Siemens Digital Industries Webinari

PI2: PI Workshop for specialist

Siemens Digital Industries Webinari 1/2

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

Siemens Digital Industries Webinari 2/2

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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*

PI Workshop for specialist

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Predavači

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Agenda

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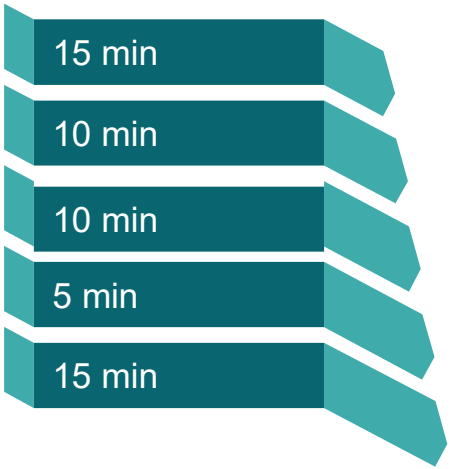

Teme	Predavač
Sitrans FP FP230-FP330	Miljan Miljanić
Sitrans LR 100	Andrijana Popara
Sitrans MAG 100	Marko Marić
Tehnički crteži, pomoćni alati za procesnu opremu	Marko Marić
Zaključci, komentari, pitanja	

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

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SITRANS FP230/FP330

Pitot tubes and orifice plates

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siemens.com/sitransp

The established addition to the SITRANS F flow portfolio.

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Ingenuity for life

When it comes to boosting productivity, choosing the right flowmeter can make all the difference. The trusted SITRANS F product family has versatile and reliable flow measurement solutions built to suit every industry and process.

Top highlights at a glance

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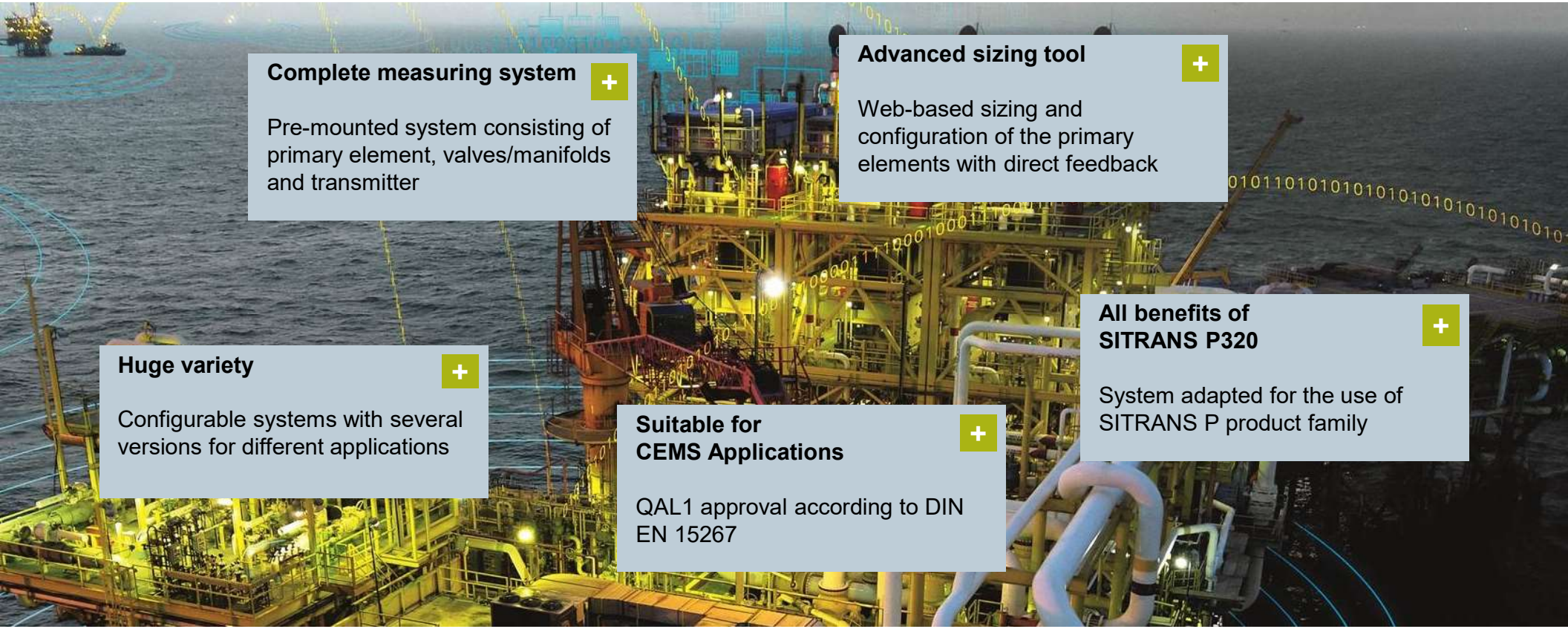

Complete measuring system +

Pre-mounted system consisting of primary element, valves/manifolds and transmitter

Advanced sizing tool +

Web-based sizing and configuration of the primary elements with direct feedback

Huge variety +

Configurable systems with several versions for different applications

Suitable for CEMS Applications +

QAL1 approval according to DIN EN 15267

All benefits of SITRANS P320 +

System adapted for the use of SITRANS P product family

The easy way to handle dP-Flow measurement

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Ingenuity for life

Feature/Function	Benefit
Large variety of different designs and materials	• Suitable for a vast range of different applications • Suitable for various process conditions and parameters
Compact or remote version	• Flexible mounting • One pressure transmitter for all applications
Complete flow solution	• Single source supplier for the hole measuring point • Pre-mounted flowmeter delivered in “one box”
Advanced sizing tool	• Easy traceability throughout the ordering process • Direct technical feedback and possibility to order

The easy way to handle dP-Flow measurement

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SITRANS FP230/330

Large variety +
- **Diameter**: DN10 … DN4000
- **Material**: Stainless steel, high temperature steel, Hastelloy
- **Design**: Averaging pitot tube for gas and liquids, for steam, for flue gas, with FASTLOK; orifice plate with single tapping, annular chamber, meter run, insertion orifice, orifice flange for welding

Complete system +
- Pre-mounted measuring system
- Complete solution as remote version
- Single parts available as own product

Safe +
- Full SIL-2/3 assessment
- Intrinsic safety
- Ex approved, Ex I approved,
- IEC, ATEX, FM, CSA, KCC, EAC, INMETRO
- DNV-GL, LR, BV, ABS, KR, RINA, CCS, etc.
- Dual seal, AD2000

Emission Monitoring +
- Measuring system for CEMS* applications
- QAL1 approval according to DIN EN 15267

*Continuous Emission Monitoring System

Your perfect choice for demanding applications

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Target applications

Steam applications

- High Temperatures due to temperature resistant steel
- Cost-effective solutions

Compressed air applications

- Efficient controle of compressed air flow
- Low pressure loss due to small profile of pitot tubes

Flue gas for CEMS

- QAL1 approval according to DIN EN 15267
- Safe and reliable monitoring of flue gas

New set up of SITRANS FP portfolio

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Product description		Product Name
Pitot tube measuring system (including pitot tube and SITRANS P320)	▶	**SITRANS FP330**
Pitot tube (only sensor)	▶	**SITRANS FPS300**
Orifice measuring system (including orifice and SITRANS P320)	▶	**SITRANS FP230**
Orifice (only sensor)	▶	**SITRANS FPS200**

New set up of SITRANS FP portfolio

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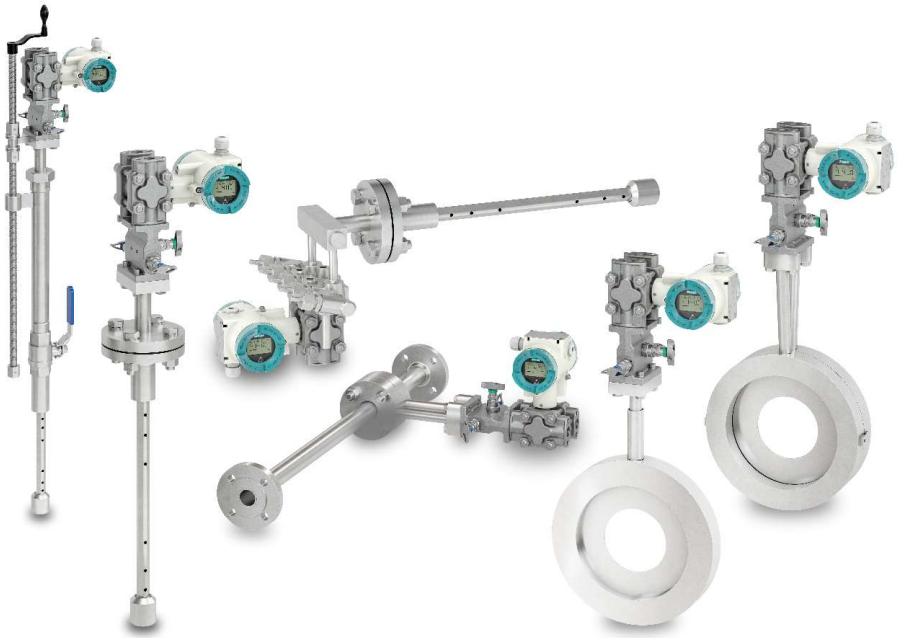
Compact version



Remote version

7ME161*: Averaging Pitot Tube for gas and liquids

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FP330 compact	FPS300 remote

7ME162*: Averaging Pitot Tube for steam

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FP330 compact	FPS300 remote

7ME163*: Averaging Pitot Tube with FASTLOK

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FP330 compact	FPS300 remote

7ME171*: Orifice plate with single tapping

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FP230 compact	FPS200 remote

7ME172*: Orifice plate with annular chamber

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FP230 compact	FPS200 remote

7ME173*: Orifice Meter run

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FP230 compact	FPS200 remote

7ME174*: Insertion orifice plate

SIEMENS
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FPS200 remote

7ME175*: Orifice flange for welding

SIEMENS
Ingenuity for life

FPS200 remote

SITRANS FP230/330
New dP-flow measuring system

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Product data overview

	SITRANS FPS300	SITRANS FPS200
Accuracy	**Linearity**: RE > 20,000: 1% **Repeatability**: RE > 20,000: 0.1%	Uncertainty at design flow: Typically 0.5% … 1.2%
Media	Steam, liquids, gas	Steam, liquids, gas
Operating conditions	**Pressure**: up to PN100 (flange) **Temperature**: -100 °C … 490 °C	**Pressure**: up to PN100 **Temperature**: acc. EN1092-1 / ASME B16.5
Installation conditions **(exemplary for installation behind 90° elbow)**	**Inlet**: 7 x inner diameter **Outlet**: 3 x inner diameter	**Inlet**: depends on β-coefficient (typically 16 … 44 x inner diameter) **Outlet**: depends on β-coefficient (typically 6 … 8 x inner diameter)
Design	Acc. to PED 2014/68 EU	Acc. to ISO 5167 (2003) Acc. to PED 2014/68 EU
Approvals	QAL1 Ex, SIL, … acc. to SITRANS P320	Ex, SIL, … acc. to SITRANS P320

Make engineering and operation even simpler and reliable

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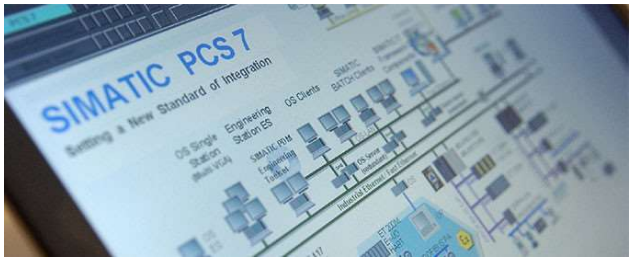
Interoperability/Lab tested

- Independent of control system manufacturer
- Test within system test



Integrated Engineering

- COMOS, SIMIT, PCS 7, TIA Portal, eCl@ss
- SIMATIC PDM, SITRANS Library, EDD, SITRANS DTM, Field device integration (FDI)

QR Code

Easy and fast way to get information:

- Manuals, Certificates, Approvals, FAQs, Downloads
- Calibration and manufacturing data

How to find the sizing tool

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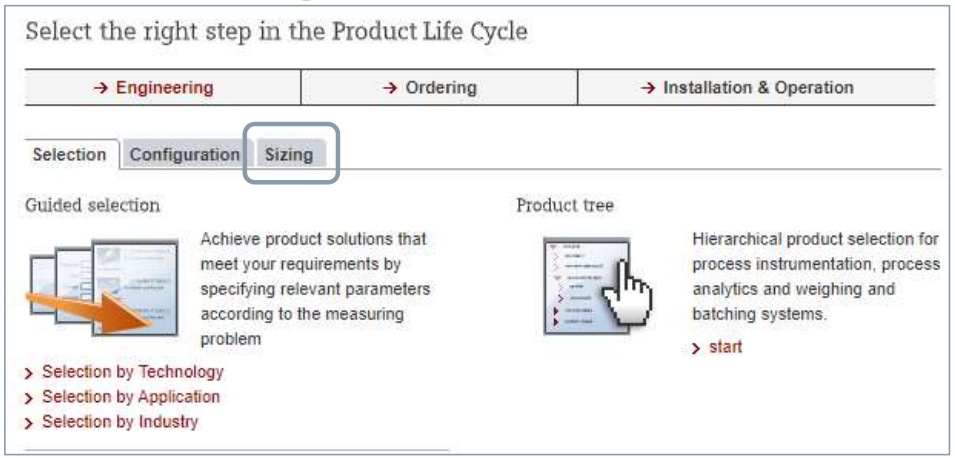
1. Open PIA LCP

pia-portal.automation.siemens.com

2. Click „Sizing“ → „Start“ → „Flow“



3. Click „SITRANS FP sizing tool“

Does not work with Internet Explorer!

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

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SITRANS LR100 series
Sales Slides

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siemens.com/sitranslr100

Radar transmitters for liquid level measurement

SIEMENS
Ingenuity for life

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

Top highlights at a glance
SITRANS LR100 series – first choice for general industries

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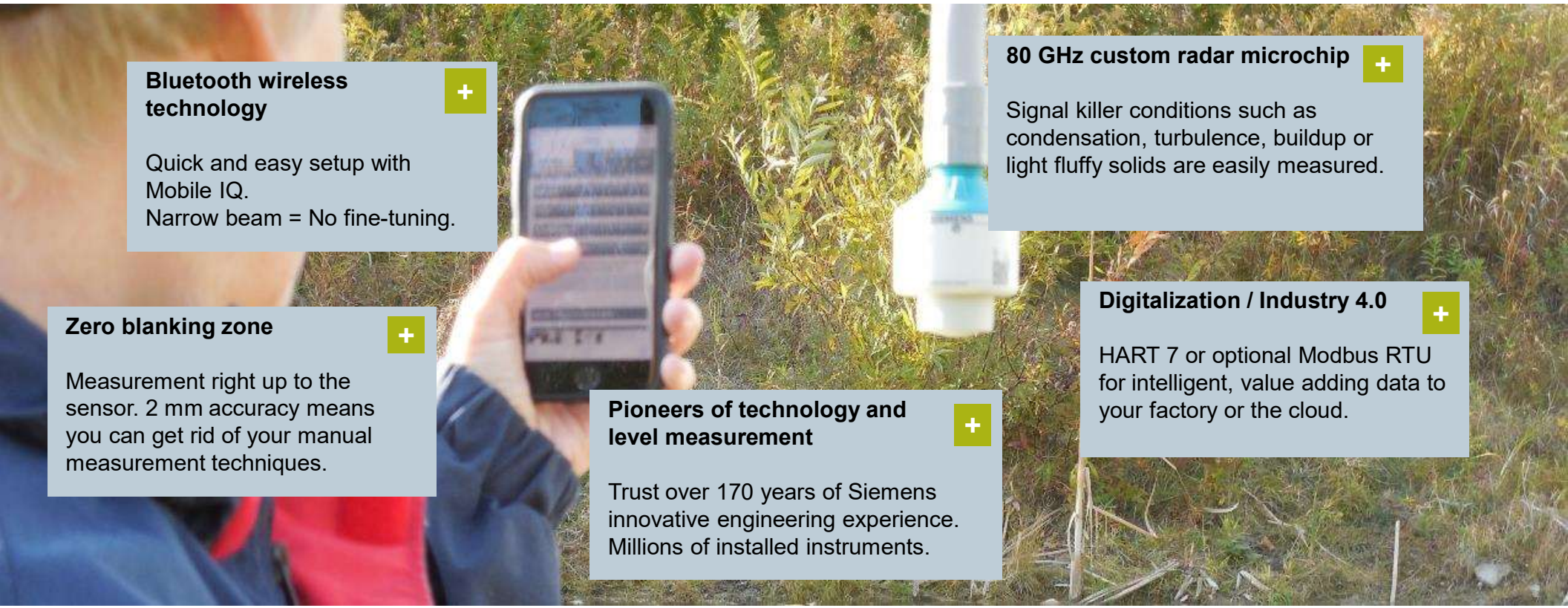

Bluetooth wireless technology +

Quick and easy setup with Mobile IQ.
Narrow beam = No fine-tuning.

80 GHz custom radar microchip +

Signal killer conditions such as condensation, turbulence, buildup or light fluffy solids are easily measured.

Zero blanking zone +

Measurement right up to the sensor. 2 mm accuracy means you can get rid of your manual measurement techniques.

Digitalization / Industry 4.0 +

HART 7 or optional Modbus RTU for intelligent, value adding data to your factory or the cloud.

Pioneers of technology and level measurement +

Trust over 170 years of Siemens innovative engineering experience.
Millions of installed instruments.

SITRANS LR100 series
Level measurement for basic inventory in general industries

SIEMENS
Ingenuity for life

Feature/Function	Benefit
Bluetooth wireless technology with SITRANS mobile IQ app on your mobile device	• Time-saving and no specialists required • Device status at a glance
2 mm accuracy (LR110/120 versions) and zero blanking distance	• Precise measurement over entire range, accurate volume measurement.
Custom radar microchip delivers exceptional sensitivity	• Signal killer conditions like condensation, turbulence, buildup or fluffy solids are no problem.
80 GHz yields narrow beam	• No nozzle interference, no costly fine-tuning.
Digitalization ready with 2-wire HART 7.0 or 4-wire Modbus RTU	• Get status and diagnostic data immediately to your systems ensuring quality of your process and faster and intelligent data for operations

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Ingenuity for life

SITRANS LR100 series

Application conditions
- Ideal for liquids or solids applications with process temperatures from -40 to 80˚C (-40 to 176˚F)
- Gas and dust approvals available
- Submergence shield option for flooding and fouling protection

Bluetooth wireless technology
- SITRANS mobile IQ app provides an intuitive interface to quickly configure, setup and monitor
- SITRANS mobile IQ app is compatible with Android, Apple and Windows devices

Process connections
- SITRANS LR100 and LR110 have thread 1½“ NPT, BSPT, or BSPP
- Top thread is 1“

Communications
- All have 2-wire, 4-20 mA
- SITRANS LR110 and LR120 also have HART or 4-wire, Modbus

SITRANS LR100 series
Suitable for a wide range of industries

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Ingenuity for life

Target industries/applications

Chemicals

- Small vessels containing raw materials
- Measurement through plastic tanks non-intrusively
- Inventory management
- HART communication option

General Industries

- Automotive, Plastics, Electronics, Power
- Inventory management of raw materials
- Liquids and solids

Mining / Aggregate

- Inventory management
- Stacker conveyor piles
- Crusher level control
- Bins feeding crusher

Remote sites

- Water management and reporting
- CSO
- Low power demands, solar battery powered sites.

SITRANS LR100 series configuration options
Remote. Local. Integrated.

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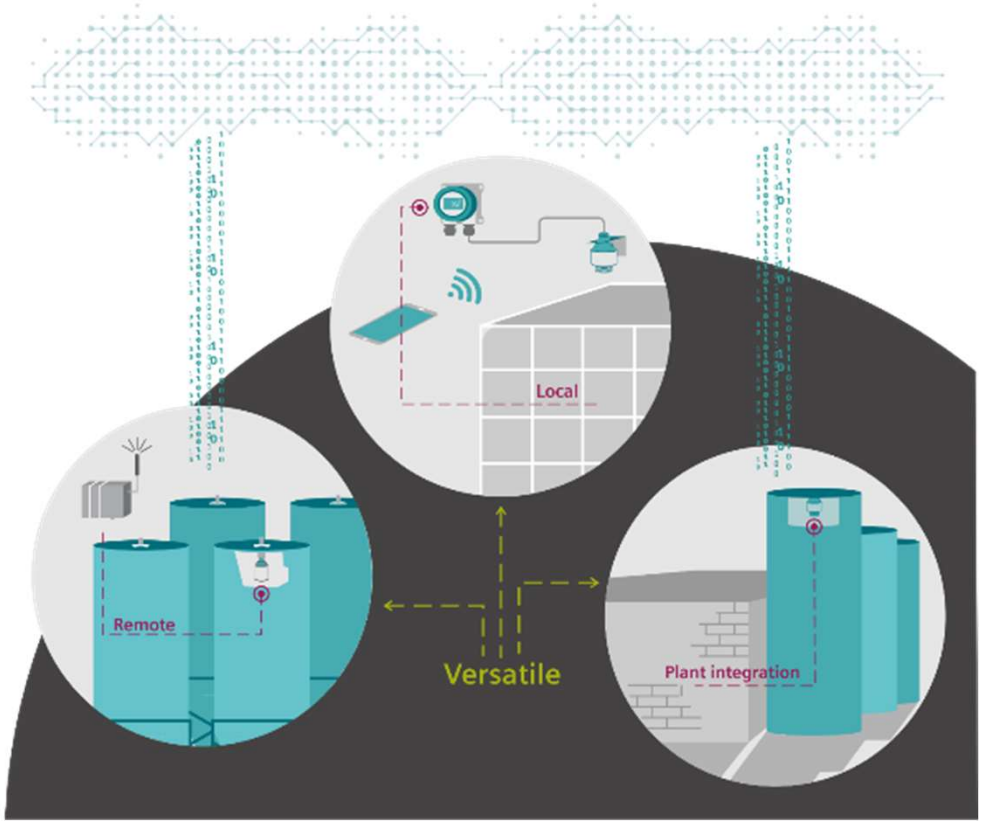

SITRANS mobile IQ App with Bluetooth wireless technology for fast and easy setup

SIMATIC RTU3030C for remote data collection and logging

SITRANS RD150 for local readings and configure and display diagnostic data

SIMATIC PDM for visualizing your data

SITRANS LR100 series
Easy and fast setup with SITRANS mobile IQ

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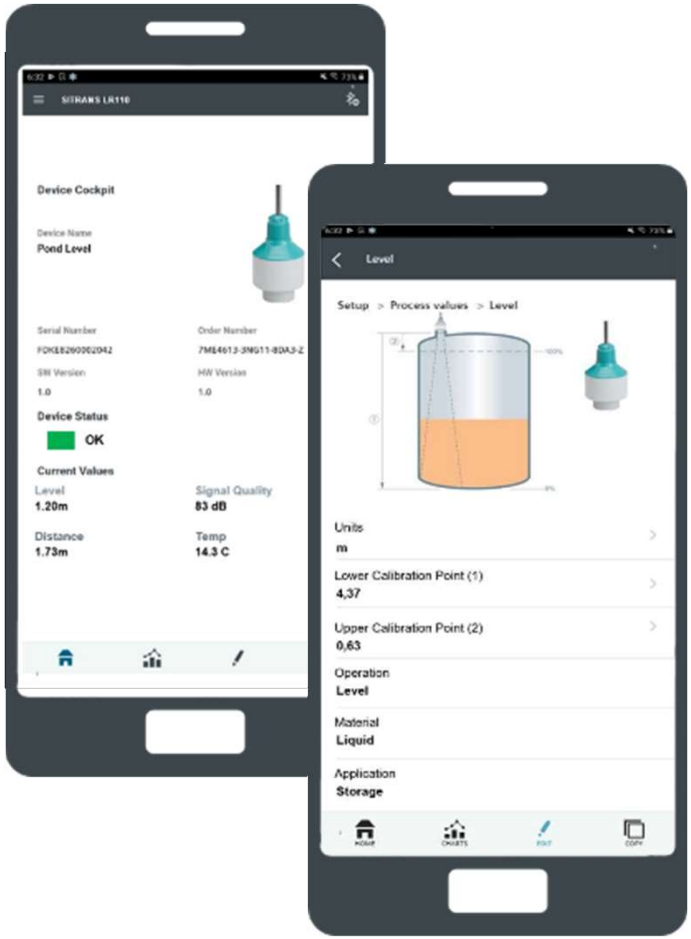
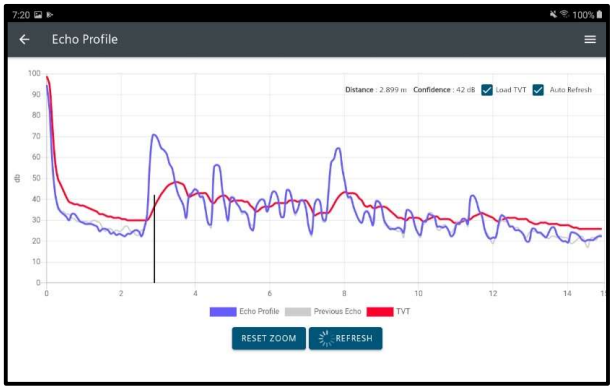
Ingenuity for life



Easy setup
Connect
Enter security PIN supplied with device
Follow basic setup
Done!



SITRANS LR100 series
Remote diagnostics with RTU 3030

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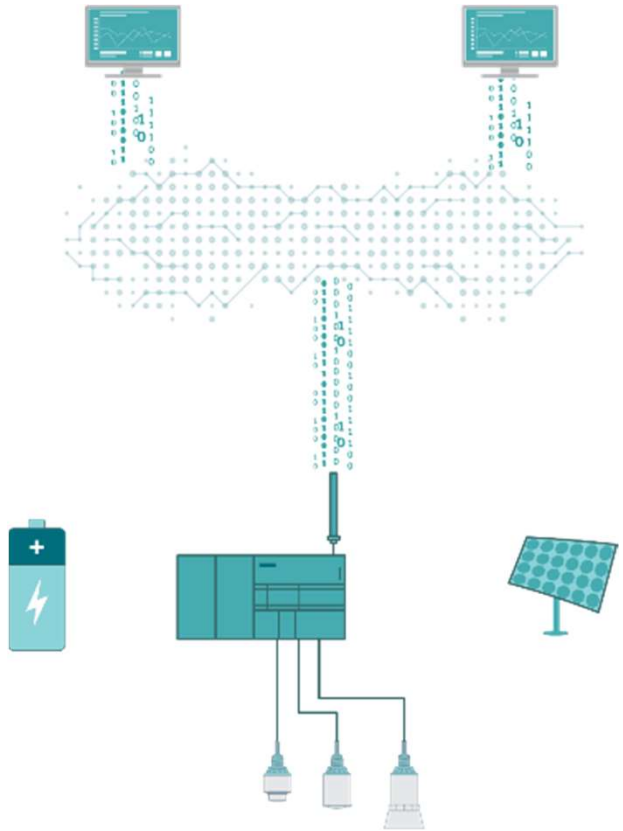

Secure industrial protocols supported
email
Telecontrol
FTP
SMS
DNP3
IEC

SITRANS LR100 series
Device-specific information at your fingertips

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QR code link to support site

Get critical information about your transmitter directly from the QR code, including:

- Manual
- FAQ
- Certificates
- PIA Portal
- MLFB number
- Serial number

SITRANS LR100 series accessories

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SITRANS RD150 and level controllers

SITRANS RD150 not only displays readings from your HART instruments, it can also configure and display diagnostic Data. For more features refer to SITRANS level controllers.

Submergence shield

Used in applications where flooding is expected.

Mounting accessories

Pre-engineered mounting brackets remove the need for Custom designs and allows quick and easy installation on liquids applications.

Easy Aimers

Accurately positioning the transmitter at the correct angle for solids level measurement is easy with these Easy Aimers.

SITRANS LR100 series
Level measurement for general industries

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Product data overview

	SITRANS LR100	SITRANS LR110	SITRANS LR120
	7ML530	7ML531	7ML532
	Basic measurement to 8 m	Versatile version with communication and hazardous approval options and increased range to 15 m	Narrow beam and longest range version to 30 m. Submergence shield option for flooding protection
Measuring principle	78-82 GHz, FMCW	78-82 GHz,, FMCW	78-82 GHz, FMCW
Measuring range	8 m (26 ft)	15 m (49 ft)	30 m (98 ft)
Process connection	Thread 1½“ and 1”	Thread 1½“ and 1”	Thread 1”
Process pressure	-1 to 3 bar	-1 to 3 bar	-1 to 3 bar
Process temperature	-40 to 60˚C (-40 to 140˚F)	-40 to 80˚C (-40 to 176˚F)	-40 to 80˚C (-40 to 176˚F)
Accuracy	5 mm (0.2”)	2 mm (0.08”)	2 mm (0.08”)
Beam Angle	8˚	8˚	4˚
mA/Loop, Communications	2-wire, 4 to 20 mA	2-wire, 4 to 20 mA/HART or 4-wire, Modbus	2-wire, 4 to 20 mA/HART or 4-wire, Modbus
Ex approvals	no	Gas and dust	Gas and dust

SITRANS LR100 series
Measurement through plastic vessels

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IBC tank applications

Non-intrusive measurement through the plastic vessel top.

Wall bracket option facilitates easy installation.

SITRANS RD150 for local display option

SITRANS LR100 series
Short-medium range solids

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Ingenuity for life

Solids applications

Ultrasonic or SITRANS LR100 series are good options.

Rugged encapsulated design

Easy aimer option allows aiming to desired point on surface

Quick update rate is suitable for crushers

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 FM100

Smart and compact flow measurement

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siemens.com/fm100

SITRANS FM100
The small and compact addition to the SITRANS F portfolio

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SITRANS FM Portfolio

When it comes to boosting productivity, choosing the right flowmeter can make all the difference. The trusted SITRANS F product family has versatile and reliable flow measurement solutions built to suit every industry and process.

+

The **SITRANS FM100** is a great addition to our existing portfolio and will boost the versatility even more.

This product aims to enlarge the flow portfolio for **OEM customer** and **other applications requiring small meters**.

Top highlights at a glance
The new SITRANS FM100 – ready to improve your process

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SITRANS FM100

Flexible communication +

IO- Link ready or
two freely independent
programmable
analogue outputs

Rugged design +

Stainless steel housing with colored,
multi-parameter display

Flow measurement +

All-round flow meter, dosing function and bidirectional measurement possible

Temperature measurement +

Additional process value with integrated PT1000 sensor

Simple Operation +

Local operation via four optical touch keys and easy rotatable 90°

The new flow meter offers flexible usage and simple handling

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Top highlights

Feature / Function		Benefit
• Flow and Temperature measurement	▶	• Two process value for additional knowledge of application
• IO-Link communication	▶	• Easy integration and parametrization of device
• Colored display with 4 optical touch keys	▶	• Easy and fast set-up • User-friendly operation • Usage with gloves possible
• 90° rotatable display via software	▶	• Flexible installation • Individual set-up of device
• Non-resettable and resettable totalizer	▶	• Individual totalizer usage according to user / application

The SITRANS FM100 shows his strengths in flexible usage across many different applications

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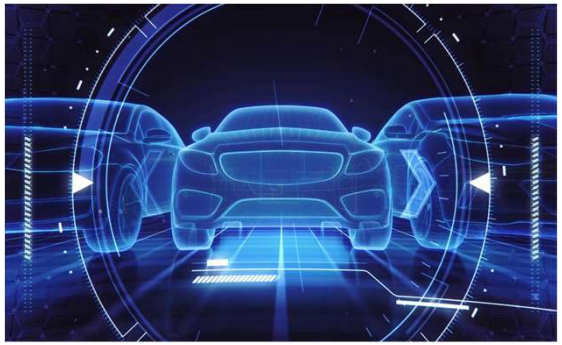
Target industries / applications

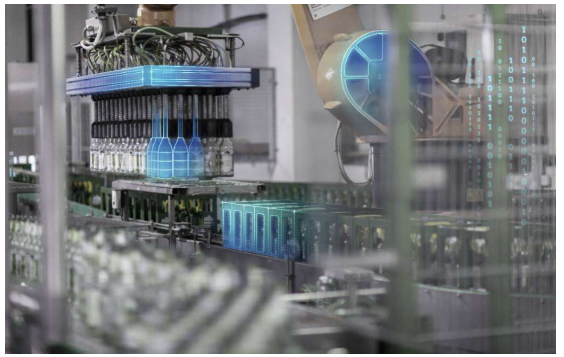
Water cooling cycle

- Monitoring and optimization of water usage in the process
- Temperature monitoring
- Leakage detection
- Glass cooling water control



Automotive

- Silicon free
- Dosing of frost protection
- Cooling of carbon fiber fabrication
- Injections for exhaust regulation



Dosing applications

- Flexible usage across industries
- Ideal usage in lab applications
- Injection applications for e.g. chemicals

Make engineering and operation even simpler and reliable

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System / value-added topics

IO-Link

Easy integration

IO-Link communication for integration into control landscape
- IODD available online
- Integrated into TIA-Portal

QR Code

Easy and fast way to get information:
- Manuals
- FAQs
- Downloads

SITRANS FM100
Product data overview

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	SITRANS FM100	
Process connection sizes	Threaded G½", ¾", 1", 2"	Accessory for *(in planning)* ¼", ½" ¾", 1", 2" NPT
Measuring range	0,03 – 350 l/min	
Process temperature	-20 ° C to 70 ° C (compact) -20 ° C to 140 ° C (remote) *(in planning)*	
Accuracy	Flow: <±0.8% of reading + 0.5% of full scale Temperature: ≤±2° C (flow >0,2 m/s)	
Design	All stainless steel design (housing, electrodes, connection in 1.4404) Insulation parts PEEK	
Outputs / communication	Two configurable outputs (pulse-/frequency-/alarm- and analogue output) IO-Link	

Configure any Siemens PI product conveniently with a single click Siemens Lifecycle Portal

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Product, **application, industry selection** and **configuration**

Product data and **application know-how**

Save and **administrate projects online**

Equipment and **spare parts**

Scan to explore the PIA Lifecycle Portal

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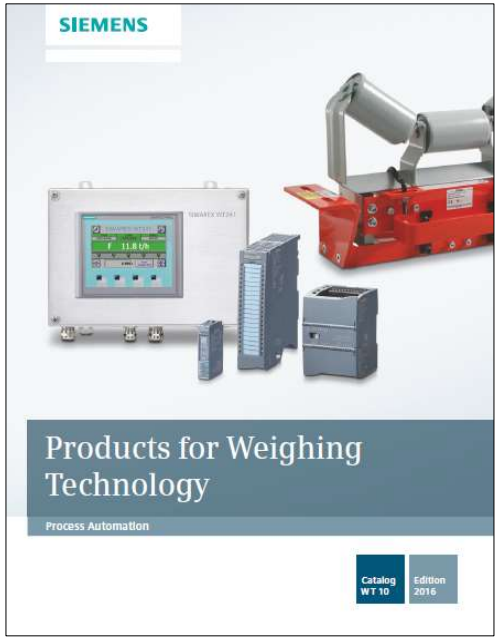
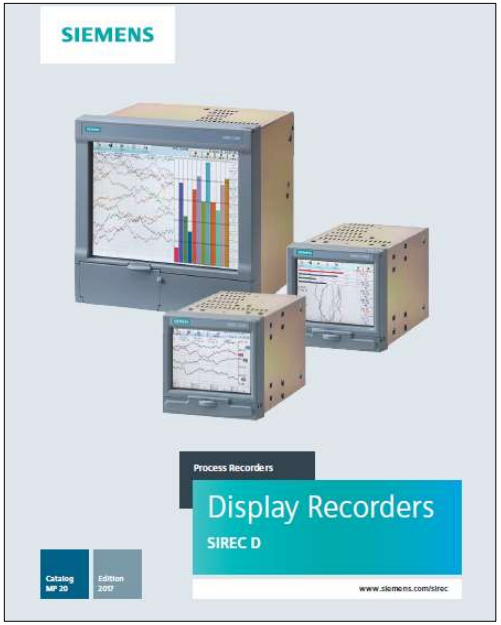
FI01

WT10



MP20



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SFI Vortex Sizing

Desktop app

Support as 24/7 online services or online call-back services to ensure uptime of your assets.

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Online Service Support (SIOS)

INTERNET

24

Every single day,
around the clock

- Free web service portal
- Information about products, systems and services
- Direct access to additional services and contact partners

Services tailored for your success

Support Request
siemens.com/industry/supportrequest

1 Select a product | 2 Select an application case | 3 Our solutions

Product/Order number *

Please enter a product **without a version specification**
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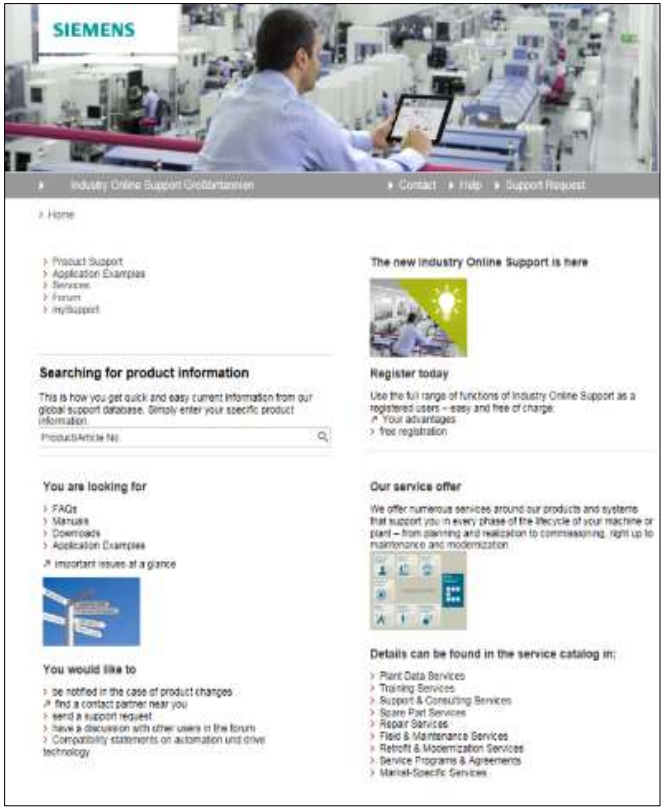

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