Content

Products with these icons are specially made for:
Industrial Applications

Mobile Applications

Filtration


Suction filters


Clogging indicators


Ventilating filters


Return filters


Pressure filters


Return-suction filters


High pressure filters


Return-suction filters

Description

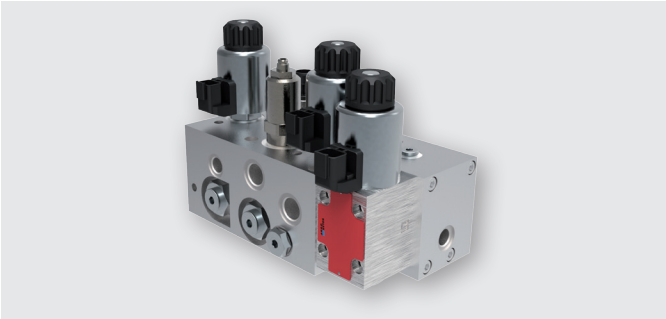
ARGO-HYTOS produces sophisticated filter solutions together with hydraulic and lubrication systems. The range of solutions we have implemented extends from fixed-position industrial plants to mobile applications.

As well as customized developments, exactly adjusted to the individual requirements of the customer, ARGO-HYTOS offers a comprehensive range of innovative standard solutions for a wide variety of applications:

- Suction filters
- Return-suction filters and return filters
- Pressure and high-pressure filters
- Filling and ventilating filters
- Filter accessories

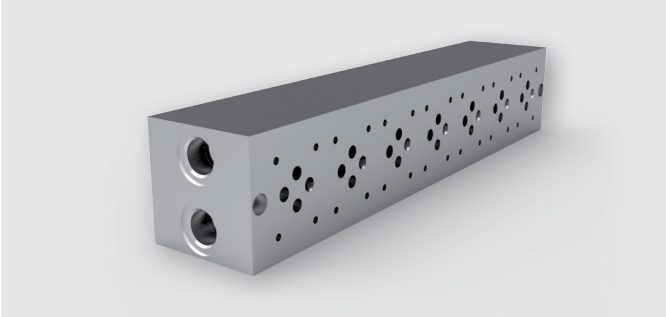
Fluid and Motion Control

Customized solutions



Control solutions

Gear pumps

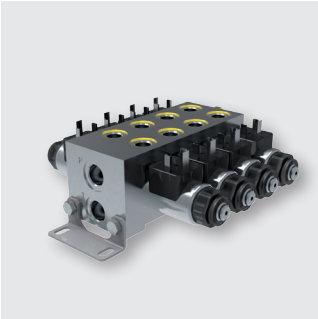


Plates

Fluid and Motion Control


Directional and proportional valves

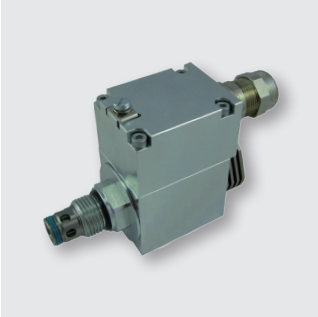

Modular valves

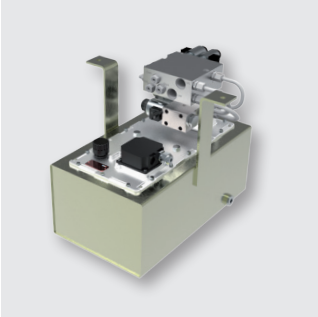

Sandwich valves


Screw-in cartridge valves


Slip-in cartridge valves


Load motion cartridges


Explosion proof valves


Hydraulic power packs

Description

ARGO-HYTOS' expertise in control technology is the fruit of more than 65 years' experience. We focus here on a wide range of valves, power units and integrated manifolds featuring all commonly used design features and functions, together with proportional valves and the associated control electronics:

- Directly operated directional valves in CETOP 02 to CETOP 05 and pilot operated directional valves in CETOP 07 and CETOP 08
- Valves sub-plate and sandwich type – flow control, pressure and check valves in CETOP 02 to CETOP 05
- Cartridge valves
- Directly activated proportional valves with compensator sandwich valve, in CETOP 02 to CETOP 05
- Analog and digital control electronics – on-board, or for installation in control cabinets
- Power pack assembly kits
- Customized control blocks

Fluid Management


Off-line filter


Off-line filter


Off-line filter unit


Off-line filter unit


Oil service unit


Oil service unit


Dewatering system


Dewatering system

Description

As well as reducing maintenance and servicing costs, effective fluid management is also a key factor in boosting the reliability, productivity and cost-effectiveness of the operation.
ARGO-HYTOS supplies application-oriented products for manual and automatic cleaning of hydraulic fluids:

- Off-line filters
- Off-line filter units
- Filter cooling systems
- Oil service units
- Dewatering systems

Sensors and Measurement


Portable particle counter


Portable oil lab


Particle monitor


Wear sensor


Condition sensors


Pressure sensor


Remote interfaces / display units


Valve electronics

Description

Systems that provide reliable assessment of the condition of hydraulic fluids are the key feature of continuous fluid monitoring.

Sensors and measurement technology from ARGO-HYTOS precisely target this range of tasks. Our fluid monitoring products comprise equipment and system solutions to enable online monitoring during continuous operation as well as analysis of bottled samples under laboratory conditions.

- Portable oil diagnosis equipment
- Stationary and portable particle monitor
- Oil condition sensors
- Software to evaluate data and analyze trends

Rental Units · Calibration · Oil Analysis · Services

Our Services for You

The ARGO-HYTOS corporate philosophy focuses on integrated service for our customers. Our process starts when we devise practical solutions, continue with product development and manufacturing and extend through to our comprehensive after-sales service.
Today's global market environment calls for all-encompassing service concepts that are precisely tailored to the customer's requirements, so that unrestricted product benefit can be guaranteed.
For this reason, ARGO-HYTOS maintains its own distribution companies in key markets and cooperates with a network of professional service partners. The result: We are a globally active partner, present in all the world's decisive business regions and able to offer our customers the fullest possible service.

Rental Units

Should you need one of our instruments only for a certain time, we may supply you with a demo unit from our stock. This enables you to receive a replacement unit during maintenance work or to assure yourself of the quality of our products. We offer you e.g. oil service units, dewatering systems, oil particle counters and airborne particle counters. On the next page you will see our available units.

Comprehensive Service

Beginning with the planning, over the installation up to the maintenance of your individual Condition Monitoring Systems, we provide customized solutions from one source.
Do you have any questions? Please contact us:
Phone: +49 7250 76-522
E-mail: service@argo-hytos.com

Consulting

Are you interested in the topic Condition Monitoring or Fluid Management and would like to equip your system with sensors and measurement technology respectively but you are short on experience? We will be pleased to support you with your measurement tasks and advise you regarding system integration and connection to your control system.
Benefit from our experience in various applications.

Installation Service

You need support with the installation of the Condition Monitoring System in your unit? We would like to support you. We will carry out mechanical installation, cabling, system integration, tests and initial operation.
If desired, we will install a remote control system (e.g. GSM/ Ethernet) and will take over the regular data recording and analysis.

Calibration

If you wish to certify your quality management according to ISO 9001ff, your measurement equipment has to be calibrated regularly. For this we offer a calibration service for our sensors including a corresponding certificate.
For testing of your particle counter, we also provide you with certified reference suspensions, in order to test the quality of your equipment at any time.

Repair Service

We will be pleased to check your equipment for errors and if needed we will make an estimate of the repairing costs. For fast and professional service we only use original spare parts.

Laboratory Analysis

The ARGO-HYTOS oil analysis includes the standard laboratory analysis as well as the extended condition analysis with the help of special electrical transducers. The condition of the oil may be analysed more precisely. Please see the offered test methods on the following page.

Rental Units	Application
OPCount	Portable particle counter of the latest generation
PODS Pro	Portable particle counter with data storage and printer
OPCom portable	Portable particle monitor with data storage
OPCom[1)]	Stationary particle counter
LubCos H_2O+ II[1)]	Oil condition sensor
LubCos Level[1)]	Combined oil condition and filling level sensor
LubCos Vis+[1)]	Oil viscosity sensor
LubCos H_2O[1)]	Combined water and temperature sensor
FA 016 / FAPC 016[2)]	Compact oil service unit for easy filling or cleaning of hydraulic and lubricating systems
UM 045 / UMPC 045 / UMP 045[3)]	Efficient oil service units for easy filling or cleaning of hydraulic and lubricating systems
COPS 010	Compact dewatering system for fast dewatering and filtering of oils
HHPC-6	Airborne particle counter: mobile solution for particle monitoring

[1)] Optionally with display and storage unit LubMon Visu
[2)] Optionally with integrated particle monitor
[3)] Optionally with integrated particle monitor or programmable oil diagnostic system

Standard Laboratory Analysis consisting of:

- Kinematic viscosity at 40 °C and 100 °C (ISO 51562)
- Slope m (DIN 51563)
- Cleanliness level (ISO 4406:1999)
- Neutralisation value (DIN 51558)
- para. Determination of the water content (DIN EN ISO 12937) according to Karl Fischer

Analysis with ARGO-HYTOS Condition Sensors consisting of:

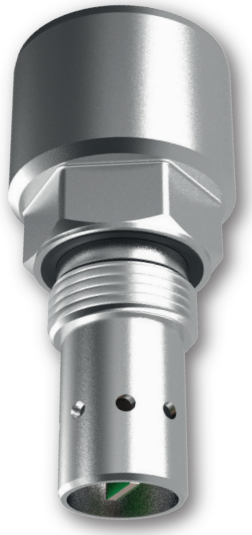
- SAW dynamic viscosity
- Slope m (DIN 51563)
- Relative permittivity
- Conductivity
- Temperature range of the relative permittivity
- Temperature range of the conductivity
- Relative water content
- Cleanliness level (ISO 4406:1999)

Spectroscopy constisting of:

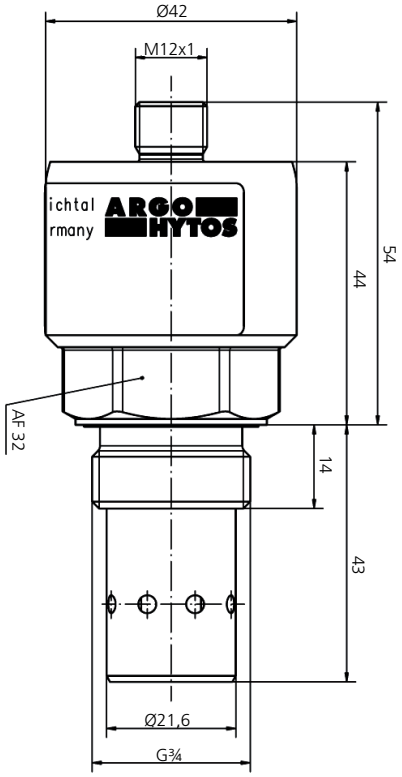
- UV/VIS/NIR-spectroscopy

LubCos H_2O

Continuous Oil Condition Monitoring



LubCos H_2O



Description

Application area

Water is not desired in hydraulic fluids and lubricants. High concentration of water can cause severe disturbance in operation and damage.

Performance features

The LubCos H_2O measures the relative humidity of the oil and thus directly displays the saturation degree in the water:

- 0 %: Absolutely dry oil.
- 100 %: The oil is completely saturated with water. Additional water will not be dissolved anymore and will present itself as free water.

In contrast to the humidity analysis from laboratories, where the absolute water content is defined in ppm (parts per million), the saturation limit of the oil can be determined by relative humidity measurement. The advantage of the relative humidity over the absolute water content is, that it is not necessary to know the oil or its saturation limit in order to determine if there is free or dissolved water.

Example:

- Mineral oils (e.g. HLP) have a comparatively low water absorption capacity. 500 ppm may signify that the oil is over-saturated and that free water exists.
- Ester oils (e.g. HEES) have a relatively high water capacity. 500 ppm may show that the oil is just saturated by 15 %.

Please also note the characteristics of the relative humidity with different temperatures: Warm oil can dissolve more water than cold oil. Therefore, the relative humidity of the oil increases in case of no further water supply. Hot, relatively dry oil, may suddenly keep free water if the ambient temperature cools down.

The LubCos H_2O points out the current saturation of the oil with water, independent from oil type and temperature and additionally assures operation of systems by direct warning.

Measuring principle

The sensor records the relative oil humidity and oil temperature. Through an oil specific calibration it is possible to calculate the absolute humidity up to the saturation limit.

The measuring values are given by RS232 and the analogue outputs.

Design characteristics

The sensor is provided with a G¾ thread and can be integrated in the tank or via adapter in lines.
Communication with the sensor either takes place over a serial interface or over two analog outputs (4 ... 20 mA).

Software

A free software for data recording and evaluation of the measured values can be downloaded from our website at www.argo-hytos.com within the download area.

Technical data

Sensor data	Size	Unit
Max. operating pressure	50	bar
Operating conditions		
Temperature[1)] Rel. humidity[1)]	-20 ... +85 0 ... 100	°C % r.H. (non-condensing)
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	aluminium, HNBR, polyurethane resin, epoxy resin, chemical nickel/gold (ENIG), soldering tin (Sn60Pb40, Sn96, 5Ag-3CuO, 5NiGe), aluminium oxide, glass (DuPont QQ550)	
Protection class[2)]	IP67	
Power supply[3)]	9 ... 33	V
Power input	max. 60	mA
Output		
Power output (2x)[4)] Accuracy power output[5)] Interface	4 ... 20 ± 2 RS232	mA % -
Connections		
Threaded connection Tightening torque of threaded connection Electrical connection Tightening torque M12-connector	G¾ 45 ±4,5 M12x1, 8-pole 0,1	inch Nm - Nm
Measuring range		
Rel. humidity Temperature	0 ... 100 -20 ... +85	% °C
Measuring accuracy		
Rel. humidity Temperature	1 0,1	% r.H. K
Measuring accuracy[6)]		
Rel. humidity (10 ... 90%)[7)] Rel. humidity (<10 %, >90 %)[7)] Temperature	±3 ±5 ±2	% r.H. % r.H. K
Response time humidity measurement (0 to 100 %)	<1	min
Weight	115	g

[1)] Outside the specificated measuring range, there are possibly no plausible measuring values to be expected
[2)] With screwed on connector
[3)] Automatic switch off at U <8 V and U >36 V, with load-dump impulses over 50V an external protection must be provided
[4)] Outputs IOut1 and IOut2 are freely configurable (see interfaces and communication commands)
[5)] In relation to the analogue current signal (4 ... 20 mA)
[6)] Works calibration
[7)] Calibrated to air at room temperature

Order code

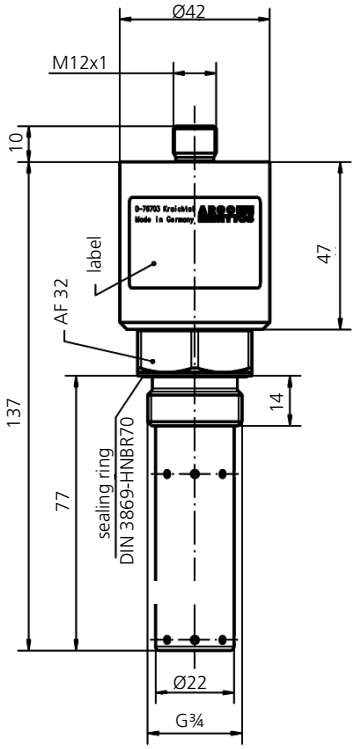
LubCos H_2O	SCSO 300-1000

Accessories	
Screw-in block for mounting in a return line, connection G¾	SCSO 100-5070
Complete data cable set, 5 m length	SCSO 100-5030
Data cable with open ends, 5 m length	SCSO 100-5020
Contact box for connection of a data cable	SCSO 100-5010
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway	SCSO 100-5100
Display and storage device LubMon Visu	SCS0 900-1000

LubCos H_2O+ II

Continuous Oil Condition Monitoring

LubCos H_2O+ II



Description

Application area

Stationary screw-in sensor for continuous determination of the oil condition, humidity and temperature in hydraulic and lubricating oils.

Performance features

Measurement of changes in hydraulic fluids and lubricants. Data is continuously documented evaluated and stored. In that way deterioration and changes in the oil (e.g. water inleakage, oil change, ...) can be indicated. Through this, damage can be recognized or completely avoided at an early stage. This offers the opportunity to prevent machine failures as well as to prolong maintenance and oil change intervals by means of appropriate measures. Furthermore, by monitoring the lubricant, correctly performed maintenance work and the use of the required lubricant quality may be documented.

Measuring principle

The sensor records the following physical oil characteristics as well as its periodic change: Temperature, relative oil humidity and water activity resp., relative dielectric number (relative permittivity) and conductivity of the fluid.
As especially the conductivity and the relative dielectric number show a strong connection to the temperature, next to the characteristic values at current temperature the sensor also sends the data at reference temperature (40 °C). The sensor is able to evaluate condition changes automatically.

Design characteristics

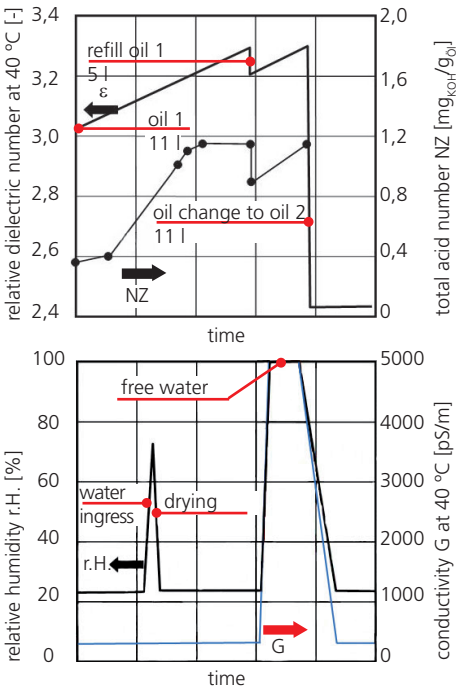
The sensor is provided with a G¾ thread and can be integrated in the tank.
The communication with the sensor either takes place over a serial RS232 interface, two analogue outputs (4 ... 20 mA) or CANopen.
In order to also enable a long-term record of data up to half a year, the sensor is provided with an internal data storage unit.

Software

A free software for data recording and evaluation of the measured values can be downloaded from our website at www.argo-hytos.com within the download area.

Application example

By using the sensor different changes of the oil condition can be detected. The following example shows a typical course of relative dielectric number, conductivity and relative humidity during various changes of the condition in the system. By means of the characteristics, different oil types may be differed, oil refreshing and oil change can be detected and the relative humidity, free water as well as the deterioration and deterioration rate can be defined respectively.



Technical data

Sensor data	Size	Unit
Max. operating pressure	50	bar
Operating conditions		
Temperature[1)]	-20 ... +85	°C
Rel. humidity[1)]	0 ... 100	% r.H. (non-condensing)
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	aluminium, HNBR, polyurethane resin, epoxy resin, chemical nickel/gold (ENIG), soldering tin (Sn96, 5Ag3CuO, 5NiGe), aluminium oxide, glass (DuPont QQ550) gold, silver-palladium	
Protection class[2)]	IP67	
Power supply[3)]	9 ... 33	V
Power input	max. 0,2	A

Sensor data	Size	Unit
Output		
Power output (2x)[4)]	4 ... 20	mA
Accuracy power output[5)]	± 2	%
Interfaces	RS232/CAN	-
Connections		
Threaded connection	G¾	inch
Tightening torque of threaded connection	45 ±4,5	Nm
Electrical connection	M12x1, 8-pole	-
Tightening torque M12-connection	0,1	Nm
Measuring range		
Rel. dielectric number	1 ... 7	-
Rel. humidity	0 ... 100	% r.H.
Conductivity	100 ... 800000	pS/m
Temperature	-20 ... +85	°C
Measuring resolution		
Rel. dielectric number	$1*10^{-4}$	-
Rel. humidity	0,1	% r.H.
Conductivity	1	pS/m
Temperature	0,1	K
Measuring accuracy[6)]		
Rel. dielectric number[7)]	rel. ±0,015	-
Rel. humidity (10 ... 90 %)[8)]	±3	% r.H.
Rel. humidity (<10 %, >90 %)[8)]	±5	% r.H.
Conductivity (100 ... 2000pS/m)	±200	pS/m
Conductivity (2000 ... 800000pS/m)	Typ. < ±10	%
Temperature	±2	K
Response time humidity measurement (0 to 100 %)	<10	min
Weight	140	g

[1)] Outside the specificated measuring range, there are possibly no plausible measuring values to be expected
[2)] With screwed on connector
[3)] Automatic switch off at U <8 V and U >36 V, with load-dump impulses over 50V an external protection must be provided
[4)] Outputs IOut1 and IOut2 are freely configurable (see interfaces and communication commands)
[5)] In relation to the analogue current signal (4 ... 20 mA)
[6)] Works calibration [7)] Calibrated to n-Pentan at 25 °C
[8)] Calibrated to air at room temperature

Order code

LubCos H_2O+ II	SCSO 100-1010

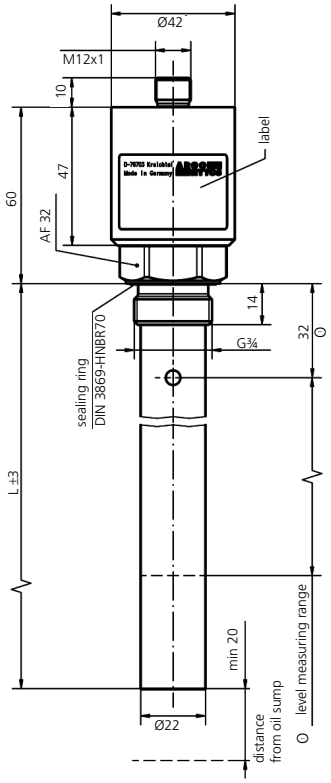
Accessories

Screw-in block for mounting in a return line, connection G¾	SCSO 100-5070
Complete data cable set, 5 m length	SCSO 100-5030
Data cable with open ends, 5 m length	SCSO 100-5020
Contact box for connection of a data cable	SCSO 100-5010
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway	SCSO 100-5100
Display and storage device LubMon Visu	SCSO 900-1000

LubCos Level

Continuous Oil Condition Monitoring

LubCos Level



LubCos Level 200: L = 200 mm, measuring range = 115 mm
LubCos Level 375: L = 375 mm, measuring range = 288 mm
LubCos Level 615: L = 615 mm, measuring range = 515 mm

Description

Application area

Stationary screw-in sensor for continuous determination of the oil condition, humidity and temperature in hydraulic and lubricating oils as well as measuring the fluid level.

Performance features

Measurement of changes in hydraulic fluids and lubricants. Data is continuously documented, evaluated and stored. In that way deterioration and changes in the oil (e.g. water inleakage, oil change, ...) can be indicated. Through this, damage can be recognized or completely avoided at an early stage. This offers the opportunity to prevent machine failures as well as to prolong maintenance and oil change intervals by means of appropriate measures. Furthermore, by monitoring the lubricant, correctly performed maintenance work and the use of the required lubricant quality may be documented.

Measuring principle

The sensor records the following different physical oil characteristics as well as its periodic change: Temperature, relative oil humidity and water activity, relative dielectric number (relative permittivity), conductivity of the fluid and fluid level respectively.
As especially the conductivity and the relative dielectric number show a strong connection to the temperature, next to the characteristic values at current temperature the sensor also sends the data at reference temperature (40 °C). The sensor is able to evaluate condition changes automatically.

Design characteristics

The sensor is provided with a G¾ thread and can be integrated in the tank. The sensor that measures the oil parameters is at the end of the lance. This ensures that the sensor element is always fully immersed and the oil parameters and their changes may be correctly defined. Above the sensor element there is a special level transducer by which the filling level can be determined.
Communication with the sensor either takes place over a serial RS232 interface, two analogue outputs (4 ... 20 mA) or CANopen.
In order to also enable a long-term record of data up to half a year, the sensor is provided with an internal data storage unit.

Software

A free software for data recording and evaluation of the measured values can be downloaded from our website at www. argo-hytos.com within the download area.

Technical data

Sensor data	Size	Unit
Max. operating pressure	50	bar
Operating conditions		
Temperature[1)]	-20 ... +85	°C
Rel. humidity[1)]	0 ... 100	% r.H. (non-condensing)
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	aluminium, HNBR, polyurethane resin, epoxy resin, chemical nickel/gold (ENIG), soldering tin (Sn96, 5Ag3CuO, 5NiGe), aluminium oxide, glass (DuPont QQ550)) gold, silver-palladium	
Protection class[2)]	IP67	
Power supply[3)]	9 ... 33	V
Power input	max. 0,2	A
Output		
Power output (2x)[4)]	4 ... 20	mA
Accuracy power output[5)]	± 2	%
Interfaces	RS232/CAN	-
Connections		
Threaded connection	G¾	inch
Tightening torque of threaded connection	45 ±4,5	Nm
Electrical connection	M12x1, 8-pole	-
Tightening torque M12-connection	0,1	Nm
Measuring range		
Rel. dielectric number	1 ... 7	-
Rel. humidity	0 ... 100	% r.H.
Conductivity	100 ... 800000	pS/m
Temperature	-20 ... +85	°C
Fluid level	115/288/515	mm
Measuring resolution		
Rel. dielectric number	$1*10^{-4}$	-
Rel. humidity	0,1	% r.H.
Conductivity	1	pS/m
Temperature	0,1	K
Fluid level	0,1	%

Sensor data	Size	Unit
Measuring accuracy[6)]	)	
Rel. dielectric number[7)]	±0,015	-
Rel. humidity (10 ... 90 %)[8)]	±3	% r.H.
Rel. humidity (<10 %, >90 %)[8)]	±5	% r.H.
Conductivity (100 ... 2000pS/m)	±200	pS/m %
Conductivity (2000 ... 800000pS/m)	Typ. <±10	K %
Temperature	±2	
Fluid level	Typ. <±5	
Response time humidity measurement (0 to 100 %)	<10	min
Weight	170/210/250	g

[1)] Outside the specificated measuring range, there are possibly no plausible measuring values to be expected
[2)] With screwed on connector
[3)] Automatic switch off at U <8 V and U >36 V, with load-dump impulses over 50V an external protection must be provided
[4)] Outputs IOut1 and IOut2 are freely configurable (see interfaces and communication commands)
[5)] In relation to the analogue current signal (4 ... 20 mA)
[6)] Works calibration
[7)] Calibrated to n-Pentan at 25 °C
[8)] Calibrated to air at room temperature

Order code

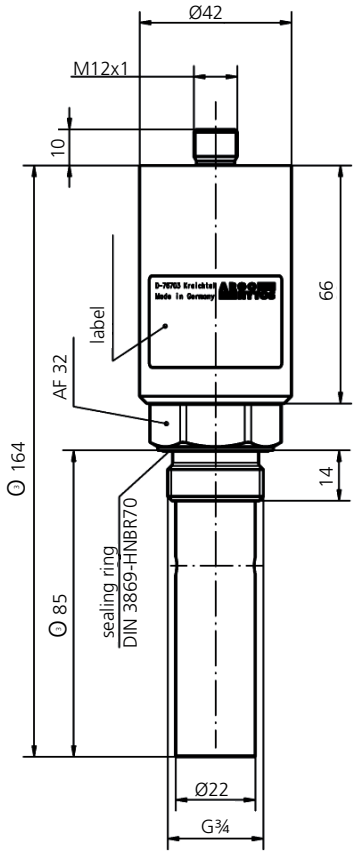
LubCos Level 200, length 200 mm	SCSO 150-1200
LubCos Level 375, length 375 mm	SCSO 150-1375
LubCos Level 615, length 615 mm	SCSO 150-1615

Accessories	
Complete data cable set, 5 m length	SCSO 100-5030
Data cable with open ends, 5 m length	SCSO 100-5020
Contact box for connection of a data cable	SCSO 100-5010
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway	SCSO 100-5100
Display and storage device LubMon Visu	SCSO 900-1000

LubCos Vis+

Continuous Oil Condition Monitoring

LubCos Vis+



Description

Application area

Sensor for determination of the viscosity, relative dielectric number and temperature in hydraulic and lubricating oils. The sensor is a screw-in sensor and immersion sensor respectively and is designed for continuous monitoring of the oil condition.

Performance features

Measurement and documentation of changes in hydraulic fluids and lubricants. The measured values are continuously documented, evaluated and stored. In that way deterioration and changes in the oil (e.g. viscosity and polarity) can be indicated. Through this, damage can be recognized or completely avoided at an early stage. By monitoring of the lubricant, it is also possible to record service measures and the use of the prescribed lubricant quality.

Measuring principle

The sensor records the following physical oil characteristics as well as periodic changes: Temperature, SAW-shear viscosity, and the relative dielectric number of the fluid. As the viscosity and the relative dielectric number show a strong connection to the temperature, the sensor additionally sends - after a learning phase - compensated values at a reference temperature (40 °C). The sensor is able to evaluate constitutional changes as well as its own functional condition automatically. Alarm messages, warnings and errors are displayed as error codes.

Design characteristics

The sensor is provided with a G¾ thread and can be integrated in the return line or the tank. Optionally the sensor can be used as immersion sensor for analysing of oil samples.
Communication with the sensor takes place optionally over a serial RS232 interface, CANopen or over two analogue outputs (4 ... 20 mA). In order to enable a long-term recording of data, the sensor is also provided with an internal storage unit.

Software

A free software for data recording and evaluation of the measured values can be downloaded from our website at www.argo-hytos.com within the download area.

Technical data

Sensor data	Size	Unit
Max. operating pressure	50	bar
Operating conditions		
Temperature[1)] Rel. humidity[1)]	-20 ... +85 0 ... 100	°C % r.H. (non-condensing)
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	aluminium, HNBR, polyurethane resin, epoxy resin, chemical nickel/gold (ENIG), soldering tin (Sn96, 5Ag3CuO, 5NiGe), aluminium oxide, glass (DuPont QQ550) silicon carbide, silicon oxide	
Protection class[2)]	IP67	
Power supply[3)]	9 ... 33	V
Power input	max. 0,2	A
Output		
Power output (2x)[4)] Accuracy power output[5)] Interfaces	4 ... 20 ± 2 RS232/CAN	mA % -
Connections		
Threaded connection Tightening torque of threaded connection Electrical connection Tightening torque M12-connection	G¾ 45 ±4,5 M12x1, 8-pole 0,1	inch Nm - Nm
Measuring range		
SAW-shear viscosity Rel. dielectric number Temperature	8 ... 400 1 ... 7 -20 ... +85	mm²/s - °C
Measuring resolution		
SAW-shear viscosity Rel. dielectric number Temperature	0,1 $1*10^{-3}$ 0,1	mm²/s - K
Measuring accuracy[6)]		
SAW-shear viscosity (8 ... 100 mm²/s)[7)] SAW-shear viscosity (100 ... 400 mm²/s)[7)] Rel. dielectric number[8)] Temperature	Type <±5 Type <±5 ±0,02 ±0,5	mm²/s % - K
Weight	155	g

[1)] Outside the specificated measuring range, there are possibly no plausible measuring values to be expected
[2)] With screwed on connector
[3)] Automatic switch off at U <8 V and U >36 V, with load-dump impulses over 50V an external protection must be provided
[4)] Outputs IOut1 and IOut2 are freely configurable (see interfaces and communication commands)
[5)] In relation to the analogue current signal (4 ... 20 mA)
[6)] Works calibration
[7)] Depending on the oil type
[8)] Calibrated to n-Pentan at 25 °C

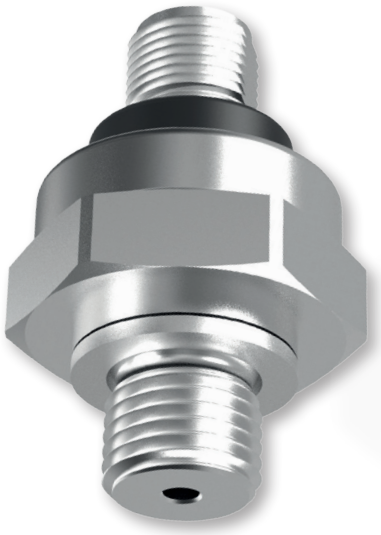
Order code

LubCos Vis+	SCSO 200-1000

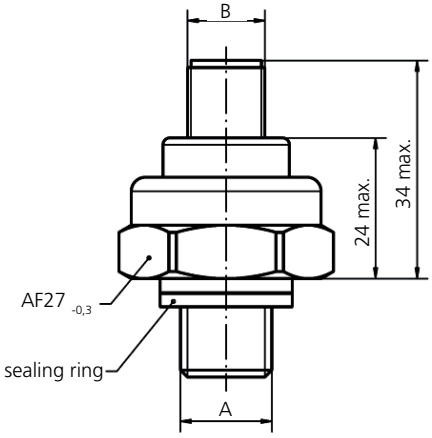
Accessories	
Screw-in block for mounting in a return line, connection G¾	SCSO 100-5070
Complete data cable set, 5 m length	SCSO 100-5030
Data cable with open ends, 5 m length	SCSO 100-5020
Contact box for connection of a data cable	SCSO 100-5010
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway	SCSO 100-5100
Display and storage device LubMon Visu	SCSO 900-1000

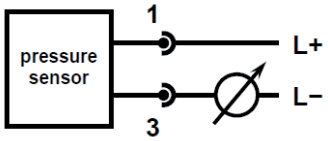
PSC

Continuous Oil Condition Monitoring



PSC





Description

Application area

The new pressure sensors of series PSC of ARGO-HYTOS have been developed for mobile and industrial applications. The used thin film technology provides a hermetically sealed design which does not need an inner seal. Together with the stainless steel housing, the sensor is extremely sturdy and suitable for measurements in all fluids or gases. The sensor is resistant to pressure peaks, high temperatures as well as excessive vibrations and can therefore also be used under extreme conditions.

A wide range of pressure and plug variants allows use in various applications. Thanks to the low weight and the compact design, the sensor is especially suited for OEMs, requiring direct integration into the machine e.g. in pressure measurement at control blocks.

Technical data

Pressure range (relative pressure)		PSC 010-1713	PSC 100-1843	PSC 250-1843	PSC 400-1843
Measuring range	bar	10	100	250	400
Overload pressure	bar	20	200	375	600
Burst pressure	bar	30	300	500	800
Service life		10 mio. pressure cycles			
Output signal - options		4 … 20 mA			
Auxiliary power UB	VDC	8-30			
Current consumption	mA	signal current (max. 20) for current output			
Insulation voltage	VDC	500			
Total error in the nominal temperature range	%	≤ 1,0 % of margin			
Response time	ms	≤ 2 ms, max. up to 63 % of full scale pressure with step change on input			
Accuracy	%	≤ 0,5 % of margin			
Nonlinearity	%	≤ 0,1 % of margin			
1-year stability	%	≤ 0,2 % of margin			
Pressure connection		G¼" A DIN 3852-E			
Electrical connection (plug) Protection classes		M12-4-POLE IP 67			
Weight	g	approx. 80			
Materials in contact with measured medium					
Pressure connection / housing Sensor measuring cell		1.4301 1.4542 or comparable			
Permitted temperature range					
Media temperature	°C	-20 °C ... +120 °C	-30 °C ... +120 °C	-30 °C ... +120 °C	-30 °C ... +120 °C
Ambient temperature*	°C	-20 °C ... +100 °C	-30 °C ... +100 °C	-30 °C ... +100 °C	-30 °C ... +100 °C
Storage temperature*	°C	-20 °C ... +100 °C	-30 °C ... +100 °C	-30 °C ... +100 °C	-30 °C ... +100 °C
Vibration resistance	g PSD	20 according IEC 60068-2-6 (vibration under resonance) 20 according IEC 60068-2-64 (noises)			
EMV tests		EN 61000-4-1 up to -6 EN 61000-6-4			
CE-conformity					
EMV Directive		2004/108/EG noise emission and interference resistance			
Pressure Equipment Directive		Classification according to Pressure Equipment Directive 97/23/EG as pressure maintaining components with safety function (article 3. sect. 3).			
RoHs Conformity		yes			

*depending on the connection cable

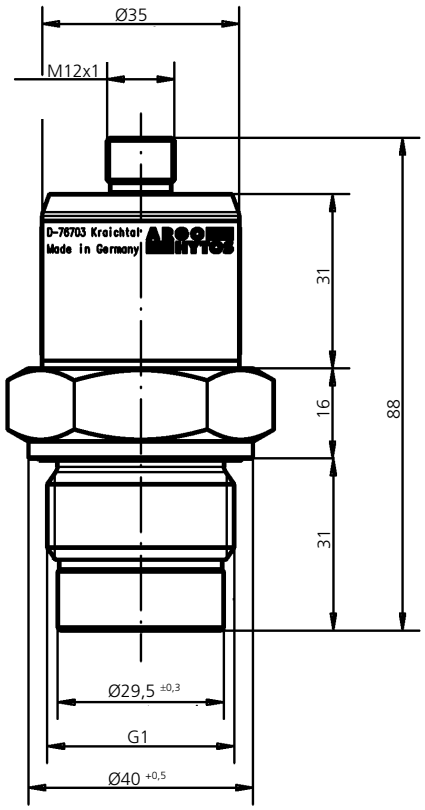
Order code

Order code	Pressure range	Output	Seal	Connection „A“ Material 1.4301	Electrical connection „B“
PSC 400-1843	0 - 400 bar	4-20 mA	Aluminium washer	G¼ A DIN 3852-A	M12 - 4-pole
PSC 250-1843	0 - 250 bar	4-20 mA	Aluminium washer	G¼ A DIN 3852-A	M12 - 4-pole
PSC 100-1843	0 - 100 bar	4-20 mA	Aluminium washer	G¼ A DIN 3852-A	M12 - 4-pole
PSC 010-1713	0 - 10 bar	4-20 mA	FKM (Viton) O-ring	G¼ A DIN 3852-E	M12 - 4-pole

OPCom FerroS

Continuous Oil Condition Monitoring

OPCom FerroS



Description

Application area

The OPCom FerroS is an intelligent sensor for determination of the condition of hydraulic and lubricating systems based on ferromagnetic wear particles. The sensor is a screw-in / immersion sensor and is designed for continuous monitoring of ferromagnetic contamination in oil.

Performance features

The sensor measures the wear of mechanical components by detecting ferromagnetic particles. The number of particles is continuously recorded and evaluated by an inductive measuring principle. Transfer is effected via digital and analogue interface. Recognition of wear and damage at an early stage allows planning of servicing measures and machine failures can be minimized.

Measuring principle

The sensor records the number of ferromagnetic particles accumulating at the permanent magnet at the sensor head. In this regard, the sensor can distinguish between fine particles in the micrometre range and coarse ferromagnetic fragments in the millimetre range. According to the output signal of 0 … 100% the distribution of ferromagnetic particles at the sensor surface can be read off. Furthermore, the sensor may compensate the magnetic field of the permanent magnet, whereupon the particles are released from the sensor head (automatic cleaning process). With the time intervals between two cleaning processes, a change in wear can be assumed.

Design characteristics

The sensor is provided with a G1“ thread and can directly be integrated in a gearbox or in the lubricating circuit.
The communication with the sensor either takes place over a serial RS232 interface, CAN (CANopen or SAE J1939) or via an anlog output (4 ... 20mA).

Technical data

Sensor data	Size	Unit
Max. operating pressure	20	bar
Operating conditions		
Temperature	-40 ... 85	°C
Humidity [1]	0 ...100	% r.H.
Min. distance for attraction of fine particles (1g) in oil with		
Kin. viscosity <100mm²/s	~9,0	mm
Kin. viscosity 300mm²/s	~7,5	mm
Kin. viscosity 500mm²/s	~7,0	mm
Min. necessary flow velocity for automatic cleaning process	0,05	m/s
Max. flow velocity	1,0	m/s
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP) synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylen glycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	aluminium, polyamide (PA6 GF30), HNBR, expoxy resin	
Protection class[2]	IP 67	
Power supply[3]	9... 33	VDC%
Power input	max. 0,5	A
Output		
Output analogue [4]	4 ... 20	mA
Accuracy of power output [5]	±2	%
Interface digital	RS232/CAN	-
Connection		
Threaded connection	G1	inch
Tightening torque thread	50 ±5	Nm
Electrical connection	M12x1, 8-pole	-
Tightening torque M12-plug	0,1	Nm
Measuring range		
Fine particles	0 ... 100	%
Coarse particles	1 ... 10	-
Measuring resolution		
Fine particles	0,1	%
Coarse particles	1	-
Repeat accuracy		
Fine particles	±5	%
Weight	~190	g

1) Non-condensing
2) With screwed-on connector
3) Automatic switch-off at U < 8 V and U > 36 V
4) Output is freely configurable (see interface and communication commands)
5) In relation to digital output value

Order code

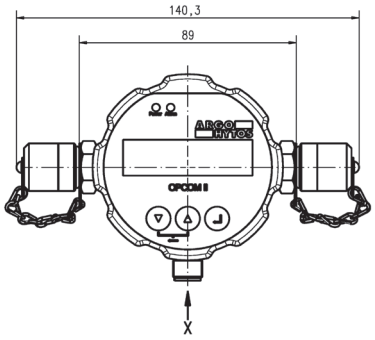
OPCom FerroS	SPCO 500-1000

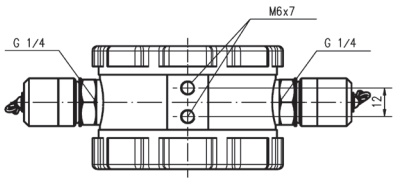
Accessories	
Complete data cable set, 5 m length	SCSO 100-5030
Data cable with open ends, 5 m length	SCSO 100-5020
Contact box for connection of a data cable	SCSO 100-5010
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway	SCSO 100-5100
Display and storage device LubMon Visu	SCSO 900-1000

OPCom Particle Monitor

Continuous Oil Condition Monitoring

OPCom Particle Monitor





Dimensional drawing

Description

Application area

The OPCom Particle Monitor is a compact particle measurement device for continuous monitoring of contamination and wear in hydraulic fluids and lubricants.

Performance features

Recognizing changes

Particle monitors precisely display any change in contamination of a system. Thus you can react quickly with an increase in particle concentration and countermeasures can be taken. Subsequent damages are minimized and costs are reduced.

High pressure range

The OPCom Particle Monitor is designed for operating with pressures of up to 420 bar. Thus it can directly be mounted to a pressure line.

Intuitive operating

The OPCom Particle Monitor is equipped with an intensely illuminated graphic display and a keypad by which you may set up all required adjustments. The menu navigation is made up intuitively and logically.

Wide communication possibilities

The OPCom Particle Monitor exports data to a serial interface or optionally to a CAN-Bus (CANopen + SAE J1939). In parallel, the configurable 4 - 20 mA interface can be connected. Over a digital alarm output you will be warned when limits are exceeded or fallen below. Readings can run time-controlled, manually or started and stopped over a digital input. The data can also be stored on the integrated memory unit.

Design characteristics

On the fluid side, the OPCom Particle Monitor is equipped with two Minimess connections to connect the sensor generally in the off-line circuit to the system. The electrical connection is installed via an 8-pole M12 x 1 circular plug. The integrated data memory allows data recording over a longer period. Besides all its technical functions, the OPCom Particle Monitor scores by its compact and optical design.

Measuring principle

The OPCom Particle Monitor is an optical particle monitor which works to a so-called light extinction principle. This means that particles are classified within a measuring cell with the help of a laser regarding their size and quantity. The device is calibrated to ISO 11943. It calculates and displays results according to ISO 4406:99, SAE AS 4059, NAS 1638 und GOST 17216. More details and conversion tables: see manual.

Software

A free PC-software for data recording and evaluation of the measured values can be downloaded from our website at www.argo-hytos.com within our download area.

Versions

The OPCom Phosphate Ester version has specially been developed for use in phosphate ester fluids. This version is delivered without Minimess couplings.
Another variant is the OPCom without display.

Warnings

› Avoid contact of phosphate ester fluids with the housing of the device!
› Device can contain remains of the calibration fluid!

Technical data

Sensor data	Size	Unit
Max. operating pressure		
dynamic	420	bar
static	600	bar
Permissible flow rate	50 ... 400	ml/min
Operating conditions		
Temperature	-20 ... +85	°C
Rel. humidity	0 ... 100	% r.H. (non-condensing)
Display readable up to	60	°C
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO) phosphate ester*[1],	
Wetted materials	Stainless steel, sapphire, chrome, FFKM*[1], NBR*[2], Minimess coupling*[2]: zinc/nickel	
Protection class[1)]	IP67	
Power supply	9 ... 33	V
Power input	max. 0,3	A
Max. power consumption	2	W

Sensor data	Size	Unit
Output		
Power output[2)]	4 ... 20	mA
Accuracy power output[2)]	± 2	%
Interfaces	RS232/CAN	
	Open	-
Alarm contact	Collector	-
Digital input for start and stop		
Power supply	9 ... 33	V
Data memory	3000	data records
Connecting dimensions		
Fluid connections	G¼	inch
	Minimess*[2]	-
	M16x2	
Electrical connection	M12x1, 8-pole	-
Tightening torque M12-connection	0,1	Nm
Measuring range according to ISO 4406:99		
Cleanliness level (measuring range)	0 ... 24	Ordinal number (OZ)
Cleanliness level (calibrated range)	10 ... 22	Ordinal number (OZ)
Measuring accuracy (calibrated range)	±1	Ordinal number (OZ)
Weight	~720	g

[1)] With screwed-on connector
[2)] Output IOut is freely configurable (see interfaces and communication commands)
[3)] In relation to the analogue current signal (4 ... 20 mA)

*[1] only applies to phosphate ester version
*[2] only applies to OPCom Particle Monitor & OPCom without display

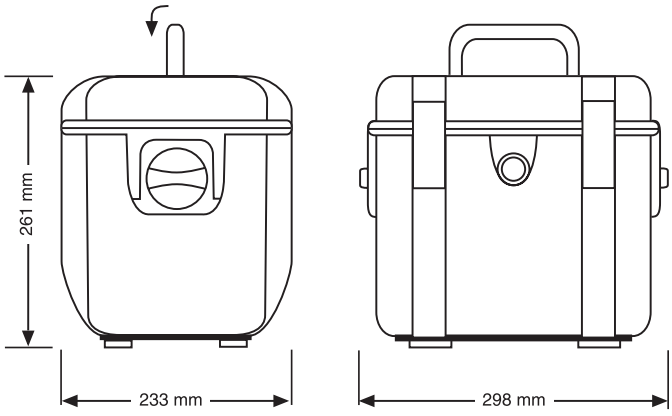
Order code

OPCom Particle Monitor	SPCO 300-1000
OPCom Particle Monitor for phosphate ester	SPCO 300-2000
OPCom Particle Monitor without display	SPCO 300-1200

OPCom Portable Oil Lab

Particle Counting - The Easy Way

OPCom Portable Oil Lab



Dimensions

Description

Mobile oil laboratory for oil cleanliness and condition monitoring - easy, compact and cost-efficient

The OPCom Portable Oil Lab is a mobile oil laboratory for service, with which the oil cleanliness and the oil condition in hydraulic and lubrication systems can be measured quickly and easily.

Sampling can be carried out directly via a pressure line or via the integrated pump. Measurement can be effected either manually or automatically in an adjustable time interval.

The OPCom Portable Oil Lab enables particle measuring according to the latest standard and displays the cleanliness classes according to ISO 4406:1999 and SAE AS4059. In addition, the relative humidity and oil temperature are displayed. Optionally, further information on the oil condition, taken from the conductivity and polarity of the oil, can be shown via the integrated display.

All functions of the OPCom Portable Oil Lab can intuitively be operated via the integrated keypad. The internal data memory allows saving of more than 1.250 data records, which may comfortably be transferred to a processor via USB adapter or SD card. Furthermore, the OPCom Portable Oil Lab includes an integrated printer to print any data record on the spot.

The real-time clock, integrated in the OPCom Portable Oil Lab, adds a time-stamp to all measured data in order to facilitate a later allocation. The measured data can additionally be marked with a freely definable indication of the measuring point.

The integrated powerful battery pack is available in two capacity classes and allows operation of several hours. The used batteries are characterized by a low self-discharge, long operating state as well as a recharging of less than one hour. The compact particle counter is supplied with a power supply, hoses and couplings. Amongst others, the OPCom Portable Oil Lab can additionally be delivered together with a convenient carrying bag with separated pockets for hoses and samples on one side as well as for the recharger and other accessories on the other side.

The portable oil service device OPCom portable Oil Lab offers an intelligent and cost-efficient possibility for monitoring of your system and oil parameters.

Technical data

Parameter	Size	Unit
Operating pressure		
High-pressure connection[1)] With pump operation	5 ... 320 0	bar bar
Viscosity range fluid	5 ... 1000	mm²/s
Operating temperature range fluid [2)]	0 ... +60	°C
Operating conditions		
Temperature Rel. humidity	-10 ... +60 0 ... 95	°C % r.H. (non-condensing)
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO)	
Wetted materials	chrome, aluminium, stainless steel, Viton, steel, brass, HNBR, NBR, polyurethane resin, epoxy resin, chemical nickel/gold (ENIG), soldering tin (Sn96, 5Ag3CuO, 5NiGe), aluminium oxide, glass (DuPont QQ550), gold, silver-palladium, sapphire, PVC (hoses)	
Power supply device		
Power supply Power consumption	24 max. 8	VDC A
Power supply for the according power adaptor		
Power supply Power consumption Power at 24VDC-output	100 ... 240 max. 4 max. 221	VAC (50/60 Hz) A W
Characteristics battery		
Nominal capacity Loading time Running time when measuring without pump (When measuring with pump the running time decreases depending on the oil viscosity)	6900 < 1 > 24	mAh h h
Measuring range particle measurement according to ISO 4406:1999		
Cleanliness degree Cleanliness degree (calibrated range) Size channels	0 ... 24 10 ... 22 4, 6, 14, 21	ordinal number (OZ) ordinal number (OZ) µm(c)
Measuring range oil parameter		
Rel. permittivity Rel. humidity Conductivity Temperature	1 ... 7 0 ... 100 100 ... 800000 -20 ... +120	- % pS/m °C
Measuring accuracy		
Particle measurement (within calibr. range) - ISO4 / ISO 6 Particle measurement (within calibr. range) - ISO14 / ISO 21 Rel. dielectric number[3)] Rel. humidity (10 ... 90 %)[4)] Rel. humidity (<10 %, >90 %)[4)] Conductivity (100 ... 2000pS/m) Conductivity (2000 ... 800000pS/m) Temperature	± 1 ± 2 ± 0,015 ± 3 ± 5 ± 200 Typ. < 10 ± 2	ordinal number (OZ) ordinal number (OZ) - % r.H. % r.H. pS/m % K
Interfaces	USB-B, SD-card (SD or SD-HC in FAT/FAT16/FAT32-data format)	
Size internal data memory	1250 readings (with time stamp)	
Weight	< 10	kg
Scope of delivery	Manual, power supply 100-240V, power cable, low-pressure hose set incl. connection couplings, high-pressure hose	

[1)] Depending on the oil viscosity
[2)] Viscosity of the fluid must be within the permissible range
[3)] Calibrated to n-Pentan at 25 °C
[4)] Calibrated to air at room temperature

Order code

OPCom Portable Oil Lab	PPCO 300-1000

Spare parts	
Set, cover for SD and USB	PPCO 300-5090
Hose set with couplings	PPCO 300-5050
Minimess cable 2 m M16 x 2	PPCO 100-5280
Paper rolls for thermal printer	SCSO 900-5075
Power supply	PPCO 300-5120
Power cable	PPCO 300-5130
Protection caps (2x)	PPCO 300-5080
Suction connection	PPCO 300-5060
Protective strainer	PPCO 300-5070

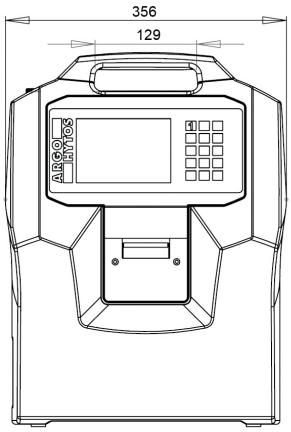
Optional accessories (not included in the scope of delivery)	
Carrier bag for accessories	PPCO 200-5020
Carrying strap	PPCO 200-5010
SD-card	SCSO 900-5050
SD-card reader	SCSO 900-5040

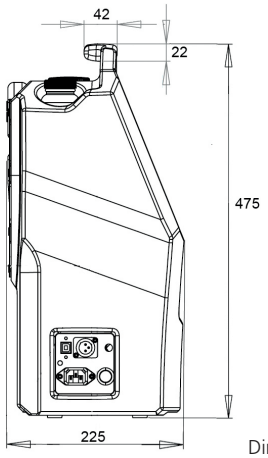
Power cable with non-European plug on demand

OPCount

Online and bottle measurement · Mobile and stationary operation · Lab quality accuracy

OPCount





Dimensions

Description

OPCount - Accurate mobile and stationary measurements

The OPCount is a particle counter, designed for stationary or mobile operation. With its touch display and keypad it can be operated intuitively.

The volumetric sensor cell and the modern and technically advanced components guarantee high resolution in combination with measuring accuracy. Each particle passing through the sensor is detected, measured and counted.

The measurement results are shown according the standards ISO 4406 and SAE AS 4059. Thanks to the 32-bit high performance control unit, flexible measurements and simultaneous storage of data from different measuring points are possible. By operating the sensor with pressure, bubble formation is prevented. The measurement results can be printed on site on the integrated printer. With the included software, the measurement data can be downloaded to a PC for further processing.

The touch display indicates the particle sizes and numbers as well as the cleanliness classes. By preset measurement profiles, online and bottle samples can quickly be measured. These profiles can be easily created and customized by the user via the touch display. To prevent incorrect or unauthorized operation, the user area of the OPCount can be protected by a password.

Via the conversational setting menu of the OPCount, multiple languages are available. German, English, French, Spanish, Portuguese, Russian, Dutch, Chinese and Finnish may be selected.

The device is delivered with a power cord, USB cable, Minimess hose incl. adapter, low pressure hose in a carrying case.

Additionally included are:

- 1 Software CD
- Calibration certificate
- 1 residual oil bottle
- 1 sample bottle

Technical data

Parameter	
Operating pressure	
Low pressure	0 - 7 bar
High pressure	4 - 420 bar
Fluid specifications	
Fluid temperatures	10 °C - 60 °C
Viscosity range of fluid	with bottle measurement up to 200 cSt; at high pressure up to 350 cSt; at lubrication systems up to 1000 cSt
Flow rate	25 ml / min.
Technical data	
Ambient temperature	5 °C - 40 °C
Relative humidity	max. 70 %
Number of channels	8 channels
Size channels	4, 6, 10, 14, 21, 25, 38, 70 µm 2, 5, 10, 15, 20, 25, 50, 100 µm*
Calibration	according to ISO 4402* / ISO 11171
Cleanliness classes	ISO 4406; NAS 1638*; SAE AS 4059; GJB 420 A and GOST 17216*
Light source	laser diode
Weight	9 kg
Dimensions	475 x 356 x 225 mm
Internal data storage	4000 data records
Interface	USB
Measuring range	
ISO 4406	01 - 23
NAS 1638	00 - 12*
SAE AS 4059D	000A - 12F
GOST 17216	00 - >17*
GJB 420A	000 - >12

*optional

Parameter	
Electrical connections	
Power supply	100 - 240 Volt, 50/60 Hz 10 - 36 Volt (XLR-connection, charging of battery not possible)
Running time of battery	4 hours
Software	
Download Software	for PC safeguarding of the measurements stored in the device
Compatibility with sample fluids	Materials getting into contact with the samples: Steel 1.0161 (St37-) and 1.4571 (V4A), aluminium, borosilicate glass, polyamide, FKM. They are compatible with almost all mineral oil products. The standard version of the OPCount is not stainless and not compatible with esters or ketones as for example acetone.

Order code

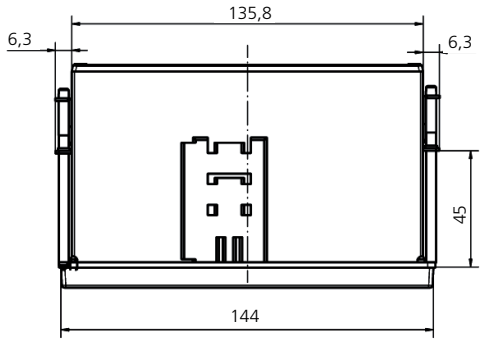
OPCount	OC 1000

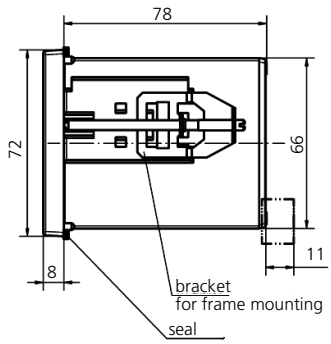
Accessories	
Thermal paper	OC 5310
Vacuum pump	OC 5240
Sensor cable	OC 5430

LubMon Visu

Continuous Oil Condition Monitoring

LubMon Visu





Description

Application area

LubMon Visu is a display unit, suitable for panel-mounting, with integrated data memory for connection of various sensors. ARGO-HYTOS offers a wide range of compatible sensors for monitoring of hydraulic and lubricating fluids. These are amongst others particle monitors, temperature, humidity and oil aging sensors as well as sensors for monitoring of the filter lifetime. Furthermore, any sensor with analogue current output may be connected e. g. for pressure or filter monitoring.

Performance features

Two sensors with serial interface as well as two sensors with analogue interface may additionally be attached to the LubMon Visu. The recorded measured values are collected in the data memory and may be copied onto a SD-memory card if desired. By means of the integrated display, the current measured values as well as the stored data may be indicated with timestamp. Navigation through the data and the operating menu is carried out over six keys at the front side of the module. Besides of the graphical display, alarms and status information are shown by four LEDs.
Communication with a processor or a SPS is effected by USB 2.0 or optionally by Ethernet. In order to activate the switch signals, there are also three potential-free switch contacts available. Optionally the printer, listed under accessories, may be connected to the module.

Design characteristics

LubMon Visu is designed for panel-mounting. Cabling is effected by the plug at the back side of the device. The sensors are supplied with power by the connecting plugs also.

Technical data

Module data	Size	Unit
Power supply		
Voltage	9 ... 33	VDC
Power input	typ. 100	
	max. 300	mA
Ambient conditions		
Temperature, operation	0 ... +60	°C
Temperature, storing	+5 ... +50	°C
Humidity, operation	0 ... 95	%
Humidity, storing	0 ... 95	%
Connections		
RJ45[1)]	1x	
8-pole switch contact, provided with a thread	3x	
USB-B	1x	
SD-card slot	1x	
Operation		
Membrane keyboard	6	keys
Display		
Graphical display	128 x 32	pixel
Brightness	adjustable	

[1)] Only available with Ethernet version

Order code

LubMon Visu, standard	SCSO 900-1000
LubMon Visu, Ethernet	SCSO 900-1010

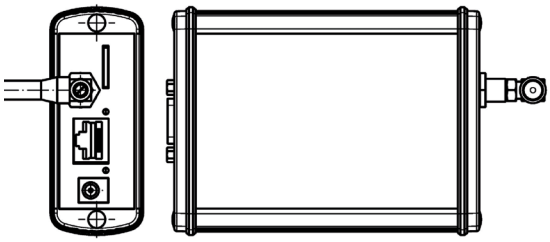
Compatible sensors	
LubCos H_2O	SCSO 300-1000
LubCos H_2O*plus* II	SCSO 100-1010
LubCos Level 200	SCSO 150-1200
LubCos Level 375	SCSO 150-1375
LubCos Level 615	SCSO 150-1615
LubCos Vis*plus*	SCSO 200-1000
OPCom II	SPCO 300-1000
FerroS	SPCO 500-1000

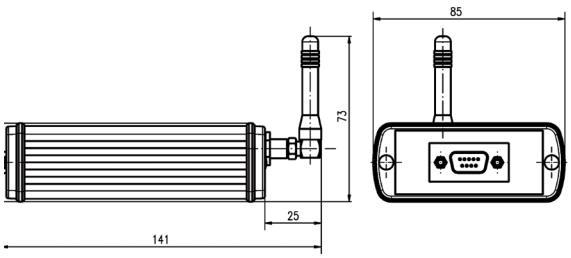
Accessories	
Connecting plug	SCSO 900-5010
Data cable with open ends, 5 m length	SCSO 100-5020
USB-SD card reader	SCSO 900-5040
SD-card	SCSO 900-5050
Compatible thermal printer	SCSO 900-5070
USB cable	SCSO 900-5060
Retaining clips	SCSO 900-5030

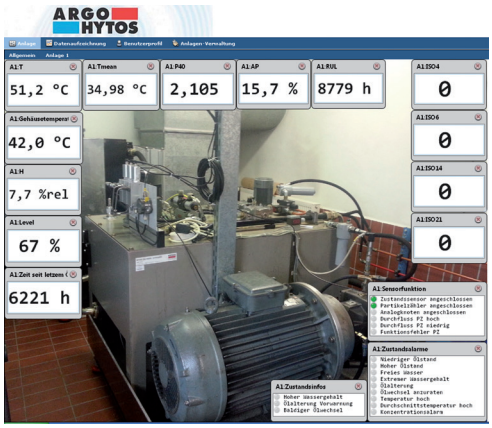
LubMon Connect

Continuous Oil Condition Monitoring

LubMon Connect







Description

Application area

The LubMon Connect is a remote gateway for connection of ARGO-HYTOS sensors via a CANopen interface. The data of the connected sensors are automatically transferred to a web database and can be displayed or exported via an internet page.

By the use of the CAN Bus and the CANopen protocol, a simple and robust possibility is provided to integrate the sensors into existing systems in order to guarantee secure communication.

At the gateway an Ethernet interface and a GSM module are provided for data transfer to the internet. The communication can be carried out either via the at the location existing network or - e.g. with mobile or remote systems - also via the worldwide available GSM network.

The LubMon Connect communicates with an internet server which can store all incoming data in variable time intervals. The data can be visualized directly online in form of diagrams or exported for processing. For this purpose, a ring memory of 100.000 data sets is available.

Note: If desired, Condition Monitoring Systems with LubMon Connect and sensors may be supplied ready for connection (plug & play). For the internet portal of the LubMon Connect an annual fee shall be due.

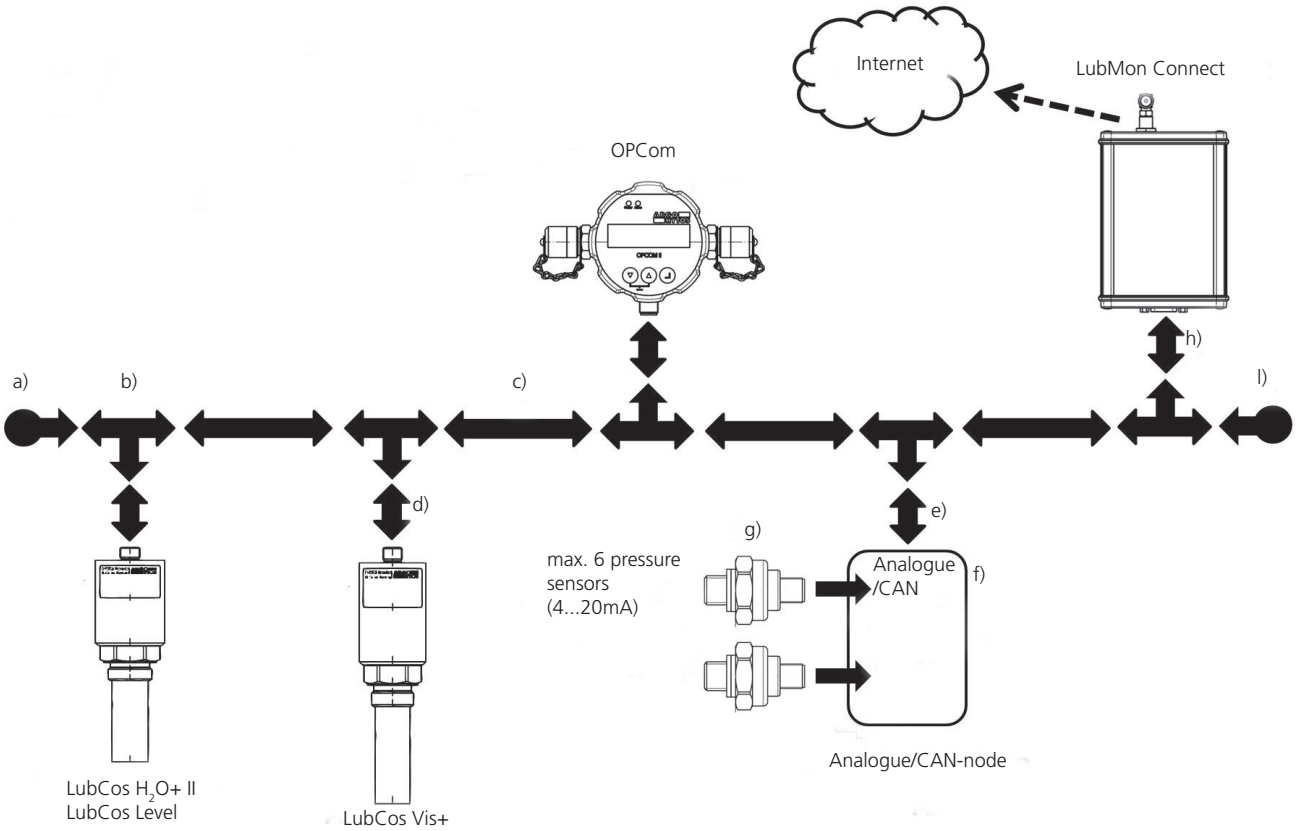
Technical data

Data	Size	Unit
Ambient conditions operation		
Temperature	+5 ... +50	°C
Humidity	0 ... 95	% r.H.
Ambient conditions storing		
Temperature	0 ... +60	°C
Humidity	0 ... 95	% r.H.
Power supply	12 ... 28	VDC
Power input	max. 0,3	A
CAN interface		
Plug	SUB-D9	-
Bus speed	100 / 125 / 250 / 500	kBaud
Protocol	CANopen	
Ethernet interface		
Connection type	RJ45	-
Speed	10/100	MBit
Protocol	UDP	

Data	Size	Unit
GSM		
Aerial	Stub Antenna FME	-
Transmission power @ 850/900 MHz	2	W
Transmission power @ 1800/1900 MHz	1	W
SIM card type	standard SIM card 1,8V / 3V	-
Frequencies	850 / 900 / 1800 / 1900 (Quad-Band EGSM)	MHz

Optical indications	
Power-LED	green
Ethernet-LED	yellow

Connection diagramme (example)



Order code

LubMon Connect	SCSO 700-1000

Accessories	
Fixing clamp LM Connect short side	SCSO 700-5010
Fixing clamp LM Connect long side	SCSO 700-5020
Subscription for one-year-use LM Connect	SCSO 700-5030
Subscription for one-year-use LM Connect	SCSO 700-5040
a) CAN terminator female	SCSO-700-5160
b) CAN T-connector	SCSO 700-5140
c) CAN cable standard 2 m	SCSO 700-5120
d) CAN sensor cable	SCSO 700-5110
e) CAN cable open leads 0,3 m	SCSO 700-5130
f) Analogue CAN adapter LM Connect	SCSO 700-5060
g) PSC pressure sensor	PSC 400-1843 PSC 250-1843 PSC 100-1843 PSC 010-1713
h) Sub-D CAN adapter LM Connect	SCSO 700-5050
i) CAN terminator male	SCSO 700-5150

Supported sensors	
LubCos H_2O+ II	SCSO 100-1010
LubCos Level 200	SCSO 150-1200
LubCos Level 375	SCSO 150-1375
LubCos Level 615	SCSO 150-1615
LubCos Vis+	SCSO 200-1000
OPCom	SPCO 300-1000
FerroS	SPCO 500-1000

LubMon PC*light*

Continuous Oil Condition Monitoring

LubMon PC*light*

Description

Application area

The software LubMon PClight allows recording, storing and visualizing the incoming data from the condition sensors.

Performance features

The scope of operation of the LubMon PC*light* is specified below:

Communication

- communication optionally over RS232 journal or TCP/IP
- free selection of IP-address, port number and COM-Port
- free adjustability of the sampling rate

Graphical visualization of the measured data

- two diagrams with respectively two y-axis and one x-axis
- flexible axis assignment
- logarithmic and linear axis display
- diverse zoom and formatting options
- list display of the currently measured data and units

Storing

- start/stop-function for automatic storing
- storing in .txt-format with header for series of measurement and labelling of the units
- recording of the current timestamp

Others

- intuitive operation

System requirements

The software is written in NI-LabVIEW. For operation, the current runtime environment LabVIEWRun-Time Engine and the NI.Visa Runtime Engine are necessary. This can optionally be downloaded together with the programme in packet.
The system requirements apply to the requirements of the runtime environment. The following operating systems are supported from Windows 2000 on.

Software

The software can be downloaded from our website at www.argo-hytos.com.

Order code

LubMonPC *light*	available at www.argo-hytos.com

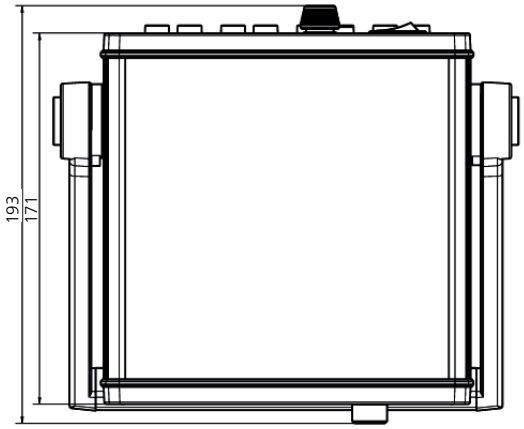
Supported sensors	
LubCos H_2O	SCSO 300-1000
LubCos H_2O*plus* II	SCSO 100-1010
LubCos Level 200	SCSO 150-1200
LubCos Level 375	SCSO 150-1375
LubCos Level 615	SCSO 150-1615
LubCos Vis*plus*	SCSO 200-1000
OPCom II	SPCO 300-1000
OPCom Ferros	SPCO 500-1000

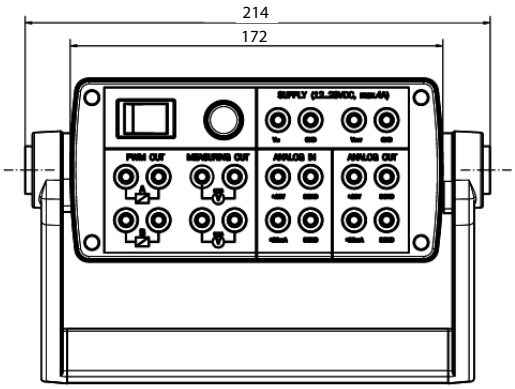
Accessories	
Contact box for connection of a data cable, M12 x 1,8-pin	SCSO 100-5010
Data cable with open ends (5m)	SCSO 100-5020
Complete data cable set, M12 x 1,8-pin, (5m)	SCSO 100-5030
USB adapter - RS232 serial	PPCO 100-5420
Power supply	SCSO 100-5080
Ethernet - RS232 gateway for sensor connection	SCSO 100-5100

ValvE SiCon

Accessories for Valve Electronics

ValvE SiCon





Description

Application area

ValvE SiCon is a standalone signal generator, designed for controlling valves via programmable parameters. By the use of standard connectors, the device is suitable for all valves, regardless of the manufacturer.

Performance features

ValvE SiCon can operate a valve of up to two magnetic coils. The control of the coil can be operated via a PWM signal by either setting the duty cycle ratio or the coil current value. The present coil current is additionally given out on a measuring channel as an analogue voltage value. Furthermore, two analogue outputs (±10V and ±20mA) are available for controlling valves with integrated electronics.

ValvE SiCon offers several configurable functions such as sine, ramp, triangle or sweep. Moreover, even set-points can be preset, from either an external device via two analogue inputs (±10V and ±20mA), or with the integrated potentiometer.

The graphical display in combination with the keypad on the front panel enables an easy operation of the unit. In addition to the graphical display, the current conditions are shown via four status LEDs.

Design characteristics

ValvE SiCon is designed for desktop use. The angle of the device can be modified by a fixable handle in steps of 30°. For all inputs and outputs, banana jack plugs at the back of the device are used.

Technical data

Device data	Size	Unit
Power supply		
Voltage	9 ... 28	VDC
Current consumption	Max. 4	A
Ambient conditions		
Temperature, storing	0 ...+60	°C
Temperature, operation	+5 ... +50	°C
Humidity, storing	0 ... 95	%
Humidity, operation (non-condensing)	0 ... 95	%
Connections		
Banana jacks	20	
Operation		
Membrane keyboard	6	keys
Display		
Graphical display	128x32	pixel
Brightness	adjustable	
Analogue inputs		
Voltage (1x)	±10	V
Current (1x)	±20	mA
Resolution	12	Bit
Analogue outputs		
Voltage (1x)	±10	V
Current (1x)	±20	mA
Resolution	12	Bit
PWM-outputs (2x)		
Resolution	12	Bit
Measuring output	1	V / A
Frequency range		
PWM	20 ... 9.999	Hz
Dither	0 ... 500	Hz
Signal (sine, triangle,...)	0 ... 500	Hz

Order code

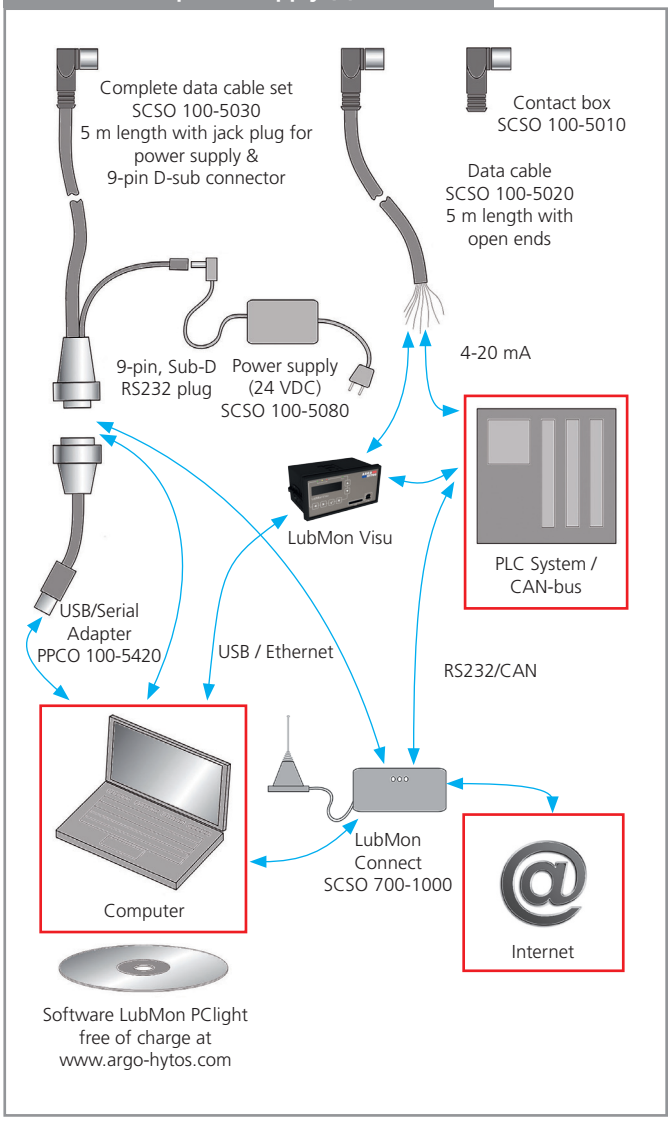
ValvE SiCon	VE 100-1000

Connection Options

Continuous Fluid Condition Monitoring

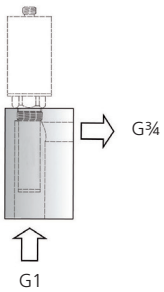
Product	Order number
LubCos H_2O	SCSO 300-1000
LubCos H_2O *plus* II	SCSO 100-1010
LubCos Vis*plus*	SCSO 200-1010
LubCos Level	Level 375 SCSO 200-1010 Level 615 SCSO 150-1615
OPCom FerroS	SPCO 500-1000
OPCom PM	SCSO 300-1000
LubMon Visu	Standard Version SCSO 900-1000 Ethernet Version SCSO 900-1010

Data transfer/power supply (a)

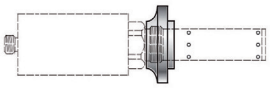


Mounting option (b)

LubCos



Screw-in block
SCSO 100-5070
Adapter



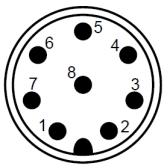
G¾ screw connection
generally available
Tank mounting

OPCom II

Minimess coupling
with integrated screen for
- medium pressure SPCO 300-5105
- high pressure SPCO 300-5140

Flow controller
for variable pressure range
- SPCO 300-5100

Sensor connector 8-pole M12x1 (a)



Pin	Function
1	Power supply L+
2	Power Supply L-
3	TxD, CAN low [OUT]
4	RxD, CAN high [IN]
5	Digital input (Start/Stop)
6	Analogue output 4...20mA
7	Switch output (Open Collector/Alarm)
8	Signal ground
Screen	-

The here shown examples display the connection of the ARGO-HYTOS oil condition sensors and the use of available accessories. If you are interested in an individual solution for condition monitoring, we will gladly support you in the selection of products. Please follow the installation instructions in the manual.