

Viewline Marine Catalogue



Viewline—the new generation in instrumentation

- ◆ Sumlog
- ◆ Tachometer & Tachourmeter
- ◆ Gauges for engine monitoring
- ◆ Basic navigation instruments

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VDO

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Sumlog & Tachourmeter



Speed
Total & Trip Distance
Depth
Sea Water Temperature
Clock
Voltmeter
External Trip-reset Button
External Mode Button



Through-Hull Kit



Transom Kit

Sumlog				Ø 80/85 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Smart Transducer
A2C59512404	Black	0 - 12 Kn	12/24V	See below
A2C59512407	White	0 - 12 Kn	12/24V	See below
A2C59512405	Black	0 - 50 Kn	12/24V	See below
A2C59512408	White	0 - 50 Kn	12/24V	See below

Transducer : Speed - Depth - Sea Water Temp				
Part Number	Range	Mounting	Cable Length	Connector
1501120004	12 Kn	Transom Kit	10 m	Blue White Red Black/Shield NMEA0183 + NMEA0183 - + 12/24V Negative
X11719000053	50 Kn	Transom Kit	10 m	Blue White Red Black/Shield NMEA0183 + NMEA0183 - + 12/24V Negative
X11719000058	50 Kn	Through-Hull Kit	10 m	Blue White Red Black/Shield NMEA0183 + NMEA0183 - + 12/24V Negative



Engine Speed (RPM)
Total & Trip Hours
Clock
Voltmeter
External Trip-reset Button
External Mode Button
Programmable External Alarm

Tachourmeter				Ø 80/85 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Applicable Signal
A2C59512390	Black	0-3000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512391	Black	0-4000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512392	Black	0-5000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512393	Black	0-6000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512394	Black	0-7000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512395	Black	0-8000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512398	White	0-5000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512399	White	0-6000 RPM	12/24V	Alternator Ignition Coil Generator Inductive

Tachourmeter



Engine Speed (RPM)
Total & Trip Hours
Clock
Voltmeter
External Trip-reset Button
External Mode Button
Programmable External Alarm

Tachourmeter				∅ 80/85 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Applicable Signal
A2C59512396	White	0-3000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512397	White	0-4000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512398	White	0-5000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512399	White	0-6000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512400	White	0-3000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512401	White	0-4000 RPM	12/24V	Alternator Ignition Coil Generator Inductive



Engine Speed (RPM)

Tachometer				∅ 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Applicable Signal
A2C59512344	Black	0-4000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512345	Black	0-6000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512347	White	0-4000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512348	White	0-6000 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512349	White	0-8000 RPM	12/24V	Alternator Ignition Coil Generator Inductive

Software, RPM programmable calibration

Tachometer



**Engine Speed (RPM)
Programmable Alarm (Software)**

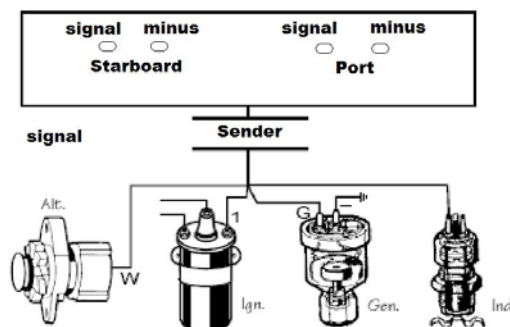
Tachometer				Ø 80/85 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Applicable Signal
A2C59512430	Black	0-3000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>
A2C59512431	Black	0-4000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>
A2C59512432	Black	0-6000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>
A2C59512433	White	0-3000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>
A2C59512434	White	0-4000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>
A2C59512435	White	0-6000 RPM	12/24V	Alternator Ignition Coil <small>(Note: Alternator signal calibration via software, only. Contact a VDO Service Agent for assistance)</small>

Software, RPM programmable calibration



Differential Engine Speed (RPM)

Synchroniser Tachometer				
Part Number	Colour Dial/ Bezel	Range	Voltage	Applicable Signal
A2C59512402	Black	+/- 0-500 RPM	12/24V	Alternator Ignition Coil Generator Inductive
A2C59512403	White	+/- 0-500 RPM	12/24V	Alternator Ignition Coil Generator Inductive




Temperature

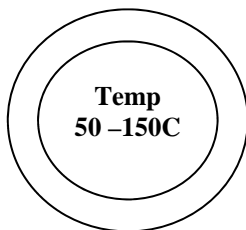


Temperature Gauge Water				Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Ohms Range
A2C59512548	Black	40 - 120C (248F)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	282 - 22 Ohms 38.6 Ohms = 100C
A2C59512555	White	40 - 120C (248F)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	282 - 22 Ohms 38.6 Ohms = 100C



Temperature Sender Water			
Part Number	Range	Thread size	Connector
323805001001K	40 - 120C (250F)	M14x1.5	2 spade terminals
323805001015N	40 - 120C (250F)	M18x1.5	2 spade terminals
323805001004K	40 - 120C (250F)	1/2"-14NPTF	2 spade terminals
323805001007N	40 - 120C (250F)	1/4"-18NPTF	2 spade terminals
323805001005N	40 - 120C (250F)	3/8"-18NPTF	2 spade terminals
323805001002C	40 - 120C (250F)	5/8"-18UNF 2A	2 spade terminals


 Note: For single terminals (earth return) or dual station senders, refer appendix on page



Temperature Gauge Engine				Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	Ohms Range
A2C59512550	Black	50 - 150C (300F)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	282 - 22 Ohms 62.2 Ohms = 100C
A2C59512556	White	50 - 150C (300F)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	282 - 22 Ohms 62.2 Ohms = 100C



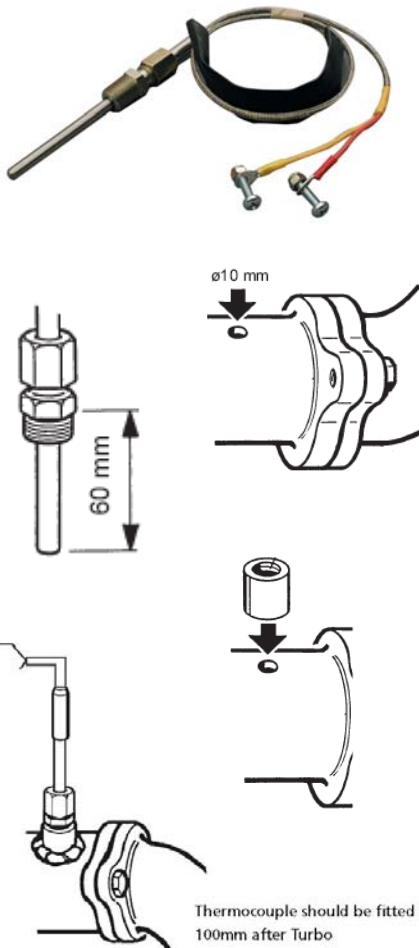
Temperature Sender Engine			
Part Number	Range	Thread size	Connector
323805001001K	50 - 150C (302F)	M14x1.5	2 spade terminals
323805001007N	50 - 150C (302F)	1/4"-18NPTF	2 spade terminals

 Note: For single terminals (earth return) or dual station senders, refer appendix on page



Pyrometer Gauge -				Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage	mV Range
A2C59512332	Black	100 - 900C (1650F)	12/24V	4.04 - 37.5 mV
A2C59512333	White	100 - 900C (1650F)	12/24V	4.04 - 37.5 mV
A2C59512334	Black	212 - 1650C (900C)	12/24V	4.04 - 37.5 mV
A2C59512335	White	212 - 1650C (900C)	12/24V	4.04 - 37.5 mV

Thermocouple K Type Kit (no gauge)			
Part Number	Description	Range	Terminals
320.714	Thermocouple Probe	100 - 900C (1650F)	Red = Negative Yellow = Positive
240.035	Compensating Cable	5 metres	White = Negative Blue = Positive or Red = Negative Brown = Positive



Install the sensor in the exhaust pipe near the elbow flange.

Maximum adjustment depth up to the middle of exhaust pipe :60 mm.

Mount the bushing centrally and weld on.

The weld must form a tight seal.

K Type thermocouple calibration chart	
Degrees Celsius	Probe Voltage (mV)
100	4.04
200	8.137
300	12.20
400	16.4
500	20.64
600	24.902
700	29.128
800	33.277
900	37.325

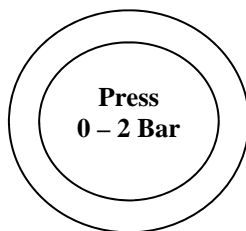
Celsius to Fahrenheit conversion chart	
Degrees Celsius	Degrees Fahrenheit
100	212
200	392
300	572
400	752
500	932
600	1112
700	1292
800	1472
900	1650

Outside Temp & Turbo Pressure



Outside Air Temperature				Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512336	Black	-25-+50C	12/24V	5000 Ohms = -15.5C 4082 Ohms = 0C 3100 Ohms = +20C 2600 Ohms = +30C 2400 Ohms = +40C
A2C59512338	White	-25-+50C	12/24V	4082 Ohms = 0C 3100 Ohms = +20C 2600 Ohms = +30C 2400 Ohms = +40C

Temperature Sender Air			
Part Number	Range	Thread size	Connector
TBA	-25-+50C		

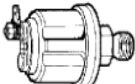


Pressure Gauge Turbo 2 Bar				
Part Number	Colour Dial/ Bezel	Range	Voltage	Ohms Range
A2C59512599	Black	0 - 2 Bar (28 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-2 Bar
A2C59512617	White	0 - 2 Bar (28 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-2 Bar



Pressure Sender 2 Bar			
Part Number	Range	Thread size	Connector
360081032025C	0 - 2 Bar (28 Psi)	1/8"-27NPTF	2 Screw terminals
360081032011C	0 - 2 Bar (28 Psi)	M12x1.5	2 Screw terminals

Note: For single terminals (earth return) or dual station senders, refer appendix on page 35

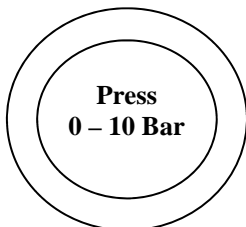
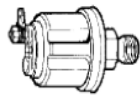
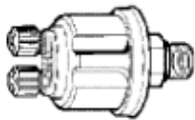




Pressure Gauge Engine Oil				Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512601	Black	0 - 5 Bar (72 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-5 Bar
A2C59512618	White	0 - 5 Bar (72 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-5 Bar

Pressure Sender Engine Oil			
Part Number	Range	Thread size	Connector
360081032002C	0 - 5 Bar (72 Psi)	M10x1	2 Screw terminals
360081032001C	0 - 5 Bar (72 Psi)	1/8"-27NPTF	2 Screw terminals

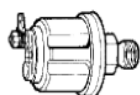
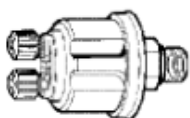
Note: For single terminals (earth return) or dual station senders, refer appendix on page



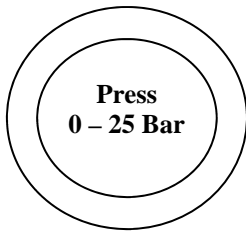
Pressure Gauge Engine Oil				Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512603	Black	0 - 10 Bar (150 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-5 Bar
A2C59512619	White	0 - 10 Bar (150 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-5 Bar

Pressure Sender Engine Oil			
Part Number	Range	Thread size	Connector
360081032003C	0 - 10 Bar (150 Psi)	M10x1	2 Screw terminals
360081032006C	0 - 10 Bar (150 Psi)	M14x1.5	2 Screw terminals
360081032014C	0 - 10 Bar (150 Psi)	1/8"-27NPTF	2 Screw terminals

Note: For single terminals (earth return) or dual station senders, refer appendix on page



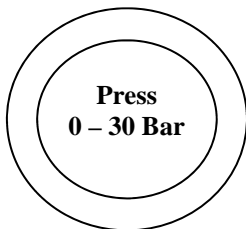
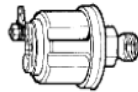
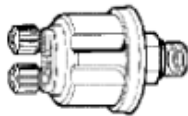
Transmission Pressure



Pressure Gauge Transmission				Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512605	Black	0 - 25 Bar (400 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-25 Bar
A2C59512620	White	0 - 25 Bar (400 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-25 Bar

Pressure Sender Transmission			
Part Number	Range	Thread size	Connector
360081038001C	0 - 25 Bar (400 Psi)	M14x1.5	2 Screw terminals
360081038003C	0 - 25 Bar (400 Psi)	1/8"-27NPTF	2 Screw terminals
360081038002C	0 - 25 Bar (400 Psi)	3/8"-18NPTF	2 Screw terminals

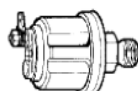
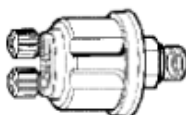
Note: For single terminals (earth return) or dual station senders, refer appendix on page



Pressure Gauge Transmission				Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512607	Black	0 - 30 Bar (435 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-25 Bar
A2C59512621	White	0 - 30 Bar (435 Psi)	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	10 - 183 Ohms 0-25 Bar

Pressure Sender Transmission			
Part Number	Range	Thread size	Connector
360081038001C	0 - 30Bar (435 Psi)	M14x1.5	2 Screw terminals
360081038003C	0 - 30Bar (435 Psi)	1/8"-27NPTF	2 Screw terminals
360081038002C	0 - 30 Bar (435 Psi)	3/8"-18NPTF	2 Screw terminals

Note: For single terminals (earth return) or dual station senders, refer appendix on page





Fuel Gauge

Ø 52 mm

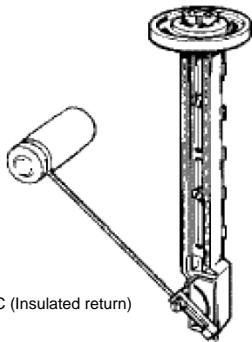
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512797	Black	0 - 1	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	3 - 180 Ohms
A2C59512508	White	0 - 1	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	3 - 180 Ohms

Sender Float Arm - Fuel

Part Number	Range	Notes	Terminal
220.003	10-180 Ohms	Adjustable 150-535mm	M4 x1
226801015001C	10-180 Ohms	Adjustable 200-600mm	Spade x2
N02240106	5-90 Ohms	Adjustable 200-600mm	Spade x2
A2C59510165	3-180 Ohms	Sender with low fuel warning switch. Adjustable 150-535mm	Spade x3
A2C59510171	3-180 Ohms	Arm Type Fuel Sender Adjustable 150-535mm	Spade x2
A2C59510166	5-90 Ohms	Sender with low fuel warning switch. Adjustable 150-535mm	Spade x3
A2C59510172	5-90 Ohms	Arm Type Fuel Sender Adjustable 150-535mm	Spade x2
A2C59510167	240-33 Ohms	Sender with low fuel warning switch. Adjustable 150-535mm	Spade x3
A2C59510173	240-33 Ohms	Arm Type Fuel Sender Adjustable 150-535mm	Spade x2



220.003 (earth return)

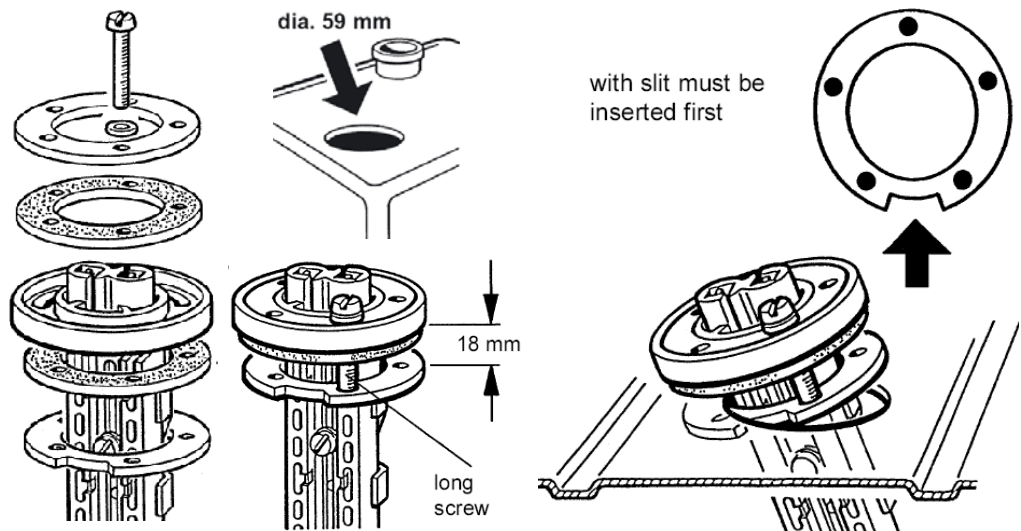


226801015001C (Insulated return)



Arm Type Fuel Sender

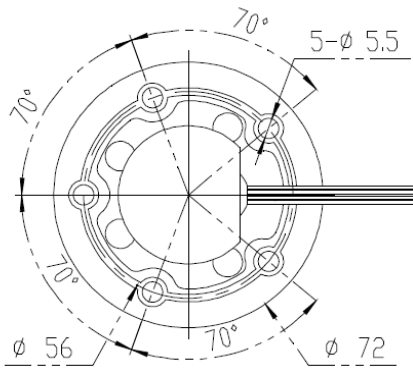
A2C595101xx (Insulated return)



For mounting kit and accessories refer to page 15



Ø 35mm Float

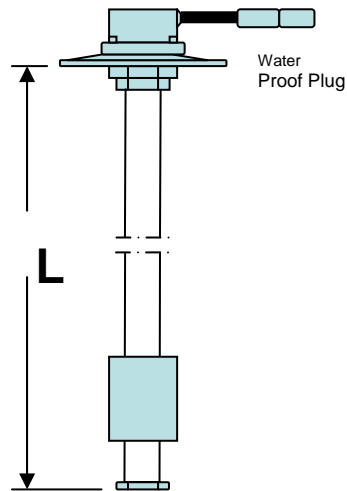


Sender Reed Switch - Fuel

Part Number	Range	L = length	Terminal
220.350-180	3-180 Ohms	350 mm	Waterproof plug (Male & Female)
220.550-90	3-90 Ohms	550 mm	Waterproof plug (Male & Female)
220.550-45	5-90 Ohms	550 mm	Waterproof plug (Male & Female)
220.600-180	3-180 Ohms	600 mm	Waterproof plug (Male & Female)

Note:

Use adaptor plate CTA0201 when installing t the five holes sender's plate on 6 holes applications,



Fuel Gauge (US Application)

Ø 52 mm

Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512505	Black	Empty-Full	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	5 - 90 Ohms
A2C59512511	White	Empty-Full	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	5 - 90 Ohms
A2C59512503	Black	Empty-Full	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	240 - 33 Ohms
A2C59512510	White	Empty-Full	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	240 - 33 Ohms



Fuel Gauge Tubular Type

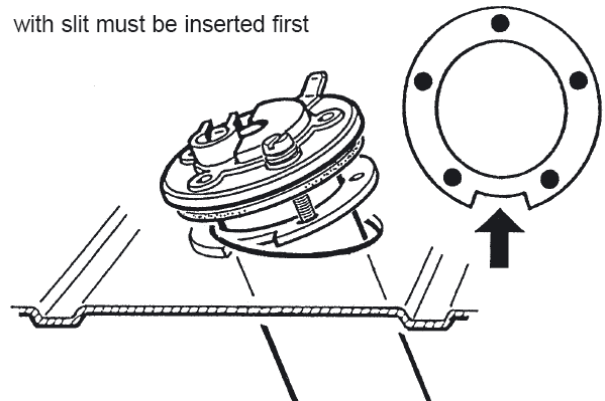
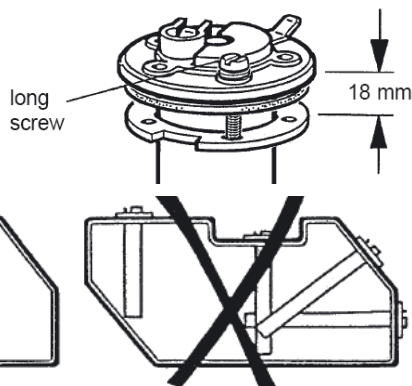
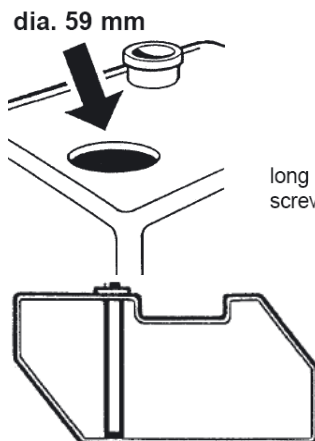
Part Number	Colour Dial Bezel	Range	Voltage	Ohms Range
A2C59512499	Black	0 - 1/1	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	110/50 - 2 Ohms
A2C59512509	White	0 - 1/1	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>	110/50 - 2 Ohms



Sender Tubular Type - Fuel

Sender Part No.	Length	Sender Part No.	Length
224011000015G	150mm	224011000032G	320mm
224011000016G	160mm	224011000033G	330mm
224011000017G	170mm	224011000034G	340mm
224011000018G	180mm	224011000035G	350mm
224011000019G	190mm	224011000036G	360mm
224011000020G	200mm	224011000037G	370mm
224011000021G	210mm	224011000038G	380mm
224011000022G	220mm	224011000039G	390mm
224011000023G	230mm	224011000040G	400mm
224011000024G	240mm	224011000045G	450mm
224011000025G	250mm	224011000050G	500mm
224011000026G	260mm	224011000055G	550mm
224011000027G	270mm	224011000060G	600mm
224011000028G	280mm	224011000065G	650mm
224011000029G	290mm	224011000070G	700mm
224011000030G	300mm	224011000075G	750mm
224011000031G	310mm	224011000080G	800mm

For mounting kit and accessories refer to page 15





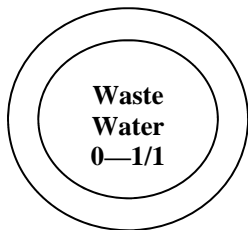
Fresh Water Level Gauge Ø 52 mm

Part Number	Colour Dial Bezel	Range	Voltage	mA Range
A2C59512340	Black	0 - 1/1	12/24V	Empty = 4 mA Full = 20 mA
A2C59512341	White	0 - 1/1	12/24V	Empty = 4 mA Full = 20 mA



Fresh Water Level Sender

Sender Part No.	Length
N02 240 902	80 - 600mm
N02 240 904	600 - 1200mm
N02 240 906	1200 - 1500mm



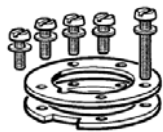
Waste/Grey Water Level Gauge Ø 52 mm

Part Number	Colour Dial Bezel	Range	Voltage	mA Range
A2C59512342	Black	0 - 1/1	12/24V	Empty = 4 mA Full = 20 mA
A2C59512343	White	0 - 1/1	12/24V	Empty = 4 mA Full = 20 mA



Waste/Grey Water Level Sender

Sender Part No.	Length
N02 240 902	80 - 600mm
N02 240 904	600 - 1200mm
N02 240 906	1200 - 1500mm



Bolt-on Tankflange



Weld-on Tankflange



Weld-on Tankflange

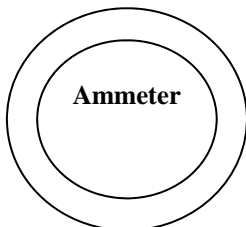


Tank Sender Accessories

Part No.	Description.
N05801432	Flange Kit Bolt Circle Ø54mm
22502641141	Bolt Circle Ø54mm
224011000017G	Bolt Circle Ø80mm
CTA0200	Six to five holes conversion plate



Voltmeter			Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage
A2C59512545	Black	8 -16V	12V
A2C59512546	White	8 -16V	12V
A2C59512458	Black	18 - 32V	24V
A2C59512459	White	18 - 32V	24V



Ammeter Gauge with external shunt			Ø 52 mm
Part Number	Colour Dial Bezel	Range	Voltage
A2C59512328	Black	60A	12/24V
A2C59512330	White	60A	12/24V
A2C59512329	Black	150A	12/24V



Ammeter Shunt		
Part Number	Range	Voltage
190.083	60A	12/24V
190.084	150A	12/24V

Trim & Rudder Angle



Trim Gauge			Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage
A2C59512564	Black	Bravo Drive	12V

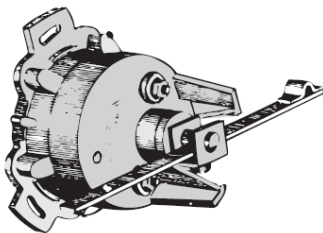
Note: Trim sensor for the Bravo drive is a Mercury product.



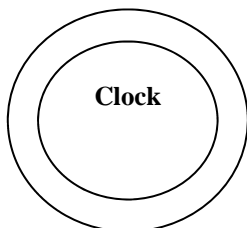
Rudder Angle Indicator			Ø 80/85 mm
Part Number	Colour Dial/ Bezel	Range	Voltage
A2C59512410	Black	+45°	12/24V
A2C59512411	White	+45°	12/24V



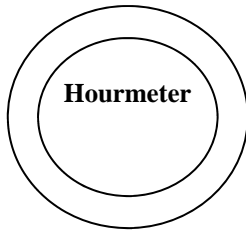
Rudder Angle Indicator			Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage
A2C59512561	Black	40° Stb	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>
A2C59512562	White	40° Stb	12V <small>(for 24V with dropping voltage resistor p/n A2C59510853)</small>



Rudder Angle Sender			
Part Number		Voltage	Note
440102001001D	Single Station	12/24V	Sender suitable for 52 and 85mm gauges
440102002001D	Dual Station	12/24V	Dual station sender has a "D" market on the body



Clock			Ø 52 mm
Part Number	Colour Dial/ Bezel	Range	Voltage
A2C59512445	Black	12h	12V
A2C59512443	White	12h	12V
A2C59512446	Black	12h	24V
A2C59512444	White	12h	24V



<i>Hourmeter</i>			
Part Number	Colour Dial/ Bezel		Voltage
A2C59512453	Black		12/24V
A2C59512454	White		12/24V

A large, empty rectangular area with a thin grey border, intended for taking notes.

Conversion Table



Oceanline to Viewline Gauges

Previous Oceanline Part number	New Viewline Part number	Gauge dial and Bezel Colour	Main Function	Voltage	Ø	Range
N01113014	A2C59512405	BLACK	Sumlog LCD (Speedo)	12/24V	85	50kn
N01211022	A2C59512564	BLACK	Trim	12V *	52	Down
N02011116	A2C59512344	BLACK	Tacho	12/24V	52	4000rpm
N02011118	A2C59512345	BLACK	Tacho	12/24V	52	6000rpm
N02012106	A2C59512396	WHITE	Tachourmeter	12/24V	85	3000rpm
N02012110	A2C59512397	WHITE	Tachourmeter	12/24V	85	4000rpm
N02012114	A2C59512398	WHITE	Tachourmeter	12/24V	85	5000rpm
N02012122	A2C59512399	WHITE	Tachourmeter	12/24V	85	6000rpm
N02012146	A2C59512390	BLACK	Tachourmeter	12/24V	85	3000rpm
N02012150	A2C59512391	BLACK	Tachourmeter	12/24V	85	4000rpm
N02012154	A2C59512392	BLACK	Tachourmeter	12/24V	85	5000rpm
N02012162	A2C59512393	BLACK	Tachourmeter	12/24V	85	6000rpm
N02012406 & N02012706	A2C59512433	WHITE	Tacho	12/24V	85	3000rpm
N02012410 & N02012710	A2C59512434	WHITE	Tacho	12/24V	85	4000rpm
N02012414 & N02012714	A2C59512435	WHITE	Tacho	12/24V	85	6000rpm
N02012426 & N02012726	A2C59512430	BLACK	Tacho	12/24V	85	3000rpm
N02012430 & N02012730	A2C59512431	BLACK	Tacho	12/24V	85	4000rpm
N02012434 & N02012734	A2C59512432	BLACK	Tacho	12/24V	85	6000rpm
N02124102 & N02124502	A2C59512617	WHITE	Press Turbo	12V *	52	2bar
N02124106 & N02124506	A2C59512618	WHITE	Press Oil	12V *	52	5bar
N02124110 & N02124510	A2C59512619	WHITE	Press Oil	12V *	52	10bar
N02124114 & N02124514	A2C59512620	WHITE	Press Oil	12V *	52	25bar
N02124118 & N02124518	A2C59512621	WHITE	Press Oil	12V *	52	30bar
N02124122 & N02124522	A2C59512599	BLACK	Press	12V *	52	2bar
N02124126 & N02124526	A2C59512601	BLACK	Press Oil	12V *	52	5bar
N02124130 & N02124530	A2C59512603	BLACK	Press Oil	12V *	52	10bar
N02124134 & N02124534	A2C59512605	BLACK	Press Trans	12V *	52	25bar
N02124138 & N02124538	A2C59512607	BLACK	Press Trans	12V *	52	30bar
N02222102 & N02222302	A2C59512508	WHITE	Level Fuel	12V *	52	1/1
N02222112 & N02222312	A2C59512497	BLACK	Level Fuel	12V *	52	1/1
N02222502 & N02222702	A2C59512509	WHITE	Level Fuel	12V *	52	1/1
N02222512 & N02222712	A2C59512499	BLACK	Level Fuel	12V *	52	1/1

* Temporary measure: For 24V application, use Voltage Dropping Resistor P/n A2C59510221 without connector or P/n A2C59510853 with 8 pins connector

Conversion Table

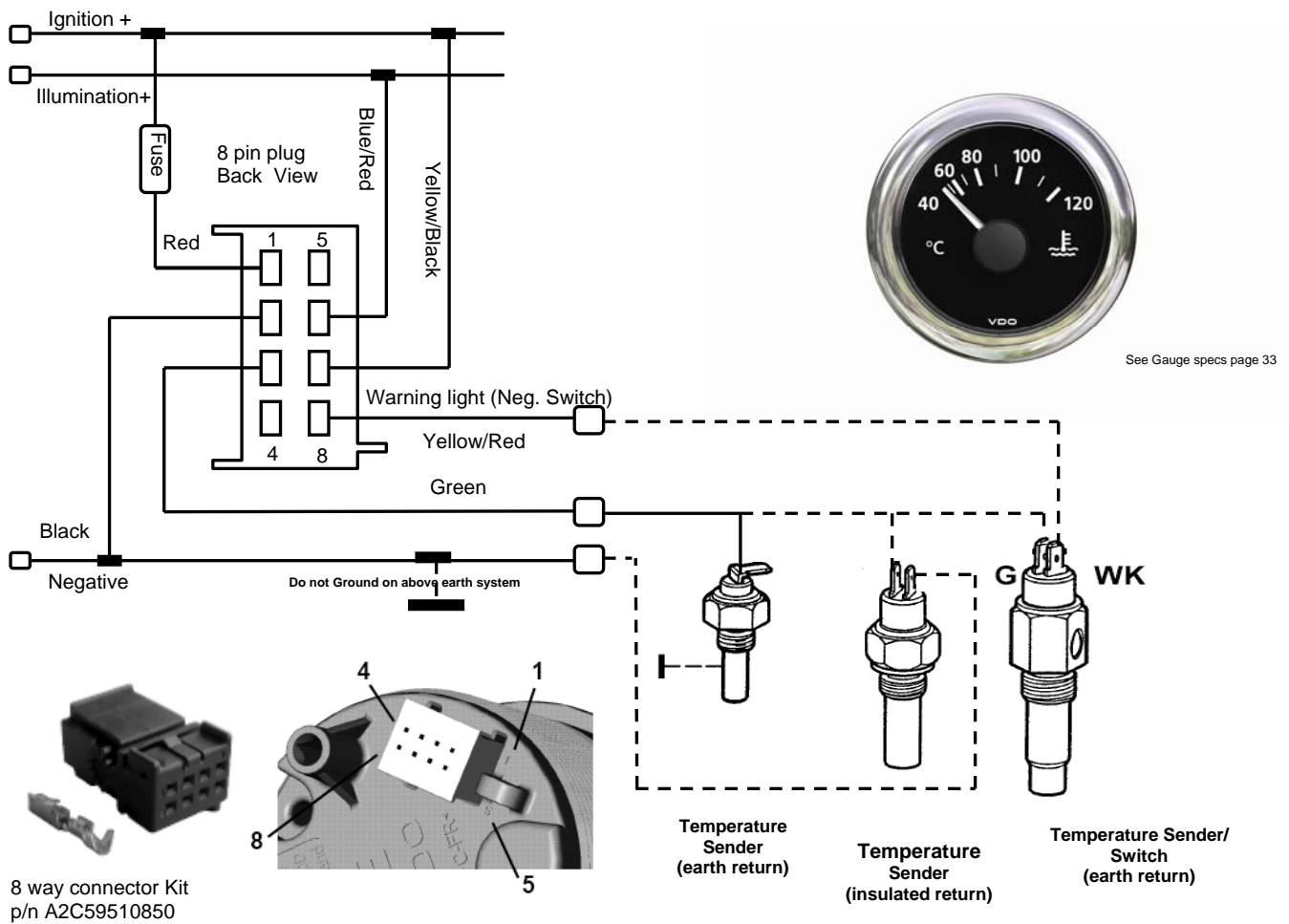


Oceanline to Viewline Gauges

Previous Oceanline Part number	New Viewline Part number	Gauge colour dial/bezel	Main Function	Voltage	Ø	Range	Scale	FSD
N02230602	A2C59512341	WHITE	Level Freshwater	12/24V	52	1/1		20mA
N02230612	A2C59512340	BLACK	Level Freshwater	12/24V	52	1/1		20mA
N02230622	A2C59512343	WHITE	Level Waste water	12/24V	52	1/1		20mA
N02230626	A2C59512342	BLACK	Level	12/24V	52	1/1		20mA
N02230702	A2C59512559	WHITE	Level Freshwater	12V *	52	F	S	LT-EU
N02230712 & N02230812	A2C59512514	BLACK	Level Freshwater	12V *	52	1/1	S	LT-EU
N02340702	A2C59512333	WHITE	Pyrometer	12/24V	52	900°C		37mV
N02340712	A2C59512332	BLACK	Pyrometer	12/24V	52	900°C		37mV
N02340714	A2C59512334	BLACK	Pyrometer	12/24V	52	1650°F		37mV
N02321402	A2C59512336	BLACK	Temp Outside	12/24V	52	+50°C		2kOhm
N02321502	A2C59512338	WHITE	Temp Outside	12/24V	52	+50°C		2kOhm
N02321602 & N02321702	A2C59512555	WHITE	Temp Water	12V *	52	120°C	D	EU
N02321606	A2C59512556	WHITE	Temp Oil	12V	52	150°C	D	EU
N02321612 & N02321712	A2C59512548	BLACK	Temp water	12V *	52	120°C	D	EU
N02321616 & N02321716	A2C59512550	BLACK	Temp Oil	12V *	52	150°C	D	EU
N02400306	A2C59512330	WHITE	Amp ext. Shunt	12/24V	52	+60A		60mV
n02420712	A2C59512328	BLACK	Amp ext. Shunt	12/24V	52	+60A		60mV
N02420714	A2C59512329	BLACK	Amp ext. Shunt	12/24V	52	+150A		60mV
N02410802	A2C59512546	WHITE	Volt	12V *	52	16	S	
N02410812	A2C59512545	BLACK	Volt	12V *	52	1/1	S	
N02410902	A2C59512459	WHITE	Volt	24V	52	32V	S	
N02410912	A2C59512458	BLACK	Volt	24V	52	32V	S	
N03110404	A2C59512454	WHITE	Hourmeter	12/24V	52			
N03110412	A2C59512453	BLACK	Hourmeter	12/24V	52			
N03211402 & N03211502	A2C59512562	WHITE	Rudder angle	12V *	52	40°Stb	S	
N03211202	A2C59512411	WHITE	Rudder angle	12/24V	85	+45°	S	
N03211206	A2C59512410	BLACK	Rudder angle	12/24V	85	+45°	S	
N03211412 & N03211512	A2C59512561	BLACK	Rudder angle	12V *	52	40°Stb	S	
N03270602	A2C59513443	WHITE	Clock	12V *	52		S	
N03270603	A2C59513444	WHITE	Clock	24V	52		S	
N03270612	A2C59513445	BLACK	Clock	12V *	52		S	
N03270613	A2C59513446	BLACK	Clock	24V	52		S	

* Temporary measure: For 24V application, use Voltage Dropping Resistor P/n A2C59510221 without connector or P/n A2C59510853 with 8 pins connector

Temp Gauges 120° C and 150° C



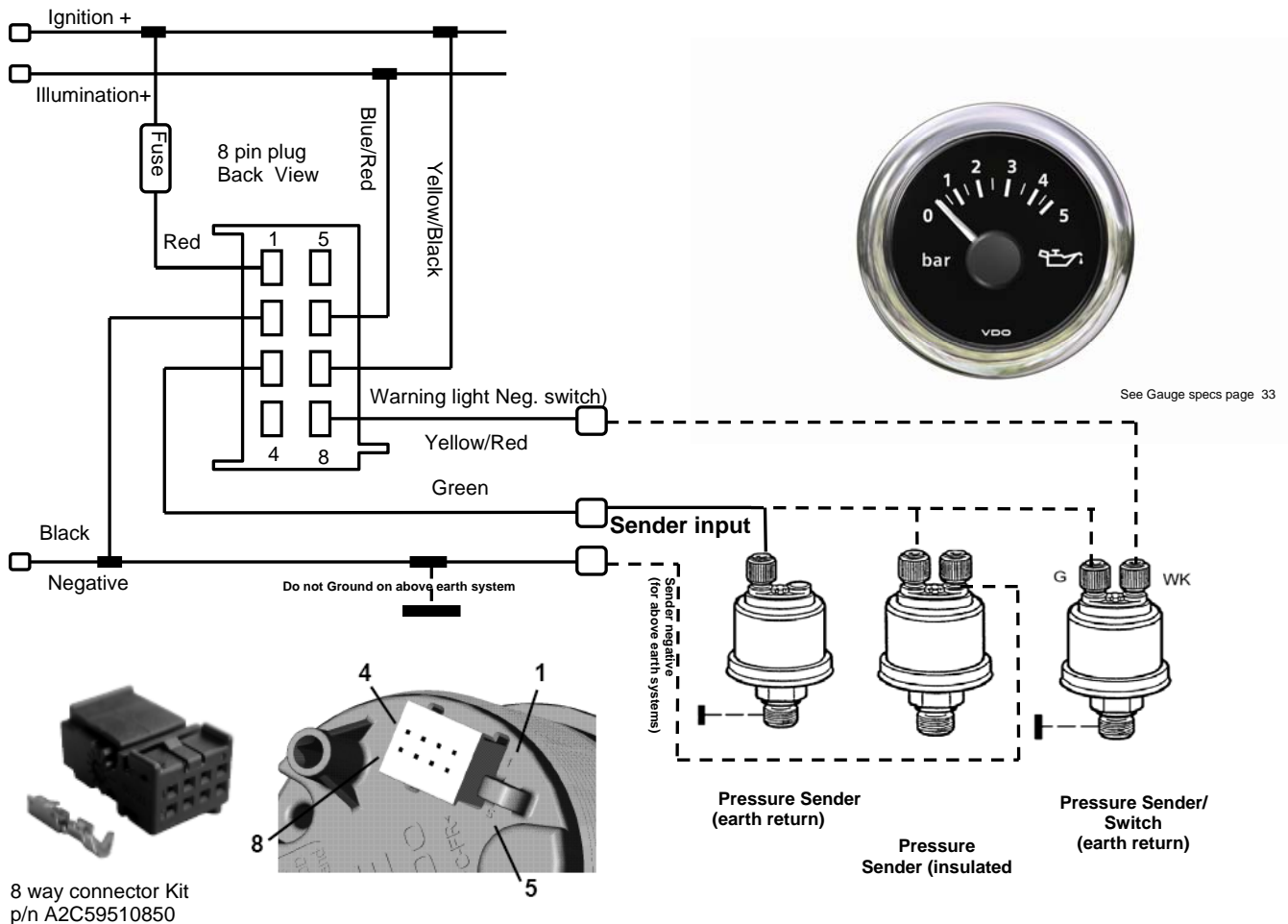
40 to 120 °C

Indication (°C)	40	50	60	70	80	90	100	110	120
Resistance (Ω)	287.4	193.3	134	95.2	69.1	51.3	38.6	29.4	22.7
Deflection (°∠)	0	3.3	8.3	15.5	25.8	40	58	75.2	88.2
Tolerance (°∠)	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6

50 to 150 °C

Indication (°C)	50	80	90	100	110	120	130	140	150
Resistance (Ω)	322.8	112.5	83	62.2	47.5	36.5	28.9	23.1	18.6
Deflection (°∠)	0	12.4	19.8	29.6	42	56.8	69.7	80.2	88.1
Tolerance (°∠)	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6	± 3.6

Pressure Gauges 2, 5, 7, 10 Bar



0 to 2 bar

Indication (bar)	0	1	2
Resistance (Ω)	10	99	184
Deflection ($^\circ\angle$)	0	41.4	87.4

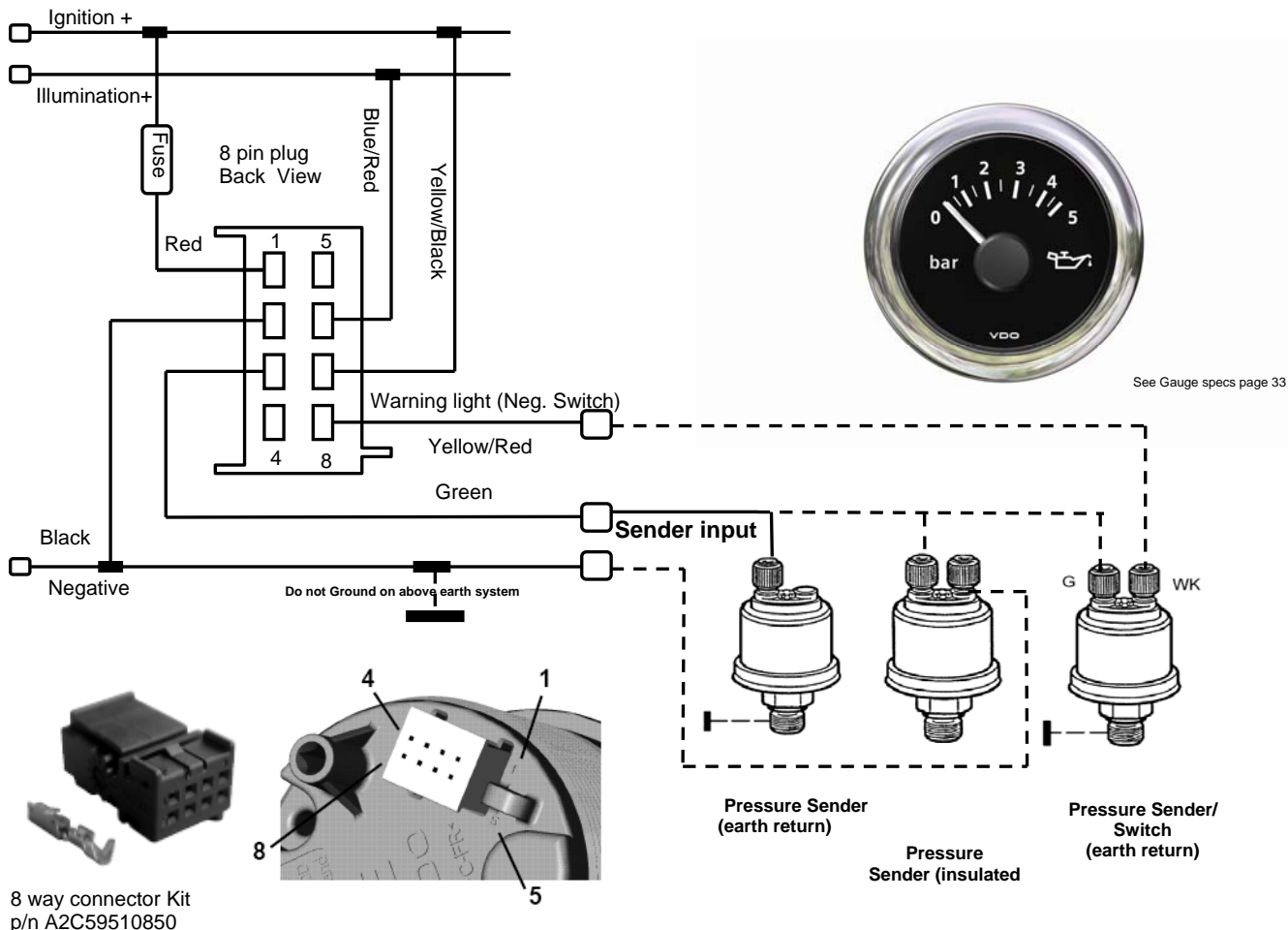
0 to 5 bar

Indication (bar)	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
Resistance (Ω)	10	30	48	65	82	99	116	134	151	168	184
Deflection ($^\circ\angle$)	0	6.4	13.4	21.3	30.6	41.4	53	64.6	74.2	81.6	87.4

0 to 10 bar

Indication (bar)	0	1	2	3	4	5	6	7	8	9	10
Resistance (Ω)	10	31	52	71	88	106	124	140	155	170	184
Deflection ($^\circ\angle$)	0	6.8	15.2	24.4	34.3	46.2	58.3	68.2	76.1	82.4	87.4

Pressure Gauges 25, 30 Bar



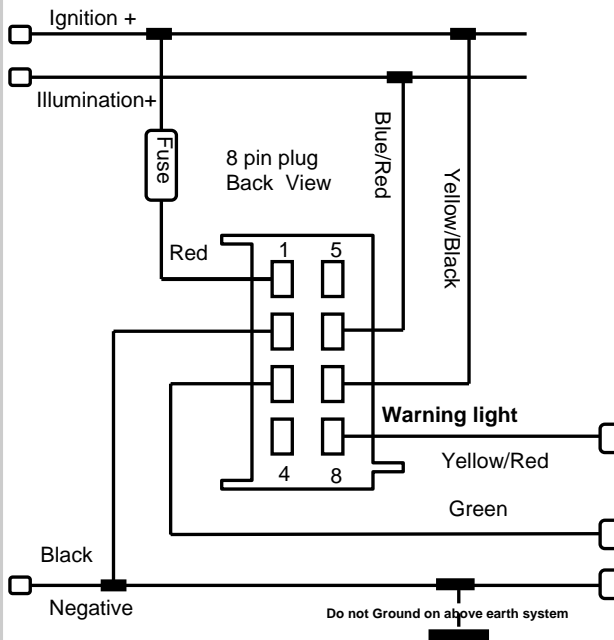
Note:

- Dual station senders have 1/2 of resistance range, Eg: 25 Bar is 92 Ohms
- For 0 to 30 Bar range application use a 0 to 25 Bar sender.

0 to 25 bar

Indication (bar)	0	2.5	5	7.5	10	12.5	15	17.5	20	22.5	25
Resistance (Ω)	10	32	53	73	92	109.1	125	143	155	169	184
Deflection ($^\circ$)	0	7.1	15.6	25.5	36.8	42.7	58.9	69.9	76.1	82	87.4

Fuel Gauge – Arm & Reed Switch Type Senders



See Gauge specs page 33

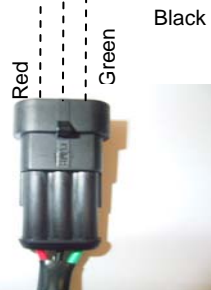
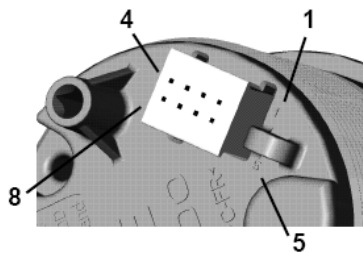
Version with Warning Contact

Arm type sender

Version without Warning Contact



8 way connector Kit
p/n A2C59510850

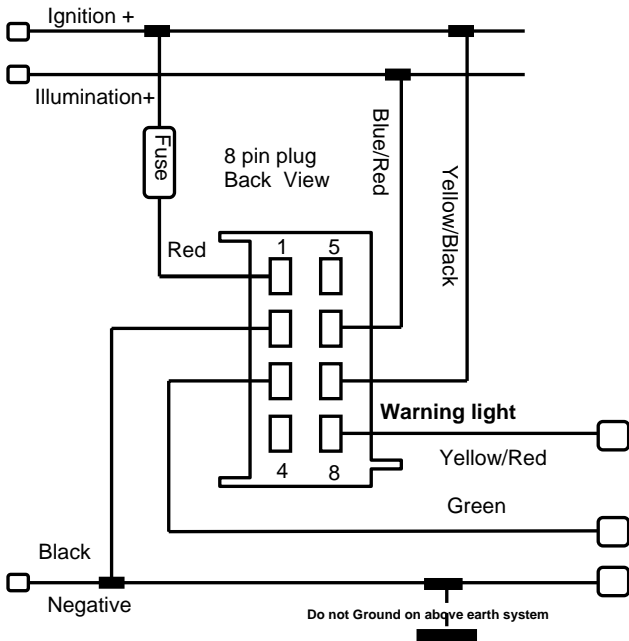


Reed Switch Sender

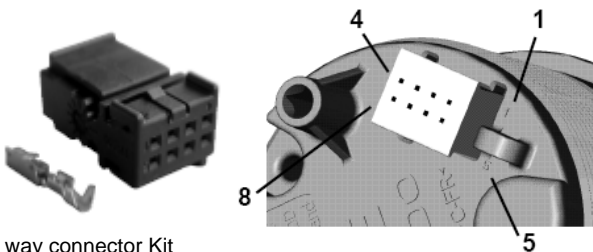
0 to 1/1

Indication	0	1/4	1/2	3/4	1/1
Resistance (Ω)	3	45	85	138	180
Deflection ($^\circ \angle$)	0	17.2	41.2	73.8	88.8
Tolerance ($^\circ \angle$)	+ 3.6 - 3.6	\pm 3.6	\pm 3.6	\pm 3.6	+ 3.6 - 3.6

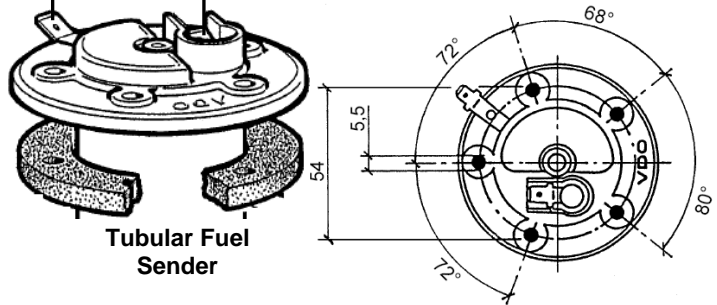
Fuel Gauge – Tubular Type Senders



See Gauge specs page 33



8 way connector Kit
p/n A2C59510850

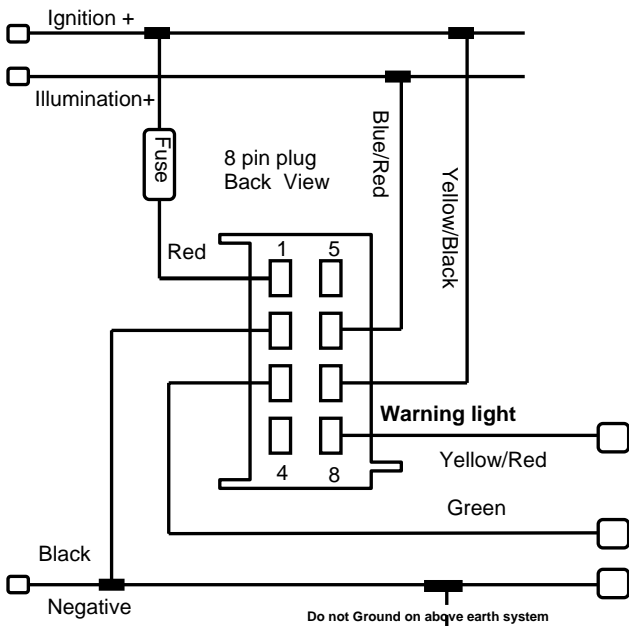


Tubular Fuel
Sender

Sender Part No.	Length	Pitch Ø	Cut-out	Ohm Full	Ohms Empty
224011000015G	150mm	54mm	41mm	4.5	69
224011000016G	160mm	54mm	41mm	4.5	74
224011000017G	170mm	54mm	41mm	4.5	79.5
224011000018G	180mm	54mm	41mm	3	64
224011000019G	190mm	54mm	41mm	3	68
224011000020G	200mm	54mm	41mm	3	68
224011000021G	210mm	54mm	41mm	3	76
224011000022G	220mm	54mm	41mm	3	80
224011000023G	230mm	54mm	41mm	3	84
224011000024G	240mm	54mm	41mm	3	65.5
224011000025G	250mm	54mm	41mm	2.5	72
224011000026G	260mm	54mm	41mm	2.5	72
224011000027G	270mm	54mm	41mm	2.5	74.5
224011000028G	280mm	54mm	41mm	2.5	75.5
224011000029G	290mm	54mm	41mm	2.5	78
224011000030G	300mm	54mm	41mm	2.5	82.8

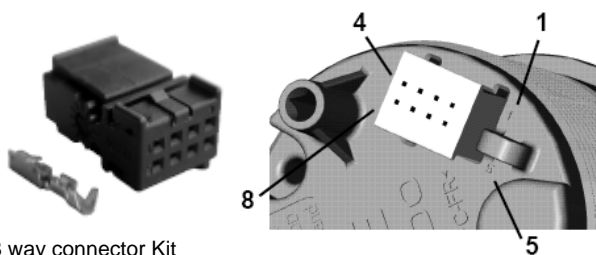
Sender Part No.	Length	Pitch Ø	Cut-out	Ohm Full	Ohms Empty
224011000031G	310mm	54mm	41mm	2.5	84
224011000032G	320mm	54mm	41mm	2.5	69.5
224011000033G	330mm	54mm	41mm	2.5	72
224011000034G	340mm	54mm	41mm	2.5	74
224011000035G	350mm	54mm	41mm	2.5	79.6
224011000036G	360mm	54mm	41mm	2.5	69
224011000037G	370mm	54mm	41mm	2.5	71
224011000038G	380mm	54mm	41mm	2.5	73
224011000039G	390mm	54mm	41mm	2.5	75
224011000040G	400mm	54mm	41mm	2.5	74.9
224011000045G	450mm	54mm	41mm	2.5	84.3
224011000050G	500mm	54mm	41mm	2.5	75.4
224011000055G	550mm	54mm	41mm	2.5	77.6
224011000060G	600mm	54mm	41mm	2.5	85.3
224011000065G	650mm	54mm	41mm	2.5	82.2
224011000070G	700mm	54mm	41mm	2	81.6
224011000075G	750mm	54mm	41mm	2	82
224011000080G	800mm	54mm	41mm	2	68.5

Rudder Angle

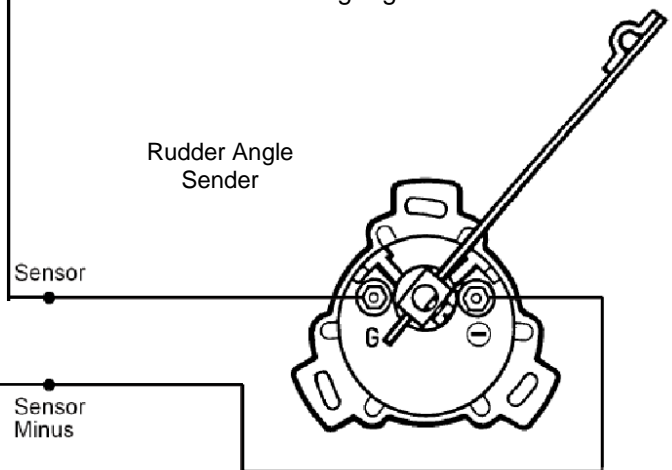


See Gauge specs page 33

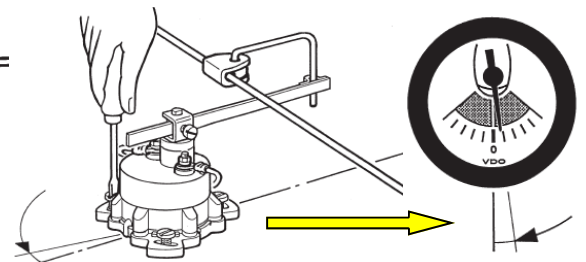
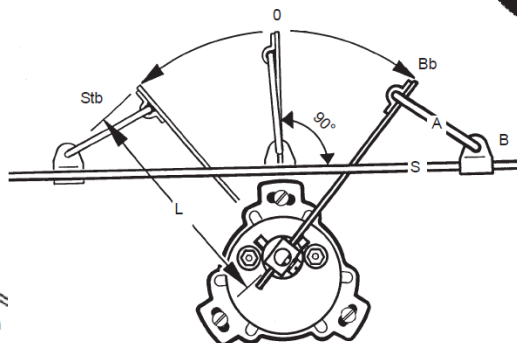
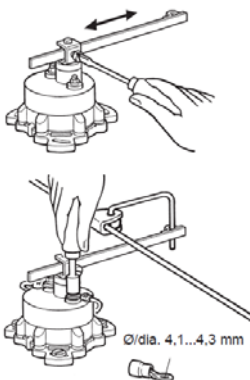
Note: For dual station installation, connect Green wire to second gauge



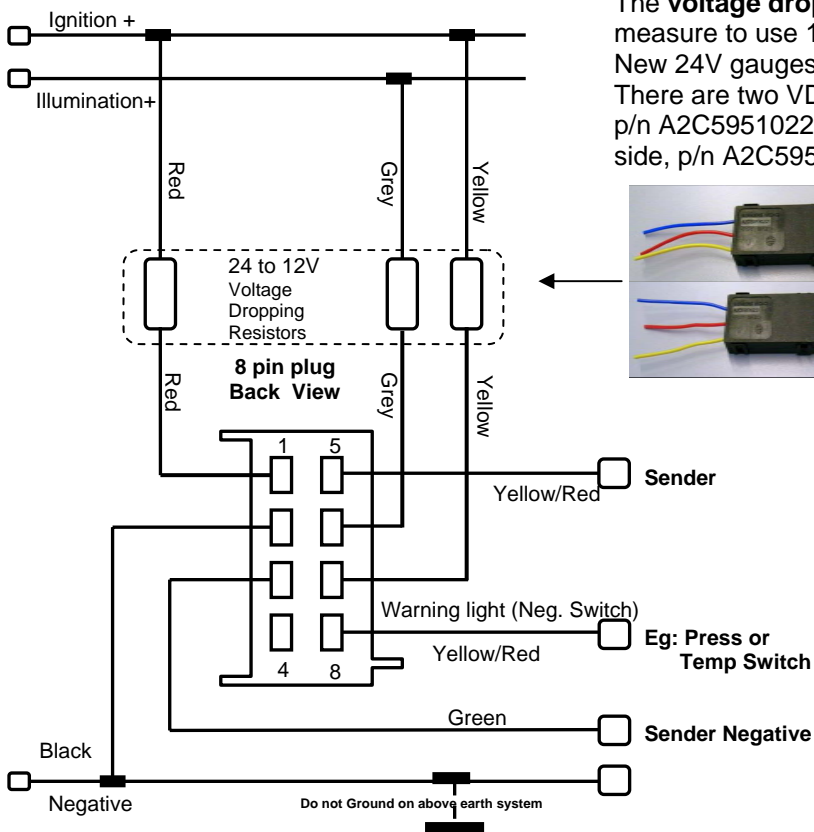
8 way connector Kit
p/n A2C59510850



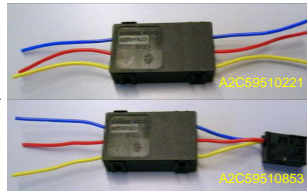
Rudder Angle sensor calibration



Tank, Temp, Press, Trim, Rudder Angle 52mm Gauges



The **voltage dropping resistor (VDR)** module is a temporary measure to use 12V gauges on 24V application. New 24V gauges will be available from Feb 2010. There are two VDR versions, one with wires termination, p/n A2C59510221 and one with a pre-wired connector on one side, p/n A2C59510853.



Note:

The VDR is used only on Ø52mm gauges with 90° meter movement, deflection. For Ø52mm gauges with 270° meter movement, deflection the VDR is not used as the gauges are 12/24V.

Electronic Alarm Switch

The Electronic Alarm Switch p/n A2C59510886 is designed to trigger the gauge's warning light at a pre-set point. It can be used on tank low level, high temp, low pressure, trim and rudder-angle. The unit has a pre-wired plug for the Viewline gauges. It operate on VDO and other manufactures (resistive) sensors.

Specification and technical data:

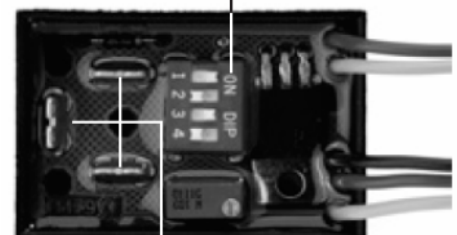
- Power supply:12VDC or24VDC
- Power consumption:< 10mA (warning lamp off)
- Operation temperature:-20°C to +70°C
- EMC:CE according to EMC Law89/336/EEC
- Vibration resistance:max.1g effective25 Hz –500Hz (duration8 hours)
- Shock:15g 1,5 ms half sine

Ø52mm gauges: Can be used on Temperature, Pressure, Tank, Trim, Rudder-angle.

Ø85/110mm: for optional warning lamps (Temperature, Pressure, Tank).



Adjustment/
operating mode 1-2
sensor selection 3-4



Connect sensor/
power connection

Bezels, Accessories and gauges details

Bezels for - Ø80/85mm & Ø52 mm Gauges

Type	Black	Black Nickel	Brush Aluminium	Chrome	Gold	White
flat	A2C53192911	A2C53293487	A2C53293488	A2C53192910	A2C53293490	A2C53192912
round	A2C53192913	A2C53293541	A2C53293499	A2C53192914	A2C53293540	A2C53192916
triangle	A2C53192917	A2C53293549	A2C53293560	A2C53192918	A2C53293561	A2C53192920
flat	A2C53186040	A2C53293468	A2C53293480	A2C53186023	A2C53293482	A2C53186022
round	A2C53192913	A2C53293494	A2C53293495	A2C53186029	TBA	A2C53186028
triangle	A2C53192917	A2C53293545	A2C53293546	A2C53186026	TBA	A2C53186025



Bezel shapes

Accessories

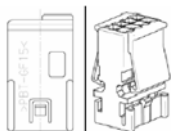
Part number	Description
A2C59510854	VL Mounting Kit (studs and brackets) 52, 85, 110mm
A2C59510864	VL Mounting bracket flush mount
A2C53215641	VL Sealing Ring 85mm flush mount
A2C53215642	VL Sealing Ring 110mm flush mount
A2C59510847	Bush housing, 8-pin
A2C59510848	Bush housing, 14-pin
A2C53324664	Protective connector cap, 8-pin
A2C59513503	Adaptor cable Triducer [®] NMEA Sensor
A2C53324671	Protective connector cap, 14-pin
Tyco No. 539635-1	Hand pliers
Tyco No. 539682-2	Tool for hand pliers.
Tyco No. 1355718-1	Single contacts 0.14 – 0.22 mm ² tin plated
Tyco No. 963729-1	Single contacts 0.5 – 0.75 mm ² tin plated
Tyco No. 1355717-1	Strip 0.14 – 0.22 mm ² tin plated
Tyco No. 928999-1	Strip 0.25 – 0.5 mm ² tin plated
Tyco No. 963715-1	Strip 0.5 – 0.75 mm ² tin plated
Tyco No. 1355718-5	Single contacts 0.14 – 0.22 mm ² gold plated
Tyco No. 963726-5	Single contacts 0.25 – 0.5 mm ² gold plated
Tyco No. 963729-5	Single contacts 0.5 – 0.75 mm ² gold plated
Tyco No. 1355717-5	Strip 0.14 – 0.22 mm ² gold plated
Tyco No. 928999-5	Strip 0.25 – 0.5 mm ² gold plated
Tyco No. 963715-5	Strip 0.5 – 0.75 mm ² gold plated



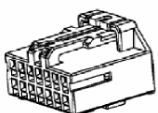
Flush mounted



Front mounted gauges



1. **TYCO or Hirschmann**
(8 pole MQS female housing, 1or 2 parts)



2. **TYCO** (TYCO 14 pole MQS female housing, 1 part)



Terminal
(tin or gold plated)



Order Code: 3902160

Manufacturer Part No: 539635-1



Order Code: 1330232

Manufacturer Part No: 539682-2



Double lens

Looms and Special application boxes

Conversion loom between Ø 52 mm Vision or International gauge and Viewline Ø 52 mm gauge

P/n 240.XXX

Conversion loom between Ø 80-85 mm Vision or International gauge and Viewline Ø 80-85 or 110 mm gauge

P/n 240.XXX

Tachometer active signal filter

P/n 410.020

Tachometer inductive sender, signal amplifier

P/n 411.096

Over-Rev switch with two independent channels

P/n 411.101

Over-Rev switch with single channel

P/n 660.990

One channel, relay output warning switch

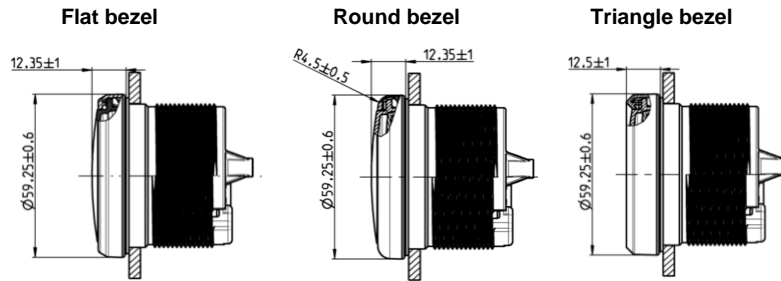
P/n 410.060

Three channels, warning switch

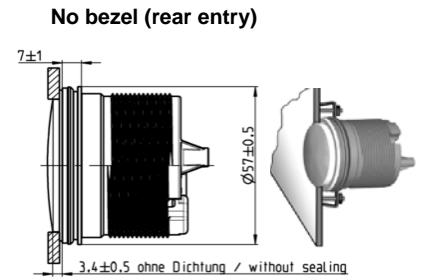
P/n 410.061

Gauges bezel types

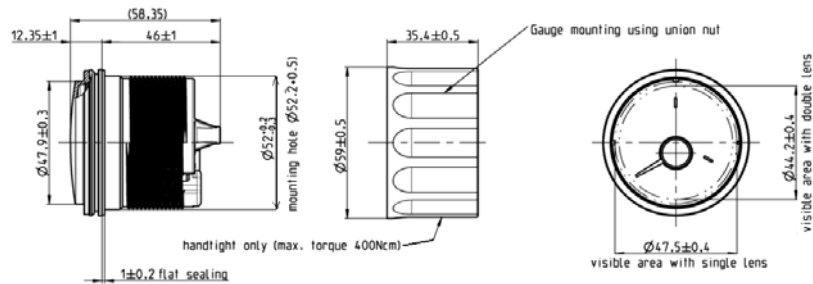
Ø 52 mm Gauges front fitting



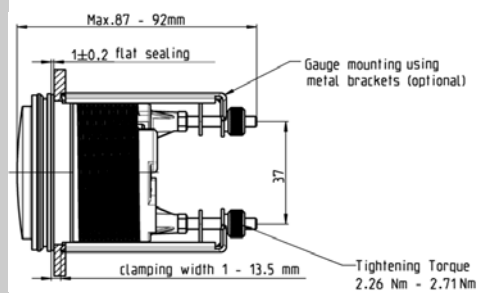
Ø 52 mm Gauges flash fitting



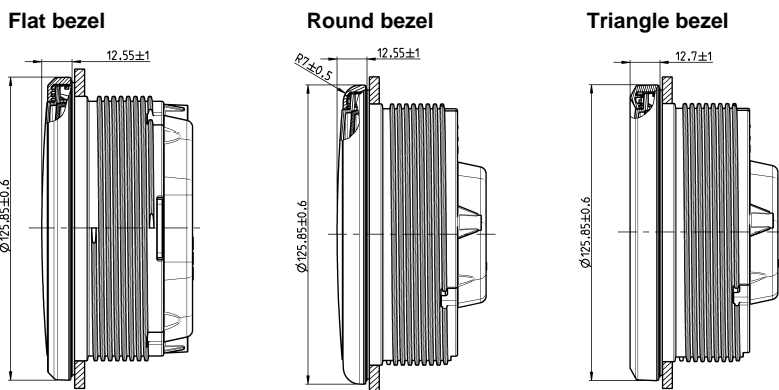
Ø 52 mm Gauge and Clamp-Ring overall dimension



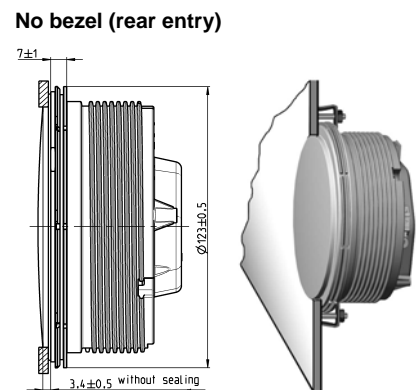
Ø 52 mm Gauges & Brackets



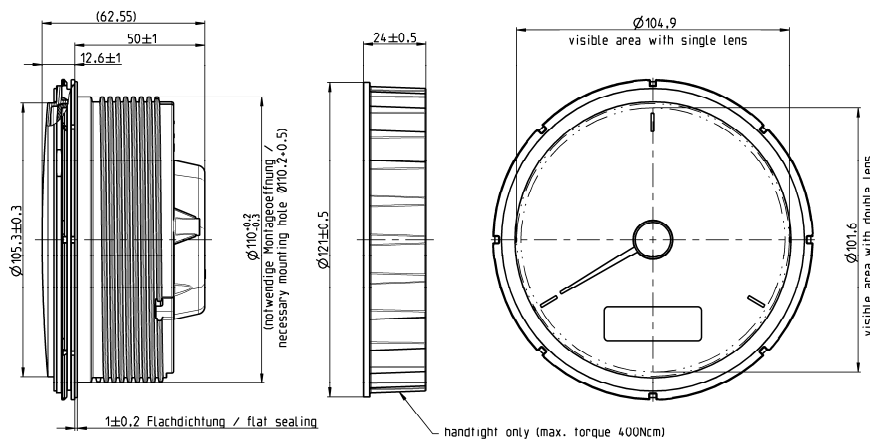
Ø 110, 85 mm Gauges front fitting



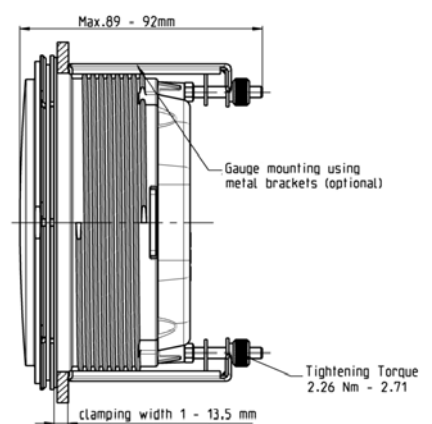
Ø 110, 85 mm Gauges flash fitting



Ø 110, 85 mm Gauge and Clamp-Ring overall dimension



Ø 110, 85 mm Gauges & Brackets



Sumlog

Technical Data

Measurement Range:	see Table
Sensors:	Sumlog SL/HS Sensor, Airmar Triducer [®] NMEA 0183
LCD-Size:	37 x 11 mm
Alarm output max:	100mA
Illumination:	amber, dimmable
Installation depth:	50mm
Installation diameter:	80 & 85mm
Deflection angle:	240°
Operating Voltage:	8,5 – 32 Volt (Sensor 8 – 16V)
Accuracy:	+/- 2,5% of full scale reading
Current consumption:	< 175 mA, including Warning LED
Operating temperature:	-20°C to +85°C; plated bezels (chrome) -20°C to +70°C
Storage temperature:	-40°C to +85°C for 48h; plated bezels (chrome) -40°C to +70°C +90°C for 1h
Temperature shock Range:	-40°C to +85°C; plated bezels (chrome) -40°C to +70°C
Transformation time:	10 seconds
Retention time:	2h
Climatic test Range:	+25°C to +55°C
Relative. Humidity:	80% to 100%
EMC:	in conformity with ISO 7637-1/2
ISO:	7637-3
ESD:	in conformity with DIN_EN 61000-4-2
ISO/CD:	10605
SAE:	J 551/15)
Vibration Sinus:	2g; 8-500Hz; duration 16h
Noise 4,2g; 10-1000Hz, duration 8h	
Mechanical shock continuous 25g; 6ms; 1Hz	
Single shock 100g; 11ms	
Free fall 1m; 3 times	
Chemical resistance against - preservative agent	
- preservative agent remover	
- cold cleaner	
- methylated spirit	
- interior cleaner	
- drinks containing caffeine and tannin	
Nominal position NL 0 to NL 85 (DIN16257)	
Protection class according to IEC 60529	
Front: IP67 (in Nominal position)	
Rear: IP52 (in Nominal position)	
Reverse polarity protection yes, 1 minute	
Short circuit protection yes, 1 minute	



Features

High reliability
Flush mount fitting
LED Illumination
Integrated Warning LED

Design

Housing PC; flame retarding (UL94)
Bezel PC or ABS; several colours and shapes (see table)
Lens PMMA; double lens
Dial backlight; different colours (see table)
Pointer backlight, white on black dials; red on white dials
Illumination Dial: LED amber (605nm)
Pointer: LED red (632nm)
Warning LED red (632nm), programmable
Mounting spin-lock Nut; locking height 0,5mm – 20mm,
optional Studs and Bracket; locking height 2 – 13mm
Connection 8 pin MQS connector system

Tachourmeter

Technical Data

Measurement Range:	see Table
Sensors:	Terminal 1 (Ignition Coil, negative side)
LCD-Size:	37 x 11 mm
Alarm output max:	100mA
Illumination:	amber, dimmable
Installation depth:	50mm
Installation diameter:	80 & 85mm
Deflection angle:	240°
Operating Voltage:	8,5 – 32 Volt (Sensor 8 – 16V)
Accuracy:	+/- 2,5% of full scale reading
Current consumption:	< 175 mA, including Warning LED
Operating temperature:	-20°C to +85°C; plated bezels (chrome)
Storage temperature:	-40°C to +85°C for 48h; plated bezels (chrome) -40°C to +70°C +90°C for 1h
Temperature shock Range:	-40°C to +85°C; plated bezels (chrome)
Relative. Humidity:	80% to 100%
Protection class	IP67 (front) in accordance to IEC 60529



Description

Gauge to indicate Engine Revolution, Engine Hours, Voltage & Clock.

Features

Integrated Warning LED
Changeable front bezel
LED Illumination
Flush mount possibility
High Reliability

Design

Housing PC; flame retarding (UL94)
Bezel PC or ABS; several colours and shapes (see table)
Lens PMMA; double lens
Dial backlight; different colours (see table)
Pointer backlight, white on black dials; red on white dials
Illumination Dial: LED amber (605nm)
Pointer: LED red (632nm)
Warning LED red (632nm), programmable
Mounting spin-lock Nut; locking height 0,5mm – 20mm,
optional Studs and Bracket; locking height 2 – 13mm
Connection 8 pin MQS connector system

(Differential Tacho)

Technical Data

Sensors: Hall sensor
Inductive sensor
Blocking oscillator
Ignition Terminal 1
Alternator Terminal W

Illumination: amber, dimmable

Installation depth: 50mm

Installation diameter: 80/85mm

Deflection angle: +/- 120°

Operating Voltage: 8,5 – 32 Volt

Accuracy: +/- 2,5% of full scale reading

Current consumption: < 175 mA, including Warning LED

Operating temperature: -20°C to +85°C; plated bezels (chrome) -20°C to +70°C

Storage temperature: -40°C to +85°C for 48h; plated bezels (chrome) -40°C to +70°C +90°C for 1h
-40°C to +85°C; plated bezels (chrome) -40°C to +70°C

Temperature shock Range: 10 seconds

Transformation time: 2h

Retention time: 2h

Climatic test Range: +25°C to +55°C

Relative Humidity: 80% to 100%

EMC in conformity with ISO: 7637-1/2
ISO 7637-3

ESD in conformity with DIN: EN 61000-4-2
ISO/CD 10605

SAE: J 551/15

Vibration Sinus: 2g; 8-500Hz; duration 16h

Noise 4,2g; 10-1000Hz, duration 8h

Mechanical shock continuous 25g; 6ms; 1Hz

Single shock 100g; 11ms

Free fall 1m; 3 times

Chemical resistance against - preservative agent
- preservative agent remover
- cold cleaner
- methylated spirit
- interior cleaner
- drinks containing caffeine and tannin

Nominal position NL 0 to NL 85 (DIN16257)

Protection class according to IEC 60529
Front: IP67 (in Nominal position)
Rear: IP52 (in Nominal position)

Reverse polarity protection yes, 1 minute



Features

High reliability
Flush mount fitting
LED Illumination
Integrated Warning LED

Concept

Housing PC; flame retarding (UL94)
Bezel PC or ABS; several colours and shapes (see table)
Lens PMMA; double lens
Dial backlit; different colours (see table)
Pointer backlit, white on black dials; red on white dials
Illumination Dial: LED amber (605nm)
Pointer: LED red (632nm)
Warning LED red (632nm), programmable
Mounting spin-lock Nut; locking height 0,5mm – 20mm, optional Studs and Bracket; locking height 2 – 13mm
Connection 8 pin MQS connector system

Press. - Temp. - Fuel - Trim - Ammeter - Volt - Pyro – Water

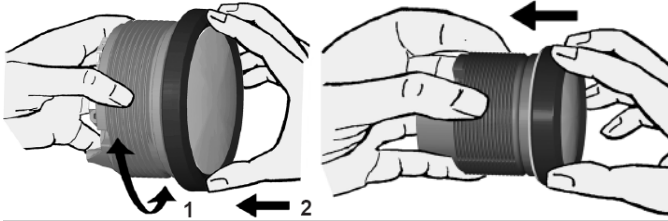
Technical Specs

- 8 pole Tyco/Hirschmann MQS plug
- +/-3.6 ° angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 130 mA with LED warning light
- Reverse polarity protection
- Input signal: standard Ohm values
- 90 ° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light
- Optional makepoint



Fittings \varnothing 85mm gauges

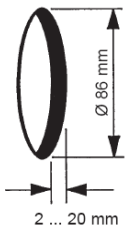
To replace a bezel



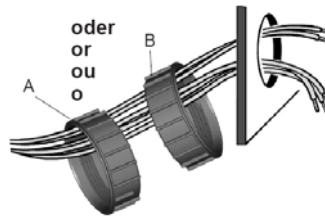
□ Place the new front ring on the instrument and press it on until it is flush with the instrument glass.

Front ring, flat; black	A2C53192911
Front ring, flat; white	A2C53192912
Front ring, flat; chrome	A2C53192910
Front ring, triangular; black	A2C53192917
Front ring, triangular; white	A2C53192920
Front ring, triangular; chrome	A2C53192918
Front ring, round; black	A2C53192913
Front ring, round; white	A2C53192916

To cut and fit gauge \varnothing 85mm



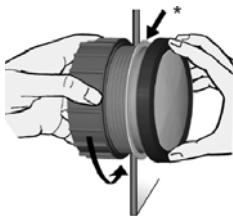
Conventional assembly. (Instrument is put into the drill hole from the front). The panel width may be within a range of 2 to 20 mm.



For 85 mm instruments, the fastening nut can be mounted at position A or B. This allows you to fix the gauge in different panel bores.

Version A Panel bore **80.5 - 81 mm**
Circumferential lip away from instrument

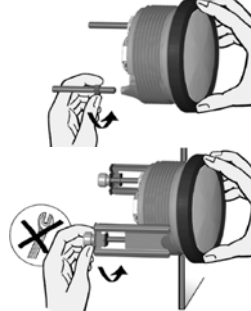
Version B Panel bore **85.5 - 86 mm**
Circumferential lip next to instrument



Align the instrument and hand-tighten the fastening nut. Ensure that the nut is not tightened with a torque greater than 400 Ncm.

* Make sure the seal lays flat between the panel and the front ring.

OR

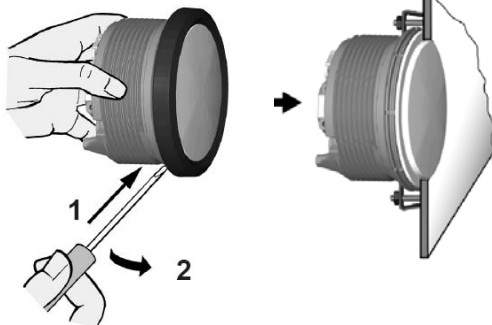


If you would like to omit the fastening nut, you may use the part set A2C59510854 as an alternative.

This is recommended if the installation location is subject to vibratory loads. Screw the stud bolts into the provided drill holes in the enclosure. Max. stud bolt torque is 1.5 Nm.

Place the bracket on the stud bolt and hand-tighten the knurled nut.

To cut and fit gauge \varnothing 85mm flash mount



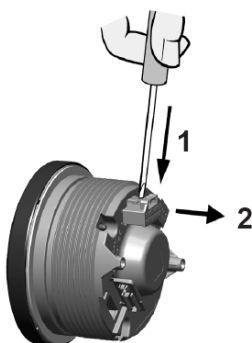
□ If the instrument is mounted flush (i. e., from the back so that the instrument glass and the panel form one plane), the front ring must be removed.

Press the instrument glass with both thumbs, while at the same time pressing the front ring forward from the instrument with both index fingers. Note the use of a tool in the adjacent figure.

□ Place the flush mount seal A2C53215641 on the instrument glass.

Put the instrument into the drill hole from the back. Adjust the instrument so that the gauge is level and fasten it to the stud bolts on the rear side of the panel, using the flush mount fixing bracket A2C59510864.

To unplug connector

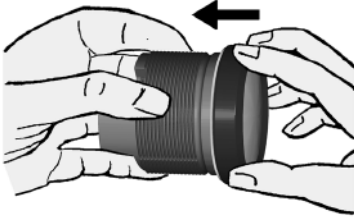


To remove the connector, press the latch (1) and pull the connector out (2).

Note: \varnothing 110 Gauges require a panel bore of \varnothing 111 mm.
Panel width may be within a range of 2 and 20 mm

Fitting $\varnothing 52$ mm gauges

To replace a bezel

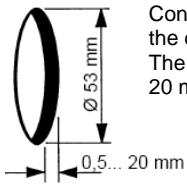


Place the new front ring on the instrument and press it on until it is flush with the instrument glass.

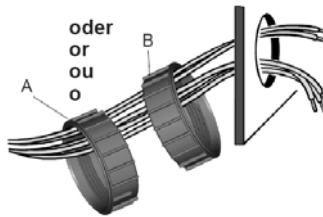


Front ring, flat; black	A2C53186040
Front ring, flat; white	A2C53186022
Front ring, flat; chrome	A2C53186023
Front ring, triangular; black	A2C53186024
Front ring, triangular; white	A2C53186025
Front ring, triangular; chrome	A2C53186026
Front ring, round; black	A2C53186027
Front ring, round; white	A2C53186028
Front ring, round; chrome	A2C53186029

To cut and fit gauge $\varnothing 52$ mm



Conventional assembly. (Instrument is put into the drill hole from the front). The panel width may be within a range of 2 to 20 mm.



For 52 mm instruments, the fastening nut can be mounted at position A or B. This allows you to fix the gauge in different panel bores.

Version A

Clamping height 0.5 – 10 mm

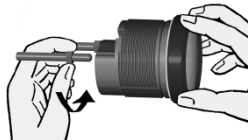
Version B

Clamping height 0.5 – 20 mm

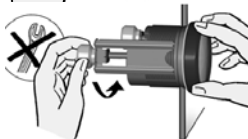


Align the instrument and hand-tighten the fastening nut. Ensure that the nut is not tightened with a torque greater than 400 Ncm.

* Make sure the seal lays flat between the panel and the front ring.



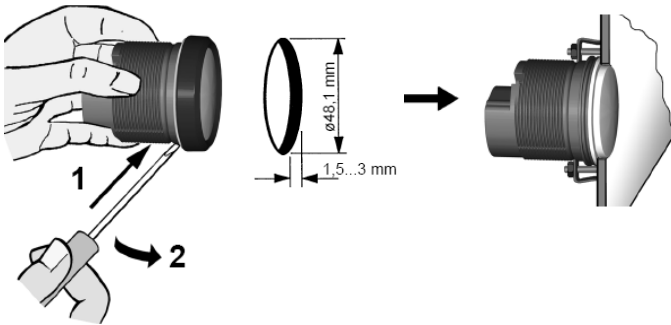
OR



If you would like to omit the fastening nut, you may use the part set A2C59510854 as an alternative. This is recommended if the installation location is subject to vibratory loads. Screw the stud bolts into the provided drill holes in the enclosure. Max. stud bolt torque is 1.5 Nm.

Place the bracket on the stud bolt and hand-tighten the knurled nut.

To cut and fit gauge $\varnothing 52$ mm flash mount



If the instrument is mounted flush (i. e., from the back so that the instrument glass and the panel form one plane), the front ring must be removed.

Press the instrument glass with both thumbs, while at the same time pressing the front ring forward from the instrument with both index fingers. Note the use of a tool in the adjacent figure.

Place the flush mount seal A2C53215641 on the instrument glass.

Put the instrument into the drill hole from the back.

Adjust the instrument so that the gauge is level and fasten it to the stud bolts on the rear side of the panel, using the flush mount fixing bracket A2C59510864.

Sumlog Calibration

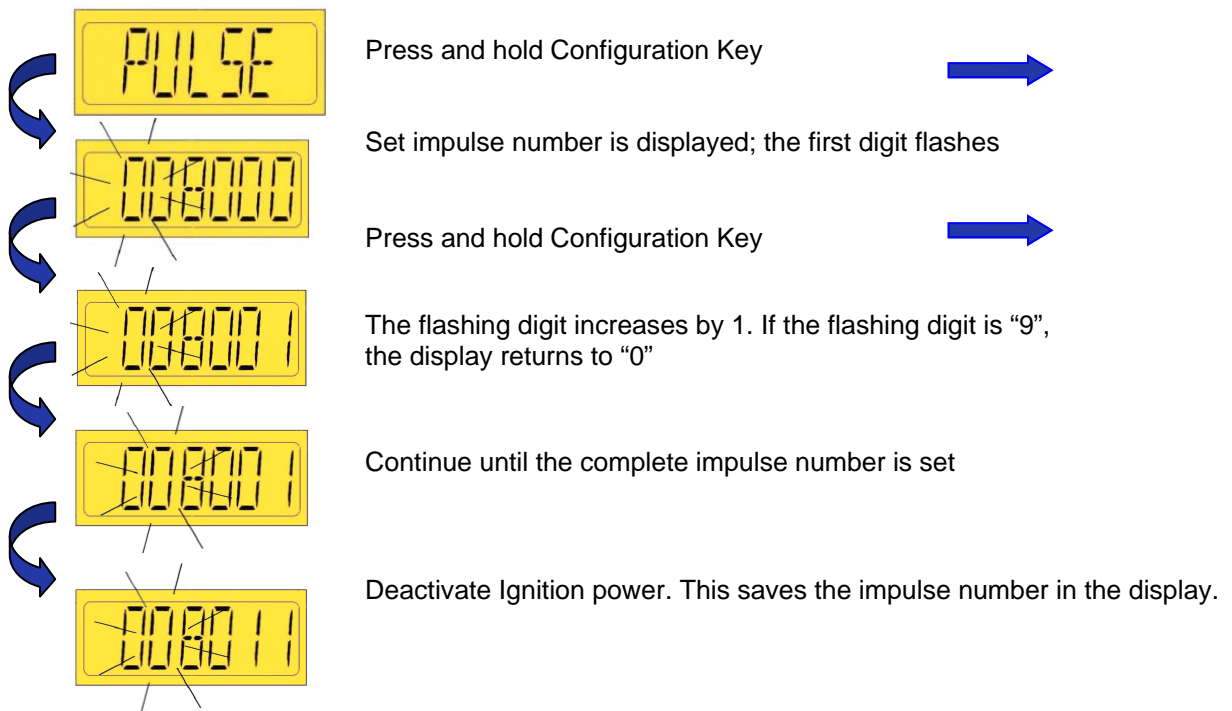
Basic operation

- Press the key briefly (< 2sec.) to change the currently displayed value.
- Press the key longer (< 2sec.) to change to the next value.
The display returns to normal operating mode
(if a key is not pressed for 30 seconds. Any settings you have made are not saved).

To enter calibration mode

1. Switch on Battery power T. 30 (8-pin - Pin1)
2. Ignition power T. 15 (8-pin - Pin4)
3. Press and hold Config key (14-pin - Pin 11)

Activate Ignition power
Release Configuration key



Tachourmeter Calibration

Basic operation

- Press the key briefly (< 2sec.) to change the currently displayed value.
- Press the key longer (< 2sec.) to change to the next value.
The display returns to normal operating mode
(if a key is not pressed for 30 seconds. Any settings you have made are not saved).

To enter calibration mode

1. Connect to battery power T. 30 (8-pin - Pin1)
2. Connect to ignition power T. 15 (8-pin - Pin4)
3. Ignition power **Off**
3. Press and hold "Config" push-button (14-pin - Pin 11)
4. Switch **On** ignition power T. 15
5. Release "Config" push-button



"Config" push-button



"Prog" push-button



Calibration Chart

Negative side of ignition coil on an electronic pointless ignition system

1. Switch **On** Battery power T. 30 (8-pin - Pin1)
2. Ignition power **Off** T. 15 (8-pin - Pin4)
3. Set impulse number according to chart below.

Note: Tachometer will not operate off a Magneto signal.

Ensure that switch position "1" is pointing toward the centre of instrument.

No. Cyl 's Strokes	No. Cyl 's Strokes	Imp/Rev	Switch 1	Switch 2	Switch 3
		XXX	0	0	0
2	4	1	1	0	0
4	4	2	0	1	0
6	4	3	1	1	0
8	4	4	0	0	1
		5	1	0	1
12	4	6	0	1	1
		8	1	1	1

Alternator signal

If the alternator is directly driven, by the engine shaft

Eg: Marine Outboard motors, the tacho can be calibrated by knowing the imp/revolution of the alternator, using a single phase connection (not a Star multi phase).

The calibration can be processed by selecting the number of imp/rev according to the pole-pairs of the alternator.

For the standard alternator running off a pulley linked to the crankshaft pulley, the tachometer can only be calibrated by a VDO Service Agent using a special software.

The alternative is to use a Tachourmeter where the calibration can be done via a configuration button without using the software.

Diagram 1
Star winding, single phase

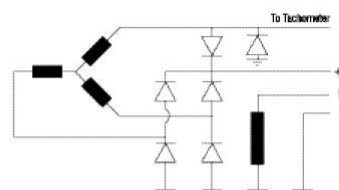


Diagram 2 Delta winding

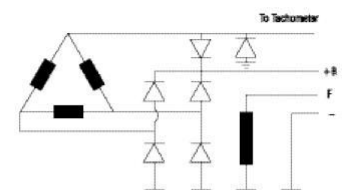
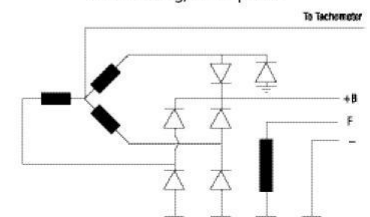


Diagram 3
Star winding, multi phase



"Star Winding" See diagram 3, will only work on a Tachourmeter, not a tachometer due to a greater calibration range.

Calibration & Adjustment

Tubular senders' gauge calibration

Connect gauge to:

1. Ignition power (T. 15)
2. Battery negative (T. 31)
3. Sender "G" terminal
4. Sender battery negative

Warranty Policy

Continental Pty Ltd (VDO) warrants the goods against defects in factory workmanship and materials within the warranty period.

The warranty period for automotive, commercial and marine products shall be 24 months from the date of invoice, subject to the usage limitation of 100,000 Km for goods installed in commercial vehicles.

The warranty period for audio and navigation products shall be 24 months from date of invoice.

The warranty period for repaired items shall be 90 days from the date of invoice.

The customer must notify the point of purchase / distributor of any defect coming within the provisions of this warranty within 30 days of the fault occurring.

A copy of the relevant invoice or the relevant invoice number as proof of the date of purchase must be provided with returned goods.

Continental P/L (VDO) liability with respect to this warranty shall be limited at the option of Continental P/L (VDO) to repair or replacement of the goods.

Removal and refitting costs and all freight costs associated with the warranty claims are the responsibility of the customer.

This warranty shall not apply to goods which have been opened by a third party. Contaminated by oil, water or grease, fitted in excessive vibration environments or improperly connected.

Glass and capillary breakages are excluded from the provisions of this warranty.

Save and except for the express warranty set out above and to the maximum extent permitted by law, all conditions and warranties which may at the time be implied by common law, Trade Practices Act, Fair Trading Act, Goods Act or any other state or Federal Act are excluded.

To the extent that these cannot be excluded and where the law permits.

Continental's liability in respect of any such condition or warranty, shall be limited at the option of Continental P/L (VDO) to repair or replacement of the goods or the supply of equivalent goods or the payment of the costs of the replacing or repairing the goods, or having them replaced or repaired.

The information provided in this brochure contains only general descriptions or performance characteristics, which do not always apply as described in case of actual use or which may change as a result of further development of the products. This information is merely a technical description of the product. This information is not meant or intended to be a special guarantee for a particular quality or a particular durability. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. We reserve the right to make changes in availability as well as technical changes without prior notice.

A large, empty rectangular area with a thin grey border, intended for taking notes.