» Fill level monitoring can save lives!

» No overflowing – the plant fire brigade stays in the garage.

» Never vacate the laboratory again due to hazardous vapors.

LEVEL CONTROL

Disposing with care
Everyday tasks in the laboratory that have become „The back of our hands“ – and we know, especially this is where the danger lurks. One of those seemingly trivial tasks is the disposal of solvents into the available containers.

Everybody uses them, everybody dumps into them, but who ensures that the containers don't overflow? However, overflowing waste containers in laboratories can be dangerous when work is done with critical substances and solvents. Dangerous fumes can spread fast. This is not only dangerous for individual health but under certain circumstances, can also lead to an explosion.

Mechanically or electronically controlled containers provide more operational safety and protection from such serious consequences. The level control developed by S.C.A.T. gives warning through an optical and acoustic signal before the waste container overflows.

In addition, connecting devices such as pumps and valves can be actuated via contact switches. Depending on demand, the different containers can be equipped either with non-contact sensors for exterior attachment or with float-controlled mechanical/optical and electronic/optical sensors. With these sensors, up to 20 containers can be monitored at the same time.

Liquid waste can be safely collected by tubes or manually; the sensor triggers an alarm if a critical fill level is reached. In addition, an integrated safety funnel can be attached to the safety cap. It is only opened during filling and closes automatically afterwards.

Running on empty can also cause damage

Also, in the opposite case, an empty level indicator might be required when the containers should not run empty. Some think timely refilling is sufficient and so undertake the risk, refilling might be forgotten. S.C.A.T. Europe offers just the right equipment for this.

All sizes of laboratory glass bottles, canisters, barrels and tank containers can be equipped with the system. Additional installations are not required for this. According to the motto: "Plug and Play", every level control is delivered as fully operational and with all the necessary components.


safety specialist
DAS MASS IST VOLL
Safety Specialist
S.C.A.T.

Source: labor&more 03/2007, Pages 18–19

Level control
Disc sensor

- Select between alarm for full or empty state
- The sensitivity can be adjusted to different wall strengths
- Fastening material included

Fill level detection without touching the content of the container. The sensitivity of the sensor can be adjusted to different wall strengths. The signal box emits an optical and acoustic signal before a previously set fill height is reached. Suitable for all containers made of glass and non-conductive plastic. Just connect the sensor to the container wall at the desired fill level (fastening material is included with delivery), connect mains plug – done. No technical modifications to the receptacle are required.

- Simple installation
- For all typical containers made of glass or non-conductive plastic
- Reusable when the receptacle is empty
- Monitor several receptacles at the same time

Disc sensor
Recognizes fluids through all glass or plastic walls. Not suitable for stainless steel containers or canisters made of conductive plastic. Page 103

Signal cables in various lengths: Page 103

Signal boxes: Page 100

Level control
with SafetyWasteCaps

Exhaust filter: Page 74

SafetyWasteCaps with electric level control: Page 55 – 73

For containers made of conductive plastic or metal, the level control can be accomplished through the closure. All SafetyWasteCaps with this mark can be connected to our signal boxes:

MAX

» Signal cable

Connection between SafetyWasteCap and signal box. Available in various lengths, can be combined to lengths up to 200 m. Also suitable for controlling externally connected devices through the contact switch.

Level control
SIGNALBOX T1 and T5

» BETTER LEVEL CONTROL WITH OUR NEW SIGNAL BOXES!

» POWER AND STATUS LEDs
Keep the operating of the signal box and the filling levels of the connected containers easily and safe in mind.

» SNOOZE & RESET BUTTON
Control of the optical and acoustic warning signals at the push of a button.

» SOLID STAND
The solid stand enables a flexible and safe positioning in the working environment.

» CONTACT SWITCH
Due to the potential-free contacts, external devices such as pumps or valves can be controlled. Thanks to separated channels there can be a respond to single sensors.

» SPACE FOR LABELLING
Useful title blocks enable easy classifying of the connected containers.

BACK SIDE SIGNALBOX T5

Level control
Signal boxes

NEW

A 108 087

» Contact switch (potential-free contact)
For controlling external devices such as pumps or valves.

B 108 088

» Contact switch 1-5 and „ALL“ (potential-free contacts)
The Signalbox T5 can respond to single sensors. The output „ALL“ reacts to all connected sensors, regardless of their number or channel.

Signal boxes incl. power supply

Fig.	Part No.	Description	Connectors	Dimensions mm (W x H x D)	Incl. power supply
A	108 087 NEW	Signalbox T1	1	180 x 105 x 55	**EU**
B	108 088 NEW	Signalbox T5	5	180 x 105 x 55	**EU**
A	108 119 NEW	Signalbox T1	1	180 x 105 x 55	**USA**
B	108 121 NEW	Signalbox T5	5	180 x 105 x 55	**USA**
A	108 122 NEW	Signalbox T1	1	180 x 105 x 55	**UK / England**
B	108 124 NEW	Signalbox T5	5	180 x 105 x 55	**UK / England**

Level control

Signal box sets

Signal box sets

Fig.	Part No.	Description
C	108 125 *NEW*	Signalbox T1 with disc **fill level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **EU power supply**
C	108 157 *NEW*	Signalbox T1 with disc **low level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **EU power supply**
-	108 158 *NEW*	Signalbox T1 with disc **fill level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **USA power supply**
-	108 159 *NEW*	Signalbox T1 with disc **low level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **USA power supply**
-	108 160 *NEW*	Signalbox T1 with disc **fill level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **UK/England power supply**
-	108 161 *NEW*	Signalbox T1 with disc **low level sensor,** signal cable 3 meters, hook and loop fastener for disc sensor 2 meters, **UK/England power supply**

Level control

Accessories single

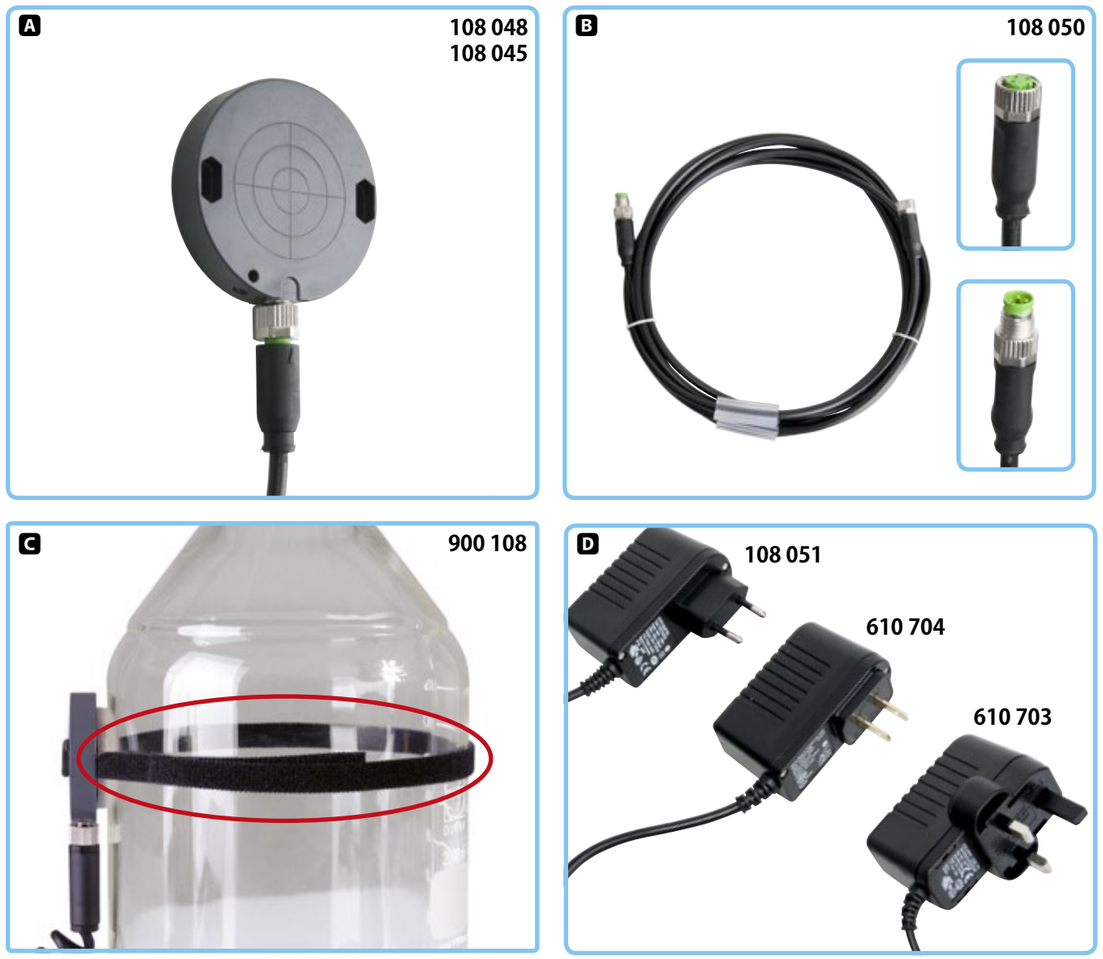
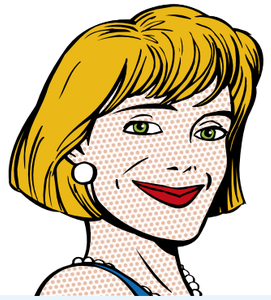


Fig.	Part No.	Description
A	108 048	Disc sensor (alarm at **full state**)
A	108 045	Disc sensor (alarm at **empty state**)
B	108 050	Signal cable, length 3 meters
	108 037	Signal cable, length 5 meters
	108 038	Signal cable, length 10 meters
C	900 108	Velcro® strip for disc sensor, length 2 meters
-	900 107	Dual Lock (releasable pressure) closure for disc sensors, approx. 20 x 20 mm. Tougher and longer lasting than a conventional hook and loop fastener.
D	108 051	EU power supply
D	610 704	USA power supply
D	610 703	UK/England power supply

Level control
Radio transmission

Monitor up to 20 containers with one receiver – without cables! If the waste containers are stored out of sight, e.g. in closed cabinets and protected zones, with our radio system you still maintain an overview.



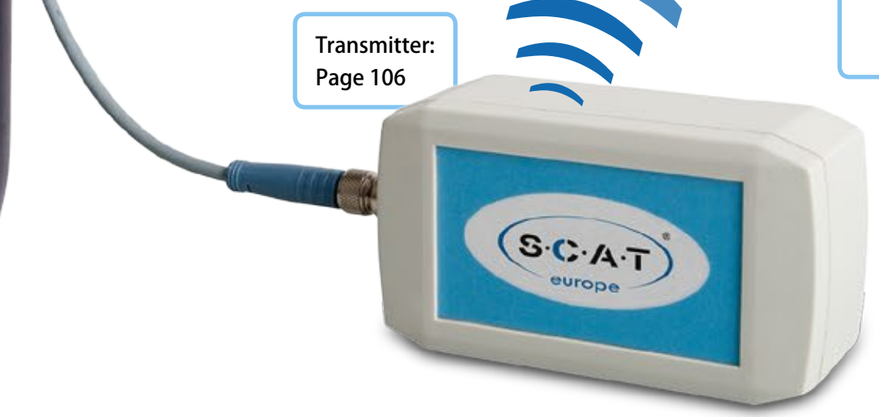
S.C.A.T. Europe GmbH
Opelstraße 3
D-64546 Mörfelden

Tel: +49 - (0) 6105 - 30 55 86 - 0
Fax: +49 - (0) 6105 - 30 55 86 - 99
e-Mail: info@scat-europe.com
Web: www.scat-europe.com

» No cables!

Receiver:
Page 107

Transmitter:
Page 106



The transmitter is ATEX-compliant for operation in explosion-endangered areas. When a critical level is reached, you are promptly warned by the receiver. The receiver is equipped to monitor up to 20 containers.

Directive 94/9/EC
- ATEX type examined
- ATEX QS certified

DEKRA EXAM GmbH
DEKRA certified
Identification No. 0158

ATEX-compliant for explosion-endangered areas!

www.scat-europe.com

LEVEL CONTROL

Level control
Radio transmission
Transmitter

A **108 241**

Directive 94/9/EC
▶ ATEX type examined
▶ ATEX QS certified
DEKRA EXAM GmbH
DEKRA certified
Identification No. 0158

ATEX-compliant for use in explosion-endangered areas!

The FSG 1 transmitter is suitable for all S.C.A.T. caps with electronic level control* and transmits a warning signal to the receiver if a critical level is reached, without cables. It is ATEX-compliant and has been tested for use in explosion-endangered areas. Thus you can also comfortably monitor critical fill states from the safety zone.

*** Look for this sign:** MAX

Technical data

Dimensions (WxHxD)	89 x 49 x 34 mm
Weight	approx. 100 g
Power supply (incl.)	3 V lithium cell (CR1/2AA) Manufacturer: VARTA
Power consumption	Standby: 5 µA Transmission and reception operation: 30 mA
Frequency	868 MHz - 870 MHz
Frequency USA	915 MHz
Transmission power	100 mW
Transfer	Request/acknowledge protocol CRC error protection
Inputs	Opener + closer for redundant evaluation of a level state

Ordering information

Fig.	Part No.	Description	Atex-compliant
A	108 241	Transmitter FSG 1 incl. battery	●
-	108 245	Transmitter FSG 1 (package with 5 pieces) incl. battery	●
-	108 247	Transmitter FSG 1 (USA) incl. battery	-
-	108 261	Transmitter FSG 1 (USA) (package with 5 pieces) incl. battery	-
-	108 249	Replacement battery for transmitter FSG 1	

Description: Ex II 1G Ex ia IIC T5 Ga

The ATEX directive consists of two EU directives describing what equipment and work environment is allowed in an environment with an explosive atmosphere. ATEX derives its name from the French title of the 94/9/EC directive: Appareils destinés à être utilisés en ATmosphères EXplosives.

Level control
Radio transmission
Receiver

B **108 242**

Optical and acoustic signals

at critical level state. Meaning of the optical signals:

- Green = Container connected and OK.
- Red + acoustic signal = Critical fill state / container full.
- Yellow = Change transmitter battery

» We also provide solutions for highly isolated or shielded areas in laboratory

» Informations regarding repeaters (signal amplifier) you receive of course by request

Monitor up to 20 containers at the same time with this receiver. If one of the transmitters registers a critical fill level, a warning signal is emitted and the LED of the affected container lights up red.
A power supply unit for connection to the 230 V power supply is included in the scope of delivery.

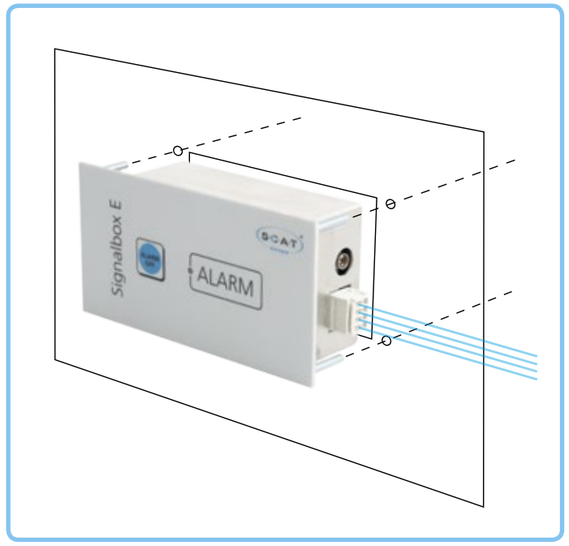
Technical data

Dimensions (WxHxD)	163 x 56 x 94 mm
Weight	approx. 150 g
Power supply	24 V plug-in power supply unit
Power consumption	max. 100 mA
Frequency	868-870 MHz
Frequency USA	915 MHz
Transmission power	10 mW
Transfer	Request/acknowledge protocol CRC error protection
Outputs	Piezo buzzer 100 V / 1 A m~V RS485 mod bus interface (e.g. for connecting to building technology)

Ordering information

Fig.	Part No.	Description	Atex-compliant
B	108 242	Receiver FSS 1 with power supply unit for Germany / EU	
-	108 243	Receiver FSS 1 with power supply unit for England / UK	
-	108 244	Receiver FSS 1 with power supply unit for USA	
-	108 240	Complete radio level control set 1x receiver signal box FSS 1 20 channels 1x transmitter FSG 1 1x EU power supply unit for receiver 1x battery for transmitter	●
-	108 246	Complete radio level control set 1x receiver signal box FSS 1 20 channels 5x transmitter FSG 1 1x EU power supply unit for receiver 5x battery for transmitter	●
		Repeater FSR 1 (signal amplifier)	
-	108 258	with power supply unit for Germany / EU	
-	108 259	with power supply unit for England / UK	
-	108 260	with power supply unit for USA	

Built-in signal box



The signal box is inserted into the allocated gap of your laboratory furniture front panel and fasten with four bolts including screw connection. Of course we have a drill template available. On the front of the built-in signal box are the users basic information and control panels. The built-in signalbox has a LED display and an acoustic warning signal which lights up and beep if the filling status of the monitoring waste container has reached the critical level. To change the full container unhurriedly the built-in signal box has a button to mute the acoustic warning signal for the time of changeover.

A **106 418**

A SafetyWasteCap or a disc sensor can be directly connected with the use of a signal cable. Also a peripheral device (pump, etc.) can be connected.

B **108 114**

Illustration similar

If it should be necessary to secure a S.C.A.T. SafetyWasteCap from the laboratory installation series with a switching amplifier, this can also be connected to the built-in signal box.

Function of switch amplifier:
Switch amplifiers are used to protect intrinsically-safe circuits in hazardous areas. Next to power and voltage limitation they also have a galvanic seperation between field circuit and control. The proximity sensor or switch controls by a change-over relay contact the load in the safe area.

ATEX-compliant for use in explosion-endangered areas!

Perfect integration of the level control in laboratory furniture. All connectors are assembled at the side and vanish out of the viewing range.

Technical data

Dimensions (WxHxD)	135 x 70 x 46 mm
Weight	ca. 195 g (without power supply)
Supply voltage	24 V
Connectors	2 x 3-pin circular connector M8 2 x board connector 3/4-pin
Display/ control	1 x LED Status/Alarm 1 x Key, alarm mute for changeover.

Ordering information

Fig.	Part No.	Description
A	106 418	Built-in signal box with EU power supply
B	108 114	Switch amplifier (Technical data sheet and further informations you will receive by request)

» Which Box...

» ...for which purpose?

Compatible with...

Box type	Control filling levels	Potential free contacts	Switch amplifier adaptable	RS485
 Signalbox T1	1	1	-	-
 Signalbox T5	5	5 + 1 (ALL)	-	-
 Radio transmission	20	–	-	●
 Built-in signal box	1	1	●	-

Compatible with...			
 signal cable (extension): Page 103	 Disc sensor: Page 103	 SafetyWasteCaps standard: Page 55-73	 SafetyWasteCaps Lab-installation: Page 140
 signal cable (extension): Page 103	 Disc sensor: Page 103	 SafetyWasteCaps standard: Page 55-73	 SafetyWasteCaps Lab-installation: Page 140
 Transmitter: Page 106	 signal cable (extension): Page 103	 SafetyWasteCaps standard: Page 55-73	 SafetyWasteCaps Lab-installation: Page 140
 signal cable (extension): Page 103	 Disc sensor: Page 103	 SafetyWasteCaps standard: Page 55-73	 SafetyWasteCaps Lab-installation: Page 140

Level control
Container with integrated floater

A 108 945

B 108 320

C 108 056

Safely collect fluid laboratory waste! The integrated floater gives a warning in time to prevent overfilling. Ideal for use with S.C.A.T safety funnels (starting on Page 80)

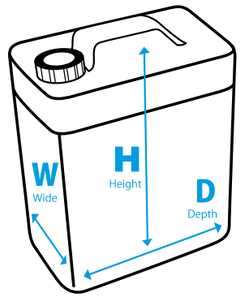


Fig.	Part No.	Description	Contents	Material	Thread size	Dimensions (W x H x D)
A	108 945	Space-saving canisters with float	5 liters	PP, white	S 50	65 x 405 x 330 mm
B	108 320	Canister with floater	10 liters	PE-HD, white	S 90	195 x 400 x 195 mm
C	108 056	Canister with floater	20 liters	PE-HD, white	S 60 / 61	260 x 455 x 285 mm
D	108 420	Canister **with viewing strip** with UN-Y approval	10 liters	**PE-HD, black electrically conductive**	S 90	195 x 400 x 195 mm
E	108 042	Canister with floater	10 liters	**PE-HD, black electrically conductive**	S 60 / 61	185 x 280 x 290 mm
F	108 043	Canister with floater	20 liters	**PE-HD, black electrically conductive**	S 60 / 61	185 x 515 x 290 mm
-	107 740	Canister with floater	60 liters	**PE-HD, black electrically conductive**	S 70 / 71	330 x 690 x 395 mm
G	199 013	Protective cage for floater				

D 108 420

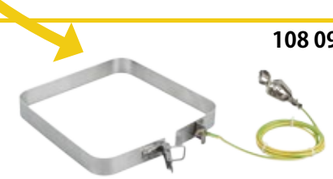
E 108 042

F 108 043

» **Electrically conductive canister with viewing strip!**

Ground strap on Page 173

108 096



Container from electrically conductive plastic counteracts electrostatic discharge and can be grounded. Thus they are especially well-suited for use in protected areas.

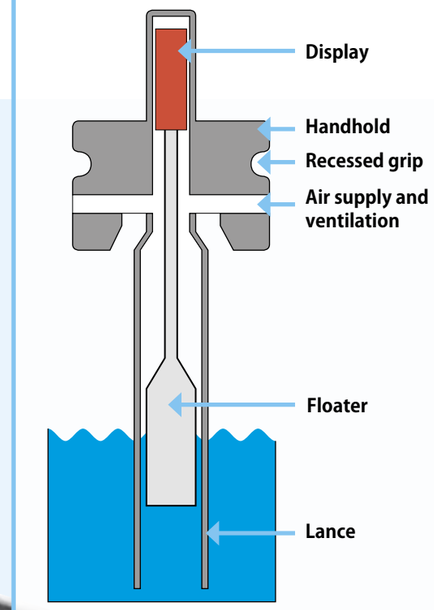
Protective cage against damages to the viewing glass

G 199 013

For barrels

» Fill barrels safely.

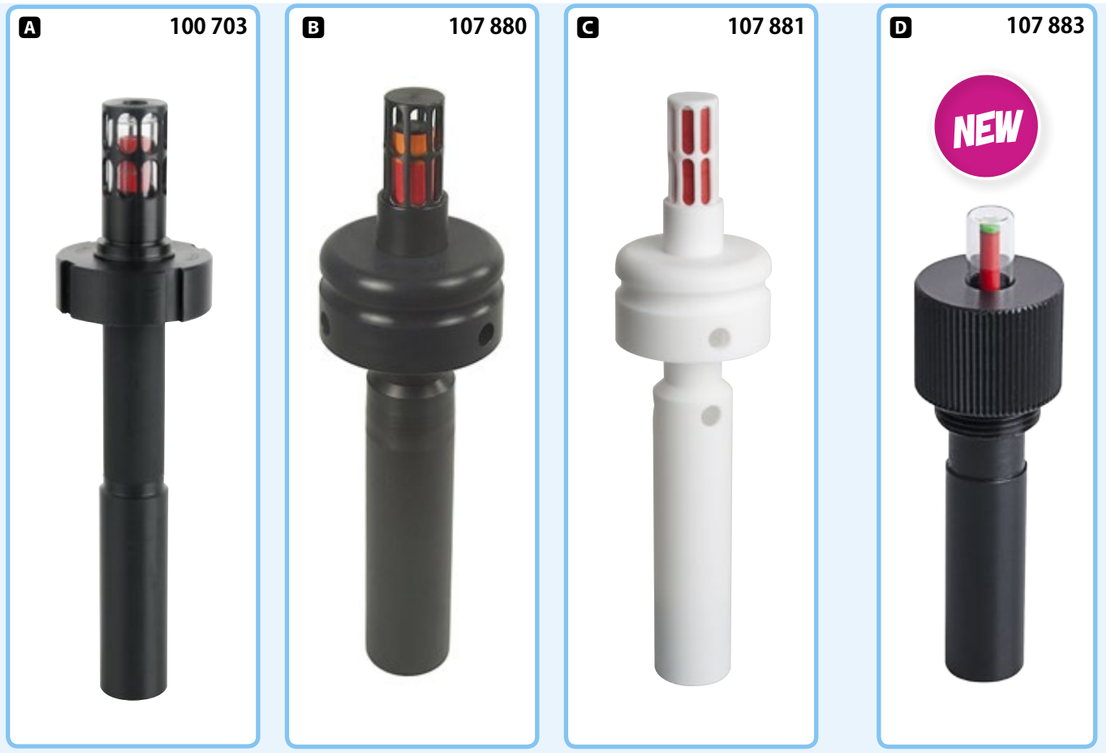
Dependable protection from overflow when filling barrels. Practical, large handle for simple handling, even with gloves. The float positions itself securely at the opening by its own weight while the barrel fills up. The integrated ventilation ensures a safe pressure equalization.



XXL LEVEL CONTROL

FITS ALL OPENINGS FROM 50MM DIAMETER

FOR 3/4" THREAD



» Dependable fill level control for containers up to 200 liters

» Ideal for safe barrel filling

» Available in different materials, therefore suitable for all chemicals

Fig.	Part No.	Description	Lance length	Lance diameter	Material
A	100 703	Level control for barrels **with milk pipe thread**	250 mm	31 mm	Lance: PE-HD, black Floater: PE-HD, black Display: ETFE, red
B	107 880	Level control for barrels (fits all openings from ∅ 50 mm) (up to max. ∅ 100 mm)	250 mm	50 mm	Lance: PE-HD, black Floater: PE-HD, black Display: ETFE, red
C	107 881	Level control for barrels (fits all openings from ∅ 50 mm) (up to max. ∅ 100 mm)	250 mm	50 mm	Lance: PTFE, white Floater: PFA, white Display: ETFE, red
D	107 883 *NEW*	Level control for barrels Thread G3/4"	150 mm	18 mm	PE-HD-el
	107 882 *NEW*	Level control for barrels Thread G3/4"	150 mm	18 mm	PE-HD
	107 884 *NEW*	Level control for barrels Thread G3/4"	150 mm	18 mm	Lance: PTFE, white Floater: PFA, white Display: PE, red