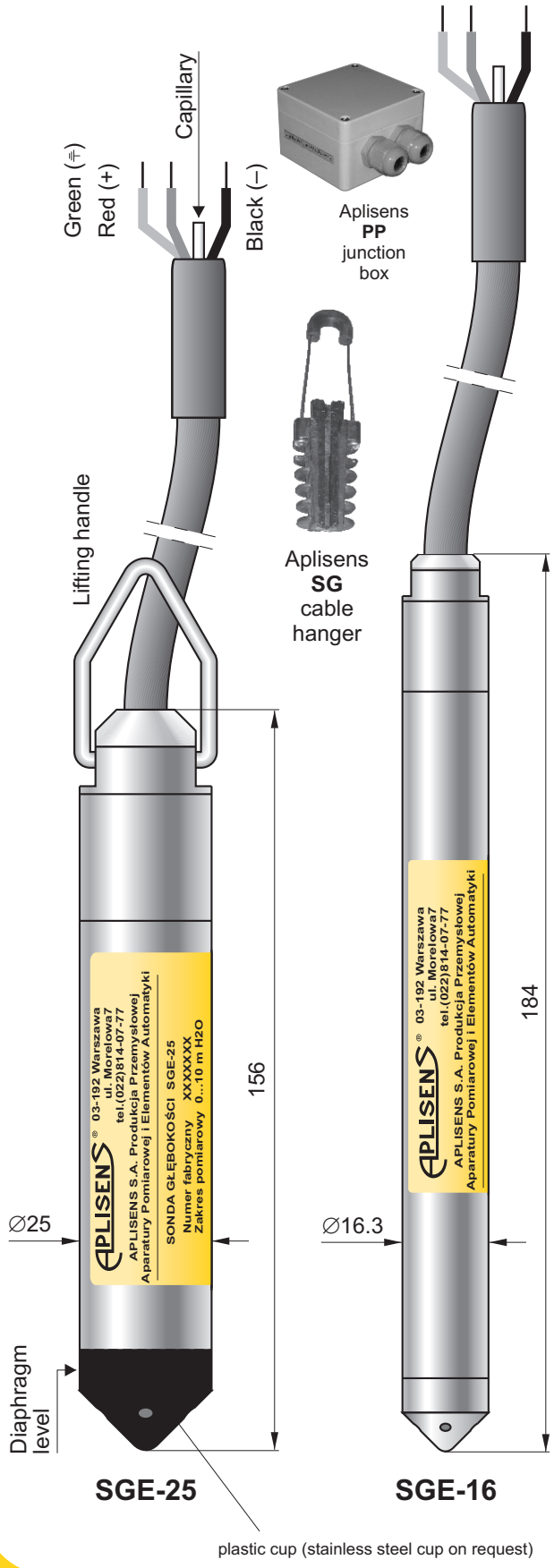
Chapter V

Hydrostatic level probes, hydrostatic density transmitter

Hydrostatic level probes SGE-25 and SGE-16



- ✓ **Any measurement range from 1 up to 500 m H_2O**
- ✓ **Integrated internal overvoltage protection circuit**
- ✓ **Marine certificate DNV**
- ✓ **ATEX Intrinsic safety**

Application

The SGE-25 hydrostatic level probe is applicable to measure liquid levels in tanks, deep wells or piezometers.

The SGE-16 probe is a specialized device designed to measure water levels in narrow diameter piezometers or wells.

Principles of operation, construction

The probe measures liquid levels, basing on a simple relationship between the height of the liquid column and the resulting hydrostatic pressure. The pressure measurement is carried out on the level of the separating diaphragm of the immersed probe and is related to atmospheric pressure through a capillary in the cable.

The active sensing element is a piezoresistant silicon sensor separated from the medium by an isolating diaphragm. The electronic amplifier, which works in combination with the sensor, and is meant to standardize the signal, is additionally equipped with an overvoltage protection circuit, which protects the probe from damage caused by induced interference from atmospheric discharges or from associated heavy current engineering appliances.

Installation, method of use

When lowered to the reference level, the probe may either hang freely on the cable or lie on the bottom of the tank. The cable with the capillary can be extended using a standard signal cable. For the cable connection a special Aplisens **SG** cable hanger is recommended. The cable connection should be situated in a non-hermetically sealed box (the internal pressure inside the box should be equal to the atmospheric pressure), preventing water or other contaminants from getting into the capillary. The Aplisens **PP** junction box is recommended For systems with long signal transmission lines, it is recommended the using of an additional Aplisens UZ-2 overvoltage protection circuit in the form of a wall-mounted box which allows the cables connection. When the probe cable is being wound up, the minimum winding diameter should be 30cm and the cable should be protected from mechanical damage.

If there is a possibility of turbulence in the tank (for example, because of the mixer operating mixers or a turbulent inflow), the probe should be installed inside a screening tube (e.g. made of PVC). If the probe is to be lowered deeper than 100m, the cable should be hanged at steel lifting rope. Cleaning the probe diaphragm by mechanical means is strictly prohibited.

Technical data for the SGE-25 level probe

Measuring range

Any measuring range 1 ÷ 500 m H_2O (the standard ranges: 4, 10, 25, 60, 100 m H_2O are recommended)

	Measuring Range		
	1 m H_2O	**4 m H_2O**	**0...10 m H_2O ÷ 500 m H_2O**
Overpressure Limit (repeatable – without hysteresis)	40 × range	25 × range	10× range (max. 700 m H_2O)
Accuracy % FSO acc. to IEC 60770	0,6%	0,3%	0,2%
Accuracy % FSO acc. to BFSL	0,3%	0,15%	0,1%
Thermal error	Typical 0,3% / 10°C max 0,4% / 10°C		Typical 0,2% / 10°C max 0,3% / 10°C

Long term stability 0,1% or 1 cm H_2O for 1 year

Hysteresis, repeatability 0,05%

Thermal compensation range 0 ÷ 40°C – standard
-10 ÷ 70°C – special version

Medium temperature range -25 ÷ 40°C – standard
0 ÷ 75°C – ETFE and PTFE version

CAUTION: The medium must not be allowed to freeze in the immediate vicinity of the probe

Technical data for the SGE-16 level probe

Measurement ranges 10 ÷ 100 m H_2O

Overpressure limit 10 × range
(repeatable – without hysteresis)

Accuracy 0,3%

Hysteresis, repeatability 0,05%

Thermal compensation range 0 ÷ 40°C

Process temperature limit 0 ÷ 40°C
(version with ETFE and PTFE cable) 0 ÷ 75°C

Electrical parameters (applicable to both probes)

Output signal, power supply:

no	Signal type	Power supply	Available in models
1	4 ÷ 20mA	8…36 VDC 10,5…36 VDC (TR version)	SGE-25/…
2	4 ÷ 20mA	9…28 VDC 10,5…28 VDC (TR version)	SGE-25/Exia/…
3	0 ÷ 10V	13…30 VDC	SGE-25/….
4	0 ÷ 3,3V	4,1…14,1 VDC	SGE-25/….
5	0 ÷ 5V 0,5 ÷ 4,5 V	8…14,1 VDC	SGE-25/….
6	4 ÷ 20mA	8…36 VDC	SGE-16/….
7	0 ÷ 3,3 V	3,6…4,5 VDC	SGE-16/….

Load resistance (for current output) $R[\Omega] \leq \frac{U_{sup}[V] - 8V}{0{,}02A}$

Load resistance (for supply output) $R \geq 20k\Omega$

Error due to supply voltage changes 0,005% / V

Degree of protection IP68

Material of casing SS316L

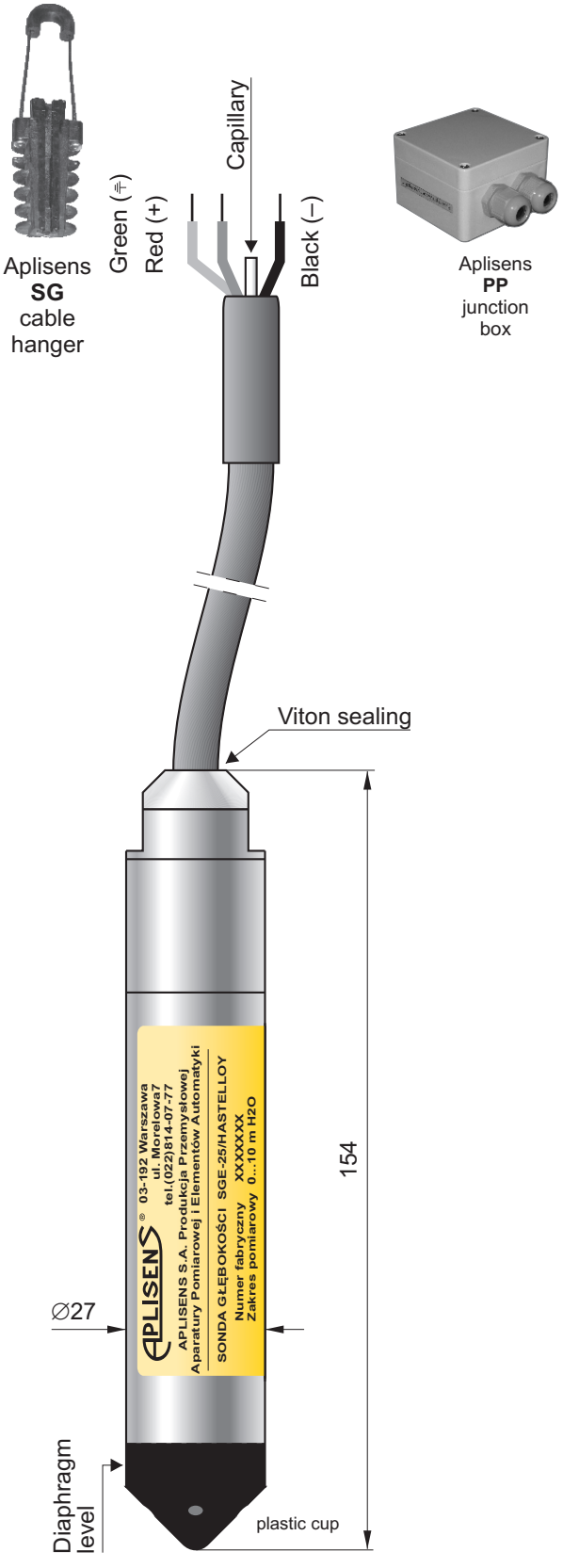
Cable shield PU, ETFE, PTFE

Material of diaphragm
SGE-25 Hastelloy C276 (optionally SS316L)
SGE-16 SS316L

Ordering procedure

Model	Code		Description
SGE-25 SGE-16			Level probe
Versions, certificates * - applicable only for SGE-25	/Exia *……		Ex II 1G Ex ia IIC T4/T5/T6 Ga II 1G Ex ia IIB T4/T5/T6 Ga (for probe with cable in PTFE shield) I M1 Ex ia I Ma
	/MR *……		Marine certification (DNV), only with ETFE cable
	/-10÷70° *……		Extended thermal compensation range
	/Pt100……		Probe with Pt100 sensor (only with PU cable)
	/TR *……		Response time <30ms (only for 4...20mA output)
	/316L……		Membrane material: 316L
Measuring set range	/…÷… [required units]		Calibrated range in relation to 4mA and 20mA (or 0V and 10V) output
Output signal	/4…20mA……		4…20mA / power supply SGE-25: 8…36VDC (Exia 9…28VDC, TR 10,5…36VDC) SGE-16: 10,5…36VDC
	/0…10V……		0…10V / power supply 13…30VDC
	/0…3,3V……		0…3,3V / power supply SGE-25: 4,1…14,1VDC, SGE-16: 3,6…4,5VDC
	/0…5V……		0…5V / power supply 18…14,1VDC
	/0,5…4,5V……		0,5..4,5V / power supply 18…14,1VDC
Type of cable		/PU……	Polyurethane cable (medium temp. up to 40°C)
		/PU PZH……	Polyurethane, halogen free cable with hygienic certification (medium temp. up to 40°C)
		/ETFE……	ETFE cable (not suitable for mineral oil products, medium temp. up to 75°C)
		/ETFE-R……	ETFE cable with Viton/silicon sealing (suitable for mineral oil products, medium temp. up to 40°C)
		/PU + PTFE……	Polyurethane cable with PTFE shielding (medium temp. up to 75°C)
		/ETFE + PTFE…	ETFE cable with PTFE shielding (medium temp. up to 75°C)
Cable length	/L=…m……		Cable length (standard: 5m, 10m, 12m, 15m, 20m, a multiple of 5m, other length on request)
Accessories		/SG	Cable hanger
		/PP	Junction box

Hydrostatic level probe SGE-25/HASTELLOY



SGE-25/HASTELLOY

- ✓ **All wetted parts made in Hastelloy**
- ✓ **Any measurement range from 2 up to 20 m H_2O**
- ✓ **Integrated internal overvoltage protection circuit**
- ✓ **Marine certificate**

Application

The SGE-25/HASTELLOY hydrostatic level probe is applicable to measure liquid levels in tanks where probe made in stainless steel can't be used – e.g. in seawater or chemical applications.

Principles of operation, construction

The probe measures liquid levels, basing on a simple relationship between the height of the liquid column and the resulting hydrostatic pressure. The pressure measurement is carried out on the level of the separating diaphragm of the immersed probe and is related to atmospheric pressure through a capillary in the cable.

The active sensing element is a piezoresistant silicon sensor separated from the medium by an isolating diaphragm. The electronic amplifier, which works in combination with the sensor, and is meant to standardize the signal, is additionally equipped with an overvoltage protection circuit, which protects the probe from damage caused by induced interference from atmospheric discharges or from associated heavy current engineering appliances.

Installation, method of use

When lowered to the reference level, the probe may either hang freely on the cable or lie on the bottom of the tank. The cable with the capillary can be extended using a standard signal cable. For the cable connection a special Aplisens **SG** cable hanger is recommended. The cable connection should be situated in a non-hermetically sealed box (the internal pressure inside the box should be equal to the atmospheric pressure), preventing water or other contaminants from getting into the capillary. The Aplisens **PP** junction box is recommended For systems with long signal transmission lines, it is recommended the using of an additional Aplisens UZ-2 overvoltage protection circuit in the form of a wall-mounted box which allows the cables connection. When the probe cable is being wound up, the minimum winding diameter should be 30cm and the cable should be protected from mechanical damage.

If there is a possibility of turbulence in the tank (for example, because of the mixer operating mixers or a turbulent inflow), the probe should be installed inside a screening tube (e.g. made of PVC). If the probe is to be lowered deeper than 100m, the cable should be hanged at steel lifting rope. Cleaning the probe diaphragm by mechanical means is strictly prohibited.

Technical data for the SGE-25/Hastelloy level probe

Measuring range
Any measuring range 2 ÷ 20 m H_2O (the standard ranges: 2, 4, 10, 20 m H_2O are recommended)

	Measuring Range	
	2…4 m H_2O	**10..20 m H_2O**
Overpressure Limit (repeatable – without hysteresis)	10 × range	10 × range
Accuracy % FSO	0,2%	0,2%
Thermal error	Typical 0,3% / 10°C max 0,4% / 10°C	Typical 0,2% / 10°C max 0,3% / 10°C

Long term stability 0,1% or 1 cm H_2O for 1 year
Hysteresis, repeatability 0,05%
Thermal compensation range 0 ÷ 40°C – standard
Medium temperature range -25 ÷ 40°C
CAUTION: The medium must not be allowed to freeze in the immediate vicinity of the probe

Electrical parameters

Output signal, power supply:
Signal type: 4 ÷ 20mA
Power supply: 8…36 VDC

Load resistance (for current output) $R[\Omega] \leq \frac{U_{sup}[V] - 8V}{0{,}02A}$

Error due to supply voltage changes 0,005% / V
Degree of protection IP68
Material of casing Hastelloy

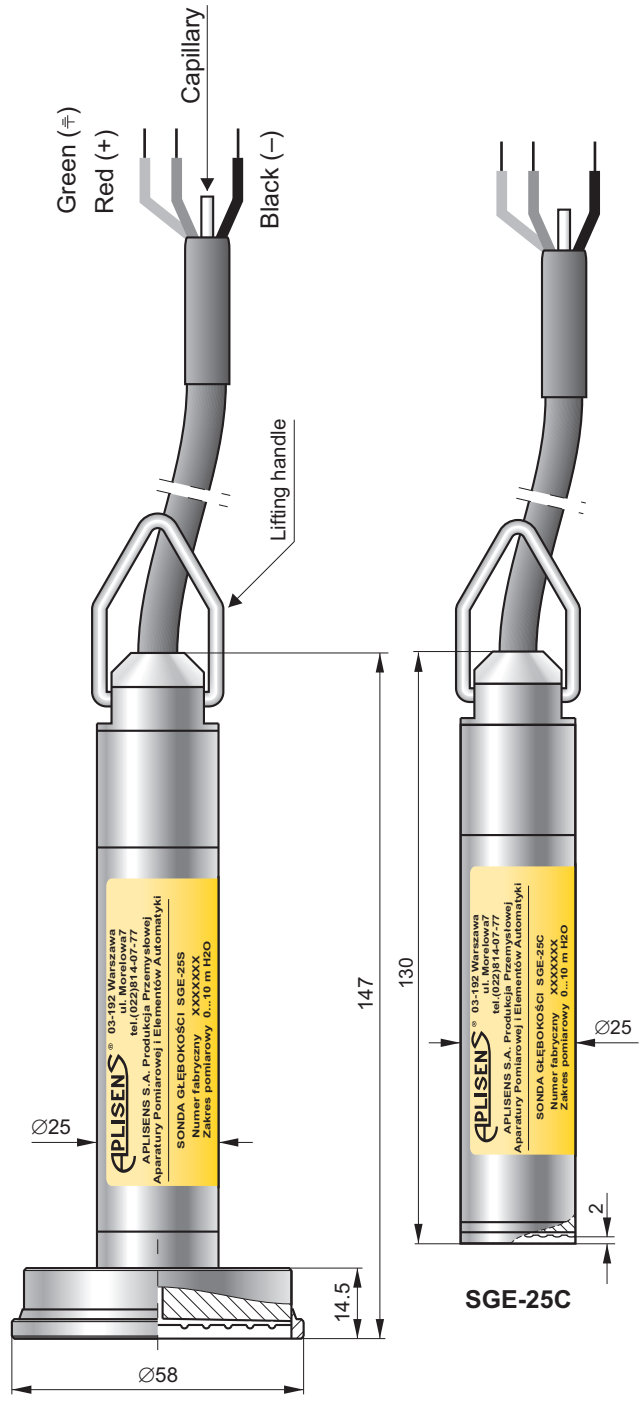
Cable shield ETFE
Material of diaphragm Hastelloy

Ordering procedure

Model	Code	Description
SGE-25/Hastelloy		Level probe
Versions, certificates	/Exia……	II 1G Ex ia IIC T4/T5/T6 Ga/Gb I M1 Ex ia I Ma
	/MR……	Marine certification (DNV)
Measuring set range	/…÷… [required units]	Calibrated range in relation to 4mA and 20mA
Output signal	/4…20mA……	4…20mA / power supply: 8…36VDC
Type of cable	/ETFE……	ETFE cable with Viton sealing (medium temp. up to 40°C)
Cable length	/L=…m……	Cable length (standard: 5m, 10m, 12m, 15m, 20m, a multiple of 5m, other length on request)
Accessories	/SG	Cable hanger
	/PP	Junction box

Hydrostatic level probes SGE-25S and SGE-25C for measurement of waste liquid levels

- ✓ **Any measurement range from 2 up to 20 m H_2O**
- ✓ **Integrated internal overvoltage protection circuit**
- ✓ **ATEX Intrinsic safety**
- ✓ **Marine certificate DNV**



Application

The SGE-25S and SGE-25C probes are applicable to measure levels of liquids containing contaminants or suspensions. A typical use for this probe is the measurement of levels of liquid waste in intermediate pumping stations, fermentation chambers, settling tanks etc.

Principles of operation, design

The probe measures liquid levels, basing on a simple relationship between the height of the liquid column and the resulting hydrostatic pressure. The pressure measurement is carried out on the level of the separating diaphragm of the immersed probe and is related to atmospheric pressure through a capillary in the cable.

The use of a special separator with a large uncovered diaphragm minimizes the metrological effect of sediment deposit on the diaphragm surface. This enables the probe long lifetime and proper work in contaminated media (even in the presence of abrasives, such as sand) and facilitates cleaning with delicate stream of running water (washing with water under pressure may damage the probe).

The active sensing element is a piezoresistant silicon sensor separated from the medium by an isolating diaphragm. The electronic amplifier, which works in combination with the sensor, and is meant to standardize the signal, is additionally equipped with an overvoltage protection circuit, which protects the probe from damage caused by induced interference from atmospheric discharges or from associated heavy current engineering appliances.

Installation, method of use

When lowered to the reference level, the probe may either hang freely on the cable or lie on the bottom of the tank. The cable with the capillary can be extended using a standard signal cable. For the cable connection a special Aplisens **SG** cable hanger is recommended. The cable connection should be situated in a non-hermetically sealed box (the internal pressure inside the box should be equal to the atmospheric pressure), preventing water or other contaminants from getting into the capillary. The Aplisens **PP** junction box is recommended For systems with long signal transmission lines, it is recommended the using of an additional Aplisens UZ-2 overvoltage protection circuit in the form of a wall-mounted box which allows the cables connection. When the probe cable is being wound up, the minimum winding diameter should be 30cm and the cable should be protected from mechanical damage.

If there is a possibility of turbulence in the tank (for example, because of the mixer operating mixers or a turbulent inflow), the probe should be installed inside a screening tube (e.g. made of PVC). The line hooked on the lifting handle can simplify the operation of the probe pulling out. Cleaning the probe diaphragm by mechanical means is strictly prohibited.

Technical data

Any measurement range 2 ÷ 20 m H_2O (we recommend the standard ranges: 2,5, 4, 6, 10 m H_2O)

	Measuring Range		
	2,5 m H_2O	**4 m H_2O**	**0...10 m H_2O ÷ 20 m H_2O**
Overpressure Limit (repeatable – without hysteresis)	20 × range	20 × range	10 × range
Accuracy % FSO acc. to IEC 60770	1%	1%	0,5%
Accuracy % FSO acc. to BFSL	0,75%	0.5%	0,25%
Thermal error of zero	Typical 0,4% / 10°C max 0,6% / 10°C		Typical 0,2% / 10°C max 0,3% / 10°C
Thermal error of span	Typical 0,3% / 10°C max 0,4% / 10°C		Typical 0,2% / 10°C max 0,3% / 10°C

Hysteresis, repeatability 0,05%

Thermal compensation range 0 ÷ 40°C – standard
-10 ÷ 70°C – special version

Medium temperature range -25 ÷ 40°C - standard
0 ÷ 75°C – ETFE and PTFE version

CAUTION: The medium must not be allowed to freeze in the immediate vicinity of the probe

Electrical parameters

Output signal 4 ÷ 20 mA, two wire transmission
Special version: 0 ÷ 10 V three wire transmission (not applicable to Ex)

Load resistance (for current output) $R\,[\Omega] \leq \frac{U_{sup}\,[V] - 8V}{0{,}02\,A}$

Load resistance (for supply output) $R \geq 20k\Omega$

Power supply 8 ÷ 36 VDC (Ex: 9…28 VDC)
TR version: 10,5÷ 36 VDC (Ex: 10,5…28 VDC)
13 ÷ 30 VDC (for 0 ÷ 10 V output)

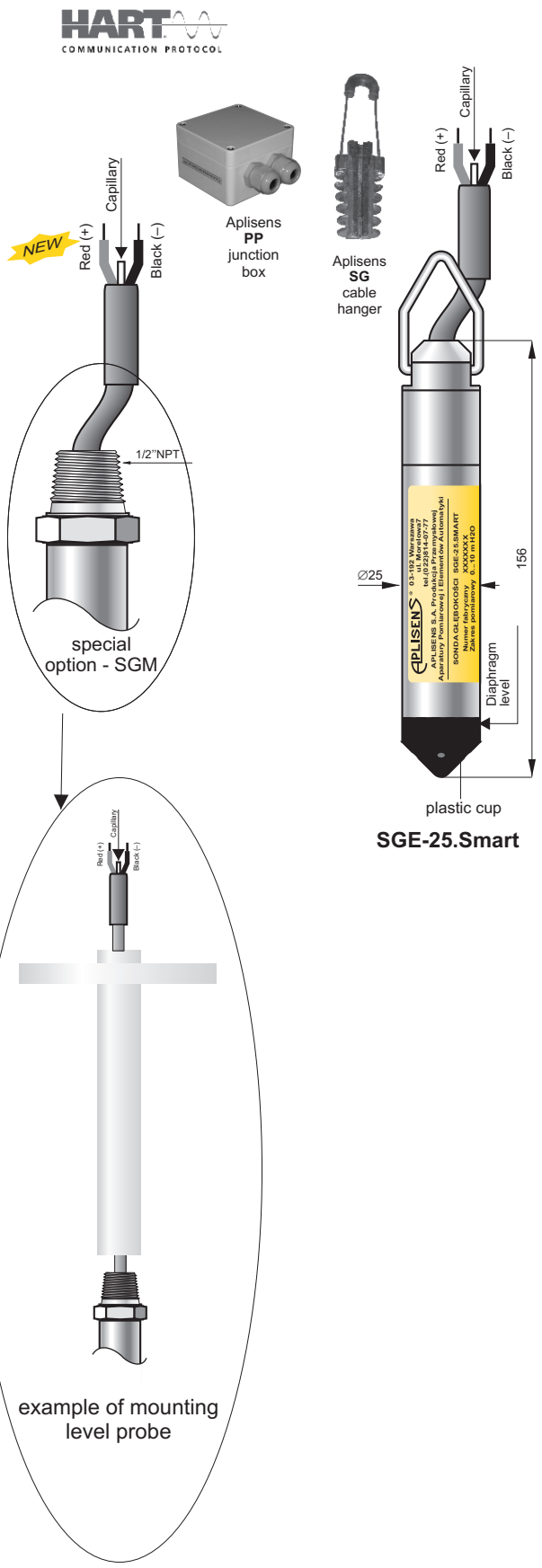
Error due to supply voltage changes variation 0,005% / V

Degree of protection IP-68
Material of casing and diaphragm
SG-25S (casing SS316L, diaphragm SS316L /option Hastelloy C/)
SG-25C (casing SS316L, diaphragm SS316L)
Cable shielding PU, ETFE, PTFE

Ordering procedure

Model	Code	Description
SGE-25C SGE-25S		Level probe
Versions, certificates	/Exia……	Ⓔx II 1G Ex ia IIC T4/T5/T6 Ga II 1G Ex ia IIB T4/T5/T6 Ga (for probe with cable in PTFE shield) I M1 Ex ia I Ma
	/MR……	Marine certification (DNV), only with ETFE cable
	/-10÷70°……	Extended thermal compensation range
	/TR……	Response time <30ms (only for 4...20mA output)
Measuring set range	/…÷… [required units]	Calibrated range in relation to 4mA and 20mA (or 0V and 10V) output
Output signal	/4…20mA……	4…20mA / power supply: 8…36VDC (Exia 9…28VDC, TR 10,5…36VDC)
	/0…10V……	0…10V / power supply 13…30VDC
Type of cable	/PU……	Polyurethane cable (medium temp. up to 40°C)
	/ETFE……	ETFE cable (medium temp. up to 75°C)
	/PU + PTFE……	Polyurethane cable with PTFE shielding (medium temp. up to 75°C)
	/ETFE + PTFE……	ETFE cable with PTFE shielding (medium temp. up to 75°C)
Cable length	/L=…m……	Cable length (standard: 5m, 10m, 12m, 15m, 20m, a multiple of 5m, other length on request)
Accessories	/SG……	Cable hanger
	/PP……	Junction box

Smart level probe
SGE-25.Smart



- ✓ **Programmable zero shift, range and damping ratio**
- ✓ **4...20 mA output signal + HART protocol**
- ✓ **Accuracy 0.1%**
- ✓ **Integrated internal overvoltage protection circuit**
- ✓ **ATEX Intrinsic safety**
- ✓ **Marine certificate DNV**

Application

The SGE-25.Smart level probe is applicable to measure liquid levels in tanks, deep wells or piezometers.

Principles of operation, construction

The probe measures liquid levels, basing on a simple relationship between the height of the liquid column and the resulting hydrostatic pressure. The pressure measurement is carried out on the level of the separating diaphragm of the immersed probe and is related to atmospheric pressure through a capillary in the cable.

The active sensing element is a piezoresistant silicon sensor separated from the medium by an isolating diaphragm. The electronic amplifier, which works in combination with the sensor, is additionally equipped with an overvoltage protection circuit, which protects the probe from damage caused by induced interference from atmospheric discharges or from associated heavy current engineering appliances.

Configuration

The following metrological parameters can be configured:

- ♦ the units of pressure;
- ♦ start and end-points of set range;
- ♦ damping time constant;
- ♦ inverted characteristic (output signal 20 ÷ 4 mA).

Calibration

It is possible to calibrate the probe in relation to a model pressure.

Communication

The communication standard for data interchange with the probe is the Hart protocol.

Communication with the probe is carried out with:

- – a KAP-03 communicator,
- – some other Hart type communicators,
- – a PC using an HART/USB converter and RAPORT 2 configuration software.

The data interchange with the probe also enables the users to:

- ♦ identify the probe;
- ♦ read the currently measured hydrostatic pressure value, output current and percentage of measuring range.

Installation, method of use

When lowered to the reference level, the probe may either hang freely on the cable or lie on the bottom of the tank. The cable with the capillary can be extended using a standard signal cable. For the cable connection a special Aplisens **SG** cable hanger is recommended. The cable connection should be situated in a non-hermetically sealed box (the internal pressure inside the box should be equal to the atmospheric pressure), preventing water or other contaminants from getting into the capillary. The Aplisens **PP** junction box is recommended For systems with long signal transmission lines, it is recommended the using of an additional Aplisens UZ-2 overvoltage protection circuit in the form of a wall-mounted box which allows the cables connection. When the probe cable is being wound up, the minimum winding diameter should be 30cm and the cable should be protected from mechanical damage.

If there is a possibility of turbulence in the tank (for example, because of the mixer operating mixers or a turbulent inflow), the probe should be installed inside a screening tube (e.g. made of PVC). The line hooked on the lifting handle can simplify the operation of the probe pulling out. Cleaning the probe diaphragm by mechanical means is strictly prohibited.

Measuring ranges

No.	Nominal measuring range (FSO)	Minimum set range	Overpressure limit (without hysteresis)
1	0…1,5 m H_2O	0,15 m H_2O	15 m H_2O
2	0…10 m H_2O	0,8 m H_2O	100 m H_2O
3	0…100 m H_2O	8 m H_2O	700 m H_2O

Technical data

Metrological parameters

Accuracy ≤ ±0,1% for nominal range
SGE-25.Smart ≤ ±0,3% for range 0...10% FSO

Long term stability ≤ 0,1% (FSO) for 2 years

Thermal error < ±0,08% (FSO) / 10°C
max ±0,2% in the whole compensation temp. range

Thermal compensation range -25...80°C

Response time 16…230ms (programmable)

Additional electronic damping 0...30s

Error due to supply voltage changes 0,002% (FSO) / V

Electrical parameters

Power supply 7,5...55 VDC (Ex 7,5...28 VDC)

Output signal 4...20 mA (two wire transmission)

Load resistance $R[\Omega] \leq \frac{U_{sup}[V] - 7{,}5V}{0{,}0225A}$

Resistance required for communication >240 Ω

Operating conditions

Medium temperature range -30...40°C
ETFE or PTFE version: 0...80°C

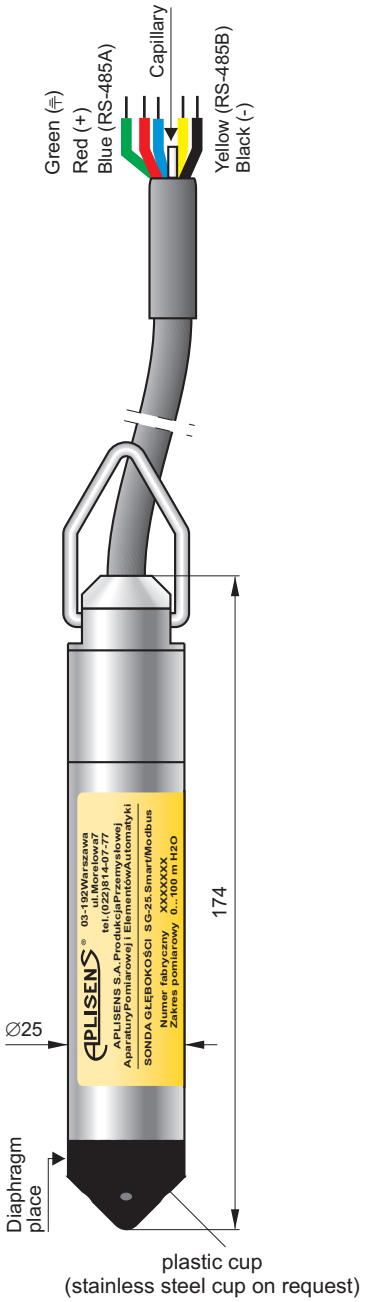
CAUTION: The medium must not be allowed to freeze in the immediate vicinity of the probe.

Degree of protection IP68
Material of casing SS316L
Material of diaphragm Hastelloy C276 (optionally: SS316L)
Cable shield PU, ETFE, PTFE

Ordering procedure

Model	Code	Description	
SGE-25.Smart		Smart level probe	
Versions, certificates	/Exia	II 1G Ex ia IIC T4/T5/T6 Ga I M1 Ex ia I Ma	Version with PTFE cable shielding
	/Exia	II 1G Ex ia IIB T4/T5/T6 I M1 Ex ia I Ma	
	/SGM	Version with thread on packing gland	
	/MR	Marine certificate (DNV), only with ETFE cable	
	/316L	Membrane material: 316L	
Nominal measuring range		Range	Min. set range
	/0…1,5 m H2O	0…1,5 m H2O	0,15 m H2O
	/0…10 m H2O	0…10 m H2O	0,8 m H2O
	/0…100 mH2O	0…100 mH2O	8 m H2O
Measuring set range	/...÷... [required units]	Calibrated range in relation to 4mA and 20mA output	
Cable	/PU	Polyurethane cable (medium temp. up to 40°C)	
	/PU PZH	Polyurethane, halogen free cable with hygienic certification (medium temp. up to 40°C)	
	/ETFE	ETFE cable (not suitable for mineral oil products, medium temp. up to 80°C)	
	/ETFE-R	ETFE cable with Viton/silicon sealing (suitable for mineral oil products, medium temp. up to 40°C)	
	/PU + PTFE	Polyurethane cable with PTFE shielding (medium temp. up to 80°C)	
	/ETFE + PTFE	ETFE cable with PTFE shielding (medium temp. up to 80°C)	
	L=...m	Cable length (standard: 5m, 10m, 12m, 15m, 20m, a multiple of 5m, other length on request)	
Accessories	/SG	Cable hanger	
	/PP	Junction box	

Smart hydrostatic level probe type SGE-25.Smart/Modbus



SGE-25.Smart/Modbus

Communication

Level probes with communication protocol Modbus RTU.
The communication standard for data interchange with the transmitter is the Modbus RTU. Communication with the transmitter is carried out with PC using RS converter and Aplisens software.

Technical data*

Metrological parameters

Accuracy	≤ ±0,1%
Long-term stability (for nominal range)	≤ accuracy for 3 years
Thermal error	< ±0,1% (FSO) / 10°C max ±0,4% (FSO) in the whole compensation range
Thermal compensation range.	-25...80°C (other range on request)
Additional electronic damping	0...30 s

Electrical parameters

Power supply	4,5...28 V DC
Transmission range	1200 m
Output	MODBUS RTU + 4..20 mA
Address space	1...247 devices address
Transmission speed	600...115200 bps
Parity transmission	no parity, odd, even
frame transmission	10...11 bit (1, 2 bit-stop)

*more information about technical data avaliable in user's manual

Special version
◊ **Teflon** – teflon cable shielding

Ordering procedure

SGE-25.Smart/Modbus /___/___/ L = ... m

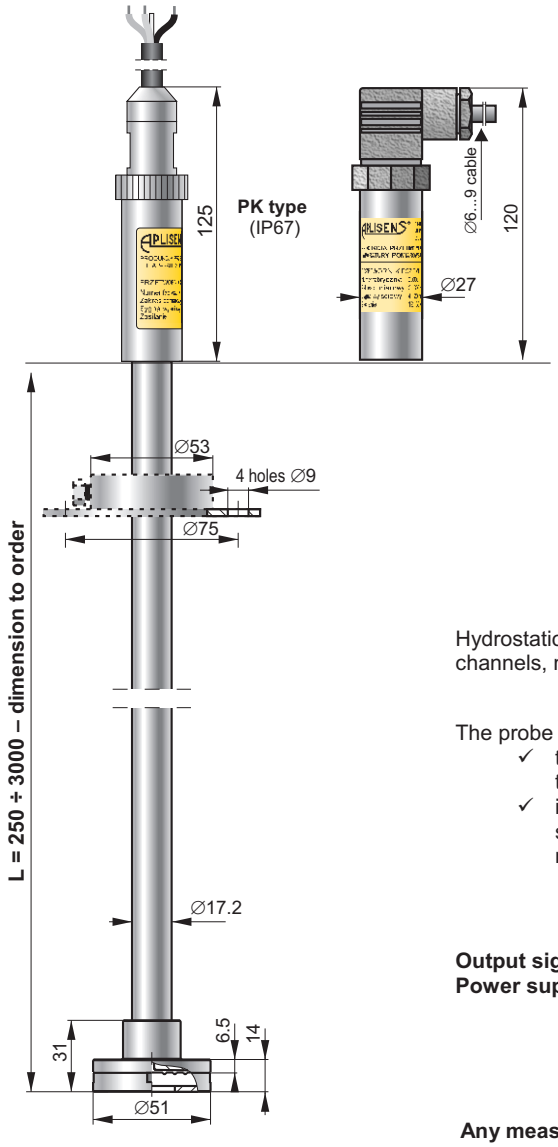
Spec. Version.: Teflon, Hastelloy

Set range

Cable length
(standard: 5m, 10m, 12m, 15m, 20m,
a multiple of 5m, other lengths on request)

Example: level probe SGE-25.Smart/Modbus, teflon cable shielding , set range 0 ÷ 10 m H_2O, cable length 10 m
SGE-25.Smart / Modbus / Teflon / 0 ÷ 10 m H_2O / L = 10 m

Hydrostatic level probe type PCE-28P



- ✓ **Any measuring range from 0…200 to 0…3000 mm H_2O**
- ✓ **ATEX Intrinsic safety**
  II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb
  II 1D Ex ia IIIC T110ºC Da
  I M1 Ex ia I Ma
  IECEx Ex ia IIC T4/T5/T6 Ga/Gb
  Ex ia IIIC T110ºC Da
  Ex ia I Ma
- ✓ **Marine certificate - DNV, BV**

Application

Hydrostatic level probes are applicable to measure levels of liquids in open tanks, channels, measuring constrictions of open channels, streams etc.

Installation

The probe may be installed in any manner subject to the following conditions:

- ✓ the expected maximum level of liquid may not cause flooding of the electronic circuits;
- ✓ if a flange fastener is to be used to install the probe in the tank cover, it should be ordered alongside with the probe, as these fasteners are to be mounted during the probe manufacturing.

Electrical parameters*

Output signal	4 ÷ 20 mA
Power supply	8 ÷ 36 VDC (Ex 9...28 VDC)

Technical data*

Any measuring range from 0…200 to 0…3000 mm H_2O

Accuracy	max. +/- 0,25%
Medium temperature range	-25 ÷ 80°C
Material of the wetted parts	SS316L
Material of casing	SS304

* more information about technical data and electrical parameters available in user's manual.

Ordering procedure

PCE-28P /__/__÷__/__/ L = ... m

Special version:
- **Exia**– ATEX Intrinsic safety
- **MR** – Marine certificate

Start and end of measuring range, in relation to 4 mA and 20mA output

Type of electrical connection: PD, PK

Tube length