

# COCKPIT INTERNATIONAL

Cockpit International represents a range of heavy duty instruments designed for the commercial and industrial market. The best combination of colours for readability and reduced eye fatigue are used in the styling of our cockpit instruments.

State of the art manufacturing and quality control procedures ensure that the end product features up to date engineering and design standards, such as the unique air core electric movements.

These reliable gauges feature easy to read floodlit dial illumination for accurate referencing.

## SPEEDOMETERS, electrical

The features of the programmable speedometer are a w/resettable LCD trip odometer with a push button and the trip odometer is displayed in the LCD window. Unique auto-calibration feature allows for easy adjustment and can be used with Hall Effect and inductive senders or most electronic controlled transmissions outputs.

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 distance 99,999.9 resettable.

Signal source Hall-effect, inductive or blocking oscillator sender units.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.

Speedometer			
Part No.	Range	Size	Voltage
437 035 016	0 - 120km/h	85mm	12/24V
437 055 001	0 - 60km/h	100mm	12/24V
437 055 011	0 - 120km/h	100mm	12/24V

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

Speedometer			
Part No.	Range	Size	Voltage
1323020100010603	0 - 125km/h	140mm	12V
437 025 002	0 - 125km/h	140mm	24V

**Note:** 140mm Speedometer Impulse Ratio programmable 1,000-60,000 pulses/Km. 8 pin plug kit part no. 340.824 recommended. Not included in kit.

Sender					
Part No.	Voltage	Thread	Type	Imp/Rev	Plug Kit
K46020	12/24V	M22x1.5	H/E	8	K72221
K46021	12/24V	7/8" - 18UNF	H/E	8	K72221

Senders				
Part No.	Description	Drive Key	Pulses/Rev	Nut Size
340.808	In line suits various vehicles with M22 nut size	3x8mm blade	8	M22 x 1.5mm Inc. 5mm dia lug drive key

See complete listing of arm senders on page 81.



## TACHOURMETERS, electrical with LCD Hourmeter



The programmable tachometer w/LCD hourmeter can be used with most engine electronic control ignitions with tachometer output terminal, standard coil ignition, alternator signal, and 12V square wave applications. Non-resettable engine hourmeter is displayed in LCD windows.

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to 1, 2, 3, 4, 5, 6, 8 or 12 cyl./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. Not suitable for magneto system.

Illumination 12V included. For 24V application use globe #240.053 (2 required). For matching sender units refer to page 83.

### Tachourmeter - for inductive sender

Part No.	Range	Size	Voltage
333 035 010	3000rpm	80mm	12/24V
333 035 011	4000rpm	80mm	12/24V
333 035 025	3000rpm	85mm	12/24V
333 035 013	4000rpm	85mm	12/24V
333 055 002	3000rpm	100mm	12/24V

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

## TACHOMETERS, electrical

Suitable for most petrol and diesel engines. Field programmable to 4, 6 or 8 cyl./4-stroke ignition and alternator pick-up ("W" terminal). Single phase not suitable for star point or magneto system. Illumination 12V and 24V included.

### Tachometer

Part No.	Range	Size	Voltage
333 035 017	6000rpm	52mm	12V
333 035 001	3000rpm	80mm	12V
333 035 002	4000rpm	80mm	12V
333 035 003	7000rpm	80mm	12V
333 045 001	3000rpm	80mm	24V
333 045 002	4000rpm	80mm	24V
333 035 004	3000rpm	85mm	12V
333 055 001	3000rpm	100mm	12V
333 055 011	4000rpm	100mm	12V
333 065 001	3000rpm	100mm	24V

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



# FUEL GAUGES, electrical

Suitable for use with most petrol, diesel fuel, and LPG systems.  
 Illumination 12V and 24V included.  
 For matching sender units refer to page 81.

Fuel Gauge - 10-180 ohms		52mm	
Part No.	Range	Size	Voltage
301 030 001	0-1/1	52mm	12V
301 040 001	0-1/1	52mm	24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
 Without ISO symbol.

Sender - Adjustable Float Arm		
Part No.	Specifications	Length
220.003	10 - 180 ohms	150 - 600mm
220.004	5 - 90 ohms	150 - 600mm

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

### Arm Type Fuel Sender

See complete listing of arm type fuel senders on page 81.  
**Note:** Mounting kit part no. N05801432 not included in kit.  
 Suitable for 3 - 180 and 10 - 180 Ohms

### Reed Switch Sender Fuel & Water

Just for 3 - 180 ohms gauges.  
 See complete listing of arm reed switch senders on page 81.  
**Note:** Mounting kit part no. N05801432 not included in kit.  
 Suitable for 3 - 180 and 10 - 180 Ohms

Fuel Gauge - Tubular		52 mm	
Part No.	Range	Size	Voltage
301 030 002	0-1/1	52mm	12V
301 040 002	0-1/1	52mm	24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
 With ISO symbol.  
 For tubular tank units, adjustable resistance.

### Tubular Type Sender

See complete listing of tubular type senders on page 82.  
**Note:** Mounting kit part no. N05801432 not included in kit.

### Accessories

Part No.	Description	PCD
N05801432	Flange mounting kit	54mm

**Note:** More Accessories, refer to pages 88 - 91.



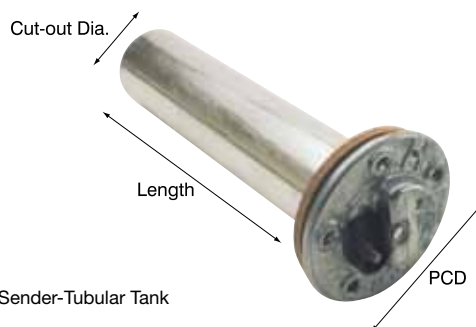
Adjustable Float Arm Sender 220.003



Arm Type Fuel Sender



Reed Switch Sender



Sender-Tubular Tank

## PRESSURE GAUGES, electrical

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

Note: Not recommended for petrol.

Adaptors are listed on page 80.



Sender 360.001

Pressure Gauge - Engine Oil Pressure		52mm
Part No.	Range	Voltage
350 030 016	0 - 500Kpa	12V
350 040 016	0 - 500Kpa	24V

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

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

**Note:** 500 Kpa = 5 Bar = 72.5 psi  
Refer to your engine manufacturers manual for correct oil pressure ratings.  
For thread adaptors see page 80. For additional pressure senders see page 73.  
For calibration specs, see page 92.



Sender 360.002

Pressure Gauge - Engine Oil Pressure		52mm
Part No.	Range	Voltage
350 030 017	0 - 1000Kpa	12V
350 040 017	0 - 1000Kpa	24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
1000Kpa = 10 Bar = 145 psi  
For thread adaptors see page 80. For additional pressure senders see page 73.

Senders			10-199 ohms
Part No.	Range	Thread	Terminal
360.002	1000Kpa	1/8"-27NPTF	Spade
360.019	1000Kpa	1/8"-27NPTF	M4 thread
360081030052C	10 Bar / 7 psi SW	1/8"-27NPTF	M4 thread

Refer to your engine manufacturers manual for correct oil pressure ratings.  
**Note:** 500 Kpa = 5 Bar = 72.5 psi    700 Kpa = 7 Bar = 101.5 psi  
1000 Kpa = 10 Bar = 145 psi    2800 Kpa = 28 Bar = 406 psi  
For calibration specs, see page 92.



Sender 360 081 038 003C

Pressure Gauge - Transmission Oil Pressure		52mm
Part No.	Range	Voltage
350 030 005	0 - 25bar	12V
350 030 006	0 - 25 bar	24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
2500Kpa = 25bar = 406psi  
Dropping resistor 24 - 12V

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

For thread adaptors see page 80. For additional pressure senders see page 73.  
For calibration specs, see page 92.

## PRESSURE GAUGES, mechanical

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

For 24V application use globe part no. 240.053

Pressure Gauge		52mm
Part No.	Range	Voltage
150 035 019	0 - 700Kpa	12V
150 035 020	0 - 1000Kpa	12V
150 035 022	0 - 2500Kpa	12V



## PRESSURE GAUGES, mechanical dual pointer

Suitable for most vehicles and machines. Two independent measuring systems indicated separate pressures on one scale.

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

Illumination 12V and 24V globes included. Part no. 240.053

Dual Pressure Gauge		
Part No.	Range	Size
150.316	0 - 1000Kpa	60mm
151.910	0 - 150 psi	52mm



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



Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025



## TEMPERATURE GAUGES, electrical

Suitable for most vehicles and machines.

Illumination 12V or 24V included.

For matching sender units refer to page 78.



a.



b.



c.



d.



e.



f.



Temperature Gauge - Water		52mm	
Part No.	Range	Size	Voltage
310 030 002	40 - 120°C	52mm	12V
310 040 002	40 - 120°C	52mm	24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
40 - 120°C = 100 - 250°F

Senders				
Part No.	Range	Thread	Terminal	Body Type
320.002	40 - 120°C	1/8"-27NPTF	button	a
320.093	40 - 120°C	1/8"-27NPTF	M4 thread	b
323.801/005/001	40 - 120°C	1/8"-27NPTF	button	a
320.022	40 - 120°C	1/2"-14NPTF	spade	c
323801001006K	40 - 120°C	M14x1.5mm	spade	c
320.004	40 - 120°C	M16x1.5mm	button	a

**Note:** 40 - 120°C = 100 - 250°F

For thread adaptors see page 80. For calibration specs, see page 92.

Temperature Gauge - Engine Oil		52mm	
Part No.	Range	Size	Voltage
310 030 003	50 - 150°C		12V
310 040 003	50 - 150°C		24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
50 - 150°C = 120 - 300°F

Sender				
Part No.	Range	Thread	Terminal	Body Type
320.021	50 - 150°C	1/8"-27NPTF	button	a
320.028	50 - 150°C	1/8"-27NPTF	button	e
320.092	50 - 150°C	1/8"-27NPTF	M4 thread	f
320.010	50 - 150°C	M12x1.5mm	button	a
320.007	50 - 150°C	M14x1.5mm	spade	d

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
50 - 150°C = 120 - 300°F

For calibration specs, see page 92.

Temperature Gauge - Transmission Oil		52mm	
Part No.	Range	Size	Voltage
310 030 004	60 - 200°C		12V
310 040 004	60 - 200°C		24V

**Note:** 3 pin plug kit part no. 240.030 recommended. Not included in kit.  
With ISO symbol.  
60 - 200°C = 140 - 392°F

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

For additional senders see page 78. For calibration specs, see page 92.

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

Temperature Gauge		52mm
Part No.	Range	Capillary Length
180 035 002	40 - 120°C	1600mm
180 035 004	40 - 120°C	2600mm
180 035 005	40 - 120°C	4000mm
180 035 006	40 - 120°C	6000mm
180 035 008	50 - 150°C	2600mm

Accessories		
Part No.	Description	Note
180.059	Thermowell 1/8"-27NPTF	Suits adaptors # 320.xxx



Thermowell 180.059

## EXHAUST TEMPERATURE / PYROMETER, electrical

Suitable for most exhaust systems.

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

Illumination 12V included.

For 24V application use dropping resistor part no. N05801180 and globe part no. 240.053.

Pyrometer - Electric Kit		52mm
Part No.	Range	Voltage
397 015 003	0 - 900°C (37.6mV@900°C)	12V

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

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

Spare Parts for 397 015 003 Pyrometer Kit	
Part No.	Description
320.059	Weld boss 1/4"-18 NPTF
240.035	Loom, 5 meter
310 035 001	Instrument 0 - 900°C (37.6mv) 52mm
320.714	Thermocouple 1/4" NPTF non bonded junction "K" type



Thermocouple 320.714

## AMMETERS, with internal shunt



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

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

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

Ammeter with Internal Shunt		52mm
Part No.	Range	Voltage
190 037 002	60-0-60 amp	12V
190 037 003	100-0-100 amp	12V

## AMMETERS, with external shunt



Suitable for most engines. Monitors charge and battery condition.

Illumination 12V included.

For 24V application use dropping resistor part no. N05801180 and globe part no. 240.051.

Ammeter with External Shunt		52mm	
Part No.	Description	Specifications	Voltage
190.505	150-0-150AMP	52mm	12V

Complete kit consisting of instrument, shunt and loom.

**Note:** For shunt installation, use 10mm wire.



Spare Parts for 190.505 ammeter kit		
Part No.	Description	Specifications
190 035 005C	150-0-150 gauge, 52mm	
190.080	Shunt - 150 amps	50mV @ 150 amps
190.888	5m loom	



## VOLTMETERS

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

Voltmeter		52mm
Part No.	Range	Voltage
332 030 001	8 - 16V	12V
332 040 001	18 - 32V	24V

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



## BATMAN III BATTERY MONITOR

It's like a fuel gauge for your battery. The Batman III lets you know everything that is essential to know about your battery.

- Battery voltage 8 - 30V
- Battery capacity used in amhours
- Battery capacity regained in amhours
- Charging and discharging current in amps

### Benefits

- Measuring range, current: +0.1 - 200A
- Accuracy, voltage: better than 1%
- Accuracy, current: +5%
- Measuring range: amhours 0 - 999AH
- Measuring range voltage: 8 - 30V
- Accuracy: +0.5%



Batman III Battery Monitor - Kit		52mm
Part No.	Specification	Voltage
190.725	Liquid crystal readout	8 - 30V

**Note:** Kit includes gauge, loom shunt, push button switch

### Accessories

Part No.	Description
190.727	Shunt

## WARNING LIGHTS CLUSTER

Universal Warning Light Cluster can be used for monitoring vehicle temperature, pressure, battery charging, high beams and ignition.

Warning lights cluster		52mm
Part No.	Specifications	Voltage
231003001	Temp - Pressure - Volt - Headlights - Ignition	12V

**Note:** Cluster contains 5 globes socket assembly.



## HOURMETERS, electrical

Suitable for all vehicles and machines.

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

12V globe included. For 24V applications, 24V globe part no. 240.055 required.



Hourmeter - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331 032 004	0 - 99999.9hrs	Illuminated	12V
(T.58 Illumination terminal)			



Hourmeter - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331 032 001	0 - 99999.9hrs	Not illuminated	12V
331810012004	0 - 99999.9hrs	Illuminated	12V
331810012007	0 - 99999.9hrs	Illuminated	24V



331.601

Hourmeters - Counter type - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331.600	0 - 99999.9hrs	Not illuminated	10/80V
331.601	0 - 99999.9hrs	Not illuminated	10/80V



331.602

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

# HOURMETER

Suitable for all vehicles and machines.

Overall Dimension 53 X 32mm.

Note - Connections not polarity specific.

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



# HOURMETER, LCD

Hourmeter			
Part No.	Range	Illumination	Voltage
331.535	0 - 99999.9hrs	Not illuminated	10/27V



Accessories		
Part No.	Description	Note
240.031	Wiring kit	
230.043	Pressure switch - 1 terminal 70 Kpa - 5 watts - N/O	1/8"-27 NPTF 6-24V
230.050	Pressure switch - 2 terminal 48 Kpa - 5 watts - N/O	1/8"-27 NPTF 6-24V

An hourmeter can be activated by connecting to Ignition power +, off the "D" terminal of the alternator or a normally-open pressure switch during engine operation.

Wiring explanation:

K15 - ignition

K31 - earth

K30 - battery

K58 - illumination



Sender 230.043



Sender 230.050