739	HD+	°F °C Trans	Dual Scale/English Dominant

Electrical Temperature 100-240 °F Electric Coolant Temp (Sender 280EC) 2 1/16" Commander Series 24 Volt Line



Part No.	Family	Dial Graphics	Characteristic
468AH	24 Volt	°C °F	Dual Scale/Metric Dominant

Electrical Temperature Commander Series 24 Volt Line 100-300 °F Electric Trans Temp (Sender 280ED-F) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
468AK	24 Volt	°C °F	Dual Scale/Metric Dominant

Electrical Temperature 150-350°F Oil Temperature (Sender 280EE-F) 2 1/16"



Part No.	Family	Dial Graphics	Characteristic
82344	DLX	Trans Oil Temperature	
82731	HD+	°F °C Oil	Dual Scale/English Dominant

All Stewart Warner gauges are 12V unless otherwise specified. For 24V applications use a dropping resistor - See page 135.

Electrical Tachometers

0-8000 RPM Petrol Ignition Tachometer 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82660	Wings	RPM Hundreds	4, 6 and 8 Cylinder/Black Face dial
82170	DLX	RPM X 1000	4, 6 and 8 Cylinder

Electrical Tachometers

0-3500 RPM Diesel Tach (Sender 82623b) Hall Effect 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82620	DLX	RPM X 100	Selectable Ratio .5, 1, 1.5, 2
82622	DLX	RPM 100 HOURS 1/10	Selectable Ratio .5, 1, 1.5, 2/Hourmeter Tach Hour
82635	DLX	R/MIN X 100	Selectable Ratio .5, 1, 1.5, 2 Alternator
82640	DLX	RPM X 100	Selectable Ratio .5, 1, 1.5, 2 Alternator
82643	HD+	RPM X 100	Selectable Ratio .5, 1, 1.5, 2 Alternator

Electrical Tachometers

0-3500 RPM Diesel Tach (Sender 82646) Mag. Pickup 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82636	DLX	R/MIN X 100	Selectable Ratio .5, 1, 1.5, 2 Flywheel

Electrical Tachometers

0-3500 RPM Diesel Tach (Alternator Application) 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82672	Wings	RPM Hundreds	Selectable Ratio .5, 1, 1.5, 2 Alternator

Electrical Speedometer

0-30 MPM Electrical Speedometer (Sender 82623B) 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82603	HD+	KM/H MPH	Programmable/Odometer/dual Scale/ English Dominant

Electrical Speedometer

5-85 MPM Electrical Speedometer (Sender 82623B/82646) 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82645	HD+	KM/H MPH	Programmable/Odometer/Dual Scale/English Dominant
82656	DLX	MPH KM/H KM	Metric Deluxe/Programmable/Metric
82658	HD+	MPH KM/H KM	Programmable/Metric Odometer/Dual Scale/Metric Dominant

Electrical Speedometer

0-120 MPH Electrical Speedometer (Sender 82623B/82646) 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82670	Wings	MPH/KPH	Programmable/Odometer/Black Face dial

Electrical Speedometer

0-160 MPH Electrical Speedometer (Sender 82623B/82646) 3 3/8"



Part No.	Family	Dial Graphics	Characteristic
82662	Wings	MPH	Programmable/Odometer/Black Face dial

Electrical Speedometer

0-160 MPH Electrical Speedometer (Sender 82623B/82646) 5"



Part No.	Family	Dial Graphics	Characteristic
82698	DLX	MPH	Programmable/Odometer

Electrical Fuel **Electric Fuel Gauge (SW) 2 1/16" Commander Series 24 Volt Line**



Part No.	Family	Dial Graphics	Characteristic
458H	24 Volt	Fuel	240 OHM

Voltmeter **10-16 V Voltmeter 2 1/16"**



82387

Part No.	Family	Dial Graphics	Characteristic
284H	HD	Volts	
82112	DLX	Volts	Marine Deluxe
82309	DLX	Batt Chg. Volts	
82376	HD+	Battery	

Voltmeter **20-32 V Voltmeter 2 1/16"**



Part No.	Family	Dial Graphics	Characteristic
284AJ	HD	Volts	
82377	HD+	Battery	

Voltmeter **20-32 V Voltmeter Commander Series 24 Volt Line**



Part No.	Family	Dial Graphics	Characteristic
475L	24 Volt	Battery	240 OHM

Ammeters **20-0-20 Ammeter 2 1/32"**



Part No.	Family	Dial Graphics	Characteristic
82201	STD	Amps	Internally Shunted/Non-Illuminated Sealed Case

Ammeters **20-0-20 Ammeter 2 1/32"**



Part No.	Family	Dial Graphics	Characteristic
82310	DLX	Amps	Internally Shunted
82736	HD+	Battery	Internally Shunted
82200	STD	Amps	Internally Shunted/Non-Illuminated Sealed Case

Ammeters **60-0-60 Ammeter 2 1/16"**



Part No.	Family	Dial Graphics	Characteristic
284A	HD	Amps	Internally Shunted
82108	DLX	Amps	Marine Deluxe/Internally Shunted
82109	DLX	Amps	Marine Deluxe/Requires External Shunt #813489
82311	DLX	Amps	Internally Shunted
82359	HD+	Battery	Requires External Shunt #813489

Ammeters **100-0-100 Ammeter 2 1/16"**



Part No.	Family	Dial Graphics	Characteristic
284AA	HD	Amps	Requires External Shunt #407616
82110	DLX	Amps	Marine Deluxe/Requires External Shunt #407616
82313	DLX	Amps	Internally Shunted

All Stewart Warner gauges are 12V unless otherwise specified. For 24V applications use a dropping resistor - See page 135.

Fuel Level



82733

240 OHM Fuel Level Gauge (SW) 2 1/16"

Part No.	Family	Dial Graphics	Characteristic
82111	DLX	FUEL	240 OHM/Marine Deluxe
82303	DLX	FUEL	240 OHM
82471	WINGS	FUEL	240 OHM/White Face dial
82472	WINGS	FUEL	240 OHM/Black Face dial
82733	HD+	FUEL	240 OHM

Fuel Level



90 OHM Fuel Level Gauge (GM) 2 1/16"

Part No.	Family	Dial Graphics	Characteristic
82341	DLX	FUEL	90 OHM

Fuel Level



73 OHM Fuel Level Gauge (Ford/Chrysler) 2 1/16"

Part No.	Family	Dial Graphics	Characteristic
82342	DLX	FUEL	73 OHM

Genuine Wings Six-Gauge Electric Kit



Kit Part No.	Kit Part No.		
82222	82223		
White Facial individual Part No.	Black Facial individual Part No.	Description	Case Size
82473	82474	Electric Oil Press	2 1/16"
82477	82478	Electric Water Temp	2 1/16"
82471	82472	Electric Fuel	2 1/16"
82481	82482	Electric Volt	2 1/16"
82659	82660	Electric Tach	3 3/8"
82661	82662	Electric Speed	3 3/8"

*Kits feature all necessary senders, lighting, instruction & installation hardware.

Genuine Wings Mechanical Six-Gauge Kit



Kit Part No.	Kit Part No.		
82224	82225		
White Facial individual Part No.	Black Facial individual Part No.	Description	Case Size
82475	82476	Mechanical Oil Press	2 1/16"
8247972	8248072	Mechanical Water Temp	2 1/16"
82471	82472	Electric Fuel	2 1/16"
82481	82482	Electric Volt	2 1/16"
82659	82660	Electric Tach	3 3/8"
82663	82664	Mechanical Speed	3 3/8"

*Kits feature all necessary senders, lighting, instruction & installation hardware.

Genuine Wings Five Gauge Kit With Mechanical Speed



Kit Part No.		
82227		
Black Facial individual Part No.	Description	Case Size
82474	Electric Oil Press	2 1/16"
82478	Electric Water Temp	2 1/16"
82472	Electric Fuel	2 1/16"
82482	Electric Volt	2 1/16"
82664	Mechanical Speed	3 3/8"

*Kits feature all necessary senders, lighting, instruction & installation hardware.



FDA stocks a comprehensive range of VDO parts. To download a catalogue go to www.fdrive.com.au/products/05/vdo.php

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Catalogue 20

Marine Catalogue

2012-13



www.vdo.net.au

Viewline—the new generation in instrumentation

- Navigation Instruments
- Tachometer & Tachourmeter
- Gauges for engine monitoring



1



83300 Series Temperature Switches



Product Description

- Solid brass body.
- Gold-plated contacts
- Excellent accuracy and repeatability
- Normally open contact
- Switches are voltage independent

Sales Kit Part No.	Thread size	Temp.	Terminal
83313	M16 X 1.5	225° F	Spade

83300 Series Pressure Switches

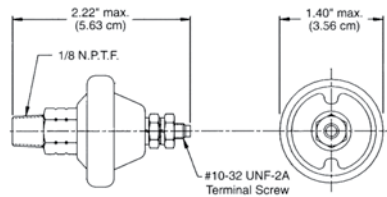


- Robust construction for maximum strength
- Diaphragm assembly is normally open and closes when input pressure drops
- Switches are voltage independent
- 1/8" NPT

Part No..... D364L..... 6 psi

Part No..... D364K..... 15 psi

Dimensions:



Thick Film Sender



Materials And Finishes On External Parts

- Flange: steel, zinc dichromate finish
- Screw: brass
- Lockwasher: phosphor bronze
- Flat Washer: brass

Features And Benefits

- Thick-film resistors deliver greater accuracy and will perform reliably for more than twenty million cycles.
- Phosphor bronze wiper with nickle silver contact provides extended life under fuel sloshing, vibration and dither conditions.
- Resistors are trimmed by computer-guided lasers to exact specifications for greater accuracy
- Extended float arm support is impervious to side play from fuel sloshing in the tank.
- Solid Lifecell™ float will not sink
- Zinc dichromate finish and copper alloy hardware

90 Ohm	
Float Position	Resistance Range
Full	88.0-92 ohms
Empty	0.0-2.0 ohms

240 Ohm	
Float Position	Resistance Range
Full	29.0-33.5 ohms
Empty	240-250 ohms



Thick Film Fuel Senders (length Adjustable)

Tank Depth	Stud Termination	Packard Connector**	Stud Termination
	Kit Part No.	Kit Part No.	Kit Part No.
	240 ohm	240 ohm	90 ohm
4 1/2-24" depth. RH	385AB-P*	D386AB*	
6-12" depth, LH	D385B	D386B	
6-12" depth, RH	D385C	D386C	
10-15" depth, LH	D391A	D392A	439361F
10-15" depth, RH	D391B	D392B	439362F
15 1/2-24" depth, LH	D391C	D392C	439363D
15 1/2-24" depth. RH	D391D	D392D	439364D
27-36" depth. RH	D391PX		

Male Packard Connector Assembly Part No. 82891

*Spade terminal ground

** Isolated Ground Sender

Fuel senders comply with NMMA requirements for fire resistance. Tested to USCG requirement #33 CFR 183.590

NOTE: Order Fuel Level Sender (Tank Unit) Installation Kit Part No. 366LPF separately, if needed. Flange should be welded or soldered to tank. The kit contains: one flange, one rubber gasket, and five washers and screws.

Application Specification: Fuel level sender plate and termination will withstand an internal pressure of 6 psi (41.4 kPa) when properly installed in the tank.

Thick Film Pressure Senders (continued over the page)



Product Description

- Preferred for the most rigorous applications, thick film pressure senders will last up to five times longer than senders with wire-wound resistors.
- Trimmed by computer-guided lasers for greater accuracy.
- Kapton® high-temperature plastic diaphragms sealed with Viton® gaskets for tighter seals and greater protection against oil leaks.
- Available with sealed integrated Packard™ connectors. The connector assures a weather tight fit for a reliable electric connection and easy installation.

Pressure	Resistance (Nominal)	Limits
0 psi (0Kps).....	240 ohm.....	229 - 242.5
Full Rating.....	33.5 ohm.....	27.0 - 43.0

Type: diaphragm, thick film rheostat
Voltage: 12 volts is normal operating voltage. Can be used in circuits up to 36 V with voltage adapter (see page 131)
Weight: 5.5 ounces or 156g

Materials & Finishes

Cover: steel, zinc dichromate finish
Flange and stud assembly: steel, bright zinc
Terminal stud: brass, white nickel. Hex nut: brass
Lock washer: phosphor bronze.
Flat washer: brass

Application Specifications

Mounting position: any orientation permissible.

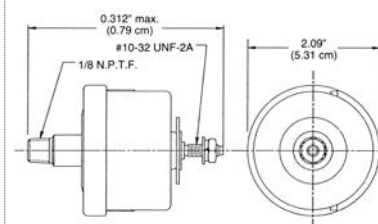
Thick Film Pressure Senders (continued)



Ambient Temperature Range

Operating:
 -40°F through 300°F
 -40°C through 149°C
Storage:
 -40°F through 300°F
 -40°C through 149°C

Dimensions



Thick Film Pressure Senders

Pressure	Stud Termination	Packard™ Connector
15 psi.....	82504F.....	-
80 psi.....	279A.....	82892
100 psi.....	F279B.....	82893

Temperature Sender



Application: Automotive and Industrial

Product Description

Constructed of high-quality, corrosion-resistant brass for maximum durability and outstanding electrical and thermal conductivity.
 Phosphor bronze contact spring provides resistance to shock and vibration

Temperature Senders

Universal Sales Kit Part No.	Sales Kit Part No.	Thread Size	Hex Size	Temperature Range
280EC		1/8" NPTF	5/8"	100-230°F
280EA	D362CZ	1/8" NPTF	5/8"	100-240°F
82503*			5/8"	100-240°F
	D362AN	1/4" NPTF	5/8"	100-240°F
	D362AJ	3/8" NPTF	3/4"	100-240°F
	D362AH	1/2" NPTF	7/8"	100-240°F
	D362BB	1/2" NPTF	7/8"	100-240°F
F280ED	D334H	1/8" NPTF	5/8"	100-280°F
	D334AA	1/4" NPTF	5/8"	100-280°F
	D334AB	3/8" NPTF	3/4"	100-280°F
	D334AD	1/2" NPTF	7/8"	100-280°F
280EE		1/8" NPTF	5/8"	140-320°F

Standard pipe thread is 1/8". Universal sales kits include adapter for 1/4", 3/8" and 1/2" pipe thread. Sender operates two gauges simultaneously, cannot be used with single gauge.

82510	Universal Metric-Adapters 14, 16, 18mm Thread	100-280°F
-------	---	-----------



Sender (Hall Effect)

7/8" Thread. 8 pulses per rev. (Square Wave). Connect to mechanical shaft take-off. Requires 12 VDC input. Comes with .187 Tang tip. Maximum rpm 3,500. One sender will operate two tachometers or two speedometers. Sender extension 2" Long: 103402

(3-wire hook-up) .152 Clutch 814011
.187 Clutch 814012

Pictured Part No.....82623B

Available tips	Part No.	Available tips	Part No.
.203 Tang	82624	.150 Sq.	82630
.187 Tang	82625	.184 Sq.	82631
.152 Tang	82626	.193 Sq.	82632
.104 Sq.	82629	(order seperately)	



Sender

Used to generate a signal from a mechanical take off shaft. No voltage input required. Easy two-wire hook-up. Comes with .104 tip

Pictured Part No.....82565F

Available tips	Part No.
.203 Tang	82624
.187 Tang	82625
.152 Tang	82626
.104 Sq.	82629
(order seperately)	



Sender/Inductive/Magnet Pickup

Thread size 3/4 in-16 UNF
Stewart Warner Speedometer/Tachometer Inductive/Magnetic Sender. Flywheel ring application for tachometer; tone wheel application for speed. One sender will operate two tachometers or two speedometers.

Part No.....82646
Part No.....063000.....Stainless stell - 5/8 Sender



Gauge - Hand-Held Tachometer

Application: Automotive and Industrial

Product Description

0-4000 rpm clockwise and counterclockwise. 3" diameter and 4" long, used for direct measure on rotating shaft.

Part No.	
82682	Tachometer
4128501	3-inch ext. shaft (accessory)
96798	Cone rubber tip (accessory)
96799	Cup rubber tip (accessory)

FLEXIBLE DRIVE AGENCIES.....



Hand-Held Digital Tachometer

- Rugged, durable, light weight plastic housing
- Shaped to fit comfortably in either hand
- Wide measuring range and high resolution
- Digital LCD display
- Memory recall function
- Packaged in protective case to ensure safe storage
- Laser beam operation
- Monitor any rotating shaft speeds

Part No.....QM1448

Dropping Resistor/Voltage Adaptor



Product Description

Used to adapt 12VDC Bi-Torque gauges to higher voltage electrical systems.

Part No.	Part No.	
24VDC	32VDC	
D8295252	8295258D	12V Gauge
D8295259	D8295256	Pyrometers
82563B	82564B	Tachometer (non-hourmeter)

Pressure Tube Kits



Product Description

Contains:

- 1/8" female NPT nut
- 1/8" male NPT nut
- 1/4" adapter nut

Part No......F82553.....6 ft. tubing

Part No......366HM.....16 ft. tubing

Adapter Nuts - For Mechanical Water Temperature Gauges



Part No......82572.....5/8" - 18 ID to M14x1.5 OD

Part No......82573.....5/8" - 18 ID to M16x1.5 OD

Part No......82574.....5/8" - 18 ID to M18x1.5 OD

Shunt



For use on ammeters requiring external shunt.

Part No......813489.....60 AMP

Part No......407616 (pictured).....100 AMP

Warning Devices



Part No......366TJ.....Includes 825104-D with 364L-F and 83307 switches

Part No......D825104.....Audio-Visual/Light and Buzzer

**FLEXIBLE DRIVE
AGENCIES**



Standard Tiny Tach™

- RPM reading adjustable from 1 spark per 2 revolutions to 8 sparks per revolution. One TINY-TACH™ now works for most petrol engines.
- RPM to 19,990.
- RPM update time 1/2 second.
- Hour meter records total actual running time on your engine.
- Job timer can be reset to record run time for record keeping.
- Coax cable transmits signal without EMF interference.
- 1 Antenna cable winds around your spark plug wire to give you the RPM reading — clean and simple to attach. Signal strength can be controlled by the antenna wire. Standard cable length is 6 feet
- TINY-TACH™ unit is potted to prevent damage from moisture and vibration.
- Lithium battery life 5+ years, not replaceable.
- One year warranty.
- Filtered unit recommended for outboard engines

Part No.....TT2A.....Standard

Part No.....TT2AXL.....Filtered

**FLEXIBLE DRIVE
AGENCIES**



Commercial Tiny Tach™

- Tachometer and hour meter for petrol engines.
- Can be programmed for different engines.
- RPM to 19,990.
- Updates every 1/2 second.
- High RPM recall.
- Contains tachometer, hour meter, two service timers, job timer and max RPM.
 - Total hours on engine-not resettable.
 - Job timer-resettable.
 - Service time reminder—set in hours from 5-50 (an icon flashes).
 - Service time reminder 2—set in hours from 10-250 (an icon flashes).
- All menu controlled.
- Standard wire length is 6 feet.
- TINY-TACH™ unit is potted to prevent damage from moisture and vibration. Lithium battery life 5+ years, not replaceable.
- One year warranty.

Part No.....TT226CML

**FLEXIBLE DRIVE
AGENCIES**



Diesel Tiny Tach™

- Lighted Display.
- RPM updates every 1/2 second
- Maximum RPM recall feature.
- RPM to 19,990.
- Flash memory replaces internal battery.
- Correct reading regardless of the number of cylinders.
- Displays RPM when engine is running.
- Automatically displays run-time hours when engine is shut off (and power is still on).
- A low cost method of keeping track of engine performance.
- Standard wire length is 8 feet.
- Accurate means of setting exact engine RPM for proper operation of diesel engines.
- Has job timer and 2 service timers.
 - Total hours on engine-not resettable.
 - Job timer-resettable.
 - Service Time Reminder -set in hours from 5-50 (an icon flashes).
 - Service Time Reminder 2 -set in hours from 10-250 (an icon flashes).
- Uses a transducer on the fuel line which must be the correct size for the line.**Sold separately
- Requires 12 volt power source. Can be used on 24v systems, TT24 voltage reducer required.
- One year warranty.

Part No.....TT226D

Transducers Available

Part No.....TD4.....4mm

Part No.....TD5.....5mm

Part No.....TD6.....6mm

Part No.....TD64.....¼ inch

Drive Joints - 888 Series

FLEXIBLE DRIVE AGENCIES



Drive joints are used to correct inaccurate speedometer operation resulting from a change in a vehicle's axle ratio, and/or tyre size. Installing a drive joint of the proper ratio between the transmission and the flexible shaft alters the drive ratio to the speedometer to correspond to the vehicles alterations.

Method of Calculating Drive Joint Ratio

1. Remove old drive joint, if fitted, connecting the flexible shaft directly to the transmission.
2. Drive vehicle on a measured course of ~ 5 km. The longer the course, the more accurate the test.
3. Note distance measured on the odometer.
4. The drive joint ratio can then be calculated as follows:
Actual distance travelled / odometer reading = drive joint ratio

Part No.	Adaptor Box Kit	Input End		Output end	
		Drive Shaft	Nut Int.	Driven End	Ext. Thd.
A888B	888B	Ø0.203 Key	7/8-18 UNS	Ø0.213 Hole	7/8-18 UNS
A888F	888F	Ø0.104 Square	7/8-18 UNS	0.105 SQ. Hole	7/8-18 UNS
A888TF	888TF	Ø0.203 Key	M22 X 1.5	Ø0.213 Hole	M22 X 1.5

Adaptor box kit Comprised of 2 housings & couplings, 4 self tapping screws, 1 gasket, 1 input shaft, 1 output shaft, 1 drive key & 1 intermediate shaft. Gears purchased separately.

For complete gear combination ask our sales staff (Chart 2500215)

Speedometer Reading Too Slow

Odo Reading	% Slow	Drive Joint Ratio	Odo Reading	% Slow	Drive Joint Ratio
3	40%	1.68	4	20%	1.25
3.1	38%	1.615	4.1	18%	1.213
3.2	36%	1.586	4.2	16%	1.202
3.3	34%	1.511	4.3	14%	1.166
3.4	32%	1.483	4.4	12%	1.136
3.5	30%	1.44	4.5	10%	1.111
3.6	28%	1.384	4.6	8%	1.088
3.7	26%	1.36	4.7	6%	1.071
3.8	24%	1.307	4.8	4%	1.041
3.9	22%	1.284	4.9	2%	1.018

Speedometer Reading Too Fast

Odo Reading	% Slow	Drive Joint Ratio	Odo Reading	% Slow	Drive Joint Ratio
5.1	2%	0.982	6.1	22%	0.821
5.2	4%	0.961	6.2	24%	0.809
5.3	6%	0.944	6.3	26%	0.789
5.4	8%	0.933	6.4	28%	0.778
5.5	10%	0.912	6.5	30%	0.769
5.6	12%	0.897	6.6	32%	0.755
5.7	14%	0.879	6.7	34%	0.746
5.8	16%	0.862	6.8	36%	0.735
5.9	18%	0.85	6.9	38%	0.722
6	20%	0.831	7	40%	0.694

Drive Joint Fittings

FLEXIBLE DRIVE AGENCIES



Double Tang

Part No.	End	Length	End
101451	Ø 0.152"	1 1/8"	Ø 0.187"
101452	Ø 0.187"	1 3/16"	Ø 0.187"
3101453110	Ø 0.203"	1 3/16"	Ø 0.187"

Tang + Square

Part No.	End	Length	End
3020048120	Ø 0.203"	1 9/16"	0.101" SQ
82625	Ø 0.187"	1 1/4"	0.107" SQ
82626	Ø 0.187"	1 1/4"	0.101" SQ
3101454110	Ø 0.187"	1 1/4"	0.107" SQ
428798	Ø 0.187"	1 1/4"	0.148" SQ

Double Square

Part No.	End	Length	End
82629	0.101" SQ	1 1/4"	0.101" SQ
3015248110 (Core)	0.101" SQ	1 3/4"	0.101" SQ
3019118110 (Core)	0.101" SQ	1 7/64"	0.101" SQ
3019054110 (Core)	0.101" SQ	1 5/8"	0.101" SQ

Calculating the Drive Joint ratio from known information.

General Formula

(Teeth in Driven Gear * 1000) / (Tire Rev's per Mile * Axle Ratio * Teeth in Drive Gear) = Drive Joint Ratio
Self assembly kits - Includes all common parts. Gears must be ordered to required ratio as per chart F525, available on request.

Drive Joint - Right Angle

FLEXIBLE DRIVE AGENCIES

FDA right angle drive joints are used to alter ratio and/or direction of rotation from the original drive unit. To effect a take-off at right angles to the original connection.

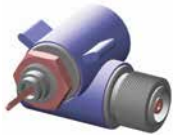
Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AA167	Constant	7/8-18 Internal .104" Square	7/8-18 Internal .105" Sq Hole	1	Suits most American type Transmissions
31601AB167	Reverse			1	
31601AA137	Constant			0.5	
31601AB127	Constant			0.25	

Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AC167	Constant	5/8-18 External .104" Square	7/8-18 External .105" Sq Hole	1	Suits most Adaptor plates and couplings
31601AD167	Reverse			1	
31601AC137	Constant			0.5	
31601AD137	Reverse			0.5	
31601AC127	Reverse			0.25	
2100329	Reverse	5/8-18 External	7/8-18 External	0.5	Extra Long Input Thread
2100330	Reverse	.104" Square	.105" Sq Hole	0.25	

Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AE167	Constant	5/8-18 External .105" Sq Hole	5/8-18 Internal .104" Square	1	Suits most American type Speedometers & Tachometers
31601AF167	Reverse			1	

Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AG167	Constant	7/8-18 External .104" Square	7/8-18 External .105" Sq Hole	1	Suits most American type Transmissions
31601AG137	Constant			0.5	

Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AJ167	Constant	7/8-18 External	7/8-18 External	1	Suit Perkins 6/354
31601AK167	Constant	3/32 Drive Pin	.105" Sq Hole	1	

Input



Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601AR167	Constant	7/8-18 External .105" Sq Hole	M22x1.5 Internal .105"sq Hole	1	-
31601AR180	Reverse	7/8-18 External .105" Sq Hole	M22x1.5 Internal .105"sq Hole	1	

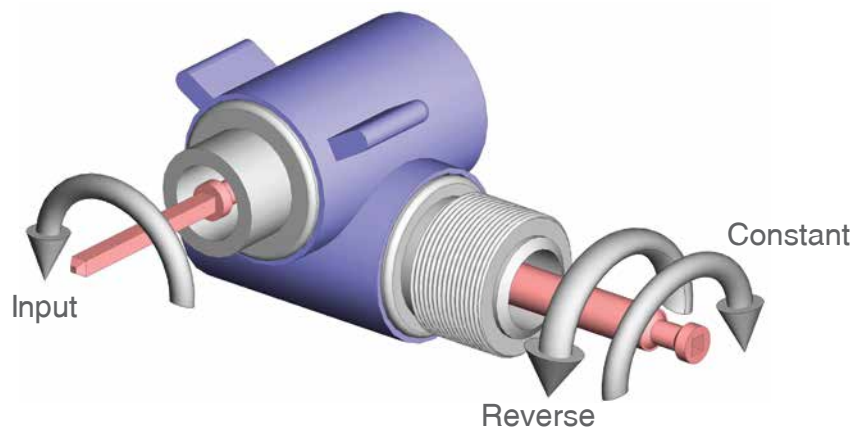
Input



Output

Output

Part No.	Rotation	Input End	Output End	Output Ratio	Remarks
31601BC167	Constant	7/8-18 External .105" Sq Hole	7/8-18 Internal .104" Square	1	Allows two instruments to be driven from the one system
			7/8-18 External .105" Sq Hole		



Warning & Back-Up Alarms

In This Section

Smart Alarms

Light & heavy duty smart alarms.



Back-Up Alarms

A variety of Back-Up alarms to suit most needs.



Wobblers Switches

Electro-mechanical actuation switches.



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Smart Alarm



SA917

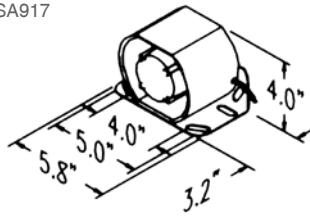
ECCO's heavy duty SA917 and medium duty SA901 Smart Alarms. With steel housing and heavy duty construction for demanding application, both come with the ECCO LIFE warranty. Automotive and Industrial

- Self Adjusting - Smart Alarms back-up Alarm
- Automatically adjusts maintaining a minimum of 5db (A) above ambient noise level to maximum rated output
- Reduces irritation and excessive noise complaints
- Sealed in epoxy against dust, moisture and vibration
- Extreme temp. range -40°C to +85°C
- Ends confusion of which alarm to choose

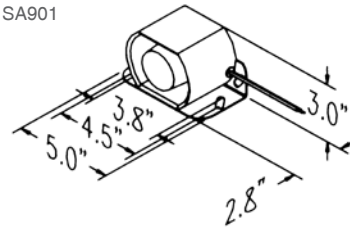
Part No.	Product Type	VDC	Minimum Decibels
SA917	Back-Up Alarm Heavy Duty	12-24	87-112
SA901	Back-Up Alarm Medium Duty	12-24	82-107

Dimensions

SA917



SA901



Smart Alarm



SA951

The SA951 and the SA920 alarms constantly measure ambient noise and adjust their sound level, creating a volume that is safe without being annoying or contributing to noise pollution. Smart Alarms eliminate the need for constant manual adjustment and help prevent intentional alarm disconnection.

Part No.	Voltage	dB(A)	AMPS
SA951	12-48	77-97	0.4
SA920	12-24	97-112	0.6



SA920

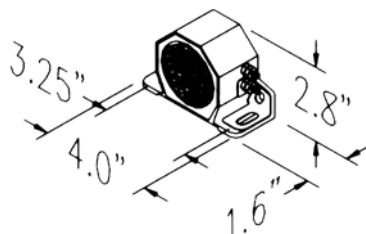
Back-Up Alarm



- ECCO reliability in a cost-effective back-up alarm.
- Compact size and universal mounting bracket maximize options.
 - Sealed in epoxy against dust, moisture and vibration
 - Self grounding, no earth wire needed.
 - Reverse polarity, voltage spike and surge protected
 - Extreme temperature range -40°C to +85°C
 - 2 year warranty

Part No.	VDC	Minimum Decibels	Current	Tone	Features
520	12-24	97	0.20 amps	Beep	Self grounding/Light duty
530	12-24	102	0.20 amps		Self grounding
580	12-80	87	0.10 amps		Self grounding
520003	12-24	97-87	-		Reduces when lights are on

Dimensions



Back-Up Alarm

ECCO



Part No.	VDC	Minimum Decibels	Current	Tone	Features
630	12-36	107	0.40 amps	Beep	Reverse mount speaker

Back-Up Alarm

ECCO



Part No.	VDC	Minimum Decibels	Current	Tone	Features
840	12-36	112 or 97	0.40 amps	Beep	Decibel selected at installation

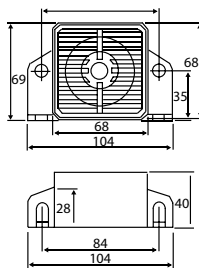
Back-Up Alarm

DATATRON
MONITORING SYSTEMS



Part No.	VDC	Minimum Decibels	Tone
PL6789780V	12-80	97	Single
PL678102	12-24	102	

Dimensions



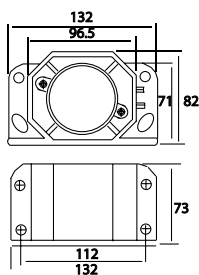
Back-Up Alarm

DATATRON
MONITORING SYSTEMS



Part No.	VDC	Minimum Decibels	Tone	Features
PL608B	12-24	82 to 107	Single	Self Adjusting
PL608	12-24	82 to 107	Single	-

Dimensions



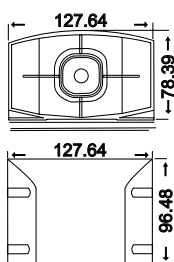
Back-Up Alarm

DATATRON
MONITORING SYSTEMS



Part No.	VDC	Minimum Decibels	Current	Tone	Features
PL688C	12-24	97 to 112	0.4 & 1.1 amps	Single	Self adjusting
PL688B	12-24	87 to 112	-	Single	Self adjusting

Dimensions





Buzzer

Part No.	VDC	Minimum Decibels	Current	Tone
209120	12-48	68	0.01 amps	Medium Continuous



SW15



SW30

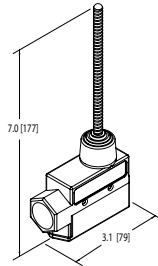
Wobbler Switch

Electro-Mechanical Actuation Switch, Metal housing, (field selectable open or closed), universal.

Part No.	Voltage	Amps
SW15	12-80 VDC	10
SW30	12-80 VDC	10

Dimensions

SW15



SW30

