

Siemens Digital Industries Webinari

PI2: PI Workshop for specialist

Siemens Digital Industries Webinari 1/2



Datum	Tema	Predavač
14.04. / 19.05.	FA1: Motion Control	<i>Darko Živković, Jelena Đukić</i>
15.04. / 14.05.	FA2: Energy Management System	<i>Zoran Jovanović</i>
22.04. / 21.05.	FA3: Redundantni kontroleri serije S7-1500R/H	<i>Mirko Milovanović</i>
05.05. / 26.05.	FA4: WinCC Unified	<i>Mirko Milovanović</i>
15.04. / 13.05.	MC1: DT konfigurator	<i>Nenad Bakal, Pavle Dragišić</i>
23.04. / 22.05.	MC2: Sizer, large drives	<i>Miloš Marković, Pavle Dragišić</i>
06.05. / 26.05.	MC3: Sizer, motion drives	<i>Miloš Marković, Pavle Dragišić</i>
21.04. / 21.05.	CI1: Industrial Networks	<i>Jelena Đukić</i>

Siemens Digital Industries Webinari 2/2



Datum	Tema	Predavač
16.04. / 15.05.	PI1: PI Academy world	Andrijana Popara, Miljan Miljanić, Marko Marić
24.04. / 22.05.	PI2: PI workshop for specialist	Andrijana Popara, Miljan Miljanić, Marko Marić
08.05. / 29.05.	PI3: #New@PI	Andrijana Popara, Miljan Miljanić, Marko Marić
30.04. / 29.05.	AE1: Digitalna rešenja u procesnoj industriji	Jelena Đukić, Marko Milenković
29.04.	CP1: Control Panel Online Symposium	Siemens worldwide webinar
22.04. / 27.05.	CP2: Clever engineering in the control panel	Tijana Džodžo
28.04. / 12.05.	CP3: New series of signaling devices 3SU	Tijana Džodžo
21.04. / 20.05.	CP4: SIRIUS 3RW Soft starters	Bojan Janković
07.05. / 28.05.	DE1: Siemens Digital Enterprise	Zoran Jovanović

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SIEMENS Apps for Process Industries

Engineering

Engineering



Ensure Asset Uptime

DCS



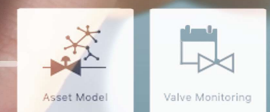
Instrumentation



Valves & Pumps



Drives & Turbines



PI Workshop for specialist

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Predavači



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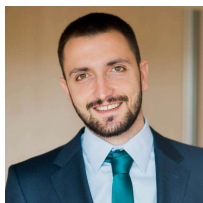
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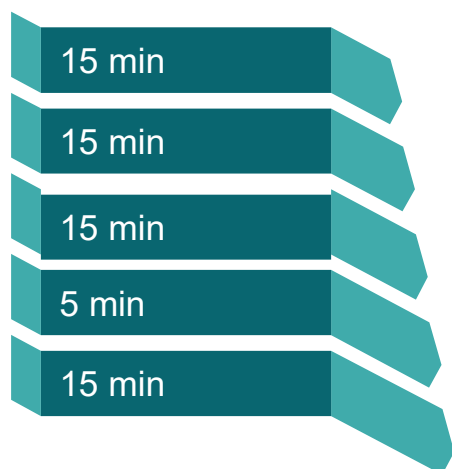
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Agenda



Teme

Pravilan odabir opreme za merenje težine

Pravilan odabir opreme za merenje protoka

Pravilan odabir opreme za merenje nivoa

Tehnički crteži, pomoćni alati za procesnu opremu

Zaključci, komentari, pitanja

Predavač

Miljan Miljanić

Marko Marić

Andrijana Popara

Andrijana Popara

Optimize processes with our automation and instrumentation portfolio

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Pressure
Measurement



Temperature
Measurement



Flow Measurement



Level Measurement



Positioners



Weight Measurement



Process Protection



Process Controllers



Process Recorders



Supplementary
Components



Communication
and Software



Product Solutions
for OEM



Agenda



1

Overview

- Automation and instrumentation portfolio
- Weighing Technology
- SIWAREX Evolution
- Production and development sites



2

Product Portfolio

- Non-Automatic Weighing
- Batching
- Dosing and Filling
- Loss-in-weight
- Belt weighing
- Weighfeeder
- Solids Flowmeter
- Process Protection



3

USPs and Benefits

- SIWAREX and SIMATIC
- Belt scales
- Load Cells



4

Contact and Support

- Service packages
- Hotline
- Training
- Contact



Siemens Weighing Technology – Overview



SIWAREX

SIWAREX weighing electronics for SIMATIC

- Seamless integrated weighing electronic for SIMATIC automation systems



SIWAREX load cells

- Made for every type of weighing application
- Cover a wide range of nominal loads from 0.3kg to 500t
- Mounting units and accessories available



Stand-alone electronics

- SIWAREX weighing terminals and Siemens Milltronics integrators for stand-alone applications



Software

- SIMATIC PCS 7 add-ons for SIWAREX weighing electronics and optional tools for commissioning and monitoring Siemens weighing devices



Dynamic Weighing

Belt weighing

- Simple mounting and low maintenance requirements
- High measuring accuracy and repeatability
- Special loadcell design allows robust design without any movable parts



Weighfeeder

- Continuous measurement of the load on the belt and the belt's speed
- Comparison of the true quantity measured with the set-point in order to control the belt speed



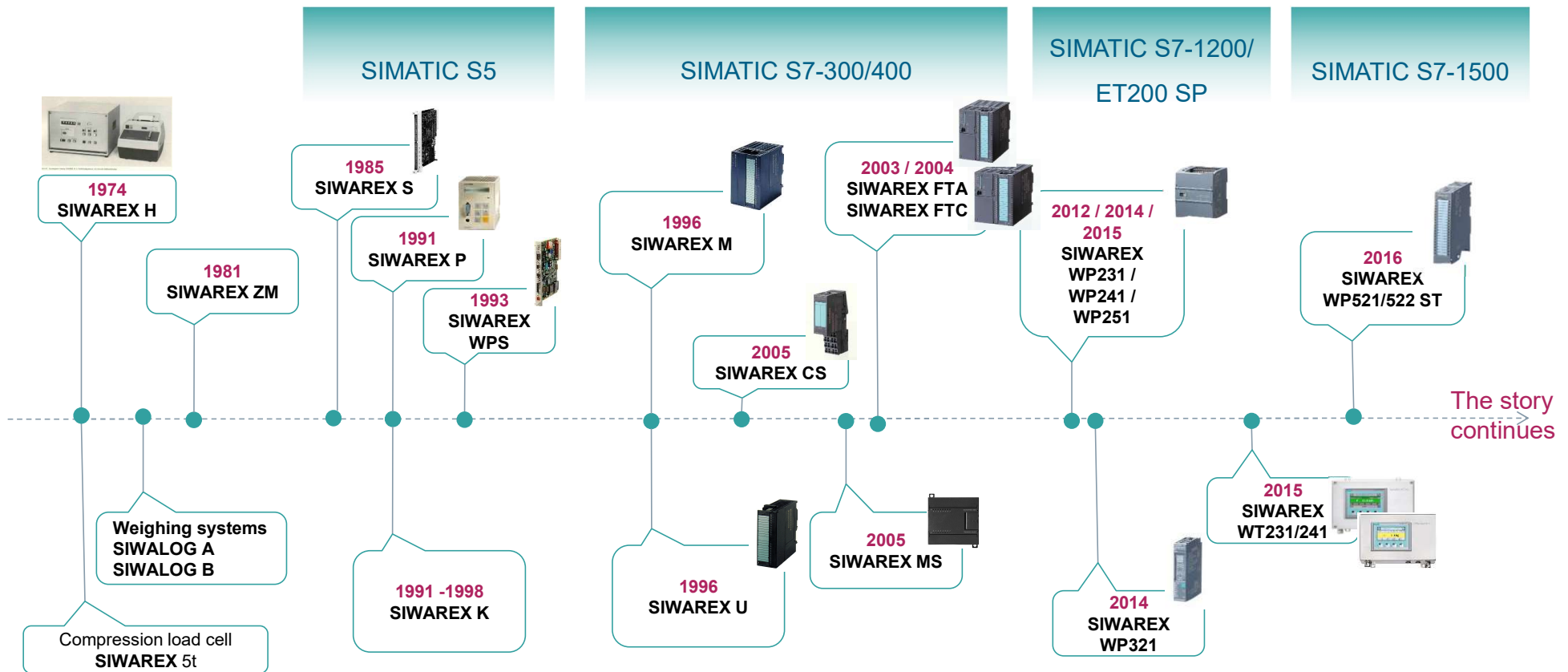
Solids Flowmeters

- Continuous measurement of the impact force of material under gravity feed conditions
- Impact force to be converted into a flow rate used to control the rate into a process or blending operation.



The evolution of Siemens Weighing Technology

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Non-Automatic Weighing Instrument – Most popular applications in the industrial environment

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Platform scales

- Possible loads – A truck, a bin, a bucket or raw material



- **SIWAREX WP231** (SIMATIC S7-1200/stand-alone)
- **SIWAREX WP321** (SIMATIC ET 200SP)
- **SIWAREX WP521/522 ST** (S7-1500/ET 200MP)
- **SIWAREX WT231** (Stand-alone)
- **SIWAREX U** (SIMATIC S7-300/400/ET 200M)
- **SIWAREX CS** (ET 200S)
- **SIWAREX load cells and installation accessories**

Hopper scales

- For liquids, powders, solids and gases
- Detection of precise levels of stored materials



- The corresponding SIWAREX electronics provide extensive features and functions to fulfill all requirements of non-automatic scale applications
- Easy and seamless integration of all SIWAREX weighing modules into the SIMATIC environment – TIA Portal or PCS7
- High scalability
- Legal-for-trade according OIML R-76

Automatic weighing instruments – High performance weighing within the SIMATIC environment

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Dosing, Batching and Bagging scale

- A predefined set-point is completely automatically batched by the SIWAREX electronic – typically by coarse and fine flow control
- Dosing, Batching and high-speed bagging (Bagging machines, multi component batching)



- **SIWAREX WP251** (SIMATIC S7-1200/stand-alone)
- **SIWAREX FTA** (SIMATIC S7-300/400/ET 200M)
- **SIWAREX load cells and installation accessories**



- On board I/O signals guarantee highest possible reaction times and therefore accuracy
- Intelligent algorithms for automatic optimizing of the dosing results
- Legal-for-trade according OIML R-51, R-61, R-76, R-107
- In combination with SIMATIC controllers, all requirements and additional functions can be easily realized
- Easy and seamless integration of all SIWAREX weighing modules into the SIMATIC environment – TIA Portal or PCS7

Loss-in-weight applications

Continuous weighing processes

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Loss-in-weight scales

- A loss-in-weight feeder regulates the mass flow rate (quantity per time)
- A loss-in-weight system helps to achieve the needed level of accuracy in continuous dosing applications
- Feeding extruders and adding additives into continuous processes



- **SIWAREX FTC** (SIMATIC S7-300/400/ET 200M)
- **SIWAREX load cells and installation accessories**



- The only loss-in-weight system fully integrated in SIMATIC format
- Complex tasks easily solved with SIWAREX and SIMATIC
- Predictive diagnostic
- Very competitive for retrofit of old systems
- Easy and seamless integration of all SIWAREX weighing modules into the SIMATIC environment – TIA Portal or PCS7

Belt scales – Simply the best for belt conveyors

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High performance for all industries

- Gravel, cement, coal, recycling and mining industries require accurate weight measurements for the conveyed materials by the use of belt scales



- **MSI/MMI** – extremely robust high precision belt scales
- **MCS** – high performance modular scale for limited space
- **MUS** – universal belt scale for various applications
- **WD600** – large weighing platform designed for food industries
- **MLC** – for light loading under harsh conditions
- **Milltronics BW500; BW500-L** and **SIWAREX WT241** (Stand-Alone)
- **SIWAREX FTC** (SIMATIC S7-300/400/ET 200M)
- **SIWAREX WP241** (SIMATIC S7-1200/stand-alone)
- **TASS, RBSS, WS300** Speed encoder



- Easy installation and low maintenance overhead
- Robust design without moving parts
- High accuracy and repeatability
- Various peripherals and calibration devices available
- Easy and seamless integration of all SIWAREX weighing modules into the SIMATIC environment – TIA Portal or PCS7

Weighfeeder – Weighing made to measure

Weighing and dosing device designed for food industries

- A weighfeeder is a belt conveyor with an installed weighing device for weighing, dosing and batching of solids
- A variable frequency drive allows control of material flowrate acc. a given set-point by controlling the belt speed

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- **SITRANS WW100** – high accuracy for light loading
- **SITRANS WW200** – universal design for various applications
- **Milltronics BW500** integrator with integrated PID controller
- **BW500-L** and **WT241** Stand-Alone integrator for weighing applications without or with external PID controller
- **SIWAREX FTC** (SIMATIC S7-300/400/ET 200M)
- **SIWAREX WP241** (SIMATIC S7-1200/stand-alone)



- High accuracy
- Ideal for low- to medium-capacity loads
- Fast installation, easy to clean and maintain
- Flexible, rugged design allows configurations to suit many applications
- Quick delivery on standard units

Solids Flowmeters – Inline Weighing for gravity fed processes

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Dust tight dust and powder measurement

- The Solids Flowmeters integrated in closed pipe systems provide reliable and highly accurate measurements of the material throughput
- Solids Flowmeters enhance process control, contributing to improved quality of your end product



- **SITRANS WF100**
- **SITRANS WF200/WF250**
- **SITRANS WF300 Series**
- **SITRANS WFS300 Sensing Heads**
- **Milltronics SF500**
- **SIWAREX FTC** (SIMATIC S7-300/400/ET 200M)



- Heavy duty, low-maintenance impact type Solids Flowmeters
- Continuous dust-tight in-line weighing of dry bulk solids, free-flowing powders or granular material
- Solutions for aerated gravity conveyors available
- Easy and seamless integration of all SIWAREX weighing modules into the SIMATIC environment – TIA Portal or PCS7

Process protection – Protected processes that run smoothly

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Contactless motion control

- Motion probes for safe and contactless monitoring of loss of motion in belt conveyors, screw conveyors, elevators or bucket elevators
- Acoustic sensors for non-invasive material flow and blockage monitoring



Motion probes

- SITRANS WMx00 and MSP probes
- SITRANS WM300 MFA electronics

Acoustic sensors

- SITRANS AS100
- SITRANS CU02



Motion probes

- Magnetive-inductive sensors up to 100 mm (4") from the ferrous target
- Exceeding and falling below the speed, standstill monitoring

Acoustic sensors

- Piezo probe for monitoring solid flows or blockages
- Detection of filter cracks
- External mounting on pipes, chutes etc. without material contact

SIWAREX integration in TIA Portal



Seamless integrated weighing technology in the TIA Portal environment

- Completely editable user interfaces
- Free standard examples and function blocks with full data access
- Continuous handling across all electronics
- Continuous hardware concept according SIMATIC standards → easy wiring, clear setup in the cabinet
- Operating, monitoring and maintenance directly from central HMI → no additional black box on the machine
- Detailed error message system in clear text
- Easy adding of foreign languages via simple EXCEL ex- and import
- Integrated hardware interrupts to the PLC
- Highest flexibility and scalability in combination with standard SIMATIC Controllers and I/O cards
- Long term availability following SIMATIC standards



Totally integrated weighing

MSI and MMI beltscales – Benefits of a reliable technology

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Heart of the beltscales – Triple-beam parallelogram style stainless steel loadcell



- Integrated **horizontal force compensation** to compensate affects by belt tracking
- **Direct force injection** without any movable parts like pivot points or hinge springs allows a robust and reliable design
- **Integrated** self-cleaning mechanical **overload-protection**
- **Temperature range** -50° to +75° C for successful applications around the world
- Loadcell capacities from 25 lbs up to 2,000 lbs for very high loading available



Features of beltscales



- High accuracy (MSI +/- 0.5%, MMI-2 +/- 0.25%, MMI-3 +/- 0.125%)
- Easy to install and to maintain
- Suitable for belt widths up to 2,500 mm and optionally more
- Hazardous and Legal-For-Trade approvals available



SIWAREX load cells – Benefits of a reliable and flexible technology

Clear labeling



SIWAREX WL 200 load cells have labels showing the most important information and cable connections

Useful accessories

Load cell accessories:



- e.g. **SIWAREX JB Junction boxes** for connecting more than one load cell (stainless steel or aluminum)
- **SIWAREX EB extension box** for lengthening connection cables
- Cable

Mounting accessories for quick and easy replacement of load cells that are supporting large and heavy tanks; supports a optimum alignment of the load cell, protect the load cell against overloads or transverse loads and which greatly simplify assembly

Excellent features



- Wide range of different designs: from platform load cells to bending and shear beam, s-type and compression cells
- High accuracy: most of our load cells are legal for trade in the accuracy class C3 to OIML R-60
- Robust: stainless steel load cells available; load cells with IP68/69K available; load cells with high temperature option available

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Optimize processes with our automation and instrumentation portfolio

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Pressure
Measurement



Temperature
Measurement



Flow Measurement



Level Measurement



Positioners



Weight Measurement



Process Protection



Process Controllers



Process Recorders



Supplementary
Components



Communication
and Software












Product Solutions
for OEM



SITRANS F M product portfolio Compact and Remote



	MAG5000	MAG6000	MAG6000I	MAG6000	Transmag2	MAG8000
			 Ex de			
	7ME6910	7ME6920	7ME6930	7ME6920	7ME5034	7ME6810
Accuracy	0,4 %	0,2%	0,2%	0,2%	0,5%	0,2% / 0,4%
Min. Conductivity (compact mount)	$\geq 5 \mu\text{S/cm}$				$\geq 1 \mu\text{S/cm}$	$\geq 20 \mu\text{S/cm}$
Sensor	MAG 1100 / 1100HT / 1100F MAG 3100 / 3100HT / 3100P MAG 5100W 				911/E 	

Flow - MAG 8000 wireless communication module (WCM)

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1. MAG 8000 with GSM / GPRS WCM

2. Mobile network

3. Internet service

4. Email with a "csv" file

5. OPC HDA server solution

6. SMS data with TOT 1

7. SMS data via email

8. SMS data exported into a datasheet



Flow – Verificator and Sensoprom for MAGs

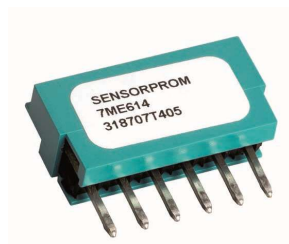
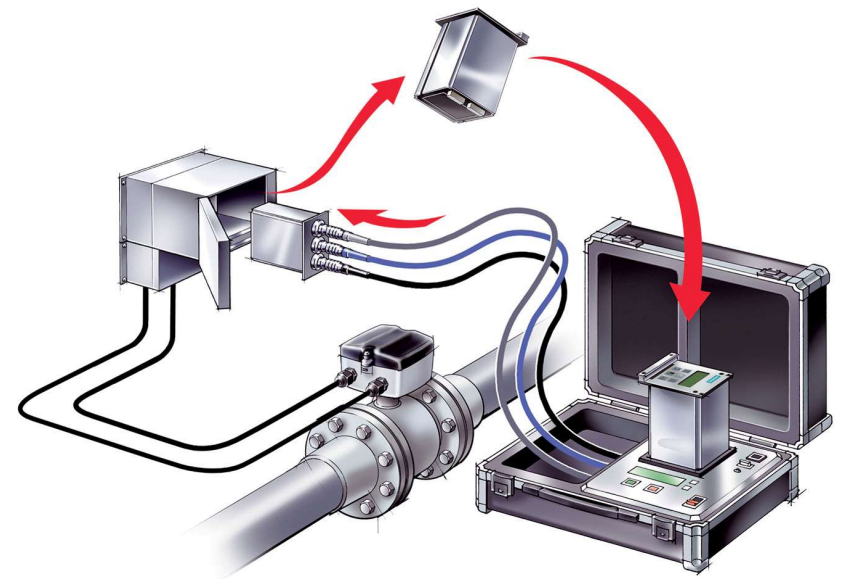
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Verificator

- Avoid recalibration and interruption of process
- Verify the correct product quality
- Save money and resources by accurate dosing of the required quantities

Typical application:

- Siemens sales companies
- Large customers
- New installations
- Service teams





Sensorprom

Each flow meter has its own identity stored in the SENSORPROM. The information consists of:

- Calibration data
- “Fingerprint” – magnetism properties
- Setup and programming data

SITRANS F US in-line product range



Battery supply and custody transfer SITRANS FUS080		Fieldbus and high performance SITRANS FUS060		
				
				
Combined with FUS380/FUE380	Combined with SONOKIT	Combined with SONOKIT	Combined with SONO 3300	Combined with SONO 3100

SITRANS FS230 clamp-on ultrasonic flow

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Transmitters for the FS230 system will be released in multiple stages to cover different industries.

General benefits of clamp-on flow technology:

- Small to large pipes >0.5"
- <1.0% accuracy
- Installation on existing pipelines
- Measures almost any liquid
- Cost efficiency increases as pipe size increases



Open channel flow measurement

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Sitrans LUT400

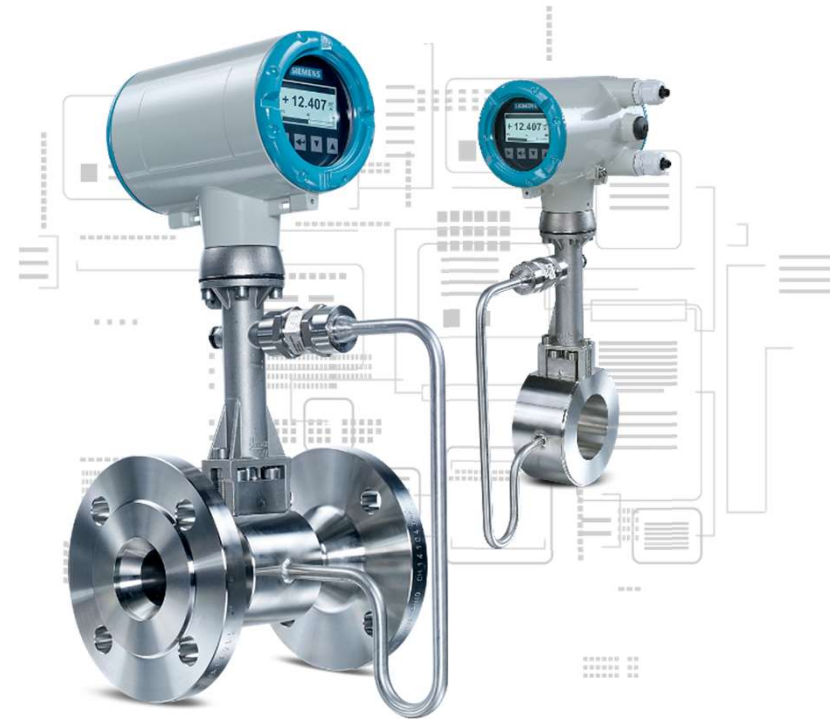


ECHOMAX XRS-5 TRANSDUCER



SITRANS FX330 – Taking steam, gas & liquid measurements to a whole new level.

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Unrestricted

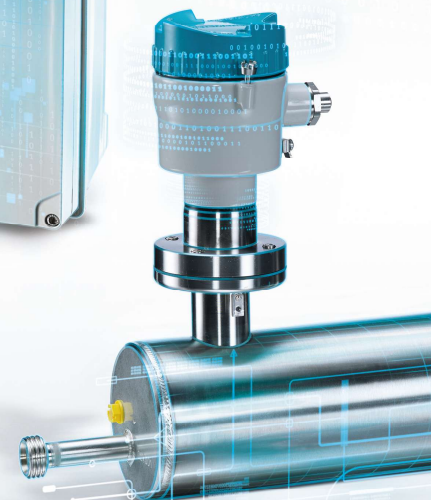
SITRANS FX330 – Technical specifications



	Flanged version	Sandwich version
Nominal diameters	DN 15 to DN 300 1/2" to 12"	DN 15 to DN 100 1/2" to 4"
Process temperature & pressure	-40 ° C to 240 ° C Up to 100 bar	-40 ° C to 240 ° C Up to 100 bar
Accuracy	± 1% for gases (Re>20000) ± 0.75% for liquids (Re>20000) ± 2% for gases and liquids (10000<Re<20000)	± 1% for gases (Re>20000) ± 0.75% for liquids (Re>20000) ± 2% for gases and liquids (10000<Re<20000)
Approvals	ATEX, QPS US and C, IECEx, SIL 2	ATEX, QPS US and C, IECEx, SIL 2
Communication & outputs / inputs	HART and EDD for SIMATIC, PROFIBUS PA and FF 4...20 mA, digital output, analog input (4...20 mA)	

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SITRANS F C digital Coriolis solutions



SITRANS F C Coriolis flow sensor – One uniform product range

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HART
COMMUNICATION PROTOCOL

PROFI
BUS DP & PA

Modbus



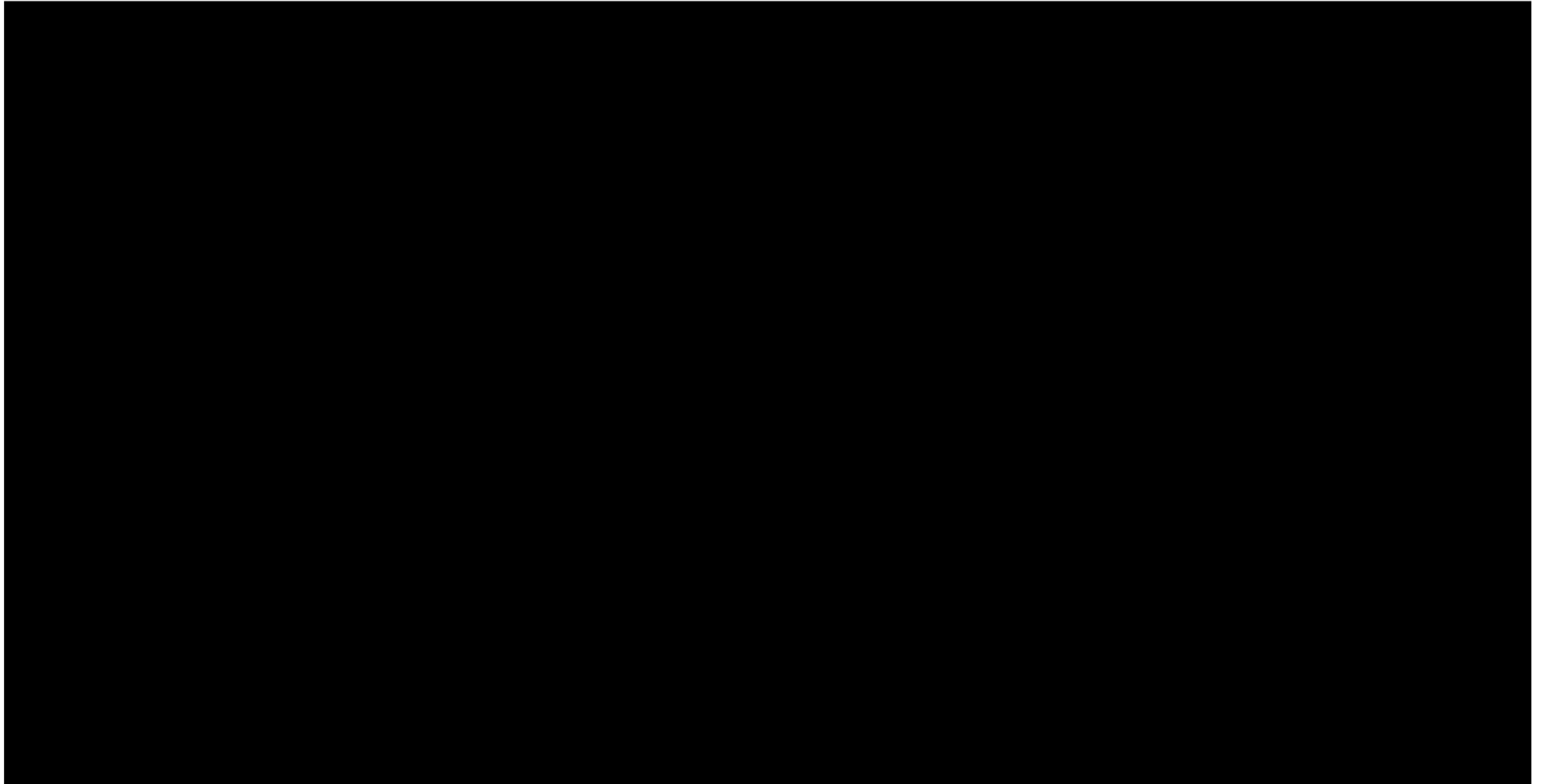
Di 1.5, DN 4 & Di 3, 6, 15



DN 15, 25, 50, 80 & DN 100, 150

And now it's coming something new

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Optimize processes with our automation and instrumentation portfolio

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Pressure
Measurement



Temperature
Measurement



Flow Measurement



Level Measurement



Positioners



Weight Measurement



Process Protection



Process Controllers



Process Recorders



Supplementary
Components



Communication
and Software



Product Solutions
for OEM



Because no single **technology** measures level in all applications, Siemens offers **selection**.

Start with the right product, finish with low cost of ownership and increased safety.

Non-contacting technology

1 Always consider non-contacting technology first. SITRANS LU and SITRANS LR ultrasonic and radar technologies measure most level applications.

- Minimal maintenance
- No wear and tear
- Easiest to commission and install

Contacting technology

2 For high accuracy dosing/mixtures use SIWAREX (weighing). SITRANS LG (guided wave radar), SITRANS P (pressure), and SITRANS LC (capacitance) are the answer for the following:

- Small process connections
- Interface detection
- Extreme pressure and temperature applications

Safety and assurance

For point level detection, safety of personnel, back-up control, and to avoid costly shutdowns, install point level devices like SITRANS CLS, SITRANS LVL, SITRANS LVS or SITRANS LPS.

Level technology selector

● preferred
● condition dependent

Conditions	Continuous level						Point level			
	Ultrasonic	Radar	Guided wave radar	RF Capacitance	Gravimetric	Hydrostatic pressure	Vibration	Capacitance	Paddle	Ultrasonic
Measurement										
Level	●	●	●	●	●	●	●	●	●	●
Interface (liquid/liquid)			●	●		●		●		
Interface (liquid/solid)	●			●			●	●		
Volume	●	●	●	●	●	●				
Mass					●	●				
Flow (open channel)	●	●								
Level Application										
Changing density	●	●	●	●			●	●	●	●
Changing dielectric	●	●	●		●	●	●	●	●	●
Aggressive chemicals*	●	●	●	●	●	●	●	●	●	●
Pressure/vacuum		●	●	●	●	●	●	●	●	
High temperature		●	●	●	●	●	●	●	●	
Cryogenic			●	●	●			●		
Turbulence	●	●	●	●	●	●	●	●		●
Steam		●	●	●	●	●	●	●	●	
Hydrocarbon vapors/solvents		●	●	●	●	●	●	●		
Foam	●	●	●	●	●	●	●	●		●
Buildup	●	●	●	●	●	●	●	●	●	●
High viscosity	●	●	●	●	●	●	●	●	●	●
Dust	●	●	●	●	●		●	●	●	●
Solids powders	●	●	●	●	●		●	●	●	●
Solids granules/pellets < 25 mm (1")	●	●	●	●	●		●	●	●	●
Solids > 25 mm (1")	●	●			●		●	●	●	●

* Check chemical compatibility.



SITRANS LV5100



SITRANS LV5200



SITRANS LV5300



SITRANS LVL100/200



SITRANS LPS200



POINTEK CLS200

POINTEK CLS300

POINTEK CLS100



	SITRANS LVS100	SITRANS LVS200	SITRANS LVS300	SITRANS LVL100/200	SITRANS LPS200
	Dry powder solids			Non-sticky liquids and slurries	Extreme temperatures and buildup
Order No.	7ML5735	7ML5731-4	7ML5736-8	7ML5745/ 7ML5746/ 7ML5747/ 7ML5748	7ML5725-8/7ML5730
	Vibrating point level switch for dry powder, fine grain, and granular bulk solids with densities starting at 30 g/l (1.9 lb/ft³).	Vibrating point level switch for dry powder, fine grain, and granular bulk solids with densities as low as 5 g/l (0.3 lb/ft³).	Vibrating point level switch for bulk solids with densities as low as 20 g/l (1.25 lb/ft³), including solids with some propensity for build-up and heavier materials requiring a durable probe.	Compact vibrating level switch for liquid and slurry and pump protection. Ideal for use in confined spaces.	Rotary paddle switch for point level detection of powder and granular solids with bulk densities as low as 15 g/l (0.94 lb/ft³).
Range	Insertion length: 170 mm to 4 m (6.7" to 13 ft)	Insertion length: • Rigid extension 165 mm to 4 m (6.5" to 13 ft) • Extended model 700 mm to 20 m (27.5" to 65 ft)	Insertion length for rigid extension: 160 mm to 4000 mm (6.3" to 13 ft)	Insertion length: 40 mm to 4000 mm (1.5" to 13 ft)	Insertion length: 100 mm to 10 m (4" to 30 ft)



	Pointek CLS100	Pointek CLS200	Pointek CLS300	Pointek ULS200
	Compact universal switch	Standard universal switch	Demanding conditions	Non-contact
Order No.	7ML5501/7ML5610	7ML5630-4/7ML5640-4	7ML5650-2/7ML5660-2	7ML1510
	RF capacitance switch for level detection in constricted spaces, interfaces, solids, liquids, slurries, and foam.	RF capacitance switch with a high level of chemical resistance; level detection of interfaces, solids, liquids, slurries, foam, and simple pump control.	RF capacitance switch for detecting solids, liquids, slurries, and interface in demanding conditions: pressures, temperatures, corrosive and abrasive materials.	Ultrasonic non-contacting switch with two switch points for level detection of bulk solids, liquids, and slurries; ideal for sticky materials.
Range	100 mm (4") insertion	Rod: 100 mm to 5.5 m (4" to 18 ft) Cable: 1 to 30 m (3 to 98 ft)	Rod: 350 mm to 1 m (14 to 40") Cable: 1 to 25 m (3 to 82 ft)	Liquids: 0.25 m to 5 m (0.8 to 16 ft) Solids: 0.25 m to 3 m (0.8 to 10 ft)
Process temperature	-30 to 100 °C (-22 to 212 °F)	-40 to 125 °C (-40 to 257 °F) with thermal isolator	-40 to 400 °C (-40 to 752 °F) high temperature version	-40 to 60 °C (-40 to 140 °F) -20 to 60 °C (-5 to 140 °F) if mounted in metal threads

SITRANS LU

Designed for excellence in level measurement

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	SITRANS LUT400	MultiRanger100/200 HydroRanger200	SITRANS Probe LU240	SITRANS Probe LU	SITRANS LU150
	High accuracy and data logging	Differential measurement and six control relays	HART 7 communications	PROFIBUS PA communications	Short range, simple measurements
Order No.	7ML5050	7ML5033/7ML5034	7ML511	7ML5221	7ML5201
	SITRANS LUT400 are compact, single point, long range ultrasonic controllers for continuous level or volume measurement of liquids, slurries, and solids, and high accuracy monitoring of open channel flow.	MultiRanger/HydroRanger are versatile short- to medium-range ultrasonic single and multi-vessel level monitor/controllers for virtually any application in a wide range of industries.	SITRANS Probe LU240 is a cost-effective, compact, intelligent level solution for liquid chemical inventory, monitoring small process vessels, and level monitoring measurement in the environmental industry.	SITRANS Probe LU is a 2-wire loop-powered level measurement transmitter for measuring storage vessels, filter beds, and open channel flow in the water and wastewater, food, and chemical industries.	SITRANS LU150 is a short-range integrated ultrasonic level transmitter – ideal for liquids and slurries in your open or closed vessels.

Radar transmitters for liquid level measurement

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SITRANS LR200

- Low frequency
- Severe process conditions

SITRANS LR250 PLA

- Great choice for process industries
- Ambient conditions with corrosive chemicals

SITRANS LR250 FEA

- Extreme corrosive chemicals and high temp
- PTFE lens

SITRANS LR250 horn

- Ideal for oil and gas
- Highest temp rating

SITRANS LR250 HEA

- Hygienic antenna
- Variety of process connections

SITRANS LR560

- > 30 m water applications
- Narrow beam
- Stainless steel enclosure

SITRANS LR100/110/120

- Compact 80 GHz
- First choice for general industries
- Bluetooth® wireless technology





	SITRANS LR560	SITRANS LR460	SITRANS LR260
	First choice	Challenging solids applications	Intrinsically safe
Order No.	7ML5440	7ML5426	7ML5427
	2-wire, 78 GHz FMCW radar level transmitter for continuous monitoring of solids or liquids.	4-wire, 25 GHz FMCW radar level transmitter for continuous monitoring of solids. Ideal for materials with extremely low dielectric properties.	2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of solids and liquids. Ideal for applications requiring quick update rates.
Range	40 m (131 ft) 100 m (328 ft)	100 m (328 ft)	30 m (98 ft)
Process temperature	-40 to 100 °C (-40 to 212 °F) -40 to 200 °C (-40 to 392 °F)	-40 to 200 °C (-40 to 392 °F)	-40 to 200 °C (-40 to 392 °F)
Process pressure	Up to 3 bar g (43.5 psi g) option	0.5 bar g (7.25 psi g) max.	Up to 3 bar g (43.5 psi g), process connection dependent



SITRANS LR250 Family

SITRANS LR560

	SITRANS LR250	SITRANS LR200	SITRANS Probe LR	SITRANS LR560
	Universal applications	Severe process conditions	Low-cost basic applications	Sea and river level measurement
Order No.	7ML5431, 7ML5432, 7ML5433	7ML542x	7ML5430	7ML5440
	2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage/process vessels.	2-wire, 6 GHz pulse radar level transmitter for continuous monitoring of liquids. Ideally suited for complex, turbulent process vessels.	2-wire, 6 GHz pulse radar level transmitter for basic continuous monitoring of liquids in storage vessels.	2-wire, 78 GHz FMCW radar level transmitter for continuous monitoring of solids or liquids.
Range	20 m (66 ft)			40 m (131 ft) 100 m (328 ft)
Process temperature	-40 to 200 °C (-40 to 392 °F), process connection dependent	-40 to 200 °C (-40 to 392 °F), process connection dependent	-40 to 80 °C (-40 to 176 °F)	-40 to 100 °C (-40 to 212 °F) -40 to 200 °C (-40 to 392 °F)
Process pressure	Up to 40 bar g (580 psi g), process connection dependent	Up to 40 bar g (580 psi g), process connection dependent	Up to 3 bar g (43.5 psi g)	Up to 3 bar g (43.5 psi g) option

SITRANS LR100 series

Level measurement for basic inventory in general industries

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Feature/Function

Bluetooth wireless technology with SITRANS mobile IQ app on your mobile device

2 mm accuracy (LR110/120 versions) and zero blanking distance

Custom radar microchip delivers exceptional sensitivity

80 GHz yields narrow beam

Digitalization ready with 2-wire HART 7.0 or 4-wire Modbus RTU

Benefit

- Time-saving and no specialists required
- Device status at a glance
- Precise measurement over entire range, accurate volume measurement.
- Signal killer conditions like condensation, turbulence, buildup or fluffy solids are no problem.
- No nozzle interference, no costly fine-tuning.
- Get status and diagnostic data immediately to your systems ensuring quality of your process and faster and intelligent data for operations



SITRANS LG Family

	SITRANS LG240 SITRANS LG250 SITRANS LG260	SITRANS LG270
	Liquids, solids and hygienic	Extreme conditions
Order No.	7ML5880/7ML5881/7ML5882	7ML5883
Range	<ul style="list-style-type: none"> • Insertion length 300 mm (11.8 inches) to 75 m (246 ft) • Probe types include: cable, rod, and coaxial versions 	<ul style="list-style-type: none"> • Insertion length 300 mm (11.8 inches) to 60 m (196.8 ft) • Probe types include: cable, rod, and coaxial versions
Accuracy	±2 mm (0.08")	

				
	SITRANS LH100	SITRANS LH300	SITRANS P320/420	SITRANS P500
	Submersible Sensor	Submersible Sensor	Advanced	Premium
Order No.	7MF1570	7MF1575	7MF036	7MF56x
	Hydrostatic level transmitter for direct mounting in tanks and vessels.	Hydrostatic level transmitter for direct mounting in tanks and vessels	Hydrostatic level transmitter for mounting with remote seal on open or closed vessels with corrosive or non-corrosive liquids.	Hydrostatic level transmitter for mounting with remote seal on open or closed vessels with corrosive or non-corrosive liquids.
Range	3 m to 20 m H ₂ O (9 ft to 60 ft H ₂ O)	1 m to 40 m H ₂ O (3 ft to 120 ft H ₂ O)	50m (167ft) H ₂ O	60m (210ft) H ₂ O
Process temperature	-10 to 80 °C (14 to 176 °F)	-10 to +80 °C (14 to 176 °F)	-40 to 100 °C (-40 to 212 °F)	-40 to 125 °C (-40 to 257 °F)
Process pressure	N/A	N/A	depending on process connection	depending on process connection

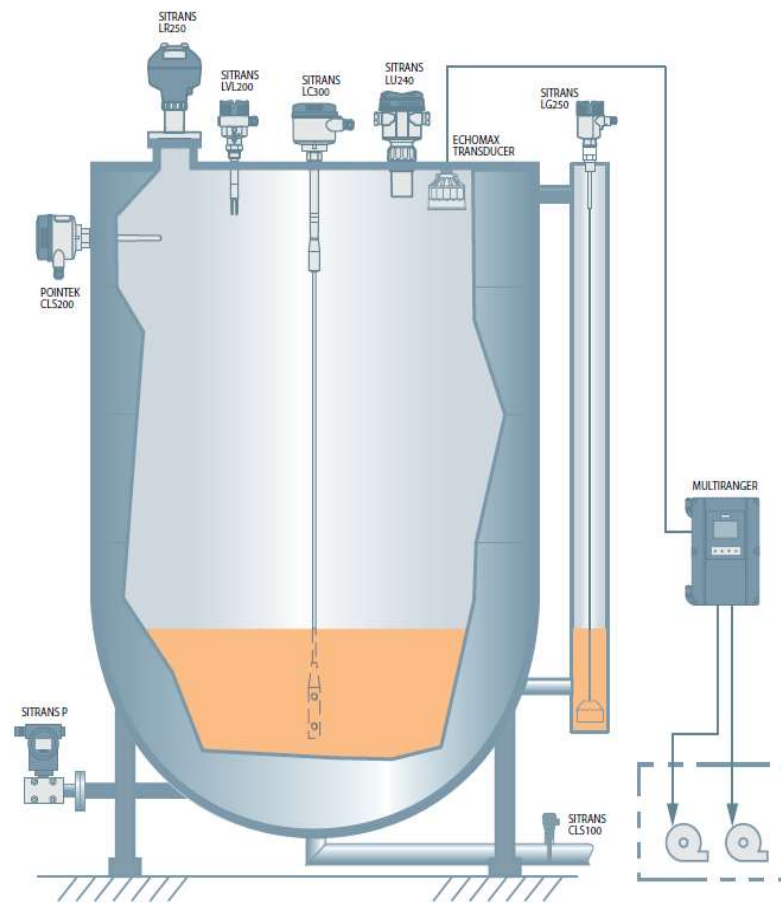


	SIWAREX WT231	SIWAREX WP231	SIWAREX WP321	SIWAREX U
	Standalone	S7-1200 integrated	ET 200SP integrated	S7-300 integrated
Order No.	7MH4965-2AA01	7MH4960-2AA01	7MH4138-6AA00-0BA0	7MH4950-1AA01 (one channel) 7MH4950-2AA01 (two channel)
Typical applications	Fast basic weighing and force measuring tasks like platform, silo or hopper scales, built-in a rugged stand-alone solution.	Fast basic weighing and force measuring tasks like platform, silo or hopper scales, seamless integrated into SIMATIC S7-1200 environment.	Fast and accurate weight measurement applications.	Basic weighing and force measuring tasks, one or two channel modules available.
Automation system integration	<ul style="list-style-type: none"> RS485 (Modbus RTU) 0/4-20mA Four digital outputs Four digital inputs 	<ul style="list-style-type: none"> SIMATIC S7-1200 (directly via SIMATIC bus) Operator panel Automation systems from other manufacturers, via Ethernet (Modbus TCP/IP) or RS-485 (Modbus RTU) 	<ul style="list-style-type: none"> SIMATIC S7-400 SIMATIC S7-300 SIMATIC S7-1200 SIMATIC S7-1500 via SIMATIC ET 200SP distributed IO 	<ul style="list-style-type: none"> SIMATIC S7-300 (directly or via SIMATIC ET 200M) SIMATIC S7-400 (H) SIMATIC PCS 7 (H) (via SIMATIC ET 200M)

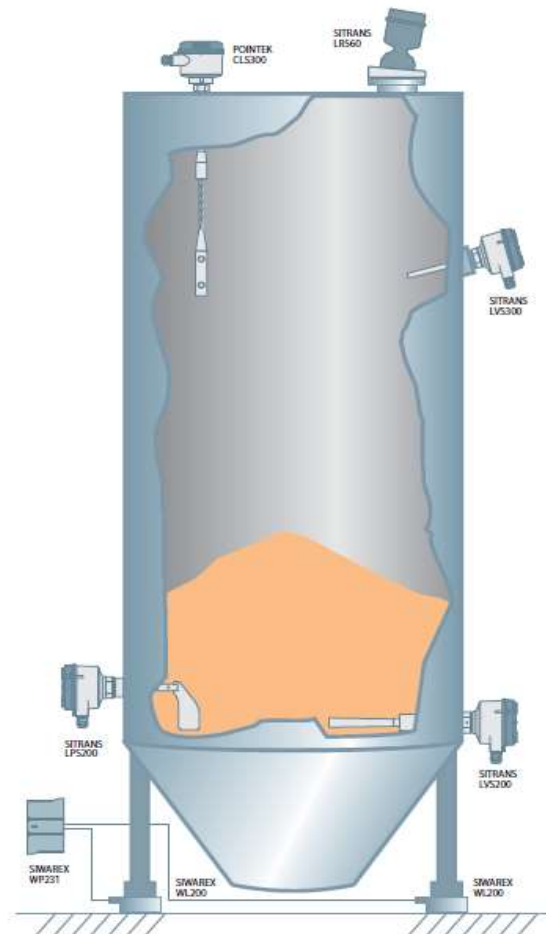


	SIWAREX WL230	SIWAREX WL230	SIWAREX WL250	SIWAREX WL260	SIWAREX WL270	SIWAREX WL270 K	SIWAREX WL280 RN
Type	Shear beam	Bending beam	S-Type	Single point	Compression	Compression	Ring-torsion
Order No.	7MH5107	7MH5106	7MH5105	7MH5118	7MH5108/10	7MH5114	7MH5113
Typical applications	Container, overhead rail conveyor, and platform scales	Small scale containers and platform scales	Tank weighing, hybrid scales, or suspended container weighing	Small to medium platform scales and weighing machines, conveyor small scales	Containers, hoppers, and vehicle scales	Vehicle scales, overhead rail scales, container weighers	Container, conveyor, platform and roller table scales

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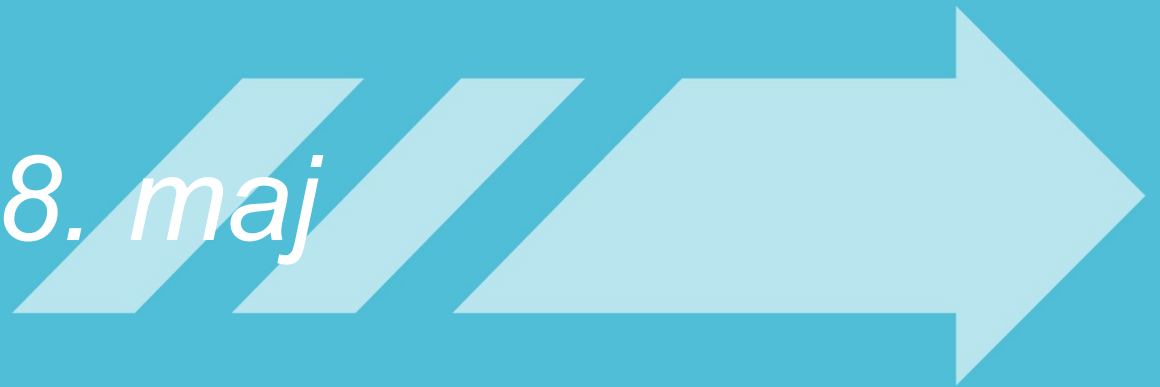
Our service offer

We offer numerous services around our products and systems that support you in every phase of the lifecycle of your machine or plant – from planning and realization to commissioning, right up to maintenance and modernization

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Pitanja

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Hvala!

