



VDO Marine Instruments Catalogue 2000

	Page
<hr/>	
1. Navigation	
1.1 LOGIC Navigation (incl. Chart Plotter)	2 to 10
1.2 Ocean Line Black Navigation	11 to 13
1.3 Ocean Line White Navigation	14 to 16
1.4 Ocean Line Chrome Navigation	17 to 19
<hr/>	
2. Engine monitoring	
2.1 Ocean Line Black Engine monitoring	20 to 27
2.2 Ocean Line White Engine monitoring	28 to 35
2.3 Ocean Line Chrome Engine monitoring	36 to 43
<hr/>	
3. Engine Data Transmission Systems	
3.1 EDB (Engine Data Box)	44
3.2 BAI (Bus Analog Interace)	44
3.3 GBI (Gauge Bus Interface)	45
<hr/>	
4. Sensor	
4.1 Pressure sensor/Generator senders	46 to 47
4.2 Temperature sensors	48 to 49
4.3 Tank Sensors	50 to 51
<hr/>	
5. Accessories	
5.1 Marine Accessories general	52
5.2 LOGIC Accessories	52
5.3 Ocean Line Accessories	53

1.1 VDO LOGIC Navigation



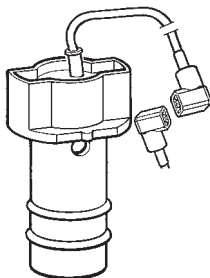
LOGIC MAP 7 GPS



LOGIC MAP 8 E



LOGIC MAP 10 E



Sensor through-hull fitting/
inhull installation

VDO LOGIC Chart plotter

LOGIC MAP 7 GPS (incl. GPS)		X10 719 002 038
LOGIC MAP 8 E (without GPS)		X10 719 002 034
LOGIC MAP 10 E (without GPS)		X10 719 002 035
LOGIC MAP 10 E Color (without GPS)		X10 719 002 036
GPS Sensor for MAP 8 and 10 (incl. Cable)		X10 719 002 016
GPS Sensor for MAP 8 and 10 (without Cable)		X10 719 002 017
Gauge Bus Interface (GBI)	12-32 V	N03 321 006
For digitisation of VDO sensor data and to display engine data in VDO Chartplotters, generation „E“		
NMEA Cable 1.5m		X11 719 000 007
Power & I/O Cable 1.5m (MAP 8 E, 10 E)		X11 719 000 002
Railmount GPS Sensor		X11 719 000 005
Deckmount for GPS Sensor		X11 719 000 006
Connecting cable GPS Sensor <-> Plotter (10m)		X11 719 000 001

(Technical Data: Page 8)



GPS Sensor

VDO LOGIC Depth

VDO LOGIC Depth complete system,
Including: Indicator, Sensor, 9m Cable

through-hull fitting	12 V	N01 400 206
inhull installation	12V	N01 400 208

Components

Indicator	12 V	N01 411 002
Repeater	12 V	N01 411 102
Sensor Through-hull fitting (incl. Through-hull fitting, Blind plug and Nut)		N01 430 108
Sensor inhull installation		N05 801 414

Spare parts

Through-hull fitting, nut and Blind plug		N05 801 416
Sensor Through-hull fitting, 9m Cable		N05 801 414

(Technical Data: Page 9)

1.1 VDO LOGIC Navigation

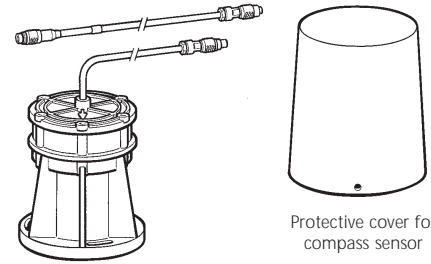
VDO LOGIC Compass

VDO LOGIC Compass complete system,
Including: Indicator, Sensor, 10m Cable 12 V N01 500 204

Components

Indicator	12 V	N01 510 602
Repeater	12 V	N01 510 702
Sensor, exc. Cable		N01 540 202
Connecting cable, 10m		N05 800 950
Protective cover for Sensor		240 113 003 001 K

(Technical Data: Page 9)



Compass sensor, connecting cable

VDO LOGIC Log

VDO LOGIC Log complete system,
Including: Indicator, Sensor, 10m Cable

12 (kn, km/h, mph)	12 V	N01 100 612
20 (kn, km/h, mph)	12 V	N01 100 614
30 (kn, km/h, mph)	12 V	N01 100 616
50 (kn, km/h, mph)	12 V	N01 100 618
80 (km/h)	12 V	N01 100 620

Components

Indicator 12 (kn, km/h, mph)	12 V	N01 113 202
Indicator 20 (kn, km/h, mph)	12 V	N01 113 204
Indicator 30 (kn, km/h, mph)	12 V	N01 113 206
Indicator 50 (kn, km/h, mph)	12 V	N01 113 208
Indicator 80 (km/h)	12 V	N01 113 210
Repeater 12 (kn, km/h, mph)	12 V	N01 113 302
Repeater 20 (kn, km/h, mph)	12 V	N01 113 304
Repeater 30 (kn, km/h, mph)	12 V	N01 113 306
Repeater 50 (kn, km/h, mph)	12 V	N01 113 308
Repeater 80 (km/h)	12 V	N01 113 310

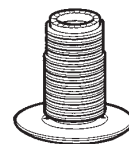


Log Sensor with Through-hull fitting

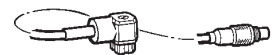
Spare parts

Through-hull fitting 12-80 kn	270 023 005 010
Paddlewheel with Axle 12 kn, 20 kn	270 023 005 003
Paddlewheel with Axle 30 kn	270 023 005 004
Paddlewheel with Axle 50 kn, 80 km/h	270 023 005 005
Sensor with Through-hull fitting 12-50 kn	N01 140 302
Connecting cable Sensor/Indicator, 9 m	270 023 005 006
Extension für Connecting cable, 5 m	270 023 005 007

(Technical Data: Page 9)



Through-hull fitting



Connecting cable



Paddlewheel



Paddlewheel

1.1 VDO LOGIC Navigation



VDO LOGIC Log/Depth

VDO LOGIC Log/Depth complete system for Through-hull fitting

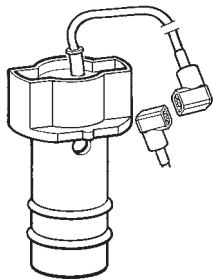
Including: Indicator, Sensor, 10m Cable

12 (kn, km/h, mph)	12 V	N01 600 222
20 (kn, km/h, mph)	12 V	N01 600 224
30 (kn, km/h, mph)	12 V	N01 600 226
50 (kn, km/h, mph)	12 V	N01 600 228
80 (km/h)	12 V	N01 600 230

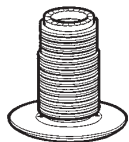
VDO LOGIC Log/Depth complete system for in-hull installation

Including: Indicator, Sensor, 10m Cable

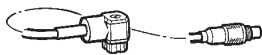
12 (kn, km/h, mph)	12 V	N01 600 232
20 (kn, km/h, mph)	12 V	N01 600 234
30 (kn, km/h, mph)	12 V	N01 600 236
50 (kn, km/h, mph)	12 V	N01 600 238
80 (km/h)	12 V	N01 600 240



Sensor Through-hull fitting/
in-hull installation



Through-hull fitting
Logsensor



Connecting cable

Components

Indicator 12 (kn, km/h, mph)	12 V	N01 611 002
Indicator 20 (kn, km/h, mph)	12V	N01 611 004
Indicator 30 (kn, km/h, mph)	12 V	N01 611 006
Indicator 50 (kn, km/h, mph)	12 V	N01 611 008
Indicator 80 (km/h)	12 V	N01 611 010
Repeater 12 (kn, km/h, mph)	12 V	N01 611 102
Repeater 20 (kn, km/h, mph)	12 V	N01 611 104
Repeater 30 (kn, km/h, mph)	12 V	N01 611 106
Repeater 50 (kn, km/h, mph)	12 V	N01 611 108
Repeater 80 (km/h)	12 V	N01 611 110

Spare parts

see LOGIC Log and LOGIC Depth

(Technical Data: Page 9)

1.1 VDO LOGIC Navigation

VDO LOGIC Wind

VDO LOGIC Wind complete system,
Including: Indicator, mast head unit,
Junction Box, 30m Cable

12 V N01 300 604

Components

Indicator 12 V N01 330 502

Repeater 12 V N01 330 602

30m Connecting cable N05 800 236

Mast head unit N01 340 404

Male and female connectors N05 800 010

Spare parts

Windvane from man. date 8/93 N05 800 356

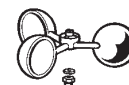
Cup rotor with hole drilled through hub N05 801 448

Junction box N03 320 112

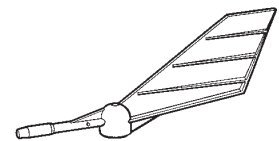
(Technical Data: Page 9)



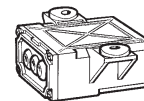
Mast head unit



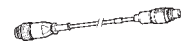
Cuprotor



Windvane



Junction Box



Connecting cable



Male and female connectors

VDO LOGIC Close Hauled

VDO LOGIC Close Hauled and Running Indicator

(only in combination with LOGIC Wind)

Indicator 12 V N01 320 502

(Technical Data: Page 9)



1.1 VDO LOGIC Navigation



VDO Pilot System

VDO LOGIC Pilot complete system,

Including: Indicator, VDO Processor Module 619,

Compass Sensor, Connecting cable 12 V X10 719 002 029

(Technical Data: Page 10)

VDO Pilot complete system, with Handheld Pilot Control

Including: Handheld Pilot Control, VDO Processor Module 609,

Compass Sensor, Connecting cable 12 V X10 719 002 033

(Technical Data: Page 10)

Hydraulic Pumps

for cylinders between 80-288 cm³

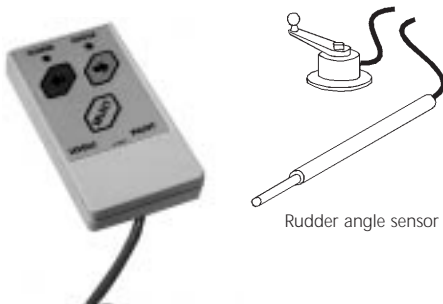
1200 cm³/min 12 V X10 719 002 026

for cylinders between 80-288 cm³

1200 cm³/min 24 V X10 719 002 027

for cylinders between 220-450 cm³

2000 cm³/min 24 V N01 660 410



Remote control

Rudder angle sensor

Linear drive with integrated feedback unit

254mm stroke, 4865 N 12 V X10 719 002 028

Accessories

Remote control N01 660 202

Repeater, LOGIC 12 V N01 611 202

Handheld Pilot Control unit X10 719 002 032

Acoustic alert unit N03 230 110



VDO Processor Module 609/619

Spare parts

VDO Processor Module 619 X10 719 002 030

VDO Processor Module 609 X10 719 002 031

Rudder angle sensor N03 220 401

Compass sensor N01 540 214

Connecting cable

Handheld Pilot Control / Processor Module 619, 609 X11 719 000 014



Hydraulic pump



Handheld Pilot Control unit



Linear drive with integrated feedback unit

1.1 VDO LOGIC Navigation

VDO LOGIC Multifunction

VDO LOGIC Multifunction	12 V	N01 611 302
-------------------------	------	-------------

(Technical Data: Page 9)



VDO LOGIC GPS

VDO LOGIC GPS complete system,

Including: Indicator, Processor module, Antenna (passiv),
10m Antenna Cable,

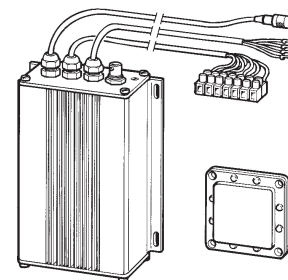
MOB-Key (man-over-board)	12-24 V	N01 800 118
--------------------------	---------	-------------



Components

Repeater	12-24 V	N01 810 116
Extensioncable to Indicator (5m)		N03 320 140
Antenna (passiv)		N01 840 104

(Technical Data: Page 10)



Processormodule and Antenna



Connecting cable

VDO LOGIC Combi

VDO LOGIC Combi

Indicator, 0-2500 min ⁻¹	12-24 V	N02 210 006
Indicator, 0-4000 min ⁻¹	12-24 V	N02 210 002
Indicator, 0-7000 min ⁻¹	12-24 V	N02 210 004
Repeater, 0-2500 min ⁻¹	12-24 V	N02 210 106
Repeater, 0-4000 min ⁻¹	12-24 V	N02 210 102
Repeater, 0-7000 min ⁻¹	12-24 V	N02 210 104



Accessories

Software to display LOGIC Combi engine data on a PC

German-language	X10 719 002 003
English-language	X10 719 002 004

(Technical Data: Page 9)

1.1 VDO LOGIC Navigation

Technical Data

VDO MAP 7 GPS	Dimensions: MAP 7 GPS (Lenght x Depth x Height) 208,5mm x 80mm x 152mm
VDO MAP 8 E	MAP 8 E (Lenght x Depth x Height) 220mm x 43mm x 153mm
VDO MAP 10 E	MAP 10 E / 10 E Color (Lenght x Depth x Height) 332,5mm x 45mm x 196mm
VDO MAP 10 E Color	Voltage: 12 or 24 V (10-35 V)
	Power consumption: MAP 7/ 8 E / MAP 10 E 7 Watt (incl. illumination & GPS-Sensor)
	MAP 10 E Color 9 Watt (incl. illumination & GPS-Sensor)
	Visible diagonal: LCD 7" 144 mm LCD 8" 180 mm LCD 10 " 241 mm LCD 10 " color 215 mm
	Display resolution: MAP 8 + 10 / 640 x 480 Pixel, MAP 7 / 320 x 240 Pixel,
	MAP 10 E Color: 16 colours
	MAP 7 / 8 E / 10 E mono 4 grey shades
	Map format: C-Map, high-resolution, CF 95
	Storage medium: non-volatile, battery-buffered memory
	Keyboard: backlit silicon keyboard with track-pad
	Operating temperatures: -10°C to +50°C
	Protection: Splashproof, IP 54, CE-EN 60945
	Weight: 560 g (Map 7 / 8), 1.2 kg (Map 10)
	Serial input/output: NMEA 0182/0183
	MAP 8 + 10 RS485 for GBI / EDB
	NMEA autopilot output: NMEA 0180, 0183/CDX, 0183

Technical Data

VDO GPS Sensor	12 Channel Parallel
	Receiver: DGPS compatible (RTCM SC-104)
	Operating temperature: -30°C to +75°C
	Protection: IP 65, waterproof, CE-EN 60945

1.1 VDO LOGIC Navigation

Voltage:	12 V (10.8 ... 15 V)
Power consumption:	c. 80 mA per non-illuminated device, c. 120 mA per illuminated device
Display unit dimensions:	125 x 125 x 23 mm. tube depth 40mm Tube ø 85mm
Installation:	Surface-mount by threaded studs and nuts; flush-fit option in 3 mm aluminium panels
Data representation:	Analogue main function; extra functions in LCD field (dot matrix), letter height 9,5 mm
Night time illumination:	red dial; green backlit LC-Display; front-lit analogue indicator; keys backlit red/green
Protection:	water-tight casing, DIN 40050 IP 65 from the front Ozone, UV and salt water-proof CE: EN 50081-1, EN 50082-1 reverse polarity safeguard for power supply and illumination
Alarms:	Optical. (internal acoustic Depth and Log/Depth alarm)
Operating temperature:	-10°C to +60°C
Repeater units:	Up to two repeater units per main instrument
Data transfer:	To other LOGIC devices: Via VDO LOGIC bus; from and to other devices: via NMEA 0183 data bus

Voltage:	12 V (10-15 V)
Power consumption:	ca. 60 mA (+ 60 mA with illumination)
Operating temperature:	-10°C bis +60°C
Protection:	DIN 40050-IP 65 (front)
EMC:	CE: EN 50081-1, EN 50082-1
Dimensions: (H x W x D)	125 x 187,5 x 23 mm
Installation depth:	18 mm
Data transfer:	To other LOGIC devices: Via VDO LOGIC bus; from navigation receivers: via NMEA 0183 data bus

Technical Data

VDO LOGIC Close Hauled

VDO LOGIC Compass

VDO LOGIC Depth

VDO LOGIC Log

VDO LOGIC Log/Depth

VDO LOGIC Wind



Technical Data

VDO LOGIC Multifunction

1.1 VDO LOGIC Navigation

Technical Data

VDO LOGIC Pilot System	Voltage:	Indicator 12-24 V (10,8-32 V) Processor Module: 12-24 V (10,8-32 V)
	Dimensions	125 x 125 x 23mm, tube depth 40mm
	Indicator:	Tube Ø 85mm
	Data inputs:	2 NMEA 0183-inputs.
	Fluxgate Compass:	VDO Compass Sensor
	Wind gauge system:	Suitable equipment products incl. VDO LOGIC and Ocean Line (with interface), wind systems as well as external company products with NMEA 0183 output
	Navigation computer:	Supports all navigation systems as GPS, Loran with NMEA 0183 interface.
	Protection:	Water-tight casing to IP 65 (front), DIN 40050; remote control IP 65. Processor module IP 32. CE: EN 50081-1, EN 50082-1
	Operating temperature:	-10°C to +60°C
	Repeater units:	one repeater unit per main instrument
Handheld Pilot Control Unit	Dimensions:	220 X 75 mm
	Voltage:	12 V / 24 V
	Operating temperature:	0° C to 55° C
VDO LOGIC GPS	Voltage:	12 or 24 V (8 - 33 V)
	Power consumption:	250 mA at 12 Volt, 120 mA at 24 Volt illumination 50 mA extra.
	Number of channels:	5 parallel
	Startup program:	automatic time to first fix: typ. 30 seconds
	Interface:	NMEA 0183/0180 input and output
	Operating temperature:	-10°C to +60°C
	Cable lengths:	antenna-to-processor module 10m (RG 58) Processor module-to-Indicator 1.5m
	Display unit:	Large LC-Display with backlighting option (105 x 80mm) with 11 large illuminated keys; displayed numbers/texts are 17/10 mm high to provide good readability at large distances
	Display unit dimensions:	187.5 x 125 x 23mm
	Protection:	Display unit DIN 40 050-IP 65 (front) Processor module DIN 40 050-IP 54 Antenna, waterproof IP 65 CE: EN 50081-1, EN 50082-1
	Data transfer:	to other devices: via NMEA 0183 data bus

1.2 VDO Ocean Line Black Navigation

VDO Ocean Line Black Sumlog®

VDO Ocean Line Black Sumlog® complete system,
Including: Indicator, Sensor, 10m Cable, Illumination 12 V

12 (kn, km/h, mph)	12-24 V	N01 100 858
30 (kn, km/h, mph)	12-24 V	N01 100 860
50 (kn, km/h, mph)	12-24 V	N01 100 862
50 (kn, mph); Double scale	12-24 V	N01 100 864

Components

Indicator 12 (kn, km/h, mph)	12-24 V	N01 113 022
Indicator 30 (kn, km/h, mph)	12-24 V	N01 113 026
Indicator 50 (kn, km/h, mph)	12-24 V	N01 113 030
Indicator 50 (kn, mph); Double scale	12-24 V	N01 113 034

(Technical Data: Page 13)



Sumlog Sensor with Through-hull fitting and Nut

VDO Ocean Line Black Echo sounder

VDO Ocean Line Black Echo sounder
complete system,

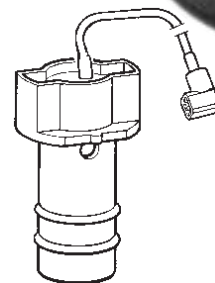
Including: Indicator, Sensor, 10m Cable

for Inside installation	12-24 V	N01 400 326
for Through-hull fitting	12-24 V	N01 400 328

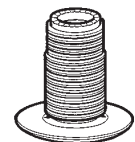
Components

Indicator 0-120m	12-24 V	N01 410 806
Sensor (inside installation/through-hull fitting)		N01 430 402
Through-hull fitting, Blind plug, Nut		N05 801 416

(Technical Data: Page 13)



Sensor for Echo sounder
in hull installation/
Through-hull fitting



Through-hull fitting
Logsensor

VDO Ocean Line Black Compass

VDO Ocean Line Black Compass complete system,
Including: Indicator, Sensor, 10m Cable

	12-24 V	N01 500 116
--	---------	-------------

Components

Indicator	12-24 V	N01 512 206
Sensor	12-24 V	N01 530 302

(Technical Data: Page 13)



Ocean Line Compass Sensor

1.2 VDO Ocean Line Black Navigation



VDO Ocean Line Black Pitot-Speedometer

VDO Ocean Line Black Pitot-speedometer complete system,

Including: Indicator, Sensor, 6 m Tube, Illumination 12 V

32 kn, 60 km/h	N01 100 882
43 kn, 80 km/h	N01 100 884
65 kn, 120 km/h	N01 100 886
65 kn, 75 mph	N01 100 888

Components

Indicator 32 kn, 60 km/h	N01 114 122
Indicator 43 kn, 80 km/h	N01 114 126
Indicator 65 kn, 120 km/h	N01 114 130
Indicator 65 kn, 75 mph	N01 114 134
Sensor up to 44 Knots, 50 mph	240 001 002 001 K

(Technical Data: Page 13)



VDO Ocean Line Black Wind measurement system

VDO Ocean Line Black Wind measurement complete system,

Including: Indicator, Sensor, 30 m Cable

System	12-24 V	N01 300 208
--------	---------	-------------

Components

Wind direction indicator	12-24 V	N01 320 712
Wind speed indicator (<i>only in combination with Wind direction indicator</i>)	12-24 V	N01 310 612
Mast head unit		N01 340 602
Cable		N05 801 542

(Technical Data: Page 13)



Accessories

Optional fastening set for Sumlog, Echo sounder, Compass, Wind, Pitot-speedometer, Rudder-Angle ø85, Speedometer ø85.

(incl. Brackets, stay bolts etc.) N05 800 792

1.2 VDO Ocean Line Black Navigation

Dial:	Translucent, black
Pointer:	Translucent, White
Casing:	Plastic flame-retarding
Bezel:	Plastic, black
Cover lens:	Double lens system
Connectors:	Flat plug 6.3 x 0.8 mm Sensor: FCC Connector (not Pitot-speedometer)
Attachment:	spin lock nut, Option: Brackets fastening set
Illumination:	2x Lightbulb 1.2 W, red, LCD permanent illuminated (green)
Voltage:	12 or 24 V(10.8-30 V) (not Pitot-speedometer)
Voltage Indicator:	max. 90 mA (without Illumination) (not Pitot-speedometer)
Repeater:	max. 2 Repeaters connectable (10 m Cable) (not Pitot-speedometer)
Nominal position:	0-90°
Operating temperature:	-10°C to +60°C
Storage temperature:	-20°C to +70°C
EMC:	used standard EN 50082-1, EN 50081-1, according to CE
Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (for 8 hours)
Shock:	15g, 1.5ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Installation diameter	Ø 85.5 mm

Technical Data

VDO Ocean Line Black Compass

VDO Ocean Line Black
Echo sounder

VDO Ocean Line Black
Pitot-speedometer

VDO Ocean Line Black Sumlog®

VDO Ocean Line Black Wind

1.3 VDO Ocean Line White Navigation



! *Note:*
This picture represents a sample instrument of the complete Ocean Line White Serie.

VDO Ocean Line White Sumlog®

VDO Ocean Line White Sumlog® complete system,
Including: Indicator, Sensor, 10m Cable, Illumination 12 V

12 (kn, km/h, mph)	12-24 V	N01 100 828
30 (kn, km/h, mph)	12-24 V	N01 100 830
50 (kn, km/h, mph)	12-24 V	N01 100 832
50 (kn, mph); Double scale	12-24 V	N01 100 834

Components

Indicator 12 (kn, km/h, mph)	12-24 V	N01 113 002
Indicator 30 (kn, km/h, mph)	12-24 V	N01 113 006
Indicator 50 (kn, km/h, mph)	12-24 V	N01 113 010
Indicator 50 (kn, mph); Double scale	12-24 V	N01 113 014

(Technical Data: Page 16)

VDO Ocean Line White Echo sounder

VDO Ocean Line White Echo sounder complete system,
Including: Indicator, Sensor, 10m Cable

for Inside installation	12-24 V	N01 400 318
for Through-hull fitting	12-24 V	N01 400 320

Components

Indicator 0-120m	12-24 V	N01 410 802
Sensor (inside installation/through-hull fitting)		N01 430 402
Through-hull fitting, Nut, Blind plug		N05 801 416

(Technical Data: Page 16)

VDO Ocean Line White Compass

VDO Ocean Line White Compass complete system,
Including: Indicator, Sensor, 10m Cable

	12-24 V	N01 500 112
--	---------	-------------

Components

Indicator	12-24 V	N01 512 202
Sensor	12-24 V	N01 530 302

(Technical Data: Page 16)

1.3 VDO Ocean Line White Navigation

VDO Ocean Line White Pitot-Speedometer

VDO Ocean Line White Pitot-speedometer complete system,

Including: Indicator, Sensor, 6 m Tube, 12 V Illumination

32 kn, 60 km/h	N01 100 866
43 kn, 80 km/h	N01 100 868
65 kn, 120 km/h	N01 100 870
65 kn, 75 mph	N01 100 872

Components

Indicator 32 kn, 60 km/h	N01 114 102
Indicator 43 kn, 80 km/h	N01 114 106
Indicator 65 kn, 120 km/h	N01 114 110
Indicator 65 kn, 75 mph	N01 114 114
Sensor up to 44 Knots, 50 mph	270 001 002 001 K

(Technical Data: Page 16)

VDO Ocean Line White Wind measurement system

VDO Ocean Line White Wind measurement complete system,

Including: Indicator, Sensor, 30 m Cable

System	12-24 V	N01 300 206
--------	---------	-------------

Components

Wind direction indicator	12-24 V	N01 320 702
Wind speed indicator (<i>only in combination with Wind direction indicator</i>)	12-24 V	N01 310 602
Mast head unit		N01 340 602
Cable		N05 801 542

(Technical Data: Page 16)

Accessories

Optional fastening set for Sumlog, Echo sounder, Compass, Wind, Pitot-speedometer, Rudder-Angle ø85, Speedometer ø85.

(incl. Brackets, stay bolts etc.)	N05 800 792
-----------------------------------	-------------

1.3 VDO Ocean Line White Navigation

Technical Data

	Dial:	White, Translucent
	Pointer:	Red, Translucent
VDO Ocean Line White Compass	Casing:	Plastic flame-retarding
VDO Ocean Line White Echo sounder	Bezel:	Plastic, White
	Cover lens:	Double lens system
VDO Ocean Line White Pitot-speedometer	Connectors:	Flat plug 6.3 x 0.8 mm Sensor: FCC Connector (not Pitot-speedometer)
VDO Ocean Line White Sumlog®	Attachment:	spin lock nut, Option: Brackets fastening set
VDO Ocean Line White Wind	Illumination:	2x Lightbulb 1,2 W, White, LCD permanent illuminated (green)
	Voltage:	12 or 24 V(10.8-30 V) (not Pitot-speedometer)
	Voltage Indicator:	max. 90 mA (without Illumination) (not Pitot-speedometer)
	Repeater:	max. 2 Repeaters connectable (10 m Cable)
	Nominal position:	0-90°
	Operating temperature:	-10°C to +60°C
	Storage temperature:	-20°C to +70°C
	EMC:	used standard EN 50082-1, EN 50081-1, according to CE
	Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (for 8 hours)
	Shock:	15g, 1.5ms Semi-sinusoidal
	Protection:	front IP 65, after installation in acc. with IEC 529
	Installation diameter	Ø 85.5 mm

1.4 VDO Ocean Line Chrome Navigation

VDO Ocean Line Chrome Sumlog®

VDO Ocean Line Chrome Sumlog® complete system,
Including: Indicator, Sensor, 10m Cable, 12 V Illumination

12 (kn, km/h, mph)	12-24 V	N01 100 842
30 (kn, km/h, mph)	12-24 V	N01 100 844
50 (kn, km/h, mph)	12-24 V	N01 100 846
50 (kn, mph); Double scale	12-24 V	N01 100 848

Components

Indicator 12 (kn, km/h, mph)	12-24 V	N01 113 102
Indicator 30 (kn, km/h, mph)	12-24 V	N01 113 106
Indicator 50 (kn, km/h, mph)	12-24 V	N01 113 110
Indicator 50 (kn, mph); Double scale	12-24 V	N01 113 114

(Technical Data: Page 19)



! *Note:*
This picture represents a sample instrument of the complete Ocean Line Chrome Serie.

VDO Ocean Line Chrome Echo sounder

VDO Ocean Line Chrome Echo sounder complete system,
Including: Indicator, Sensor, 10m Cable

for Inside installation	12-24 V	N01 400 322
for Through-hull fitting	12-24 V	N01 400 324

Components

Indicator 0-120m	12-24 V	N01 410 902
Sensor (inside installation/through-hull fitting)		N01 430 402
Through-hull fitting, Nut, Blind plug		N05 801 416

(Technical Data: Page 19)



VDO Ocean Line Chrome Compass

VDO Ocean Line Chrome Compass complete system,
Including: Indicator, Sensor, 10m Cable

	12-24 V	N01 500 114
--	---------	-------------

Components

Indicator	12-24 V	N01 512 402
Sensor	12-24 V	N01 530 302

(Technical Data: Page 19)

1.4 VDO Ocean Line Chrome Navigation

VDO Ocean Line Chrome Pitot-Speedometer

VDO Ocean Line Chrome Pitot-speedometer complete system,
Including: Indicator, Sensor, 6 m Tube, 12 V Illumination

32 kn, 60 km/h	N01 100 874
43 kn, 80 km/h	N01 100 876
65 kn, 120 km/h	N01 100 878
65 kn, 75 mph	N01 100 880

Components

Indicator 32 kn, 60 km/h	N01 114 202
Indicator 43 kn, 80 km/h	N01 114 206
Indicator 65 kn, 120 km/h	N01 114 210
Indicator 65 kn, 75 mph	N01 114 214
Sensor up to 44 Knts, 50 mph	270 001 002 001 K

(Technical Data: Page 19)

VDO Ocean Line Chrome Wind measurement system

VDO Ocean Line Chrome Wind measurement complete system,
Including: Indicator, Sensor, 30 m Cable

System	12-24 V	N01 300 210
--------	---------	-------------

Components

Wind direction indicator	12-24 V	N01 320 802
Wind speed indicator <i>(only in combination with Wind direction indicator)</i>	12-24 V	N01 310 702
Mast head unit		N01 340 602
Cable		N05 801 542

(Technical Data: Page 19)

Accessories

Optional fastening set for Sumlog, Echo sounder, Compass, Wind, Pitot-speedometer, Rudder-Angle ø85, Speedometer ø85.

<i>(incl. Brackets, stay bolts etc.)</i>	N05 800 792
--	-------------

1.4 VDO Ocean Line Chrome Navigation

Dial:	Black, Translucent
Pointer:	Red, floodlit
Casing:	Plastic flame-retarding
Bezel:	Brass , chromeium-plated
Cover lens:	Single cover lens
Connectors:	Flat plug 6.3 x 0.8 mm Sensor: FCC Connector (not Pitot-speedometer)
Attachment:	spin lock nut, Option: Brackets fastening set
Illumination:	2x Lightbulb 1.2 W, red, LCD permanent illuminated (green) (not Pitot-speedometer)
Voltage:	12 or 24 V(10.8-30 V)
Voltage Indicator:	max. 90 mA (without Illumination)
Repeater:	max. 2 Repeaters connectable (10 m Cable) (not Pitot-speedometer)
Nominal position:	0-90°
Operating temperature:	-10°C to +60°C
Storage temperature:	-20°C to +70°C
EMC:	used standard EN 50082-1, EN 50081-1, according to CE
Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (for 8 hours)
Shock:	15g, 1.5ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Installation diameter	Ø 85.5 mm

Technical Data

VDO Ocean Line Chrome
Compass

VDO Ocean Line Chrome
Echo sounder

VDO Ocean Line Chrome
Pitot-speedometer

VDO Ocean Line Chrome
Sumlog®

VDO Ocean Line Chrome
Wind

2.1 VDO Ocean Line Black Engine monitoring



VDO Ocean Line Black Tacho Ø 85mm

VDO Ocean Line Black Tacho Ø 85mm

0-1800 rpm	●	12 V	N02 012 422
0-1800 rpm	●	24 V	N02 012 722
0-3000 rpm	●	12 V	N02 012 426
0-3000 rpm	●	24 V	N02 012 726
0-4000 rpm	●	12 V	N02 012 430
0-4000 rpm	●	24 V	N02 012 730
0-6000 rpm	■	12 V	N02 012 434
0-6000 rpm	■	24 V	N02 012 734
0-1800 rpm, EHM	●/▲	12-24 V	N02 012 142
0-3000 rpm, EHM	●/▲	12-24 V	N02 012 146
0-4000 rpm, EHM	●/▲	12-24 V	N02 012 150
0-5000 rpm, EHM	●/▲	12-24 V	N02 012 154
0-5000 rpm, EHM	■	12-24 V	N02 012 158
0-6000 rpm, EHM	■	12-24 V	N02 012 162

*EHM = electronic engine hourmeter,
Tacho with 12-24 V with 12 V Illumination
(Technical Data: Page 26)*

● Terminal W, ■ Terminal 1, ▲ Inductive (specification upon request)

VDO Ocean Line Black Rudder-Angle Ø 85mm



Rudder-Angle Sensor

VDO Ocean Line Black Rudder-Angle Ø 85mm complete system Including: Indicator, Sensor, Illumination 12 V

	12-24 V	N03 200 620
--	---------	-------------

Components

Indicator	12-24 V	N03 211 206
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 26)

2.1 VDO Ocean Line Black Engine monitoring

VDO Ocean Line Black Tacho Ø 52mm

VDO Ocean Line Black Tacho Ø 52mm

0-1800 rpm	●	12 V	N02 011 112
0-3000 rpm	●/■	12 V	N02 011 114
0-4000 rpm	●/■	12 V	N02 011 116
0-6000 rpm	●/■	12 V	N02 011 118

(Technical Data: Page 27)

- Terminal W, ■ Terminal 1



VDO Ocean Line Black Rudder-Angle Ø 52mm

VDO Ocean Line Black Rudder-Angle Ø 52mm complete system Including: Indicator, Sensor

	12 V	N03 200 514
	24 V	N03 200 414

Components

Indicator	12 V	N03 211 412
Indicator	24 V	N03 211 512
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 27)



Rudder-Angle Sensor

2.1 VDO Ocean Line Black Engine monitoring



Pyrometersensor



Outside temperature sensor



VDO Ocean Line Black Pyrometer

VDO Ocean Line Black Pyrometer (Exhaust-gas temperature)

Indicator 100-900°C	12 V	N02 340 712
System 100-900°C	12 V	N02 300 616
Indicator 250-1650°F	12 V	N02 340 714
System 250-1650°F	12 V	N02 300 618
Sensor		N03 320 266

(Technical Data: Page 27)

VDO Ocean Line Black Thermometers

VDO Ocean Line Black Thermometers

Indicator	120°C/250°F	12 V	N02 321 612
Indicator	120°C/250°F	24 V	N02 321 712
Indicator	150°C/300°F	12 V	N02 321 616
Indicator	150°C/300°F	24 V	N02 321 716
Indicator	120°C/250°F	4-20mA	N02 321 812
Indicator	150°C/300°F	4-20mA	N02 321 816

(Technical Data: Page 27)

(Sensor: Page 48, 49) - no for 4-20mA indicators

VDO Ocean Line Black Outside temperature

VDO Ocean Line Black Outside temperature

Indicator -25°C to +60°C	12 V	N02 321 512
Sensor		323 809 010 005 C

(Technical Data: Page 27)

VDO Ocean Line Black Quartz clock

VDO Ocean Line Black Quartz clock

electr. adjustable	12-24 V	N03 270 612
--------------------	---------	-------------

(Technical Data: Page 27)

2.1 VDO Ocean Line Black Engine monitoring

VDO Ocean Line Black Level gauges

VDO Ocean Line Black Level gauges fuel

Indicator lever 0-4/4	12 V	N02 222 112
Indicator lever 0-4/4	24 V	N02 222 312
Indicator tubular sensor 0-4/4	12 V	N02 222 512
Indicator tubular sensor 0-4/4	24 V	N02 222 712

(Technical Data: Page 27)

(Sensor: Page 50, 51)



VDO Ocean Line Black Fresh Water Level Gauges

Indicator, capacitive 0-4/4	4-20 mA	N02 230 612
System (80-600 mm), capacitive	4-20 mA	N02 200 320
System (600-1200 mm), capacitive	4-20 mA	N02 200 322
System (1200-1500 mm), capacitive	4-20 mA	N02 200 324
Indicator (Reedcontact Sensor)	12 V	N02 230 712
Indicator (Reedcontact Sensor)	24 V	N02 230 812

(Technical Data: Page 27)

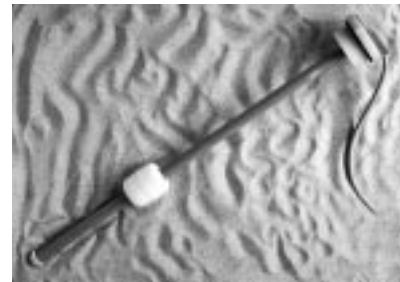
(Sensor: Page 50 51)

Note Sensor capacitiv:

- Sensor can be cut individually
- Sensor not for alluminic tank
- Sensor recommended for freshwater only



Fresh Water Sensor Capacitive



Fresh Water Sensor Reedcontact Sensor

2.1 VDO Ocean Line Black Engine monitoring



Black Water Sensor

VDO Ocean Line Black Black water System

Usage in different tank materials like, steel, aluminium, plastic with galvanic separation and for all conductive liquids like water, greywater, wastewater with adjustable make point Including: Indicator, Sensor (600 mm), Gauge

System	12-24 V	N02 200 524
--------	---------	-------------

Components

Indicator , 0-4/4	12-24 V	N02 230 626
Sensor, with galvanic separation, adjustable make point.		
Sensor	80-600 mm	N02 240 902
Sensor	600-1200 mm	N02 240 904
Sensor	1200-1500 mm	N02 240 906

(Technical Data: Page 27)

VDO Ocean Line Black Pressure gauges

VDO Ocean Line Black Pressure gauges

Indicator	2 bar/28 psi	12 V	N02 124 122
Indicator	2 bar/28 psi	24 V	N02 124 522
Indicator	5 bar/72 psi	12 V	N02 124 126
Indicator	5 bar/72 psi	24 V	N02 124 526
Indicator	10 bar/145 psi	12 V	N02 124 130
Indicator	10 bar/145 psi	24 V	N02 124 530
Indicator	25 bar/360 psi	12 V	N02 124 134
Indicator	25 bar/360 psi	24 V	N02 124 534
Indicator	30 bar/435 psi	12 V	N02 124 138
Indicator	30 bar/435 psi	24 V	N02 124 538
Indicator	2 bar/28 psi	4-20 mA	N02 124 732
Indicator	2.5 bar/35 psi	4-20 mA	N02 124 736
Indicator	5 bar/72 psi	4-20 mA	N02 124 740
Indicator	10 bar/145 psi	4-20 mA	N02 124 744
Indicator	25 bar/360 psi	4-20 mA	N02 124 748
Indicator	30 bar/435 psi	4-20 mA	N02 124 752

(Technical Data: Page 27)

(Sensor: Page 62, 63) - not for 4-20mA indicators

Note: - The 30 bar gauge has to be used with a VDO 25 bar sensor.



VDO Ocean Line Black Acoustic alert

VDO Ocean Line Acoustic alert	12-24 V	N03 230 702
-------------------------------	---------	-------------

2.1 VDO Ocean Line Black Engine monitoring

VDO Ocean Line Black Voltmeter

VDO Ocean Line Black Voltmeter

Indicator	Range: 8-16 V	12 V	N02 410 812
Indicator	Range: 18-32 V	24 V	N02 410 912

(Technical Data: Page 27)

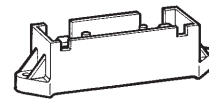


VDO Ocean Line Black Ammeter

VDO Ocean Line Black Ammeter

System with Shunt	80-0-80 A	12 V	N02 400 310
Indicator	80-0-80 A	12 V	N02 420 712
Shunt			N03 330 116

(Technical Data: Page 27)



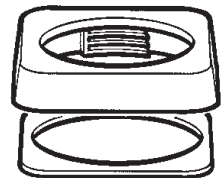
Shunt



Accessories

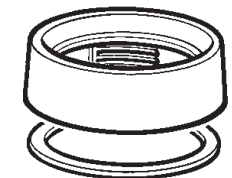
Front panel adapter to VDO instrument ranges (52mm Ø)

VDO Standard Bezel, rectangular (62.5x62.5mm)		N05 800 222
VDO Standard Bezel, round (62mm Ø)		N05 801 110
VDO LOGIC Bezel, rectangular (62.5x62.5mm)		N05 800 496
Makepoint switch Ocean Line pressure, Temp., Tank	12/24 V	X10 719 002 037



Standard Bezel, rectangular

Warning light kit	12 V	N05 800 762
Warning light kit	24 V	N05 800 764
Optional fastening set including Brackets, stay bolts etc. for pressure, Temp, Volt, Tank, Rudder-Angle Ø52		N05 800 766
Optional fastening set including Brackets, stay bolts etc. for Pyrometer, Ammeter, Outside temperature, Tachometer Ø52		N05 800 782
Optional fastening set including Brackets, stay bolts etc. for Sumlog, Echo sounder, Compass, Wind Rudder-Angle Ø85, Tachometer Ø85		N05 800 792



Standard Bezel, round

(Further Accessories for Ocean Line Black Serie, see Page 53)

2.1 VDO Ocean Line Black Engine monitoring

Technical Data

VDO Ocean Line Intern. Black
Rudder-Angle Ø 85mm

VDO Ocean Line Intern. Black
Tachometer Ø 85mm

Casing:	Plastic flame-retarding
Bezel:	Plastic, black
Cover lens:	Double lens system
Connectors:	Flat plug 6.3 x 0.8mm
Attachment:	Spin lock nut, Locking height 0-16.5mm Option: bracket mounting kit, (see accessories)
Illumination:	2x Lightbulb 1.2 W, red, LCD permanent illuminated (green)
Pointer:	White, Translucent
Dial:	black, Translucent
Voltage:	12 V or 24 V (EHM 12-24 V)
Power consumption Indicator:	max. 90 mA (without Illumination)
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 500081-1, according to CE
Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Installation diameter:	85.5mm Size of bore
Germanischer Lloyd:	Certificate No.: 12-276-98 H



2.1 VDO Ocean Line Black Engine monitoring

Casing:	Plastic flame-retarding
Bezel:	Plastic, black
Cover lens:	Double lens system
Connectors:	Flat plug 6.3 x 0.8 mm
Attachment:	spin lock nut, Locking height 0-15 mm Option: Brackets Attachment kit, (see Accessories) Locking height 0-12mm
Illumination:	red 1.2 W, Socket W5/2
Pointer:	White, Translucent
Dial:	black, Translucent
Driven by:	VDO Resistortype Sensor
Voltage:	12 V or 24 V, insulated return
Power consumption:	max. 130 mA
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 50081-1 according to EMC Direction 89/336/EWG
Schwinungsfestigkeit:	max. 1g eff. 25Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Option:	Warning lamp (see Accessories)
Installation diameter:	52,5 mm Size of bore
Germanischer Lloyd:	Certificate No.: 12-276-98 H

Technical Data

VDO Ocean Line Intern. Black
Engine monitoring Ø 52mm

Ammeter
Outside temperature
Engine hour counter
Tachometer
Pressure gauges
Pyrometer
Quartz clock
Rudder angle gauges
Black watersystem
Thermometers
Fuel Level Gauges
Fresh water Level gauges
Voltmeter



2.2 VDO Ocean Line White Engine monitoring



! *Note:*
This picture represents a sample instrument of the complete Ocean Line White Serie.

VDO Ocean Line White Tachometer Ø 85mm

VDO Ocean Line White Tachometer Ø 85mm

0-1800 rpm	●	12 V	N02 012 402
0-1800 rpm	●	24 V	N02 012 702
0-3000 rpm	●	12 V	N02 012 406
0-3000 rpm	●	24 V	N02 012 706
0-4000 rpm	●	12 V	N02 012 410
0-4000 rpm	●	24 V	N02 012 710
0-6000 rpm	■	12 V	N02 012 414
0-6000 rpm	■	24 V	N02 012 714
0-1800 rpm, EHM	●/▲	12-24 V	N02 012 102
0-3000 rpm, EHM	●/▲	12-24 V	N02 012 106
0-4000 rpm, EHM	●/▲	12-24 V	N02 012 110
0-5000 rpm, EHM	●/▲	12-24 V	N02 012 114
0-5000 rpm, EHM	■	12-24 V	N02 012 118
0-6000 rpm, EHM	■	12-24 V	N02 012 122

*EHM = electronic engine hourmeter,
Tachometer 12-24 V with 12 V Illumination
(Technical Data: Page 34)*

● Terminal W, ■ Terminal 1, ▲ Inductive (specification upon request)

VDO Ocean Line White Rudder-Angle Ø 85mm

VDO Ocean Line White
Rudder-Angle Ø 85mm complete system
Including: Indicator, Sensor, Illumination 12 V

	12-24 V	N03 200 616
--	---------	-------------

Components

Indicator	12-24 V	N03 211 202
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 34)

2.2 VDO Ocean Line White Engine monitoring

VDO Ocean Line White Tachometer Ø 52mm



VDO Ocean Line White Tachometer Ø 52mm

0-1800 rpm	●	12 V	N02 011 102
0-3000 rpm	●/■	12 V	N02 011 104
0-4000 rpm	●/■	12 V	N02 011 106
0-6000 rpm	●/■	12 V	N02 011 108

(Technical Data: Page 35)

- Terminal W, ■ Terminal 1

VDO Ocean Line White Rudder-Angle Ø 52mm

VDO Ocean Line White Rudder-Angle Ø 52mm complete system

Including: Indicator, Sensor

	12 V	N03 200 510
	24 V	N03 200 410

Components

Indicator	12 V	N03 211 402
Indicator	24 V	N03 211 502
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 35)

2.2 VDO Ocean Line White Engine monitoring

VDO Ocean Line White Pyrometer

VDO Ocean Line White Pyrometer (Exhaust-gas temperature)

Indicator	100-900°C	12 V	N02 340 702
System	100-900°C	12 V	N02 300 608
Indicator	250-1650°F	12 V	N02 340 704
System	250-1650°F	12 V	N02 300 610
Sensor			N03 320 266

(Technical Data: Page 35)

VDO Ocean Line White Thermometers

VDO Ocean Line White Thermometers

Indicator	120°C/250°F	12 V	N02 321 602
Indicator	120°C/250°F	24 V	N02 321 702
Indicator	150°C/300°F	12 V	N02 321 606
Indicator	150°C/300°F	24 V	N02 321 706
Indicator	120°C/250°F	4-20mA	N02 321 802
Indicator	150°C/4300°F	4-20mA	N02 321 806

(Technical Data: Page 35)

(Sensor: Page 48, 49) - not for 4-20mA Indicators

VDO Ocean Line White Outside Temperature

VDO Ocean Line White Outside Temperature

Indicator -25°C to +60°C	12 V	N02 321 502
Sensor		323 809 010 005 C

(Technical Data: Page 35)

VDO Ocean Line White Hours Counter

VDO Ocean Line White Engine hour counter

	12-24 V	N03 110 402
--	---------	-------------

(Technical Data: Page 35)

VDO Ocean Line White Quartz Clock

VDO Ocean Line White Quartz clock

electr. adjustable	12-24 V	N03 270 602
--------------------	---------	-------------

(Technical Data: Page 35)

2.2 VDO Ocean Line White Engine monitoring

VDO Ocean Line White Fuel Level gauges

VDO Ocean Line White Fuel Level gauges

Indicator lever 0-4/4	12 V	N02 222 102
Indicator lever 0-4/4	24 V	N02 222 302
Indicator tubular sensor 0-4/4	12 V	N02 222 502
Indicator tubular sensor 0-4/4	24 V	N02 222 702

(Technical Data: Page 35)

(Sensor: Page 50, 51)

VDO Ocean Line White Fresh Water Level Gauges

Indicator, capacitive 0-4/4	4-20 mA	N02 230 602
System (80-600 mm), capacitive	4-20 mA	N02 200 308
System (600-1200 mm), capacitive	4-20 mA	N02 200 310
System (1200-1500 mm), capacitive	4-20 mA	N02 200 312
Indicator (for reedcontact sensor)	12 V	N02 230 702
Indicator (for reedcontact sensor)	24 V	N02 230 802

(Technical Data: Page 35)

(Sensor: Page 50, 51)

Note Sensor capacitiv:

- Sensor can be cut individually
- Sensor not for alluminic tank
- Sensor recommended for freshwater only

2.2 VDO Ocean Line White Engine monitoring

VDO Ocean Line White Black water System

Usage in different tank materials like, steel, aluminium, plastic with galvanic separation and for all conductive liquids like water, greywater, wastewater with adjustable make point
Including: Indicator, Sensor (600 mm), Gauge

System	12-24 V	N02 200 520
--------	---------	-------------

Components

Indicator , 0-4/4	12-24 V	N02 230 622
-------------------	---------	-------------

Sensor, with galvanic separation, adjustable make point.

Sensor	80-600 mm	N02 240 902
--------	-----------	-------------

Sensor	600-1200 mm	N02 240 904
--------	-------------	-------------

Sensor	1200-1500 mm	N02 240 906
--------	--------------	-------------

(Technical Data: Page 35)

VDO Ocean Line White Pressure Gauges

VDO Ocean Line White Pressure gauges

Indicator	2 bar/28 psi	12 V	N02 124 102
-----------	--------------	------	-------------

Indicator	2 bar/28 psi	24 V	N02 124 502
-----------	--------------	------	-------------

Indicator	5 bar/72 psi	12 V	N02 124 106
-----------	--------------	------	-------------

Indicator	5 bar/72 psi	24 V	N02 124 506
-----------	--------------	------	-------------

Indicator	10 bar/145 psi	12 V	N02 124 110
-----------	----------------	------	-------------

Indicator	10 bar/145 psi	24 V	N02 124 510
-----------	----------------	------	-------------

Indicator	25 bar/360 psi	12 V	N02 124 114
-----------	----------------	------	-------------

Indicator	25 bar/360 psi	24 V	N02 124 514
-----------	----------------	------	-------------

Indicator	30 bar/435 psi	12 V	N02 124 118
-----------	----------------	------	-------------

Indicator	30 bar/435 psi	24 V	N02 124 518
-----------	----------------	------	-------------

Indicator	2 bar/28 psi	4-20 mA	N02 124 702
-----------	--------------	---------	-------------

Indicator	2.5 bar/35 psi	4-20 mA	N02 124 706
-----------	----------------	---------	-------------

Indicator	5 bar/72 psi	4-20 mA	N02 124 710
-----------	--------------	---------	-------------

Indicator	10 bar/145 psi	4-20 mA	N02 124 714
-----------	----------------	---------	-------------

Indicator	25 bar/360 psi	4-20 mA	N02 124 718
-----------	----------------	---------	-------------

Indicator	30 bar/435 psi	4-20 mA	N02 124 722
-----------	----------------	---------	-------------

(Technical Data: Page 35)

(Sensor: Page 46, 47) - not for 4-20mA Indicators

Note: - The 30 bar gauge has to be used with a VDO 25 bar sensor.

2.2 VDO Ocean Line White Engine monitoring

VDO Ocean Line White Acoustic Alert

VDO Ocean Line White Acoustic alert	12-24 V	N03 230 704
-------------------------------------	---------	-------------

(Technical Data: Page 35)

VDO Ocean Line White Voltmeter

VDO Ocean Line White Voltmeter			
Indicator	Range: 8-16 V	12 V	N02 410 802
Indicator	Range: 18-32 V	24 V	N02 410 902

(Technical Data: Page 35)

VDO Ocean Line White Ammeter

VDO Ocean Line White Ammeter			
System with Shunt	80-0-80 A	12 V	N02 400 306
Indicator	80-0-80 A	12 V	N02 420 702
Shunt			N03 330 116

(Technical Data: Page 35)

Accessories

Front panel adapter to VDO instrument ranges (52mm Ø)			
VDO Standard Bezel, rectangular (62.5x62.5mm)			N05 800 222
VDO Standard Bezel, round (62mm Ø)			N05 801 110
VDO LOGIC Bezel, rectangular (62.5x62.5mm)			N05 800 496
Make Point swith Ocean Line for pressure-, temperature- and Fuel level gauge	12/24 V	X10	719 002 037
Warning light kit	12 V		N05 800 762
Warning light kit	24 V		N05 800 764
Optional fastening set including Brackets, stay bolts etc. for pressure, Temp, Volt, Tank, Rudder-Angle Ø52			N05 800 766
Optional fastening set including Brackets, stay bolts etc. for Pyrometer, Ammeter, Outsidetemp., Tachometer Ø52			N05 800 782
Optional fastening set including Brackets, stay bolts etc. for Sumlog, Echo sounder, Compass, Wind Rudder-Angle Ø85, Tachometer Ø85			N05 800 792

(Further Accessories for Ocean Line White Serie, see Page 53)

2.2 VDO Ocean Line White Engine monitoring

Technical Data

VDO Ocean Line White
Rudder-Angle Ø 85mm

VDO Ocean Line White
Tachometer Ø 85mm

Casing:	Plastic flame-retarding
Bezel:	Plastic, White
Cover lens:	Double lens system
Connectors:	Flat plug 6,3 x 0,8mm
Attachment:	Spin lock nut, Locking height 0-16.5mm Option: bracket mounting kit, (see Accessories)
Illumination:	2x Lightbulb 1.2 W, White, LCD permanent illuminated (green)
Pointer:	red, Translucent
Dial:	White, Translucent
Voltage:	12 V or 24 V
Power consumption Indicator:	max. 90 mA (without Illumination)
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 500081-1, according to CE
Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Installation diameter:	85.5mm Size of bore
Germanischer Lloyd: Ocean Line White indicators:	Certificate No.: 12 276-98 H



2.2 VDO Ocean Line White Engine monitoring

Casing:	Plastic flame-retarding
Bezel:	Plastic, White
Cover lens:	Double lens system
Connectors:	Flat plug 6.3 x 0.8 mm
Attachment:	spin lock nut, Locking height 0-15 mm Option: Brackets Attachment kit, (see Accessories) Locking height 0-12mm
Illumination:	White 1.2 W, Socket W5/2
Pointer:	red, Translucent
Dial:	White, Translucent
Driven by:	VDO Resistoretype sensor (not for 4-20mA Temp, Pressure)
Voltage:	12 V or 24 V, insulated return
Power consumption:	max. 130 mA
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 50081-1, according to EMC Direction 89/336/EWG
Vibration resistance:	max. 1g eff. 25Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Option:	Warning lamp (see Accessories)
Installation diameter:	52.5 mm Size of bore
Germanischer Lloyd: Ocean Line White indicators	Certificate No.: 12-276-98 H

Technical Data

VDO Ocean Line White
Engine monitoring Ø 52mm

Acoustic alert
Ammeter
Outside temperature
Engine hour counter
Tachometer
Pressure gauges
Pyrometer
Quartz clock
Rudder angle gauges
Black watersystem
Thermometers
Fuel Level Gauges
Fresh waterLevel gauges
Voltmeter



2.3 VDO Ocean Line Chrome Engine monitoring



! *Note:*
 This picture represents a sample instrument of the complete Ocean Line Chrome Serie.

VDO Ocean Line Chrome Tachometer Ø 85mm

VDO Ocean Line Chrome Tachometer Ø 85mm

0-1800 rpm	●	12 V	N02 012 502
0-1800 rpm	●	24 V	N02 012 802
0-3000 rpm	●	12 V	N02 012 506
0-3000 rpm	●	24 V	N02 012 806
0-4000 rpm	●	12 V	N02 012 510
0-4000 rpm	●	24 V	N02 012 810
0-6000 rpm	■	12 V	N02 012 514
0-6000 rpm	■	24 V	N02 012 814
0-1800 rpm, EHM	●/▲	12-24 V	N02 012 202
0-3000 rpm, EHM	●/▲	12-24 V	N02 012 206
0-4000 rpm, EHM	●/▲	12-24 V	N02 012 210
0-6000 rpm, EHM	■	12-24 V	N02 012 222
0-5000 rpm, EHM	●/▲	12-24 V	N02 012 214
0-5000 rpm, EHM	■	12-24 V	N02 012 218

*EHM = electronic engine hourmeter,
 Tachometer 12-24 V with 12 V Illumination
 (Technical Data: Page 42)*

● Terminal W, ■ Terminal 1, ▲ Inductive (specification upon request)

VDO Ocean Line Chrome Rudder-Angle Ø 85mm

VDO Ocean Line Chrome
 Rudder-Angle Ø 85mm complete system
 Including: Indicator, Sensor, 12 V Illumination

	12-24 V	N03 200 618
--	---------	-------------

Components

Indicator	12-24 V	N03 211 302
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 42)

2.3 VDO Ocean Line Chrome Engine monitoring

VDO Ocean Line Chrome Tachometer Ø 52mm

VDO Ocean Line Chrome Tachometer Ø 52mm

0-1800 rpm	●	12 V	N02 011 202
0-3000 rpm	●/■	12 V	N02 011 204
0-4000 rpm	●/■	12 V	N02 011 206
0-6000 rpm	●/■	12 V	N02 011 208

(Technical Data: Page 43)

- Terminal W, ■ Terminal 1

VDO Ocean Line Chrome Rudder-Angle Ø 52mm

VDO Ocean Line Chrome Rudder-Angle Ø 52mm complete system
Including: Indicator, Sensor

	12 V	N03 200 512
	24 V	N03 200 412

Components

Indicator	12 V	N03 211 602
Indicator	24 V	N03 211 702
Sensor	12-24 V	440 102 001 001 K
Sensor for Dual-station readings	12-24 V	440 102 002 001 K

(Technical Data: Page 43)

2.3 VDO Ocean Line Chrome Engine monitoring

VDO Ocean Line Chrome Pyrometer

VDO Ocean Line Chrome Pyrometer (Exhaust-gas temperature)

Indicator 100-900°C	12 V	N02 340 802
System 100-900°C	12 V	N02 300 612
Indicator 250-1650°F	12 V	N02 340 804
System 250-1650°F	12 V	N02 300 614
Sensor		N03 320 266

(Technical Data: Page 43)

VDO Ocean Line Chrome Thermometers

VDO Ocean Line Chrome Thermometers

Indicator	120°C/250°F	12 V	N02 322 302
Indicator	120°C/250°F	24 V	N02 322 402
Indicator	150°C/300°F	12 V	N02 322 306
Indicator	150°C/300°F	24 V	N02 322 406
Indicator	120°C/250°F	4-20mA	N02 322 502
Indicator	150°C/300°F	4-20mA	N02 322 506

(Technical Data: Page 43)

(Sensor: Page 48, 49) - not for 4-20mA Indicators

VDO Ocean Line Chrome Outside Temperature

VDO Ocean Line Chrome Outside temperature

Indicator -25°C to +60°C	12 V	N02 322 202
Sensor		323 809 010 005 C

(Technical Data: Page 43)

VDO Ocean Line Chrome Engine Hour Counter

VDO Ocean Line Chrome Engine hour counter

	12-24 V	N03 110 502
--	---------	-------------

(Technical Data: Page 43)

2.3 VDO Ocean Line Chrome Engine monitoring

VDO Ocean Line Chrome Level Gauges

VDO Ocean Line Chrome Level gauges fuel

Indicator lever 0-4/4	12 V	N02 222 802
Indicator lever 0-4/4	24 V	N02 222 902
Indicator tubular sensor 0-4/4	12 V	N02 223 202
Indicator tubular sensor 0-4/4	24 V	N02 223 302

(Technical Data: Page 43)

(Sensor: Page 50, 51)

VDO Ocean Line Chrome Fresh Water Level Gauges

Indicator, capacitive 0-4/4	4-20 mA	N02 230 902
System (80-600 mm), capacitive	4-20 mA	N02 200 314
System (600-1200 mm), capacitive	4-20 mA	N02 200 316
System (1200-1500 mm), capacitive	4-20 mA	N02 200 318
Indicator (Reedcontact Sensor)	12 V	N02 231 002
Indicator (Reedcontact Sensor)	24 V	N02 231 102

(Technical Data: Page 43)

(Sensor: Page 50, 51)

Note Sensor capacitiv:

- Sensor can be cut individually
- Sensor not for alluminic tank
- Sensor recommended for freshwater only

2.2 VDO Ocean Line Chrome Engine monitoring

VDO Ocean Line Chrome Black water System

Usage in different tank materials like, steel, aluminium, plastic with galvanic separation and for all conductive liquids like water, greywater, wastewater with adjustable make point
Including: Indicator, Sensor (600 mm), Gauge

System	12-24 V	N02 200 522
--------	---------	-------------

Components

Indicator 0-4/4	12-24 V	N02 230 912
-----------------	---------	-------------

Sensor, with galvanic separation, adjustable make point.

Sensor	80-600 mm	N02 240 902
--------	-----------	-------------

Sensor	600-1200 mm	N02 240 904
--------	-------------	-------------

Sensor	1200-1500 mm	N02 240 906
--------	--------------	-------------

(Technical Data: Page 43)

VDO Ocean Line Chrome Pressure Gauges

VDO Ocean Line Chrome Pressure gauges

Indicator	2 bar/28 psi	12 V	N02 125 402
-----------	--------------	------	-------------

Indicator	2 bar/28 psi	24 V	N02 125 502
-----------	--------------	------	-------------

Indicator	5 bar/72 psi	12 V	N02 125 406
-----------	--------------	------	-------------

Indicator	5 bar/72 psi	24 V	N02 125 506
-----------	--------------	------	-------------

Indicator	10 bar/145 psi	12 V	N02 125 410
-----------	----------------	------	-------------

Indicator	10 bar/145 psi	24 V	N02 125 510
-----------	----------------	------	-------------

Indicator	25 bar/360 psi	12 V	N02 125 414
-----------	----------------	------	-------------

Indicator	25 bar/360 psi	24 V	N02 125 514
-----------	----------------	------	-------------

Indicator	30 bar/435 psi	12 V	N02 125 418
-----------	----------------	------	-------------

Indicator	30 bar/435 psi	24 V	N02 125 518
-----------	----------------	------	-------------

Indicator	2 bar/28 psi	4-20 mA	N02 125 602
-----------	--------------	---------	-------------

Indicator	2.5 bar/35 psi	4-20 mA	N02 125 606
-----------	----------------	---------	-------------

Indicator	5 bar/72 psi	4-20 mA	N02 125 610
-----------	--------------	---------	-------------

Indicator	10 bar/145 psi	4-20 mA	N02 125 614
-----------	----------------	---------	-------------

Indicator	25 bar/360 psi	4-20 mA	N02 125 618
-----------	----------------	---------	-------------

Indicator	30 bar/435 psi	4-20 mA	N02 125 622
-----------	----------------	---------	-------------

(Technical Data: Page 43)

(Sensor: Page 46, 47) - not for 4-20mA Indicators

Note: - The 30 bar gauge has to be used with a VDO 25 bar sensor.

2.2 VDO Ocean Line Chrome Engine monitoring

VDO Ocean Line Chrome Voltmeter

VDO Ocean Line Chrome Voltmeter

Indicator	Range: 8-16 V	12 V	N02 411 202
Indicator	Range: 18-32 V	24 V	N02 411 302

(Technical Data: Page 43)



VDO Ocean Line Chrome Ammeter

VDO Ocean Line Chrome Ammeter

System with Shunt	80-0-80 A	12 V	N02 400 308
Indicator	80-0-80 A	12 V	N02 420 802
Shunt			N03 330 116

(Technical Data: Page 43)

Accessories

Warning light kit	12 V	N05 800 762
Warning light kit	24 V	N05 800 764
Optional fastening set including Brackets, stay bolts etc. for pressure, Temp, Volt, Tank, Rudder-Angle Ø52		N05 800 766
Optional fastening set including Brackets, stay bolts etc. for Pyrometer, Ammeter, EHM, Tachometer Ø52		N05 800 696
Optional fastening set including Brackets, stay bolts etc. for Sumlog, Echo sounder, Compass, Wind Rudder-Angle Ø85, Tachometer Ø85		N05 800 796
Warnpunkteinsteeler Ocean Line for Pressure-, temperature- and Fuel level gauge	12-24 V	X10 719 002 037

(Further Accessories for Ocean Line Chrome Serie, see Page 53)

2.3 VDO Ocean Line Chrome Engine monitoring

Technical Data

VDO Ocean Line Chrome
Rudder-Angle Ø 85mm

VDO Ocean Line Chrome
Tachometer Ø 85mm

Casing:	Plastic flame-retarding
Bezel:	Brass , chromeium-plated
Cover lens:	Single cover lens
Connectors:	Flat plug 6.3 x 0.8mm
Attachment:	Spin lock nut, Locking height 0-25mm Option: bracket mounting kit, (see Accessories)
Illumination:	2x Lightbulb 1.2 W, red, LCD permanent illuminated (green)
Pointer:	red, Frontlighting
Dial:	black, Translucent
Voltage:	12 V or 24 V (EHM 12-24 V)
Power consumption Indicator:	max. 90 mA (without Illumination)
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 500081-1, according to CE
Vibration resistance:	max. 1g eff. 25 Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Installation diameter:	85.5mm Size of bore
Germanischer Lloyd Ocean Line Chrome Indicators:	Certificate No.: 12-276-98 H



2.3 VDO Ocean Line Chrome Engine monitoring

Casing:	Plastic flame-retarding
Bezel:	Brass , chromeium-plated
Cover lens:	Single cover lens
Connectors:	Flat plug 6.3 x 0.8 mm
Attachment:	spin lock nut, Locking height 0-20 mm Option: Brackets Attachment kit, (see Accessories) Locking height 0-12mm
Illumination:	red 1.2 W, Socket W5/2
Pointer:	red, Frontlighting
Dial:	black, Translucent
Driven by:	VDO Resistortype sensor, VDO Reedcontact-Sensor
Voltage:	12 V or 24 V, insulated return
Power consumption:	max. 130 mA
Nominal position:	0-90°
Operating temperature:	-20°C to +70°C (bei Voltage)
Storage temperature:	-30°C to +85°C
EMC:	used standard EN 50082-1, EN 50081-1, according to EMC Direction 89/336/EWG
Schwingungsfestigkeit:	max. 1g eff. 25Hz-500 Hz (For 8 hours)
Shock:	15 g. 1.5 ms Semi-sinusoidal
Protection:	front IP 65, after installation in acc. with IEC 529
Option:	Warning lamp (see Accessories)
Installation diameter:	52.5 mm Size of bore
Germanischer Lloyd Ocean Line Chrome Indicator:	Certificate No.: 12-276-98 H



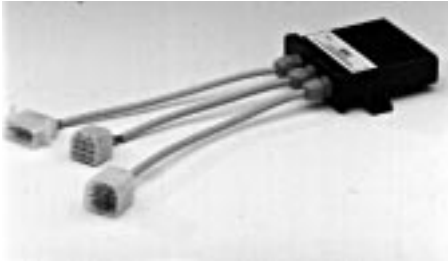
Technical Data

VDO Ocean Line Chrome
Engine monitoring Ø 52mm

Ammeter
Black Water System
Engine hour counter
Fuel Level Gauges
Fresh Water Level Gauges
Outside temperature
Pressure gauges
Pyrometer
Rudder angle gauges
Tachometer
Thermometers
Voltmeter



3. Digital Engine Data Transmission Systems



EDB (Engine Data Box)

Interface for digitisation of VDO Sensor values
(pressure, Temperatur, Tank, Pyrometer, Tachometer into the
SAE J 1708 Protocoll.

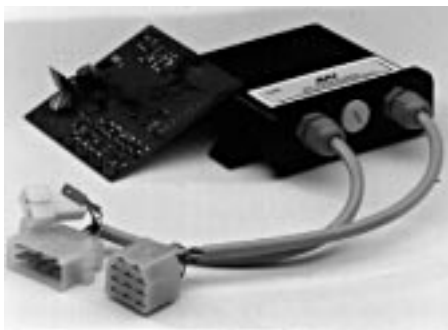
Inputs:

2 x Temperature,
2 x Pressure,
1 x Tank fuel,
1 x Tank Fresh Water (4-20 mA),
1 x Pyrometer,
1 x Tachometer
SAE J1708 Interface

Voltage: 10-32 V

IP 65

N03 321 002



BAI (Bus Analog Interface)

Interface for the conversion of EDB Data to drive analogue
VDO gauges.

Outputs:

2 x Temperature,
3 x Pressure,
1 x Tank fuel,
1 x Tank Fresh Water,
1 x Pyrometer,
2 x Tachometer W,
8 x switching contacts to drive Ocean Line warning lamps.

SAE J 1708 Interface

Voltage: 10-32 V

IP 65

N03 321 004

3. Digital Engine Data Transmission Systems

GBI (Gauge Bus Interface)

Interface for Digitisation of VDO Sensor values connected to VDO Ocean Line instruments, into the SAE 1708 Format. These data's can be displayed on Chartplotter MAP 8, 10, E. Plotters has to be updated.

Inputs/Indicator:

- 2 x Temperature,
- 2 x Pressure,
- 1 x Fuel Tank,
- 1 x Fresh Water Tank (4-20mA)
- 1 x Pyrometer,
- 2 x Tachometer W,
- 1x Battery Sensing

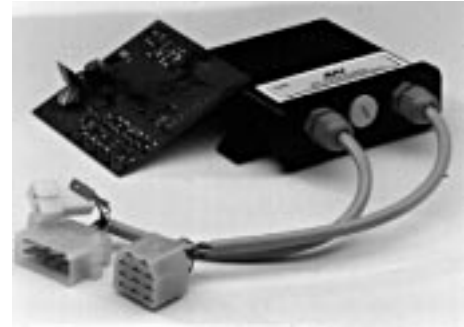
Sensor value will be picked-up at a already installed VDO gauges
(VDO Ocean Line Gauges only)

SAE J1708 Interface,

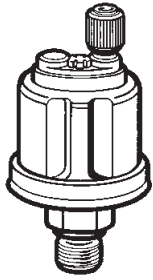
Voltage: 10-32 V

IP 65

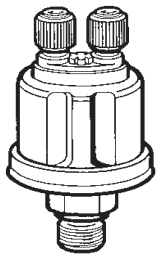
N03 321 006



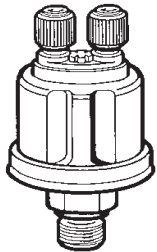
4.1 VDO Pressure sensors



Pressure sensors earth return, without Reedcontact Sensor



Pressure sensors insulated return



Pressure sensors insulated return

VDO Pressure Sensors

Type- 1 Pressure sensors (Not for Water Pressure) Earth Return thread

Range	5 bar, 75 psi	1/8-27 NPTF	360 081 029 004 C
Range	10 bar, 150 psi	M 10x1 k	360 081 029 010 K
Range	10 bar, 150 psi	1/8-27 NPTF	360 081 029 012 K

Type- 2 Pressure sensors (Not for Water Pressure) insulated return thread

Range	2 bar, 30 psi	M 12x1,5 k	360 081 032 011 C
Range	2 bar, 30 psi	1/8-27 NPTF	360 081 032 025 C
Range	5 bar, 75 psi	M 10x1 k	360 081 032 002 C
Range	5 bar, 75 psi	1/8-27 NPTF	360 081 032 001 C
Range	10 bar, 150 psi	M 10x1 k	360 081 032 003 C
Range	10 bar, 150 psi	M 14x1,5	360 081 032 006 C
Range	10 bar, 150 psi	1/8-27 NPTF	360 081 032 014 C
Range	25 bar, 350 psi	M 14x1,5	360 081 038 001 C
Range	25 bar, 350 psi	1/8-27 NPTF	360 081 038 003 C
Range	25 bar, 350 psi	3/8-18 NPTF	360 081 038 002 C

Type- 3 Pressure sensors, Earth Return, with Reedcontact Sensor (Not for Water Pressure) Range 5 bar, 75 psi thread

Make point	0.25 bar, 3.5 psi	M10x1 k	360 081 030 001 K
Make point	0.5 bar, 7.0 psi	M10x1 k	360 081 030 002 K
Make point	0.5 bar, 7.0 psi	M14x1,5	360 081 030 028 K
Make point	0.5 bar, 7.0 psi	1/8-27 NPTF	360 081 030 049 K
Make point	0.6 bar, 8.5 psi	M10x1 k	360 081 030 014 C
Make point	1.4 bar, 11.5 psi	1/8-27 NPTF	360 081 030 010 C

Pressure sensors Type- 3, Earth Return, with Reedcontact Sensor (Not for Water Pressure) Range 80 psi thread

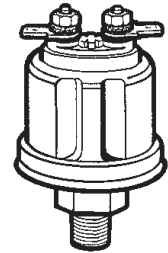
Make point	7 psi	1/8-27 NPTF	360 081 030 023 C
Make point	8 psi	1/4-18 NPTF	360 081 030 020 K

4.1 VDO Pressure sensors

VDO Pressure Sensors

Type- 3 Pressure sensors, with Reedcontact Sensor, Earth Return (Not for Water Pressure) Range 10 bar, 150 psi
thread

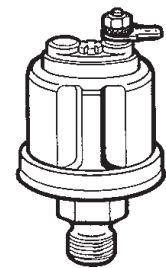
Make point 0.5 bar, 7.0 psi	M10x1 k	360 081 030 009 K
Make point 0.5 bar, 7.0 psi	M12x1,5	360 081 030 022 C
Make point 0.5 bar, 7.0 psi	1/8-27 NPTF	360 081 030 052 C
Make point 0.75 bar, 10.7 psi	M10x1 k	360 081 030 039 C
Make point 0.8 bar, 11.5 psi	1/8-27 NPTF	360 081 030 015 C
Make point 0.9 bar, 12.0 psi	M10x1 k	360 081 030 017 C



Pressure sensors insulated return for 2 indicator instruments

Type- 4 Pressure sensors for Dual-Station Readings (Not for Water Pressure)
thread

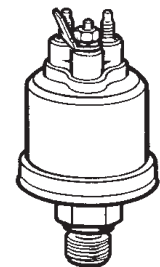
Range 5 bar, 5 psi (insulated return)	1/8-27 NPTF	362 081 001 001 K
Range 10 bar, 150 psi (insulated return)	1/8-27 NPTF	362 081 001 002 K
Range 10 bar, 150 psi (Earth return)	1/8-27 NPTF	362 081 003 002 K
Range 25 bar, 350 psi (insulated return)	1/8-27 NPTF	362 081 002 001 K
Range 25 bar, 350 psi (Earth Return)	1/8-27 NPTF	362 081 004 001 C
Range 25 bar, 350 psi (insulated return)	3/8-18 NPTF	362 081 002 002 K



Pressure sensors earth return for Dual-Station Readings

Type- 5 Pressure sensors with Reedcontact Sensor (Not for Water Pressure) insulated return, 3 Connectors, Thread 1/8-27 NPTF

Range 5 bar, 75 psi,		
Make point 0.8 bar, 11.5 psi		360 081 039 002 C
Range 10 bar, 150 psi,		
Make point 10.0 psi		360 081 039 004 C
Range 25 bar, 350 psi,		
Make point 0.8 bar, 11.5 psi		360 081 039 003 C

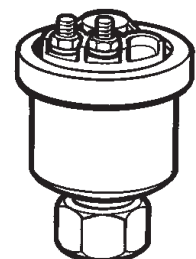


Pressure sensors with Reedcontact Sensor, insulated return 3 Connectors

VDO Generator senders

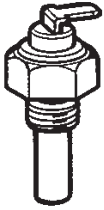
Generator senders for elek. Tachometer and Differential Tachometermeters/Engine Synchronizer (Diesel) insulated return

3000 min ⁻¹	M22x1,5	340 808 001 002 C
3000 min ⁻¹	7/8-18	340 808 001 004 G

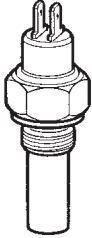


Generator Sender insulated return

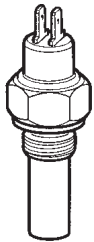
4.2 VDO Temperature Sensors



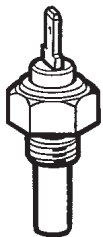
Temperature sensors faston 6,3 mm terminal



Temperature sensors, insulated return for 2 indicators



Temperature sensors, insulated return faston 6,3 mm terminal



Temperature sensors for 2 indicators faston 6.3mm terminal

VDO Temperature Sensors

Type- 1 Temperature sensors, Earth Return 70-120°C and 158-250° F, Terminal Type: Faston 6,3mm (AMP)

Thread M14x1.5	323 801 001 006 K
Thread M16x1.5	323 801 001 040 K
Thread M18x1.5	323 801 001 022 K
Thread 1/2-14 NPTF	323 801 001 010 K
Thread 1/4-18 NPTF	323 801 001 009 K
Thread 3/8-18 NPTF	323 801 001 007 N
Thread 5/8-18 UNF - 3A	323 801 001 008 N
Thread R1/2	323 801 001 041 N

Type- 2 Temperature sensors, Earth Return 140-160°C and 284-320°F

Thread M10, flathead terminal for spade	323 801 010 001 D
Thread M14x1.5 faston 6,3 mm terminal, angled	323 801 004 030 K

Type- 3 Temperature sensors, insulated return 70-120°C and 158-250°F, Terminal Type: Faston 6,3mm (AMP)

Thread M14x1.5	323 805 001 001 K
Thread M18x1.5	323 805 001 015 N
Thread 1/2-14 NPTF	323 805 001 004 K
Thread 1/4-18 NPTF/Dryseal	323 805 001 007 N
Thread 3/8-18 NPTF/Dryseal	323 805 001 005 N
Thread 5/8-18 UNF - 2A taper seat	323 805 001 002 C

Temperature switch, 6-24 V, switching load 3 W, non inductive, screw terminal M4

Thread M10x1 keg	110±3°C	232 011 005 024 D
Thread M10x1.5	125±5°C	232 011 005 011 D
Thread M10x1.5	150±5°C	232 011 005 017 D
Thread M10x1.5	170±5°C	232 011 005 004 D

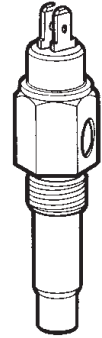
Temperature sensors Type- 6, Earth Return, for Dual-Station Readings 70-120°C and 158-255°F, Terminal: Faston 6,3mm (AMP), marking "D"

Thread M18x1.5, Earth Return	325 801 002 002 D
Thread 1/4-18 NPTF, insulated return	325 805 003 001 C
Thread 5/8-18 UNF-2A, Taper seat, insulated return	325 805 003 002 C

4.2 VDO Temperature Sensors

Type- 5 Temperature sensors, Earth Return, with Warning contact 70-120°C and 158-250°F, Terminal Type: Faston 6,3mm

Thread, M14x1.5	90±3°C, 194±5°F	323 803 001 004 D
Thread, M14x1.5	92±3°C, 198±5°F	323 803 001 015 D
Thread, M14x1.5	96±3°C, 205±5°F	323 803 001 006 D
Thread, M14x1.5	110±3°C, 230±5°F	323 803 001 008 D
Thread, 5/8-18 NF 3	95±3°C, 203±5°F	323 803 001 011 D
Thread, 5/8-18 NF3	98±3°C, 209±5°F	323 803 001 002 D
Thread, 5/8-18 NF3	100±3°C, 212±5°F	323 803 001 012 D
Thread, 1/2-14 NPTF	95±3°C, 203±5°F	323 803 001 019 D



Temperature sensors with Reedcontact
Sensor faston 6.3mm,

Temperatureswitch, 6-24 V, switching boad 3 W, non inductive, Faston 6,3mm (AMP)

Thread, M14x1.5	35±3°C	232 011 017 102 D
Thread, M14x1.5	55±3°C	232 011 017 038 D
Thread, M14x1.5 keg	60±3°C	232 011 017 015 D
Thread, M14x1.5	85±3°C	232 011 017 017 D
Thread, M14x1.5	90±3°C	232 011 017 009 D
Thread, M14x1.5	95±3°C	232 011 017 016 D
Thread, M14x1.5	100±3°C	232 011 017 034 D
Thread, M14x1.5	110±3°C	232 011 017 010 D
Thread, M14x1.5	120±3°C	232 011 017 032 D
Thread, M14x1.5	130±3°C	232 011 017 075 D



Temperature sensors terminal faston 6.3mm

Type- 4 Temperature sensors, insulated return 140-160°C and 284-320°F, Terminal Type: Faston 6,3mm (AMP)

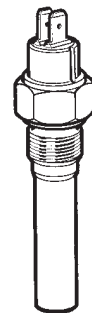
Thread M14x1.5	323 805 003 001 K
Thread 1/4-18 NPTF	323 805 003 002 N



Temperature sensors terminal faston 6.3mm

Temperatureswitch, 6-24 V, insulated return, load 100W, 2 Faston 6,3mm (AMP)

Thread, M14x1.5	64±3°C	X10 232 001 001
Thread, M18x1.5	82±3°C	X10 232 001 002
Thread, M18x1.5	86±3°C	X10 232 001 003
Thread, M18x1.5	92±3°C	X10 232 001 004
Thread, M18x1.5	96±3°C	X10 232 001 005
Thread, 1/2-14 NPTF	96±3°C	X10 232 001 006
Thread, M14x1.5	96±3°C	X10 232 001 007
Thread, M22x1.5	96±3°C	X10 232 001 008
Thread, M18x1.5	100±3°C	X10 232 001 009
Thread, M18x1.5	105±3°C	X10 232 001 010



Temperature sensors, insulated return
terminal faston 6.3

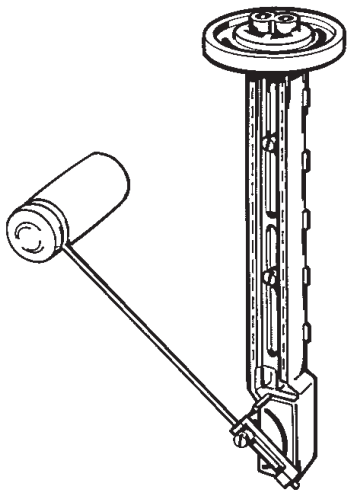
4.3 VDO Tank Sensor

VDO Tank sensor

Fuel Lever-Type (Float-Arm) Sensor

For fuel, insulated return, with flange	6-24 V	226 801 015 001 C
For dual-station readings, with insulated retron; marked "D"	6-24 V	N02 240 106

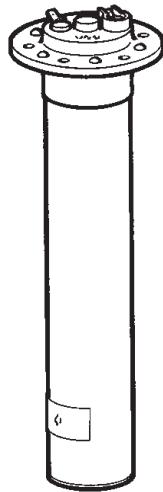
Note: - lever are adjustable from 200 to 600mm



Fuel Tank Lever

Tubular sensor for Fuel (Petrol) Tanks, Common Ground/Earth Return; with Flange with 54-mm Bolt Circle Dia.

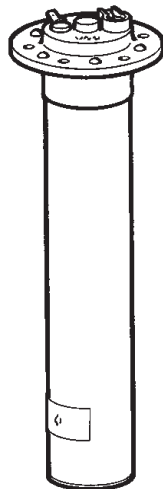
Instal. depth 221.5 mm	224 082 008 021 R
Instal. depth 251.5 mm	224 082 006 097 R
Instal. depth 279.5 mm	224 082 007 022 R
Instal. depth 310.5 mm	224 082 005 136 R
Instal. depth 341.5 mm	224 082 005 137 R
Instal. depth 346.0 mm	224 082 005 108 R
Instal. depth 372.5 mm	224 082 007 004 R
Instal. depth 404.5 mm	224 082 005 142 R
Instal. depth 433.5 mm	224 082 005 098 R
Instal. depth 463.5 mm	224 082 005 044 R
Instal. depth 498.5 mm	224 082 005 117 R
Instal. depth 591.0 mm	224 082 007 021 R
Instal. depth 692.0 mm	224 082 005 011 R
Instal. depth 787.0 mm	224 082 005 072 R



Tubular sensor for Gasoline Tanks

Tubular Sensors for Fuel (Petrol) Tanks, Common Ground/Earth Return; with Flange with 80-mm Bolt Circle Dia.

Instal. depth 536.0 mm	224 082 009 037 R
Instal. depth 596.0 mm	224 082 009 039 R
Instal. depth 686.0 mm	224 082 014 002 R
Instal. depth 741.0 mm	224 082 009 029 R
Instal. depth 781.0 mm	224 082 009 019 C
Instal. depth 831.0 mm	224 082 009 026 R
Instal. depth 881.0 mm	224 082 014 003 R
Instal. depth 916.0 mm	224 082 014 011 R
Instal. depth 996.0 mm	224 082 014 015 R



Tubular sensor for Gasoline Tanks

4.3 VDO Tank Sensor

Capacitive Sensors for Water Tanks, with Flange

for tank depths of 80-600 mm	6-24 V	N02 240 402
for tank depths of 600-1200 mm	6-24 V	N02 240 404
for tank depths of 1200-1500 mm	6-24 V	N02 240 406

Note Sensor capacitiv:

- Sensor can be cut individually
- Sensor not for alluminic tank
- Sensor recommended for freshwater only

Reedkontaktsensor for Freshwassertanks with Reedcontact Sensor

for tank depths up to 200 mm	X10 224 000 001
for tank depths up to 350 mm	X10 224 000 002
for tank depths up to 500 mm	X10 224 000 003

Bolt-on Flange Kit for Fuel-Level Sensor

With 54-mm bolt circle dia	N05 801 432
----------------------------	-------------

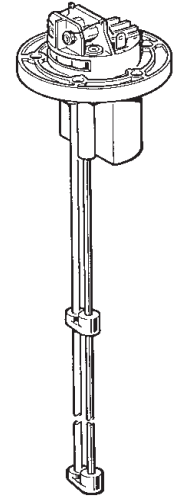
Weld-on Flanges for fuel- and Capacitivesensor

With 54-mm bolt circle dia	2 250 264 1141
With 80-mm bolt circle dia	11 591 001 1401

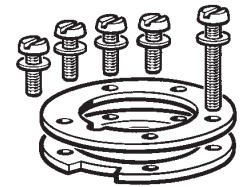
Tankflange for Reedkontaktsensor and Black watersensor	X10 224 000 007
--	-----------------

Blackwater Sensor, capacitive, usage in different tank materials like, steel, alluminium, plastic with galvanic separation and for all conductive liquids like water, greywater, wastewater with adjustable make point

Sensor	80-600 mm	N02 240 902
Sensor	600-1200 mm	N02 240 904
Sensor	1200-1500 mm	N02 240 906



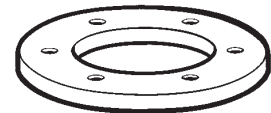
Fresh water sensor capacitive



Tankflange



Tankflange



Tancflange



Black water sensor

5.1 VDO Accessories / 5.2 VDO LOGIC Accessories

VDO Marine-Instruments Accessories general



Lightbulb

Lightbulb

For old-type engine monitoring equipment,
old-/new-type ammeter, pyrometer; 85-mm dia.,
100-mm dia. tachometermeters; Adis-I compass,
depth sounder, Sumlog SL, Sumlog HS,
old-type wind ind. system

12 V/2 W

4 124 122

For old-type engine monitoring equipment,
old-/new-type ammeter, pyrometer;
85-mm dia., 100-mm dia. tachometermeters;
Adis-I compass, depth sounder, sumlog SL,
Sumlog HS, old-type wind ind. sys.

24 V/3 W

N05 800 296

For new-type engine monitoring equipment,
Powerboat style instruments, Twinline,
pitot-tube tachometer,
new-type wind indicator system

12 V/1,2 W

N05 800 552

For new-type engine monitoring equipment,
Powerboat style instruments, Twinline,
pitot-tube tachometer,
new-type wind indicator system

24 V/1,2 W

N05 800 550

For Powerboat style instruments,
tachometermeter, Sumlog S

12 V/2 W

N05 800 540

For Powerboat style instruments,
tachometermeter, Sumlog S

24 V/1,2 W

N05 800 550

Dropping Resistor for Adapting 12-Volt Instruments for 24-Volt Use

Suitable for temperature gauge, pressure gauge,
tank gauge, and rudder angle indicator:
prewired unit complete with bulb

N05 801 180

Note: - Dropping resistor for VDO Standard Serie only.

VDO LOGIC Accessories

VDO LOGIC Accessories

Protective Cover for 125x125 mm Instruments N03 320 004

Protective Cover for 187.5x125 mm Instruments N06 022 951

Cable (6-Core) for LOGIC Repeater (by the meter) X10 719 002 001

Cable (12-Core) for LOGIC Indicator (by the meter) X10 719 002 002

LOGIC Bezel, rectangular 125X125 mm N05 800 498

LOGIC Bezel, rectangular 62.5x62.5 mm N05 800 496

Power Cable for LOGIC Instruments (old/new) N05 801 856

LOGIC pigtail, 10m Extensioncable N03 320 824



5.3 VDO Ocean Line Accessories

VDO Ocean Line Accessories

Ocean Line NMEA Interface

for Compass, Log, Wind, Depth	10,8-30 V	N01 610 506
-------------------------------	-----------	-------------

Ocean Line Makepointswitch

Makepointswitch Ocean Line for Pressure-, Temperature- and Fuel level gauge	12-24 V	X10 719 002 037
--	---------	-----------------

Lightbulb

Lightbulb 1.2 W red; for Ø52mm Instr.	12 V	N05 800 552
Lightbulb 1.2 W red; for Ø52mm Instr.	24 V	N05 800 550
Lightbulb 1.2 W white; for Ø52mm Instr.	12 V	N05 801 532
Lightbulb 1.2 W white; for Ø52mm Instr.	24 V	N05 801 588

Dropping resistor

with red Lightbulb	N05 800 786
with white Lightbulb	N05 800 596

Warning lamp

Warning lamp	12 V	N05 800 762
Warning lamp	24 V	N05 800 764

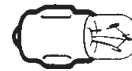
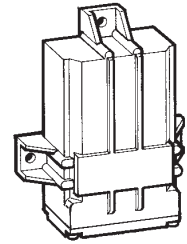
Bezel

Ocean Line (black); for Ø85mm Instr.	N05 801 562
Ocean Line (white); for Ø85mm Instr.	N05 801 790
Ocean Line (black); for Ø52mm Instr.	N05 800 774
Ocean Line (white); for Ø52mm Instr.	N05 801 788

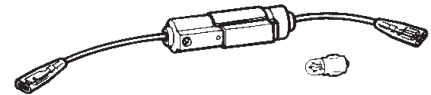
Mounting Kit

(including brackets, stay bolts and nuts)

For 85mmØ Indicator with Ocean Line Plastic Bezel	N05 800 792
For pressure- temperature- fuel- freshwater- and voltmeter 52mmØ with Ocean Line Plastic Bezel	N05 800 766
For pressure- temperature- fuel- freshwater- and voltmeter 52mmØ with Chrome Bezel	N05 800 696
For Pyrometer, Ammeter, Tachometer, Engine hour counter 52mmØ with Ocean Line Plastic Bezel	N05 800 782



Lightbulb



Dropping resistor and Lightbulb

VDO Kienzle Sales & Distribution



Headoffice

VDO Kienzle
Vertrieb und Service GmbH
Kruppstraße 105
D-60388 Frankfurt am Main
Tel.: 00 49 (0) 69 4 08 05-0
Fax: 00 49 (0) 69 4 08 05-177
E-Mail: vdomarine@vdokienzle.com
Internet: www.vdokienzle.com/marine

Europe

Austria

VDO Kienzle Austria GesmbH
Flachgasse 54-58
A-1150 Wien
Tel.: 00 43 / 19 81 27-0
Fax: 00 43 / 19 81 27-42

Belgium

Krautli S.A.
Industrialaan 15
B-1702 Dilbeek
Tel.: 00 32 / 24 81 72 00
Fax: 00 32 / 24 66 55 60

Croatia

Tachograf d.o.o.
Strigina 4
CRO-10000 Zagreb
Tel.: 00 85 / 12 33 90 71
Fax: 00 85 / 12 33 90 52

Cyprus

Savas Y. Spyridakis & Sons Ltd.
3, Nikitara Street
CY-Limassol
Tel.: 00 57 / 5 39 26 32
Fax: 00 57 / 5 39 26 10

Denmark

Rober Bosch A/S
Telegrafvej 1
DK-2750 Ballerup
Tel.: 00 45 / 44 89 89 84
Fax: 00 45 / 44 89 86 80

Finland

Oy Maritim AB
P.O. Box 46
SF-00211 Helsinki
Tel.: 00 58 / 9 68 16 31
Fax: 00 58 / 96 92 78 84

France

VDO Kienzle France S.A.
8 Rue Latérale, B.P. 377
F-94154 Rungis Cedex
Tel.: 00 33 / 1 45 60 16 00
Fax: 00 33 / 1 45 60 16 52

Great Britain

VDO Kienzle UK Ltd.
36, Gravelly Industrial Park
Tyburn Road, Erdington
GB - Birmingham B24 8TA
Tel.: 00 44 / 12 13 44 20 00
Fax: 00 44 / 12 13 26 12 99

Greece

Electra Hellas's S.A.
246 Syngroy & Davaki Str.
GR-17672 Kallithea
Tel.: 00 33 / 19 53 16 90
Fax: 00 33 / 19 53 16 96

Iceland

Björn ó Pétursson Maela-OG
Barkavidgerdir
Sudurlandsbraut 16
IS-128 Reykjavik
Tel.: 00 54 / 5 88 97 47
Fax: 00 54 / 5 88 97 22

Italy

Krautli Electrica S.R.L.
Via A. Figino 12
I-20156 Milano
Tel.: 00 39 / 02 32 44 41
Fax: 00 39 / 02 39 21 87 05

Norway

VDO Kellox A/S
Nygardsveien 67
N-1401 Ski
Tel.: 00 47 / 64 97 61 00
Fax: 00 47 / 64 97 61 90

Poland

P.P.-H. "Drabpol" Sp. Jawna
ul. Jagiellonska 67/71
PL-42-200 Czestochowa
Tel.: 00 48 / 34 66 00 22
Fax: 00 48 / 34 66 01 02

Portugal

Krautli Portugal Lda.
Horta dos Bancelos, Lote no. 2
P-2695-390 Sta. Iria de Azeitão
Tel.: 0 03 51 / 2 19 53 56 00
Fax: 0 03 51 / 2 19 53 56 33

Spain

VDO Kienzle España, S.A.
Poligono Industrial
Calle Sepulveda 11
E-28100 Alcobendas (Madrid)
Tel.: 00 34 / 9 16 57 21 21
Fax: 00 34 / 9 16 61 83 81

Sweden

KG Knutsson Handels AB
Hamarbacken 8
S-19181 Sollentuna
Tel.: 00 46 / 8 92 30 00
Fax: 00 46 / 8 92 33 07

Switzerland

Krautli AG
Badenerstraße 734
CH-8010 Zürich
Tel.: 00 41 / 14 32 67 00
Fax: 00 41 / 14 32 92 12

The Netherlands

VDO Kienzle Netherland B.V.
Nieuwpoortstraat 5
NL-1055 RZ Amsterdam
Tel.: 00 31 / 2 06 82 19 52
Fax: 00 31 / 2 06 86 54 65

Turkey

Oelcuesan, Oelcue Aletleri
Sanayi ve
Ticaret A.S.
Yilanli Ayazma Sok. No: 12/1
TR-Topkapi/Istanbul
Tel.: 00 90 / 21 24 81 80 31
Fax: 00 90 / 21 24 81 80 60

Overseas

Australia

VDO Instruments
Australia Pty. Ltd.
13/98 Old Pittwater Road
AUS-2100 Brookvale
Tel.: 00 61 / 2 99 05 59 09
Fax: 00 61 / 2 99 05 59 23

Korea

VDO Korea Co. Ltd.
8th Fl. Pumyang Bldg. 811-6,
Bangbae-Dong, Seocho-Ku
ROC-137060 Seoul
Tel.: 00 82 / 25 92 89 81-6
Fax: 00 82 / 25 92 89 87

Republic of South Africa

Control Instruments
VDO Pty. Ltd.
Unit 3 Cur. Coach Street
& Carriage Close
Crown Extension 7
ZA-Crown Mines 2092
Tel.: 00 27 / 1 18 37 03 05
Fax: 00 27 / 1 18 37 99 74

Singapore

VDO Kienzle Singapore Pte. Ltd.
Block 28, Ayer Rajah Crescent
#08-06/08
SEA-Singapore 139959
Tel.: 00 65 / 7 78 77 72
Fax: 00 65 / 7 79 69 79

U.S.A.

VDO North America LLC
188 Brooke Road
USA-22603 Winchester, Virginia
Tel.: 0 01 / 54 06 65 01 00
Fax: 0 01 / 54 06 62 25 15