Level Detection System

SLL210 AnyLevel™

Material-Independent Reliability

Simple Installation and Use

Minimal Maintenance

Gravimetric Level Detection

Simple, Safe, Reliable

METTLER TOLEDO

Simplify Level Detection

The Universal Choice for Any Material

Gravimetric level sensors offer the most straightforward and reliable method for monitoring material storage levels via automation systems. Because the sensors are never in contact with the tank contents, material compatibility, detection challenges, and sensor corrosion are no longer concerns.

▸ **www.mt.com/SLL210**

Values for Engineering and Tank System Design

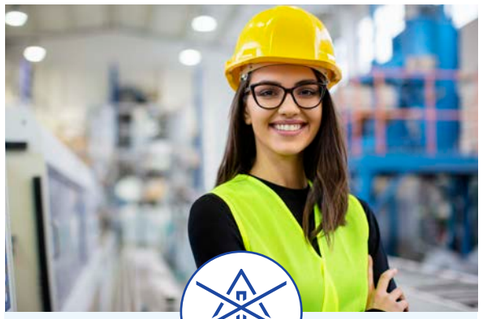
"I like to find the optimal technical design to simplify our manufacturing and assembly process and ensure that our system is easy to maintain and repair. With the SLL210 AnyLevel, I simply look at the force ratings and select the system that fits our tank capacity. I do not have to think about detailed configuration."

Mechanical Engineer

"I want to deliver the best solution for our customers and reduce our lead times. I also want to avoid financial risks in our projects. With the SLL210 family, I have one solution that fits any type of level detection application."

Project Manager

Values for Maintenance and Production



"The gravimetric level sensors spare me the time and risk of climbing up on top of silos to perform inspections. The risk of sensor failure is also dramatically minimized since the SLL210 AnyLevel is not in contact with the stored material."

Maintenance Engineer

"I want to be 100% sure that my stock level is measured correctly. With the SLL210 AnyLevel, my results are as reliable as they can get for level detection applications, and as for uptime, there is nothing more dependable than a level detection system installed under the tank."

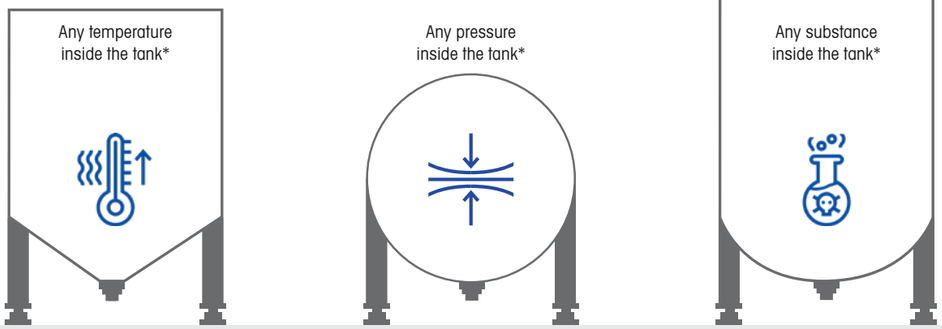
Process Engineer

One Sensor System
Any Level Detection Application

Eliminate the risk of selecting the wrong sensor by leveraging the SLL210 AnyLevel™, which works for all industries and level detection applications. You can simply select your required communication protocol and tank-foot connection. This streamlined process saves you time and resources, allowing you to concentrate on creating innovative storage solutions for your customers.

Standardize to Simplify Your Job

The SLL210 AnyLevel works with any tank shape, any process condition, and comes in three different mechanical options.



ISO Stem/UNF Stem | Receiver | Plate

* Sensors need to stay within the technical specifications (see page 10).

SLL210 AnyLevel is fit to measure any material:

Liquids

When measuring liquid levels with other technologies, many characteristics such as high viscosity or foam can cause inaccurate readings. With SLL210 AnyLevel sensors installed outside of the tank, the material properties have no impact on measurements, so you can trust your results every time.

Granules

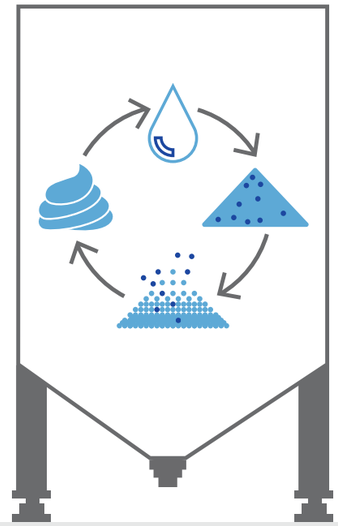
In industries such as chemical manufacturing, companies may store granules of plastics, resins, or fertilizers. These granules may have different properties such as varying sizes, shapes, and densities. The SLL210 AnyLevel solution can accurately measure the level of any type of granules, making it a versatile choice for chemical companies.

Slurries

Equip your slurry tank with SLL210 AnyLevel sensors to benefit from the advantages of an outside-the-tank installation. Not only will the cleaning process will be simplified as the sensor cannot cause contamination, but you also do not have to limit your mechanical design to account for stirrers.

Powders

For measuring powder in tanks, our innovative sensor technology not only delivers accurate readings but also eliminates the need for contact with the powder.



"The SLL210 AnyLevel™ helped me eliminate downtime due to stockouts."

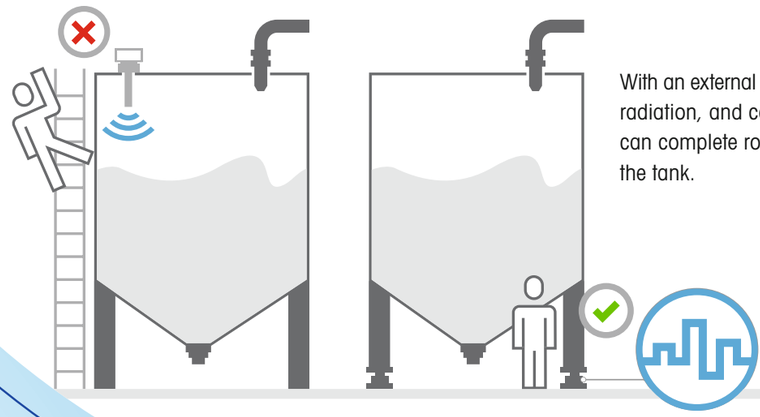
Production Manager

Innovative Sensor Technology

Level Detection at Its Best
The Bottom-Up Approach

By placing gravimetric sensors below the tank, material and environmental effects such as sidewall adhesion, dust, or foam do not distort your measurements, providing real-time readings that you can trust. Integrated advanced technical design features equip your system with state-of-the-art technology.

SLL210 AnyLevel™ reduces your risks



With an external level-detection solution, the risks of corrosion, radiation, and contamination are eliminated, and operators can complete routine maintenance checks without climbing the tank.

Internal network setup
The sensors can be easily set up by simply connecting the cables, and they will automatically establish the network.

Smart5™ alarms
AnyLevel delivers immediate notification and troubleshooting in case of a sensor error, in accordance with NAMUR NE 107.

Integrated connectivity
SLL210 sensors offer a unique internal sensor network, which can be directly connected to the PLC or DCS.

Tilt correction up to 8°
AnyLevel provides height compensation and tilt correction of up to 8 degrees, making installation simple.

Easy-to-clean design
All surfaces are designed with slight slopes to allow for seamless run-off during washdown.

Integrated 360° checking
Integrated 360° checking enables compensation for changes in horizontal length.

Uplift protection
You can bolt the entire tank to the ground via the sensors to maximize safety.

IP68/IP69K
SLL210 is designed with the highest ingress protection to enable maximum uptime.

Quick and Easy Connectivity
Integrate without Expert Knowledge

The SLL210 AnyLevel™ family includes multiple mechanical interface options to meet your specific requirements, and the sensors connect to most systems in just minutes. With simple cabling and robust connectors, you can eliminate complicated wiring, and thanks to the factory calibration, you can achieve out-of-the-box accuracy.

Complete System Visibility with Smart Technology

With analog level detection technology, days, months, or a year can go by before anyone realizes a costly problem exists. SLL210 AnyLevel comes with condition monitoring directly connected to the PLC via IO-Link or to the DCS via HART communication protocol.

HART COMMUNICATION PROTOCOL

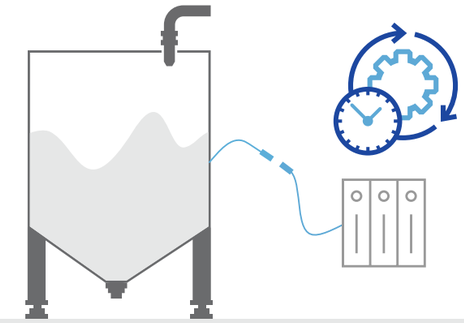
IO-Link inside

Smart5™ Alarms and Condition Monitoring

- All Okay
- Test Due
- Oos/Wrong Step
- Call Service
- Stop

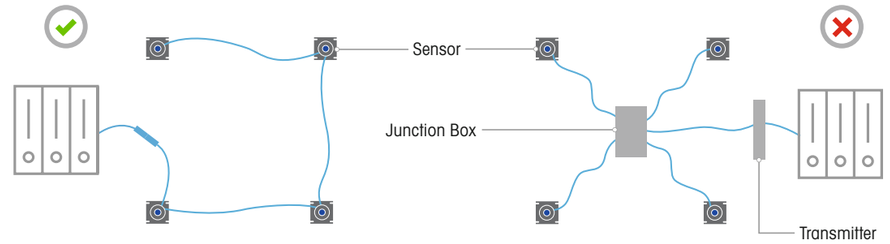
Direct PLC/DCS connectivity

Save space in the machine cabinet and reduce system complexity with integrated connectivity.



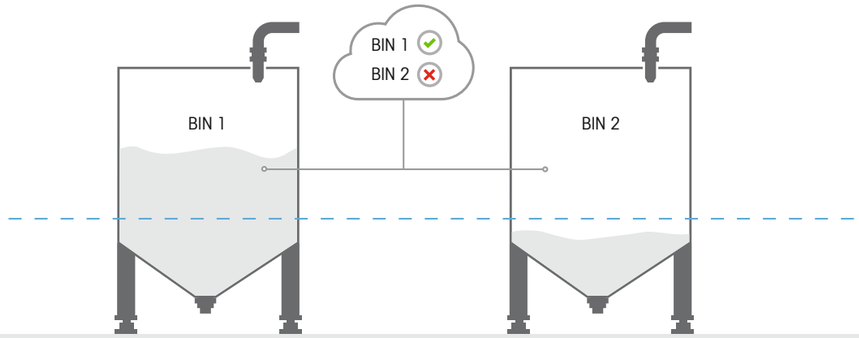
No complicated cabling

Simply connect all sensors and go; no specific architecture is required.



Direct PLC/DCS connectivity

Typical Analog Load Cell System



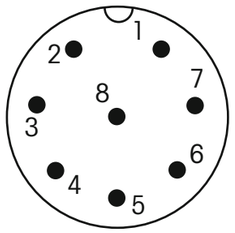
The Power of Digitalization
Make Informed Decisions

Digitalizing inventory control increases your stock reliability and enables more cost-effective use of goods. You also will be able to react faster to challenges in the supply chain because SLL210 AnyLevel™ consistently provides reliable readings, allowing you to place timely material orders and never turn away a shipment due to inaccurate level measurements.

Technical Specifications

Parameter		Unit	Specification			
Model			SLL210 AnyLevel™			
Application			Level detection in silos, tanks or vessels for powders, granules, and liquids.			
Size			1		2	
Rated Capacity (R.C.)		kg (lb, nominal)	1,000 (2,200)	3,000 (6,600)	10,000 (22,000)	30,000 (66,000)
Measurement Error per Sensor		% R.C.	±0.2		±0.3	
Typical System Accuracy		% R.C.	±2 or better[1]			
Signal Update Rate		Hz	0.5			
Process Pressure			Any			
Max. Rated Forces[2]	Max. Compressive Force, Rated	kN (klb)	10 (2.2)	30 (6.6)	100 (22)	300 (66)
	Max. Horizontal Force, Rated		10 (2.2)	10 (2.2)	75 (16.5)	75 (16.5)
	Max. Uplift Force, Rated		10 (2.2)	10 (2.2)	75 (16.5)	75 (16.5)
Max. Yield Forces[3,5]	Max. Compressive Force, Yield	kN (klb)	15 (3.3)	45 (9.9)	150 (33)	450 (99)
	Max. Horizontal Force, Yield		15 (3.3)	15 (3.3)	113 (24.9)	113 (24.9)
	Max. Uplift Force, Yield		15 (3.3)	15 (3.3)	113 (24.9)	113 (24.9)
Max. Ultimate Forces[4,5]	Max. Compressive Force, Ultimate	kN (klb)	30 (6.6)	90 (19.8)	300 (66)	900 (198)
	Max. Horizontal Force, Ultimate		30 (6.6)	30 (6.6)	200 (44)	200 (44)
	Max. Uplift Force, Ultimate		30 (6.6)	30 (6.6)	200 (44)	200 (44)
Max. Top Plate Travel	Horizontal Plane	mm (in)	±2 (±0.08)			
	Tilting	deg	±2 (Plate Kit), ±8 (Stem Kit)			
Weight, nominal	Sensor with Receiver Kit	kg (lb)	3.7 (8.2)		10.8 (23.8)	12.1 (26.7)
	Sensor with Stem Kit		4.2 (9.2)		–	–
	Sensor with Plate Kit		5.5 (12.1)		17.5 (38.5)	18.8 (41.4)
Package dimensions, nominal		mm (in)	380 (15) × 380 (15) × 190 (7.5)			
Material and Finish			Carbon steel and zinc plating/Stainless steel and electropolishing			
Temperature Range	Compensated	°C (°F)	–10 ~ +40 (+14 ~ +104)			
	Operating		–20 ~ +55 (–4 ~ +131)			
	Safe Storage		–40 ~ +80 (–40 ~ +176)			
Altitude Range		m	0 – 4,000			
Humidity			20% ~ 80% non-condensing			
Excitation Voltage		V AC/DC	Master: (18 ~ 30 V max. 100 mA) Slave: Min 10 V			
IP Rating[6]			IP68/IP69K			
Cable Diameter[7]		mm	Sensor to sensor cable: 8, Homerun cable: 11			
Connector Diameter		mm	15			
Bending radius		mm	25			
Pollution degree			2			
Installation Category			II			

[1] Depends on the installation quality and external influences such as wind or other unwanted forces.
[2] Ensure that the sensors are within the defined operating range. The level sensor is rated for these forces in normal operation, a Factor of Safety has been applied by METTLER TOLEDO
[3] Warning: If loaded statically one time in excess of these forces, the sensor may yield and need replacing. The Max. Yield Forces do not consider fatigue/cyclic loading and should be approached only in exceptional circumstances.
[4] Warning: If loaded statically one time in excess of these forces, the weigh module may break with potential for serious injury and/or property damage.
[5] Warning: Apply a Factor of Safety appropriate to the application.
[6] Sensor can be installed indoor and outdoor.
[7] Check the Manual for cable length limitations with the different protocols.



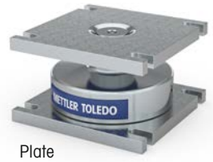
Pin	Description	Color
1	CI–	Blue
2	CI+ or CQ	White
3	Signal-1	Yellow
4	Signal-2	Pink
5	RS485-A	Green
6	RS485-B	Brown
7	LC_GND	Black
8	LC_24V	Red

Depending on the Protocol configuration, the Output Signal either is provided by the Pin 1 and 2 (4–20 mA, 4–20 mA HART) or by Pin 3 and 4 in the case of IO-Link Protocol version. Pin 5 and 6 are only relevant for the internal communication of the sens network. Pin 7 and 8 are used for the power supply.

Ordering Information

Receiver

ISO Stem/UNF Stem*



Plate

	Tank Connection	Material	1 ton	3 ton	10 ton	30 ton
4–20 mA	Receiver	Carbon steel	30937244	30937246	30937248	30937250
		Stainless steel	30937245	30937247	30937249	30937251
	ISO Stem M20 × 1.5	Carbon steel	30937252	30937254	–	–
		Stainless steel	30937253	30937255	–	–
	Stem UNF* ¾" – 16 UNF	Carbon steel	30937320	30937322	–	–
		Stainless steel	30937321	30937323	–	–
	Plate	Carbon steel	30937256	30937258	30937260	30937262
		Stainless steel	30937257	30937259	30937261	30937263
4–20 mA HART	Receiver	Carbon steel	30937272	30937274	30937276	30937278
		Stainless steel	30937273	30937275	30937277	30937279
	ISO Stem M20 × 1.5	Carbon steel	30937280	30937282	–	–
		Stainless steel	30937281	30937283	–	–
	Stem UNF* ¾" – 16 UNF	Carbon steel	30937324	30937326	–	–
		Stainless steel	30937325	30937327	–	–
	Plate	Carbon steel	30937284	30937286	30937288	30937290
		Stainless steel	30937285	30937287	30937289	30937291
IO-Link	Receiver	Carbon steel	30937300	30937302	30937304	30937306
		Stainless steel	30937301	30937303	30937305	30937307
	ISO Stem M20 × 1.5	Carbon steel	30937308	30937310	–	–
		Stainless steel	30937309	30937311	–	–
	Stem UNF* ¾" – 16 UNF	Carbon steel	30937328	30937330	–	–
		Stainless steel	30937329	30937331	–	–
	Plate	Carbon steel	30937312	30937314	30937316	30937318
		Stainless steel	30937313	30937315	30937317	30937319

* Stocked in the US

Ordering Guidance
Do not mix different capacities or communication protocols in one system.

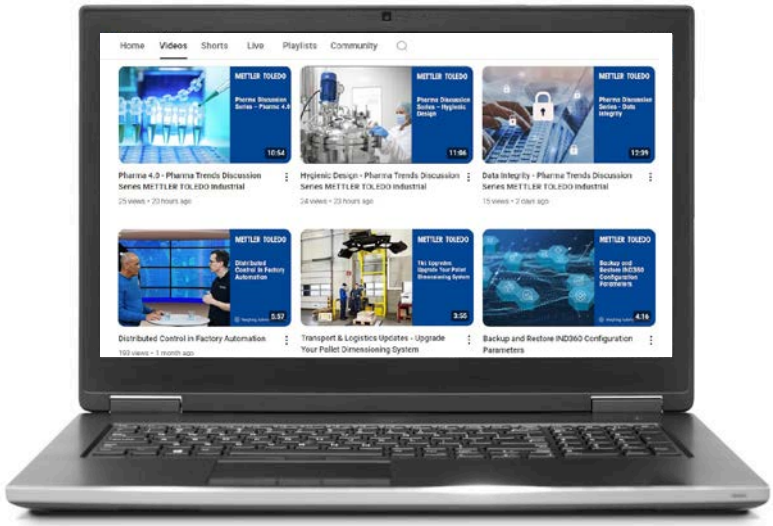
Accessories

	Material No.
Level Sensor Button with LED M12	30937213
Level Sensor Terminal Resistor M12 120 Ohm	30937214
Cell to Cell Cable 2 m	30937215
Cell to Cell Cable 5 m	30937216
Cell to Cell Cable 10 m	30937217
Cell to Cell Cable 20 m	30937218
Homerun M12 HART Cable 5 m*	30937222
Homerun M12 HART Cable 10 m*	30937223
Homerun M12 HART Cable 15 m*	30937224
Homerun M12 HART Cable 25 m*	30937225
Homerun M12 HART Cable 50 m*	30937226
Homerun M12 HART Cable 100 m*	30937227
Homerun M12 HART Cable 150 m*	30937228
Homerun M12 HART Cable 200 m*	30937229
Homerun M12 IOL Cable 1 m*	30937230
Homerun M12 IOL Cable 2 m*	30937231
Homerun M12 IOL Cable 5 m*	30937232
Homerun M12 IOL Cable 10 m*	30937233
Homerun M12 IOL Cable 20 m*	30937234

*Includes button with LED M12

Ordering Guidance
Each system must be equipped with LC cables connecting the sensors, as well as with one homerun cable. Each homerun cable comes together with LED Button, which also acts as a resistor.
If you are not going to use a homerun cable from METTLER TOLEDO, you must also order a Button with LED (4–20 mA version) OR a terminal resistor (4–20 mA HART or IO-Link version).

Reference Material
Level Detection Systems



SLL210 AnyLevel™ Video

Watch how the SLL210 delivers flexibility, connectivity, and long-term reliability for level detection.

▸ **www.mt.com/SLL210-video**

SLL210 Anylevel download page, including 2D/3D drawings:

▸ **www.mt.com/ind-downloads-sll210**

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For more information

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