



Time Access & Automotive Systems

Tel: 082 375 3280 • 011 326 4146

www.timeandautomotive.co.za

www.tachogaphsandspeedometers.co.za

TAS

Time Access & Automotive Systems

Gauges	Ammeter	1
	Clock	1
	Fuel, Lever, Tubular	1-2
	Hourmeters	3
	Pressure	4-5
	Speedometers	9
	Tachometers	12
	Tachourmeters	12
	Temperature	13-14
	Temp. Exhaust/Pyrometer	14
	Turbo Charger	6
	Vacuum	6
	Voltmeter	6
Oil Pressure Senders & Switches		7-8
Speed Sensors		9-11
Temp. Senders & Switches		16-17



AMMETER - with internal shunt

Suitable for most engines. **Monitors Charge and battery condition.**
Voltage independent - suitable for 12 & 24V
Ammeters with internal shunt are easily identified by the heavy duty threaded terminals. Heavy duty wire must be used for wiring.
Illumination globe holder included.
For 24V application use globe 999-065-002
For 12V application use globe 999-065-001

Part no.	Range	Ø
190-037-001C	30-0-30AMP	52mm
190-037-002C	60-0-60AMP	52mm
190-037-003C	100-0-100AMP	52mm



CLOCK - quartz

The VDO Quartz Clock offers accurate timing to within ± 1 second per day. The crystallographic properties of quartz ensure that the electric current is precisely regulated for accurate timing.

ELECTRIC CLOCKS

Part no.	Voltage	Ø
370-214-031-001G	12	52mm
370-214-031-003G	24	52mm



FUEL GAUGES - lever

Suitable for use with petrol and diesel fuel.
Illumination 12V and 24V included.

FUEL GAUGES 10-180 ohms

Part no.	Range	Ø	Voltage
301-030-001C	0-1/1	52mm	12
301-040-001C	0-1/1	52mm	24

For tank units with 10-180 ohms resistance.
Without ISO symbol.

SENDER - Adjustable float Arm

Part no.	Specifications	Length
220-003	0-1/1 Empty 10 ohm Full 180 ohm	150mm-600mm

SENDER - Plastic Adjustable includes warning contact

Part no.	Specifications	Length
A2CS9510162	3-180ohm	145-400mm



FUEL GAUGES - tubular

FUEL GAUGES - Tubular

Part no.	Range	Ø	Voltage
301-030-002C	0-1/1	52mm	12
301-040-002C	0-1/1	52mm	24

With ISO symbol for fuel level

For tubular tank units, adjustable resistance range

Full 3 ohm Empty 9 ohm

TUBULAR TYPE SENDERS (PCD* Pitch Circle Diameter)

Part no.	PCD*	Cut-Out Dia.	Voltage	Length
224-082-008-008R	54mm	42mm	12/24	189,5mm
224-011-000-027G	54mm	42mm	12/24	270,0mm
224-011-000-037X	54mm	42mm	12/24	370,0mm
224-817-008-004R	54mm	42mm with warning contact		380,0mm
224-011-000-039X	54mm	42mm	12/24	390,0mm
224-082-005-117R	54mm	42mm	12/24	498,5mm
224-082-005-012R	54mm	42mm	12/24	555,0mm
224-082-005-129R	54mm	42mm	12/24	665,0mm
224-817-008-011C	54mm	42mm with warning contact		737,5mm
224-082-005-161R	54mm	42mm	12/24	914,0mm

TUBULAR TYPE SENDERS (Heavy Duty)

Part no.	PCD*	Cut-Out Dia.	Voltage	Length
X10-224-009-039	80mm	57mm	12/24	596,0mm
X10-224-009-029	80mm	57mm	12/24	741,0mm
X10-224-009-040	80mm	57mm	12/24	1086,0mm
X10-224-009-072	80mm	57mm	12/24	1387,0mm

TUBULAR TYPE SENDERS (Insulated Versions)

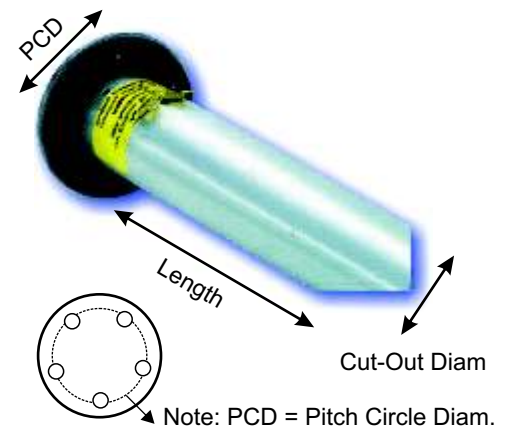
Part no.	PCD*	Cut-Out Dia.	Voltage	Length
X10-224-021-001	80mm	57mm	12/24	536,0mm
X10-224-021-006	80mm	57mm	12/24	846,0mm
X10-224-021-005	80mm	57mm	12/24	1045,0mm

Please Note: All 54mm PCD have an Aluminium body

Please Note: All 80mm PCD have a Steel Body

ACCESSORIES

Part no.	Description	PCD*
2-250-234	Gasket, cork	54mm
2-251-006	Gasket, cork	80mm
2-251-016	Gasket, rubber	80mm
1403141	Flange only	
1403145	Flange & gasket	54mm



HOURLMETER - electronic

Suitable for all vehicles and machines
Available with 360° minute hand sweep or as counters only

With 360° sweep hand, black bezel

Part no.	Range	Ø	Voltage
331-810-012-002G	0-99999.9hrs	52mm	12/24

No minute hand, black bezel

Part no.	Range	Ø	Voltage
331-810-012-001X	0-99999.9hrs	52mm	12/24



ACCESSORIES

Part no.	Description	Thread
230-112-001-002C	Pressure switch 70kPa - 5 watt - N/O	18" - 27NPTF 6-24V

HOURLMETER - vibration type

For control of motors and engines as well as for recording the operating time of machinery not connected to an electric power supply but generating vibrations in service.

Part no.	Description
D611008	52mm
D611010	60mm
D611012	52mm with anti-vibration mounting kit
D761120	60mm bracket
D761130	72mm bracket
D761143	Vibration ring assembly

- Installation is simple as no source of current is required.
- Vibration-proof clockwork operating with high accuracy.
- Metering capacity 99.999 hours with minute read-out.
- Suitable for installation in openings of different diameters with mask or damper ring.
- Waterproof and tropicalised.
- Fit for service in ambient temperatures from -15°C to +60°C.
- Designed for flush and surface mounting.



PRESSURE GAUGE - electric

Suitable for all vehicles and machines.

Illumination 12V or 24V included. **Note: Not recommended for petrol or water.**

PRESSURE GAUGES, engine oil pressure 500kPa

Part no.	Range	Ø	Voltage
350-030-016C	0-500kPa	52mm	12
350-040-016C	0-500kPa	52mm	24

With ISO symbol.
500kPa = 72.5 PSI

SENDER only 500kPa

Part no.	Range	Thread	Voltage
360-081-029-004C	500kPa	1/8" - 27NPTF	12/24

SENDER/SWITCH combination

Part no.	Range	Thread	Switch Point
360-081-030-049C	500kPa	1/8" - 27NPTF	50kPa

Refer to your engine manufacturers manual for correct oil pressure.
Note: 500 kPa = 72.5 PSI. Additional senders are listed on page 7.

PRESSURE GAUGES, engine oil pressure 1000kPa

Part no.	Range	Ø	Voltage
350-030-017C	0-1000kPa	52mm	12
350-040-017C	0-1000kPa	52mm	24

With ISO symbol.
1000kPa = 145 PSI

SENDER only 1000kPa

Part no.	Range	Thread	Voltage
360-081-029-012C	1000kPa	1/8" - 27NPTF	12/24

SENDER/SWITCH combination

Part no.	Range	Thread	Switch Point
360-081-030-052C	1000kPa	1/8" - 27NPTF	50kPa

Refer to your engine manufacturers manual for correct oil pressure.
Note: 1000kPa = 145PSI. Additional senders are listed on page 7.

PRESSURE GAUGES, Transmission Oil Pressure

Part no.	Range	Ø	Voltage
350-030-005C	0-25 bar	52mm	12
350-040-005G	0-25 bar	52mm	24

With ISO symbol.
25 bar = 2500kPa = 360PSI

SENDER only 2500kPa

Part no.	Range	Thread	Voltage
360-081-038-003C	0-25 bar 360PSI	1/8" - 27NPTF	12/24





PRESSURE GAUGE - mechanical

Suitable for most vehicles and machines. Can be used on most non-aggressive gases and liquids. Supplied with nut and cone for 3/16" PVC tubing. Globe Holder not included.

For 24V application use globe part no. **999-065-002**

For 12V application use globe part no. **999-065-001**

Globe Holder part no. **999-067-001**

Part no.	Range	Ø
150-035-019G	0-700kPa	52mm
150-035-020G	0-1000kPa	52mm
150-035-022G	0-2500kPa	52mm



TURBO BOOST GAUGE - mechanical

Suitable for all vehicles.

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

Illumination 12V included.

Part no.	Range	Ø
150-015-001K	0 to +3 bar	52mm



ACCESSORIES

Part no.	Description	Length
150-005	Pressure pipe kit	2 Meters
150-006	Pressure pipe kit	2 Meters
150-007	Pressure pipe kit	6 Meters

TURBO CHARGER GAUGE - mechanical

Suitable for all vehicles.
Illumination 12V included.

Part no.	Range	Ø
150-035-001G	-1-0 to +1,5 bar	52mm



VACUUM GAUGE - mechanical

Suitable for most vehicles.
Supplied with nuts and cones for 3/16" tubing.
Illumination 12V included.

Part no.	Range	Ø
150-077-005	-30-0" Hg	52mm



VOLTMETER

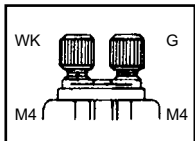
Suitable all engines and machines.
Monitors charge and battery condition.
Illumination 12V or 24V included.

Part no.	Range	Voltage	Ø
332-030-001C	8-16V	12	52mm
332-040-001C	18-32V	24	52mm

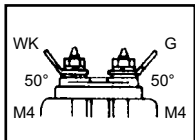




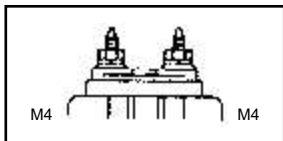
(A)



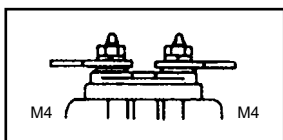
(B)



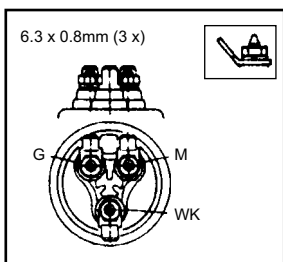
(C)



(E)



(F)



(G)

OIL PRESSURE SENDERS

WITHOUT WARNING CONTACT - COMMON GROUND

Part no.	Range	Thread	Type
360-081-029-004C	500kPa	1/8"x27NPTF	(A)
360-081-029-012C	1000kPa	1/8"x27NPTF	(A)

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

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to +100°C (up to +120°C for 1 hour max. at threaded connector)
- Resistance range: 10 Ω to 184 Ω

OIL PRESSURE SENDERS - with switch

WITH WARNING CONTACT - COMMON GROUND

Part no.	Range	Switch Point	Thread	Type
360-081-030-049C	500kPa	40kPa	1/8"x27NPTF	(B)
360-081-030-052C	1000kPa	50kPa	1/8"x27NPTF	(B)
360-081-030-025C	500kPa	40kPa	M18x1.5	(C)
360-081-030-032C	1000kPa	50kPa	M14x1.5	(B)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to +100°C (up to +120°C for 1 hour max. at threaded connector)
- Resistance range: 10 Ω to 184 Ω
- Switching capacity of warning contact: 5W max. non-inductive

OIL PRESSURE SENDERS - single station

WITHOUT WARNING CONTACT - INSULATED RETURN

Part no.	Range	Thread	Type
360-081-032-001C	500kPa	1/8"x27NPTF	(B)
360-081-032-014C	1000kPa	1/8"x27NPTF	(B)
360-081-032-025C	200kPa	1/8"x27NPTF	(C)
360-081-038-002C	2500kPa	3/8"x18NPTF	(F)
360-081-038-003C	2500kPa	1/8"x27NPTF	(E)

Note: 200kPa = 29 PSI, 500kPa = 72.5k PSI, 1000kPa = 145 PSI
2500kPa = 362.5 PSI

- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to +100°C (up to +120°C for 1 hour max. at threaded connector)
- Resistance range: 10 Ω to 184 Ω
- Overpressure safety: 30 bar or 50 bar max. (short period only for 2 seconds)

OIL PRESSURE SENDERS - with switch

WITH WARNING CONTACT - INSULATED RETURN

Part no.	Range	Switch Point	Thread	Type
360-081-039-002C	500kPa	80kPa	1/8"x27NPTF	(G)
360-081-039-003C	1000kPa	80kPa	1/8"x27NPTF	(G)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to +100°C (up to +120°C for 1 hour max. at threaded connector)
- Resistance range: 10 Ω to 184 Ω
- Overpressure safety: 30bar or 50 bar max. (short period only fo 2 seconds)
- Switching capacity of warning contact: 5W max. non-inductive

OIL PRESSURE SENDERS - dual station

WITHOUT WARNING CONTACT - INSULATED RETURN

Part no.	Range	Thread	Type
362-081-001-001K	500kPa	1/8"x27NPTF	(F)
362-081-001-002K	1000kPa	1/8"x27NPTF	(F)
362-081-002-001K	2500kPa	1/8"x27NPTF	(F)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI, 2500kPa = 362.5 PSI

- Rated Voltage: 6V to 24V

HEAVY DUTY PRESSURE SWITCH

NON-INSULATED

Part no.	Switch Point	Thread	Contacts	Type
230-112-003-013C	70kPa	1/8"x27NPTF	Close as pressure falls	(A)
230-112-003-012C	600kPa	1/8"x27NPTF	Close as pressure falls	(A)
230-112-001-002C	70kPa	1/8"x27NPTF	Close as pressure rises	(A)
230-112-001-001C	100kPa	M10x1	Close as pressure rises	(A)

Note: 70kPa = 10.15 PSI, 100kPa = 14.50 PSI, 600kPa = 87 PSI

- Rated Voltage: 6V to 12V
- Operating Temperature: -25°C to 120°C
(up to 140°C for 1 hour max. at threaded connector)

INSULATED

Part no.	Switch Point	Thread	Contacts	Type
230-112-005-006C	50kPa	M10x1	Close as pressure falls	(E)
230-112-007-005C	30kPa	M14x1.5	Open as pressure rises	(G)
230-112-005-011C	150kPa	M10x1	Close as pressure falls	(F)
230-112-002-001C	50kPa	1/8"x27NPTF	Close as pressure rises	(E)

Note: 30kPa = 4.35 PSI, 50kPa = 7.25 PSI, 150kPa = 21.75 PSI

- Rated Voltage: 6V to 12V
- Operating Temperature: -25°C to 120°C
(up to 140°C for 1 hour max. at threaded connector)



(A)



(E)



(F)



(E)

ADJUSTABLE PRESSURE SWITCH

INSULATED

Part no.	Terminal	Adjustable Range	Contacts
105-018	screw	10-100kPa	Close as pressure rises
105-020	blade	10-100kPa	Close as pressure rises
105-021	blade	100-1000kPa	Close as pressure rises
105-022	blade	1000-2000kPa	Close as pressure rises
105-023	blade	2000-5000kPa	Close as pressure rises
105-024	blade	10-100kPa	Close as pressure falls
105-025	blade	100-1000kPa	Close as pressure falls
105-026	blade	1000-2000kPa	Close as pressure falls
105-027	blade	2000-5000kPa	Close as pressure falls

Over Pressure Rating up to 30000kPa

Max Voltage 42V-DC

Threads: all M1x1T



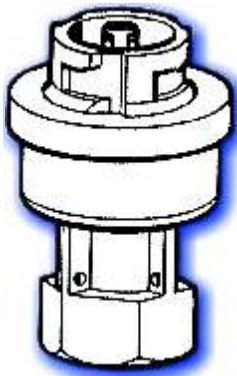
SPEEDOMETERS



Floodlit illumination. 12V globe included.
 Field adjustable to suit 500 to 400,000 imp/km by pulse setting or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip 99,999.9 resettable.
 Signal source Hall effect, inductive or blocking oscillator sender units.
 For 24V application use globe **999-065-002** (2 required).
 Note: 140mm speedometer Impulse Radio programmable 1000-6000 pulses/Km (via software).
 For matching sender units refer to page/s 9-10.

Part no.	Range	Ø	Voltage
437-035-001C	0-60km/h	80mm	12/24
437-035-012C	0-80km/h	80mm	12/24
437-035-002G	0-120km/h	80mm	12/24
437-035-003C	0-200km/h	80mm	12/24
437-055-001G	0-60km/h	100mm	12/24
437-055-002G	0-120km/h	100mm	12/24
437-025-002G	0-125km/h	140mm	24

Note:
 8 way socket connector part no: **Z863103**
 8 x terminal part no: **Z863016**

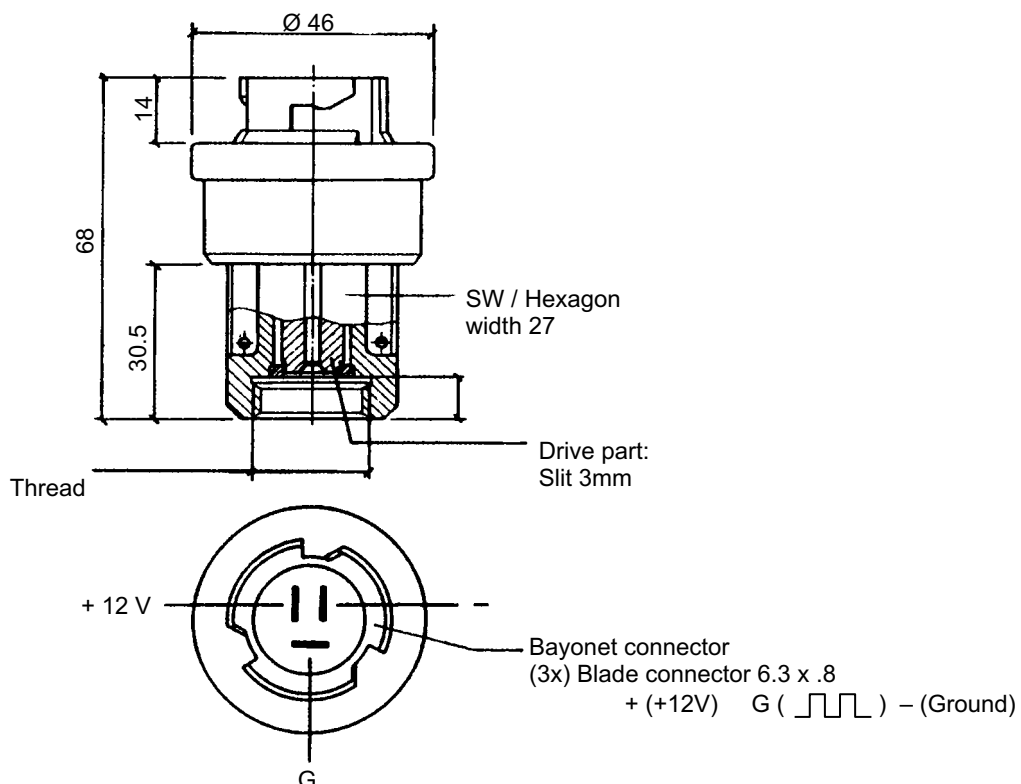


SPEEDOMETERS - hall effect

Electrical connection: 3-pole, insulated return
 Voltage: 8V-16V
 Current: 21mA
 Operating Temperature: -40°C to +100°C

Part no.	Pulses	Thread
340-214-002-001B	8	M22x1.5

Dimensions (mm):



FUEL GAUGES - tubular

PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS/SPEEDOMETERS 3 BLADE

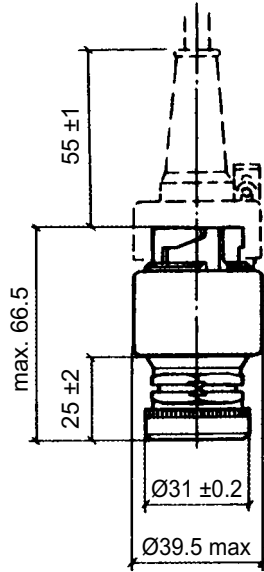
For instruments which require an electrical pulse (**single pulse**) for inquiry of the speed and/or the distance.

Output: single pulse • Pulses/Revolution: 8 (s- and V-pulse)

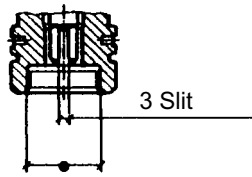
Pulse Ratio: 30-70%...70-30% • Operating Voltage: 6.5V...16V

Part no.	Pulses	Thread
2155-01000000	8	M22x1.5 right (female)
2155-02000000	8	M22x1.5 left (external) no nut
A731012	8	7/8" - 18UNF Male/Female in line

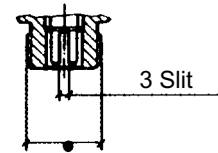
A-SPEC-731 Sender cable connector bayonet plug kit, 3 way spade



Thread variants:

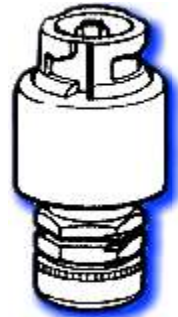


Female thread
• M22 x 1.5 right
• 7/8 - 18UNS - 2B

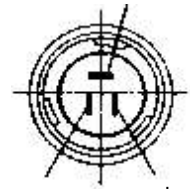


External thread
• M22 x 1.5 left (without nut)

- Blue - Speed Signal
- Green - Negative
- Red - Positive
- 12/4V
- Square wave signal
- Cable Length 4M+



(A1)



3x Blade connector 6,3 x 0,8

A731012



PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS 4 BLADE

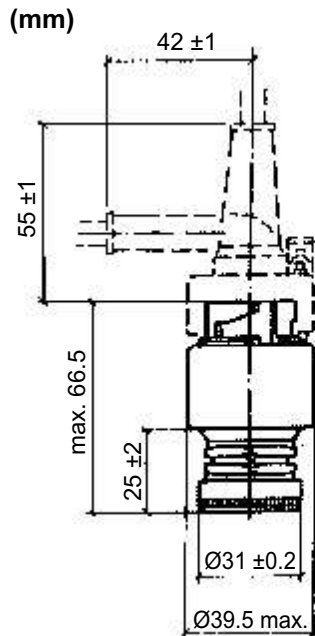
For instruments which require an electrical pulse (**pulse inverse**) for inquiry of the speed and/or the distance.

Output: dual pulse inverse • Pulses/Revolution: 8 (s- and V-pulse)

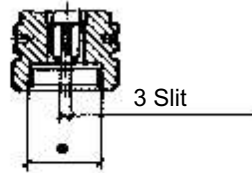
Pulse Ratio: 30-70%...70-30% • Operating Voltage: 6.5V...16V

Part no.	Pulses	Thread
2159-01000000	8	M22x1.5 right (female)
2159-02000000	8	M22x1.5 left (external) no nut

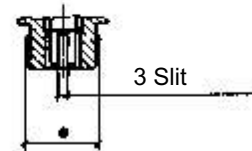
A-SPEC-731 Sender cable connector bayonet plug kit, 4 way spade



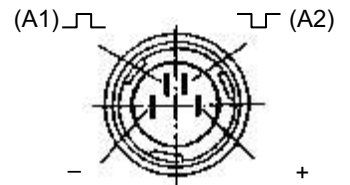
Thread variants:



Female thread
• M22 x 1.5 right



External thread
• M22 x 1.5 left (without nut)



4x Blade connector 3 x 0,8

(mm)

SENSORS - hall effect



PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS/SPEEDOMETERS

For instruments which require an electrical pulse (**single pulse**) for inquiry of the speed and/or the distance.

For applications requiring an additional mechanical takeoff.

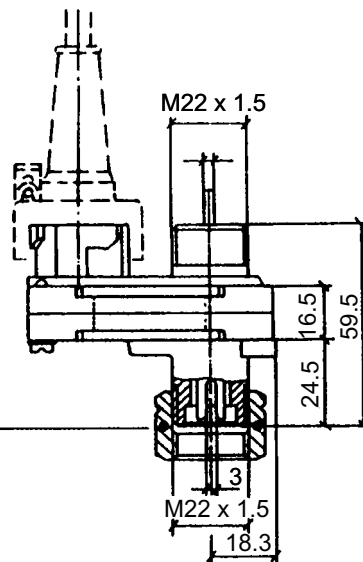
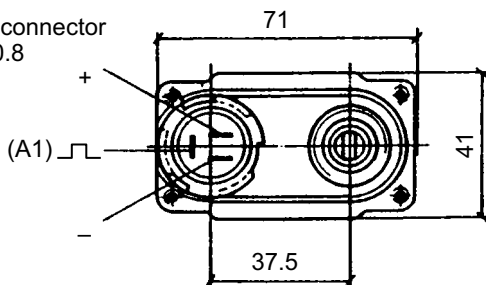
Output single pulse • Pulses/Revolution: 8 (s- and V-pulse)

Pulse Ratio: 30-70%...70-30% • Operating Voltage: 6.5V...16V

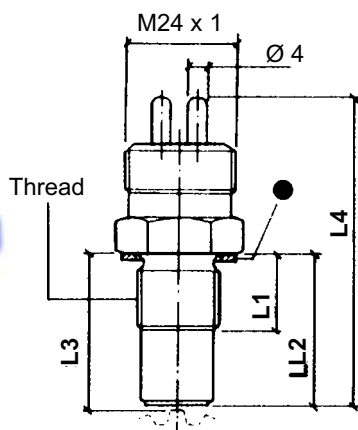
Part no.	Pulses	Thread (Input & Output)
2157-0300000	8	M22x1.5

(mm)

Blade connector
6.3 x 0.8



Tightening torque:
50 ± 10Nm



SENDERS - inductive push on

Electrical connection: 2-pole, insulated return

Rated voltage: Independent

Interior Resistance: Ri 1050Ω ± 100Ω

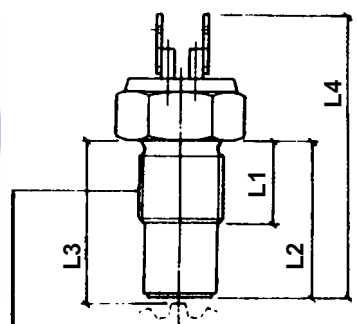
Test Voltage: 500V

Insulating Resistance: 500Ω min.

Part no.	Signal	Thread	L1	L2	L3	L4
340-804-005-002C	Sine	M18x1.5	24.9	26.5	27.65	63
340-804-005-007C	Sine	M18x1.5	15	35	36	71



connector 6.3 x 0.8mm



SENDERS - inductive blade

Electrical connection: 2-pole, insulated return

Rated voltage: Independent

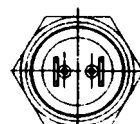
Interior Resistance: Ri 1050Ω ± 100Ω

Test Voltage: 500V

Insulating Resistance: 500kΩ min.

Part no.	Signal	Thread	L1	L2	L3	L4
340-804-006-007C	Sine	M18x1.5	24.9	26.5	27.65	63

Thread



TACHOURMETERS - electronic with LCD hourmeter

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to 1, 2, 3, 4, 5, 6, 8, or 12cyl./4 stroke, 1, 2, 3, or 4 cyl./2-stroke ignition and alternator pick-up ("W" terminal). Also suitable for signal from generator or inductive sender unit. Incorporated hourmeter shows true engine hours. Operating hours 99,999.9. Pulse range 0.5-200 pulses per rev. Illumination 12V application use globe 999-065-002 (required). For matching speed sensors/senders see pages 9-10

TACHOURMETER

Part no.	Range	Ø	Voltage
333-035-010G	3000rpm	80mm	12/24V
333-035-011G	4000rpm	80mm	12/24V
333-035-014C	6000rpm	80mm	12/24V
333-055-002G	3000rpm	100mm	12/24V

Note: 8 pin plug required which is not included in kit, PN. Z2863103 Terminal PN. Z2863016 x 8



TACHOMETERS - electronic

Suitable for most petrol and diesel engines. Field programmable to suit 4, 6, or 8 cyl./4 stroke ignition and alternator pick-up (Terminal "W"). For 24V application use globe 999-065-002 (2 required)

TACHOMETER

Part no.	Range	Ø	Voltage
333-035-017G	6000rpm	52mm	12V
333-035-018G	8000rpm	52mm	12V
333-035-011G	3000rpm	80mm	12V
333-035-002C	4000rpm	80mm	12V
333-035-003C	7000rpm	80mm	12V
333-035-022C	10000rpm	80mm	12V
333-055-001G	3000rpm	100mm	12V
333-045-001G	3000rpm	80mm	24V
333-045-002C	4000rpm	80mm	24V

Note: 8 pin plug required which is not included in kit, PN. Z2863103 Terminal PN. Z2863016 x 8

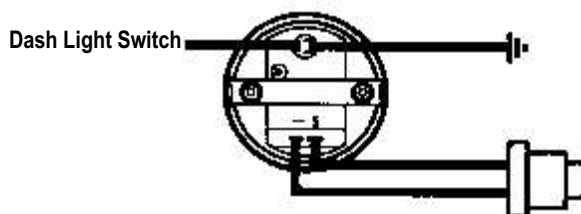


TACHOMETERS - generator driven

This tachometer is designed for diesel engines and industrial applications. An alternating current makes the instrument independent of voltage and polarity. The Generator Tachometer is styled to complement the VDO range of commercial instruments.

TACHOMETER

Part no.	Range	Ø	Ratio
338-815-001-009C	0-3500rpm	80mm	1:2



GENERATOR SENDER

Part no.	Signal Output	Thread
340-807-001-001C	with distance pulse output	M22x1.5
340-808-001-002G	output 1.0 Volt AC current per 100rpm	M22x1.5





TEMPERATURE GAUGES - electric

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

For other sender units please refer to page 15

TEMPERATURE GAUGES - WATER

Part no.	Range	Ø	Voltage
310-030-002C	40-120°C	52mm	12
310-040-002C	40-120°C	52mm	24

With ISO symbol.
40-120°C = 100-250°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-005-001D	40-120°C	1/8-27NPTF	Button

SENDER/SWITCH COMBINATION

Part no.	Range	Thread	Switch Point
323-803-001-011D	40-120°C	5/8-27UNF	95°C
323-803-001-016D	40-120°C	M14x1.5	94°C
323-803-001-001D	40-120°C	M14x1.5	100°C

40-120°C = 100-250°F
For other sender units please refer to page 16



TEMPERATURE GAUGES - ENGINE OIL

Part no.	Range	Ø	Voltage
310-030-003C	50-150°C	52mm	12
310-040-003C	50-150°C	52mm	24

With ISO symbol.
50-150°C = 120-350°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-009-001D	50-150°C	1/8-27NPTF	Button

SENDER/SWITCH COMBINATION

Part no.	Range	Thread	Switch Point
323-803-002-002D	50-150°C	M14x1.5	120°C
323-803-002-007D	50-150°C	M14x1.5	120°C
323-803-014-002D	50-150°C	M14x1.5	130°C



TEMPERATURE GAUGES - TRANSMISSION OIL (CYLINDER HEAD -AIR COOLED ENGINE)

Part no.	Range	Ø	Voltage
310-030-004C	60-200°C	52mm	12
310-040-004C	60-200°C	52mm	24

With ISO symbol.
60-200°C = 140-392°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-003-001D	60-200°C	M10x1.5	Button
323-801-028-001C	60-200°C	M14x1.5	Screw

TEMPERATURE GAUGES - mechanical

Suitable for most vehicles and machines. Process connection is 1/8" - 27NPTF threaded removable thermowell.

Temperature is transmitted via capillary tube.

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

Illumination globe holder included.

For 24V application use globe **999-065-002**

For 12V application use globe **999-065-001**

Globe holder part no. **999-067-001**

TEMPERATURE GAUGE (WATER GAUGE)

Part no.	Range	Ø	Capillary length
180-035-002G	40-120°	52mm	1600mm
180-035-004G	40-120°	52mm	2600mm
180-035-005G	40-120°	52mm	4000mm
180-035-006G	40-120°	52mm	6000mm
180-035-008G (oil)	50-150°	52mm	2600mm

ACCESSORIES

Part no.	Description	Thread
1-801-078	Block Adapter	1/8x27NPTF

Note: Suitable for all the above temperature gauges

TEMPERATURE EXHAUST/PYROMETER - electric

Suitable for most exhaust systems.

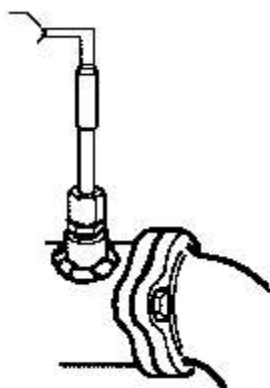
Thermocouple connection is by 1/4" - 18NPTF compression fitting.

Illumination 12V Included.

PYROMETER ELECTRONIC KIT

Part no.	Range	Ø	Voltage
397-015-003	0-900°C (37.6mV@900°C)	52mm	12

Complete Kit - consisting of instrument and thermocouple, 5M loom and weld boss



Thermocouple should be fitted 100mm after Turbo.



SENDERS - to suit VDO instruments 40° - 120°C

The senders listed hereunder are for use with all instruments listed in this publication.
Selection is simple: just match the range of the instrument with the range of the sender unit.

WATER TEMPERATURE SENDERS

To suit all VDO temperature gauges with range 40° - 120°C

Related Voltage: 6V to 24V
Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-801-005-001D	40-120°C	1/8-27NPTF	(A)
323-801-001-016D	40-120°C	1/2-14NPTF	(B)
323-801-001-026N	40-120°C	M14x1.5	(B)

40-120°C = 100-250°F

WATER TEMPERATURE SENDERS WITH SWITCH contact rating 3 watt

Related Voltage: 6V to 24V
Temperature response time: 3 minutes minimum after switching on operating current.
Switching capacity: 1.2W to 3W non-inductive
Break Point: 5°C max. below make point
Contacting Mode: slow-acting
Type of contact: Switch closes at switch point

Part no.	Range	Switch Point	Thread	Type
323-803-001-004D	40-120°C	90°C, NO	M14x1.5	(D)
323-803-001-008D	40-120°C	110°C, NO	M14x1.5	(D)
323-803-001-016D	40-120°C	94°C, NO	M14x1.5	(D)
323-803-004-002D	40-120°C	105°C, NO	M14x1.5	(E)
323-803-001-011D	40-120°C	95°C, NO	5/8-18UNF	(D)
323-803-001-001D	40-120°C	100°C, NO	M14x1.5	(D)

40-120°C = 100-250°F

Note: NO = Normally open - contact closes at switch point

TEMPERATURE SENDER UNIT Insulated return - single station

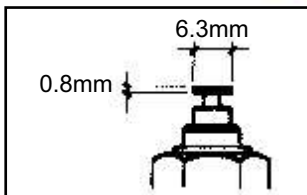
Related Voltage: 6V to 24V
Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-805-001-001K	40-120°C	M14x1.5	(C)
323-805-001-002	40-120°C	5/8-18UNF	(C)

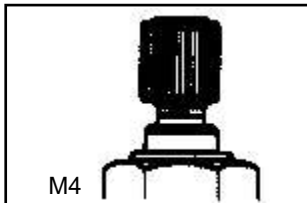
TEMPERATURE SENDER UNIT Insulated return - dual station

Related Voltage: 6V to 24V
Temperature response time: 3 minutes minimum after switching on operating current.

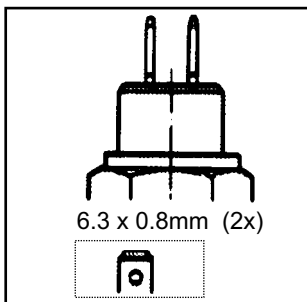
Part no.	Range	Thread	Type
323-805-003-001	40-120°C	1/4-18NPTF	(C)



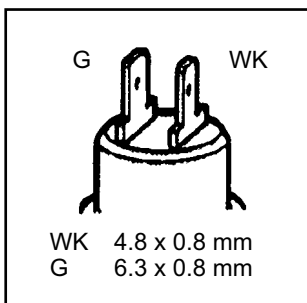
(A)



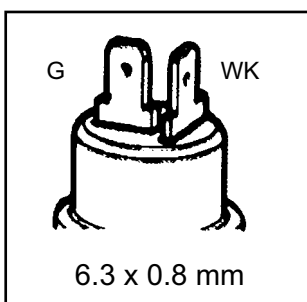
(B)



(C)



(D)



(E)

Temperature Senders

SENDERS - to suit VDO instruments 50° - 150°C

The senders listed hereunder are for use with all instruments listed in this publication.

Selection is simple: just match the range of the instrument with the range of the sender unit.

OIL TEMPERATURE SENDERS ONLY

To suit all VDO temperature gauges with range 50° - 150°C

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-801-009-001D	50-150°	1/8-27NPTF	(A)
323-801-010-003D	50-150°	M12x1.5	(A)
323-801-004-002N	50-150°	M14x1.5	(F)

50-150°C = 120-300°F

SENDER/SWITCH COMBINATION

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Switching capacity: 1.2W to 3W non-inductive

Break Point: 5°C max. below make point

Contacting Mode: slow-acting

Type of contact: Switch closes at switch point

Part no.	Range	Switch Point	Thread	Type
323-803-014-002D	50-150°	130°C, NO	M14x1.5	(D)
323-803-002-007D	50-150°	130°C, NO	M14x1.5	(D)

50-150°C = 120-300°F

Note: NO = Normally open - contact closes at switch point

TEMPERATURE SENDER UNIT

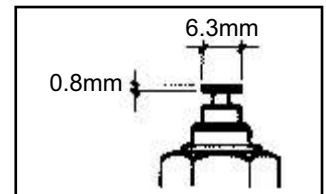
Insulated return

Related Voltage: 6V to 24V

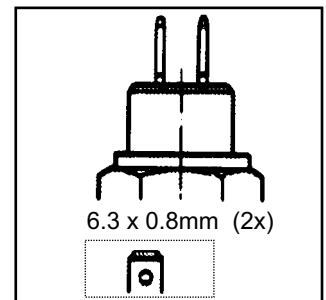
Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-805-003-001N	50-150°	M14x1.5	(C)

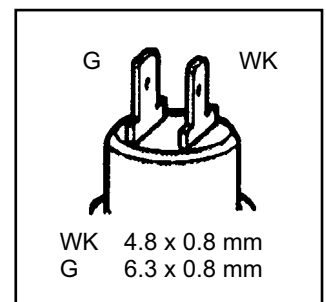
50-150°C = 120-300°F



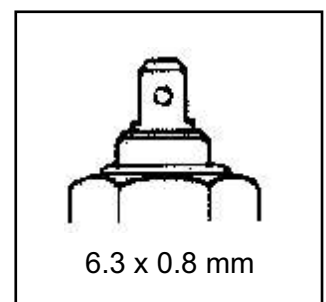
(A)



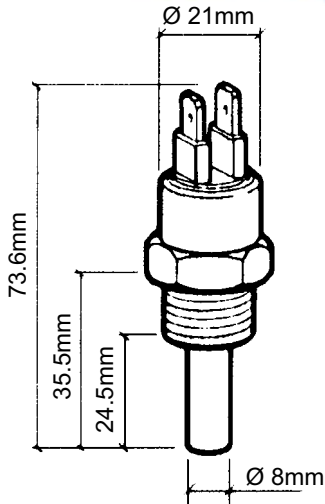
(C)



(D)



(D)

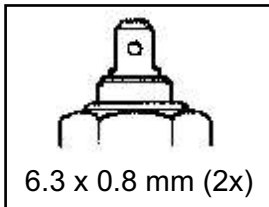


TEMPERATURE SWITCHES - insulated return

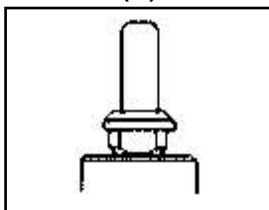
Rated Voltage: 6V to 12V.
 Switching Capacity: 100W/120W.
 Make Point: Contact close as temperature rises.
 Break Point: Contact open as temperature falls.
 2-fold blade x 0.8DIN 46244

Part no.	On	Off	OP. Max	Thread
X10-232-001-001 ⁺	64°C	60°C	110°C	M14x1.5
X10-232-001-002 [*]	82°C	74°C	110°C	M14x1.5
X10-232-001-007 [*]	96°C	92°C	110°C	M14x1.5
X10-232-001-010 [*]	105°C	100°C	110°C	M18x1.5

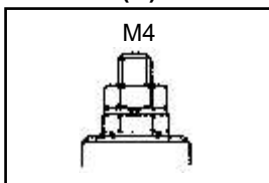
⁺ = Switching capacity 120W
^{*} = Switching capacity 100W



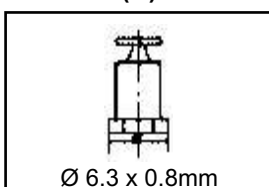
(A)



(B)



(B)



(D)

TEMPERATURE SWITCHES - common ground

Rated Voltage: 6V to 12V.
 Switching Capacity: 1.2W to 3W non-inductive
 Type of contact: **Contact closes at switch point.**
 Contact mode: slow-acting
 Break Point 5°C max. below make point.

Part no.	Switching Point	OP.max	Thread	Type
232-011-005-003D	90°C	120°C	M10x1.5	(C)
232-011-005-004D	170°C	220°C	M10x1.5	(C)
232-011-005-011D	125°C	155°C	M10x1.5	(C)
232-011-005-017D	150°C	200°C	M10x1.5	(C)
232-011-005-019D	96°C	120°C	1/8-27NPTF	(C)
232-011-005-020D	105°C	120°C	1/8-27NPTF	(C)
232-011-005-030D	185°C	230°C	M10x1.5	(D)
232-011-017-010D	110°C	160°C	M14x1.5	(A)
232-011-017-017D	85°C	120°C	M14x1.5	(A)
232-011-017-032D	120°C	130°C	M14x1.5	(A)
232-011-017-034D	100°C	160°C	M14x1.5	(A)
232-011-017-038D	55°C	120°C	M14x1.5	(A)
232-011-017-040D	70°C	120°C	M14x1.5	(A)
232-011-017-135D	102°C	150°C	M14x1.5	(B)
232-011-019-003D	195°C	250°C	M10x1.5	(C)

Rated Voltage: 6V to 12V.
 Switching Capacity: 3W non-inductive
 Type of contact: **Contact open at switch point.**
 Contracting mode: slow-acting
 Break Point: 5° max. below make point.

Part no.	Switching Point	OP.max	Thread	Type
232-011-020-026D	103°C	120°C	M14x1.5	(B)



TAS

Time Access & Automotive Systems

Tel: 011 326 4146 / 011 326 3521 • Fax: 011 781 4392

e-mail: adriang@lantic.net

www.timeandautomotive.co.za

www.tachogaphsandspedometers.co.za