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# Instrumentation Catalogue 2015



**VDO**

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# Introducing VDO Viewline

Viewline is the new standardised instrument platform for pleasure boats and yachts. With modular solutions in three housing variations, we supply more functions, more flexible installation and design options as well as

space-saving combi instruments – something unique in this sector. Furthermore, Viewline offers maximum freedom to customise the cockpit and is the natural choice for an attractive price / performance ratio.

## The future of analogue instrumentation

With Viewline, we offer a comprehensive modular series of state-of-the-art instruments for engine monitoring. Featuring more functions and greater flexibility with regard to installation and design, Viewline

increases the scope for creating the perfect cockpit. High quality and engineering excellence guarantee outstanding reliability and readability.

### Panel and flush mounting

All Viewline instruments can be conveniently mounted in the instrument panel. It is possible to use the modular bezels for installation as well as integrating the instruments flat without the bezels (flush installation). This allows maximum flexibility in cockpit customisation and numerous design variants.

### Clip-on bezel

The modular bezel concept offers design flexibility in the layout of instrument panels. Three attractive design variants in black, white or chrome perfectly complement any boat's interior. Furthermore, bezels are available in flat, round and triangular versions. All available bezels can be combined with all devices.

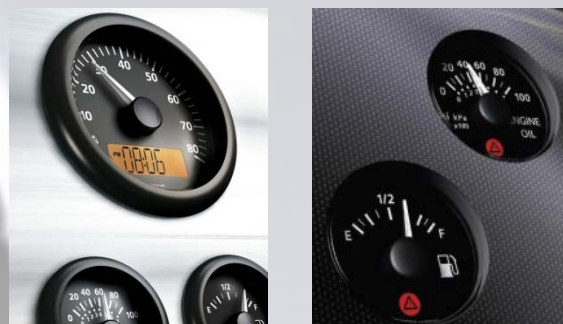


### Anti-fog and water resistance

Electrical devices for use on boats under extreme conditions at sea need to be particularly well protected. This is why the fronts of all Viewline instrument casings are hermetically sealed in compliance with IP 67 and fitted with anti-fog double lenses in shock-resistant plastic, while the casing itself is corrosion-free.

### Highly visible LED warning and indicator lights

Viewline instruments are fitted with highly visible, high intensity LED warning and indicator lights. They ensure that critical operating conditions can be quickly and safely detected. In the case of the multifunctional speedometer and tachometer, the Viewline platform concept includes instruments which can be equipped with up to five warning lights (OEM-specific).



### Full backlight technology

The dials and pointers of all Viewline instruments feature full backlight technology:

- Optimum contrast and superb readability of the display when lit
- Attractive display appearance at night thanks to clearly structured dial design.

### LC-display


As well as having an analogue indication (speed or engine revs), the new Viewline tachometer and speedometer instruments have an additional digital display:

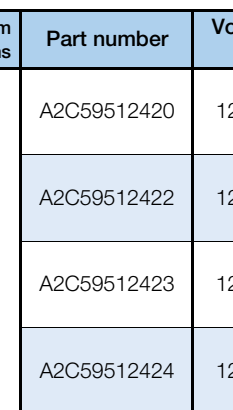
- Display size 37 mm x 11 mm
- Quick and reliable retrieval of other data
- Optimum reading angle and representation on the display
- Display with speed or engine revs (option)
- Further monitoring functions available on the LC display (battery, temperature, mileage indicator, etc.)
- Individual function selection via external button.

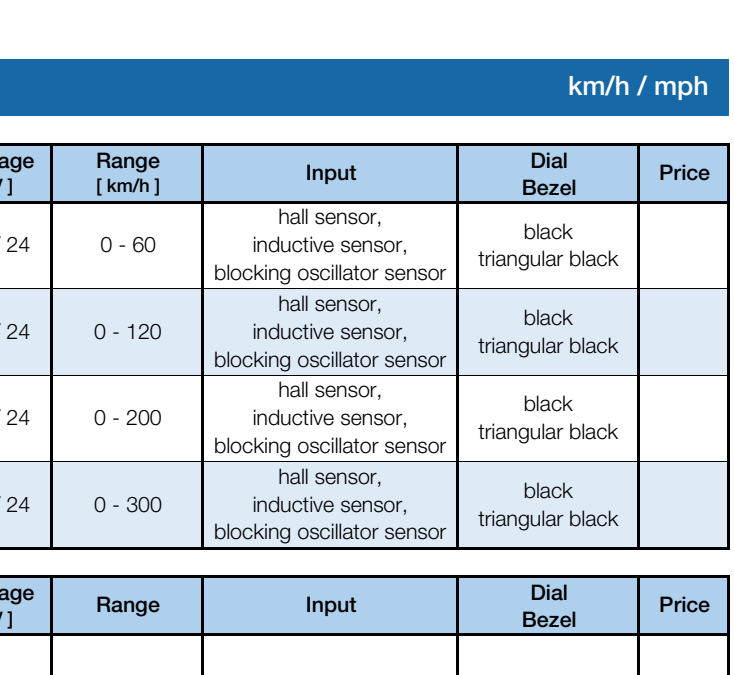



## Speedometer

km/h / mph

Speedometer with LCD Ø110 mm single scale / single lens	Part number	Voltage [V]	Range [km/h]	Input	Dial Bezel	Price
	A2C59512420	12 / 24	0 - 60	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512422	12 / 24	0 - 120	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512423	12 / 24	0 - 200	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512424	12 / 24	0 - 300	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	


Speedometer with LCD Ø110 mm double scale / single lens	Part number	Voltage [V]	Range	Input	Dial Bezel	Price
	A2C59512428	12 / 24	0 - 220 mph 0 - 360 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	


Speedometer with LCD Ø85 mm single scale / single lens	Part number	Voltage [V]	Range	Input	Dial Bezel	Price
	A2C59512366	12 / 24	0 - 25 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512367	12 / 24	0 - 60 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512379				white triangular chrome	
	A2C59512368	12 / 24	0 - 80 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512369	12 / 24	0 - 120 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512381				white triangular chrome	
	A2C59512370	12 / 24	0 - 200 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512382				white triangular chrome	
	A2C59512371	12 / 24	0 - 300 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512378	12 / 24	0 - 160 mph	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	

Speedometer with LCD Ø85 mm double scale / single lens	Part number	Voltage [V]	Range	Input	Dial Bezel	Price
	A2C59512372	12 / 24	0 - 30 mph 0 - 50 km/h	hall sensor, inductive sensor, blocking oscillator sensor	black triangular black	
	A2C59512378	12 / 24	0 - 140 mph 0 - 220 km/h	hall sensor, inductive sensor, blocking oscillator sensor	white triangular chrome	

## Tachometer

RPM x 100

Tachometer with LCD Ø110 mm single scale / single lens	Part number	Voltage	Range	Input	Dial Bezel	Price
	A2C59512412	12 / 24	0 - 1800	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512413	12 / 24	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512414	12 / 24	0 - 4000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512415	12 / 24	0 - 5000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512416	12 / 24	0 - 6000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512418	12 / 24	0 - 8000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	

Tachometer Ø110 mm single scale / single lens	Part number	Voltage	Range	Input	Dial Bezel	Price
	A2C59512444	12 / 24	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512445	12 / 24	0 - 4000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512446	12 / 24	0 - 7000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	
	A2C59512447	12 / 24	0 - 10000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	black triangular black	

Tachometer with LCD	Ø85 mm single scale	Part number	Voltage [ V ]	Range [ km/h ]	Input	Lens	Dial Bezel	Price
		A2C59512350	12 / 24	0 - 1800	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
		A2C59512351	12 / 24	0 - 2500	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
		A2C59512352	12 / 24	0 - 3000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
		A2C59512390				double lens	black round black	
		A2C59512353	12 / 24	0 - 4000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
		A2C59512391				double lens	black round black	
		A2C59512397					white round white	
		A2C59512354	12 / 24	0 - 5000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black white triangular chrome	
		A2C59512361				double lens	black round black white round white	
		A2C59512392					black round black white round white	
		A2C59512398					black triangular black white triangular chrome	
		A2C59512355	12 / 24	0 - 6000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black white triangular chrome	
		A2C59512362				double lens	black round black white round white	
		A2C59512393					black round black white round white	
		A2C59512399					black triangular black	
		A2C59512356	12 / 24	0 - 7000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
		A2C59512394				double lens	black round black white round white	
		A2C59512400					black triangular black white triangular chrome	
		A2C59512357	12 / 24	0 - 8000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black white triangular chrome	
		A2C59512364				double lens	black round black white round white	
	A2C59512395	black round black white round white						
	A2C59512401	black triangular black						
	A2C59512358	12 / 24	0 - 10000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
	A2C59512365					white triangular chrome		

Tachometer	Ø85 mm single scale	Part number	Voltage [ V ]	Range [ km/h ]	Input	Lens	Dial Bezel	Price
		A2C59512436	12 / 24	0 - 3000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
	A2C59512440	white triangular chrome						
	A2C59512430	double lens				black round black		
	A2C59512433					white round white		
	A2C59512437	12 / 24	0 - 4000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
	A2C59512431				double lens	black round black		
	A2C59512434					white round white		
	A2C59512432	12 / 24	0 - 6000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	double lens	black round black		
	A2C59512435					white round white		
	A2C59512438	12 / 24	0 - 7000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
	A2C59512442					white triangular chrome		
	A2C59512439	12 / 24	0 - 10000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
A2C59512443	white triangular chrome							

Tachometer	Ø52 mm single scale	Part number	Voltage [ V ]	Range [ km/h ]	Input	Lens	Dial Bezel	Price
		A2C59512322	12 / 24	0 - 4000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black	
	A2C59512344	double lens				black round black		
	A2C59512347					white round white		
	A2C59512323	12 / 24	0 - 6000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
	A2C59512326				double lens	white triangular chrome		
	A2C59512345					black round black		
	A2C59512348				white round white			
	A2C59512324	12 / 24	0 - 8000	terminal W, ignition coil terminal 1, inductive, hall, generator, lighting coil	single lens	black triangular black		
	A2C59512327				double lens	white triangular chrome		
	A2C59512346					black round black		
	A2C59512349				white round white			

# Speed and revolution sensors

Hall-effect sensor	3-pole insulated return	Part number	Price
		340-214-013-001Z	

Inductive sensor	2-pole insulated return	Part number	Length [mm]				Thread size	Price
			L1	L2	L3	L4		
<p>Special push-on connector (KOSTAL)</p>		340-804-005-007C	15	35	36.1 ± 0.1	71.5	M18 x 1.5	
		340-804-005-001C	18	35	36.15 – 35.80	71.5	M18 x 1.5	
		340-804-005-013A	18	71.4	72.63 – 72.20	107.9	M18 x 1.5	
		340-804-005-015C	18	99.1	101.15 – 100.55	135.6	M18 x 1.5	
		340-804-005-018C	18	45.7	46.95 – 46.45	82.2	M18 x 1.5	
		340-804-005-002C	24.9	26.5	27.65 – 27.30	63	M18 x 1.5	
		340-804-005-028C	24.9	63.4	64.55 – 64.20	99.9	M18 x 1.5	
<p>2x blade connector 6.3 x 0.8 mm</p>		340-804-006-002C	18	35	36.1 ± 0.1	63.5	M18 x 1.5	
		340-804-006-007C	33	34	35.1 ± 0.1	62	M18 x 1.5	
		340-804-007-003C	33	34	35.1 ± 0.1	64.5	M18 x 1.5	
<p>C1 blade connector G = 6.3 x 0.8 mm W = 6.3 x 0.8 mm</p> <p>C2 blade connector G = 4.8 x 0.8 mm W = 6.3 x 0.8 mm</p>		340-804-007-002A	27.5	28.5	29.6 ± 0.1	70	M18 x 1.5	
		340-804-007-004C	27.5	28.5	29.6 ± 0.1	70	3/4" - 16 UNF-2A	
		340-804-007-013C	27.5	28.5	29.6 ± 0.1	82.2	M18 x 1.5	
		340-804-007-001C	33	34	35.1 ± 0.1	70	M18 x 1.5	
		340-804-007-011C	33	34	35.1 ± 0.1	70	M18 x 1.5	
		340-804-007-019C	18.2	70.7	71.8 ± 0.1	79.7	M18 x 1.5	
<p>Push-on connector (2 x pin Ø 1.6 mm)</p>		340-804-030-006B	18.2	70.7	71.8 ± 0.1	93.5	M18 x 1.5	
		340-804-030-005B	23.3	25	26.1 ± 0.1	67	M18 x 1.5	



Blocking oscillator sensor		4-pole, insulated return 8 - 15 V, 12 mA	Part number	Length [mm]		Price
				L1	L2	
4x blade connector 3 x 0.8  		bayonet connector  washer, captive $\text{Ø } 18 \times \text{Ø } 25 \times 1.2$	340-216-005-001C	90.2	133	
			340-216-005-002C	63.2	106	
4x blade connector 3 x 0.8  		bayonet connector	A2C59513983	25	74	
4x blade connector 3 x 0.8  		special push-on connector	340-216-010-003C	25	78.3	

Blocking oscillator sensor		4-pole, insulated return 30 V, 14 mA	Part number	Length [mm]		Price
				L1	L2	
4x blade connector 3 x 0.8  		bayonet connector  washer, captive $\text{Ø } 18 \times \text{Ø } 25 \times 1.2$	340-216-010-004C	90.2	133	

Generator sensors		2-pole, 3-pole insulated return	Part number	Thread size	Price
			340-808-001-004G	7/8" - 18NS-2A	
		3-pole, M4  	340-807-001-001C	M22 x 1.5	
		3-pole, 8-32UNC-2A  	340-807-001-003C	7/8" - 18UNS-2B	

## Outside air temperature

°C / °F

Outside air temperature	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [kΩ]	Lens	Dial Bezel	Price
		A2C59512318	12 / 24	-25 ÷ +50°C	39	single lens	black triangular black	
		A2C59512320	12 / 24	-25 ÷ +50°C	39	single lens	white triangular chrome	
		A2C59512336	12 / 24	-25 ÷ +50°C	39	double lens	black round black	
		A2C59512338	12 / 24	-25 ÷ +50°C	39	double lens	white round white	
		A2C59512319	12 / 24	-10 ÷ +120°F	39	single lens	black triangular black	
		A2C59512321	12 / 24	-10 ÷ +120°F	39	single lens	white triangular chrome	
		A2C59512337	12 / 24	-10 ÷ +120°F	39	double lens	black round black	
		A2C59512339	12 / 24	-10 ÷ +120°F	39	double lens	white round white	

## Sensor for air temperature

Sensor for air temperature	Part number	Cable length L	Price
	323-809-010-005C	3000 mm	

## Coolant temperature




Coolant temperature	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514159	12 / 24	40 - 120°C	287.4 - 22.7	double lens	black triangular black	
		A2C59514239	12 / 24	40 - 120°C	287.4 - 22.7	double lens	white triangular chrome	
		A2C59514179	12 / 24	105 - 250°F	287.4 - 22.7	double lens	black triangular black	

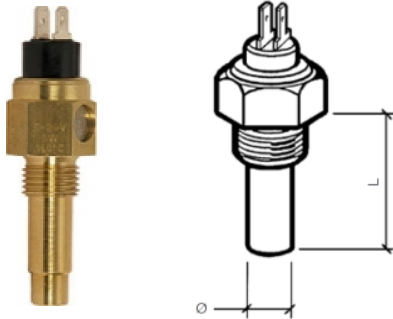
Coolant temperature	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514170	12 / 24	40 - 120°C 105 - 250°F	287.4 - 22.7	double lens	black round black	
		A2C59514171	12 / 24	40 - 120°C 105 - 250°F	287.4 - 22.7	double lens	black triangular chrome	
		A2C59514172	12 / 24	40 - 120°C 105 - 250°F	287.4 - 22.7	double lens	black triangular black	
		A2C59514237	12 / 24	40 - 120°C 105 - 250°F	287.4 - 22.7	double lens	white round white	
		A2C59514238	12 / 24	40 - 120°C 105 - 250°F	287.4 - 22.7	double lens	white triangular chrome	
		A2C59514176	12 / 24	105 - 250°F 40 - 120°C	287.4 - 22.7	double lens	black round black	
		A2C59514177	12 / 24	105 - 250°F 40 - 120°C	287.4 - 22.7	double lens	black triangular chrome	
		A2C59514241	12 / 24	105 - 250°F 40 - 120°C	287.4 - 22.7	double lens	white round white	

# Hydraulic temperature

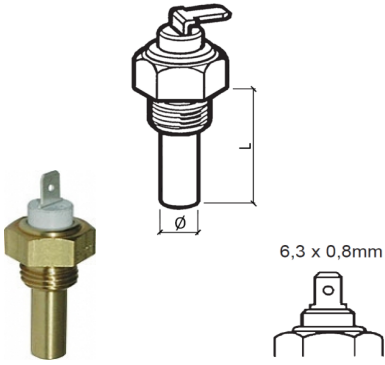





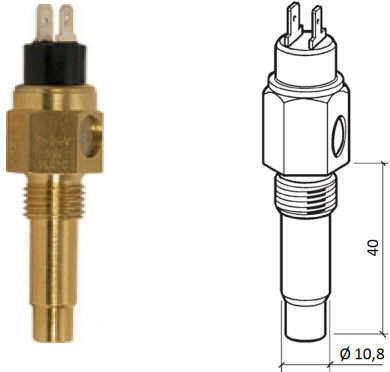
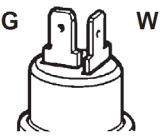
Hydraulic temperature	Ø52 mm single scale	Part number	Voltage [V]	Range [°C]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514174	12 / 24	40 - 120	287,4 – 22,7	double lens	black triangular black	

# Temperature sensors (120°C)

Temperature sensor	dual-pole insulated return	Part number	Tmax [°C]	L [mm]	Ø [mm]	Thread size	Price
		323-805-001-001K	120	29	11	M14 x 1.5	
		323-805-001-002C	120	24	11	5/8" - 18 UNF-2A	
		323-805-001-004N	120	29	11	1/2" - 14 NPTF	
		323-805-001-005N	120	29	11	3/8" - 18 Dryseal NPTF	
		323-805-001-015N	120	29	9	M18 x 1,5	
		325-805-003-001C *	120	29	10.9	1/4" - 18 NPTF	
		325-805-003-003C *	120	29	10.9	3/8" - 18 NPTF	

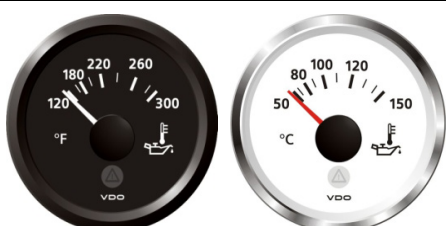
\* For dual units (fly bridge)


Temperature sensor	single-pole common ground	Part number	Tmax [°C]	L [mm]	Ø [mm]	Thread size	Price
		323-801-001-006N	120	29	9	M14 x 1.5	
		323-801-001-007N	120	29	9	3/8" - 18 NPTF	
		323-801-001-008N	120	29	9	5/8" - 18 UNF-3A	
		323-801-001-009N	120	29	9	1/4" - 18 NPTF	
		323-801-001-010N	120	29	9	1/2" - 14 NPTF	
		323-801-001-022N	120	29	9	M18 x 1,5	
		323-801-001-040N	120	29	9	M16 x 1,5	
	knurled nut M4	323-801-001-026N	120	29	9	M14 x 1,5	
		323-801-001-029N	120	29	9	M16 x 1,5	
		323-801-001-058C	120	29	9	R 3/8" DIN 2999, tapered	
	hexagonal nut M4	323-801-001-054D	120	29	9	M14 x 1,5	
		323-801-005-001D	120	22	8,5	1/8" - 27 NPTF	
		323-801-005-005D	120	22	8,5	M10 x 1	
		323-801-017-001N	120	10,5	8,4	M10 x 1 tapered, short	

Temperature sensor with warning contact	common ground	Part number	Tmax [°C]	Switch point [°C]	Thread size	Price
		323-803-001-001D	120	100 ± 3	M14 x 1.5	
		323-803-001-002D	120	98 ± 3	5/8" - 18 NF-3	
		323-803-001-004D	120	90 ± 3	M14 x 1.5	
		323-803-001-006D	120	96 ± 3	M14 x 1.5	
		323-803-001-007D	120	110 ± 3	M14 x 1.5	
		323-803-001-008D	120	110 ± 3	M14 x 1.5	
		323-803-001-009D	120	102 ± 3	M14 x 1.5	
		323-803-001-011D	120	95 ± 3	5/8" - 18 NF-3	
		323-803-001-012D	120	100 ± 3	5/8" - 18 NF-3	
		323-803-001-013D	120	106 ± 3	M14 x 1.5	
		323-803-001-016D	120	94 ± 3	M14 x 1.5	
		323-803-001-019D	120	95 ± 3	1/2" - 14 NPTF	
		323-803-001-020D	120	115 ± 3	M14 x 1.5	
		323-803-001-022D	120	118 ± 3	M14 x 1.5	
		323-803-001-023D	120	80 ± 3	M14 x 1.5	
		323-803-001-025D	120	103 ± 3	1/2" - 14 NPTF	
		323-803-001-028D	120	98 ± 3	M14 x 1.5	
		323-803-001-030D	120	100 ± 3	1/2" - 14 NPTF	
		323-803-001-032D	120	108 ± 3	1/2" - 14 NPTF	
		323-803-001-036D	120	103 ± 3	5/8" - 18 NF-3	
		323-803-001-059D	120	105 ± 3	5/8" - 18 NF-3	
	323-803-001-060D	120	105 ± 3	1/2" - 14 NPTF		
	323-803-001-064C	120	112 ± 3	M14 x 1.5		
G = Sensor terminal W = Warning contact terminal		323-803-004-001D	120	100 ± 2,5	M14 x 1.5	
		323-803-004-002D	120	105 ± 3	M14 x 1.5	
		323-803-004-003D	120	95 ± 2,5	M14 x 1.5	
		323-803-004-007D	120	100 ± 6	M14 x 1.5	
		323-803-004-011D	120	105 ± 3	M14 x 1.5	

## Engine oil temperature




Engine oil temperature	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514164	12 / 24	50 - 150°C	322.8 - 18.6	double lens	black triangular black	
		A2C59514233	12 / 24	50 - 150°C	322.8 - 18.6	double lens	white triangular chrome	
		A2C59514163	12 / 24	50 - 150°C	322.8 - 18.6	double lens	black triangular black	
		A2C59514168	12 / 24	120 - 300°F	322.8 - 18.6	double lens	black triangular black	

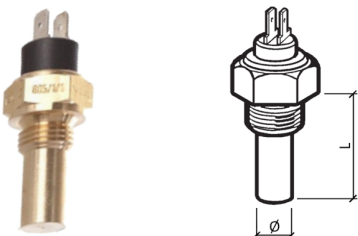
Engine oil temperature	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514160	12 / 24	50 - 150°C 120 - 300°F	322.8 - 18.6	double lens	black round black	
		A2C59514161	12 / 24	50 - 150°C 120 - 300°F	322.8 - 18.6	double lens	black triangular chrome	
		A2C59514162	12 / 24	50 - 150°C 120 - 300°F	322.8 - 18.6	double lens	black triangular black	
		A2C59514231	12 / 24	50 - 150°C 120 - 300°F	322.8 - 18.6	double lens	white round white	
		A2C59514165	12 / 24	120 - 300°F 50 - 150°C	322.8 - 18.6	double lens	black round black	
		A2C59514234	12 / 24	120 - 300°F 50 - 150°C	322.8 - 18.6	double lens	white round white	

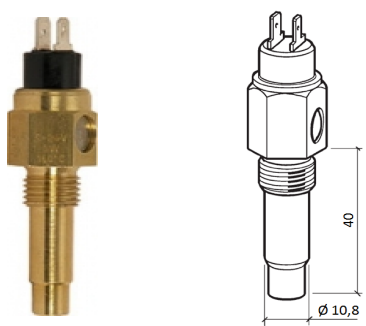
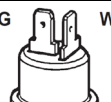
## Transmission temperature

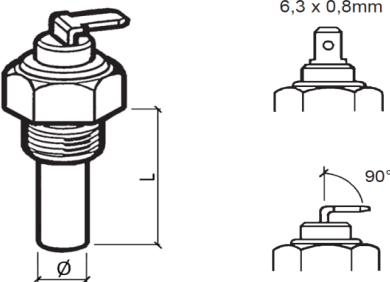
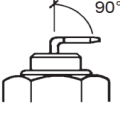



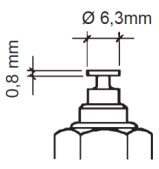




Transmission temperature	Ø52 mm single scale	Part number	Voltage [V]	Range [°C]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514169	12 / 24	50 - 150	322,8 - 18,6	double lens	black triangular black	

## Temperature sensors (150°C)



Temperature sensor	dual-pole insulated return	Part number	Tmax [°C]	L [mm]	Ø [mm]	Thread size	Price
		323-805-003-001N	150	29	11	M14 x 1.5	
		323-805-003-002N	150	29	11	1/4" - 18 NPTF	
		323-805-003-003N	150	29	11	5/8" - 18 UNF-2A with sealing cone	

Temperature sensor with warning contact	common ground	Part number	Tmax [°C]	Switch point [°C]	Thread size	Price
		323-803-002-002D	150	120 ± 3	M14 x 1.5	
		323-803-002-007D	150	130 ± 3	M14 x 1.5	
		323-803-002-010C	150	135 ± 3	M14 x 1.5	
		323-803-002-016D	150	130 ± 3	M14 x 1.5	
		323-803-002-017D	150	120 ± 3	M14 x 1.5	
		323-803-002-019D	150	135 ± 3	M14 x 1.5	
		323-803-002-020D	150	110 ± 3	M14 x 1.5	
G = Sensor terminal W = Warning contact terminal		323-803-006-002C	150	130 ± 4	M14 x 1.5	


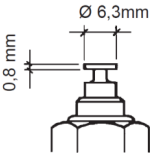
Temperature sensor	single-pole common ground	Part number	Tmax [°C]	L [mm]	Ø [mm]	Thread size	Price
		323-801-004-002N	150	29	9	M14 x 1.5	
		323-801-004-003D	150	29	9	R 1/2	
		323-801-004-007D	150	29	9	1/2" - 14 NPTF	
		323-801-004-039D	150	29	9	M14 x 1,5	
		323-801-012-001D	150	15	9	M16 x 1,5	
		323-801-012-002D	150	15	9	M14 x 1,5	
		323-801-012-003D	150	15	9	M18 x 1,5	
	knurled nut M4 	323-801-004-012C	150	29	9	M16 x 1,5	
		323-801-009-001D	150	22	8,2	1/8" - 27 NPTF	
		323-801-009-003D	150	22	8,2	M10 x 1 tapered, short	
		323-801-010-001D	150	22	6,9	M10 x 1,5	
		323-801-010-003K	150	22	6,9	M12 x 1,5	
	hexagonal nut M4 	323-801-004-006D	150	29	9	1/2" - 14 NPTF	
		323-801-004-017D	150	29	9	1/4" - 18 NPTF	

## Cylinder temperature

°C / °F

Cylinder temperature	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514156	12 / 24	60 - 200°C	482,5 - 14,3	double lens	black triangular black	
		A2C59514157	12 / 24	150 - 400°F	482,5 - 14,3	double lens	black triangular black	

## Temperature sensors (200°C)

Temperature sensor	single-pole common ground	Part number	Tmax [°C]	L [mm]	Ø [mm]	Thread size	Price
		323-801-003-001D	200	22	6.9	M10 x 1.5	
		323-801-018-001D	200	10.5	8.4	1/8" - 27 NPTF	
		323-801-013-001D	200	22	8.2	1/8" - 27 NPTF	

# Pyrometer



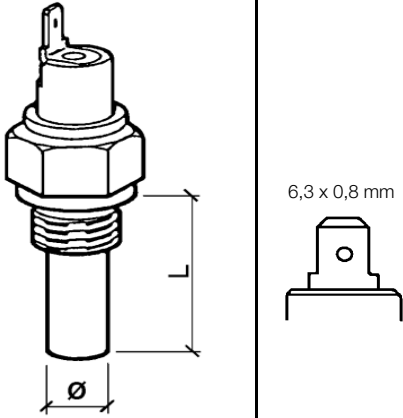
Pyrometer	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [mV]	Lens	Dial Bezel	Price
		A2C59512314	12 / 24	100 - 900°C	37	single lens	black triangular black	
		A2C59512315	12 / 24	100 - 900°C	37	single lens	white triangular chrome	
		A2C59512332	12 / 24	100 - 900°C	37	double lens	black round black	
		A2C59512333	12 / 24	100 - 900°C	37	double lens	white round white	
		A2C59512334	12 / 24	250 - 1650°F	37	double lens	black triangular black	
		A2C59512335	12 / 24	250 - 1650°F	37	double lens	white triangular chrome	

# Pyrometer sensor

Pyrometer sensor	Part number	Article description	Range Length	Terminals	Price
	N03-320-264	Thermocouple element	100 - 900°C -	Red = Negative Yellow = Positive	
	N03-320-268	Connecting cable	- 5 m	White = Negative Blue = Positive	
	N03-320-266	Threaded bushing for welding to manifold	-	-	

# Temperature switches

Temperature switch	single-pole common ground	Part number	Switch point [°C]	L [mm]	Ø [mm]	Thread size	Price
	M4 	232-011-005-003D	90 ± 3	38,5	6,9	M14 x 1,5	
		232-011-005-019D	96 ± 3	33 ± 0,5	12 ± 0,3	1/8" - 27 Dryseal NPFT	
		232-011-005-017D	150 ± 5	38,5	6,9	M14 x 1,5	
		232-011-005-004D	170 ± 5	38,5	6,9	M10 x 1,5	
		232-011-019-003D	195 +10	38,5	6,9	M10 x 1,5	
	Ø 6,3 x 0,8 mm 	232-011-005-027D	150 ± 5	38,5	6,9	M10 x 1,5	
		232-011-005-028D	170 ± 5	38,5	6,9	M10 x 1,5	
		232-011-005-030D	185 ± 5	38,5	6,9	M10 x 1,5	
	Ø 4 mm 	232-011-020-022E	16 ± 3 (normally closed, NC)	29	10	M14 x 1,5	
		232-011-020-006E	25 ± 3 (normally closed, NC)	29	10	M14 x 1,5	
		232-011-017-087D	40 ± 3	29	10	M14 x 1,5	
		232-011-017-147D	94 ± 3	29	10	M14 x 1,5	
		232-011-017-135D	102 ± 3	29 ± 0,2	9 ± 0,2	M14 x 1,5	
	M4 	232-011-017-005D	120 ± 3	29	10	1/2" - 14 NPTF	

Temperature switch	single-pole common ground	Part number	Switch point [ °C ]	L [ mm ]	Ø [ mm ]	Thread size	Price
		232-011-017-141D	28 ± 3 (normally closed, NC)	29	9.7	M14 x 1.5	
		232-011-017-129D	35 ± 3	29 ± 0.2	10 - 0.5	M14 x 1.5	
		232-011-017-148D	35 ± 3	29	10	M14 x 1.5	
		232-011-017-038D	55 ± 3	29	10	M14 x 1.5	
		232-011-017-040D	70 ± 3	29	10	M14 x 1.5	
		232-011-017-078D	80 ± 3	29	10	M14 x 1 tapered, short	
		232-011-017-017D	85 ± 3	29	10	M14 x 1.5	
		232-011-017-013D	90 ± 3	29	10	M10 x 1 tapered, short	
		232-011-017-033D	92 ± 3	29	10	M14 x 1.5	
		232-011-017-016D	95 ± 3	29	10	M14 x 1.5	
		232-011-017-039D	95 ± 3	29	10	1/2" - 14 NPTF	
		232-011-017-080D	97 ± 3	29	10	M14 x 1.5	
		232-011-017-099D	98 ± 3	29	10	5/8" - 18 UNF-2A	
		232-011-017-034D	100 ± 3	29	10	M14 x 1.5	
		232-011-017-139D	103 ± 3	29	10	3/8" - 18 NPTF	
		232-011-017-037D	105 ± 3	29	10	M14 x 1.5	
		232-011-017-041D	105 ± 3	29	10	1/2" - 14 NPTF	
		232-011-017-010D	110 ± 3	29	10	M14 x 1.5	
		232-011-017-076D	115 ± 3	29	10	M14 x 1.5	
		232-011-017-032D	120 ± 3	29	10	M14 x 1.5	
		232-011-017-143D	120 ± 3.3	27.1 ± 0.2	9.7 ± 0.2	3/4" - 16 UNF-2A	
		232-011-017-103D	130 ± 3	29	10	M14 x 1.5	
		232-011-005-004D	140 ± 10	29	10	M14 x 1.5	
		232-011-017-004D	140 ± 10	29	10	M14 x 1.5	



## Turbo pressure (0 - 2 bar)



Turbo pressure 0 - 2 bar	Ø52 mm single scale	Part number	Voltage [V]	Range [bar]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514152	12 / 24	0 - 2	10 - 184	double lens	black triangular black	
		A2C59514227	12 / 24	0 - 2	10 - 184	double lens	white round white	
		A2C59514228	12 / 24	0 - 2	10 - 184	double lens	white triangular chrome	

Turbo pressure 0 - 2 bar / 0 - 30 psi	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514149	12 / 24	0 - 2 bar 0 - 30 psi	10 - 184	double lens	black round black	
		A2C59514150	12 / 24	0 - 2 bar 0 - 30 psi	10 - 184	double lens	black triangular chrome	
		A2C59514151	12 / 24	0 - 2 bar 0 - 30 psi	10 - 184	double lens	black triangular black	
		A2C59514225	12 / 24	0 - 2 bar 0 - 30 psi	10 - 184	double lens	white round white	
		A2C59514226	12 / 24	0 - 2 bar 0 - 30 psi	10 - 184	double lens	white triangular chrome	

## Engine oil pressure (0 - 30 psi)

OIL

Engine oil pressure 0 - 30 psi	Ø52 mm single scale	Part number	Voltage [V]	Range [psi]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514210	12 / 24	0 - 30	10 - 184	double lens	white triangular chrome	

## Pressure sensors (2 bar)

Pressure sender	2 bar, dual-pole insulated return	Part number	Range [bar]	Dimension [mm]		Thread size	Price
				L1	L2		
	(2x) knurled nut M4 M4 M4	360-081-032-058C	2	20.5	12	M18 x 1.5	
	(2x) 6.3 x 0.8 mm (50°)	360-081-032-011C	2	20.5	12	M12 x 1.5	
	M4 M4	360-081-032-025C	2	19.5	11	1/8" - 27 NPTF	

## Engine oil pressure (0 - 5 bar)

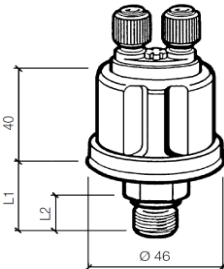


Engine oil pressure	Ø52 mm single scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel		Price
		A2C59514126	12 / 24	0 - 5 bar	10 - 184	double lens	black	triangular black	
		A2C59514213	12 / 24	0 - 5 bar	10 - 184	double lens	white	triangular chrome	
		A2C59514127	12 / 24	0 - 500 kPa	10 - 184	double lens	black	triangular black	

Engine oil pressure	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel		Price
		A2C59514123	12 / 24	0 - 5 bar 0 - 80 psi	10 - 184	double lens	black	round black	
		A2C59514124	12 / 24	0 - 5 bar 0 - 80 psi	10 - 184	double lens	black	triangular chrome	
		A2C59514125	12 / 24	0 - 5 bar 0 - 80 psi	10 - 184	double lens	black	triangular black	
		A2C59514211	12 / 24	0 - 5 bar 0 - 80 psi	10 - 184	double lens	white	round white	
		A2C59514212	12 / 24	0 - 5 bar 0 - 80 psi	10 - 184	double lens	white	triangular chrome	
		A2C59514128	12 / 24	0 - 80 psi 0 - 5 bar	10 - 184	double lens	black	round black	
		A2C59514129	12 / 24	0 - 80 psi 0 - 5 bar	10 - 184	double lens	black	triangular chrome	

## Pressure sensors (5 bar)

Pressure sensor	5 bar, dual-pole insulated return	Part number	Range [bar]	Dimension [mm]		Thread size	Price	
				L1	L2			
	(2x) knurled nut M4	360-081-032-001C	5	20.5	12	1/8" - 27 NPTF		
		360-081-032-002C	5	19.5	11	M10 x 1 tapered, short		
		360-081-032-013C	5	20.8	12	M18 x 1.5		
		360-081-032-016C	5	23.8	15.3	1/4" - 18 NPTF		
	(2x) 6.3x0.8 mm (50°) M4 M4	360-081-032-007C	5	19.5	11	1/8" - 27 NPTF		
		362-081-001-001K *	5	19.5	11	1/8" - 27 NPTF		
	(2x) hexagonal nut M4 M4	360-081-032-059C **	5	20.5	12	M18 x 1.5		
		360-081-032-060C **	5	20.5	12	M14 x 1.5		
	* For dual units (fly bridge)							
	** Without hexagonal nut							

Pressure sensor with warning contact	5 bar common ground	Part number	Warning contact [bar]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	(2x) knurled nut M4	360-081-030-001C	0.25 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-002C	0.5 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-004C	0.7 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-008C	0.5 ± 0.15	20.5	12	M12 x 1.5	
		360-081-030-010C	1.4 ± 0.3	19.5	11	1/8" - 27 NPTF	
		360-081-030-014C	0.6 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-018C	1.2 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-028C	0.5 ± 0.15	20.5	12	M14 x 1.5	
		360-081-030-036C	0.5 ± 0.15	20.5	12	M18 x 1.5	
		360-081-030-049C	0.4 ± 0.1	19.5	11	1/8" - 27 NPTF	
	(2x) 6.3 x 0.8 mm (50°)	360-081-030-025C	0.4 ± 0.2	20.5	12	M18 x 1.5	
		360-081-030-053C	0.25 ± 0.15	20.5	12	M18 x 1.5	
		360-081-030-065K	0.4 ± 0.15	19.5	11	R 1/8 DIN 2999	
		360-081-030-097C	0.5 ± 0.15	20.5	12	M14 x 1.5	
	WK 6.3 x 0.8 mm (50°) G 4.8 x 0.8 mm (50°)	360-081-030-085C	0.4 <sup>+0.2</sup>	20.5	12	M18 x 1.5	
		360-081-030-086C	0.5 <sup>+0.2</sup> <sub>-0.1</sub>	19.5	11	1/8" - 27 NPTF	
	WK 6.3 x 0.8 mm (90°) G M4	360-081-030-033C	0.4 ± 0.1	20.5	12	M14 x 1.5	
		360-081-030-071C	0.4 ± 0.15	20.5	12	M14 x 1.5	
		360-081-030-157C	0.5 <sup>+0.15</sup>	20.5	12	M18 x 1.5	
	(2x) 6.3 x 0.8 mm (90°) WK G	360-081-030-119C	1.4 ± 0.3	19.5	11	1/8" - 27 NPTF	
hexagonal nut M5	360-081-034-002C	0.25 ± 0.15	20.5	12	M14 x 1.5		
	360-081-034-004C	0.25 ± 0.15	20.5	12	M18 x 1.5		
Special push-on connector	360-081-062-002A	0.4	20.5	12	M14 x 1.5		
	360-081-062-004A	1.0	20.5	12	M14 x 1.5		

G = sensor terminal  
W = warning contact terminal


Pressure sensor	5 bar, single-pole common ground	Part number	Range [ bar ]	Dimension [ mm ]		Thread size	Price	
				L1	L2			
	knurled nut M4	360-081-029-001C	5	19.5	11	M10 x 1 tapered, short		
		360-081-029-004C	5	19.5	11	1/8" - 27 NPTF		
		360-081-029-008C	5	23.8	15.3	1/4" - 18 NPTF		
		360-081-029-025C	5	20.5	12	M18 x 1.5		
		360-081-029-026C	5	20.5	12	M14 x 1.5		
		360-081-029-085C	5	20.5	12	M12 x 1.5		
		360-081-029-099C	5	19.5	10	M12 x 1.25		
	6.3 x 0.8 mm (50°)		360-081-029-041C	5	19.5	11	1/8" - 27 NPTF	
	hexagonal nut M4		360-081-029-059C	5	20.5	12	M18 x 1.5	
			360-081-029-065C	5	20.5	12	M14 x 1.5	

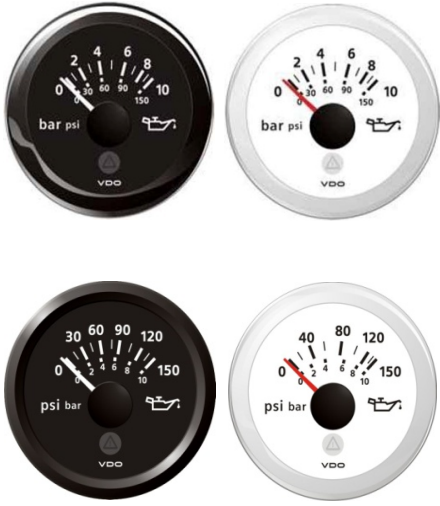
Pressure sensor with warning contact	5 bar 3 connections	Part number	Warning contact [bar]	Dimension [ mm ]		Thread size	Price
				L1	L2		
<p>G = sensor M = ground (Masse) WK = warning contact</p> <p>1 = sensor 2 = warning contact 3 = anti-twist guard</p>		360-081-039-002C	0.8 ± 0.15	19.5	11	1/8" - 27 Dryseal NPTF	
		360-081-039-015C	0.25 + 0.15	19.5	11	1/8" - 27 Dryseal NPTF	
		360-081-064-001C	0.25 + 0.15	20.5	12	M18 x 1.5	
		360-081-064-003C	0.25 ± 0.15	20.5	12	M18 x 1.5	


## Engine oil pressure (0 - 10 bar)



Engine oil pressure 0 - 10 bar	Ø52 mm single scale	Part number	Voltage [ V ]	Range [ bar ]	Input [ Ω ]	Lens	Dial Bezel	Price
		A2C59514114	12 / 24	0 - 10	10 - 184	double lens	black triangular black	
		A2C59514201	12 / 24	0 - 10	10 - 184	double lens	white triangular chrome	


Engine oil pressure 0 - 1000 kPa	Ø52 mm single scale	Part number	Voltage [V]	Range [kPa]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514115	12 / 24	0 - 1000	10 - 184	double lens	black triangular black	


Engine oil pressure	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
	A2C59514111	12 / 24	0 - 10 bar 0 - 150 psi	10 - 184	double lens	black round black		
	A2C59514112	12 / 24	0 - 10 bar 0 - 150 psi	10 - 184	double lens	black triangular chrome		
	A2C59514113	12 / 24	0 - 10 bar 0 - 150 psi	10 - 184	double lens	black triangular black		
	A2C59514199	12 / 24	0 - 10 bar 0 - 150 psi	10 - 184	double lens	white round white		
	A2C59514200	12 / 24	0 - 10 bar 0 - 150 psi	10 - 184	double lens	white triangular chrome		
	A2C59514117	12 / 24	0 - 150 psi 0 - 10 bar	10 - 184	double lens	black triangular black		
A2C59514202	12 / 24	0 - 150 psi 0 - 10 bar	10 - 184	double lens	white round white			

Engine oil pressure 0 - 150 psi / 0 - 10 bar	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514116	12 / 24	0 - 150 psi 0 - 10 bar	10 - 184	double lens	black triangular black	

## Brake pressure (0 - 10 bar)




Brake pressure 0 - 10 bar	Ø52 mm single scale	Part number	Voltage [V]	Range [bar]	Input [Ω]	Lens	Dial Bezel	Price
	A2C59514104	12 / 24	0 - 10	10 - 184	double lens	black triangular black		
	A2C59514195	12 / 24	0 - 10	10 - 184	double lens	white triangular chrome		

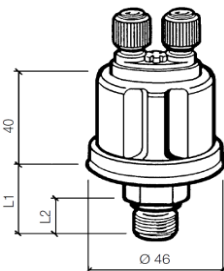
Brake pressure 0 - 150 psi / 0 - 1000 kPa	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514105	12 / 24	0 - 150 psi 0 - 1000 kPa	10 - 184	double lens	black triangular black	

## Air pressure (0 - 10 bar)

AIR

Air pressure 0 - 150 psi / 0 - 1000 kPa bar	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514105	12 / 24	0 - 150 psi 0 - 1000 kPa	10 - 184	double lens	black triangular black	

## Pressure sensors (10 bar)

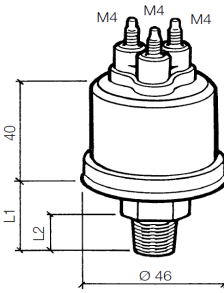
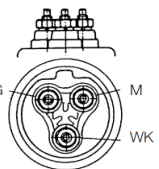
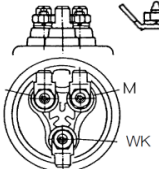
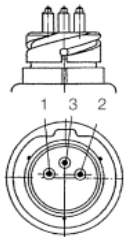
Pressure sensor with warning contact	10 bar common ground	Part number	Warning contact [bar]	Dimension [mm]		Thread size	Price
				L1	L2		
	(2x) knurled nut, M4	360-081-030-009C	0.5 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-015C	0.8 ± 0.3	19.5	12	1/8" - 27 NPTF	
		360-081-030-017C	0.9 ± 0.15	19.5	11	M10 x 1 tapered, short	
		360-081-030-019C	1.5 ± 0.15	20.5	12	M12 x 1.5	
		360-081-030-022C	0.5 ± 0.15	20.5	12	M12 x 1.5	
		360-081-030-030C	0.7 ± 0.15	20.5	12	M14 x 1.5	
		360-081-030-032C	0.5 ± 0.15	20.5	12	M14 x 1.5	
		360-081-030-037C	0.75 ± 0.15	20.5	12	M18 x 1.5	
		360-081-030-041C	2.0 ± 0.3	19.5	11	M10 x 1 tapered, short	
		360-081-030-052C	0.5	19.5	11	1/8" - 27 NPTF	
		360-081-030-074C	0.5 ± 0.15	20.5	12	M18 x 1.5	
		(2x) 6.3 x 0.8 mm (50°)	360-081-030-031C	0.5 ± 0.15	19.5	11	M10 x 1 tapered, short
360-081-030-039C	0.75 ± 0.15		19.5	11	M10 x 1 tapered, short		
360-081-030-063C	1.0 ± 0.15		20.5	12	M14 x 1.5		
360-081-030-070C	0.5 ± 0.15		20.5	12	M18 x 1.5		
360-081-030-100C	4.0 <sup>+0.5</sup>		19.5	11	1/8" - 27 NPTF		
WK 4.8 x 0.8 mm (50°) G 6.3 x 0.8 mm (50°)	360-081-030-107C	5.5 ± 0.3	20.5	12	M16 x 1.5		
	360-081-030-122C	0.75 ± 0.15	20.5	12	M18 x 1.5		
(2x) hexagonal nut, M4 WK M4 G	360-081-030-078C	1.0 ± 0.15	20.5	12	M14 x 1.5		
	360-081-030-075C	5.0 ± 0.3	20.5	12	M14 x 1.5		
WK M4 G	360-081-030-152C	5.2 ± 0.5	19.5	11	M10 x 1 tapered, short		

WK = warning contact  
terminal  
G = sensor terminal

<p>WK = warning contact terminal G = sensor terminal</p>	<p>WK 4.8 x 0.8 mm (90°) G 6.3 x 0.8 mm (90°) WK M4 G</p>	360-081-030-138C	1.25 + 0.3	19.5	11	1/8" - 27 NPTF
	<p>WK 6.3 x 0.8 mm (90°) G 4.8 x 0.8 mm (90°) WK M4 G</p>	360-081-030-112C	1.35 ± 0.15	18.5	10	M10 x 1
<p>Special push-on connector</p>	<p>WK G</p>	360-081-061-002C	0.7 ± 0.15	20.5	12	M14 x 1.5
		360-081-061-003C	1.0 ± 0.15	20.5	12	M14 x 1.5
		360-081-061-006C	5.0 ± 0.3	21.5	13	M12 x 1.5 tapered, short
<p>Special push-on connector</p>	<p>G WK</p>	360-081-062-003C	5.5 ± 0.3	20.5	12	M14 x 1.5
		360-081-062-005A	3.0 ± 0.3	20.5	12	M14 x 1.5


Pressure sensor	10 bar, single-pole common ground	Part number	Range [ bar ]	Dimension [ mm ]		Thread size	Price
				L1	L2		
<p>* For dual units (fly bridge)</p>	<p>knurled nut M4</p>	360-081-029-010C	10	19.5	11	M10 x 1 tapered, short	
		360-081-029-012C	10	19.5	11	1/8" - 27 NPTF	
		360-081-029-013C	10	20.5	12	M12 x 1.5	
		360-081-029-020C	10	23.8	15.3	1/4" - 18 NPTF	
		360-081-029-033C	10	20.5	12	M14 x 1.5	
		360-081-029-038C	10	20.5	12	M14 x 1.5	
		360-081-029-042C	10	19.5	11	1/8" - 27 NPTF	
		360-081-029-062C	10	19.5	11	R 1/8 DIN 2999	
	362-081-003-002K *	10	19.5	11	1/8" - 27 NPTF		
		<p>6.3 x 0.8 mm (50°)</p> <p>M4</p>					

Pressure sensor	10 bar, dual-pole insulated return	Part number	Range [ bar ]	Dimension [ mm ]		Thread size	Price
				L1	L2		
<p>* For dual units (fly bridge)</p>	<p>(2x) knurled nut M4</p>	360-081-032-003C	10	19.5	11	M10 x 1 tapered, short	
		360-081-032-004C	10	20.5	12	M12 x 1.5	
		360-081-032-006C	10	20.5	12	M14 x 1.5	
		360-081-032-008C	10	20.5	12	M18 x 1.5	
		360-081-032-014C	10	19.5	11	1/8" - 27 NPTF	
		360-081-032-053C	10	20.5	12	M12 x 1.5	
		360-081-032-057C	10	40	10	R1/8 DIN 2999	
	<p>(2x) 6.3 x 0.8 mm</p>	362-081-001-002C *	10	19.5	11	1/8" - 27 NPTF	

Pressure sensor with warning contact	10 bar 3 connections	Part number	Warning contact [bar]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	(3x) hexagonal nut M4 	360-081-039-007C	1.0 ± 0.15	19.5	11	M14 x 1.5	
	(3x) 6.3 x 0.8 mm (50°) 	360-081-039-003C	0.8 ± 0.15	20.5	12	1/8" - 27 Dryseal NPTF	
Special bayonet connector 	1 - sensor 2 - warning contact 3 - ground	360-081-063-001C	5.2 ± 0.3	20.5	12	M12 x 1.5	
	1 - sensor 2 - warning contact 3 - anti-twist guard	360-081-064-004C	0.6 + 0,3	20.5	12	M18 x 1.5	


## Engine oil pressure (0 - 25 bar)




Engine oil pressure 0 - 25 bar / 0 - 350 psi	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514206	12 / 24	0 - 25 bar 0 - 350 psi	10 - 184	double lens	white round white	
		A2C59514207	12 / 24	0 - 25 bar 0 - 350 psi	10 - 184	double lens	white triangular chrome	


## Transmission oil pressure (0 - 25 bar)




Transm. oil pressure 0 - 25 bar	Ø52 mm single scale	Part number	Voltage [V]	Range [bar]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514139	12 / 24	0 - 25	10 - 184	double lens	black triangular black	
		A2C59514219	12 / 24	0 - 25	10 - 184	double lens	white triangular chrome	

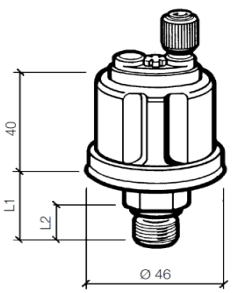

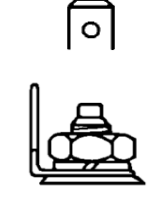
Transm. oil pressure 0 - 2500 kPa	Ø52 mm single scale	Part number	Voltage [V]	Range [kPa]	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514140	12 / 24	0 - 2500	10 - 184	double lens	black round black	



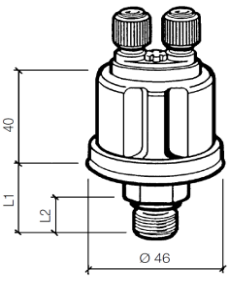

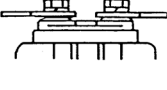
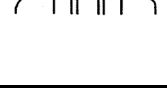
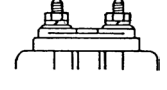
Transm. oil pressure 0 - 25 bar / 0 - 350 psi	Ø52 mm double scale	Part number	Voltage [ V ]	Range	Input [ Ω ]	Lens	Dial Bezel	Price
		A2C59514136	12 / 24	0 - 25 bar 0 - 350 psi	10 - 184	double lens	black round black	
		A2C59514137	12 / 24	0 - 25 bar 0 - 350 psi	10 - 184	double lens	black triangular chrome	
		A2C59514138	12 / 24	0 - 25 bar 0 - 350 psi	10 - 184	double lens	black triangular black	

Transm. oil pressure 0 - 400 psi / 0 - 25 bar	Ø52 mm double scale	Part number	Voltage [ V ]	Range	Input [ Ω ]	Lens	Dial Bezel	Price
		A2C59514145	12 / 24	0 - 400 psi 0 - 25 bar	10 - 184	double lens	black round black	
		A2C59514223	12 / 24	0 - 400 psi 0 - 25 bar	10 - 184	double lens	white round white	

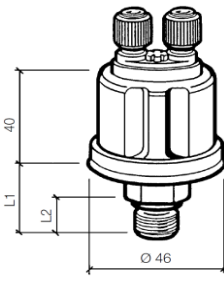
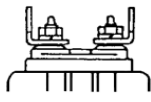
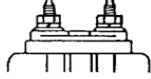
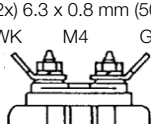
## Pressure sensors (25 bar)

Pressure sensor	25 bar, single-pole common ground	Part number	Range [ bar ]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	6.3 x 0.8 mm (50°) M4 	360-081-037-008C	25	19.5	11	M10 x 1 tapered, short	
		360-081-037-011C	25	19.5	11	M10 x 1 tapered, short	
		362-081-004-001C *	25	19.5	11	M14 x 1.5	
	6.3 x 0.8 mm (90°) 	360-081-037-003C	25	20.5	12	M18 x 1.5	
		360-081-037-010C	25	19.5	11	1/8" - 27 NPTF	
		360-081-037-013C	25	20.5	12	M14 x 1.5	
		360-081-037-017C	25	20.5	12	M14 x 1.5	
		360-081-037-018C	25	20.5	12	M18 x 1.5	

\* For dual units (fly bridge)


Pressure sensor	25 bar, dual-pole insulated return	Part number	Range [ bar ]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	(2x) knurled nut M4 M4 M4 	360-081-038-005C	25	20.5	12	M18 x 1.5	
	(2x) 6.3 x 0.8 mm 	360-081-038-002C	25	23.8	15.3	3/8" - 18 Dryseal NPTF	
		362-081-002-001K *	25	19.5	11	1/8" - 27 NPTF	
	(2x) hexagonal nut M4 M4 	360-081-038-001C	25	20.5	12	M14 x 1.5	
		360-081-038-003C	25	19.5	11	1/8" - 27 NPTF	

\* For dual units (fly bridge)

Pressure sensor with warning contact	25 bar common ground	Part number	Warning contact [bar]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	WK 4.8 x 0.8 mm (90°) G 6.3 x 0.8 mm (90°) WK M4 G 	360-081-053-001C	15.5 +1.5	19.5	11	1/8" - 27 NPTF	
	(2x) hexagonal nut M4 WK G 	360-081-053-003C	5.5 +1.0	20.5	12	M18 x 1.5	
	(2x) 6.3 x 0.8 mm (50°) WK M4 G 	360-081-053-004C	14.5 +1.5	19.5	11	1/8" - 27 NPTF	


## Engine oil pressure (0 - 30 bar)



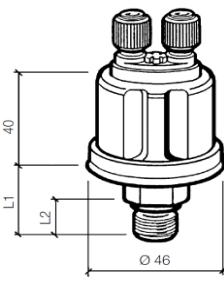
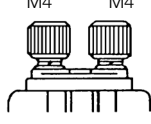


Engine oil pressure 0 - 30 bar / 0 - 435 psi	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514208	12 / 24	0 - 30 bar 0 - 435 psi	10 - 184	double lens	white round white	
		A2C59514209	12 / 24	0 - 30 bar 0 - 435 psi	10 - 184	double lens	white triangular chrome	

## Transmission oil pressure (0 - 30 bar)



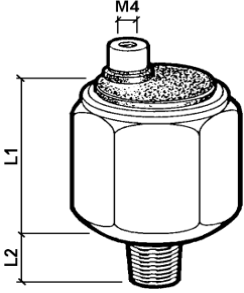
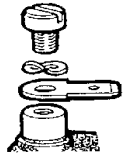
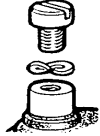
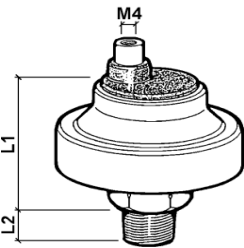
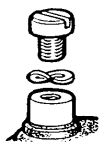
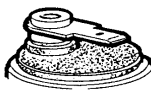
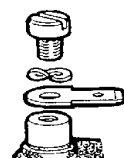
Transm. oil pressure 0 - 30 bar / 0 - 435 psi	Ø52 mm double scale	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514141	12 / 24	0 - 30 bar 0 - 435 psi	10 - 184	double lens	black round black	
		A2C59514142	12 / 24	0 - 30 bar 0 - 435 psi	10 - 184	double lens	black triangular chrome	
		A2C59514143	12 / 24	0 - 30 bar 0 - 435 psi	10 - 184	double lens	black triangular black	

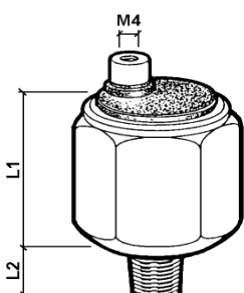
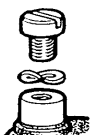
## Pressure sensors (30 bar)

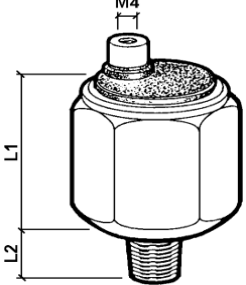
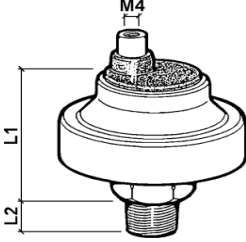
Pressure sender	30 bar, dual-pole insulated return	Part number	Range [bar]	Dimension [ mm ]		Thread size	Price
				L1	L2		
	(2x) knurled nut M4 M4 M4 	360-081-038-008C	30	19.5	11	1/8" - 27 NPTF	
	(2x) hexagonal nut M4 M4 M4 	362-081-002-003C *	30	19.5	11	1/8" - 27 NPTF	
	(2x) hexagonal nut M4 M4 M4 	362-081-002-004C *	30	19.5	11	1/8" - 27 NPTF	

\* For dual units (fly bridge)

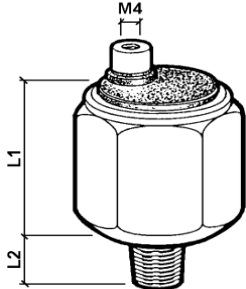
# Pressure switches

Pressure switch	single pole common ground	Part number	Switch point		Dimension [ mm ]		Range [ bar ]	Thread size	Price
			[ bar ]		L1	L2			
	screw M4 x 5 6.3 x 0.8 mm 	230-112-005-004C	0.3 ± 0.3	SF	26	10	12	M10 x 1 tapered, short	
		230-112-005-005C	0.8 ± 0.2	SF	26	10	12	M10 x 1 tapered, short	
		230-112-005-001C	1.0 ± 0.2	SF	26	10	12	M10 x 1 tapered, short	
	screw M4 x 5 	230-112-001-004C <sup>2</sup>	0.4 ± 0.3	SS	26	11	12	M10 x 1 tapered, short	
		230-112-003-015C <sup>1</sup>	0.5 ± 0.1	SF	26	11	12	M10 x 1 tapered, short	
		230-112-001-015C <sup>2</sup>	0.9 ± 0.15	OF	26	11	12	M10 x 1 tapered, short	
		230-112-003-022C <sup>2</sup>	0.9 ± 0.15	SF	26	11	12	M10 x 1 tapered, short	
		230-112-001-001C <sup>2</sup>	1.0 ± 0.2	SS	26	11	12	M10 x 1 tapered, short	
		230-112-001-005C <sup>2</sup>	2.5 ± 0.3	SS	26	11	12	M10 x 1 tapered, short	
<sup>1</sup> Contact chamber: vented <sup>2</sup> Contact chamber: unvented									
	screw M4 x 5 	230-113-001-004C <sup>1</sup>	0.4 ± 0.2	SF	39	11	12	M10 x 1 tapered, short	
		230-213-001-021C <sup>2</sup>	8.0 ± 0.5	SF	39	11	25	M10 x 1 tapered, short	
	6.3 x 0.8 mm riveted 	230-113-001-008C <sup>2</sup>	5.5 ± 0.2	SF	39	12	10	M12 x 1.5	
	screw M4 x 5 6.3 x 0.8 mm 	230-213-001-011C <sup>2</sup>	12.0 ± 0.4	SF	39	11	18	M10 x 1 tapered, short	
		<sup>1</sup> Contact chamber: vented <sup>2</sup> Contact chamber: unvented							

Pressure switch	single pole common ground	Part number	Switch point		Dimension [ mm ]		Range [ bar ]	Thread size	Price
			[ bar ]		L1	L2			
	screw M4 x 5 	230-112-003-012C <sup>1</sup>	6	SF	26	11	12	1/8" - 27 NPTF	
		230-112-001-002C <sup>1</sup>	10	SS	26	11	12	1/8" - 27 NPTF	
		230-112-003-013C <sup>1</sup>	10	SF	26	11	12	1/8" - 27 NPTF	
<sup>1</sup> Contact chamber: vented									

Pressure switch	dual-pole insulated return	Part number	Switch point		Dimension [ mm ]		Range [ bar ]	Thread size	Price
			[ bar ]		L1	L2			
	(2x) 6.3 x 0.8 mm riveted (90°)	230-112-007-005C <sup>2</sup>	0.3 ± 0.15	OS	24.5	12	12	M14 x 1.5 <sup>3</sup>	
		230-112-005-006C	0.5 ± 0.2	SF	26	11	12	M10 x 1 tapered, short	
		230-112-005-012C	1.2 ± 0.2	SF	24.5	10.5	12	M10 x 1	
		230-213-004-002C	12.5 ± 0.4	SS	39	12	12	M14 x 1.5	
	(2x) screws M4 x 5	230-112-002-001C <sup>2</sup>	0.5 ± 0.2	SS	26	11	12	1/8" - 27 NPTF	
		230-112-005-005C <sup>1</sup>	0.8 ± 0.2	SF	26	11	12	M10 x 1 tapered, short	
		230-112-005-001C <sup>1</sup>	1.0 ± 0.2	SF	26	11	12	M10 x 1 tapered, short	
		230-112-005-004C <sup>1</sup>	3.0 ± 0.4	SF	26	11	12	M10 x 1 tapered, short	
	(2x) ring terminal	230-112-005-011C <sup>1</sup>	1.5 ± 0.2	SF	26	11	12	M10 x 1 tapered, short	
		230-112-005-003C <sup>1</sup>	1.8 ± 0.2	SF	26	11	12	M10 x 1 tapered, short	
	(2x) screws M4 x 5	230-213-002-004C <sup>1</sup>	4.5 ± 0.3	SF	38	12	12	M12 x 1.5	
	(2x) screws M4 x 5 (2x) ring terminal	230-213-002-001C <sup>1</sup>	7.0 ± 0.3	SF	39	11	12	1/8" - 27 NPTF	
	(2x) 6.3 x 0.8 mm riveted (90°)	230-213-002-003C	10.5 ± 0.3	SF	39	11	12	1/8" - 27 Dryseal NPTF	

<sup>1</sup> Contact chamber: vented  
<sup>2</sup> Contact chamber: unvented  
<sup>3</sup> With sealing washer, captive

Pressure switch	dual-pole insulated return	Part number	Switch point		Dimension [ mm ]		Range [ bar ]	Thread size	Price
			[ bar ]		L1	L2			
	(2x) screws M4 x 5	230-112-005-010C <sup>1</sup>	7 ± 0.2	SF	26	10	12	1/8" - BSPF	

<sup>1</sup> Contact chamber: vented

Switch point	SF = Contact closes with falling pressure
	SS = Contact closes with rising pressure
	OF = Contact opens with falling pressure
	OS = Contact opens with rising pressure

## Fuel gauges (3 – 180 Ω)



Fuel	Ø52 mm 3 – 180 Ω	Part number	Voltage [ V ]	Range	Input [ Ω ]	Lens	Dial Bezel	Price
		A2C59514082	12 / 24	0 - 1/1	3 – 180	double lens	black round black	
		A2C59514083	12 / 24	0 - 1/1	3 – 180	double lens	black triangular chrome	
		A2C59514084	12 / 24	0 - 1/1	3 – 180	double lens	black triangular black	
		A2C59514184	12 / 24	0 - 1/1	3 – 180	double lens	white round white	
		A2C59514185	12 / 24	0 - 1/1	3 – 180	double lens	white triangular chrome	
		A2C59514091	12 / 24	E - F	3 – 180	double lens	black round black	
		A2C59514092	12 / 24	E - F	3 – 180	double lens	black triangular chrome	
		A2C59514093	12 / 24	E - F	3 – 180	double lens	black triangular black	

## Lever-arm fuel level senders (3 – 180 Ω)

Lever-arm fuel level sender	3 – 180 Ω	Part number	Article description	Signal range [ Ω ]		Length [ mm ]	Price
				empty	full		
		226-801-015-001G	Adjustable lever-arm fuel level sender, standard / ALAS I	3	180	150 - 600	
		N02-240-106	Adjustable lever-arm fuel level sender standard / ALAS I for dual units (flying bridge)	2	90	150 - 600	
		A2C59510165	Adjustable lever-arm fuel level sender, standard / ALAS I with warning contact	3	180	145 - 400	
		A2C59510171	Adjustable lever-arm fuel level sender, standard / ALAS I without warning contact	3	180	145 - 400	

## Tubular fuel level senders (3 – 180 Ω)

Tubular fuel level sender	3 – 180 Ω	Part number	Overall length L1 [ mm ]	Length to inlet tube L2 [ mm ]	Length to heating tube [ mm ]	Price
		A2C59510128	455 ± 2	446 <sup>+2,5</sup> -3,5	432 <sup>+2,5</sup> -3,5	
		A2C59510129	544 ± 2	535 <sup>+2,5</sup> -3,5	519 <sup>+2,5</sup> -3,5	
		A2C59510130	672 ± 2	663 <sup>+2,5</sup> -3,5	654 <sup>+2,5</sup> -3,5	

## Fuel gauges (90 – 4 Ω)

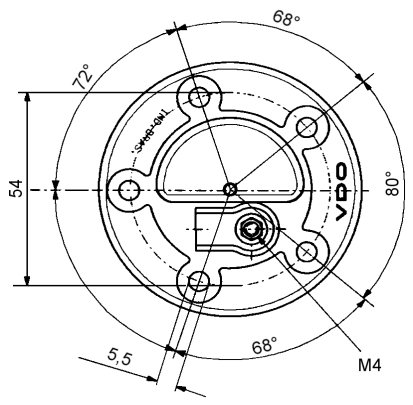
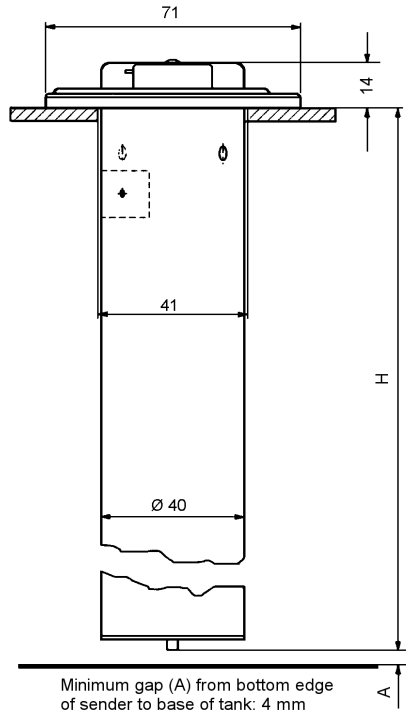


Fuel	Ø52 mm 90 – 4 Ω	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514079	12 / 24	0 - 1/1	90 – 4	double lens	black round black	
		A2C59514080	12 / 24	0 - 1/1	90 – 4	double lens	black triangular chrome	
		A2C59514081	12 / 24	0 - 1/1	90 – 4	double lens	black triangular black	
		A2C59514182	12 / 24	0 - 1/1	90 – 4	double lens	white round white	
		A2C59514183	12 / 24	0 - 1/1	90 – 4	double lens	white triangular chrome	
		A2C59514088	12 / 24	E - F	90 – 4	double lens	black round black	
		A2C59514089	12 / 24	E - F	90 – 4	double lens	black triangular chrome	
		A2C59514090	12 / 24	E - F	90 – 4	double lens	black triangular black	
		A2C59514188	12 / 24	E - F	90 – 4	double lens	white round white	
		A2C59514189	12 / 24	E - F	90 – 4	double lens	white triangular chrome	

## Tubular fuel level senders (90 – 4 Ω)

Tubular fuel level sender Flange bolt hole circle ø80 mm	metal robust	Part number	Signal range [Ω]		Length [ mm ]	Type	Price
			empty	full			
		X10-224-014-031	59,4 ±1,2	1,5 ±0,4	326	III	
		X10-224-014-030	88,5 ±1,8	2,2 ±0,4	380	III	
		X10-224-009-037	67,2 ±1,4	0,8 ±0,4	536	I	
		X10-224-021-001	67,9 ±1,4	1,0 ±0,4	536	IV	
		X10-224-009-053	69,3 ±1,4	0,8 ±0,4	551	I	
		X10-224-009-039	75,0 ±1,6	1,3 ±0,4	596	I	
		X10-224-009-048	81,0 ± 1,8	0,8 ±0,4	641	I	
		X10-224-014-002	86,7 ±1,8	0,8 ±0,4	686	III	
		X10-224-009-016	69,7 ±1,4	0,6 ±0,4	716	I	
		X10-224-009-029	65,0 ±1,4	0,5 ±0,4	741	I	
		X10-224-009-019	68,7 ±1,4	0,5 ±0,4	781	I	
		X10-224-021-004	71,1 ±1,6	0,7 ±0,4	803	IV	
		X10-224-009-026	82,8 ±1,8	0,6 ±0,4	831	I	
		X10-224-021-006	75,0 ±1,6	0,7 ±0,4	846	IV	
		X10-224-014-003	78,0 ±1,6	0,7 ±0,4	881	II	
		X10-224-014-011	81,2 ±1,8	0,7 ±0,4	916	II	
		X10-224-014-023	83,9 ±2,5	0,7 ±0,7	946	II	
		X10-224-014-015	59,0 ±1,2	0,5 ±0,4	996	II	
		X10-224-009-022	88,4 ±1,8	0,5 ±0,4	1001	I	
		X10-224-009-021	92,5 ±2,0	0,5 ±0,4	1045	I	
	X10-224-021-005	92,9 ±2,0	0,7 ±0,4	1045	IV		
	X10-224-009-040	64,0 ±1,4	0,4 ±0,4	1086	I		
	X10-224-014-044	74,2 ±1,6	0,5 ±0,4	1250	II		
	X10-224-009-072	82,4 ±1,8	0,5 ±0,4	1387	I		

Tubular fuel level sender Flange bolt hole circle $\varnothing 54$ mm	metal standard	Part number	Signal range [ $\Omega$ ]		Length (H) [ mm ]	Price
			empty	full		
		224-011-000-150G	69,0 $\pm$ 2,5	4,5 $\pm$ 1,5	150	
		224-011-000-160G	74,0 $\pm$ 2,5	4,5 $\pm$ 1,5	160	
		224-011-000-170G	79,5 $\pm$ 2,5	4,5 $\pm$ 1,5	170	
		224-011-000-180G	64,0 $\pm$ 2,5	3,0 $\pm$ 1,5	180	
		224-011-000-190G	68,0 $\pm$ 2,5	3,0 $\pm$ 1,5	190	
		224-011-000-200G	68,0 $\pm$ 2,5	2,5 $\pm$ 1,5	200	
		224-011-000-210G	76,0 $\pm$ 2,5	3,0 $\pm$ 1,5	210	
		224-011-000-220G	80,0 $\pm$ 2,5	3,0 $\pm$ 1,5	220	
		224-011-000-230G	84,0 $\pm$ 2,5	2,5 $\pm$ 1,5	230	
		224-011-000-240G	65,5 $\pm$ 2,5	2,5 $\pm$ 1,5	240	
		224-011-000-250G	72,0 $\pm$ 2,5	2,5 $\pm$ 1,5	250	
		224-011-000-260G	72,0 $\pm$ 2,5	2,5 $\pm$ 1,5	260	
		224-011-000-270G	74,5 $\pm$ 2,5	2,5 $\pm$ 1,5	270	
		224-011-000-280G	75,5 $\pm$ 2,5	2,5 $\pm$ 1,5	280	
		224-011-000-290G	78,0 $\pm$ 2,5	2,5 $\pm$ 1,5	290	
		224-011-000-300G	82,8 $\pm$ 2,5	2,5 $\pm$ 1,5	300	
		224-011-000-310G	84,0 $\pm$ 2,5	2,5 $\pm$ 1,5	310	
		224-011-000-330G	72,0 $\pm$ 2,5	2,5 $\pm$ 1,5	330	
		224-011-000-340G	74,0 $\pm$ 2,5	2,5 $\pm$ 1,5	340	
		224-011-000-350G	79,6 $\pm$ 2,5	2,5 $\pm$ 1,5	350	
		224-011-000-360G	69,0 $\pm$ 2,5	2,5 $\pm$ 1,5	360	
		224-011-000-370G	71,0 $\pm$ 2,5	2,5 $\pm$ 1,5	370	
		224-011-000-380G	73,0 $\pm$ 2,5	2,5 $\pm$ 1,5	380	
		224-011-000-390G	75,0 $\pm$ 2,5	2,5 $\pm$ 1,5	390	
		224-011-000-400G	74,9 $\pm$ 2,5	2,5 $\pm$ 1,5	400	
		224-011-000-450G	84,3 $\pm$ 2,5	2,5 $\pm$ 1,5	450	
		224-011-000-500G	75,4 $\pm$ 2,5	2,5 $\pm$ 1,5	500	
		224-011-000-550G	77,6 $\pm$ 2,5	2,5 $\pm$ 1,5	550	
		224-011-000-600G	85,3 $\pm$ 2,5	2,5 $\pm$ 1,5	600	
		224-011-000-650G	82,2 $\pm$ 2,5	2,5 $\pm$ 1,5	650	
		224-011-000-700G	81,6 $\pm$ 2,5	2,0 $\pm$ 1,5	700	
		224-011-000-750G	82 $\pm$ 2,5	2,0 $\pm$ 1,5	750	
		224-011-000-800G	68,5 $\pm$ 2,5	2,0 $\pm$ 1,5	800	



## Fuel gauges (0 – 90 Ω)



Fuel	Ø52 mm 0 – 90 Ω	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514085	12 / 24	E - F	0 – 90	double lens	black round black	
		A2C59514086	12 / 24	E - F	0 – 90	double lens	black triangular chrome	
		A2C59514087	12 / 24	E - F	0 – 90	double lens	black triangular black	
		A2C59514186	12 / 24	E - F	0 – 90	double lens	white round white	
		A2C59514187	12 / 24	E - F	0 – 90	double lens	white triangular chrome	

## Lever-arm fuel level senders (2 – 90 Ω)

Lever-arm fuel level sender	2 – 90 Ω	Part number	Article description	Signal range [Ω]		Length [mm]	Price
				empty	full		
		A2C59510167	Adjustable lever-arm fuel level sender, standard / ALAS I with warning contact	2	90	145 - 400	
		A2C59510173	Adjustable lever-arm fuel level sender, standard / ALAS I without warning contact	2	90	145 - 400	

## Fuel gauges (240 – 33.5 Ω)



Fuel	Ø52 mm 240 – 33.5 Ω	Part number	Voltage [V]	Range	Input [Ω]	Lens	Dial Bezel	Price
		A2C59514094	12 / 24	E - F	240 – 33.5	double lens	black round black	
		A2C59514095	12 / 24	E - F	240 – 33.5	double lens	black triangular chrome	
		A2C59514096	12 / 24	E - F	240 – 33.5	double lens	black triangular black	
		A2C59514190	12 / 24	E - F	240 – 33.5	double lens	white round white	
		A2C59514191	12 / 24	E - F	240 – 33.5	double lens	white triangular chrome	


## Lever-arm fuel level senders (240 – 33.5 Ω)

Lever-arm fuel level sender	240 – 33.5 Ω	Part number	Article description	Signal range [Ω]		Length [mm]	Price
				empty	full		
		A2C59510166	Adjustable lever-arm fuel level sender, standard / ALAS I with warning contact	240	33.5	145 - 400	
		A2C59510172	Adjustable lever-arm fuel level sender, standard / ALAS I without warning contact	240	33.5	145 - 400	




## Voltmeter




Voltmeter	Ø 52 mm	Part number	Voltage [V]	Range [V]	Input	Lens	Dial Bezel	Price
	A2C59512543	12	8 – 16	-	single lens	black triangular black		
	A2C59512544	12	8 – 16	-	single lens	white triangular chrome		
	A2C59512545	12	8 – 16	-	double lens	black round black		
	A2C59512546	12	8 – 16	-	double lens	white round white		
	A2C59512455	24	18 – 32	-	single lens	black triangular black		
	A2C59512456	24	18 – 32	-	single lens	white triangular chrome		
	A2C59512457	24	18 – 32	-	double lens	black triangular chrome		
	A2C59512458	24	18 – 32	-	double lens	black round black		
A2C59512459	24	18 – 32	-	double lens	white round white			

## Ammeter



Ammeter	Ø 52 mm	Part number	Voltage [V]	Range [A]	Input [mV]	Lens	Dial Bezel	Price
	A2C59512306	12 / 24	-30 ÷ +30	60	single lens	black triangular black		
	A2C59512310	12 / 24	-30 ÷ +30	60	single lens	white triangular chrome		
	A2C59512311	12 / 24	-60 ÷ +60	60	single lens	white triangular chrome		
	A2C59512328	12 / 24	-60 ÷ +60	60	double lens	black round black		
	A2C59512330	12 / 24	-60 ÷ +60	60	double lens	white round white		
	A2C59512308	12 / 24	-100 ÷ +100	60	single lens	black triangular black		
	A2C59512312	12 / 24	-100 ÷ +100	60	single lens	white triangular chrome		
	A2C59512309	12 / 24	-150 ÷ +150	60	single lens	black triangular black		
	A2C59512313	12 / 24	-150 ÷ +150	60	single lens	white triangular chrome		
	A2C59512329	12 / 24	-150 ÷ +150	60	double lens	black round black		
	A2C59512331	12 / 24	-150 ÷ +150	60	double lens	white round white		

## Ammeter shunts

Ammeter shunt	Part number	Voltage [V]	Ampere	Volt	Packaging	Price
	A2C59514041	12 / 24	30 A	60 mV	single	
	A2C59514043	12 / 24	60 A	60 mV	single	
	A2C59514045	12 / 24	100 A	60 mV	single	
	A2C59514047	12 / 24	150 A	60 mV	single	

## Multifunction gauges

4 in 1	Ø 110 mm	Part number	Voltage [V]	Range	Lens	Dial Bezel	Price
	A2C59514265 *	12	1. Engine oil pressure: 0 – 5 bar 2. Coolant temperature: 40 – 120°C 3. Voltmeter: 8 – 16 V 4. Fuel level: 0 – 1/2 - 1/1	double lens	black triangular chrome		
	A2C59514266 *	12	1. Engine oil pressure: 0 – 5 bar 2. Coolant temperature: 40 – 120°C 3. Voltmeter: 8 – 16 V 4. Fuel level: 0 – 1/2 - 1/1	double lens	white round white		

\* Sensors: - Pressure: see pages 16 - 18  
- Temperature: see pages 09 - 10  
- Fuel: see pages 27 - 29

## Engine hours counter



Engine hours counter	Ø52 mm non-illuminated	Part number	Voltage [V]	Range [h]	Lens	Dial Bezel	Price
	A2C59512448	12 / 24	0.0 - 99999.9	single lens	black triangular chrome		
	A2C59512449	12 / 24	0.0 - 99999.9	single lens	white triangular chrome		

Engine hours counter	Ø52 mm illuminated	Part number	Voltage [V]	Range [h]	Lens	Dial Bezel	Price
	A2C59512450	12 / 24	0.0 - 99999.9	single lens	black triangular chrome		
	A2C59512451	12 / 24	0.0 - 99999.9	single lens	white triangular chrome		
	A2C59512452	12 / 24	0.0 - 99999.9	double lens	black triangular chrome		
	A2C59512453	12 / 24	0.0 - 99999.9	double lens	black round black		
	A2C59512454	12 / 24	0.0 - 99999.9	double lens	white round white		

## Clock

Clock	Ø52 mm	Part number	Spannung [V]	Lens	Dial Bezel	Price
	A2C59513443	12	double lens	white round white		
	A2C59513444	24	double lens	white round white		
	A2C59513445	12	double lens	black round black		
	A2C59513446	24	double lens	black round black		

# Warning lights



Warning lights	Ø 52 mm	Part number	Voltage [V]	Telltale	Function	Buzer	Color	Dial Bezel	Price
	A2C59506150	12	WL1	Pre heating	No	amber	white triangle chrome		
			WL2	Cooling water	Yes	red			
			WL3	Battery fault	Yes	red			
			WL4	Oil pressure	Yes	red			
			WL5	Water in gasoil	Yes	red			
			WL6	Ignition ON	No	green			
	A2C59506153	12	WL1	Pre heating	No	amber	black triangle black		
			WL2	Cooling water	Yes	red			
			WL3	Battery fault	Yes	red			
			WL4	Oil pressure	Yes	red			
			WL5	Water in gasoil	Yes	red			
			WL6	Ignition ON	No	green			





Warning lights	Ø 52 mm	Part number	Voltage [V]	Telltale	Function	Buzer	Color	Dial Bezel	Price
	A2C59506154	12	WL1	Low fuel	No	amber	black triangle chrome		
			WL2	Cooling water	No	red			
			WL3	Battery fault	No	red			
			WL4	Oil pressure	No	red			
			WL5	Oil temperature	No	red			
			WL6	Pre heating	No	amber			
	A2C59506155	12	WL1	Low fuel	No	amber	black triangle black		
			WL2	Cooling water	No	red			
			WL3	Battery fault	No	red			
			WL4	Oil pressure	No	red			
			WL5	Oil temperature	No	red			
			WL6	Pre heating	No	amber			

Warning lights	Ø 52 mm	Part number	Voltage [V]	Telltale	Function	Buzer	Color	Dial Bezel	Price
	A2C59506156	12	WL1	Low fuel	No	amber	white round white		
			WL2	Cooling water	No	red			
			WL3	Battery fault	No	red			
			WL4	Oil pressure	No	red			
			WL5	Oil temperature	No	red			
			WL6	Pre heating	No	amber			
	A2C59506159	12	WL1	Low fuel	No	amber	black round black		
			WL2	Cooling water	No	red			
			WL3	Battery fault	No	red			
			WL4	Oil pressure	No	red			
			WL5	Oil temperature	No	red			
			WL6	Pre heating	No	amber			


Warning lights	Ø 52 mm	Part number	Voltage [V]	Telltale	Function	Buzer	Color	Dial Bezel	Price
	A2C59506160	12	WL1	Low beam	No	green	black triangle chrome		
			WL2	High beam	No	blue			
			WL3	Rear fog light	No	amber			
			WL4	Parking brake	No	red			
			WL5	Blinkers	No	green			
			WL6	Hazard	No	red			
	A2C59506161	12	WL1	Low beam	No	green	black triangle black		
			WL2	High beam	No	blue			
			WL3	Rear fog light	No	amber			
			WL4	Parking brake	No	red			
			WL5	Blinkers	No	green			
			WL6	Hazard	No	red			


## Accessories


Accessories	Part number	Article description	Price
	999-072-001	Spinlock Nut 52 mm	
	A2C53212238	Spinlock Nut 85 mm	
	A2C53238881	Spinlock Nut 110 mm	
	A2C59512684	Push button for LCD 13,6mm IP67	
	A2C59510850	Connector set 8-pole	
	A2C59510851	Connector set 14-pole	
	A2C59510852	Adapter cable for 52 mm 5 x AMP taps, 6.3 mm 2 x AMP taps, 2.8 mm	
	A2C59510886	Make Point Switch 12 V Gauges: 52 mm: temperature, pressure, tank, trim, rudder angle 85 / 110 mm: temperature, pressure, tank	
	A2C59512675	Adapter cable 8-pole for sumlog, temperature, pressure, fuel level, trim, pyrometer, outside temperature, freshwater, blackwater, tachometer, speedometer	unpacked
	A2C59512947		packed
	A2C59512677	Adapter cable 8-pole for voltmeter, engine hours counter, clock	unpacked
	A2C59512948		packed
	A2C59512679	Adapter cable 8-pole for ammeter	unpacked
	A2C59512949		packed
	A2C59512681	Adapter cable 14-pole for tachometer with LCD	unpacked
	A2C59512950		packed

	A2C59514546	Adapter cable - Sumlog Open Collector for sumlog, tachometer, speedometer when connected for sensors whit open collector output	
	A2C53324664	Connector protective cap 8-pin	
	A2C53324671	Connector protective cap 14-pin	
	A2C59513492	Connector blind plug 14-pin	

## Bezels

Bezel	Ø 52 mm	Part number	Profile	Color	Price
	A2C53186040	flat	black		
	A2C53186022	flat	white		
	A2C53186023	flat	chrome		
	A2C53186024	triangular	black		
	A2C53186025	triangular	white		
	A2C53186026	triangular	chrome		
	A2C53186027	round	black		
	A2C53186028	round	white		
A2C53186029	round	chrome			

Bezel	Ø 85 mm	Part number	Profile	Color	Price
	A2C53192911	flat	black		
	A2C53192912	flat	white		
	A2C53192910	flat	chrome		
	A2C53192917	triangular	black		
	A2C53192920	triangular	white		
	A2C53192918	triangular	chrome		
	A2C53192913	flat	black		
	A2C53192916	flat	white		
	A2C53192914	flat	chrome		

Bezel	Ø 110 mm	Part number	Profile	Color	Price
	A2C53210745	flat	black		
	A2C53210746	flat	white		
	A2C53210747	flat	chrome		
	A2C53210763	triangular	black		
	A2C53210764	triangular	white		
	A2C53210765	triangular	chrome		
	A2C53210749	round	black		
	A2C53210760	round	white		
	A2C53210761	round	chrome		



## VDO Cockpit International - classic round instruments using state-of-the-art technology.

The cockpits of trucks, construction and agricultural machinery or stationary machine panels can no longer be imagined without the classic VDO round instruments. The wide range, robust design and extensive years of experience are what makes these instruments "classics".

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.

VDO Cockpit International instruments feature standard and metric scales with international symbols to accommodate applications around the world.

These rugged and reliable instruments utilize edge-lit lighting, feature white easy-to-read numerals and red pointers on black dials and are available in 12 / 24V applications. The bezels are black-plated brass, and all housings are constructed of zinc-plated steel and have stud-type mounting connections.


World-class Cockpit International instruments are the standard in the industry for reliability and economy. State of the art manufacturing and quality control procedures ensure that the end product features up to date engineering and design standards.


These instruments feature our latest generation patented air core movements or stepper motor technology to deliver the precision and durability that has made VDO renowned as the leading brand in instrumentation.



# Speedometer

km/h


Speedometer with odometer and trip distance LCD	Ø100 mm	Part number	Voltage [ V ]	Range [ km/h ]	Display	Input	Price
	437-055-001G	12 / 24	0 - 60	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		
	437-055-009C *	12 / 24	0 - 80	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		
	437-055-002G	12 / 24	0 - 120	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		

Speedometer with odometer and trip distance LCD	Ø80 mm	Part number	Voltage [ V ]	Range [ km/h ]	Display	Input	Price
	437-035-001G	12 / 24	0 - 60	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		
	437-035-012C *	12 / 24	0 - 80	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		
	437-035-002G	12 / 24	0 - 120	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		
	437-035-003G	12 / 24	0 - 200	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor		


\* Packaging unit: 10 pc.

# Tachometer


RPM x 100


Tachometer with operating hours counter LCD	Ø100 mm	Part number	Voltage [ V ]	Range [ rpm ]	Display	Input	Price
	333-055-002G	12 / 24 24 illumination	0 - 3000	999999,9 h	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil		
	333-055-004C *	12 / 24 24 illumination	0 - 3000	999999,9 h	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil		


\* Packaging unit: 10 pc.

Tachometer with operating hours counter LCD	Ø80 mm	Part number	Voltage [ V ]	Range [ rpm ]	Display	Input	Price
	333-035-010G	12 / 24 12 illumination	0 - 3000	999999,9 h	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil		
	333-035-011G	12 / 24 12 illumination	0 - 4000	999999,9 h	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil		
	333-035-014C *	12 / 24 12 illumination	0 - 6000	999999,9 h	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil		

\* Packaging unit: 10 pc.


Tachometer	Ø100 mm	Part number	Voltage [V]	Range [rpm]	Input	Price
		333-055-001G	12	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-065-001G	24	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	






Tachometer	Ø80 mm	Part number	Voltage [V]	Range [rpm]	Input	Price
		333-035-001G	12	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-045-001G	24	0 - 3000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-035-002G	12	0 - 4000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-045-002G	24	0 - 4000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-035-003G	12	0 - 7000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-035-022C	24	0 - 10000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	

Tachometer	Ø52 mm	Part number	Voltage [V]	Range [rpm]	Input	Price
		333-035-029G	12	0 - 4000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-035-017G	12	0 - 6000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	
		333-035-018G	12	0 - 8000	alternator terminal W, ignition coil terminal 1, inductive, generator, hall sensor, lighting coil	






## Electric temperature gauges


°C


Outside air temperature -20 ÷ +40°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Special feature	Price
		397-035-001G	12	-20 ÷ +40	5842 - 303	support bracket, connection parts, protecting cap and temperature sensor 323-801-008-002D included	

Electric temperature gauge 40 - 120°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Price
		310-030-002G	12	40 - 120	287.4 - 22.7	°C 	
		310-030-013G	12	40 - 120	287.4 - 22.7	°C 	
		310-040-002G	24	40 - 120	287.4 - 22.7	°C 	
		310-040-013G	24	40 - 120	287.4 - 22.7	°C 	




Electric temperature gauge 50 - 150°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Price
	310-030-003G	12	50 - 150	322,8 - 18,6	°C		
	310-030-015G	12	50 - 150	322,8 - 18,6	°C		
	310-040-003G	24	50 - 150	322,8 - 18,6	°C		
	310-040-015G	24	50 - 150	322,8 - 18,6	°C		


Electric temperature gauge 60 - 200°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Price
	310-030-004G	12	60 - 200	482 - 14,3	°C		
	350-040-004G	24	60 - 200	482 - 14,3	°C		

Pyrometer	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input	Imprint	Price
	397-015-003C	12	100 ÷ 900	37	10 - 90 x10 °C		

## Mechanical temperature gauges



°C




Mechanical temperature gauge 40 - 120°C	Ø52 mm	Part number	Range [°C]	Imprint	Special feature	Price
	180-035-002G	40 - 120	°C	L 1600 + 106 mm		
	180-035-004G	40 - 120	°C	L 2600 + 160 mm		
	180-035-005G	40 - 120	°C	L 4000 + 160 mm		
	180-035-006G	40 - 120	°C	L 6000 + 188 mm		




Mechanical temperature gauge 50 - 150°C	Ø52 mm	Part number	Range [°C]	Imprint	Special feature	Price
	180-035-008G	50 - 150	°C	L 2600 + 160 mm		




## Electric pressure gauges




bar

Turbo pressure 0 - 2 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Price
		350-040-001C *	24	0 - 2	10 - 184	bar 	
* Packaging unit: 10 pc.							

Engine oil pressure 0 - 5 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Price
		350-030-003G	12	0 - 5	10 - 184	bar 	
		350-040-003G	24	0 - 5	10 - 184	bar 	


Engine oil pressure 0 - 10 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Price
		350-030-004G	12	0 - 10	10 - 184	bar 	
		350-040-004G	24	0 - 10	10 - 184	bar 	


Brake pressure 0 - 10 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Price
		350-030-011C *	12	0 - 10	10 - 184	bar 	
		350-040-011G	24	0 - 10	10 - 184	bar 	
* Packaging unit: 10 pc.							


Transmission oil pressure 0 - 25 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Price
		350-030-005G	12	0 - 25	10 - 184	bar 	
		350-040-005G	24	0 - 25	10 - 184	bar 	

# Mechanical pressure gauges

bar / kPa




Mechanical pressure gauge	Ø52 mm	Part number	Range [ bar ]	Imprint	Special feature	Price
		150-035-001G	-1 ÷ 1.5	bar	without illumination	




Mechanical pressure gauge	Ø52 mm	Part number	Range [ bar ]	Imprint	Special feature	Price
		150-035-004G	0 - 7	bar	without illumination	
		150-035-006G	0 - 10	bar	without illumination	
		150-035-009G	0 - 30	bar	without illumination	
		150-035-025C	0 - 10	bar	without illumination	

Mechanical pressure gauge	Ø52 mm	Part number	Range [ kPa ]	Imprint	Special feature	Price
		150-035-020G	0 - 1000	kPa x 100	with illumination 12 V, white pointer, without mounting parts	

# Fuel



Fuel level gauge for lever type sensor	Ø52 mm	Part number	Voltage [ V ]	Range	Input [ Ω ]	Imprint	Price
		301-030-001G	12	0 - 1/1	3 - 180	0 - 1/2 - 1/1 	
		301-040-001G	24	0 - 1/1	3 - 180	0 - 1/2 - 1/1 	

Fuel level gauge for tubular type sensor	Ø52 mm	Part number	Voltage [ V ]	Range	Input [ Ω ]	Imprint	Price
		301-030-002G	12	0 - 1/1	60/90 - 0,5 adjustable	0 - 1/2 - 1/1 	
		301-040-002G	24	0 - 1/1	60/90 - 0,5 adjustable	0 - 1/2 - 1/1 	

## Voltmeter



Voltmeter	Ø 52 mm	Part number	Voltage [V]	Range [V]	Imprint	Price
		332-030-001G	12	8 - 16	colour fields (red and green) 	
		332-040-001G	24	18 - 32	colour fields (red and green) 	

## Ammeter

- AMP +

Ammeter	Ø 52 mm	Part number	Voltage [V]	Range [A]	Input [mV]	Imprint	Price
		190-037-002G	12	-60 ÷ +60	50	- AMP +	
		190-037-003G	12	-100 ÷ +100	50	- AMP +	

## Engine hours counter



Engine hours counter	Ø52 mm	Part number	Voltage [V]	Range [h]	Imprint	Special feature	Price
		331-810-012-001G	12	0.0 - 99999.9	HOURS	no illumination	
		331-810-012-002G	12	0.0 - 99999.9	HOURS	minutes hand (wt), no illumination	
		331-810-012-007G	24	0.0 - 99999.9	HOURS	with illumination	

## Clock

Clock	Ø52 mm	Part number	Voltage [V]	Imprint	Price
		370-214-031-001G	12	3 6 9 12 VDO	
		370-214-031-003G	24	3 6 9 12 VDO	



## VDO Cockpit Vision - pinnacle of instrument technology.

VDO Cockpit Vision represents a true technological advancement in instrument illumination. Using light piping techniques, we have created fullybacklit "through dial lighting" and pointer illumination with an unmatched level of nighttime readability.

Vision Instruments features crisp black dials and matching bezels. Included light diffusers allow the dial illumination color to be changed to red or green. High contrast clear white graphics and red pointers make Vision instruments easy to read.


Vision instruments also feature our innovative Spin-Lok™ mounting system for fast and easy installation. Using our unique spin-on clamp, it provides a full 360 degrees of mounting force when installed, preventing panel warping and gauge rotation.

As with all VDO instruments, Vision incorporates the use of our own patented air core or stepper motor movements. Designed and used worldwide exclusively by VDO.




## Speedometer

km/h

Speedometer with odometer & trip distance LCD Ø100 mm	Part number	Voltage [V]	Range	Scale	Display	Input	Price
	437-015-007G	12 / 24	0 - 200 km/h	single scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	
	437-015-008G	12 / 24	0 - 300 km/h	single scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	
	437-015-009G	12 / 24	0 - 220 mph 0 - 360 km/h	dual scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	
	437-015-017C *	12 / 24	0 - 140 mph 0 - 220 km/h	dual scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	


\* Packaging unit: 10 pc.


Speedometer with odometer & trip distance LCD Ø80 mm	Part number	Voltage [V]	Range	Scale	Display	Input	Price
	437-015-001K	12 / 24	0 - 200 km/h	single scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	
	437-015-002K	12 / 24	0 - 300 km/h	single scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	
	437-015-016C *	12 / 24	0 - 140 mph 0 - 220 km/h	dual scale	total: 999999.9 km trip: 9999.9 km	hall sensor, inductive sensor, blocking oscillator sensor	

\* Packaging unit: 10 pc.

## Tachometer


RPM x 100





Tachometer Ø80 mm Ø100 mm	Part number	Voltage [V]	Messbereich [rpm]	Scale	Diameter	Input	Price
	333-015-001K	12 V	0 - 7000 rpm	single scale	Ø80 mm	alternator terminal W, ignition coil terminal 1, inductive sensor, generator sensor, hall sensor, lighting coil	
	333-015-005G	12 V	0 - 8000 rpm	single scale	Ø100 mm	alternator terminal W, ignition coil terminal 1, inductive sensor, generator sensor, hall sensor, lighting coil	

Tachometer Ø52 mm	Part number	Voltage [V]	Range	Scale	Input	Price
	333-015-009K	12 V	0 - 6000 rpm	single scale	alternator terminal W, ignition coil terminal 1, inductive sensor, generator sensor, hall sensor, lighting coil	
	333-015-010K	12 V	0 - 8000 rpm	single scale	alternator terminal W, ignition coil terminal 1, inductive sensor, generator sensor, hall sensor, lighting coil	




## Electric temperature gauges

°C

Outside air temperature -20 ÷ +40°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Special feature	Price
		397-015-001K	12	-20 ÷ +40	5842 – 303	°C	support bracket, connection parts, protecting cap and temperature sensor 323-801-008-002D included	




Coolant temperature gauge 40 - 120°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Special feature	Price
		310-010-002K	12	40 - 120	287.4 – 22.7	°C 	clamp ring	
		310-010-012K	12	40 - 120	287.4 – 22.7	°C 	stud bolts	
		310-020-001C *	24	40 - 120	287.4 – 22.7	°C 	clamp ring, without colour caps	





\* Packaging unit: 10 pc.

Oil temperature gauge 50 - 150°C	Ø52 mm	Part number	Voltage [V]	Range [°C]	Input [Ω]	Imprint	Special feature	Price
		310-010-003K	12	50 - 150	322,8 – 18,6	°C 	clamp ring	
		310-010-013K	12	50 - 150	322,8 – 18,6	°C 	stud bolts	

## Electric pressure gauges




Engine oil pressure 0 - 5 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Special feature	Price
		350-010-008K	12	0 - 5	10 – 184	bar 	clamp ring	
		350-010-014K	12	0 - 5	10 – 184	bar 	stud bolts	

Engine oil pressure 0 - 10 bar	Ø52 mm	Part number	Voltage [V]	Range [bar]	Input [Ω]	Imprint	Special feature	Price
		350-010-007K	12	0 - 10	10 – 184	bar 	clamp ring	
		350-010-015K	12	0 - 10	10 – 184	bar 	stud bolts	
		350-020-001C *	24	0 - 10	10 – 184	bar 	clamp ring, without colour caps	





\* Packaging unit: 10 pc.





## Mechanical pressure gauges

Mechanical turbo boost	Ø52 mm	Part number	Range [ bar ]	Imprint	Special feature	Price
		150-015-001K	0 ÷ 3	TURBO bar	illumination 12 V, metal housing	


## Fuel



Fuel level gauge for lever type sensor	Ø52 mm	Part number	Voltage [ V ]	Range	Input [ Ω ]	Imprint	Special feature	Price
		301-010-002K	12	0 - 1/1	3 - 180	0 - 1/2 - 1/1 	clamp ring	
		301-010-008K	12	0 - 1/1	3 - 180	0 - 1/2 - 1/1 	stud bolts	
		301-020-001C	24	0 - 1/1	3 - 180	0 - 1/2 - 1/1 	clamp ring, without colour caps	

Fuel level gauge for tubular type sensor	Ø52 mm	Part number	Voltage [ V ]	Range	Input [ Ω ]	Imprint	Special feature	Price
		301-010-001K	12	0 - 1/1	60/90 - 0,5 adjustable	0 - 1/2 - 1/1 	clamp ring	
		301-010-007K	12	0 - 1/1	60/90 - 0,5 adjustable	0 - 1/2 - 1/1 	stud bolts	
		301-020-002C	24	0 - 1/1	60/90 - 0,5 adjustable	0 - 1/2 - 1/1 	clamp ring, without colour caps	

## Voltmeter

Voltmeter	Ø 52 mm	Part number	Voltage [ V ]	Range [ V ]	Imprint	Special feature	Price
		332-010-001K	12	8 - 16	VOLT	clamp ring	
		332-010-001K	12	8 - 16	VOLT	stud bolts	
		332-010-001K	24	18 - 32	VOLT	clamp ring, without colour caps	

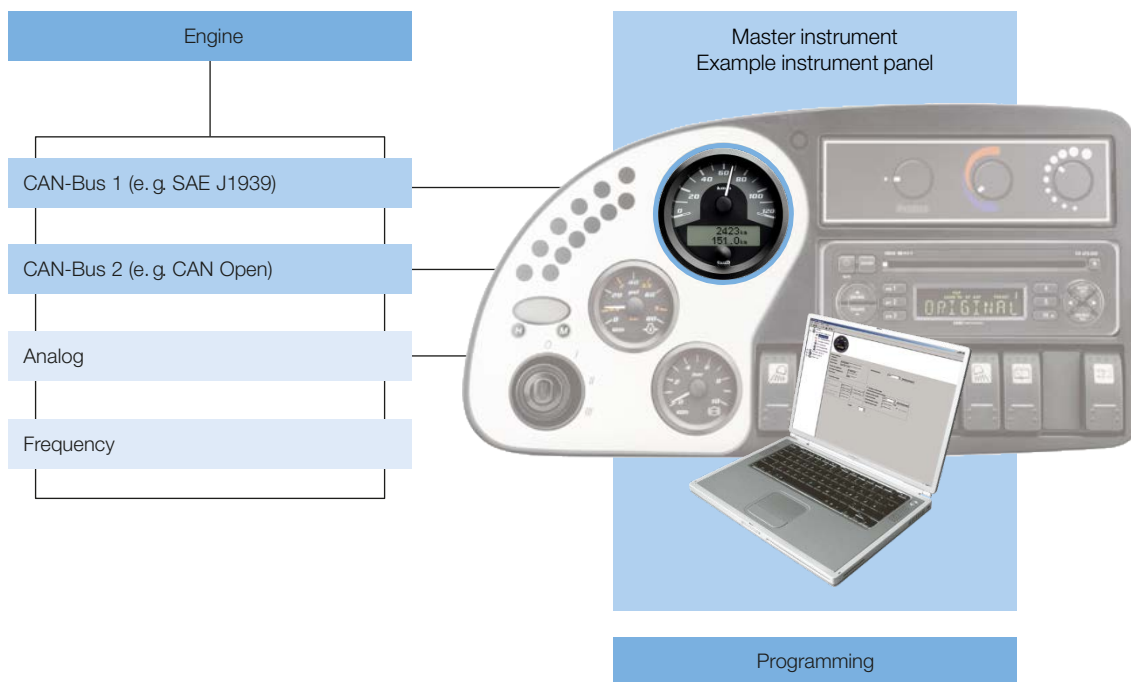


## CANcockpit - handle complex requirements with ease.

The VDO brand is synonymous with customised solutions that handle sophisticated technical tasks while offering maximum ease of operation. VDO products are deployed in a wide range of applications from construction vehicles, agricultural and forestry equipment to stationary machines, sports cars and boats.

CANcockpit is the flexible system solution for processing data from various analogue and digital

sensors via a central instrument connected to a CAN bus. It can be precision configured to meet specific needs, and is simple to expand whenever required. In addition, this modular instrumentation solution may be integrated into existing VDO panel solutions. Thanks to the powerful WINgauge software it is exceptionally easy to program. CANcockpit is also capable of processing two CAN protocols (e.g. SAE J1939 and CAN Open) simultaneously.



## CANcockpit – harness the benefits.


- **Flexibility** – Data from up to two CAN buses running different protocols (e.g. SAE J1939 and CAN Open) can be processed simultaneously.
- **Safety** – Easy DTC (diagnostic trouble code) handling of the protocol defined by J1939 through comprehensive functionality and setting options.
- **Diagnostic support** – Configuration checking, plus online recording of selected measurement values via recorder function for subsequent download onto PC and evaluation using standard tools.
- **Integration** – CANcockpit can easily be incorporated into existing VDO panel solutions, with different bezels helping to simplify fitting.
- **Compatibility** – Analogue, frequency and CAN inputs are available.
- **Programmability** – Specific limits can be set and programmed so that an alarm triggers when they are exceeded.
- **Modularity** – Simple cabling requirements and straightforward subsequent expansion via Plug & Play
- **Convenience** – Automatic plausibility check for the parameters entered and various functional checks carried out by special WINgauge software during input phase.
- **Personalisation** – Flexible LCD display options allow icons to be defined and corporate logos to be displayed.
- **Readability** – Display instruments designed for maximum clarity.



## Speedometer


km/h  
mph


Speedometer	master	Part number	MOQ	Voltage [V]	Range	Ø [mm]	Imprint	Dial scale	Price
		A2C60000026 *	10	12 / 24	0 - 30 km/h	80	km/h	single scale	
		A2C60000022	10	12 / 24	0 - 60 km/h	80	km/h	single scale	
		A2C59514367	1	12 / 24	0 - 120 km/h	80	km/h	single scale	
		A2C60000023 *	10						
		A2C60000024	10	12 / 24	0 - 200 km/h	80	km/h	single scale	
		A2C60000025 *	10	12 / 24	0 - 80 mph 0 - 120 km/h	80	mph km/h	double scale	
		A2C60000072 *	10	12 / 24	0 - 120 km/h	85	km/h	single scale	
		A2C60000073	10	12 / 24	0 - 80 mph	85	mph	single scale	
		A2C60000128 *	10	12 / 24	0 - 60 km/h	100	km/h	single scale	
		A2C60000129	10	12 / 24	0 - 120 km/h	100	km/h	single scale	
		A2C60000130 *	10	12 / 24	0 - 200 km/h	100	km/h	single scale	
		A2C60000131 *	10	12 / 24	0 - 50 mph 0 - 80 km/h	100	mph km/h	double scale	
		A2C60000133 *	10	12 / 24	0 - 200 km/h 0 - 120 mph	100	km/h mph	double scale	
		A2C60000134 *	10	12 / 24	0 - 120 mph 0 - 200 km/h	100	mph km/h	double scale	

Speedometer	slave	Part number	MOQ	Voltage [V]	Range	Ø [mm]	Imprint	Dial scale	Price
		A2C60000287	10	12 / 24	0 - 60 km/h	52	km/h	single scale	
		A2C59514434	1	12 / 24	0 - 60 km/h	80	km/h	single scale	
		A2C60000357	10						
		A2C60000358 *	10	12 / 24	0 - 80 mph 0 - 120 km/h	80	mph	double scale	
		A2C60000359 *	10	12 / 24	0 - 60 km/h 0 - 40 mph	80	km/h mph	double scale	
		A2C60000361 *	10	12 / 24	0 - 120 km/h	100	km/h	single scale	

\* Limited quantities, delivery only while stocks last






## Tachometer

Tachometer	master	Part number	MOQ	Voltage [V]	Range [rpm]	Ø [mm]	Imprint	Dial scale	Price
		A2C59514364	1	12 / 24	0 - 3000	80	min <sup>-1</sup> x 1000	single scale	
		A2C60000020	10						
		A2C59514365 *	1	12 / 24	0 - 4000	80	min <sup>-1</sup> x 1000	single scale	
		A2C60000021	10						
		A2C59514372	1	12 / 24	0 - 3000	85	min <sup>-1</sup> x 1000	single scale	
		A2C60000070	10						
		A2C59514373 *	1	12 / 24	0 - 4000	85	min <sup>-1</sup> x 1000	single scale	
		A2C60000071	10						
		A2C60000076	10	12 / 24	0 - 5000	85	min <sup>-1</sup> x 1000	single scale	
		A2C59514379 *	1	12 / 24	0 - 3000	100	min <sup>-1</sup> x 100	single scale	
		A2C60000126 *	10						
		A2C59514380 *	1	12 / 24	0 - 4000	100	min <sup>-1</sup> x 100	single scale	
		A2C60000127	10						

Tachometer	slave	Part number	MOQ	Voltage [V]	Range [rpm]	Ø [mm]	Imprint	Dial scale	Price
		A2C60000286	10	12 / 24	0 - 3000	52	min <sup>-1</sup> x 1000	single scale	
		A2C60000356 *	10	12 / 24	0 - 3000	85	min <sup>-1</sup> x 1000	single scale	
		A2C60000360	10	12 / 24	0 - 3000	100	min <sup>-1</sup> x 1000	single scale	



## Temperature





°C / °F



Engine coolant temperature	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C59514410	1	12 / 24	40 - 120°C	°C 	single scale	
		A2C60000273	10					
		A2C59514411 *	1	12 / 24	40 - 120°C 100 - 250°F	°C / °F 	double scale	
		A2C60000274	10					
		A2C59514412	1	12 / 24	100 - 250°F 40 - 120°C	°F / °C 	double scale	
		A2C60000275	10					
		A2C60000355	10	12 / 24	40 - 120°C	°C 	single scale	

\* Limited quantities, delivery only while stocks last

\*\* Minimum Order Quantity

Engine oil temperature	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [°C]	Imprint	Dial scale	Price
		A2C60000268 *	10	12 / 24	50 - 150	°C 	single scale	










Transmission oil temperature	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C59514406	1	12 / 24	50 - 150°C	°C 	single scale	
		A2C60000269	10					
		A2C60000270 *	10	12 / 24	50 - 150°C 120 - 300°F	°C °F 	double scale	
		A2C60000271 *	10	12 / 24	120 - 300°F 50 - 150°C	°F °C 	double scale	

Hydraulic oil temperature	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [°C]	Imprint	Dial scale	Price
		A2C60000276	10	12 / 24	20 - 120	°C 	single scale	

Temperature	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [°C]	Imprint	Dial scale	Price
		A2C60000272 *		12 / 24	60 - 200	°C	single scale	









## Pressure




bar / kPa / psi

Engine oil pressure	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C59514388 *	1	12 / 24	0 - 5 bar	bar 	single scale	
		A2C60000251	10					
		A2C60000252	10	12 / 24	0 - 10 bar	bar 	single scale	
		A2C60000354	10	12 / 24	0 - 10 bar	bar 	single scale	
		A2C60000253 *	10	12 / 24	0 - 500 kPa	kPa 	single scale	
		A2C60000254 *	10	12 / 24	0 - 1000 kPa	kPa 	single scale	
		A2C60000255 *	10	12 / 24	0 - 80 psi	psi bar 	double scale	
		A2C60000256 *	10	12 / 24	0 - 100 psi	psi bar 	double scale	
		A2C59514394 *	1	12 / 24	0 - 150 psi	psi bar 	double scale	
		A2C60000257 *	10					


\* Limited quantities, delivery only while stocks last

50 \*\* Minimum Order Quantity



Brake pressure	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C60000258 *	10	12 / 24	0 - 10 bar	bar 	single scale	
		A2C59514396 *	1	12 / 24	0 - 10 bar	bar 	single scale	
		A2C60000259	10					
		A2C59514397 *	1	12 / 24	0 - 10 bar	bar 	single scale	
		A2C60000260	10					
		A2C60000263 *	10	12 / 24	0 - 150 psi 0 - 10 bar	psi bar 	double scale	
		A2C60000264 *	10	12 / 24	0 - 16 bar	bar 	single scale	
		A2C59514428 *	1	12 / 24	0 - 150 psi 0 - 10 bar	psi bar 	double scale	
		A2C60000297	10					
	A2C60000298	10	12 / 24	0 - 150 psi 0 - 10 bar	psi bar 	double scale		

Transmission oil pressure	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C60000265 *	10	12 / 24	0 - 28 bar	bar 	single scale	
		A2C60000266 *	10	12 / 24	0 - 400 psi 0 - 28 bar	psi bar 	double scale	

Pressure	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [bar]	Imprint	Dial scale	Price
		A2C60000261	10	12 / 24	0 - 250	bar	single scale	
		A2C60000262	10	12 / 24	0 - 250	bar	single scale	

Turbo pressure	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [bar]	Imprint	Dial scale	Price
		A2C60000267 *	10	12 / 24	0 - 2	bar 	single scale	

## Water

Wastewater	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C59514418 *	1	12 / 24	0 - 1	0 1/4 1/2 3/4 1 	single scale	
		A2C60000281	10					

\* Limited quantities, delivery only while stocks last

\*\* Minimum Order Quantity

Freshwater	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C60000280	10	12 / 24	0 - 1	-	single scale	

## Fuel



Fuel	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range	Imprint	Dial scale	Price
		A2C59514415	1	12 / 24	0 - 1	0 1/4 1/2 3/4 1	single scale	
		A2C60000278	10					
		A2C60000279	10	12 / 24	E - F	E 1/4 1/2 3/4 F	double scale	

## Voltmeter



Voltmeter	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [V]	Imprint	Dial scale	Price
		A2C59514419 *	1	12	8 - 16	volt 	single scale	
		A2C60000282	10					
		A2C59514421 *	1	24	18 - 32	volt 	single scale	
		A2C60000284	10					

## Ammeter



Ammeter	slave Ø52 mm	Part number	MOQ	Voltage [V]	Range [A]	Imprint	Dial scale	Price
		A2C60000285 *	10	12 / 24	-125 ÷ +125	amp 	single scale	

\* Limited quantities, delivery only while stocks last

# VDO Audio

## Radio Platform OE-Line 2

### Features

- › 12V and 24V version available
- › Worldwide FM RDS tuner
- › USB 2.0 Port, MP3 & WMA player
- › With or without CD drive
- › With or without Bluetooth®
- › Short chassis (except for CD version)
- › Backup memory
- › Steering wheel remote control
- › From 4 x 15W to 4 x 41W RMS output
- › Excellent visibility of the display by day and night
- › Logic On/Off function to preserve the vehicle battery
- › Tuner performance qualified with automotive standards
- › Robust design qualified to ensure best performance
- › Long term product availability
- › Customer specific branding possible
- › Variant with CAN bus available in Q3/2015



**TR7411U-OR / TR7422U-OR**

- › FM/AM Radio
- › USB MP3/WMA
- › 12V / 24V



**TR7412UB-OR / TR7423UB-OR**

- › FM/AM Radio
- › USB MP3/WMA
- › Bluetooth®
- › 12V / 24V



**CD7416U-OR / CD7426U-OR**

- › FM/AM Radio
- › USB MP3/WMA
- › CD drive
- › 12V / 24V



**CDD7418UB-OR / CDD7428UB-OR**

- › FM/AM Radio
- › USB MP3/WMA
- › CD drive
- › Bluetooth®
- › DAB/DAB+/DMB
- › 12V / 24V

## Speakers

### Features

- › Nominal Impedance: 4 Ω
- › Voice coil resistance Rcc: 3,2 Ω ± 15%
- › Resonance Frequency: 140 Hz ± 15%
- › Efficiency: 88 ± 3 dB
- › Frequency Response: 120 Hz - 18 KHz @-15 dB
- › Peak Power: 50 W (Short terms IEC-268.5)
- › Max. Power: 12 W (Rated IEC-268.5)
- › Speaker weight: 310 g ±10%



**HP 1021**

- › Ø100 mm



**HP 1321**

- › Ø130 mm

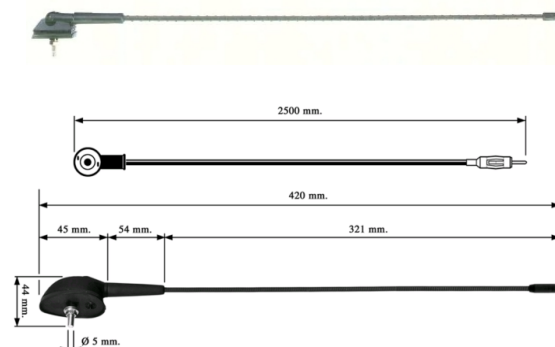
## AM/FM Antennas

### AT-BERU-A100S

- › Impedance: 150 Ω
- › Aerial rod: 470 mm
- › Aerial head: 0°
- › Max. inclination: 0° - 180°
- › Drilling hole: 10 mm
- › Installation depth: 20 mm
- › Connecting cable: 2350 mm

### 10-121

- › Impedance: 150 Ω
- › Aerial rod: 420 mm
- › Aerial head: 0°
- › Drilling hole: 10 mm
- › Installation depth: 20 mm
- › Connecting cable: 2500 mm



Authorized partner

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Continental Trading GmbH

**VDO**