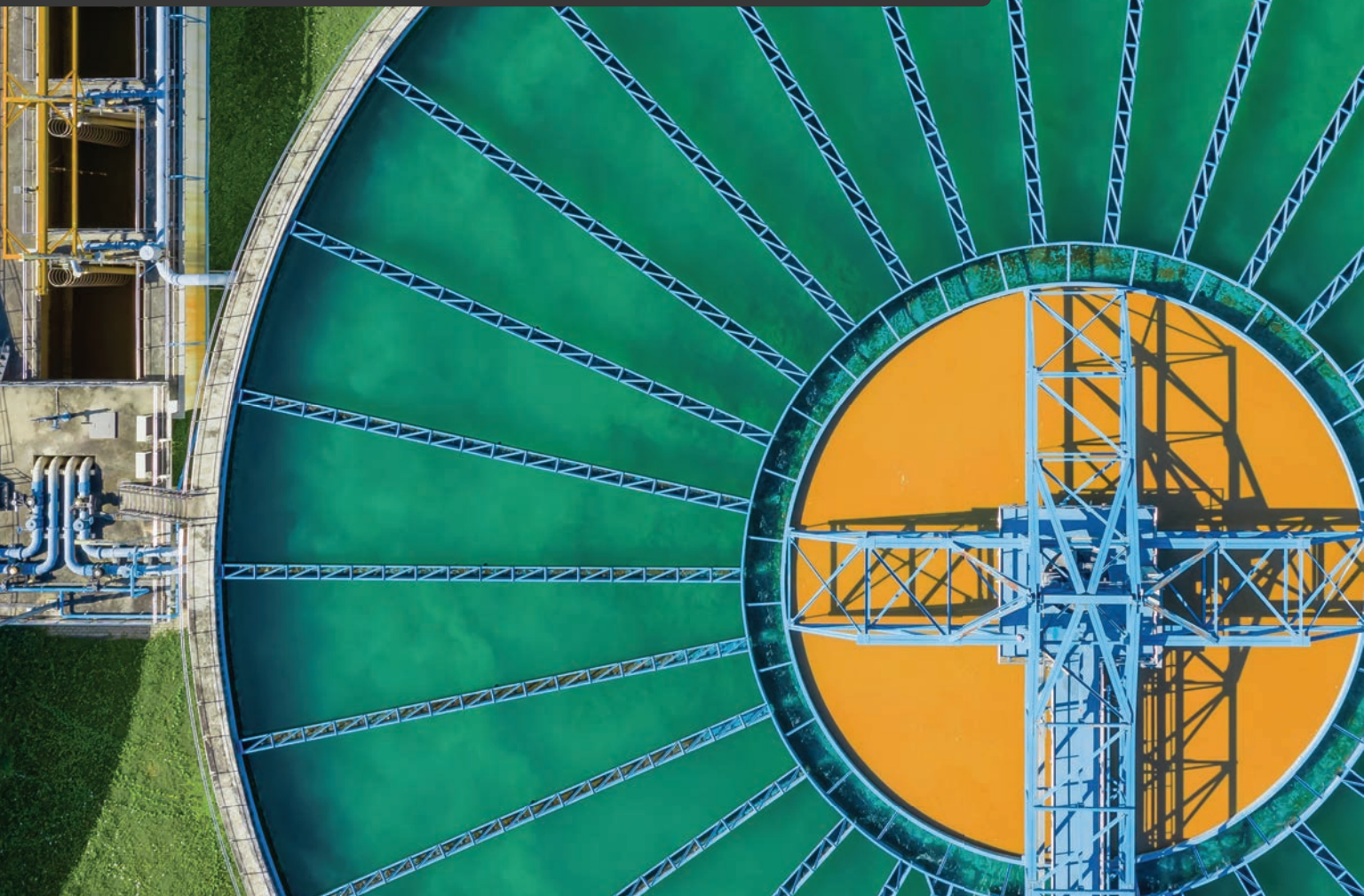# APG

Automation Products Group, Inc.

2019 WATER & WASTEWATER CATALOG

ABOUT APG

At APG, we are dedicated to designing and manufacturing innovative level and pressure sensors to match the application needs of our customers. As part of our dedication to meet your application needs, in 2019 we are releasing two new product lines, Vertical Stainless Steel Float Switches and Side Mount Stainless Steel Float Switches, and intrinsically safe models of two longtime products, the MND IS and MPX IS.

APG has specialized in matching application needs with the right sensing technologies since the early 70's. Our sensors are used in applications across a variety of industries including:

- Water / Wastewater
- Food / Beverage
- Chemical / Petrochemical
- Mining / Minerals
- Medical / Pharmacy
- Aerospace / Military
- Oil / Gas
- Car Wash
- Agriculture

Our primary goal at APG is to provide reliable products and solutions to our customers that are backed by exceptional customer service. As part of our customer service efforts, we added an online store at store.apgsensors.com. Now you can quickly check prices, place orders, and view stock all while connected to your current customer account.

Automation Products Group, Inc. (APG) is an ISO 9001:2015 certified manufacturer. With very few exceptions, APG manufactures its sensors from start to finish at our facilities in Logan, UT.

WELL LEVELS

When customers need a water level sensor for wells, especially deep wells, we recommend our submersible pressure transducer, the PT-500. These water level sensors are inexpensive, versatile, and easy to install making them a favorite among water level sensors in the water and wastewater industry. The submersible pressure transducer rests at the bottom of a tank or well, and measures level based on the specific gravity of the liquid being measured.

LIFT STATION PUMP CONTROL

Lift stations are an essential component to municipal water and wastewater systems so keeping them in operation and performing properly is vital. Lift stations that aren't performing properly could spell disaster, especially if an overflow occurs; therefore, monitoring the water level in the station is critical. Level sensors can be used to trip alarms or turn on/off pumps automatically if an alarm condition exists. For most lift station applications, we typically recommend using an ultrasonic or radar sensor, since they don't come in contact with the liquid, and then a float switch for an emergency shut off or high level alarm.

OPEN WATER LEVELS

APG's ultrasonic level sensors have been used to measure open waters including dams, rives, and irrigation canals. Ultrasonic level sensors are capable of not only measuring water level, they can also measure open channel flow.

Our new radar sensors are also ideal for use over open water or standing water and have inherent advantages over other technologies, such as seeing through mist and foam.

FLOAT SWITCHES

HOW THEY WORK

Float switches work much like a standard light switch, they open and close contacts to control whether or not signal current can pass through to tell level.

COMING SOON

Side Mount Float Switches

FS-500 Series

Stainless Steel Float Switches

FS-400

Vertical Stainless Steel Float Switch

All stainless steel wetted materials, operating temperatures up to 500º F, and a switch for VDC and VAC operation.

NEW!

FS-410

Miniature Vertical Float Switch

Designed to measure small space the FS-410 is less than 2.35 inches in total length and the float is just under 1.2" wide.

NEW!

	FS-400	FS-410
Material	316L SS	
Max Power	100 W	
Temp. Range	up to 500° F	
Specific Gravity	0.6	0.7

Cable Suspended Float Switches

KA

Single Float Switch with up to 4 Levels
A single Kari float allows up to four switch points in a single float, saving you money by replacing four single-level float switches. The sensors are durable, highly chemical compatible and come in 25 configurations, most with built-in hysteresis.

FT-100/300

Single Point Float Switch
This inexpensive, traditional single point switch is ideal for simple alarming applications. The sensors trigger immediately above or below horizontal, for a highly repeatable performance that you can count on.

Stem Mounted Float Switches

FL

Custom Point Level Control
The FL series multi-point level switch has up to seven switch points custom configured along a single mount for linear level measurement in tight spaces.

TLS

Dual Point Float Switch with Hysteresis
The TLS series cable switches are dual point switches with built in hysteresis to provide high and low level control that won't wear out your pumps with frequent on/off cycles.

	FL
Max. Stem Length	24" or 153"
Switch Point	up to 7 NO/NC, custom configuration
Wetted Material	304 SS, 316L SS, Buna
Certification	General Purpose, Explosion Proof CSA C1D1

	KA Series	FT-100	FT-300	TLS
Cable Length	5 m, 15 m, custom	6 m, custom 5 ft increments		6 m, 12 m, 18 m
Switch Point	up to 4 NO/NC	1 NO/NC, 1 SPTD	1 NO/NC	1 NO/NC
Control Range	—	±1.5"	± 4"	6"-8"
Certification	CE; CSA General Purpose	General Purpose		—

ULTRASONIC LEVEL SENSORS

HOW THEY WORK

Ultrasonic sensors measure distance by sending sound waves above 20 Hz that echo off of a target and return to the transmitter. The time it takes the sound burst to return to the sensor is measured and translated into a distance measurement that can be converted into a level indication, volume measurement, or rate of flow by the sensor's microprocessor.

MNU IS

Intrinsically Safe Modbus Sensor

With the mounting and range flexibility of the MNU, the MNU IS brings worry-free level monitoring and remote Modbus controls to hazardous locations.

NEW!

MNU

Web Enabled Modbus Sensor

Built for any situation that requires Modbus, the MNU is compatible with any Modbus controller, and can be monitored online via Tank Cloud.

	MNU	MNU IS
Range	4 in to 40 ft	
Output	Modbus RS-485	
Mount	1, 2 or 3 in NPT	2 in NPT
Certification		Intrinsically Safe CSA C1D1, IECEx, ATEX

LOE

Web Enabled Sensor and Controller

Designed for remote measurement, the LOE series connects to the internet to provide online monitoring via Tank Cloud for up to 10 APG Modbus sensors.

LPU-2428

Intrinsically Safe, Loop-powered

Made for highly configurable measurement in linear and non-linear tanks and channels, the LPU-2428 can internally calculate distance, level, flow, and volume.

LPU-2127

Built-in Keypad & Display

The LPU-2127 features a built in keypad and LCD display for easy programming that can be done entirely through the keypad.

IRU-2420, -3400, -5000

Short, Mid, and Long Range Sensors

Designed with flexibility in mind, this series features auto-sense software for quick, easy programming in a variety of applications.

IRU-6429

Datalogger Compatible

The IRU-6429 features auto-sense software for quick and easy programming, and an excitation for datalogging.

IRU-9400

For Soft or Reflective Target Surfaces

The IRU-9400 is an indoor sensor with a more sensitive transducer to detect difficult targets such as reflective and soft surfaces.

LOE	LPU-2127	LPU-2428	IRU-6429	IRU-9400	IRU-2420	IRU-3400	IRU-5000
7 in to 40 ft	1 to 25 ft.		1 to 30 ft	0.5 to 35 ft	1 to 25 ft	1.5 to 50 ft	4 to 79 in
Modbus TCP/IP	4-20 mA		0-2.5 V, 0-5V	4-20 mA, 0-2.5 V, 0-5 V 2 Trip Points	Isolated 4-20 mA, 4-20 mA with 2 NPN Trip Points		0-2.5 V, 0-5 V, 4-20 mA, 2 Trip Points
2 or 3 in NPT	2 in NPT		2 in NPT	2 in NPT	2 in NPT	3 in NPT	1 or 2 in NPT
—	CSA C1D2	Intrinsically Safe CSA C1D1	CSA General Purpose		CSA C1D2, CSA General Purpose		

RADAR LEVEL TRANSMITTERS

HOW THEY WORK

Radar sensors calculate level based on the time difference between low-energy, high-frequency impulses sent by the sensor and returned to the sensor after reflecting off of the measured surface. They are ideal for measuring difficult materials where there is foam, vapor, or dust that interferes with other non-contact sensors.

NEW!

The True Echo™ Pulse Radar Level Transmitters automatically adjust signal power for optimal accuracy and clarity. With echo masking and damping factors programmable via software, getting dependable level readings from difficult materials is simple.

PRL

Pulse Radar for Liquids

The True Echo™ PRL provides accurate level readings from all types of liquid level measurement, including oil-water interface measurement via additional firmware.

PRSW

For Standing Water

The True Echo™ PRSW has dual frequencies to allow quick and accurate readings of the complex reflection off uncontrolled standing and rising water surfaces.

	PRL	PRSW
Range	1'-17', 1'-50', 1'-100'	
Output	2- and 3-wire 4-20 mA and Hart	
Enclosure Protection	IP68, NEMA 6	

SUBMERSIBLE PRESSURE TRANSDUCERS

HOW THEY WORK

APG's submersible pressure transducers read in feet or inches of liquid that are converted to PSI. They use piezoresistive principles to monitor pressure, just like our other pressure transducers.

APG's PT-500 Series Submersible Pressure Transducers are the only transducers on the market with built-in lightning protection, Class 1, Division 1 certification, and field adjustable zero. The PT-500 Series is Tank Cloud compatible for remote monitoring via the internet

PT-500-P1

For Clean Liquids
The PT- 500-P1 has a nose cone fitting and is designed for use in clean liquids.

PT-500-P38

For Mixed Fluids
The PT-500-P38 has a choice of patented removable, reusable or fixed, welded cage, and is designed for use in caustic, turbulent, and dirty liquid.

PT-500-P1   **PT-500-P38**

	PT-500-P1	PT-500-P38
Output	4-20 mA, Modbus RS-485	
Range	up to 450 ft	
Lightning Protection	Built-in, IEC 61000-4-5	
Body	316L SS	
Nose Cone	Delrin	—
Cage	—	316L SS
Certification	Intrinsically Safe CSA C1D1/C1D2 (4-20 mA only)	

CONTINUOUS FLOAT LEVEL PROBES

HOW THE MPX WORKS

The MPX Magnetostrictive Liquid Level Probes send electrical pulses that align the molecules to a magnetic field down a metal waveguide in the stem. The magnet in the floats create a competing magnetic field that sends a strain pulse back to the sensor when reached by the electrical pulse. The strain pulse is then used to determine the position of the floats to provide a level measurement.

MPX-E/R

IS MODELS COMING SOON

Explosion Proof

The MPX-E's light weight design makes it ideal for applications where space is limited, while the MPX-R' s large, robust floats and stem make it ideal for harsh applications where fouling or build up might be a concern.

MPX-E Chemical

Chemical Resistant

With a chemical resistant coating and a Kynar® float, the MPX-E Chemical delivers precision measurements in corrosive, acidic and marine environments.

MPX-F

Flexible Stem

The MPX-F features a 316L SS flexible tubing braided stem that uncoils easily for simple installation in tall tanks.

MPX-E/R   **MPX-E CHEMICAL**   **MPX-F**

The RPM Resistive Liquid Level Sensors have a magnetic float that travels up and down the sensor stem to close contained reed switches that change the resistance of the sensor. The change in resistance causes a voltage fluctuation that is directly proportional to the float position, providing a level reading.

RP-E/X

1/2" Stem - Liquid Level Probe for Hazardous Locations

The RP is a durable liquid level probe with a 1/2" stem designed for use in smaller tanks, up to 6 ft. in height.

RPM

1" Stem - Explosion Proof Liquid Level Probe

The RPM is made to work for you and is completely customizable for your needs including: probe length, float type, specific gravity and outputs.

RP-E/X   **RPM**

	MPX-E/R	MPX-E Chemical	MPX-F	RP-E	RP-X	RPM
Max Length	Custom	12.75 ft	32 ft	6 ft		20 ft
Stem	304 SS or 316L SS	1/2" 316L SS with coating	7/8" ø Flexible Tubing with Braid, 316L SS	304 SS, 316L SS		316L SS
Output	RS-485 Modbus, 4-20 mA Loop Powered			Resistive, 4-20 mA Loop-Powered		
Mount	NPT, Flange, No Mount	NPT	NPT, Flange, No Mount			
Certification	Explosion Proof CSA C1D1, Intrinsic Safety Pending		C1D2	—		Explosion Proof or Intrinsically Safe CSA C1D1, ATEX

DIGITAL PRESSURE GAUGES

HOW THEY WORK

APG's digital pressure gauges contain a pressure transducer that provides readings to the attached digital display in the unit of measure of your choosing (psi, kPa, mmHg, cmHg, mbar, bar, inH_2O, ftH_2O, kg/cm^2), while adjusting for additional activated features. The full-feature PG gauge platform includes tare, peak hold, and max/min functions standard (PG2 not included).

PG2
Low-Cost, Indoor/Outdoor Gauge

The PG 2 is our base-line digital gauge with auto-off and re-zeroing functions, user selectable units of measure and an easy-to-read display.

PG5
Full-Feature Indoor Gauge

Serving as the foundation to our PG series of gauges, this general purpose, full-feature gauge is designed for accurate indoor pressure measurements.

PG7
Rugged Full-Feature Gauge

The PG7 is a rugged full-feature gauge perfect for indoor and outdoor use.

PG10
Large Display Gauge

The PG10 is our additional feature gauge with a large, 5-digit display, 270° radial bar, datalogging, and optional solid-state or SPDT mechanical relays.

	PG2	PG5	PG7	PG10
Range	up to 5,000 psi	up to 10,000 psi	up to 30,000 psi	up to 10,000 psi
Output	—	4-20 mA, 0-2 V, 0-5 V		
Accuracy	available 0.5 % of f.s.	available 0.1 % of f.s.		
Enclosure Protection	IP65	—		IP65

DISPLAYS & CONTROLLERS

RST-5003

Web Enabled Controller

Connects up to 10 Modbus sensors in a daisy-chain network and a single 4-20 mA sensor to Tank Cloud.

DDD/DBD

NEW!

Din Mounted Digital Display

Din Mounted Digital Bright Displays provide highly configurable, 2 line displays with NEMA 4X / IP65 front facing ratings.

MND

Modbus Digital Display

Local display that works with up to 10 sensors as a master, slave , or power source on any Modbus network.

IS MODELS COMING SOON

DDL

NEW!

Large Digital Display

The DDL features 1.8" digits readable from 100 ft with standard high intensity LED's for direct sun visibility, and a NEMA 4X / IP65 rated enclosure.

LPD

Loop-Powered Display
Local display designed to be inserted into a 4-20 mA sensor current loop.

DDX

NEW!

Explosion Proof Digital Display

Loop- and line-powered explosion-proof display encased in a cast aluminum FM rated housing.

	MND	LPD	RST-5003	DDD/DBD	DDL	DDX
Input	RS-485 Modbus	4-20 mA	Modbus, 4-20 mA, 0-2 Switches	4-20 mA, 0-10 V DC		
Output	4-20 mA, 0-5 V, Trip Points	4-20 mA	Modbus, TCP/IP, 2 Relays, 0-2 Isolated SSR	up to 4 relays, Isolated 4-20 mA		
Mount	Handheld, Panel, Wall		Din Rail	Din Rail	Panel, Wall	
Enclosure Protection	IP67	IP67/IP68	—	IP65		

REMOTE TANK MONITORING

Tank Cloud

Allows you to view measurements from your sensors anywhere you have an internet connection.

1. Connect a Remote Sensor
Connect any 4-20 mA signal sensor or up to 10 daisy-chained APG Modbus sensors to a Tank Cloud master.

2. Use the Internet Backbone
Connect the Tank Cloud master to a pre-existing Internet connection via an Ethernet cable - landline, satellite, radio, or cellular.

3. View Measurements Online
Access sensor data online anytime through our secure Tank Cloud portal at levelandflow.com. Here you can see everything you need to know about your measurements and can even program your sensors.

4. Get Alerts and Long-Term Data
Become further connected to your measurements by programming custom alarms that can be received via email and text, and add data-logging for long-term decisions.

Tank Minder

Remote Vendor Managed Inventory System (VMIS)

Tank Minder remote tank vendor management system provides real-time tank inventory level so you receive deliveries based on actual need. Tank Minder measures and transmits tank levels to a secure website, where you can view current and past level measurements, and set level-based delivery alerts.

View Remote Inventory

High performance ultrasonic level sensors are installed on each tank to measure inventory level that is transmitted to an RST-5003 controller so level measurements can be viewed online.

Define Delivery Alerts

With level-based alerts you are guaranteed to receive inventory deliveries when you need them without having excess or running out. Simply log on to the secure website and set an alert at the levels you need.

Tank Mesh Wireless

Scalable and Customizable Telemetry Solutions

Built on 900 MHz radios, Tank Mesh sentinels and stick transceivers can transmit signals from analog or digital sensors up to .05 and 3-4 miles, respectively. Additionally, Tank Mesh networks can be connected to the online Tank Cloud data portal by integrating a Tank Cloud master into the network.

APG

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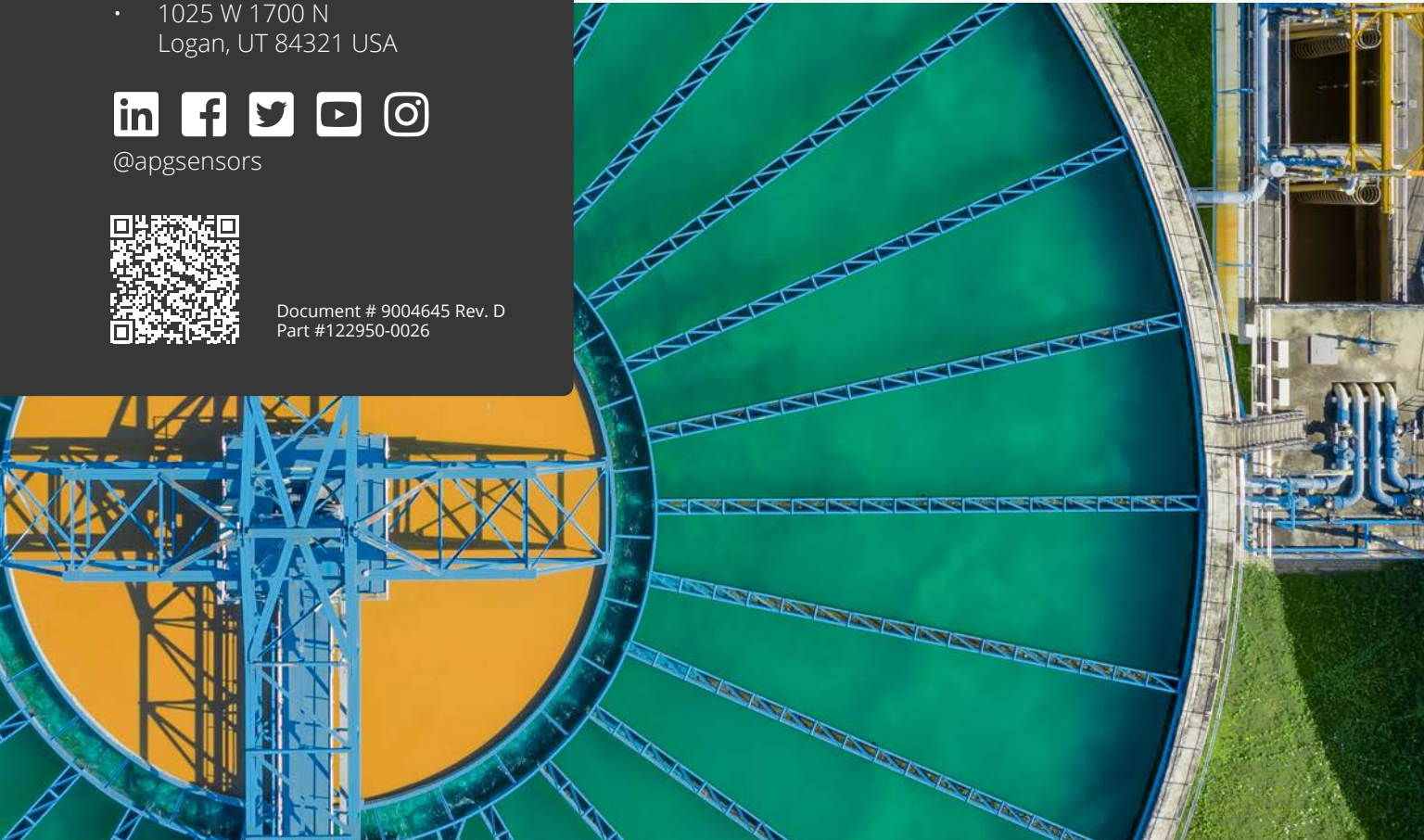## CEICA soluciones

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