

# Process Automation made easy



Accurate measurement  
Precise control  
Reliable actuation  
Comprehensive valves

Together as one

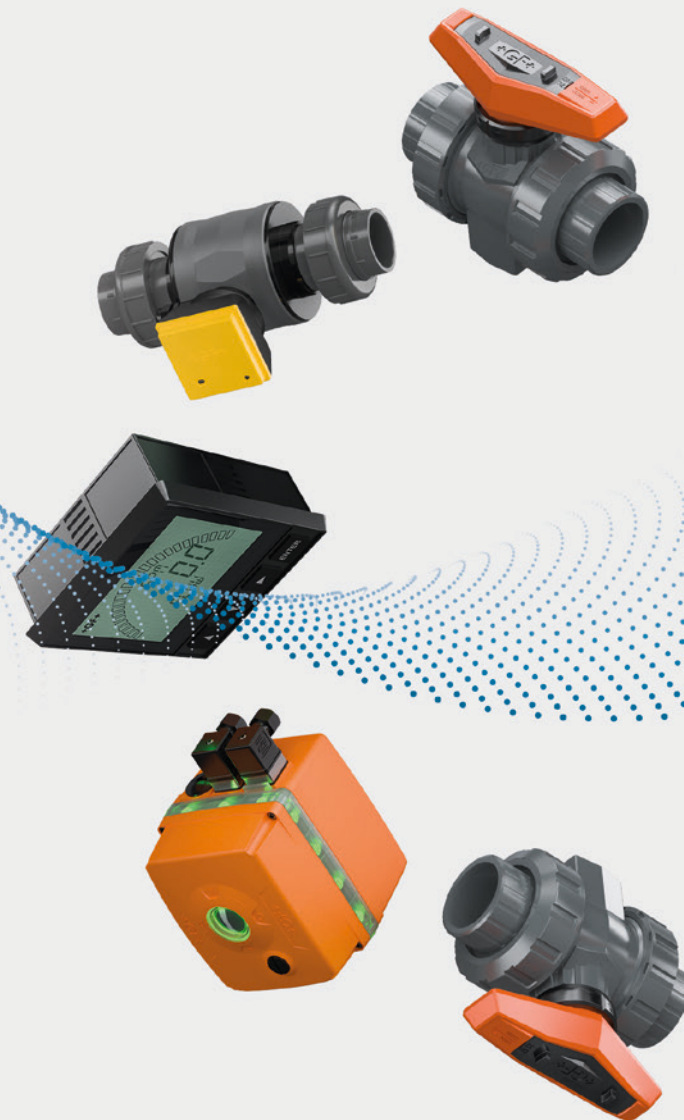
# We make Process Automation easy

The water treatment market faces several critical issues: increasing urbanization and global warming resulting in one of the biggest concerns, namely water scarcity. Process Automation has an integral role in the growing needs of water conservation.

GF Piping Systems offers deep application knowledge of the entire process within the water treatment industry. Depending on the application area, there are different water treatment process challenges, ranging from guaranteeing high water qualities and providing reliable measurements to assuring stringent regulations. Plastic piping solutions from GF Piping Systems provide higher efficiency around the water cycle with increased productivity and lower operational and overall costs.

## Features & Benefits

- Non-corrosive solutions
- Higher efficiency around the water cycle with increased productivity
- Lower operational and overall costs





## One user experience across the whole control loop

**GF Piping Systems is your experienced partner with a full portfolio of measurement, control, and actuation components, which are easy to install and use and have local support through all project phases. We offer the full package with our products and solutions, providing top-quality installation, a highly skilled team of experts standing by our customers' side every step of the way worldwide, and digitalized services ensuring a project is at the forefront of the market.**



### **Design (Planning phase)**

Easy planning thanks to application-specific solutions making an effortless combination around the complete control loop.



### **Select (Ordering phase)**

Easy to select and order via configurators and matching components throughout the whole portfolio.



### **Install (Building phase)**

Easy planning thanks to application-specific solutions making an effortless combination around the complete control loop.



### **Own (Operation phase)**

Easy monitoring once installed, including spare part availability. Long lifetime and low maintenance make for reduced downtime.

A detailed view of an industrial automation system. It features a robotic arm with a white joint and a blue label '1242DH12'. Various cables (blue, green, black) are connected to a central control unit. To the right, there's a vertical assembly with a red handle and a blue label '1243VH14'. A green label 'Permeat warm' is visible on a vertical pipe. The background is filled with more industrial components and pipes.

Automation

# The complete control loop

We offer the full package with our products and solutions, providing top-quality installation, a highly skilled team of experts standing by our customers' side every step of the way worldwide, and digitalized services ensuring a project is at the forefront of the market.





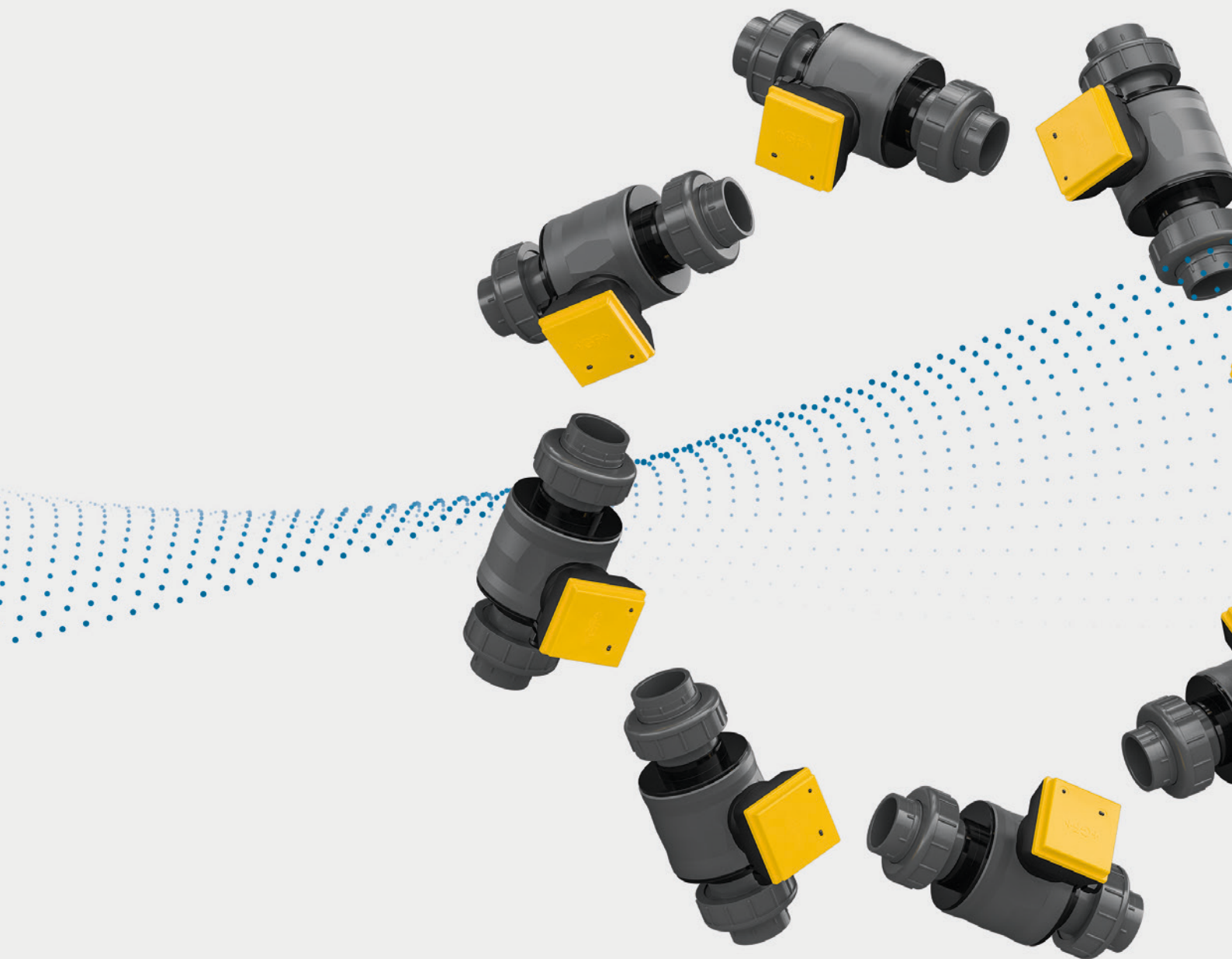
## Your key benefits

- Accurate measurement is the basis for reliable process control
- Precise control throughout your automation loop
- Reliable actuation with configuration flexibility
- Comprehensive valves - the right valve for your application



# One process

**Accurate measurement is the basis  
for reliable process control**





# Measurement

GF Piping Systems offers a wide range of technologies for quality flow and analytical products which are simple to operate and generate reliable results for all process requirements. Committed to product excellence, GF Piping systems continues its pursuit of quality through innovative, leading-edge technology in flow control and measurement. Our instruments are used in applications ranging from water and wastewater treatment to chemical processing.

## Main benefits

- Each instrument is engineered to provide reliable and accurate information
- Simple to operate and easy installation

## Product overview

- Flow
- Level
- Transmitters
- Controller
- pH/ORP
- Conductivity/resistivity
- Temperature and pressure sensors
- Water analysis
- Accessories



# Flow – Product overview

All flow sensors comply with the high and specific requirements of the industry. GF Piping Systems provides reliable quality systems with worldwide support, long service life and cost-efficiency. Flow rate measurements can be conducted in media ranging from highly pure to highly contaminated, and allows a tailor made solution for almost any application in accordance with the application requirements.

## Paddlewheel flow sensor

Paddlewheel flow sensors are highly repeatable, rugged sensors that offer exceptional value with little or no maintenance. Easy to install and offering proven, reliable performance, Paddlewheel flow sensors are available in a variety of materials for a wide range of pipe sizes and insertion configurations. The many material choices, which include PP, PVDF and stainless steel, make paddlewheels highly versatile and chemically compatible in many liquid process applications.

## Main applications

- Filtration Systems
- Chemical Production
- Liquid Delivery Systems
- Pump Protection
- Scrubber/Gas Stacks



### Rotor-X paddlewheel flow sensor type 515

- Non-powered
- 0.3 - 6 m/s (1 to 20 ft/s)
- DN15 - DN900 (½ to 36 in.)
- PP 12.5 bar @ 20 °C (180 psi @ 68 °F)
- PVDF 14 bar @ 20 °C (203 psi @ 68 °F)
- 19.7 Hz per m/s nominal (6 Hz per ft/s nominal)
- Wet tap sensors available



### Rotor-X paddlewheel flow type 2536

- 0.1 - 6 m/s (0.3 to 20 ft/s)
- DN15 - DN900 (½ to 36 in.)
- DN15 - DN100 (½ to 4 in.) for PVC
- PP 12.5 bar @ 20 °C (180 psi @ 68 °F)
- PVDF 14 bar @ 20 °C (203 psi @ 68 °F)
- PVC 14 bar @ 20 °C (203 psi @ 68 °F)
- 49 Hz per m/s nominal (15 Hz per ft/s nominal)



### Paddlewheel flow sensor type 2537

- 0.1 - 6 m/s (0.3 to 20 ft/s)
- DN15 - DN200 (½ to 8 in.)
- PP 12.5 bar @ 20 °C (181 psi @ 68 °F)
- PVDF 14 bar @ 20 °C (203 psi @ 68 °F)
- 4-20 mA, digital (S<sup>2</sup>L), flow switch or pulse outputs (based on part number)



### Metalex paddlewheel flow sensor type 525

- 0.5 - 6 m/s (1.6-20 ft/s)
- DN15 - DN300 (½-12 in.)
- 316 stainless steel
- 103 bar (1500 psi @ safety factor 1.5) @149 °C (300 °F)
- 39 Hz per m/s nominal (12 Hz per ft/s nominal)



### Stainless steel paddlewheel flow sensor type 2540

- 0.1 - 6 m/s (0.3 to 20 ft/s)
- DN40 - DN900 (1½ to 36 in.)
- 316 stainless steel
- 17 bar @ 100 °C (250 psi @ 212 °F)
- 49 Hz per m/s nominal (15 Hz per ft/s nominal)
- Open collector output



## Magmeter

Magmeters are versatile, easy-to-install sensors with no moving parts and patented Magmeter technology. Design provides easier installation and removal than full-line magmeters. Corrosion-resistant materials are available for various applications.

## Main applications

- Chemical Processing
- Water and Wastewater Monitoring
- Commercial Pools, Spas, and Aquariums
- HVAC
- Cooling Tower
- Neutralization Systems
- Industrial Water Distribution



**FlowtraMag® Meter type 2581  
(Hastelloy® C)**

- 0.02 - 10 m/s (0.07 to 33 ft/s)
- DN25 to DN100 (1 to 4 in.)
- 10 bar @ 23 °C (145 psi @ 73 °F)
- 4 - 20 mA, 4 to 20 mA per ANSI-ISA 50.00.01 Class H



**Magmeter (blind or display)  
type 2551**

- 0.05 - 10 m/s (0.15 to 33 ft/s)
- DN15 - DN900 (½ to 36 in.)
- 10.3 bar @ 25 °C (150 psi @ 77 °F)
- 4 - 20 mA, or frequency/digital (S<sup>3</sup>L) outputs
- Optional relay outputs



**Metal magmeter  
type 2552**

- 0.05 - 10 m/s (0.15 to 33 ft/s)
- DN50 - DN2550 (2 to 102 in.)
- 316 stainless steel & PVDF
- 20.7 bar @ 25 °C (300 psi @ 77 °F)
- 4 - 20 mA, frequency/digital (S<sup>3</sup>L)
- Hot-tap using ball or gate valves

## Inline flow sensors

Flow through the body design of the rotor sensor provides easy access for cleaning, inspection and rotor replacement without the need for powering down. Flexibility with end connections enable flexible tubing or rigid pipe installations. The injection-molded PVDF body and ceramic bearings provide excellent chemical compatibility and long service in dosing and batching applications.

## Main applications

- Chemical addition
- High-purity chemical dispensing
- Batch processes
- Chemical dosing



**Turbine flow sensor  
type 2100**

- 0.38 to 38 lpm (0.10 to 10 gpm)
- DN15 (½ in.)
- PVDF
- 16 bar @ 20 °C (232 psi @ 68 °F)
- Open collector output
- Use with end fitting: 3-2100-31 to 3-2100-38



**Mini-flow rotor sensor  
type 2507**

- 400 - 12 000 mL/m (0.1 to 3.2 U.S. gpm)
- G ¼ in. ports, ¼ in. NPT pipe adapters
- PVDF
- 5.5 bar @ 24 °C (80 psi @ 75 °F)
- Open Collector output
- Standard cable 7.6 m (25 ft)



**Micro-flow rotor sensor  
type 2000**

- 0.11 - 12.11 lpm (0.03 - 3.2 gpm)
- ¼ in. NPT or ISO 7/1-R1/4 threads
- Polyphenylene sulphide and PEEK
- 5.5 bar @ 0 ° to 80 °C (80 psi @ 32 °F to 176 °F)
- Open collector output
- Standard cable 7.6 m (25 ft)

## Measurement – Flow

### Variable area flow meters

Variable area flow meters (VAFM) are dismountable meters for flow measuring in industrial piping applications. The measurement ranges, which are attuned to our customers' needs, and the range of materials available for the tubes and connection ends, mean that the flow meters can be used for a wide range of applications and a great variety of media.



#### Variable area flow meters type 335 / 350, SK50-73

- Taper tubes in PVC transparent, PA, PSU
- Union connection with PVC (std)\*
- DN10 - DN65 (3/8" - 3 1/2")
- PN10
- Optional switch feedback
- Special scales on request

\*others on request

### Main applications

- Water treatment
- Chemical process industry
- Microelectronics
- Food industry
- Ship building

### Ultrasonic Flow Meter

Ultrasonic flow sensors perform highly accurate flow rate measurements of liquid media without coming into contact with the actual medium. Customers use ultrasonic technology, no invasive intervention is required. This advantage comes into play especially in areas in which one would like to avoid contamination, such as with ultrapure water. Their installation also requires no interruption of processes.

### Main applications

- Ultrapure water measurement
- Heatingsystems
- Chilled water metering
- Flow measurement for energy metering
- Monitoring of manufacturing processes



#### Ultrasonic Flowmeter type U1000 V2

- 0.1 m/s - 10 m/s
- d22 - d180
- DC 12 - 24 V
- Output: 4-20 mA, pulse/frequency, Modbus
- Transit-time measurement
- Heatmeter option available



#### Portable ultrasonic flowmeter type PF220 / PF330

- 0.1 m/s - 20 m/s
- d13 - d2000
- Battery powered, AC 110 - 240 V
- Output: 4-20 mA, USB
- Integrated datalogger (PF330)
- Transit-time measurement



#### Ultrasonic wall mount flowmeter type U3000 / U4000

- 0.1 m/s - 20 m/s
- d13 - d2000
- DC 24 V or AC 86 - 240 V
- Output: 4-20 mA, pulse/frequency, RS232, USB
- Integrated datalogger (U4000)
- Transit-time measurement



#### Ultrasonic doppler flowmeter type UD2100

- Especially designed for dirty/aerated liquids
- 0.03 m/s - 12.2 m/s
- d16 - d4000
- DC 24 V or AC 86 - 240 V
- Output: 4-20 mA, pulse/frequency, Modbus
- Integrated datalogger
- Doppler measurement

# Level – Product overview

Continuous level control detects the level in a tank continuously. Depending on application requirements and characteristics of the process liquid, either a non-contact or contact device can be utilized. GF level sensors provide accurate level information through analogue or digital signals to ensure easy interfacing with PLCs.

## Point level detection

To maintain full control over the liquid level in tanks, point level switches can be used for a physical detection of critical filling levels. These instruments provide additional safety and control. They are often installed together with a continuous level sensor as a back-up system. They can also be used to directly control filling and emptying process.

## Main applications

- Overfill protection
- High and low level alarms
- Pump control
- Dry-run protection for pumps



### Vibration forks type 2280

- For safe operation in critical applications
- Cable, DIN connector and connection terminals
- Easy wiring in various applications
- No moving parts
- No maintenance costs



### Conductive multipoint switch type 2281

- Individual cutting of electrodes
- Most economic solution to indicate multiple point levels
- Easy adaptation of switching points on site
- Up to 4 switching points in one sensor
- 4 times faster installation
- Cost effective solution



### Float switch type 2285

- Double chambered enclosure
- Easiest way to monitor point levels in open tanks and basins
- High operational safety
- Mercury free switching contact
- Safe use in drinking- and waste water applications



### Ultrasonic gap switch type 2284

- PPS Full-plastic body
- Reliable point level detection even in very corrosive or viscous liquids
- Optimized chemical compatibility
- Compact size
- Easy installation in pipes and small systems
- Robust ultrasonic principle even in highly viscous liquid



### Guided float switch type 2282

- PP or PVDF full-plastic body
- Compact and cost attractive solution for small vessels
- Optimized chemical compatibility
- Ultra compact housing
- Easy installation in compact systems

## Measurement – Level

### Continuous level control

For continuous tank level detection, GF offers a variety of measurement technologies. Depending on application requirements and characteristics of the process liquid, either a non-contact or contact device can be utilized. GF level sensors provide accurate level information through analog or digital signals to ensure easy interfacing with programmable logic controllers (PLC).

### Main applications

- Inventory management
- Batching and dosing processes
- Storage Tank Monitoring
- Neutralization Tanks
- Plating Lines
- Waste Sumps
- Clarifiers
- Overflow Protection



#### Guided radar level transmitter type 2291

- Reliable guidance of measuring signal along probe
- Advanced resilience in case of extreme fumes, thick foam layers or agitation
- Great performance also on media of low dielectric constants
- Special coatings for probes available: PP, PFA and FEP



#### Ultrasonic level sensor type 2270

- Non-contact principle
- Narrow 5 and 6° beam
- Range: 4, 6, meters (13, 20 ft)
- 4-20 mA, HART
- PP and PVDF bodies
- Easy to use EView programming software
- Allows for open channel measurement



#### Non-contact principle radar level transmitter type 2290

- Non-contact principle
- Robust against most interfering factors such as fumes, light foaming or fluctuations of pressure or temperature
- Display and comprehensive configuration menu
- PP, PTFE or steel antenna enclosures



#### Ultrasonic integral level transmitter type 2260

- Non-contact principle
- Narrow 5 and 6° beam
- Range: 4, 6, 15 meters (13, 20, 50 ft)
- 4-20 mA, HART, relay output
- PP and PVDF bodies
- ATEX versions
- Quick-set and advanced menu
- Large multi-parameter display
- Allows for open channel measurement



#### Hydrostatic level sensor type 2250

- 0-10 psi = 0-7.03 m = 0-23.06 ft
- 0-50 psi = 0-35.15 m = 0-115.32 ft
- Wetted material: PVDF, PVC, ceramic and FKM
- Submersible sensor
- 4-20 mA or digital (S<sup>3</sup>L)
- Uses hydrostatic pressure for level and depth control



# Conductivity/resistivity – Product overview

The Conductivity / Resistivity electrodes are suitable for a variety of applications ranging from high-purity water quality monitoring to weak acids and bases.

## Main applications

- Water Treatment and Water Quality Monitoring
- Aquatic Animal Life Support Systems
- Deionization
- Plating Bath
- Dry-run protection for pumps



### Conductivity integral system with 9900 transmitter

- Local display for sensor mounted instruments
- Provides 4-20 mA output
- "At a glance" visibility
- "Dial-type" digital bar graph
- NEMA 4X/IP65



### Conductivity/resistivity electrodes type 2818-2823

- 0.055-400 000  $\mu\text{S}$  (0.02-200 000 ppm) (18.2 M $\Omega$  - 1 K $\Omega$ )
- 316 SS or titanium (Hastelloy C also available upon request)
- Reversible threads or sanitary flange connections
- Connect to 2850 sensor electronics



### Conductivity sensor electronics with PVDF type 2850

- 0.055-400 000  $\mu\text{S}$  (0.02-200 000 ppm) (18.2 M $\Omega$  - 1 K $\Omega$ )
- PBT (integral mount) /PBT/CPVC (universal J-box)
- Integral systems connect to the 2839 series electrodes or 2819 series electrode via 3-286X universal j-box assembly
- 4-20 mA or digital (S<sup>2</sup>L)
- Factory NIST certified



### PVDF conductivity electrodes type 2839-1V(D)-2842-1V(D)

- 0.055-200 000  $\mu\text{S}$  (0.02-100 000 ppm) (18.2 M $\Omega$  - 1 K $\Omega$ )
- 316 SS and PVDF
- Dual threaded NPT or ISO
- Connection to 9900 and 9950 instruments or 2850 sensor electronics
- NIST certificate

# PH/ORP – Product overview

PH/ORP electrodes are versatile process sensors with unique designs and long service lives for use in everything from general purpose to harsh media applications. When connected to the 2751 pH/ORP smart sensor electronics and 9900/9950 Transmitter, customers have available to them a wide range of features and benefits.

## Main applications

- Water and Wastewater Treatment
- Neutralization Systems
- Scrubber Control
- Effluent Monitoring
- Surface Finishing
- Flocculent Coagulation
- Heavy Metal Removal and Recovery
- Toxics Destruction
- Sanitization Systems
- Pool & Spa Control
- Aquatic Animal Life Support Systems



**Threaded DryLoc pH/ORP electrode - type 2774 - 2777**

- 0 - 14 pH,  $\pm 2,000$  mV ORP
- Ryton body, PTFE junction
- Use sensor  $\frac{3}{4}$ " threads for mounting
- DryLoc preamplifier connection with gold plated pins
- Suitable for submersible applications
- For use with 2751/2760 preamplifiers



**Differential DryLoc pH/ORP electrodes type 2744 - 2747**

- 0 - 14 pH,  $\pm 1500$  mV ORP
- Ryton body, PTFE double junction
- Use sensor 1 inch threads for mounting
- DryLoc preamplifier connection with gold plated contacts
- For use with 2751/2760 preamplifiers



**DryLoc pH/ORP electrodes for harsh applications – type 2734 - 2736**

- Enhanced reference and bridge gels to resist chemical poisoning
- Ryton (PPS) body and PTFE junction for broad range of chemical compatibility
- PTFE reference junction resists fouling and chemical attack
- Mounts in Signet standard fittings from DN15 to DN100 ( $\frac{1}{2}$  to 4 in.)



**DryLoc pH/ORP electrodes type 2724-2726**

- 0-14 pH,  $\pm 2,000$  mV ORP
- Ryton body, PE junction
- Use fittings for in-line applications or  $\frac{3}{4}$ " NPT or ISO
- Suitable for submersible applications
- DryLoc preamplifier connection with gold plated pins



**pH/ORP Wet-Tap assembly - type 3719/2756, Wet-Tap electrodes type 2757**

- Use a wet-tap style sensor for 0 - 14 pH,  $\pm 2,000$  mV ORP
- CPVC, PVC
- 1½ or larger
- 1½ or 2 NPT, ISO 7/1 - R1.5 or R2
- Electrode removal without process shutdown



**DryLoc pH/ORP Smart Sensor Electronics type 2751**

- -1 - 15 pH,  $\pm 2,000$  mV ORP
- PBT, CPVC (PVC-C)
- Probe health monitoring, glass impedance and broken glass detection
- Memory chip interface
- Use with 9900 and 9950
- In-line and submersible versions available

# Temperature and pressure sensors – Product overview

The temperature and pressure sensors are versatile sensors with the ability to outlast metal sensors in aggressive liquids and eliminate the need for costly custom thermowells.

## Main applications

- Plating Bath Temperature Control
- Heat Exchange Monitor
- R.O. and D.I. System Monitor
- Hot/Cold Mixing System Monitor
- Data Acquisition
- Cooling Loops
- Effluent Monitoring
- HVAC
- Chemical Processing



**Temperature integral system with 9900 transmitter**

- Local display for sensor mounted instruments
- Provides 4-20 mA output
- "At a glance" visibility
- "Dial-type" digital bar graph
- NEMA 4X/IP65



**Pressure integral system with 9900 transmitter**

- Utilizes the 2450 sensor for pressure or hydrostatic level measurement
- Local display for sensor mounted instruments
- Provides 4-20 mA output
- "At a glance" visibility
- "Dial-type" digital bar graph
- NEMA 4X/IP65



**Temperature sensor type 2350**

- In-line mounting: 10 °C to 100 °C (14 ° - 212 °F)
- Submersible mounting: 10 °C to 85 °C (14 ° - 185 °F)
- PVDF
- 3/4 inch dual threaded for in-line or submersible installation
- 4-20 mA or digital (S<sup>3</sup>L)



**Pressure sensor type 2450**

- 0-0.7 bar (0-10 psig) - U
- 0-3.4 bar (0-50 psig) - L
- 0-17 bar (0-250 psig) - H
- Vacuum range available
- Wetted material: PVDF, ceramic and FKM
- 1/2" union, dual threaded
- 4-20 mA or digital (S<sup>3</sup>L)

# Transmitters – Product overview

The the 9900 and 8150 Transmitter provide a single channel interface for many different sensor types including Flow, pH/ORP, Conductivity/Resistivity, Salinity, Temperature, Pressure, Level, Dissolved Oxygen and other sensors that output a 4 to 20 mA signal. Each release of the 9900 Transmitter has included new features and capabilities in addition to the already extensive list of capabilities.

## Main applications

- Wastewater Flow Accumulation
- Water Treatment Systems
- Remote or Mobile Treatment
- Distribution Systems
- Irrigation Systems
- Filtration Systems
- Commercial Pools & Spas
- Groundwater Remediation
- R.O. Concentrate
- Process Flow Monitoring
- UPW Distribution
- Demineralizer Regeneration
- Process Cooling Water



### Flow integral mount type 9900

- Local display for sensor mounted instruments
- Provides 4 - 20 mA output
- "At a glance" visibility
- "Dial-type" digital bar graph
- NEMA 4X/IP65



### Battery powered flow totaliser type 8150

- Displays GPS, GPM, GPH, GPD, LPS, LPM, LPH, LPD
- Battery powered
- Single input
- Panel or field mount
- 3 totalisers, auto calibration
- Use with 515 or 525 flow sensors



# Water analysis – Product overview

The Chlorine Analyzer System is an integrated, all-in-one system designed to measure free chlorine or chlorine dioxide. Quick to set up and easy to install, the analyzers are supplied with a 100-240 VAC power supply, two 4 to 20 mA outputs and two dry contact mechanical relays.

## Main applications

- Water Distribution
- Ground Water
- Surface Water
- HVAC Applications (cooling water)
- Food and Beverage
- Swimming Pools
- Water Parks



**Chlorine analyzer system  
type 4630**

- Continuous free chlorine measurement without chemical reagents
- Optional pH sensor for increased accuracy
- Pre-wired panel for easy installation
- Built in pressure regulator and variable area flow meter



**Chlorine dioxide system  
type 4632**

- Complete turnkey system – no additional parts required to install
- Now available with a flow switch interrupt (chlorine and chlorine dioxide)
- Complies with EPA standard 334.0
- Chemical free measuring system – 0 - 2 ppm
- Optional pH measurement



**Process optical dissolved  
oxygen sensor type 2610**

- Optical DO measurement with no flow requirements
- No membranes or filling solutions
- Flexible communications, 4 - 20 mA or modbus 3-2610-51
- Measurement range: 0 - 20 mg/L, 0 - 200 % saturation

# Accessories



### Switching power supplies type 7310

- Universal AC input/full range
- Protections: short circuit/overload/over-voltage
- Cooling by free air convection
- Install on DIN rail TS-35/7.5 or 15
- Built in DC OK active signal
- LED indicator for power on



### i-GO signal converter type 8058

- Connects third party 4-20 mA signals to the 9900
- Available for single or dual 4-20 mA sensor inputs
- Compatible with 9900 and 9950



### 8059 external relay module

- AC and DC powered versions
- External relays controlled by host instrument
- Digital pass-through (DC versions) to simplify wiring
- Relay can be tested locally, and also via the host instrument
- Only compatible with 8900



### HART – USB modem

- HART to USB converter
- Portable or DIN rail version
- ATEX



### pH/ORP system tester type 2759

- Battery powered
- Simulates pH and ORP
- Compatible with 2751 and 2760 preamp
- Connects to any pH/ORP instrument



### Configuration tool type 0252

- Back up and restore SmartPro transmitters and blind sensors
- configurations to a computer file
- User-friendly interface
- Configure settings such as instrument type, units, scale 4 to 20 current loops and modify labels from the computer
- Use a single file to clone multiple
- SmartPro transmitters and blind sensors



### Conductivity/resistivity tools type 2850 - 101 - X

- Available in 5 different values
- Verifies electronic independent of electrode
- Compatible with all conductivity and resistivity instruments
- Temperature compensated to 25 °C



### 9900 pH/ORP Calibrator

- 9900 battery operated calibrator
- Works with new line of 2751 Smart pH/ORP sensor electronics
- This unit can be kept in a lab or taken in to the field
- Runs on (8) AA Alkaline batteries (included)
- Allows the user the ability to rotate electrodes, meaning unplug an aged/dirty electrode replace with a pre-calibrated electrode



### Flow wet-tap valve type 3519

- DN15 - DN900 (½ to 36 in.)
- PVC
- 7 bar @ 20 °C (100 psi max @ 68 °F)
- Use with wet-tap paddlewheel flow sensors type 515 and 2536



#### Buffer solutions type pH/ORP

- NIST Traceable
- Easily identifiable colour coded buffer solutions
- Liquid or powder versions
- Temperature compensated values
- Kits for easy use



#### Wall mount accessory kit

- Compact enclosure that works with 9900 transmitter and other ¼ DIN size instruments
- Equipped with a ¼ DIN cutout and two ½" holes at the base
- Mounting hardware and liquid tight connectors are included



#### Limit contacts GK 10/GK11 VAFM type 335/350 /123

- Reed contact
- IP65
- 230 V



#### 4 - 20 mA sensor GK 15 for VAFM type 335/350

- 12 - 24 V DC
- IP 65
- 4 - 20 mA (3 wire)



#### Rear enclosure kits for 9900

- Compatible with all existing 9900-1P transmitters
- NEMA TYPE 4X/IP66 rated for indoor or outdoor installations
- Spacious for any 9900 transmitter accessory module
- Hinged cover design for easy to access wiring
- Hinged cover suitable for wall mount or pipe mount installations



# Measurement

## Installation fitting tees



**Plastic -  
metric tees**

- ABS\* DN20 - DN50
- PVC DN15 - DN50
- PP DN15 - DN50
- PVDF DN15 - DN50
- PE DN15 - DN50



**Plastic -  
fiberglass tees**

- Fiberglass 1.5 - 2.0" / SCH 80
- Special order 1/2 saddles available up to 12 inch / DN 300



**Plastic -  
PVC tees**

- PVC 0.50 - 2.0" / SCH 80
- PVC-C 0.50 - 2.0" / SCH 80
- PVC BSP\* 0.50 - 2.0"
- Fiberglass 1.50 - 2.0" / SCH 80



**Metal -  
tees**

- Carbon steel NPT 0.50 - 2.0" / SCH 40
- Copper sweat-on 0.50 - 2.0" / SCH K
- Galvanized iron NPT 1.00 - 2.0" / SCH 40



**Metal -  
tees**

- 316 SS NPT 0.50 - 2.00" / SCH 40
- Brass NPT 1.00 - 2.00" / SCH 40

\* BSP and ABS fittings are available through your local Georg Fischer sales company.

## Weldolets / brazolets



**Weldolet**

- PVC-U DN65 - DN600
- PP DN65 - DN600
- PE DN65 - DN600
- PVDF DN65 - DN600
- SS DN50 - DN630

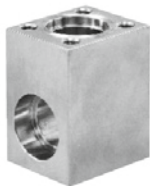


**Weldolets / brazolets**

- Carbon steel 2.5 - 12.0" / SCH 40
- Brass 2.5 - 12.0" / SCH 40
- 316 SS 2.5 - 12.0" / SCH 40



# Metalex



- Metalex**
  - SS socket
  - SS weld-on
- 0.50 - 1.00"  
1.25 - 12"



- Metalex weld-on mini-tap**
  - 1.25 - 12"

# Wafer fittings



- Wafer**
  - PP
  - PVDF
- DN65 - DN300  
(2.5 - 4.0")  
DN65 - DN200  
(3.0")

# Saddles



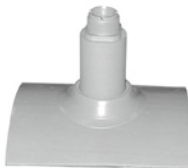
- Electrofusion transition**
  - PE
- 2.0 - 12.0"



- Electrofusion**
  - PE
- DN65 - DN400



- Clamp-on**
  - PVC
  - PVC-U
  - BSP
- 2.0 - 8.0"/SCH 80  
metric DN65 - DN200  
3" - 6"



- PVC-U Glue-on**
  - PVC
  - Special order up to 20 inch
- 10" - 12"/SCH 80



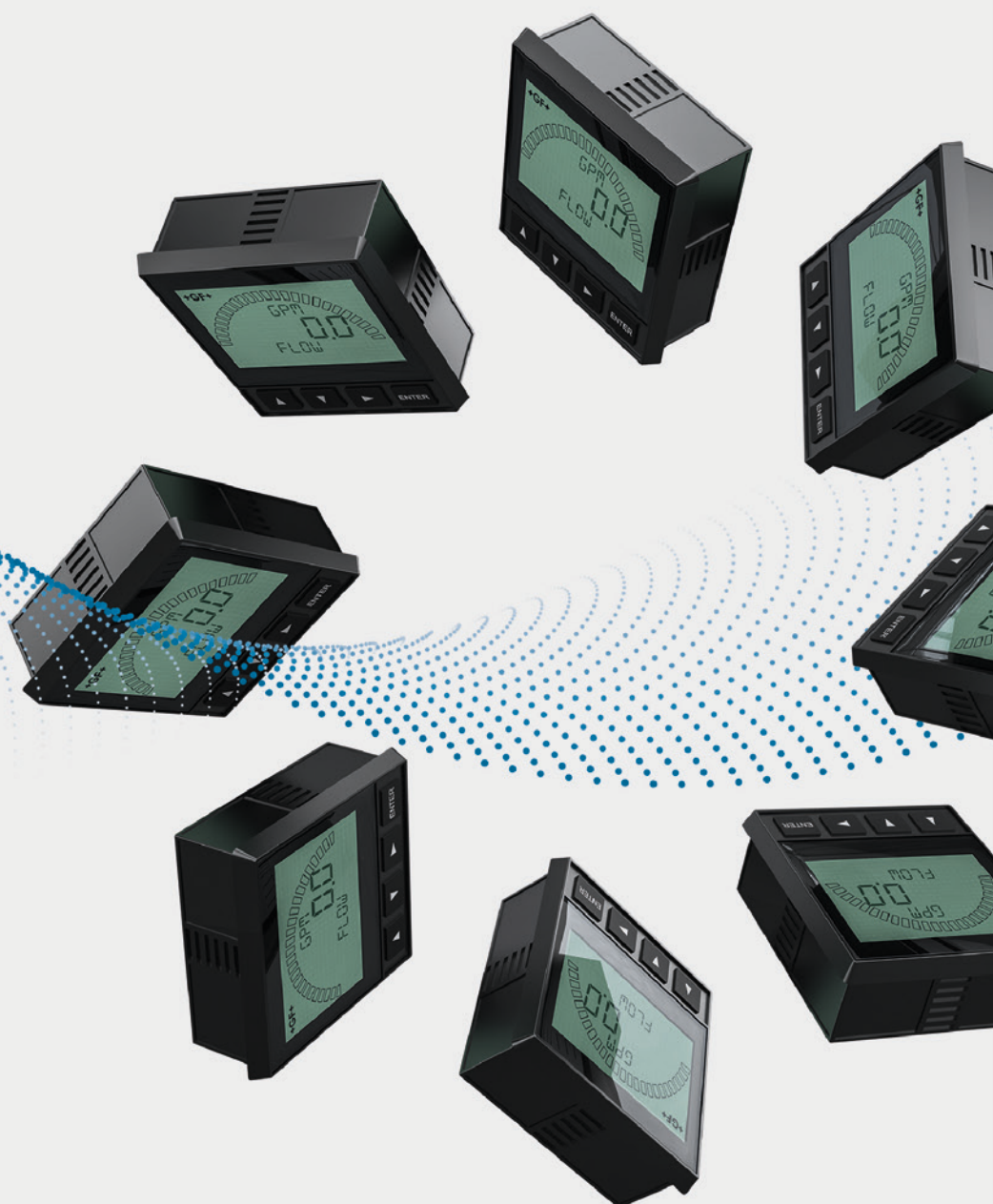
- Strap-on**
  - Iron
  - Schedule 80
  - Sch 52 and K9 metric ductile iron saddle
- 2.0 - 12.0"/SCH 80  
available up to 48 inches/DN 1200  
56 to 400 mm



- Glue-on**
  - PVC-U
  - ABS
- DN65 - DN300  
DN65 - DN200

# One platform

Precise control throughout your automation loop





# Control

Thanks to the clever design, our control products make life easy. Each one is simple to operate, thanks to the intuitive menu structures, and all of our measurement parameters connect with the same transmitter, ensuring a true multiparameter controller. Because of the modular design, you can add additional functionalities like batch control or communication technologies and upgrade at any time.

## Main benefits

- Compatible with all GF sensors
- Configurable display
- Multiple sensor types in one instrument
- Optional modules for additional capabilities

## Product overview

- Multi-parameter instruments
- Accessories
- Modules

# Multi-parameter instruments – product overview

As a member of the Signet SmartPro® family of instruments, the Signet 9900 Transmitter provides a single channel interface for many different sensor types including Flow, pH/ORP, Conductivity/Resistivity, Salinity, Temperature, Pressure, Level, Dissolved Oxygen and other sensors that output a 4 to 20 mA signal. Each release of the 9900 Transmitter has included new features and capabilities in addition to the already extensive list of capabilities.

## Main applications

- Wastewater Flow Accumulation
- Water Treatment Systems
- Remote or Mobile Treatment/
- Distribution Systems
- Irrigation Systems
- Filtration Systems
- Commercial Pools & Spas
- Groundwater Remediation
- R.O. Concentrate
- Process Flow Monitoring
- UPW Distribution
- Demineralizer Regeneration
- Process Cooling Water



### SmartPro transmitter type 9900

- Multi-parameter input selection
- Large auto-sensing backlit display
- „Dial-type“ digital bar graph
- Optional field upgradable relays
- Selectable error mode for current outputs, 3.6 mA or 22 mA
- Optional relay, direct conductivity/resistivity, 4-20 mA output, and HART modules are available



### Dual channel transmitter type 9950

- Independent dual channel multi-parameter, flow, pH, ORP, conductivity, resistivity, pressure, temperature, level, volume, salinity, dissolved oxygen, other (4-20 mA)
- 2 Passive 4-20 mA loop outputs standard
- Options for up to 4 relays – dry contact or solid state
- Derived functions: ratio, difference, sum, % rejection, % recovery

## Accessories



### i-GO signal converter type 8058

- Connects third party 4-20 mA signals to the 9900
- Available for single or dual 4-20 mA sensor inputs
- Compatible with 9900
- Requires programming at the factory
- with the 8350, 8450



### PID controller type 3216

- Easy set-up
- Auto-tune
- 24 V or 100-230 V
- External set-point
- Manual override via push button
- Compact design

## Modules



**Relay Module  
type 9900**

- Adds two programmable dry-contact relays
- Hysteresis and time delay available for each relay
- Depending on the sensor type, there are a total of 23 relay modes available



**Conductivity/Resistivity Module  
type 9900**

- Interfaces Conductivity/Resistivity and Salinity directly to the 9900 transmitter
- Conductivity/Resistivity and Salinity measurements may also be performed via the 2850 Sensor Electronics connected through the 9900 Digital (S<sup>3</sup>L) inputs)



**H COMM Module  
type 9900**

- Allows communication between the 9900 Transmitter and a HART®-enabled device
- Allows access to primary and secondary measurements remotely
- Allows user to remotely adjust the 4 and 20 mA settings
- Not compatible with Batch module



**Batch Module  
type 9900**

- Adds batch capability to the 9900 Transmitter (Generation II or later)
- Compatible with all Signet flow sensors
- Up to 10 batch sizes can be stored in one 9900 with customized names and K-Factors available for each batch
- Batch module plugs in the same location as the conductivity and 4-20 mA module. Only one can be used at one time



**4 to 20 mA Module  
type 9900**

- Adds one extra 4-20 mA output to the
- Output can be used for primary or secondary measurement
- Settings are independent from 4-20 mA output in base unit



**Modbus Module  
type 9900**

- Ability to transfer live readings, units of measure, and measurement status
- Connects to PLCs and SCADA system
- Supports the serial Modbus RS485 standard



**Relay Module  
type 9950**

- Interface up to four binary inputs
- Binary inputs are compatible with either open collector or mechanical contacts
- The binary inputs can supply power to the four inputs or accepts powered outputs from external devices



**Dual Channel 4 to 20 mA Module  
Current Loop Output Module  
type 9950**

- Up to six 4 to 20mA current loops in one 9950
- Passive loops, requires external 12 to 24 VDC power



**Single Channel Conductivity/Resistivity  
Module type 9950**

- Two conductivity modules can be added for conductivity, resistivity or salinity measurements



**Dual Channel Conductivity Module  
type 9950**

- Monitor two different conductivities with a single module
- The module design allows for additional expansion opportunities with the 9950 such as additional current loop outputs



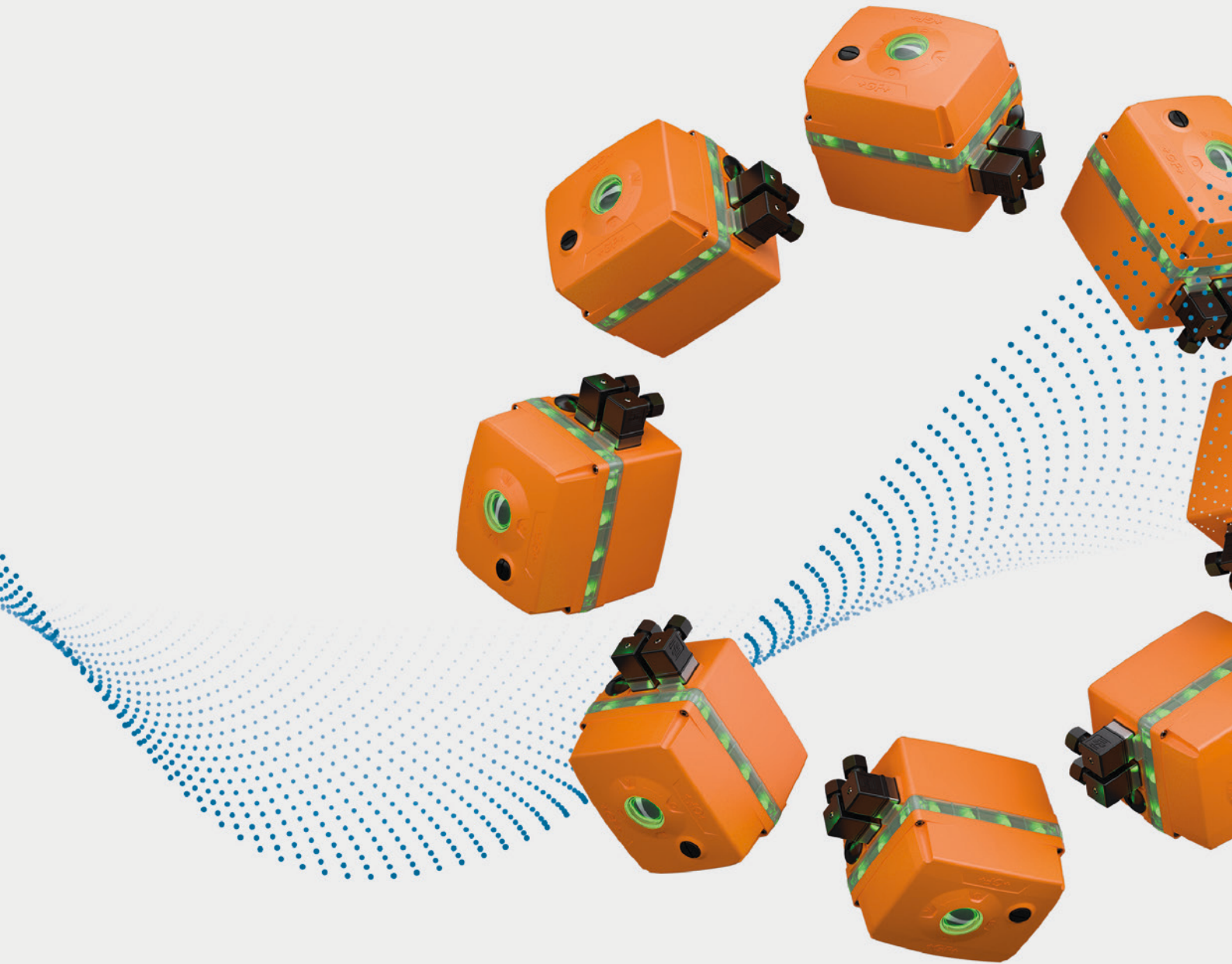
**Modbus Module  
type 9950**

- Connects the 9950 to existing Modbus RTU, serial RS485 and automation networks
- Allows digital access to live measurement readings
- Simplifies the interfacing of the 9950 to automation networks



# One partner

**Reliable actuation with  
configuration flexibility**







# Actuation

With our modular set-up, valves and actuators can be combined for flexibility and additional functionalities, and positioners or monitoring devices can be added optionally. Naturally, we offer the whole range in all-plastic designs, which are capable of withstanding harsh environments.

A wide range of pressure regulating valves and accessories complete our actuation portfolio.

## Main benefits

- Robust and durable
- Fail-safe mode
- Extremely high reliability
- Compact and lightweight

## Product overview

- Electric Actuators
- Pneumatic Actuators
- Actuated Butterfly valves
- Actuated Ball Valves
- Actuated Diaphragm Valves
- Actuated Process Control Valves
- Pressure Regulating Valves
- Electric Accessories
- Pneumatic Accessories

## Actuation

### Electric Actuators

Electric actuators are used to open and close valves and regulate the flow of liquids, with electrical actuators being powered by an electric motor. Electric actuators are highly reliable and very easy to set up and operate. In addition, the latest generation of actuators offers many intelligent features. Modular accessories such as electric interfaces, integrated battery-powered fail-safe units and visual system feedback are also available.

### Main applications

- Chemical process industry
- Water treatment
- Refrigeration



**Electric actuator smart type  
dEA25/45/120/250**

- 100–230 V AC, 24 V AC/DC
- Torques from 10 Nm – 250 Nm
- LED stripe for visual open/close 360° feedback
- Heating element, position feedback (Open/Close/ Middle)
- Connectivity via NFC and Wi-Fi Direct ensuring control



**Electric actuator  
type EA25, 45, 120, 250**

- 100–230 V AC, 24 V AC/DC
- Torques from 25 Nm – 250 Nm
- LED enforced position feedback
- Standard: position feedback, heater
- Optional: fail-safe return unit integrated, positioner, monitoring, profibus DP V0



**Electric actuator  
type EA15**

- 100–230 V AC, 24 V AC/DC
- Torques from 20 Nm
- LED enforced position feedback
- Standard: position feedback, heater
- Optional: fail-safe return unit integrated

### Pneumatic Actuators

GF Piping Systems pneumatic actuators are suitable for a wide range of environments and guarantee high levels of safety and reliability thanks to their fail-safe operation, robust design and high functionality, such as fast cycle times and adjustable travel. They are an economical, functional and reliable solution, especially for installations with a high number of actuated valves.

### Main applications

- Chemical process industry
- Water treatment
- Refrigeration



**Plastic pneumatic actuator type PPA**

- FC, F0, DA
- Rack and pinion principle
- Integrated NAMUR interfaces
- Glass-fiber reinforced polypropylene



**Pneumatic actuator  
type PA11/PA21**

- FC, F0, DA
- Rack and pinion principle
- Accessory interface acc. ISO5211
- Visual position indication
- Full plastic solution
- PA11: 10 Nm / PA21: 20 Nm



**Pneumatic actuator  
type PA30 - PA90**

- FC, F0, DA
- Scotch Yoke principle
- Accessory interface acc. ISO5211
- Visual position indication
- Adjustable end stops
- Various coatings on request



## Actuated Butterfly Valves

Thanks to a wide range of accessories, GF Piping Systems butterfly valves can be equipped with the appropriate pneumatic or electric actuators and thus used as process and control valves. Double sensors enable hereby the end position detection (open/closed disc).

## Main applications

- Drinking water process
- Industrial process water
- Industrial waste water
- Municipal waste water
- Desalination plant
- Aquarium/ Oceania
- Swimming pools
- Cruise ships
- Offshore
- Vessels and merchant fleet



### Butterfly valve electric type 565

- Electric actuated butterfly valve
- Actuator type: EA25-250 and dEA (24 V, 100 - 230 V)
- Plastic butterfly valve wafer style
- ABS, PVC-U, PVC-C, ecoFIT and PROGEF
- DN50 - DN300



### Butterfly valve electric type 145/146/147\*

- Electric actuated butterfly valve
- Actuator type: dEA45/120/250 and EA45/120/250 (24 V, 110 - 230 V)
- Plastic butterfly valve wafer/lugstyle
- Butterfly valve type 567/578
- PVC-U, PVC-C, ABS, PP-H, PVDF
- 567: DN50 - DN600; 578: DN50 - DN300



### Butterfly valve electric type 038-E/039-E

- Electric actuated butterfly valve
- Actuator type: dEA45/120/250 and EA45/120/250 (24 V, 110 - 230 V)
- Metal butterfly valve wafer/lugstyle
- Butterfly valve type 038/039
- 038/039: Ductile iron with powder/epoxy/rilsan coating
- 038: DN50 - DN600, 039: DN50 - DN1200

\* Predecessor type 140/143/144 with electric actuators type EA31/42



### Butterfly valve pneumatic type 565

- Pneumatic actuated butterfly valve
- Actuator type: PA30-PA70
- Plastic butterfly valve wafer
- ABS, PVC-U, PVC-C, ecoFIT and PROGEF
- DN50 - DN300



### Butterfly valve pneumatic type 240/243/244

- Pneumatic actuated butterfly valve
- Actuator type: PA30-PA90
- Plastic butterfly valve wafer/lugstyle
- Butterfly valve type 567/578
- PVC-U, PVC-C, ABS, PP-H, PVDF
- 567: DN50 - DN600; 578: DN50 - DN300



### Butterfly valve pneumatic type 038-P/039-P

- Pneumatic actuated butterfly valve
- Actuator type: PA30 - PA70
- Metal butterfly valve wafer/lugstyle
- Butterfly valve type 038/039
- 038/039: ductile iron with powder/epoxy coating/rilsan coating
- 038: DN50 - DN600; 039: DN50 - DN1200

## Actuation

### Actuated Ball Valves



**Pneumatic ball valve  
type 546 Pro P**

- Pneumatic actuated 2-way ball valve
- Actuator type: PA11/PA21 (<DN65)
- Actuator type: PA30-PA90 (>DN50)
- Ball valve 546 Pro
- ABS, PVC-C, PVC-U, PP-H, PVDF
- DN10-DN100



**Electric ball valve  
type 127**

- Electric actuated 2-way ball valve
- Actuator type: EA15 (24 V, 110-230 V)
- Actuating angle 90°
- Ball valve 546 Pro
- ABS, PVC-C, PVC-U, PP-H, PVDF
- DN10-DN50



**Pneumatic ball valve  
type 543 Pro P**

- Pneumatic actuated 3-way ball valve
- Actuator type: PA11/PA21
- Actuating angle 90°
- Ball valve 543 Pro
- ABS, PVC-C, PVC-U, PP, PVDF
- DN10-DN50



**Electric ball valve  
type 167-170\*\***

- Electric actuated 3-way ball valve
- Actuator type: dEA25 and EA25 (24 V, 110-230 V)
- Actuating angle 90°; max. 180°
- Ball valve 543 Pro
- ABS, PVC-C, PVC-U, PP, PVDF
- DN10-DN50



**Electric ball valve  
type 179-184\***

- Electric actuated 2-way ball valve
- Actuator type: dEA25/45/120 and EA25/45/120 (24 V, 110-230 V)
- Actuating angle 90°
- Ball valve 546 Pro
- ABS, PVC-C, PVC-U, PP-H, PVDF
- EA25 DN10-DN50; EA45/120 DN65-DN100



**Electric ball valve  
type 104**

- Electric actuated 2-way ball valve
- Actuator type: EA04 (24V, 85-230V)
- Actuating angle 0 - 90°
- Ball valve 546 Pro
- PVC-C, PVC-U, PP-H
- DN10 - DN50 3/8 - 2"
- Limited access range
- Low cycle applications

\* Predecessor type 130-135 with electric actuators type EA21 / 31

\*\* Predecessor type 185-188 with electric actuator type EA21

### Actuated Diaphragm Valves



**Diaphragm valve  
type 604/605**

- PVC-U, PVC-C, PP-H, PVDF
- EPDM, FKM, PTFE / EPDM, PTFE / FKM
- DN15
- PN6
- pneumatic actuated FC, FO, DA



**Diaphragm valve  
DIASTAR Sixteen**

- PVDF, PVDF-HP
- EPDM, FKM, PTFE/EPDM, PTFE/FKM
- DN15-DN50
- PN16
- pneumatic actuated FC, FO, DA
- Accessories available



#### Diaphragm valve DIASTAR Six

- ABS, PVC-U, PVC-C, PP-H
- EPDM, FKM
- DN15 - DN50
- PN6
- pneumatic actuated FC



#### Diaphragm valve DIASTAR 025

- ABS, PVC-U, PVC-C, PP-H, PVDF, PVDF-HP
- EPDM, FKM, PTFE/EPDM, PTFE/FKM
- DN65 - DN150
- up to PN10
- pneumatic actuated FC, FO, DA
- Accessories available



#### Diaphragm valve DIASTAR Ten

- ABS, PVC-U, PVC-C, PP-H, PP-N, PVDF, PVDF-HP
- EPDM, FKM, PTFE/EPDM, PTFE/FKM
- DN15 - DN50
- PN10
- pneumatic actuated FC, FO, DA
- Accessories available



#### eDiastar – type 514 (threaded sockets) and type 515 (spigots)

- PVC-U, PVC-C, ABS, PP-H, PVDF
- Retrofittable: PVDF-HP
- EPDM, PTFE/EPDM, NBR, FKM, PTFE/FKM
- d32/DN25 and d63/DN50
- DN25: PN10 / DN50: PN6
- electric actuated FC



#### Diaphragm valve DIASTAR TenPLUS

- ABS, PVC-U, PVC-C, PP-H, PVDF, PVDF-HP
- EPDM, FKM, PTFE/EPDM, PTFE/FKM
- DN15 - DN50
- PN10 (both sides)
- pneumatic actuated FC, FO, DA
- Accessories available

## Actuated process control valves



#### Solenoid valve type 157

- direct acting pivoted armature valve
- 2/2-Ways
- PVC-U
- EPDM, FKM
- 230 V AC, 24 V AC, 24 V DC
- DN4-DN8
- 0 - 4 bar depending on dimension



#### Solenoid valve type 160/161

- direct acting pivoted armature valve
- 2/2- or 3/2-ways
- PVC-U
- EPDM, FKM
- 230 V AC, 24 V AC, 24 V DC
- DN10-DN20
- 0 - 3 bar depending on dimension



#### Solenoid valve type 165

- Pilot assisted solenoid valve
- 2/2-Ways
- PVC-U, PVDF
- EPDM, FKM
- 230 V AC, 110 V AC, 24 V AC, 24 V DC
- DN15 - DN50
- 0.5 - 6 bar



#### Solenoid valve type 166

- direct acting pivoted armature valve
- 2/2- or 3/2-Ways
- PVDF
- EPDM, FKM
- 230 V AC, 110 V AC, 24 V AC, 24 V DC
- DN3 - DN5
- 0 - 10 bar depending on dimension

## Actuation

### Pressure regulating valves

Full pressure regulation, zero safety risk with the pressure regulating valves. Made from hardwearing fully molded plastic parts, the range of pressure regulating valves keeps the pressure in a pipe system at a pre-defined value and eliminates the risk of overload. Containing the latest in pressure-regulating technology, these valves are compact and easy to install and can be configured to either reduce or retain the pressure. The innovative cartridge design minimizes maintenance.

### Main applications

- Water treatment
- Chemical process industry
- Semiconductor industry



**Pressure reducing valve  
type 582**

- PVC-U, PVC-C, PP-H, PVDF, PVDF-HP
- Spigot or union connection
- O-ring Material: EPDM, FKM
- DN10 - DN50
- 0.5 - 9 bar or 0.3 - 3 bar
- Manometer with or without gauge guard optional



**Pressure retaining valve  
type 586**

- PVC-U, PVC-C, PP-H, PVDF
- Spigot or union connection
- O-ring Material: EPDM, FKM
- DN10 - DN50
- 0.5 - 9 bar or 0.3 - 3 bar
- Manometer with or without gauge guard optional



**Pressure reducing valve  
type V82**

- PVC-U, PP, PVDF
- EPDM, EPDM-PTFE-coated
- Adjustment range:  
DN65 - 80: 0.5 - 5 bar  
DN100: 1 - 3 bar



**Pressure retaining valve  
type V86**

- PVC-U, PP, PVDF
- EPDM, EPDM-PTFE-coated
- V86 DN65 - 80: 1 - 6 bar  
DN100: 1 - 4 bar

## Electric accessories



**Monitoring board (EA15 - 250)**

- Easy monitoring for on/off actuation
- "Plug & Play" installation
- Cycle time extension
- Cycle time monitoring
- Cycle counter
- Motor current monitoring



**Profibus (EA25 - 250)**

- Version DP V0
- M12 connectors for daisy chain
- Integrated in actuator housing (no external box)
- Can be used in combination with fail-safe return unit
- Monitoring or positioner can be activated via software





#### Fail-safe return unit (E15-250)

- Integrated battery including charging management
- Error messages for low battery
- Optional fail safe open/fail safe close
- Optional without battery for external 24V DC source



#### Modbus

- Modbus interface network upgrade for EA25-250 electric actuators
- Integrated in actuator housing (no external box)
- Control and setup functions via Modbus
- Serial Modbus via RS485
- Bidirectional Modbus enabling control & live diagnostics



#### Positioner (EA25-250)

- Input 4-20mA or 0-10V (can be inverted)
- Output/Feedback 4-20 mA (can be inverted)
- Motor current monitoring on board
- "Plug & Play" installation

## Pneumatic accessories



#### Electro-pneumatic Positioner for rotary actuators

- For pneumatic actuators in double-acting and singleacting function
- Power supply voltage 24V DC
- Activation 0-10 V, 0-5 V, 4-20 mA, 0-20 mA adjustable
- Multi-pin plug electrical connection
- Operation/configuration via display or internal DIP switch
- Protection rating IP65/IP67
- Binary input (fail-safe position, changeover)
- Operating mode (Automatic/Manual)
- Analog position indicator (0/4 to 20 mA, 0 to 5/10 V) for setpoints and actual values
- Approved and listed according to cULus and cCSAus



#### Electro-pneumatic Positioner for linear stroke actuators

- For pneumatic actuators in single-acting function
- Power supply voltage 24V DC
- Activation 0-10 V, 0-5 V, 4-20 mA, 0-20 mA adjustable
- Multi-pin plug electrical connection
- Operation/configuration via display or internal DIP switch
- Protection rating IP65/IP67
- Binary input (fail-safe position, changeover)
- Operating mode (Automatic/Manual)
- Analog position indicator (0/4 to 20 mA, 0 to 5/10 V) for setpoints and actual values
- Approved and listed according to cULus and cCSAus



#### Solenoid pilot valve type MNL 532

- Version for 3/2-way and 5/2-way
- Namur connection
- Material of body: Aluminum
- 24 V AC, 24 V DC, 48 V AC, 110 V AC, 230 V AC
- DN 5
- 950 l/min



#### Solenoid pilot valve 4/2-ways type 5470

- for double acting pneumatic actuators (DA)
- NAMUR connection
- Material of body: Polyamid
- 24 V AC/DC, 110 V AC/DC, 230 V AC/DC
- DN 4
- 300 l/min



#### Solenoid pilot valve type 2000

- Modular version for 3/2-way and 5/2-way valves
- 24 V DC
- Connection module AS-Interface
- Connection module profibus interface



#### Electric position feedback type ER 52-1/ER53-1

- For pneumatic stroke actuators
- For DIASTAR Ten, TenPLUS, Sixteen, 025
- Mechanical switches (AgNi or Au)
- NPN/PNP, Namur connection
- With visual position indication



#### Electric position feedback limit switch box

- For pneumatic rotary actuators
- For PPA08-80 and PA11-90
- Mechanical switches (AgNi or Au)
- NPN/PNP, Namur connection
- With visual position indication



#### Stroke limiter/ manual override

- For DIASTAR all type Ten, TenPLUS, Sixteen, 025

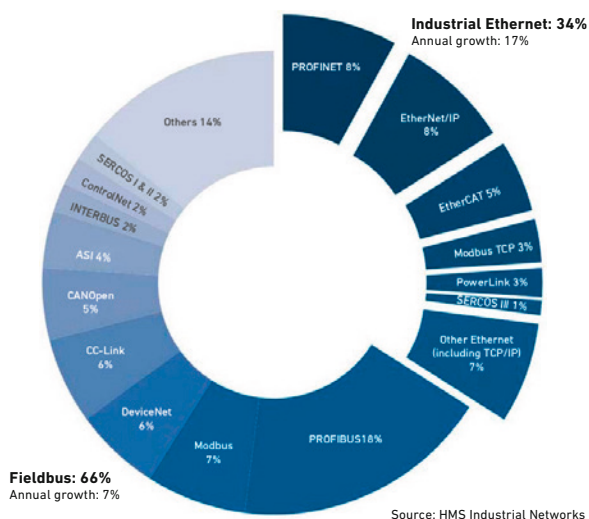
# Communication Products

Our automation loop can be managed with various communication technologies and can therefore be seamlessly integrated into existing plant management systems. We offer analogue and digital communication technologies which support on/off or continuous control loops. Benefits are less wiring, faster installations and more efficient diagnostic and parameterization capabilities.

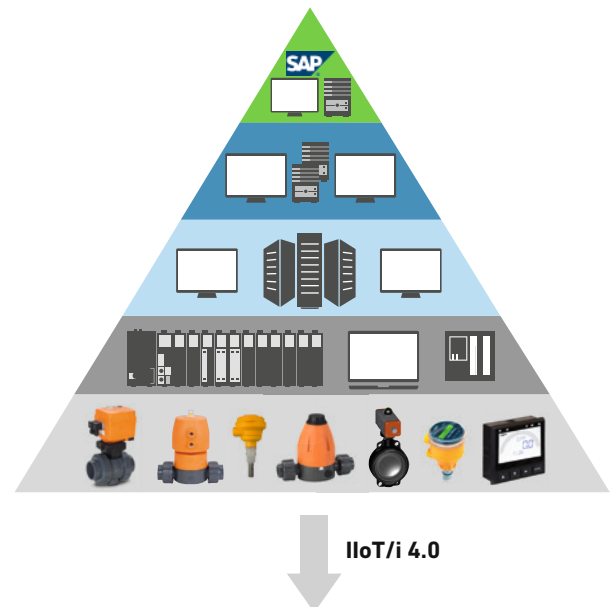
The ability to digitally control and gather information from remote devices offers increased flexibility. Internet of Things (IoT), Industrial Internet of Things (IIoT), and Industry 4.0 (i 4.0) are movements in technology that connect individual sensors and actuators to information networks allowing automation and enterprise systems unparalleled access to real time data and information. GF is providing options for Profibus, HART and AS-Interface. For the bus communication split please refer to the chart. The ability to digitally control

and gather information from remote devices offers increased flexibility. Internet of Things (IoT), Industrial Internet of Things (IIoT), and Industry 4.0 (i 4.0) are movements in technology that connect individual sensors and actuators to information networks allowing automation and enterprise systems unparalleled access to real time data and information. GF is providing options for Profibus, HART and AS-Interface. For the bus communication split please refer to the chart.

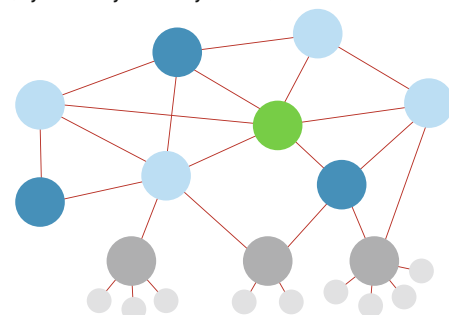
## Fieldbus vs. industrial ethernet



## Today (Automation pyramid/hierarchic)



## Future (Cyber-Physical-Systems)





#### Profibus concentrator type 3 - 0486



- Connect GF actuated valves and sensors to profibus automation networks
- Supports six S<sup>3</sup>L sensors or relay modules plus a proportional controlled actuated valve
- Four of the (S<sup>3</sup>L) inputs support flow frequency devices for cost effective flow monitoring
- Two of the (S<sup>3</sup>L) inputs support 4 to 20 mA current loop inputs for connections to third party sensors

#### Profibus (EA25 – 250)



- Connectable to Profibus DPVO networks
- Using all the advantages of the standard full plastic GF electric actuator

## Modbus



#### Modbus (EA25 – 250)

- Modbus interface network upgrade for EA25-250 electric actuators
- Using all the advantages of the standard full plastic GF electric actuator
- For 24 VAC/DC as well as for 100-230 VAC actuator versions
- Serial Modbus via RS485
- Bidirectional Modbus enabling control & live diagnostics

#### Profibus for valve cluster



- Modular version for 3/2-way and 5/2-way valves
- Connection module profibus interface
- 24 V DC
- Optional available module AS-Interface



#### Transmitter type 9900



- Optional module available

#### Ultrasonic level sensor type 2260/ ultrasonic level transmitter type 2270



- Non-contact principle
- Robust against most interfering factors such as fumes, light foaming or fluctuations of pressure or temperature
- Display and comprehensive configuration menu
- PP, PTFE or steel antenna enclosures

#### Non-contact principle radar level transmitter type 2290



- Non-contact principle
- Robust against most interfering factors such as fumes, light foaming or fluctuations of pressure or temperature
- Display and comprehensive configuration menu
- PP, PTFE or steel antenna enclosures



#### AS-Interface for pneumatic rotary actuators



- Pilot valve 5/2-ways
- Electric feedback integrated
- Full plastic housing
- Optical status indicator
- AS interface version 3.0

#### AS-Interface for manual valves with feedback



- With integrated feedback
- Ideal for ball valves
- Ideal for butterfly valves
- Ideal for diaphragm valves

#### AS-Interface for pneumatic stroke actuators



- Pilot valve 3/2-ways
- Compact design
- Full plastic housing
- Optical status indicator
- AS Interface Version 3.0

#### AS-Interface for sensor with switch output



- With switching output
- For level switch
- For flow switch
- For pressure switch
- For temperature switch

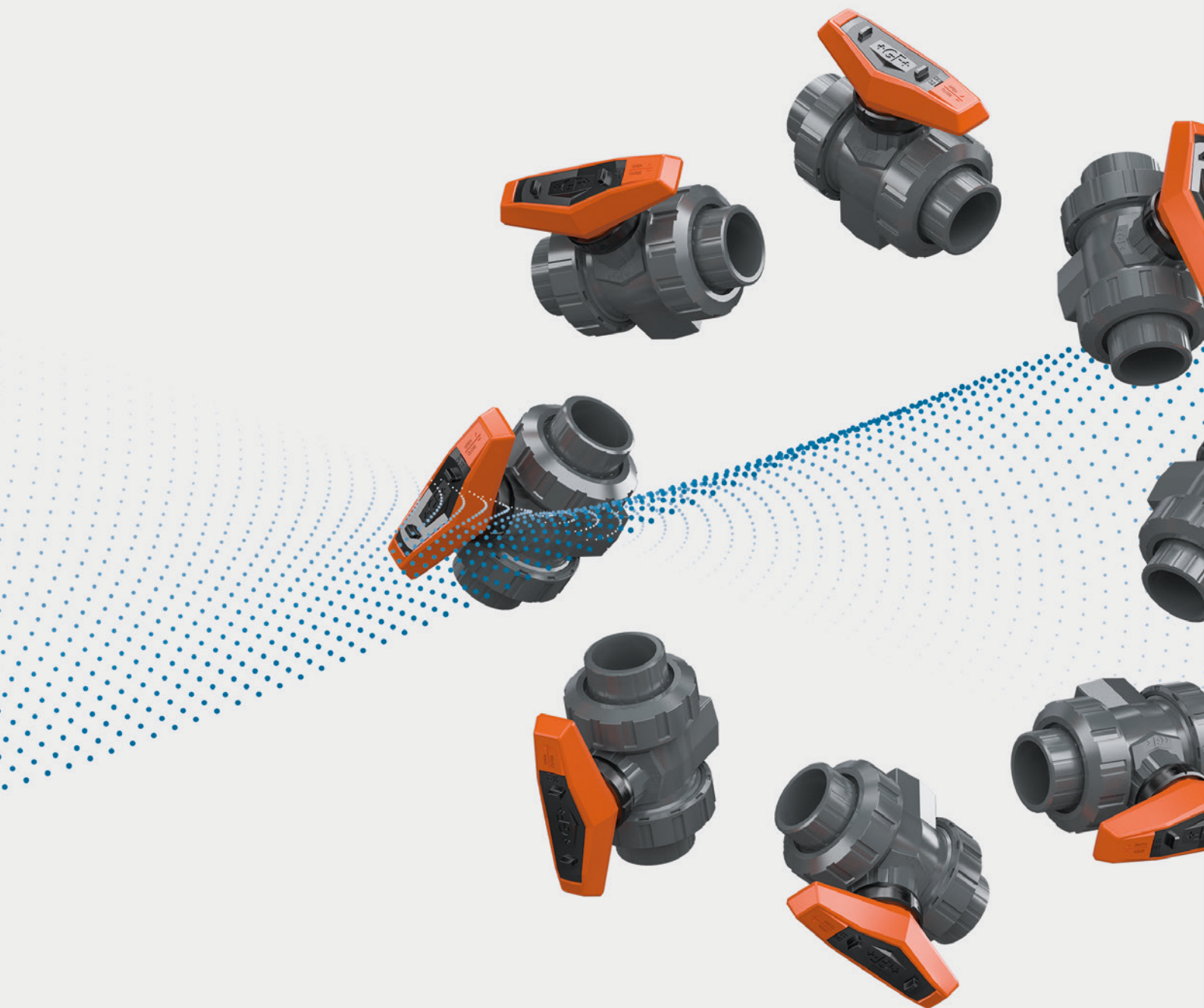
#### AS-Interface for electric actuators



- Integrated control and electric feedback
- For 24 V DC actuators
- For EA11 - EA42
- Manual override standard

# One provider

The right valve for your application







# Valves

We offer one of the most comprehensive valve product ranges, which enables you to find the right match for your application. Our valves are available in a wide selection of dimensions, materials, chemical resistances, standards, actuation, operation principles and pipe connections and are designed for long service life. The combination of the right valve selection and our high product quality leads to a favorable total cost of ownership.

## Main applications

- Flexible and versatile
- Simple operation
- User-friendly
- Excellent corrosion resistance

## Product overview

- Ball Valves
- Diaphragm Valves
- Butterfly Valves
- Process control valves
- Accessories

# Valves

## Ball Valves

High-quality components are essential for the reliable and efficient operation of piping systems. That is why ball valves from GF Piping Systems are always the ideal solution. Whether in the chemical process industry, microelectronics or water treatment: GF Piping Systems reliably covers a variety of applications with its broad product range. From a simple, manually operated shut-off valve to a fully automated ball valve.

## Main applications

- Chemical process industry
- Life science industry
- Microelectronics
- Measurement and control technology
- Water treatment
- Food and beverage industry
- Shipbuilding



**Ball valve  
type 546 Pro**

- ABS, PVC-C, PVC-U, PP-H, PVDF
- EPDM, FKM, ball seat: PTFE, PVDF
- DN10 - DN100
- Up to PN16 = PVC-U, PVC-C, PVDF;  
up to PN10 = PP-H, ABS
- Lockable lever, multifunctional module
- Linear version



**Ball valve  
type 542**

- PVC-U / PVC-C PP-H  
PE (blue lever)  
PTFE (red lever)
- EPDM, FKM, ball seat: PTFE, PVDF
- DN 10 - 50 (3/8"-2")
- PN 10 for PP-H  
PN 16 for PVC-U and PVC-C



**Metering ball valve  
type 523**

- PVC-U, PP-H, PVDF
- EPDM, FKM, Ball Seat: PTFE
- DN10 - DN15
- Up to PN16



**Linear ball valve  
type 546**

- PVC-U, PVC-C, ABS, PP-H, PVDF
- DN15 - DN50
- Lockable lever
- Multifunctional module



**3-Way ball valve  
type 543 Pro**

- ABS, PVC-C, PVC-U, PP-H, PVDF
- EPDM, FKM, ball seat: PTFE, PVDF
- DN10 - DN50
- Up to PN10
- Lockable Lever, multifunctional module



**Ball valve  
type 375**

- PVC-U, PVC-C
- EPDM, FKM, ball seat: PTFE
- DN10-DN100
- PN16
- Not actuated

## Diaphragm Valves

The GF Piping Systems range of plastic diaphragm valves includes manual, pneumatic and electric units in various sizes and for different pressure ranges, guaranteeing the right valve for any piping system. Designed to optimize the flow profile of the liquid inside the pipe, these valves are made entirely of plastic for excellent durability and reliability. The modular design allows them to be easily adapted to process conditions.

## Main applications

- Chemical process industry
- Microelectronics
- Water treatment
- Cooling
- Control applications



**Diaphragm valve  
type 514**

- PVC-U, PVC-C, ABS, PP-H, PVDF, PVDF-HP
- EPDM, PTFE/EPDM, FKM, PTFE/FKM
- DN15 - DN50
- Up to PN16
- Lockable handwheel
- Electrical feedback module



**Diaphragm valve  
type 517 (317)**

- PVC-U, PVC-C, PP-H, PVDF, PVDF-HP
- EPDM, PTFE/EPDM, FKM, PTFE/FKM
- DN15 - DN50 (type 317: DN65 - DN150)
- Up to PN16
- Lockable handwheel
- Electrical feedback module



**Diaphragm valve  
type 515**

- PVC-U, PVC-C, ABS, PP-H, PP-N, PVDF, PVDF-HP
- EPDM, PTFE/EPDM, FKM, PTFE/FKM
- DN15 - DN50
- Up to PN16
- Lockable handwheel
- Electrical feedback module



**Diaphragm valve  
type 519**

- PP-H, PP-N, PVDF-HP
- EPDM, PTFE/EPDM, PTFE/FKM
- DN20 - DN20 : d160 - d63
- Up to PN16
- Lockable handwheel
- Electrical feedback module





# Valves

## Butterfly Valves

As well as being easy to open and close, butterfly valves have to be versatile enough to be combined with a huge range of system components. All GF Piping Systems butterfly valves are modular, enabling them to be integrated into any gas or liquid piping system with ease. Their innovative operating principle protects the valve seal and extends the system's overall service life, while the high-performance plastic withstands corrosion.

## Main applications

- Water Treatment
- Chemical Process Industry
- Microelectronics
- Marine



**Butterfly valve manual type 565**

- ABS, PVC-C, PVC-U, PP-H, PVDF
- Sealings: EPDM, FKM
- DN50-DN300
- DN50-150: PN16 / DN200-250: PN10 / DN300: PN6
- Lever, Gear, 230 V o. 24 V, FC /FO/DA
- Optional: Integrated position indicator in valve body



**Butterfly valve manual type 567**

- ABS, PVC-C, PVC-U, PP-H, PVDF
- Sealings: EPDM, FKM, PTFE/FKM
- DN50 - DN600
- PN10
- Lever, Gear, 230 V o. 24 V, FC /FO/DA
- Optional: Integrated position indicator in valve body



**Butterfly valve manual type 578**

- ABS, PVC-C, PVC-U, PP-H, PVDF
- Sealings: EPDM, FKM, PTFE/FKM
- DN50 - DN300
- PN10
- Lever, gear, 230 V o. 24 V, FC/FO/DA
- Optional: Integrated position indicator in valve body



**Metal butterfly valve type 038/039**

- 038: GGG, LUG; 039: GGG Wafer
- Sealings: EPDM, FKM
- 038: DN50 - DN300;
- 039: DN50 - DN1200
- PN10/PN16
- Lever, gear, 230 V o. 24 V, FC/FO/DA

## Accessories



**Manual interface module**

- Accessory for manual ball valve type 546 Pro and 543 Pro
- Possibility of electrical feedback, incl. LED in combination with double sensor (accessory)
- Inclusive labelling clip



**Manual spring return unit Retrofit kit**

- Manual spring return unit („Dead-man lever“) ensures that the valve closes after operation
- For safe sampling, dosing, cleaning or draining - Retrofit possible with ball valve 546 Pro and 543 Pro
- Includes transparent clip for valve labelling
- Option: double sensor for position feedback



**Interface module for GF actuators**

- Accessory for ball valve type 546 Pro and 543 Pro
- Interface module acts as interface for GF actuators
- Possibility of electrical feedback, incl. LED in combination with double sensor (accessory)
- Inclusive labelling clip



**Electrical feedback module**

- Electrical feedback module
- Accessory for (manual) diaphragm valves 514 - 519
- Limit switch AgNi or Au
- Self adjusting mechanism



#### Interface module for norm actuators

- Accessory for ball valve type 546 Pro and 543 Pro
- For ball valve norm interfaces according to EN ISO 5211
- Inclusive labelling clip



#### Ball valve labeling

- Labelling system for ball valve 546 Pro/543 Pro/523/547



#### Double sensor for electrical position feedback

- Accessory for ball valve type 546 Pro and 543 Pro
- Enables electrical position feedback, incl. LED, in combination with GF interface module
- IP67 rating
- Accessory for butterfly valve 565



#### Integrated position indicator

- Integrated position indicator
- Accessory for butterfly valves 567/578
- Limit switch AgNi, AU, Namur, NPN, PNP

## Process Control Valves



#### Check valve type 561/562

- ABS, PVC-C, PVC-U, PP-H, PVDF
- EPDM, FKM
- DN10 - DN100
- Up to PN16
- Type 562 with spring



#### Ventilating valve type 595 / Ventilating and bleed valve type 591

- ABS, PVC-C, PVC-U, PP-H, PVDF
- EPDM, FKM
- DN10 - DN100
- Up to PN16
- Type 595 with spring
- Float PP-H / PVDF



#### Angle seat check valve type 303/304

- PVC-U, ABS
- EPDM, FKM
- DN10 - DN80
- PN10



#### Wafer check valve type 369

- PVC-U, PP-H, PVDF
- EPDM, FKM
- DN32 - DN300, 1 1/4" - 12"
- PN10



#### Line strainer type 305/306

- PVC-U, PVC-C, ABS, PP-H, PVC-U transparent
- EPDM, FKM
- DN15 - DN50, PVC-U up to DN80
- PN10
- Screen: stainless-steel and PVC-U



#### Throttle valve type V251

- PVC-U, PP-H, PVDF
- EPDM, FKM
- DN10 - DN50
- PN10



#### Water jet suction pump (eductor) type P20

- PVC-U, PP-H, PVDF
- EPDM, FKM
- DN10 - DN80
- PN10



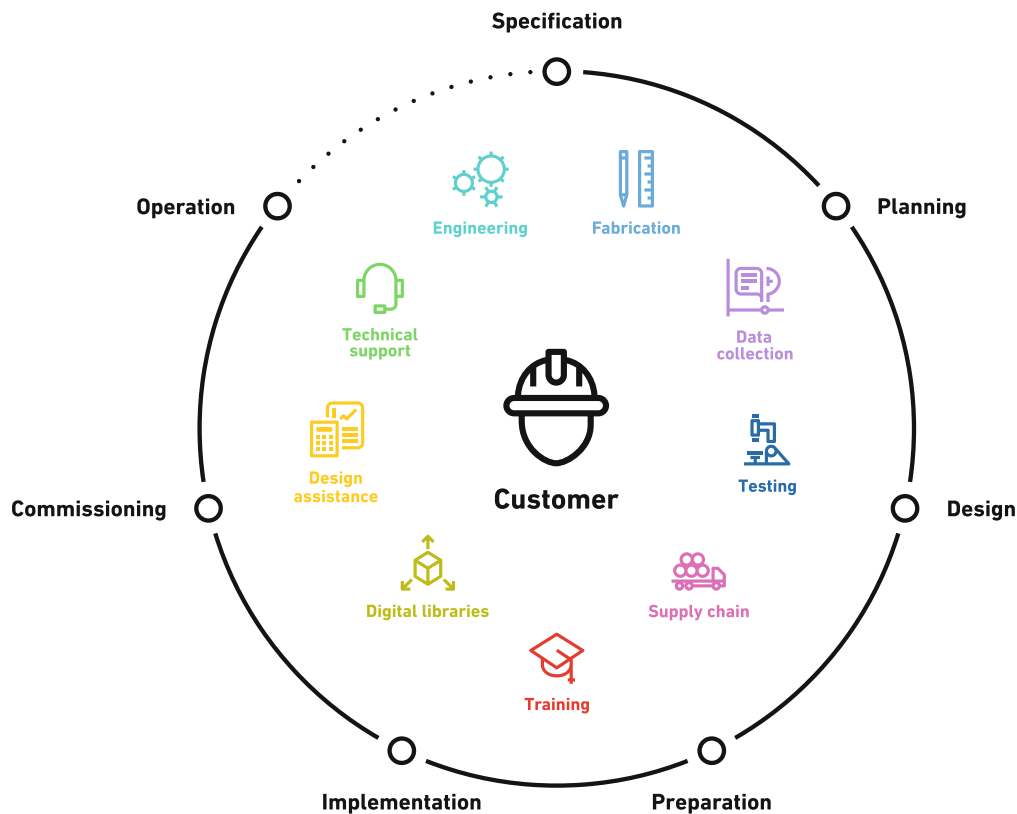
#### Gauge guard type Z500/501

- True plastic design (no metal screws!)
- PVC-U, PP-H, PVDF
- EPDM, EPDM-PTFE-coated
- DN20 or DN 25
- PN10
- With or without pressure gauge

## Specialized Solutions

# Ready when you are

With Specialized Solutions, the global leader GF Piping Systems provides project support every step of the way to achieve construction excellence. Allowing owners and planners to concentrate on their daily business without interruption.



## Taking care of your needs

GF Piping Systems supports the conception and design process of a project from the outset to ensure that a sustainable and efficient solution is achieved. Whether in the selection of the right plastic solution from our extensive portfolio, the management of complex sub-projects, or quality control based on recognized international standards

- you can benefit from Specialized Solutions for all application areas and references from a wide range of industries across the entire product range.

**More information at**  
[www.gfps.com/specialized-solutions](http://www.gfps.com/specialized-solutions)

Help around the world

# Making our global footprint sustainable

GF Piping Systems is making flow sustainable: Environmental regulations, water scarcity and an increasing demand of consumers and society for greener and more sustainable solutions is an important set of trends shaping customer behavior. Saving energy in high-consumption areas such as the cooling of data centers or food storage, reducing the carbon footprint of cruise ships or decreasing the levels of chemicals in industrial wastewater treatment are examples of some of the areas where GF Piping Systems can provide attractive solutions.

## Next steps

In this brochure, you have received the most important information and technical details. But nothing replaces a personal conversation with an expert from GF Piping Systems. It is all about your needs and how we can support you in your daily business challenges. If you have not already done so, make an appointment today.

On the GF Piping Systems website, you will find specialized contact persons in your area. There you will also find further information on the product, including technical data sheets and operating instructions as well as relevant certificates and approvals.

- Appointment with an expert from GF Piping Systems
- Advice on the benefits of the solution for you
- Information on reference applications
- Help with selection and calculations
- Support in all project phases

**More information at**  
[www.gfps.com](http://www.gfps.com)

## Local support around the world

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