

Comprehensive equipment from a single source **OnControl.FieldInstruments**



OnControl.FieldInstruments

Content

Integrated concept for plant instrumentation	4	5. Valve accessories	18
1. OnC BallValve	6	5.1 Pneumatic actuator type A	19
1.1 Ball valve three-part thread or welding ends	7	5.2 Pneumatic actuator AD / AS	19
1.2 Ball valve flanged	7	5.3 Electrical actuator	19
1.3 Ball valve two-part for PN100 high pressure	7	5.4 Valve positioner	20
1.4 Ball valve three-part thread or welding ends	8	5.5 OnC ValvePos VP450	20
1.5 Ball valve flanged	8	5.6 Valve switch	20
1.6 Ball valve two-part for PN100 high pressure	8	5.7 Distributor box	21
1.7 Ball valve with limit switch box	9	6. OnC AirValve	22
1.8 Ceramic slide valve	9	6.1 Solenoid Valve Cabinet 8 stations	23
1.9 Ceramic ball valve	9	6.2 OnC AirValve 500 single solenoid 5/2-way	23
2. OnC SegmentValve	10	6.3 OnC AirValve 500 double solenoid 5/2-way	23
2.1 Ball segment valve wafer	11	6.4 OnC AirValve 500 Namur 3/2-way	24
2.2 Ball segment valve flanged	11	6.5 OnC AirValve 500 Namur 5/2-way	24
2.3 Ball segment valve with V-groove	11	6.6 OnC AirValve 500 pneumatically actuated 5/2-way spool valve	24
2.4 Ball segment valve low noise	12	6.7 OnC AirValve 500 lever actuated 5/2-way spool valve	25
3. OnC DiscValve	13	6.8 OnC AirTube 500	25
3.1 High-performance butterfly valve metal seated	14	6.9 Fittings and function fittings	26
3.2 High-performance butterfly valve metal seated low noise	14	6.10 OnC WaterSupply 500	26
3.3 Butterfly valve lugs	14	7. Compressed air preparation	27
3.4 Butterfly valve flanged	15	7.1 OnC AirDistributor Cabinet	28
3.5 Soft seated butterfly valve	15	7.2 OnC AirFilter 500 / 520	28
3.6 Soft seated butterfly valve, manually operated	15	7.3 OnC AirRegulator 500 / 520	28
4. OnC Knife Gate Valves	16	7.4 OnC AirRegulator 500	29
4.1 OnC Knife Gate Valve uni-directional design	17	7.5 OnC AirOiler 500	29
4.2 OnC Knife Gate Valve bi-directional design	17	7.6 OnC AirDistributor 512	29
		8. OnC FlowSens	30
		8.1 OnC FlowSens 601	31
		8.2 OnC FlowSens 602	31
		8.3 OnC FlowSens 604	31
		8.4 OnC FlowSens 605 ceramic liner	32
		8.5 Signal converter for FS601 / 602 / 604 / 605	32
		8.6 Signal converter for FS601 / 602 / 604 / 605	33
		8.7 OnC FlowSens 610 Vortex	35

9. OnC PressSens	36	13. OnC ConSens	52
9.1 OnC PressSens 110	37	13.1 OnC ConSens 720	
9.2 OnC PressSens 114 / 117	37	Optical total consistency sensor	53
9.3 OnC PressSens 181	37	13.2 Multi channel signal converter for	
9.4 OnC PressSens 182	38	OnC ConSens 720	53
9.5 OnC PressSens 183	39	13.3 Installation and mounting set for	
9.6 OnC PressSens 185	39	OnC ConSens 720	54
		13.4 Microwave consistency sensor	
10. OnC LevelSens	40	OnC ConSens 800	54
10.1 OnC LevelSens 186	41	13.5 Signal converter for microwave	
10.2 OnC LevelSens 252	41	consistency sensor OnC UniCom 800	55
10.3 OnC LevelSens 260	41		
10.4 OnC LevelSens 261	42	14. OnC TempSens	56
10.5 OnC LevelSens 262	42	14.1 OnC TempSens 400 Temperature sensors	57
10.6 OnC LevelSens 263	42	14.2 OnC TempTrans 422	
10.7 OnC LevelSens 266	43	Two-wire temperature transmitter	57
10.8 OnC LevelSens 267	43	14.3 OnC TempTrans 453	
10.9 OnC LevelSens 268	43	Two-wire temperature transmitter	57
10.10 OnC LevelSens Flex81	44		
10.11 OnC LevelSens 362	44	15. OnC UniCom	58
10.12 OnC LevelSens 363	45	15.1 Display and control module	59
10.13 OnC LevelSens 463	45	15.2 External display and control module	59
10.14 OnC LevelSens 464	45	15.3 Signal conditioning instrument UC991	60
10.15 OnC LevelSens 466	46	15.4 Signal conditioning instrument UC981	60
10.16 OnC LevelSens 561 and 563		15.5 Local Indicator for analog signals	60
with extended shaft	46		
10.17 OnC LevelSens 564 and 566		16. Sensor accessories	61
with extended shaft	46	16.1 Manifold valve blocks milled	62
		16.2 Manifold valve blocks forged	62
11. OnC PosSens	48	16.3 Gauge valves and accessories	62
11.1 OnC PosSens 400	49	16.4 Welding sockets and flanges for PT / LT	63
		16.5 Mounting sets for valve blocks and transmitters	63
12. BTG	50	16.6 OnC TransValve 310 transmitter service valve	63
		16.7 OnC SampleValve 500	65



Integrated concept for plant instrumentation

Voith offers an integrated solutions package for your plant instrumentation. Customers therefore benefit from simplified order processing, leaving the entire instrumentation handling to Voith. This ensures flexible on-time delivery, adapted to the customer's actual needs.

All field instruments in one package

Field instruments are an essential part of any plant and have a crucial impact on proper functioning. However, newly designed facilities are often equipped with field instruments from various suppliers, requiring a substantial coordination effort from the customer: Quotations have to be obtained and compared, orders have to be tracked and deliveries checked. This demands a lot of resources from the customer and creates an exceeding number of interfaces.

One partner for all your requirements

Voith offers a large variety of valves and sensors. The customer thus saves resources and benefits from the knowledge of Voith experts as well as partnerships with leading technology companies. Thanks to the different variants produced exclusively for Voith, the best possible solution can be selected for each process segment.

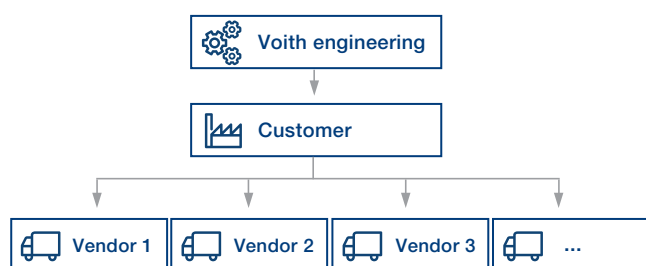
Voith's extensive process and application know-how ensures an optimal equipment selection according to the customer's needs. After compiling a portfolio of field instruments, all subsequent steps up to commissioning of the products can be handled by Voith. In addition, delivery times and consistently high product quality are guaranteed.



2

- 1 Voith offers all kinds of field instruments for diverse industries.
- 2 Whatever your concern, Voith engineers will take care of it.

Procuring field instruments from several vendors within a project uses up time and resources



Smooth process guaranteed

Standardized instrumentation from one supplier eases the integration of devices into the control system and enables uniform documentation. Another advantage is efficient maintenance and spare parts inventory. Consequently, customers benefit from a reliable supplier with guaranteed delivery times and a consistently high quality of field instruments, who assists in a smooth start up of the entire system right on schedule.

Voith is dedicated to offer this level of service and comfort throughout the entire process and to continue being a reliable partner even after commissioning. Together with highly qualified partners, Voith offers a fast and efficient supply of spare parts all over the world.

Shut off and control valves

Voith's portfolio includes shut off and control valves. The first ones are available as ball valves as well as metal seated and soft seated butterfly valves, the latter are offered as butterfly valves and segment ball valves.

The metal seated butterfly valves can be used for stock, water and reject applications, and offer good control performance: Stock consistencies of up to 18 % are reliably controlled. In addition, the metal seated butterfly valves and segment ball valves can be used to control the flow of steam. Both types are available for use at high differential pressures and as low noise versions.

Level and pressure transmitters

Voith offers a wide range of level and pressure transmitters applicable in all industry sectors using water, steam, paper suspensions, coating colors or chemical additives. Due to the robust materials used for the measuring cell, such as special ceramic material or stainless steel, the pressure transmitters can also be used at high temperatures or with corrosive materials, such as sodium hydroxide solution.

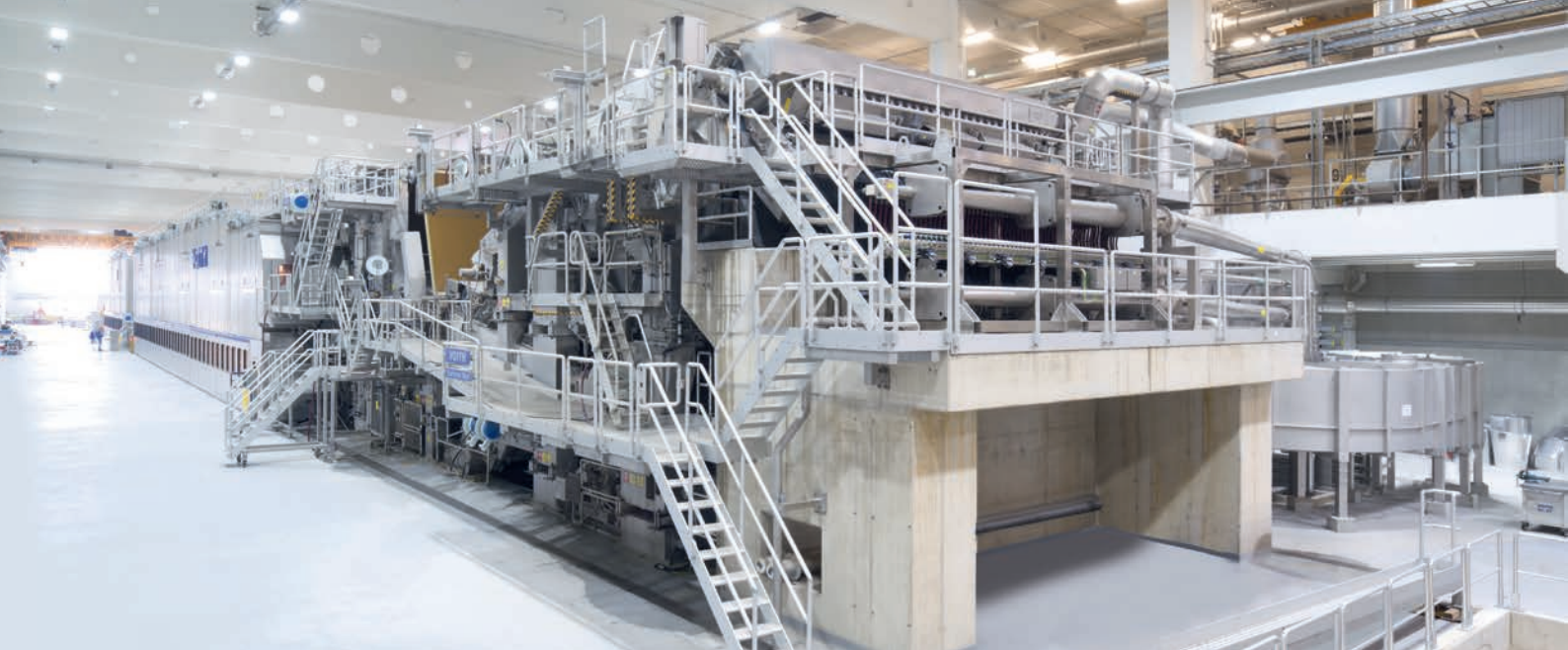
In addition, the special ceramic material in particular features high abrasion resistance, making the transmitters ideal for use in a recovered paper stock preparation unit, from pulping all the way to the headbox. Due to the wide range of level and pressure transmitters differentiated according to measuring methods and materials, a suitable product is available for every application.

Flow and temperature

The product portfolio also includes sensors for flow and temperature measurement, allowing them to be used along the entire production line. Two measuring methods, magnetic-inductive and vortex, are available. This ensures that a suitable device is supplied to any operating location.

Partnership based on innovation

Voith works closely with its partner companies in research and development. This allows customer requirements for new products or product modifications to be implemented more efficiently and precisely.



1. OnC BallValve

Compact, sturdy shut off valve

OnC BallValves from Voith are perfect for many industrial applications. They are extremely durable and work to achieve perfect shut off over a very long time.

Application

The OnC BallValve 500 range is suitable for stopping the flow of water, liquids, fiber or stock suspensions and chemicals. Modular designs with a hand lever, pneumatic actuator and limit monitoring are available.

The ball valves are shut off valves with a full bore, no-maintenance spindle seal and a simple, direct assembly for pneumatic actuators. The compact device is available in sizes DN15 to DN100 with pneumatic or manual actuation via hand lever.

Both versions can be ordered with a pre-assembled limit switch box, which is also used for the OnC DiscValve butterfly valves.

Product benefits

- + Modular design
 - + Compact dimensions
 - + Easy maintenance
 - + Additional O-ring seal in spindle, making it also suitable for vacuum applications
 - + Highest quality materials
 - + Cutting edge production methods
 - + Excellent price-performance ratio
-



1.1 Ball valve three-part thread or welding ends

BV500.PKI-I/.PKI-A

For on-off function. Three-part ball valve with floating precision ball of high flow capacity.

- DIN ISO 5211 mounting pad for direct actuator mounting
- Maintenance-free stem seal
- Actuator, switchbox and solenoid valve for direct mounting onto valve
- Operation with pneumatic actuator, double- or single-acting, open or closed with spring force
- DN15 – 50; PN63 / DN65 – 80; PN40
- Female thread connection Rp1/2" – Rp3" (ISO 7/1)
- Optional welding ends type BV500.PKI-A

1.2 Ball valve flanged

BV500.PKW

For on-off function. Flanged ball valve with floating precision ball of high flow capacity.

- DIN ISO 5211 mounting pad for direct actuator mounting
- Compact space saving design
- Maintenance-free stem seal
- Actuator, switchbox and solenoid valve for direct mounting onto valve
- Operation with pneumatic actuator, double- or single-acting, open or closed with spring force
- DN15 – 50, DN80; PN40 DN65 – 100; PN16
- Flange connection according to DIN EN

1.3 Ball valve two-part for PN100 high pressure

BV500.PKN

For on-off function. Two-part ball valve with floating precision ball of high flow capacity.

- Maintenance-free stem seal
- Actuator, switchbox and solenoid valve for direct mounting onto valve
- Operation with pneumatic actuator, double- or single-acting, open or closed with spring force
- Female thread connection Rp1/2" to Rp2" (ISO 7/1)
- Pressure rating PN100

OnC BallValve 500 PKI



OnC BallValve 500 PKW



OnC BallValve 500 PKN





1.4 Ball valve three-part thread or welding ends

BV500.HKI-I / .HKI-A

For manual on-off function. Three-part ball valve with floating precision ball of high flow capacity including hand lever.

- DN15 – 50; PN63 / DN65 – 80; PN40
- Female thread connection Rp1/2" – Rp3" (ISO 7/1)
- Optional welding ends type BV500.HKI-A

1.5 Ball valve flanged

BV500.HKW

For manual on-off function. Flanged ball valve with floating precision ball of high flow capacity including hand lever.

- DN15 – 50, DN80; PN40
- DN65 – 100; PN16
- Flange connection according to DIN EN

1.6 Ball valve two-part for PN100 high pressure

BV500.HKN

For manual on-off function. Two-part ball valve with floating precision ball of high flow capacity including hand lever.

- Female thread connection Rp1/2" to Rp2" (ISO 7/1)
- Pressure rating PN100

OnC BallValve 500 HKI



OnC BallValve 500 HKW



OnC BallValve 500 HKN





1.7 Ball valve with limit switch box

BV500.HKI/.HKW/.HKN

For manual ball valves a VS500 limit switch box including proximity switches can be delivered.

The same limit switch box is used for Voith automatic valves.

1.8 Ceramic slide valve

Type SSV

Control and on-off function.

- Ceramic slide valve DN10 – 40
- Pressure rating PN10 – PN40
- High wear resistance
- PTFE packing for lowest friction to ensure highest performance in positioning
- Long lifetime, maintenance-free

Application:

Chemical dosing, filler dosing, all paper additives dosing for minimum quantities.

1.9 Ceramic ball valve

Type KSV / KAV

Control and on-off function.

- Ceramic ball valve DN15 – 200
- Full ceramic lined valve
- Pressure rating PN10 – PN40
- Body materials according to application
- High wear resistance due to full ceramic ball and lining of wetted parts
- Longer service intervals, less maintenance
- Replaceable spare and wear parts

Application:

Filler dosing, reject control, high differential pressures.

OnC BallValve 500 HKI / HKW / HKN



OnC BallValve Ceramic Type SSV



OnC BallValve Ceramic Type KSV / KAV





2. OnC SegmentValve Control valves for all applications

The OnC SegmentValve equipment range from Voith can be used to control all kinds of conditions, such as flow, pressure, temperature, and liquid level by fully or partially opening or closing.

Application

Their popularity among customers derives from the especially rugged construction and the many options available that make them suitable for a variety of process applications. Simple to use and at the same time highly configurable, they offer the best conditions for applications from stock preparation to the dryer section, as well as for any control that requires reliable operation in the long term.

These valves are available in diameters DN25 to DN700 and suitable for water, steam and stock or rejects up to medium consistency.

Product benefits

- + Suitable for high consistencies
 - + A wide range of options for every requirement
 - + Low noise version
 - + V-port version for medium consistencies
 - + Modular design
-



2.1 Ball segment valve wafer

SV500.KVT /.KVTW /.KVX /.KVXW

Control and on-off function. The valve types KVT and KVTW are a sandwich wafer design version with centrally mounted shaft, while KVX and KVXW dispose of an eccentrically mounted shaft.

- Diameter DN25 – DN250
- Low noise version for high differential pressure
- Abrasion-resistant surfacing (stellite) available
- Wafer versions according to DIN EN

Application:

Water, stock or rejects up to medium consistency (18 % as well as steam > 200 °C with eccentric shaft.

2.2 Ball segment valve flanged

SV500.KVTF /.KVXF

Control and on-off function. Type SV500.KVTF is a flanged version with a centrally mounted shaft, while KVXF is flanged with an eccentric design.

- Diameter DN25 – DN700
- Various seat rings available
- Abrasion-resistant surfacing (stellite) available
- Flange versions according to DIN EN
- Optional ANSI drillings possible

Application:

Water, stock as well as steam > 200 °C with eccentric shaft.

2.3 Ball segment valve with V-groove

SV500.KVMW

This ball segment valve is for use at high fibre concentrations of up to 15 % consistency. The V-groove design prevents dewatering at small opening angles.

Application:

Control valve after MC pump.

OnC SegmentValve
KVT / KVTW / KVX / KVXW



OnC SegmentValve KVTF / KVXF



OnC SegmentValve KVMW





2.4 Ball segment valve low noise

SV500.KVTW LN / .KVXW LN / .KVTF LN / .KVXF LN

Especially designed for control purposes at high differential pressures. The ball segment is equipped with a low noise trim to distribute the pressure drop across the valve, lessen pressure recovery and reduce noise as well as potential cavitation damage usually generated in standard models.

- Wafer design KVTW / KVXW LN
DN50 – 250; PN20 – 50
- Flanged design KVTF / KVXF LN
DN50 – 400; PN20 – 50

Application:

Gases, steam, water and thin stock.

OnC SegmentValve

Low noise version





3. OnC DiscValve

Metal and soft seated butterfly valves

OnC DiscValves are used for shut off and control functions. They stand out due to the cost efficient design and wide range of application areas.

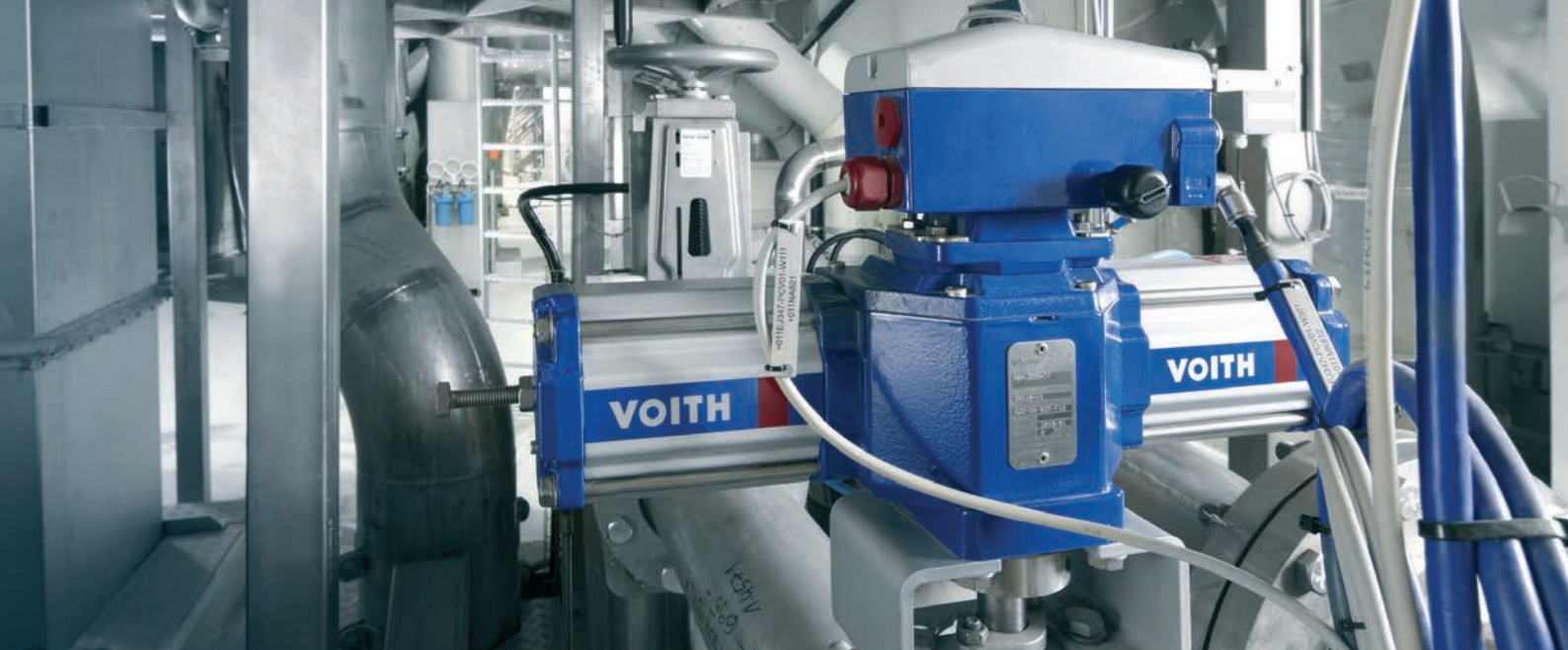
Application

OnC DiscValve 500 series butterfly valves comprise a stainless steel housing and metal or PTFE seats. The valves are suitable for shut off and control functions of all kinds of liquids, steam, and gases in a wide temperature range of up to 550 °C. Thanks to the special shape of the disc, the triple eccentric design allows the use of a strong stainless steel valve seat. The seat is resistant to high flow velocities and guarantees a good seal even under tough operating conditions. It is replaceable and available in various materials. The valves are supplied tested and ready to operate and can be equipped with manual or pneumatic actuators and positioners or limit switch boxes. The low noise version control valve is equipped with an additional noise reducer. Evaporation and cavitation problems can thus be prevented and a lower noise level achieved.

OnC DiscValve 550 soft seated butterfly valves have a cast iron or alternatively stainless steel housing and are fitted with EPDM, NBR, FKM or PTFE liners. They are suitable for shut off applications of water, white water, waste water, air, vacuum and coating colors. The valves can be fitted with manual or pneumatic actuators and positioners or limit switch boxes.

Product benefits

- + **Triple eccentric specially fabricated seat for low wear and high sealing capacity (DV500)**
 - + **Parts easy to replace**
 - + **Modular structure and reduced inventory**
 - + **Low noise version**
 - + **Disc and shaft made of stainless steel**
 - + **Self-lubricating bearings**
-



3.1 High-performance butterfly valve metal seated

DV500.MTV / .VSS

Control and on-off functions.

- Diameter DN80 – DN1200
- Low noise for high differential pressures
- With solid metal seat ring, alternative PTFE seating ring with carbon reinforcement for e. g. vacuum application
- Wafer, lugs and flange versions according to DIN EN

Application:

Stock, water, steam and vacuum.

3.2 High-performance butterfly valve metal seated low noise

DV500.VSS LN

Especially designed for control at high differential pressures. The valve is designed to handle a wide range of liquids, gases and steam at temperatures of up to 550 °C or 1,022 °F. With the low noise trim, flushing and cavitation problems can be eliminated and a lower noise level is achieved.

- Diameter DN80 – DN600
- PN10 – 25
- For high differential pressures
- Wafer and lugs versions according to DIN EN

Application:

Gases, steam and water.

3.3 Butterfly valve lugs

DV500.MTV / .VSS

All butterfly valves can also be supplied with lugs for mounting between flanges according to DIN EN standards.

ANSI drillings are available.

OnC DiscValve MTV / VSS



OnC DiscValve VSS

For low noise



OnC DiscValve MTV / VSS

With lugs





3.4 Butterfly valve flanged

DV500.MTVF

Alternatively, the butterfly valves can be equipped with flanges according to DIN EN.

Optional ANSI drillings are available.

3.5 Soft seated butterfly valve

DV550.PZD

One-piece, blow-out-proof, streamlined designed, absolutely tight sealing and central mounted soft seated butterfly valve. The automatic butterfly valve can be actuated double or single acting.

- Diameter DN25 – DN600
- PN6 / 10 / 16 / 25 / 40, ASME / ANSI 125 / 150
- Seat EPDM, FKM, NBR, PTFE
- Valve body cast iron or stainless steel

Application:

Water distribution and supply, water treatment, most fluids of general services.

3.6 Soft seated butterfly valve, manually operated

DV550.HZD

The soft seated butterfly valve OnC DiscValve 550 can be provided with either manual hand lever or gear box.

- Manual hand lever for sizes DN25 – DN300
- Manual gear box for sizes DN25 – DN1000

OnC DiscValve MTVF



OnC DiscValve PZD



OnC DiscValve HZD





4. OnC KnifeGateValves

Shut-off valves for various media

Shut-off valves in the design as knife gate valves are used for reliable on/off and throttling function of various media. They are designed for a wide range of applications in some of the most corrosive, erosive and abrasive industrial environments.

Application

OnC KnifeGateValves 500 series are wafer style valves casted as monoblock with raised face and ribs in larger diameters for extra body strength. The slide plate has a cutting edge to cut through blockages caused by media with a high solid content such as cellulose, sludge, pulp, biomass, water, ash, granulate and various types of impurities.

The valve design is modular and allows selection of different materials and actuation types, as well as the associated automation accessories for adaptations to the process requirements. The OnC KnifeGateValves also have a short overall length compared to a conventional gate valve, which is much larger in size. As a result, a knife gate valve is much lighter and requires less installation space.

Product benefits

- + Various material compositions (stainless steel, cast iron, nitrile, Viton®, PTFE, etc.)
 - + PN10 pressure rating for all diameters
 - + Low pressure loss, full opening
 - + Variable diameters (DN50 – DN600)
 - + Manual and automatic actuation
 - + Silicone-free
 - + Leakage rate class VI
-

4.1 OnC KnifeGateValve uni-directional design

KV500.NG (Normal Gate)

The OnC KnifeGateValve KV500.NG is a uni-directional valve designed for isolation application where solid-liquid mixes, corrosive, abrasive, viscous liquid, abrasive slurries, pulp stock and dry materials are involved. The design of the body and seat ensures non-clogging shut off. The body is made of single casting, and it has cast jaws without welding on pressure-containing parts to make it even more rugged. The design incorporates a rigid fabricated yoke that will accommodate hand wheel or pneumatic actuators. Internal cast wedges and gate guides allow for tight shut off.

- Diameter DN50 – DN600
- PN10 (on request PN16, ANSI CL150 & ANSI CL300)
- Seat: Resilient or metal to metal

Application:

Pulp stock, sludge, slurry, biomass.

4.2 OnC KnifeGateValve bi-directional design

KV500.TG (Throughgoing Gate)

The OnC KnifeGateValve KV500.TG is a bi-directional valve specially designed for media with high consistency, to handle high-density paper stock, wood chips, plastic pellets, etc., which makes the valve suitable for a wide range of demanding applications in industries like pulp and paper, power, chemical, waste and water treatment, etc. The double seat design in the OnC KnifeGateValve KV500.TG model assures a non-clogging shut off on either normal or reverse flow. The body is made of full lug-style, split cast body with reinforced ribs for additional strength. The port design allows greater flow capacity and lower pressure drop. The gate design eliminates unbalanced forces on the valve plate and allows trouble-free opening and closing of the valve.

- Diameter DN50 – DN400
- DN50 - DN150: PN10
- DN200 - DN250: 8 Bar (manufacturer standard)
- DN300 - DN350: 6 Bar (manufacturer standard)
- DN400: 4 Bar (manufacturer standard) (on request PN16, ANSI CL150 & ANSI CL300)
- Seat: Resilient or metal to metal

Application:

Stock at high consistency's, rejects. This gate is particularly adapted in paper mills for secondary fiber applications with high contaminants (e.g. staples).

OnC KV500.NG



OnC KV500.TG





5. Valve accessories

Perfect-fit accessoires for Voith valves

Voith offers a broad range of valves for all kinds of application. Along with this large portfolio comes a selection of various actuators, positioners and a limit switch box suitable for several valve types.

Application

The OnC SegmentValve, OnC DiscValve and OnC BallValve series are supplied completely assembled and tested. The modular system allows the same components to be used for different valve types.

Limit monitoring is solved via inductive limit switches that are installed preassembled in the limit switch box VS500. The same VS500 equipment is used for all valve types.

Similarly, an identical positioner VP500 can be ordered as an option for all valves to allow the respective valve to be used for control applications. The actuators are available separately as additional accessories. Spare and wear parts are available on request.

Product benefits

- + **Modular structure reduces spare parts inventory**
 - + **Structurally identical positioners and limit switch monitors for all product families**
 - + **Structurally identical actuators for ball valves and soft seated butterfly valves**
 - + **Structurally identical actuators for segmented ball valves and metal seated butterfly valves**
-



5.1 Pneumatic actuator type A

A-DA/A-SC/A-SO

Voith actuators are designed for optimal function in control for both on-off applications as well as standard applications. Type A pneumatic actuators are specifically made to fit the Voith range of butterfly valves type DV500 and ball segment valves type SV500. The actuators are available in three versions:

- Double-acting type A-DA
- Single-acting type A-SC for spring to close
- Single-acting type A-SO for spring to open

5.2 Pneumatic actuator AD / AS

AD / AS

Suitable for ball valves type BV500 and soft seated butterfly valves DV550. Pneumatic twin piston actuator, rack-and-pinion principle with self-centering piston guide. Air supply pressure 2 to 8 bar, compared to standard 5.5 bar.

- Type AD double acting
- Type AS single acting with spring-return springs in safety cage
- Namur interface for solenoid direct mounting
- Cylinder aluminium anodized, blots in stainless
- Torque range 16 – 4 000 Nm

5.3 Electrical actuator

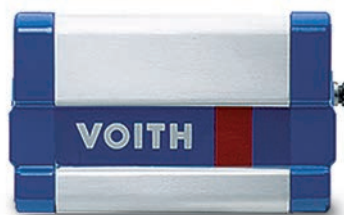
Electrical drives can be ordered alternatively to pneumatic actuators. Different versions are available.

- Unique Oden gear system providing extremely high efficiency
- Easy and fast mounting without need for alignment to the valve spindle
- No back-up accumulators or sensitive electromechanical components
- Modern electronics with unique gear technology for extrem accuracy and compactness

Pneumatic actuator type A



Pneumatic actuator AD / AS



Electric actuator





5.4 OnC ValvePos VP450

VP450

The electro pneumatic smart positioner is a control accessory of a pneumatic actuated control valve. It is used for linear or rotary part-turn actuators. VP450 is based on microprocessor technology and its piezo technology allows for very fast and precise positioning. In the steady state, the positioner require neither compressed air.

- Excellent cost-performance ratio
- I/P module with piezo valve technique
- Robust aluminum housing with a small footprint
- Signal: 4 – 20 mA HART
- Optional position feedback signal or limit switches

Valve positioner VP450



5.5 OnC ValvePos VP500

VP500

The VP500 smart digital positioner provides flexible and cost-effective valve control. They are suitable for use even under harsh conditions and designed for linear, part-turn, and single or double-acting pneumatic actuators. The VP500 is able to help reduce cost with its unique electro-pneumatic system, providing unsurpassed low air consumption at steady state.

- Auto-adjust to reduce commissioning time
- I/P converter with low air consumption
- Signal: 4 – 20 mA HART, Profibus PA
- Optional position feedback signal or limit switches

Valve positioner VP500



5.6 Valve switch

VS500

This limit switch box can be used for the manual and pneumatic ball valves BV500, ball segment valves SV500, as well as disc valves DV500 and DV550. These patented systems have self-adjusting limits. Cable glands and integrated terminals are provided for the signals of two limit switches and one solenoid valve in case of direct mounting. The inside mounted inductive proximity switches in two- or three-wire technique, 24 VDC PNP are wired to internal terminals. The OnC Valve Switch is available in two shaft versions.

Valve switch VS500





5.7 Distributor box

VS510

The distribution box enables the connection of sensors and actuators to a control system with plug-in and pre-assembled cables. It is robust and guarantees safe operation in various areas of application.

- On-off valve applications with box on valve
- Ports for limit switches (open and closed valve position), local mounted solenoid valve
- Three- or two-wire limit switches
- Internal spring clamp terminal strip for wires from 0.8 mm² – 1.5 mm²
- 4 ports of M12 female 5-pole
- Cable gland PG11/13.5
- Housing material PBT UL 94 V-0, black

Distributor box VS510





6. OnC AirValve

High air flow rates for all applications

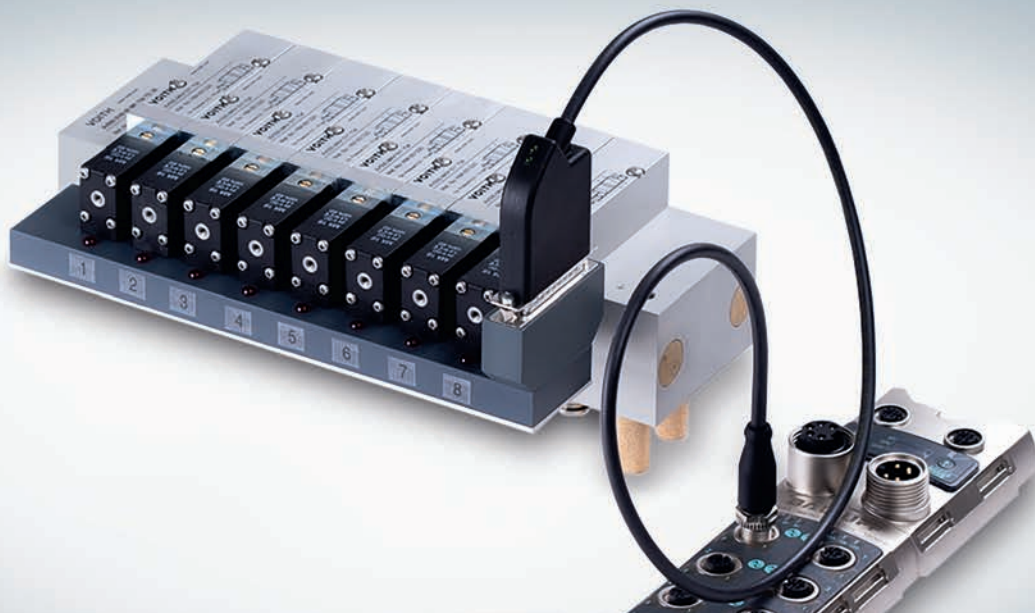
OnC AirValve products are used to pre-control pneumatic actuators of process valves. Customers are very satisfied with their high air flow rate for quick on-off actuation even under harsh conditions.

Application

The OnC AirValve product portfolio is complementary to the process valves. Voith supplies different on-off valves with either built-on Namur solenoid valves or solenoid valve blocks. These blocks contain 8 or 16 solenoid valves which are normally integrated into cabinets. Those are mounted in the field near the process valves. For the tubing between the solenoid valves and the process valve actuators, Voith tube bundles with welding beads protection are recommended as they contain two tubes in one. The Namur interface of the process valves pneumatic actuator eases direct mounting of the solenoid valve onto the actuator. Thus, installation costs are decreased and pneumatic and electric installation simplified. For all rotary actuators the switchbox VS500 is the perfect addition to connect the solenoid coil cable.

Product benefits

- + Robust Namur solenoid valves with high protection class IP67
 - + High air flow rate to ensure fast operation of large process valves
 - + Solenoid valve blocks with 8 or 16 stations as an alternative to Namur valves
 - + Special pneumatic tubes in polyamide (PA12) for harsh environments featuring welding beads protection to minimize tube defects during plant installation
 - + Assembled and tested Solenoid Valve Box in stainless steel available
-



6.1 Solenoid Valve Cabinet 8 stations

AV500.SVB 08 MK 704TDSZ **AV500.SVB 08 MK 704TDSSZ**

The compact and the innovative standard solenoid valve cabinet includes 8 pieces of 5/2-way single solenoid valves and is equipped with push-in fittings for PA tube 8 x 1 or with cutting ring fittings for 8 mm metal pipes.

- Stainless steel cabinet
- Protection class IP66
- Tested and ready for operation
- Numbered valve terminals
- High air flow rate of 1 250 l/min
- Single air shut off for each valve
- Optional IO-link interface

6.2 OnC AirValve 500 single solenoid 5/2-way

AV500.MH 510

These single solenoid 5/2-way valves are actuated by permanent signals and equipped with air spring returns.

- Connection G1/4"
- High air flow rate of 1 250 l/min
- Coil 24 V DC
- Temperatures -10 to 60 °C
- Manual override
- Used for solenoid valve blocks

6.3 OnC AirValve 500 double solenoid 5/2-way

AV500.MH 520

The double solenoid 5/2-way solenoid valve is actuated by impulse. It's position is kept until an electrical signal is applied to the opposite side even when not attached to an electrical source.

- Connection G1/4"
- High air flow rate of 1 250 l/min
- Coils 2 x 24 V DC
- Temperatures -10 to 60 °C
- Manual override
- Used for solenoid valve blocks

OnC ValveBlock 500

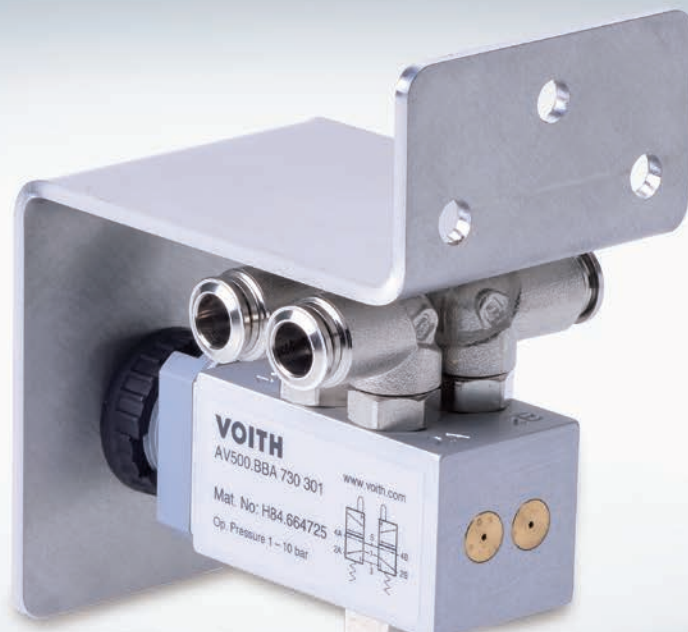


OnC AirValve MH 510



OnC AirValve MH 520





6.4 OnC AirValve 500 Namur 3/2-way

AV500.MNH 310

The 3/2-way Namur solenoid valve is actuated by a permanent signal and usually closed. Its interface is according to Namur standards, with exhaust air recirculation. The valves are equipped with air spring returns.

- Air supply G1/4" or G1/2"
- High air flow rate from 1 250 / 3 000 l/min
- Namur interface for direct mounting
- Epoxy-coils 24 V DC
- Manual override

6.5 OnC AirValve 500 Namur 5/2-way

AV500.MNH 510

This 5/2-way Namur solenoid valve is actuated by a permanent signal. The interface is designed according to Namur standards. All valves are equipped with an air spring return.

- Air supply G1/4" or G1/2"
- High air flow rate of 1 250 or 3 000 l/min
- Namur interface for direct mounting
- Epoxy-coils 24 V DC
- Manual override

6.6 OnC AirValve 500 pneumatically actuated 5/2-way spool valve

AV500.P520

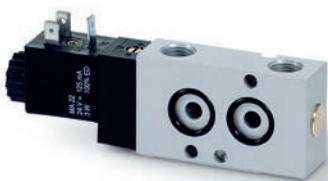
The pneumatically actuated 5/2-way spool valve is actuated by a double pilot air impulse.

- Air supply G1/2"
- High air flow rate of 3 000 l/min

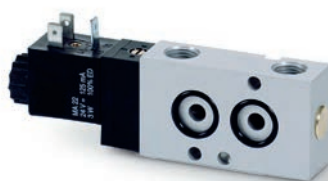
Application:

Booster valve for big on-off valves.

OnC AirValve MNH 310



OnC AirValve MNH 510



OnC AirValve HZD





6.7 OnC AirValve 500 lever actuated 5/2-way spool valve

AV500.HVR 520

Lever actuated 5/2-way spool valve, indexed. Spring-return version available on request. These valves are sealed at the lever using a brass ball as a metal seal.

- Air supply G1/4", G3/8" or G1/2"
- High air flow rate of 2 250 or 3 000 l/min

Application:

Manual operation for big on-off valves.

6.8 OnC AirTube 500

AT500

Tube bundles with welding beads protect content of one or more serially numbered plastic tubes. The stranded tubes are sheathed with a polyester foil and asphalt crepe tape as well as aluminium tape. A seamless extruded blue plastic jacket follows at the end. The robust construction of these tubes prevents damages during installation and maintenance work.

Tube materials PA 12-PHL and copper tubes are available.

- Protection against flying sparks and welding beads in particular
- Protection against mechanical impacts
- Protection against harsh environments
- Wide temperature range
- Single tube 6 x 1 mm or 8 x 1 mm or 14 x 1,5 mm
- Double tube 2 x 6 x 1 mm or 2 x 8 x 1 mm
- Also available without welding beads protection

OnC AirValve HVR 520



OnC AirTube 500





6.9 Fittings and function fittings

Full metal fittings and function fittings on request. Relevant fittings for tubing and the function fittings for quick exhaust and air throttling are also supplied together with the pneumatic equipment.

- Push in tube fittings straight and elbow in different versions and materials
- Flow control silencers
- Quick exhaust valves

6.10 OnC WaterSupply 500

WS500

The OnC WaterSupply 500 series is designed for applications that require continuous seal water flow.

Each seal type has specific flow and pressure characteristics for seal water. Fine adjustment of flow and pressure will result in water and energy savings. The OnC WaterSupply 500 system is designed to withstand contaminated water due to water filter module and special designed nozzles. Further available modules ensure the compatibility with a variety of seal types. The instruments for flow and pressure are equipped with analog outputs and binary alarm signals.

- Modular design for all customer-specific needs
- Robust and solid construction
- Big internal openings to prevent plugging
- High chemical resistance
- High accuracy with proven instruments
- Proven for harsh ambient conditions

Application:

Single / double mechanical seal, stuffing box and water supply for gland packings.

Fittings and function fittings



OnC WaterSupply 500



OnC WaterSupply 500





7. Compressed air preparation

Innovative and compact modules

The preparation of instrument air is very important for the overall performance of pneumatic components like positioners and solenoid valves. Therefore, the Voith portfolio includes especially designed modules for air preparation.

Application

Voith modules for compressed air preparation are innovative, compact and protected against dust, dirt particles and moisture by their modular design. Complementary new air distributors for the instrument air have been launched that are suitable for almost every application. High flow filter regulators maintain a constant air pressure and protect the equipment against pollution. Guaranteed functionality, attractive design and absolute pressure-tightness of all the freely combinable modules make the difference.

Modular equipment architecture allows to combine all modules to a unique air preparation system.

Product benefits

- + Shut off ball valve to isolate downstream equipment
 - + Air filters for particles of 3 µm or 5 µm
 - + Pressure regulator, according to customer needs
 - + Filter regulator with cleaning and regulating functionality
 - + Oil mist lubricators for smooth functioning
 - + Accessories, pressure gauges, mounting brackets and coupling kit for individual devices
 - + Modular and flexible
 - + Scalable system with different module sizes
 - + Air preparation systems in single or double versions
 - + Design according to the needs of various air consumers
 - + High performance and lower weight synthetic material
 - + High functionality and absolute pressure tightness
-



7.1 OnC AirDistributor Cabinet

AV500.RVB 012 SZ

AV500.RVB 012 SSZ

Complete air distribution box equipped with a pressure regulator 0.5 – 10 bar, main shut off valve, distribution block with 12 outlets and pressure gauge. Outlets can be used to supply control valves or other pneumatic applications. Each outlet can be shut off individually from inside the box.

- Outlets equipped with push-in fittings for PA tube 8 x 1 or cutting ring fittings for 8 mm metal pipes (copper or stainless steel). All other dimensions optionally available
- Stainless steel cabinet
- Protection class IP66

The air distributor cabinets are tested and ready for operation at delivery.

7.2 OnC AirFilter 500 / 520

AF500 / AF520

Single or double air filter system for instrument air. For protection of air consumers against dust and condensate. Different cartridges are available.

- High rate of flow and efficiency of dirt separation
- Operating pressure of 0 – 16 bar
- Air connection G1/2", others optional

7.3 OnC AirRegulator 500 / 520

AR500 / AR520

Single or double air filter regulator system for instrument air. Air pressure control and protection of air consumers against dust and condensate. Different cartridges are available.

- Filter and regulator in one compact device
- Good regulation performance
- Replaceable filter cartridge
- Grade of filtration 3 µm or 5 µm
- High flowrate and effective dirt and condensate separation
- Automatic drain
- Operating pressure of 0 – 16 bar
- Air connection G1/2", others optional

OnC AirDistributor Cabinet



OnC AirFilter 500 / 520



OnC AirRegulator 500 / 520





7.4 OnC AirRegulator 500

AR500

Precision filter regulator for individual air pressure control, e.g. in front of positioners for control valves. Filter and regulator functions in one compact device

- Replaceable filter cartridge
- Grade of filtration 3 µm or 5 µm
- Operating pressure of 0 – 16 bar
- Air connection G1/4", others optional

7.5 OnC AirOiler 500

AO500

Oil mist lubricators ease the load on heavy-duty compressed air drives. The consistent fine oil mist ensures friction-free operation sequences and prevents abrasion and wear of moving parts.

- Proportional lubricator
- High flow rate
- Operating pressure 0-16 bar
- Air connection G1/4", G1/2" or others optional

7.6 OnC AirDistributor 512

AD512

Modular Air Distributor for multiple air consumers consisting of lockable shut off valve, filter regulator with automatic condensate drain and manifold block for 12 air consumers. Used for air supply of control valves or other air consumers.

- Air supply G1/2"
- 12 air connections for PA tube 8 x 1 mm or other dimensions on request
- Replaceable filter cartridge
- Grade of filtration 3 µm or 5 µm
- High flowrate and effective dirt and condensate separation
- Automatic drain
- Operating pressure 0 – 16 bar

OnC AirRegulator 500



OnC AirOiler 500



OnC AirDistributor 512





8. OnC FlowSens

Flow measurement for all applications

OnC FlowSens devices take care of sensing precisely the rate of fluid flow. They are the instrument of choice when high precision and extensive self-diagnosis functionalities are required.

Application

OnC FlowSens offers reliable flow measurements for all typical applications in the paper manufacturing industry.

The instruments are suitable for water, stock, steam, chemicals, and additives. Particular note should be made of the highly precise measurement it offers and its extensive self-diagnosis. Various measurement principles are used depending on the application. When dealing with typical liquid media like water or suspension the electromagnetic flow meter OnC FlowSens 604 is the standard choice. For abrasive media, a protective ring is used for the liner. The OnC FlowSens 605 is a special version with a fully ceramic liner for highly abrasive media. For steam or non-conductive fluids, such as condensate, the Vortex OnC FlowSens 620 shall be used.

Product benefits

- + The most advanced measurement processing and diagnostics
 - + A variety of material combinations available, including robust ceramic liner
-



8.1 OnC FlowSens 601

FS601

- Electromagnetic flowmeter
- Diameter range DN10 – DN150
- Wafer design
- Liner, PFA
- Electrode material Hastelloy
- Accuracy 0.3 % with OnC UniCom

Application:

Covering volumetric flow applications in pulp, paper and water treatment with a minimum conductivity $> 20 \mu\text{S/cm}$.

8.2 OnC FlowSens 602

FS602

- Electromagnetic flowmeter
- Diameter range: DN25 – DN3000 with flanges
- Various liner options available: DN25 – DN150 polypropylene, DN200 – DN3000 ebonite hard rubber
- Various electrode materials available
- Accuracy 0.3 % with OnC UniCom 601

Application:

For water, wastewater and sludge applications.

8.3 OnC FlowSens 604

FS604

- Electromagnetic flowmeter
- Diameter range: DN2.5 – DN3000 with flanges
- Various liner options available, e. g. PTFE, PFA, ETFE
- Reinforced liner with stainless steel wire
- Various electrode materials available
- Accuracy 0.2 % with OnC UniCom 600

Application:

Covering volumetric flow applications in pulp, paper and water treatment with a minimum conductivity $> 20 \mu\text{S/cm}$.

OnC FlowSens 601



OnC FlowSens 602



OnC FlowSens 604





8.4 OnC FlowSens 605 ceramic liner

FS605

Flow tube with ceramic liner for high end applications that is specifically designed for abrasive media.

- Electromagnetic flowmeter
- Diameter range DN2.5 – DN300 with flanges
- Various electrode materials available
- Accuracy 0.2 % with OnC UniCom 600
- Also available in wafer design DN2.5 – DN100

Application:

- After MC pump at high consistencies
- Filler dosing
- Chemical dosing
- Coating colors

8.5 Signal converter for FS601 / 602 / 604 / 605

UC600

UC600W is a wall mount version with a polycarbonate housing. UC600C offers a compact design, for mounting on a flow sensor. UC600F is a field mount version with a die-cast aluminum housing.

- 3 x 100 % diagnostics of application, accuracy and instrument
- Large graphic display with piezoelectric buttons
- Quick and easy installation and start-up
- Excellent long-term stability
- Optimal zero point stability independent from product properties
- Integrated temperature and conductivity measurement

- Indication of erroneous measurement, e. g. because of gas bubbles
- Display of accuracy and linearity errors
- Output 4 – 20 mA HART, pulse, frequency or status output, limit switch or control input depending on the I/O version
- Options Profibus PA and DP
- Internal counters with a maximum of 8 counter places e. g. for counting volume or mass units

Application:

Conductive liquid media containing

- Solids < 70 % (vol)
- Gas > 5 % (vol)
- Fibers > 30 % (vol)

OnC FlowSens 605



OnC UniCom 600 Wall mount version



OnC UniCom 600 Field mount version





8.6 Signal converter for FS601 / 602 / 604 / 605

UC601

UC601W is a wall mount version with a die-cast aluminum housing. UC601C offers compact design, is mounted on the flow sensor and has a die-cast aluminium housing.

- Large graphic display with push buttons
- Quick and easy installation and start-up
- Excellent price-performance ratio
- Integrated temperature and conductivity measurement
- Diagnostic tools for device function and application check

- Output 4 – 20 mA HART, pulse, frequency, status output or limit switch
- Internal counters with a max. of 8 counter places e. g. for counting volume or mass units

Application:

Conductive liquid media containing

- Solids < 10 % (vol)
- Gas > 3 % (vol)
- Fibers > 0,5 % (vol)

OnC UniCom 601 Signal converter





8.7 OnC FlowSens 620 Vortex

FS620

The FS620 is a vortex flowmeter with integrated temperature sensor. It is best suited for flow measurement of non-conductive liquids, dry or humid gases, compressed air, saturated or superheated steam in supply processes. The integrated pressure and temperature sensors enable direct output of mass, nominal flow, energy and gross / net heat variables.

- Sandwich design (up to DN100 / 4")
- Flange design (up to DN300 / 12")
- Ideal sizing due to reduction of sensor size if needed
- Compact or remote electronics with robust field housing
- Integrated calculation for steam and hot water
- Build in pressure and temperature sensors for compensation
- Increased accuracy and stable measurements with advanced signal processing technology
- Signal 4 – 20 mA HART

OnC FlowSens Vortex 620



OnC FlowSens Vortex 620 Splitted version





9. OnC PressSens Pressure and level transmitters

A reliable sensor system is essential for the efficient and malfunction-free operation of any production facility. OnC PressSens sensors are available with all commercial threaded and flanged mountings. Customized mountings for many applications are also available.

Application

OnC PressSens 182 with ceramic-capacitive sensor element and protected radial seal enables front-flush mounting of the sensor in pipes, vats and chests, tanks and storage towers. Thanks to the extremely abrasion-resistant ceramic, this sensor is ideal for use throughout recovered paper stock preparation lines: from pulping all the way to the headbox.

OnC PressSens 181 for applications with high temperatures and aggressive media such as caustic soda, a tough stainless steel diaphragm is used. Since the sensor element works with internal transmission fluid and special temperature compensation, the temperature influence is very slight and measurement error is minimized.

OnC PressSens 185 is used for differential pressure measurement. The high accuracy of 0.065 % and high long-term stability make OnC PressSens 185 suitable for all applications with highly precise measuring requirements.

Product benefits

- + Modular system for all applications
 - + Sturdy design with abrasion resistant special ceramic material
 - + Only one transmitter for pressure and level
 - + Easy to replace valve assembly for storage towers
 - + Remote display and operation
 - + Available with 4 – 20 mA HART and Profibus PA plus option for climate compensated transmitters
-



9.1 OnC PressSens 110

PT110

The electronic pressure transmitter with gauge combines the high visibility of a gauge with the advantages of an electronic pressure sensor.

It withstands vibrations, dynamic load changes, overpressure or temperature fluctuations. Programming options: hysteresis / window; NO / NC; output logic; current output; damping; calibration of displayed values; scalable, display unit; 2-point calibration.

- Measuring range -1 to 20 bar
- Medium Temperature -24 to 125 °C
- Accuracy < 0.2 %
- Analog output 4 – 20 mA or 0 to 10 V
- Switch function for pressure limit values
- Operating voltage 18 to 32 VDC

OnC PressSens 110



9.2 OnC PressSens 114 / 117

PT114

Pressure transmitter with ceramic measuring cell for simple pressure measurement in liquids and vapors.

- Measuring range -1 to 60 bar
- Temperature -40 to 100 °C
- Accuracy < 0.3 %
- Analog output 4 – 20 mA

PT117

Pressure transmitter with metal measuring cell for simple pressure measurement. A front-flush process connection is available.

- Measuring range -1 to 1 000 bar
- Temperature -40 to 150 °C
- Accuracy < 0.5 %
- Analog output 4 – 20 mA

OnC PressSens 114 / 117



9.3 OnC PressSens 181

PT181

Pressure transmitter with chemical seal for hot and chemically aggressive media. It demonstrates its capability especially in high temperatures and aggressive media. A wide range of metal diaphragm materials and coatings make this pressure transmitter an essential instrument across many applications.

- Measuring range -1 to 1 000 bar
- Diaphragm seal
- Process temperature -90 to 400 °C
- Accuracy < 0.2 %

OnC PressSens 181





9.4 OnC PressSens 182

PT182

The pressure transmitter PT182 is the robust all-rounder with a ceramic measuring cell. The ceramic pressure sensor is resistant to thermal shock and handles temperatures up to 150 °C. The extremely high overload factor of 200 is unique to the market. Typically applications are measurement of gauge pressure, absolute pressure or vacuum. Measured products are gases, vapors and clean liquids.

- Measuring ranges -1 to 100 bar
- Smallest measuring range 0.025 bar
- Dry, ceramic-capacitive sensor element
- Process temperature -40 to 150 °C
- Accuracy < 0.1 %
- High overload and vacuum resistance 200 times

The front flush ceramic measuring diaphragm is highly abrasion resistant. Various process connections are available with all kind of flanges and threads. Typically applications are measurement of gauge, absolute pressure or vacuum measurement. Measured products are gases, vapors, liquids and also 2 phase liquids containing abrasive substances.

PT182 Headbox pressure

Precision pressure measurement for headbox with fixed cable and separated electronics. It must be very precise and is thus implemented redundantly. The optimal solution is the PT182 in absolutely front-flush and super-finished version, with a accuracy class 0.05 % and protection rating IP 68.

- Accuracy < 0.05 %
- Excellent long-term stability
- Absolutely front-flush mounting ceramic
- Process connection superfinished, mounting directly in headbox tender and drive side
- Sensor protection class IP68
- External electronics in stainless steel housing

OnC PressSens 182



OnC PressSens 182

Front flush



OnC PressSens 182

Headbox pressure





9.6 OnC PressSens 185

PT183

Pressure transmitter with metallic measuring cell for a wide application range. With its metallic measuring cell, the instrument delivers excellent measurement accuracy, even under a vacuum. For measurement of liquids and viscous products in a highly corrosive environment like chemicals.

The PT183 offers special advantages in applications with high pressures. The connection of 2 sensors as electronic differential pressure measurement opens new possibilities.

- Measuring range -1 to 1000 bar
- Process temperature -40 to 200 °C
- Accuracy 0.075 %

PT185

Differential pressure transmitter with metallic measuring diaphragm. Flange with female thread or differential pressure transmitter with one or two remote seals.

- Process pressure -1 to 400 bar
- High accuracy 0.065 %
- Measuring range -16 to 16 bar
- Output 4 – 20 mA HART, Profibus PA

Application:

The PT185 is a universal differential pressure transmitter for measurement of liquids, gases and vapors.

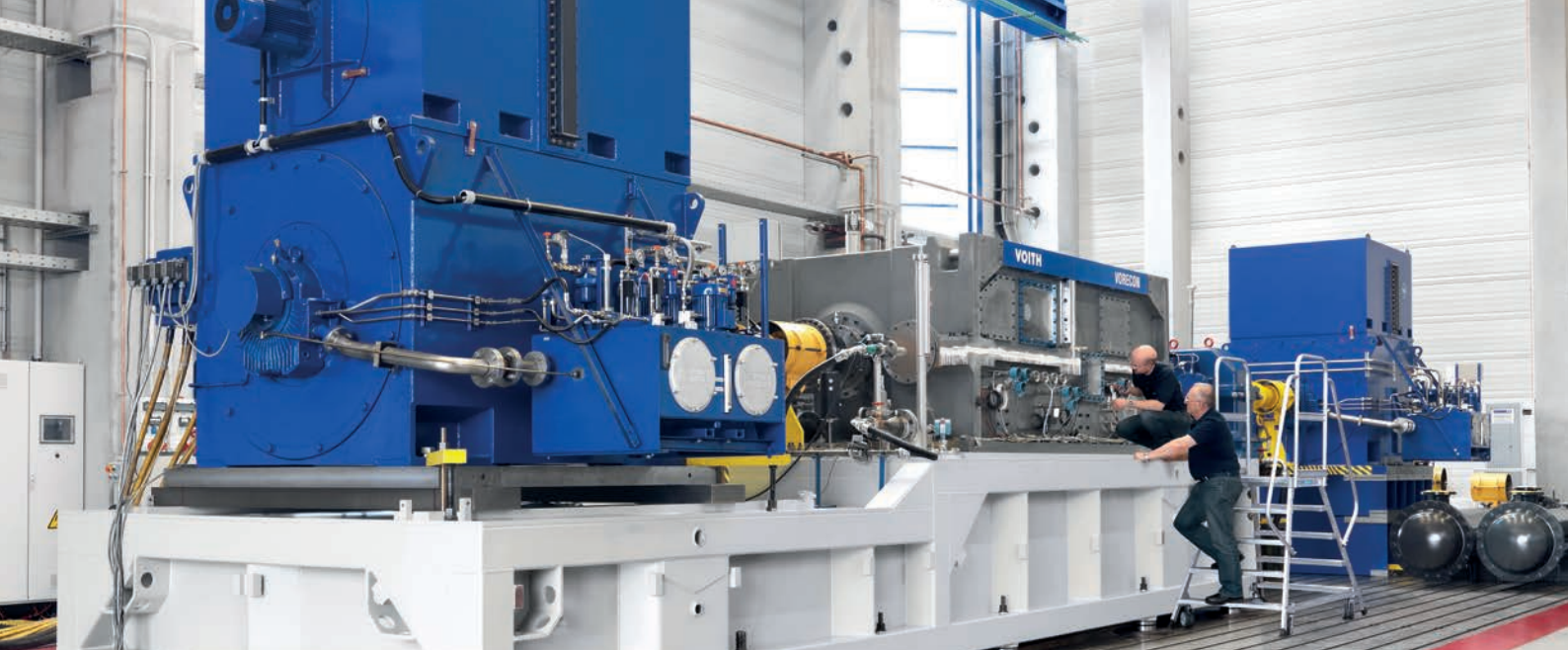
- Steam and condensate systems
- Flow measurement in combination with orifice blade or pitot tube
- Level measurement in pressurized vessels
- Deculator level measurement
- Differential pressure monitoring on filters

OnC PressSens 183



OnC PressSens 185





10. OnC LevelSens

Level measurement for harsh environments

OnC LevelSens comprises transmitters for continuous level measurement and level switches using various physical measuring principles. Depending on the application involved, radar, ultrasound, vibration, and also capacitive and hydrostatic sensors from the OnC PressSens product group are used.

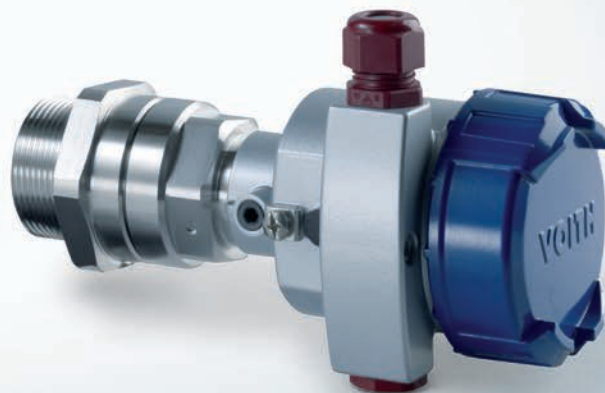
Application

This sensor measures levels of media such as water, steam, fiber suspensions, coating colors and chemical additives. OnC LevelSens 200 series uses radar to measure the level of suspensions, liquids or bulk materials in challenging applications. Extremely short microwave pulses are radiated from the antenna system onto the product to be measured, reflected by the surface and then received again. The distance, and therefore the level, are calculated from the time elapsed for this process. Interference signals are reliably balanced by electronic means, so that there is no need to calibrate with the vessel in full and empty state. The OnC LevelSens 300 series uses ultrasound and transmits short ultrasonic pulses of up to 70 kHz to the surface of the product. The distance and level are calculated from the time elapsed. In capacitive measurement, as used by the

LevelSens 400 series, vessel and sensor form the two electrodes of a capacitor. The measurement is effected over the entire sensor length without dead band.

Product benefits

- + Modular system for all applications
 - + Non-contact measuring process
 - + Unaffected by product characteristics
 - + Simple commissioning without the need for calibration
 - + Wear and maintenance-free
 - + One operating module for all measurements systems
 - + Available with 4 – 20 mA HART and Profibus PA
-



10.1 OnC LevelSens 186

LT186

The LT186 is a submersible pressure transmitter for level measurement in wells, basins and open vessels. Thanks to the flexibility through different cable and tube versions, it can be used in various applications.

- Measuring range 0 to 25 bar
- Ceramic-capacitive sensor element
- Potted cable with inner capillaries
- Deviation < 0.1 %
- High overload resistance
- Process temperature -20 to 100 °C

10.2 OnC LevelSens 252

LT252

Guided microwave sensor for continuous level measurement. It is suitable for liquids and heavy solids in practically all industries. Typical applications are measurements of bulk solids in medium size to very tall silos. The sensor can also be used for liquids in storage vessels and bypass tubes.

- Measuring range 60 m maximum (197 ft)
- Process pressure -1 to 40 bar
- Process temperature -40 to 150 °C
- Insensitive to dust, vapor, buildup and condensation
- Wear and maintenance-free

10.3 OnC LevelSens 260

LS260

Microwave barrier for supervision of bulk solids. Principle of sender and receiver. The microwave barrier is used where light barriers are not working properly because of steam and dust.

- Supervision of blockage in funnels and ducts
- Loose paper on conveyor
- Rejects and sludge detection
- Shredder feed (max)
- Bale press feed (min, max)

OnC LevelSens 186



OnC LevelSens 252



OnC LevelSens 260





10.4 OnC LevelSens 261

LT261

Two-wire radar sensor for continuous level measurement, two versions:

1. Encapsulated antenna system, particularly for measurement of aggressive liquids in small vessels
 2. Plastic horn antenna suitable for flow measurement in open flumes or gauge measurement in water bodies
- Measuring range 35 m maximum (115 ft)
 - Process pressure with encapsulated antenna system for 1 to 3 bar or plastic horn antenna -1 to 2 bar
 - Process temperature -40 to 80 °C

OnC LevelSens 261



10.5 OnC LevelSens 262

LT262

Two-wire radar sensor for continuous level measurement, three versions:

1. Thread and horn antenna (40 mm) for small tanks or vessels
 2. Flange and horn antenna (48 to 95 mm) for storage tanks and process vessels, under most difficult process conditions
 3. Parabolic antenna version for products with small dielectric figure
- Measuring range 35 m maximum (115 ft)
 - Process pressure with horn antenna for -1 to 160 bar or parabolic antenna -1 to 6 bar
 - Process temperature -40 to 80 °C

OnC LevelSens 262



10.6 OnC LevelSens 263, radar for chemicals

LT263

Typically used for continuous level measurement at chemical tanks. Front-flush installation. Measuring range depending on process fitting.

- Measuring range 20 m maximum (66 ft)
- Process pressure -1 to 16 bar
- Process temperature -200 to 200 °C
- Hygienic fittings up to 10 m (33 ft)
- Flange DN50, ANSI 2" up to 10 m (33 ft)
- Flange DN80 – DN150
- Tri-Clamp 4", ANSI 3" to 6" for up to 20 m (66 ft)

OnC LevelSens 263





10.7 OnC LevelSens 266

LT266

Two-wire radar sensor for continuous level measurement. Application in the chemical industry, paper and environmental industry, recycling technology as well as in the petrochemical industry.

- Measuring range max. 35 m
- Process fitting flange from DN50 or ANSI 2"
- Process pressure -1 to 160 bar, 14.5 to 2,321 psi)
- Process temperature -60 to 400 °C

10.8 OnC LevelSens 267

LT267

This sensor is suitable for continuous level measurement of bulk solids. The mechanical construction and the electronics are optimized for this application.

- Measurement range 15 m maximum (49 ft)
- Process fitting flange DN80 or ANSI 2", alternative mounting strap
- Process pressure -1 to 2 bar
- Process temperature -40 to 80 °C

10.9 OnC LevelSens 268

LT268

Radar sensor for continuous level measurement of bulk solids even under the most difficult process conditions.

Adjusting flange for optimum alignment of the sensor and reduction of false reflections. Purge air connection G1/8" F.

- Measuring range 70 m maximum (230 ft)
- Process temperature -200 to 50 °C
- Process pressure -1 to 160 bar
- Process connection flange DN50
- Solid products in storage and process vessels
- Bleaching tower
- Storage tower

OnC LevelSens 266



OnC LevelSens 267



OnC LevelSens 268





10.10 OnC LevelSens Flex81

Flex81

Cable, rod or coaxial radar sensor for continuous level measurement and interface (separation layers) measurement of liquids of all kinds. This unique level sensor measures maintenance-free all kind of liquids. Even in applications with vapor, buildup, foam and condensation, the sensor delivers precise and reliable measurement values.

- The guided radar measurement enables a simple, time-saving and reliable setup
- Probe length could be shortened afterwards, thus offer a simple standardization and highest flexibility in the engineering phase
- Comprehensive diagnostic capabilities ensure a maintenance-free operation and hence a high plant availability

OnC LevelSens Flex81



10.11 OnC LevelSens 362

LT362

Ultrasonic sensor for continuous level measurement of liquids and for use in bulk solids vessels. Typical applications are the measurement of liquids in storage vessels or open basins.

- Measuring range
 - Liquids 0.4 to 8 m (26 ft)
 - Bulk solids 0.4 to 3.5 m (11 ft)
- 4 – 20 mA HART two-wire
- Deviation ± 10 mm
- Process fitting thread G2 A, 2 NPT
- Process pressure -0.2 to 2 bar
- Process temperature -40 to 80 °C

OnC LevelSens 362





10.12 OnC LevelSens 363

LT363

Ultrasonic sensor for continuous level measurement of liquids and for use in bulk solids vessels. Typical applications are the measurement of liquids in medium sized storage vessels or open basins.

- Measuring range
 - Liquids 0.6 to 15 m (49 ft)
 - Bulk solids 0.6 to 7 m (23 ft)
- 4 – 20 mA HART two-wire
- Deviation ± 10 mm
- Process pressure -0.2 to 1 bar
- Process temperature -40 to 80 °C

10.13 OnC LevelSens 463

LT463

Capacitive level switch with PE or PTFE insulated electrode.

- Conducting liquids
- Bulk solids
- Process connection thread from G3/4A
- Process pressure -1 to 64 bar
- Process temperature -50 to 200 °C

10.14 OnC LevelSens 464

LS464

Capacitive compact level switch with PTFE fully insulated rod electrode for adhesive products like stock or high viscous media.

- Overfill protection, e. g. in the bleaching or storage tower
- Highly corrosion resistant
- Exact switching point even with strong build-up
- Process pressure -1 to 64 bar
- Process temperature -50 to 200 °C
- Process connection thread from G $\frac{3}{4}$ A resp. $\frac{3}{4}$ NPT
- Flange from DN25 resp. ANSI 1"
- Electrode length of up to 6 m (20 ft)

OnC LevelSens 363



OnC LevelSens 463



OnC LevelSens 464



10.15 OnC LevelSens 466

LT466

Continuous capacitive level measurement. PTFE fully insulated cable for adhesive products like stock or high-viscous media. Cable measuring probes are preferred for tall vessels. Flexible cable probes allow easy installation even in tight areas.

- Long measuring lengths
- No dead band
- Low minimal distance
- Unaffected by sockets and vessel installations
- High chemical resistance

Application:

Level measurement MC-pump

10.16 OnC LevelSens 561 and 563 with extended shaft

LS561 / LS563

Vibrating tuning fork level switch. Ideal for overflow protection due to fail safe, high level alarm design. Works in the harshest environments with a broad selection approvals, fittings and outputs.

- Very high reproducibility
- Setup without adjustment
- Product-independent switching point
- Wear and maintenance-free
- Process pressure -1 to 64 bar
- Process temperatures -50 to 250 °C
- Dry-run protection chemical pumps (LS561)
- Overflow protection chemical tanks (LS563)

10.17 OnC LevelSens 564 and 566 with extended shaft

LS564 / LS566

Vibrating level switches for solids combine mechanical and solid state technology to offer one of the most reliable switches for solids levels and to overcome the typical problems of wear, maintenance and failure of traditional mechanical paddle and tilt switches. Used in granulated and coarse-grained bulk solids and for reliable and precise level detection.

- Easy setup without adjustment
- Product-independent switching point
- Optimum rod design prevents build up and jamming
- Easy cleaning
- Wear and maintenance-free
- Process pressure -1 to 16 bar
- Process temperature -50 to 250 °C

OnC LevelSens 466



OnC LevelSens 561 / 563



OnC LevelSens 564 / 566





RETRETEN DER
ZELLENOBERFLÄCHE
VERBOTEN

VOITH
EcoDrive

RETRETEN DER
ZELLENOBERFLÄCHE
VERBOTEN



11. OnC PosSens

Reliable position sensors for industrial machinery

Continuous distance measurements and positions measurements are needed in many different applications for use in the areas of mechanical and plant construction, for hydro power and also in paper machinery where precise positioning is required.

High-quality product range with enormous versatility in sensors and systems for position measurement. Inductive sensors to monitor, regulate and automate sequences and statuses in the highest quality. Every sensor is optimized for its respective application: from standard to extended sensing distance, from temperature- and high-pressure resistant. They are always wear-free, resistant to dirt and short-circuit-proof.

Magnetostrictive sensors come into use wherever high reliability and precision is demanded in position and speed measurement. Reliable even over long stroke lengths and in harsh conditions.

Magnetic encoders for precise positioning and speed detection in very dynamic applications. The highly-precise, fast-

response encoders are optionally equipped with magnetic linear or rotational measuring elements. They are appropriate for linear as well as rotational applications, for incremental or absolute position detection. Their rugged design makes them ideal in extreme ambient conditions. They also ensure high up-time of your machines and equipment.

Product benefits

- + **Contact-free, therefore wear- and maintenance-free**
 - + **Resistant to shock, vibration and contamination**
 - + **Hermetically sealed housing**
 - + **Easy system integration via a wide range of available interfaces**
 - + **Flexible installation and handling**
-



11.1 OnC PosSens 400

DS400

The DS400 series is a high-quality product range of displacement and distance sensors which offer a wide range of position measurements for various applications in different industries. It also comes with a host of compatible accessories like fastening equipment, cabling, signal converters and communication adapters.

- Magnetostrictive linear position sensors
- Inductive sensors standard, pressure-rated, full-metal
- Magnetic-field-resistant inductive sensors are insensitive to magnetic fields

- Inclination sensor with one or two measuring axis
- Magnetic Tape Linear Encoder

Characteristics:

- High accuracy and reliability
- Compact design and small footprint
- Long service lifetimes thanks to the high mechanical robustness
- Fast and flexible integration into machinery

OnC PosSens 400





12. Field instruments from BTG

Consistency solutions

BTG is the market leader in consistency solutions. BTG is offering a portfolio of solutions, to meet all possible situations and challenges. The solutions are a combination of appropriate instruments, strong expertise, relevant service and right software. There is not one size fits all! Together with you, and depending on your situation and your objectives, our experts will define what is the best solution for you.

The BTG Group is a multinational provider of integrated, highly specialized process solutions for the global pulp and paper industry. Every day our people help customers achieve sustainable gains in business performance through our application know-how and industry-leading technologies. This includes world-leading pulp and paper process control sensors and laboratory instruments as well as and rods and beds for film-metering size presses; high-performance ceramic and cermet coating blades; high-performance tissue creping doctors and doctor holders, specialty doctor blades. All of these technologies are supported with expert services and application support.

Our advanced integration philosophy combines high-quality instrumentation, detailed and versatile data analytics and our unique, expert applications experience to provide BTG customers with operational advantages that realise new gains in productivity and profitability.

Instrument

The challenges

- Do you have different measurement conditions in the mill?
- Do you want to utilize the technology that best fits your application?

BTG will assist you in selecting the right instrument for your location leveraging a full portfolio of sensor technologies and expertise in application best practices.

BTG offers a comprehensive range of equipment for consistency measurement, based on different technologies, to be chosen based on the application and on the conditions: Shear Force, Microwave and Optical.



Confirm

Reliability

The challenges

- Do you experience high variability in finished product quality?
- Are you concerned with instrument breakdowns and downtime?
- Does your team lack maintenance skills for your consistency instrument?

BTG service specialists will help you maximize the reliability of your consistency instruments and provide ongoing training and support for your team.

Our service organization, locally available worldwide, guarantees that you will always get the help and support you need, from new installations to service and maintenance of our products. Our service engineers have access to, and knowledge of, the latest developments in the area of consistency monitoring and control. They also have the ability to realize extensive jobs, such as project engineering, planning, evaluation and test installations.

Constant

Expertise

The challenges

- Do you have a low trust in the measurement from your consistency instrument?
- Do you have poor results with your consistency control?

BTG experts combine technical and process knowledge to help you optimize the performance of your consistency control loops and associated elements.

In consistency measurement, the right hardware is a must. The right brainware is the difference.



Confidence

Full service

The challenges

- Do you need reliable consistency instruments available for control?
- Do you have lack resources to maintain your consistency instruments fleet and associated controls?

BTG offers support for the entire consistency loop including calibration, lab testing, and loop tuning/monitoring for maximal availability and accuracy of your consistency control fleet.

Convergence



13. OnC ConSens

Precise total consistency and turbidity measurement

Consistency measurement in paper manufacturing is one of the most important parameters used to control and stabilize the paper production.

The OnC ConSens 720 is an optical consistency and turbidity measurement that can cover a wide range of different applications in the pulp and paper industry. It has five pre-defined fiber models that are pre-calibrated for typical applications in different measurement ranges.

In secondary fiber applications, especially for packaging grades, the raw material can lead to fluctuations in freeness, ash content, fiber length, contaminants, and other factors. Different from other measuring methods like shear force or optical sensors, the OnC ConSens 800 utilizes a microwave sensor that is independent from raw material properties.

Product benefits

- + Best device in the market regarding value for money
 - + Total consistency independent of fiber distribution and ash content
 - + Reliable measurement for different fiber compositions in a wide measuring range 0 – 10 %
-



13.1 OnC ConSens 720 Optical total consistency sensor

CS720

The OnC ConSens 720 is an optical consistency and turbidity sensor. This advanced sensor is specially pre-calibrated for pulp and paper applications. It is used to measure the total consistency in the range 0 – 10 % of pulp including ash (fillers). It is also used to measure turbidity in water and wastewater.

- Factory-calibrated sensor
- Applications from white water to medium consistency are directly selectable
- All sensing principles (90 °, 135 ° and four-beam alternating light) are contained in the sensor

- Interference factors are compensated
- Sensor body in stainless steel with sapphire windows
- Hardened front surface of the Sensor to withstand abrasive substances in the suspension

OnC ConSens 720



13.2 Multi channel signal converter for OnC ConSens 720

UC950

The OnC UniCom 950 digital multi-channel signal converter for optical consistency and turbidity sensors offers all the benefits of a first-class converter platform that is ingeniously simple yet offers maximum process reliability.

- 2 channels / 2 pcs. CS720 for consistency or turbidity measurement
- Communication 4 – 20 mA HART, optional Profibus DP, Ethernet with web server
- Intuitive menu interface with graphical display
- Data logger function
- Optional digital inputs / outputs or current inputs for signal transfer from other devices
- Fast and easy adjustment of measured values

OnC UniCom 950





13.3 Installation and mounting set for OnC ConSens 720

Mounting set for OnC ConSens 720 (1) consisting of:

- Welded socket
- Adaptor
- Triclamp connector
- Gasket
- Blind cover
- Optional plug for welding socket

Optional:

Mounting set with ball valve (2) for easy retracting the sensor without draining the pipe.

13.4 Microwave consistency sensor OnC ConSens 800

The operational principle of this microwave consistency sensor is based on a precision measurement of aqueous suspension of the dielectric constant in the microwave range. It is designed for harsh environmental conditions in the Paper industry. The sensor is almost maintenance free because there are no moving parts. This continuous on-line measurement of total consistency is ideally suited for recycled fiber applications and board & packaging grades.

- High accuracy measurement of total consistency
- Wide measurement range 0 to 16 %
- Diameters: DN80, DN100, DN150, DN200, DN250, DN300
- Not sensitive to the composition of raw material fiber type, fiber size (SR), fiber composition, color, additives and fillers
- Flush inner parts with no risk of spinnings or deposits
- Independent of flow rate
- Easy to install, no straight pipe section required
- No moving parts and no wear parts
- Low maintenance required

OnC ConSens 720

Installation set (1)

Optional: Mounting set with ball valve (2)



OnC ConSens 800





13.5 Signal converter for microwave consistency sensor OnC UniCom 800

UniCom 800

Microprocessor-based signal converter with big color touchscreen and USB interface for historical data storage and trending. The GUI is designed for intuitive and easy operation and sensor calibration.

- Multivariable output for consistency, temperature, conductivity and pressure
- Signal outputs: 4 – 20 mA (4 x for all measured variables)
- Ethernet interface for remote access
- Multiple languages selectable (e. g. en, ru, de, fr, es, pt)
- Optional pressure transmitter connection via M12 cable
- Power supply to converter: 100 to 240 V AC
- Power supply sensor: 24 V DC from converter

OnC UniCom 800





14. OnC TempSens

Precision temperature measurement

The OnC TempSens product family comprises sensors with large temperature ranges and fixed or separate thermowell for all kinds of application. Featuring plug-in, screw-in, weld-in and flange connections, temperature sensors from Voith fulfill various requirements. Designed for best accuracy, highest reliability and excellent performance.

Application

OnC TempSens 400 temperature sensors are offered in different versions with various process connections. The adequate temperature transmitters are available as head-or-rail mounted version. Instruments with Profibus and IO-Link interface are also offered in addition to analog current output.

The measuring inserts TR 100 and TC 100 feature precision workmanship, high insulation resistance and good long-term stability. The measuring inserts made from mineral-insulated sheathed cable can be installed in all thermowells. Tolerance classes A and B to EN 60751 or 1/3 DIN B are included in the standard range.

Product benefits

- + Complete range of temperature RTD sensors and transmitters
- + Cable and surface temperature sensors
- + Customized solutions for special applications



14.1 OnC TempSens 400 Temperature sensors

OnC TS400

Wide range of different types of temperature sensors for all applications.

- Temperature sensor assemblies with replaceable measuring inserts
- Broad variety of process connections with screw-in, weld-in or flanged thermowells
- Measuring inserts RTD (Pt100) or thermocouple (K or J) in three- or four-wire connection
- Tolerance cl. A and B for Pt100
- Tolerance cl. 1 for thermocouples
- Transmitters head mounted or in rail version
- Signals 4 – 20 mA HART, Profibus PA, IO-link

14.2 OnC TempTrans 422 Two-wire temperature transmitter

OnC TT422 C/R

Multi range two-wire temperature transmitter for resistance thermometers Pt100 for industrial environments.

- Mounting into temperature sensor head (C) or on rail (R)
- Input for 3- wire Pt100
- Output 4 to 20 mA
- Range from -200 °C to +850 °C
- Accuracy $\pm 0,1$ °C
- Digital filtering of input signal
- Sensor break and short circuit detection
- Zero- and span- adjustment
- Output simulation
- PC-based configuration (USB)

14.3 OnC TempTrans 453 Two-wire HART temp. transmitter

TT453 C/R

Universal multi range two-wire HART temperature transmitter for resistance thermometers and thermocouples as well as potentiometer applications, for industrial environments.

- Mounting into temperature sensor head (C) or on rail (R)
- Input for 2/3 or 4- wire RTD, thermocouples and potentiometer
- Signal 4 to 20 mA HART
- Range from -200 °C to +850 °C
- High accuracy $\pm 0,08$ °C
- Digital filtering of input signal
- Sensor break and short circuit detection
- Built-in NFC for Bluetooth
- Output simulation
- PC-based configuration (USB)

OnC TempSens 400



OnC TempTrans 422 C/R and 453 C/R





15. OnC UniCom

Versatile sensor indicators

The OnC UniCom product range comprises various internal and external indicating and adjustment modules that keep the operating team up to date with all the important process information.

Application

Voith offers a broad range of versatile indicators and displays for signal processing and sensor adjustment. To ensure smooth operation, measuring instruments are employed to deliver a steady flow of up-to-date, objective information about the process to the control and regulation technology. Various hardware components as well as signal conditioning software process and integrate the measurement data. They convert the analogue or digital signals from the measuring instruments into information, i. e. measured values, that are displayed on indicating instruments or fed directly into the control system.

Product benefits

- + Uniform operating philosophy
 - + Almost all languages available
 - + Intuitive to operate
 - + Analogue and digital display mode
 - + Shows engineering unit
-



15.1 Display and control module

UC910

The extremely compact OnC UniCom 910 plug-in display and control module for storage of all settings and calibration data is ideal for permanent or temporary installation, and needs no power connection.

- Innovative technology OnC UniCom 910 control module
- Powered from the sensor: no separate supply required
- Convenient local display and control
- Plug-in mounting in four positions 90° displaced
- Permanent storage of calibration data and settings
- Illuminated display for easy reading

- Wide choice of units (e. g. mbar, bar, psi, Pa)
- Comprehensive service and diagnostics functions
- Many different languages selectable
- Optional bluetooth-function for wireless connection via smartphone (iOS / Android)

OnC UniCom 910



15.2 External display and control module

UC961

The external UniCom 961 device is an external indicating and adjustment module that operates without additional power.

It is used for remote measured value indication, for example at some distance from the measuring site, and adjustment of OnC sensors.

- For 4 – 20 mA, Profibus PA sensors
- Connection and communication via standard four-wire screened cable up to 25 m long
- Additional power supply is not required

OnC UniCom 961





15.3 Signal conditioning instrument

UC991

Universal analog or digital programmable signal conditioning instrument.

- Big illuminated display
- Analog Input sensor 4 – 20 mA HART passive with two-wire supply from indicator to sensor
- Analog Input sensor 4 – 20 mA HART active
- Five or six level relays
- Fail safe relay possible
- 0/4 – 20 mA current output
- Dimensions 96 x 96 mm
- USB and Ethernet interface, RS232 for modem
- Data transmission via e-mail and SMS
- Counter (totalizer) function
- Front protection IP65
- Optional wall mounting with separate housing

OnC UniCom 991



15.4 Signal conditioning instrument

UC981

OnC UniCom 981 is a universal single signal conditioning instrument with integrated level switches and display for continuous sensors. At the same time it serves as power supply unit for the connected sensor. OnC UniCom 981 is designed for connection of any 4 – 20 mA sensor. The instrument is suitable for carrier rail, panel and surface mounting.

- Analog Input sensor 4 – 20 mA passive with two-wire supply from indicator to sensor
- Analog Input sensor 4 – 20 mA active
- Two level relays
- Fail safe relay
- 0/4 – 20 mA current output
- Dimensions 96 x 96 mm
- Less cost intensive alternative to OnC UniCom 991

OnC UniCom 981



15.5 Local Indicator for analog signals

DIS82

Measured value display in the field is often desired when measuring level, pressure or other process variables. The DIS82 is suitable for indication and adjustment of analogue sensors with HART protocol. The indicator can be connected to the 4 – 20 mA signal cable at any point. A separate voltage supply is not required.

- Universal 4 – 20 mA current loop field indicator
- No separate power supply needed (2-wire system)
- Robust aluminum field housing IP67 for mounting on the wall, rail or tube
- Local indication of measured values and parameter adjustment
- Plug in display UniCom 910 is used for indication

DIS82





16. Sensor accessories

The right add-on for every sensor

Certain mounting positions and applications are sometimes hard to realize without the proper equipment: that is where the Voith sensor accessories come into play!

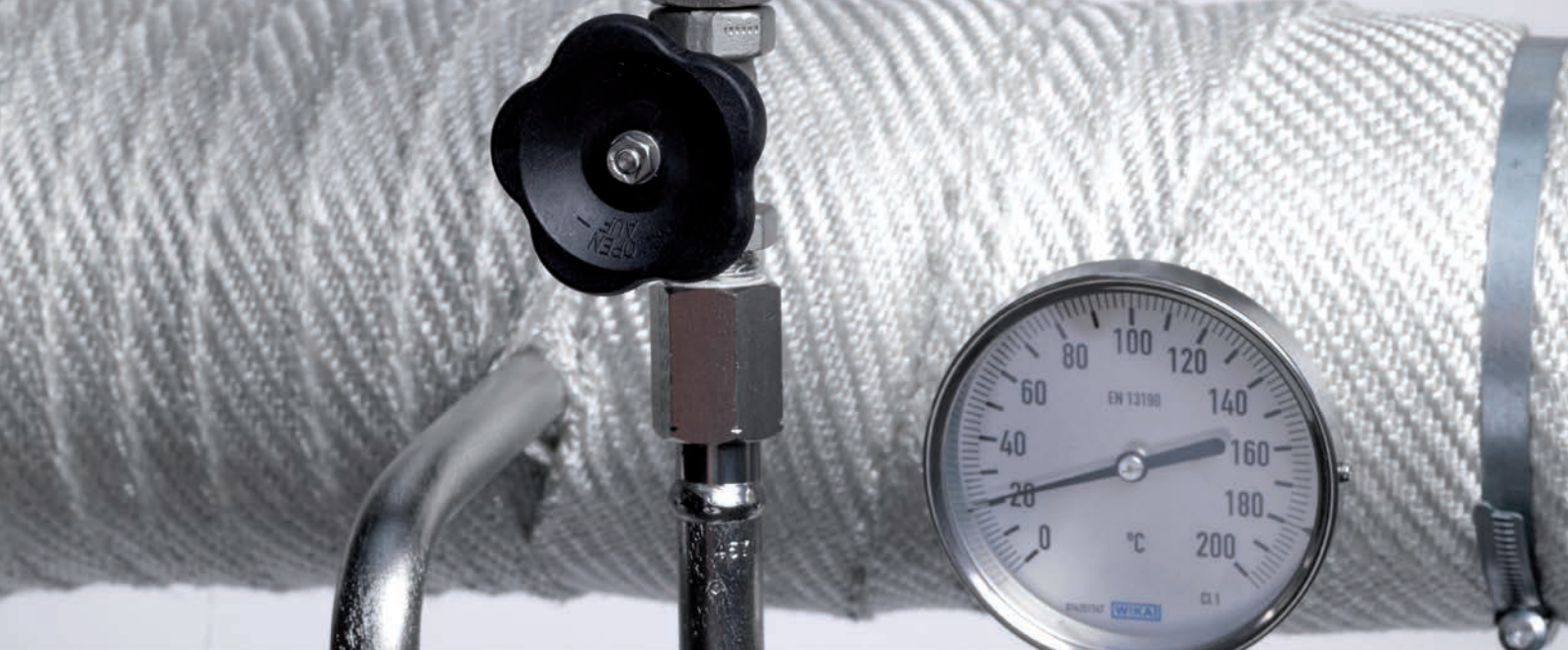
Application

A large range of accessories is available for the measuring instruments including various process connections, manifold valve blocks, and mounting sets.

The transmitter service valves allow to disconnect a pressure transmitter from the process without interrupting the process.

Product benefits

- + Complementary component to Voith product range
 - + Supply from one source
-



16.1 Manifold valve blocks milled

Manifold blocks

Voith offers a large variety of valves and manifolds with different options. Two, three and five valve manifolds, manifold combinations and multi-way cocks for use on general applications for liquid, gas and steam service. They are suitable for shutting off the impulse lines and for mounting to pressure and differential pressure instruments. These manifold combinations and multi-way cocks are for (1/2 NPT) direct mounting according to DIN EN 61518 or for remote mounting. Process connections are with threads or with pipe fittings.

16.2 Manifold valve blocks forged

Manifold blocks

Process connections with compression fitting or welded connection.

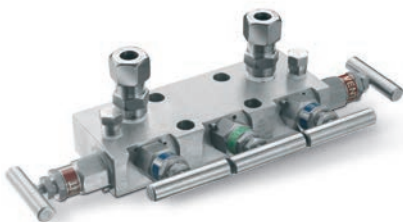
- Multi-way cocks PN100, plug seal made of PTFE carbon
- Manifolds PN420, metal seated, PTFE packing for temperatures up to 200 °C (manifolds for direct mounting 120 °C at the transmitter / manifold interface)
- Graphite packing and sealing rings available for high temperature service
- Purge valves on manifold combinations suitable for temperatures up to 550 °C

16.3 Gauge valves and accessories

Gauge valves and accessories

This product group includes standardized gauge valves, gauge cocks, siphons and gauge supports as well as gauge protectors and gauge snubbers. Apart from the standard materials brass, carbon steel and stainless steel, other materials are available.

Manifold valve blocks milled



Manifold valve blocks forged



Gauge valves and accessories





16.4 Welding sockets and flanges for PT / LT

Process connections

Welding sockets are used to connect level and pressure sensors to the process. In some cases there is a difference between welding sockets for vessels and for pipelines. The welding sockets are used for certain types of instruments, depending on the version. Also, threaded flanges are available.

- Thread fittings and welding rings
- Tri-Clamp connections
- Hygienic fitting
- Bolting according to DIN EN
- Flange connections
- Welding dummies and plugs

Welding sockets and flanges PT / LT



16.5 Mounting sets for valve blocks and transmitters

Mounting sets

Included in these sets are mounting brackets with manifold accessories for mounting the manifold to a wall, a tube or a rack. Accessory kits with screws and bolts are supplementary available.

16.6 OnC TransValve 310 Transmitter service valve

TV310

The OnC TransValve TV310 is a ball valve retractable assembly for installation of a pressure and level transmitter on tanks or pipelines. This transmitter service valve makes it simple to disconnect the transmitter from the process for maintenance and cleaning purposes without interrupting the process or draining the tank.

- Nominal pressure PN10
- Flange-mount design: DN 80/3" ANSI 150
- Pipe-mount design: DN 100 to 450 (with pipe adapter)
- For PT182 transmitter with G1" – Tubus version
- Locking device connectivity

OnC TransValve 310







16.7 OnC SampleValve 500

XV500

Manual and automatic sampling valves are used to get representative samples for laboratory from pipe lines or tanks. The valve opens into the pipeline.

- DN25 for samples up to 5 % consistency
- DN40 for samples > 5 % consistency
- Pressure rating PN10
- Actuation: Manual lever or pneumatic cylinder
- Body and inserts stainless steel
- Accessories for pneumatic operation:
 - Lever actuated 5/2-way spool valve
 - Manually actuated 7/3-way valve

OnC SampleValve 500
Pneumatic version



OnC SampleValve 500
Manual version



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