



Instrumentation and monitoring

MJK PRODUCT CATALOGUE

CATALOGUE

EN 1.00 PRODUCT CATALOGUE 1504

mjk 
a xylem brand



A BETTER, CLEANER ENVIRONMENT

MJK Automation is one of Scandinavia's leading suppliers of equipment for use in water treatment plants, waterworks and industrial applications. MJK is known for producing innovative, high-quality products with a long lifetime.

More than 80% of Danish municipalities uses MJK instruments in their pumping stations and water purification plants. Our products are made at our own factory in Denmark and marketed and serviced in more than 50 countries.

We believe that better control helps save resources and create a better, cleaner environment. MJK Automation's mission is to produce high-quality measuring instruments for use in process and environmental treatment.

[page 8-17]

[page 18-27]

[page 28-33]

[page 34-43]



LEVEL



FLOW



ANALYSIS



RTU &
CONTROLLERS

PRODUCT RANGE

.....

The MJK product range covers a comprehensive pallet including equipment for use in wastewater and potable water.

To create an overview of our product range, we have divided our products into categories. Each product category has its own colour code and symbol.

The colour codes are used throughout the catalogue to indicate which products can be combined.

[page 44-51]

[page 52-59]

[page 60-71]

[page 72-75]



DATA LOGGER



SAMPLER



ACCESSORIES



ABOUT MJK



PC INSTRUMENT SOFTWARE

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Many of our products now have PC Instrument software for configuration, control and updating purposes. The software widens the scope and applications of our products. Many of our products can communicate with other instruments or SCADA systems, to make it faster, simpler and safer for you to configure from a PC.

The PC programs allow you to save your configurations in a file, which you can reload or use in another unit. The PC software saves the files in a format, which can easily be exchanged via e-mail. In many cases, the MJK Support Team will be able to help resolve difficulties simply by checking or rectifying a configuration you send to us by e-mail.

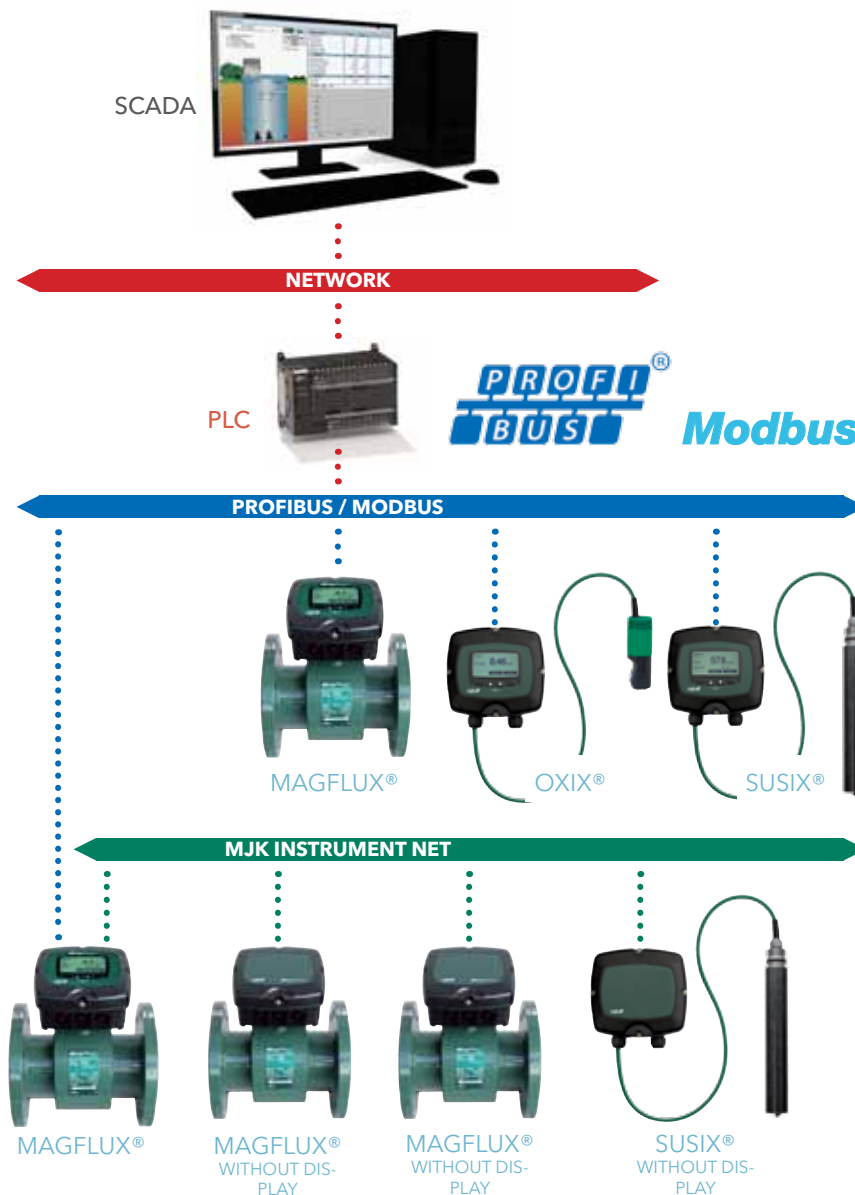


MJK SOFTWARE PRODUCTS

LOGICAL OPERATION AND NETWORK

The products in the MJK instrument range communicate with each other and share a display via a network connection. For example, the display can be set up to show individual measured values from up to four different instruments in a network or show all measurements simultaneously. The display has a built-in data logger with 160,000 logs which can be shared between connected instruments. The measured values can be downloaded to a PC from the display's USB port as a CSV File (Excel).

If you link a communication module to the display, you can transmit measurements to a PLC or SCADA system with Profibus or Modbus communication. Using the built-in network, a Profibus or Modbus module can transmit signals for as many as 4 units/converters.



EXPERT
LEVEL TRANSMITTER
www.mpk.com

HYDROSTATIC LEVEL TRANSMITTER



II 2G

Ex Ia IIC T4 (-20°C < Ta < 80°C)
Ui: 30 VDC - Ii: 101 mA
Pi: 750 mW - Ci: 250 nF
Li: 460 µH - (Incl. Cable = 300m)
Demko 06 ATEX 137949X

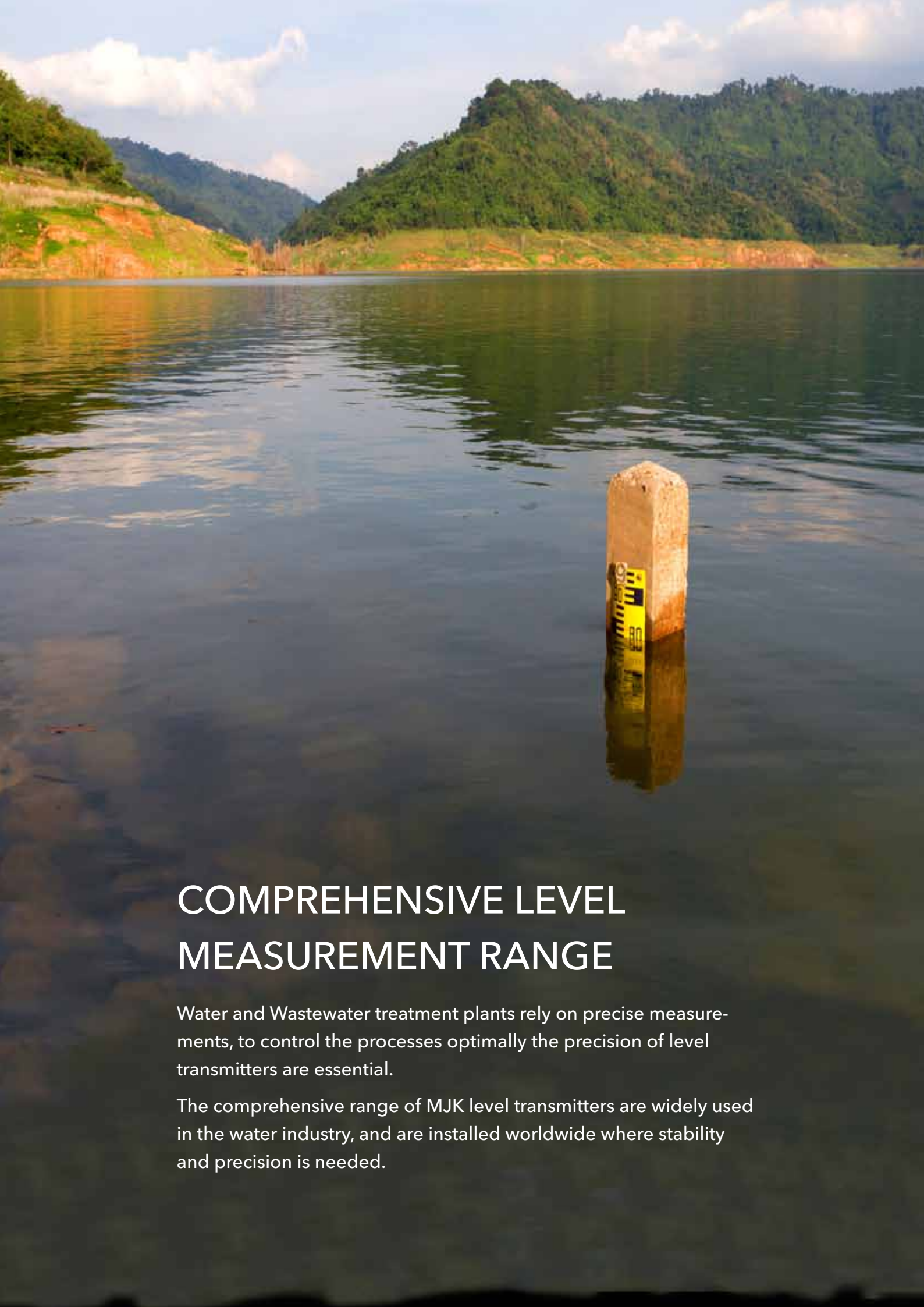




LEVEL



[Level measurement and regulation are part of most processes with tanks and other containers. In many cases, liquid is pumped in or out so level measurement is a vital aspect of control and monitoring. MJK's comprehensive range of liquid level measuring instruments cover any task imaginable.]



COMPREHENSIVE LEVEL MEASUREMENT RANGE

Water and Wastewater treatment plants rely on precise measurements, to control the processes optimally the precision of level transmitters are essential.

The comprehensive range of MJK level transmitters are widely used in the water industry, and are installed worldwide where stability and precision is needed.



ON/OFF LEVEL CONTROL

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Level in wells can be controlled by a relatively simple control unit using electrodes. This is a cost-effective solution, where liquid contact controls the tank emptying or filling process – or a simple alert tells you that the floor is wet.

HYDROSTATIC MEASUREMENT

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Hydrostatic level transmitters are ideal for measuring the level in open tanks and containers, e.g. wastewater pumping stations. These instruments are often chosen for reasons of accuracy and reliability. The instruments are also used to measurements in rivers and lakes, or to measure groundwater levels in wells.



ULTRASONIC MEASUREMENT

.....

Ultrasound is widely used to measure levels in liquids and solids. Ultrasonic measurement is an excellent method as none of the parts is in contact with the liquid. This method of measurement is therefore ideal for use with polluted water and aggressive liquids.



EXPERT™ LEVEL TRANSMITTER

.....

MJK Expert Hydrostatic Level Transmitters are designed to measure level when submersed in pump wells, tanks, flumes and channels.

Expert Level Transmitters are strong and specially designed to withstand tough mechanical and chemical impacts in e.g. wastewater, slurry and sludge. Expert Pressure Transmitters are supplied with stainless steel or ceramic membranes. The housing is made of plastic or stainless steel.

Expert Level Transmitters are available in a number of variants adapted to measuring levels in wastewater, potable water and process fluids. We can supply variants which are suitable for use in corrosive chemicals and ATEX-approved (i.e. approved for use in an explosive atmosphere).

Expert Pressure Transmitters cover measurement ranges from 0-30 cm up to 0-300 m.

Expert Pressure Transmitters are supplied with a 4-20 mA or Modbus output.





ATEX



FEATURES					
EXPERT®	700	7070 (T)	7060	1400	3400
Application	Water well	Water well, Process fluids	Wastewater, Process fluids	Water well, Process fluids	Wastewater, Process fluids
Measurement range <small>min. max.</small>	0-30 m 0-100 m	0-3 m 0-300 m	0-3 m 0-300 m	0-30 cm 0-100 m	0-30 cm 0-100 m
Precision (+10-30°C)	±0.5%	±0,25%	±0.25%	±0,1%	±0,1%
Housing	1.4404/ AISI 316L	1.4404/ AISI 316L	PP	1.4404/ AISI 316L	PPS
Membrane	1.4404/ AISI 316L	1.4404/ AISI 316L	1.4404/ AISI 316L	Ceramic	Ceramic
External diameter	Ø 16 mm	Ø 22 mm	Ø 60 mm	Ø 22 mm	Ø 50 mm
Analogue 4-20 mA	•	•	•	•	•
Modbus RS485	•	•	•		
Temp. outlet		PT100 Modbus	Modbus		
Approvals	CE	CE	CE	ATEX UL CE	ATEX UL CE

Expert can be used with



Open channel flow converter 713 [page 26]



Chatter® data logger [page 47]



Fittings [page 64-65]



RTU & Controllers [page 38]



SHUTTLE® ULTRASONIC LEVEL TRANSMITTER

.....

The Shuttle Ultrasonic Level Transmitter measures the distance to a liquid and is used primarily to measure the level in tanks, pump wells, sludge tanks, storm flow weirs, channels, etc. The transmitter is not in physical contact with the liquid measured.

Shuttle sends a strong, narrow ultrasonic pulse to achieve stable and reliable measurements even from turbulent and polluted surfaces.

The transmitter is simple and logical to operate. The instrument is intelligent; it recognises and eliminates signal impacts from its surroundings, e.g. piping and flanges inside a well.

Shuttle needs no operation after initial set-up. The instrument has an automatic start function. The sensors cover measurement ranges from 0-10 cm up to 0-25 m.





Choose separate sensor and electronics modules to get the optimal sensor for the job.



FEATURES					
SHUTTLE®	TRANSMITTER	200570	200640/41/42	200630/31/32	200660
Application		Fluids, Solid materials	Fluids, Solid materials	Fluids, Solid materials	Fluids, Solid materials
Measurement range	Depending on sensor	15 m in fluid 6 m in solid	12 m in fluid 5 m in solid	25 m in fluid 10 m in solid	10 m in fluid 5 m in solid
Frequency		30 KHz	40 KHz	30 KHz	50 KHz
Spreading		3 °	7 °	6 °	6 °
Analogue 4-20 mA	•				
Digital outputs	2				
Approvals	UL CE	CE	¹⁾ FM APPROVED CE	¹⁾ FM APPROVED CE	CE

1) Does not apply to 200632 and 200642

Shuttle® can be used with



Open channel flow converter 713 [page 26]



Fittings [page 64-65]



Accessories [page 69+71]



FLOAT SWITCH 7030

Float switches are often used in environmental engineering systems, such as pumping stations and sewage plants. It is therefore important that float switches do not contain mercury.

Float switch 7030 has an electro-mechanical contact system. The float switch has a built-in hermetically sealed micro-switch, which is activated by a moving weight. The weight activates the micro-switch, when the float switch's position in the water changes. Float switches are often used in overflow prevention systems.

We supply a counterweight (accessory) which ensures that the float switch remains submerged at all times. The differential is adjustable and the counterweight ensures that the cable bend is smooth.



CONDUCTIVITY LEVEL SWITCH 501

ON/OFF level switches are often used as a simple method of controlling pumps and valves and to alert high or low levels and warn that there is water on the floor.

MJK's Conductivity Level Switch comprises an electrode base for up to four electrodes. The stainless steel electrodes can be cut to the desired length and connected via the electrode base to the amplifier. The amplifier can be set to either pump in or out of the tank.

The electrode base can be fitted on a standard bracket - see page 64.





FEATURES				
LEVEL SWITCH	7030	501	ELECTRODE BASE	ELECTRODE ROD
Application	Wastewater, Process fluids	Process fluids	Process fluids	Process fluids
Material	PP / Oil Resistant cable		POM 1.4404 / AISI 316L	Rubber cable 1.4404 / AISI 316L
Digital outputs	1	1		
Switch	Max. 250 V AC / 16A	Max. 250 V AC / 4A		
Approval	CE	CE	CE	CE

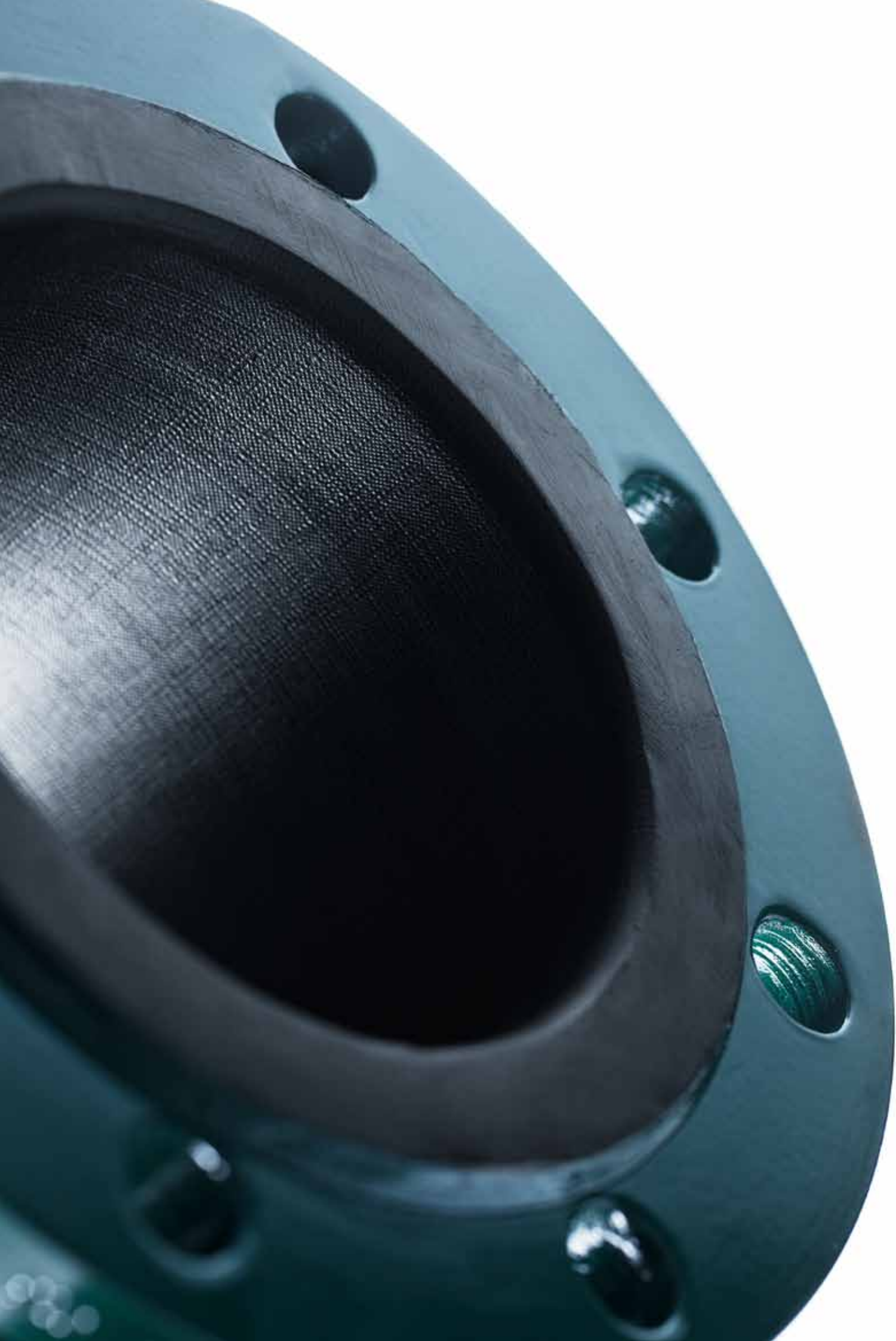
Level switch and 501 can be used with



Open channel flow meter 713 [page 26]



Fittings [page 64-65]

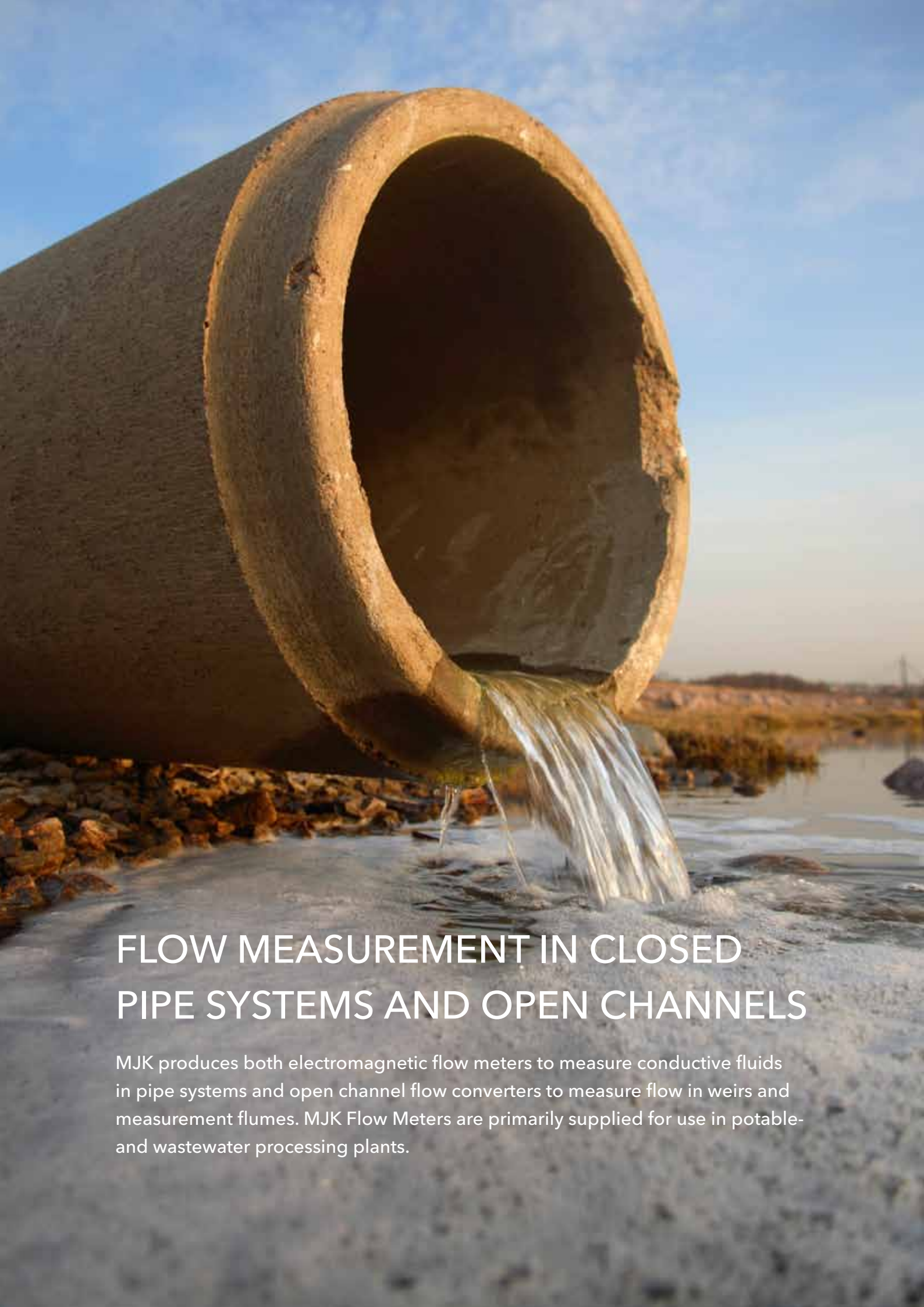




FLOW



[Flow measurement is a process used frequently in potable water and wastewater processing plants. The instrument accurately determines water volume, controls processes and performs various calculations, e.g. water charges. MJK Flow Meters are also used to measure and control industrial applications.]



FLOW MEASUREMENT IN CLOSED PIPE SYSTEMS AND OPEN CHANNELS

MJK produces both electromagnetic flow meters to measure conductive fluids in pipe systems and open channel flow converters to measure flow in weirs and measurement flumes. MJK Flow Meters are primarily supplied for use in potable- and wastewater processing plants.

ELECTROMAGNETIC FLOW MEASUREMENT

.....

MagFlux Electromagnetic Flow Meters for pressurized closed pipe systems. The modular design is versatile. MJK's sensors and converters cover a broad range of applications and can be combined to meet specific requirements. MJK offers a wide range of sensors and converters with very competitive specifications. Our instruments are designed for flexibility and can be used in many different systems.



OPEN CHANNEL FLOW MEASUREMENT

.....

MJK has many years of experience of producing open channel flow meters for use in open channels and partly filled pipes. The present generation of open channel flow meters is adaptable to any weir or flume. Flow calculation follows ISO standard recommendations to the letter.

MJK Open Channel Flow Meters are supplied with ultrasonic or hydrostatic sensors.



MAGFLUX® ELECTROMAGNETIC FLOW METER

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MagFlux Electromagnetic Flow Meters deliver very stable and accurate flow measurements in any conductive liquid in a pressurized closed pipe system.

MagFlux Flow Meters have no moving parts and have no hydraulic influence on the flow in the pipe system. The measurement method used is very accurate over a wide measurement range.

We have developed an outstanding sensor measuring method for MagFlux. An individual sensor calibration code adapts the converter automatically to communicate with the sensor. The calibration code includes calibration data, nominal diameter and sensor features. Once the calibration code is entered, the MagFlux Flow Meter is ready to operate. The calibration code means there is no need to make difficult adjustments in the field.



VERSATILE CONVERTER

.....

MagFlux can be supplied with the converter mounted directly onto the sensor or it can be mounted on a wall or panel. The display unit can be attached to the converter or mounted at a distance of up to 1,000 m from the measurement site. This means that you can mount both the converter and the display in the most practical spot.



COMPACT MOUNTING



WALL MOUNTING



PANEL MOUNTING



FEATURES				
MAGFLUX®			SENSOR 7100	SENSOR 7200
Application			Process fluids	Wastewater, Process fluids
Sizes	min.		DN15	DN20
	max.		DN1000	DN1400
Precision ($\geq 0.2\text{m/s}$)			0.25%	0.25%
Fluid flow speed	min.		0.2 m/s	0.2 m/s
	max.		10 m/s	10 m/s
Flange	EN ANSI AWWA AS		EN-1092-1 B 16.5 C207-01 2129 - 2000, 4087 - 2004	EN-1092-1 B 16.5 C207-01 2129 - 2000, 4087 - 2004
Liner			PTFE	Hard rubber
Housing ¹⁾			Epoxy painted steel	Epoxy painted steel
Electrodes ²⁾			1.4571 / AISI 316 Ti	1.4571 / AISI 316 Ti
Enclosure rating			IP67 / 68	IP67 / 68
Reversible flow direction			•	•
Build-in liquid earth electrode ³⁾			•	•
Approval			CE	CE
MAGFLUX®			CONVERTER	
Measurement range			Depends on sensor	
Fitting			Compact / Wall	
Housing			Fibreglass-reinforced Polycarbonate	
Analogue output			4-20 mA	
Digital outputs			2	
Built-in communication			Modbus RS485	
Network-compatibility ⁴⁾			Modbus RS485 / Profibus DP	
Built-in data logger			160,000 logs and curve view	
IP ingress protection class			IP67	
Remote display			up to 1,000 m	
Approvals			cUL US LISTED CE	

1) Housing and flange can also be supplied as steel 304/316

2) Electrodes can be supplied as HASTELLOY® C, platinum or titanium

3) Included

4) Order separately

MagFlux can be used with



Chatter® data logger [page 47]



Fittings [page 64-65]



Accessories [page 69+71]



DIMENSIONING YOUR FLOW SENSOR

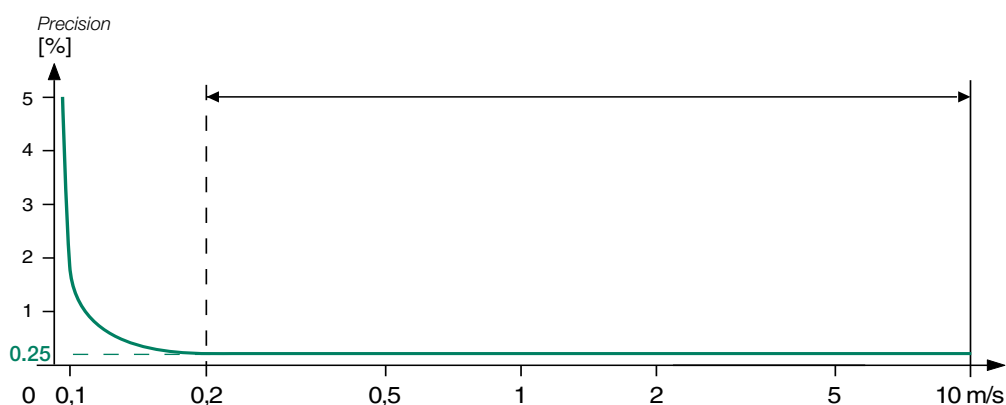
MINIMUM / MAXIMUM FLOW AND STANDARD mA SETTINGS				
Size		Q _{min} = 0.2 m/s	Q _{max} = 10 m/s	20 mA
DN	[inch]	[l/h]	[l/h]	[l/h]
15	½"	127	6362	5000
20	¾"	226	11304	10000
25	1"	353	17676	20000
32	1¼"	579	28944	30000
40	1½"	905	45360	50000
50	2"	1414	70560	75000

DN	[inch]	[m³/h]	[m³/h]	[m³/h]
65	2½"	2.39	119	100
80	3"	3.62	181	200
100	4"	5.65	283	300
125	5"	8.84	442	400
150	6"	12.7	636	600
200	8"	22.6	1131	1000
250	10"	35.3	1767	2000
300	12"	50.9	2545	2500
350	14"	69.3	3464	3000
400	16"	90.5	4524	4500
450	18"	115	5726	6000
500	20"	141	7069	7000
600	24"	204	10179	10000
700	28"	277	13854	15000
800	32"	362	18095	20000
900	36"	458	22902	25000
1000	40"	565	28274	30000
1200	48"	814	40715	40000
1400	54"	1100	55400	55000



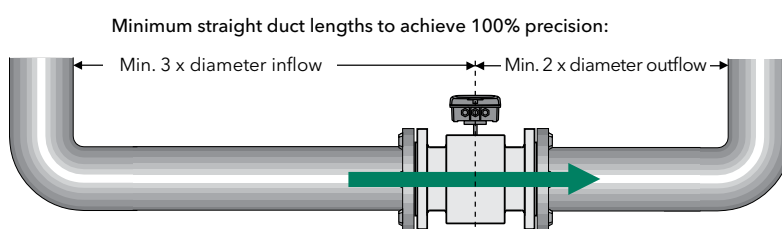
ACCURACY

MagFlux Flow Meters set the gold standard for precision. MagFlux Meters offer full accuracy down to 0.25% at a speed of 0.2 m/sec. This ensures optimal accuracy to measure even low rates of flow but it also expands the flow meters dynamic measuring range whilst keeping the high accuracy.



BUILD IN LENGTHS

MJK Flow Sensors are easy to install. They have ISO-standard installation build in lengths. You need a straight inflow pipe which is only 3 x the diameter and a straight outflow pipe which is only twice the diameter of the flow meter. For smaller dimensions, the sensor itself - to a great extent - meets all build in lengths requirements.



IP68

MagFlux is supplied as standard with protection class IP67. However, if you use our gel potting kit, you can increase the protection class to IP68 (which means that MagFlux can withstand constant submersion in water (max. 10 m water column pressure)).





713 OPEN CHANNEL FLOW CONVERTER

The MJK 713 Flow Converter measures the water level behind a weir or in a measurement flume. The converter measures the level and calculates flow values, displayed as actual flow and total flow. The 713 Flow Converter is supplied with an ultrasonic sensor or hydrostatic transmitter to measure the level.

The 713 Flow Converter has a 4-20 mA output signal and 5 digital outputs. The 713 Flow Converter's outputs can be connected to an external instrument or data logger to record flow volumes. The digital outputs are used for, e.g. an external alarm device to warn of excessively high or low flow, an external flow counter or a liquid sampler controlled proportionate to flow.



FLUMES

We offer a range of prefabricated flumes as accessories for the 713 Flow Converter. MJK supplies 3 types of flumes: Venturi, Parshall and Palmer Bowlus. They are available in stainless steel and fibreglass-reinforced polyester, depending on the type.

MJK's flumes are often used in water treatment plants and in stormflow locations or industrial wastewater outlets, where they can be used with the 713 Flow Converter to calculate wastewater duties.





FEATURES			
OPEN CHANNEL FLOW CONVERTER	713 FLOW CONVERTER	ULTRASONIC	HYDROSTATIC
Measurement range	Depending on sensor	min. 10 cm max. 3 m	min. 10 cm max. 3 m
Analogue 4-20 mA	•		
Digital outputs	5		
Approvals	UL CE	CE	ATEX UL CE

Open channel flow converter 713 can be used with



Fittings [page 64-65]



Accessories [page 69]

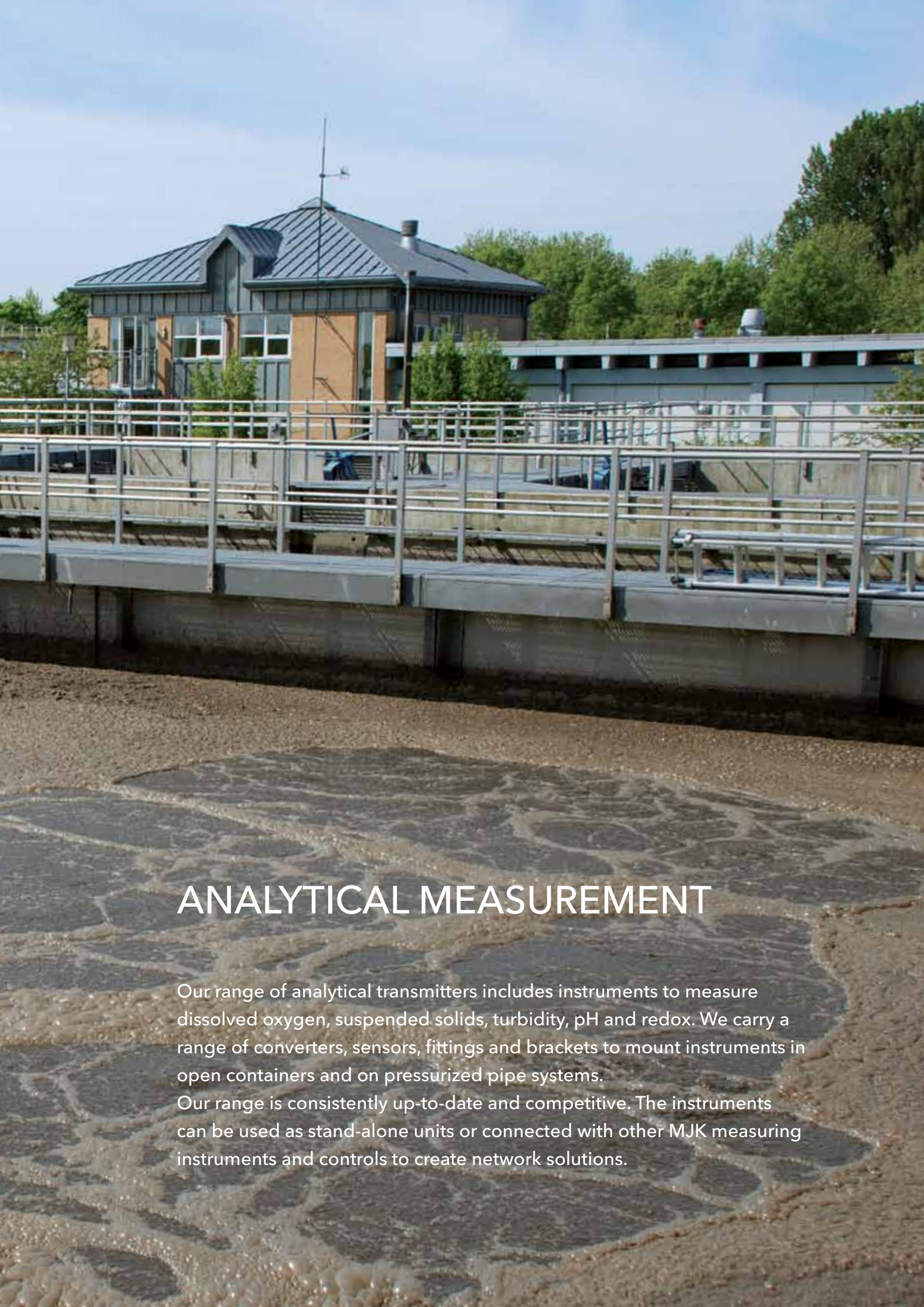




ANALYTICAL



[Analytical measurement and management of dissolved oxygen, suspended solids, turbidity and pH are important parameters in water supply and wastewater purification to optimise, save energy and for environmental documentation purposes.]



ANALYTICAL MEASUREMENT

Our range of analytical transmitters includes instruments to measure dissolved oxygen, suspended solids, turbidity, pH and redox. We carry a range of converters, sensors, fittings and brackets to mount instruments in open containers and on pressurized pipe systems.

Our range is consistently up-to-date and competitive. The instruments can be used as stand-alone units or connected with other MJK measuring instruments and controls to create network solutions.



PH & REDOX

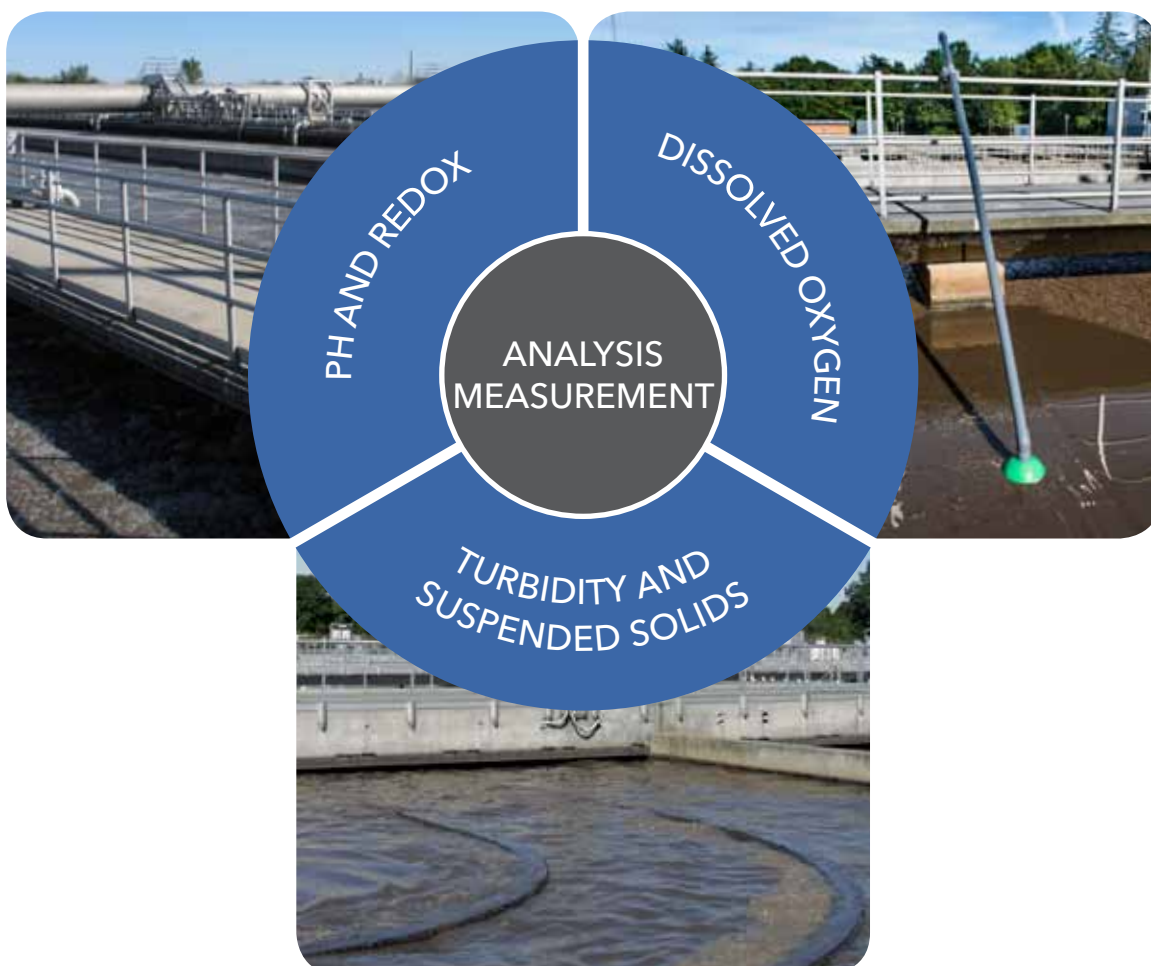
.....

pH and redox measurement is an element in many water supply processes, in wastewater treatment plants and, above all, in industrial processes. pH measurement involves measuring of the hydrogen ion concentration and is used in neutralisation, sedimentation and other chemical processes.

DISSOLVED OXYGEN

.....

Dissolved oxygen is often measured in modern water purification plants to control aeration so that sufficient oxygen is added to the water to allow a bacterial culture to grow. The increasing cost of energy makes measuring and managing oxygen concentrations one of the most important measurements at the plant.



TURBIDITY AND SUSPENDED SOLIDS

.....

When measuring turbidity and suspended solids, you measure particles in water. In regards to potable water, turbidity is most commonly measured to ensure that the water is pure.



OXIX® DISSOLVED OXYGEN TRANSMITTER – LOW MAINTENANCE

.....

The Oxix dissolved oxygen transmitter is a unique system which uses a technically advanced optical sensor to communicate with a specially developed converter.

Oxix is perfect for measuring dissolved oxygen in wastewater and process fluids. The optical sensor in Oxix has no replaceable membrane, contains no chemicals, electrolytes or similar substances and requires no calibration, Oxix has unique functionalities and benefits compared to alternative products.

If the sensor is connected to a water or compressed air supply, the converter controls automatic cleaning of the sensor's optical window, making the system practically maintenance-free.

PHIX® COMPACT

.....

pHix Compact is a ground-breaking and very practical alternative to customary pH and redox potential transmitters. It is simple to install and easy to use.

pHix Compact is an all-in-one electrode, fitting and transmitter unit.

The design eliminates the need for special fittings and there are no fragile cable connections.

When installed in the simplest way, you just connect pHix Compact to a display and a 12-30 V DC power supply.

For measuring in open channels and containers, the pHix Compact transmitter is fitted on a pipe which is immersed in the liquid.

For in-line measuring, pHix Compact is mounted into a 2" pipe connection.

pHix Compact has IP68 class enclosure protection and can therefore withstand an external pressure of up to 1 bar, corresponding to submersion at a depth of 10 metres of water.

SUSIX® ADVANCED OPTICAL SENSOR SYSTEM






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The SuSix sensor produced in acid-resistant, polished steel with a chrome dioxide coating to ensure minimal particle adhesion to the surface. The optical windows are made of scratch-resistant sapphire glass. Thanks to these hi-tech materials, very little manual cleaning is required.

When applied to especially demanding environments in which the sensor is likely to become soiled, we also supply a mechanical cleaning system

The SuSix sensor has 6 optical windows. Using only the one sensor, this patented measurement system measures turbidity in pure water and concentration in any thicker liquid, including sludge. Turbidity is measured in accordance with ISO 7027 standards.



FEATURES				
ANALYSIS	CONVERTER W. DISPLAY	OXIX® SENSOR	SUSIX® SENSOR	PHIX® COMPACT
Measurement range	Depending on sensor	0-25 g/l (dissolved oxygen)	0.001-9999 NTU/FTU 0.001-400 g/l (Sio2)	0-14 pH 0-50 / 80 °C
Fitting	Wall	Submersion	Flow / Submersion	Flow / Submersion
Housing	Fibreglass-reinf. Polycarbonate	PVC / PP 1.4404 / AISI 316L	1.4404 / AISI 316L	PPS 1.4404 / AISI 316L
Analog 4-20 mA	•			•
Modbus RS485	•	•	•	
HART				•
IP enclosure class	IP67	IP68	IP68	IP68
Network compatibility	Modbus RS485/ Profibus DP			
Built-in data logger	160,000 logs and graph view			
Remote display	up to 1,000 m			
Approval	c  US LISTED 			

MJK analytical measurement equipment can be used with

 Fittings [page 65-67]

 Accessories [page 68]

Mu Connect® RTU

AI
+1 -1 +2 -2 +3 -3

DO
01 01



RTU & CONTROLLERS



[MJK offers an up-to-date and very competitive range of RTU & controller units - with or without communication. Our RTU & controller units are often used in wastewater plants, pumping stations, small water purification and water supply plants to control pumps, filters, freshwater wells, water pressure and booster pumps.]



TRIED-AND-TESTED TECHNOLOGY

MJK supplies some of the market's most advanced and best-tested RTU & controller units. We have a wealth of experience and have been a leading supplier for more than 35 years.

MJK's controllers are in operation all over the world.



CONTROLLING A PUMPING STATION

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In Scandinavia alone, more than 10,000 pumping stations have an MJK product to control and monitor the process. One of the biggest benefits of using MJK products is that the equipment always has backward compatibility.

CONTROLLING A WATERWORKS

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MJK controllers can be used everywhere in a modern waterworks from the raw water intake, with the filters and in pumping station. Intelligent communication solutions make it possible to link the controllers and gather data from meters all over the plant.



CONTROLLING A WATER PURIFICATION PLANT

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When you use MJK systems at purification plants, RTU & control devices are simple and intuitive even though the processes involved are complex. Flexible in- and outputs on the units and energy-optimizing functions for pumping operations, calculation, data-logging and communication with SCADA systems make our products versatile and extremely flexible in operation.



CONTROLLERS WITH COMMUNICATION

.....

The Mμ Connect and Connect series are integrated control and monitoring units used to control waterworks, pumping stations and small purification plants and to measure and record flow, e.g. in an emergency storm flow location.

Our controllers have technically advanced functions to create energy-optimized pumping operations and control pumps with frequency converters. Functions also include intelligent data-logging, SCADA systems communication and calculating saved energy.

Our controllers are modular and developed for mounting in DIN rails with a bus system inside the DIN track for simple mounting of additional I/O modules.

Our controllers have an iNET Modbus port to allow for easy connection of MJK instruments, e.g. to measure flow, level, suspended solids, etc.



WIRELESS ACCESS

MJK has developed a smartphone app to help you operate the most important parameters.

The M μ Connect unit has built-in wifi communication.

Using the MJK Connect app for iPhone and Android, you can restart, stop or block any pump. Change start, stop and alarm levels. Read operating data as a number of starts, runtime, level and the most recent alarms.

Download the app free of charge from App Store or Android Market



DOWNLOAD THE MJK PUMP APP



ANDROID



IPHONE

HMI DISPLAY

The MJK HMI display for controllers provides the perfect overview of your pumping stations' operations. The display offers a large number of very practical functions, including pump status readings, a graphic display of level and an overview of active and historical alarms.





ALL-ROUND COMMUNICATION

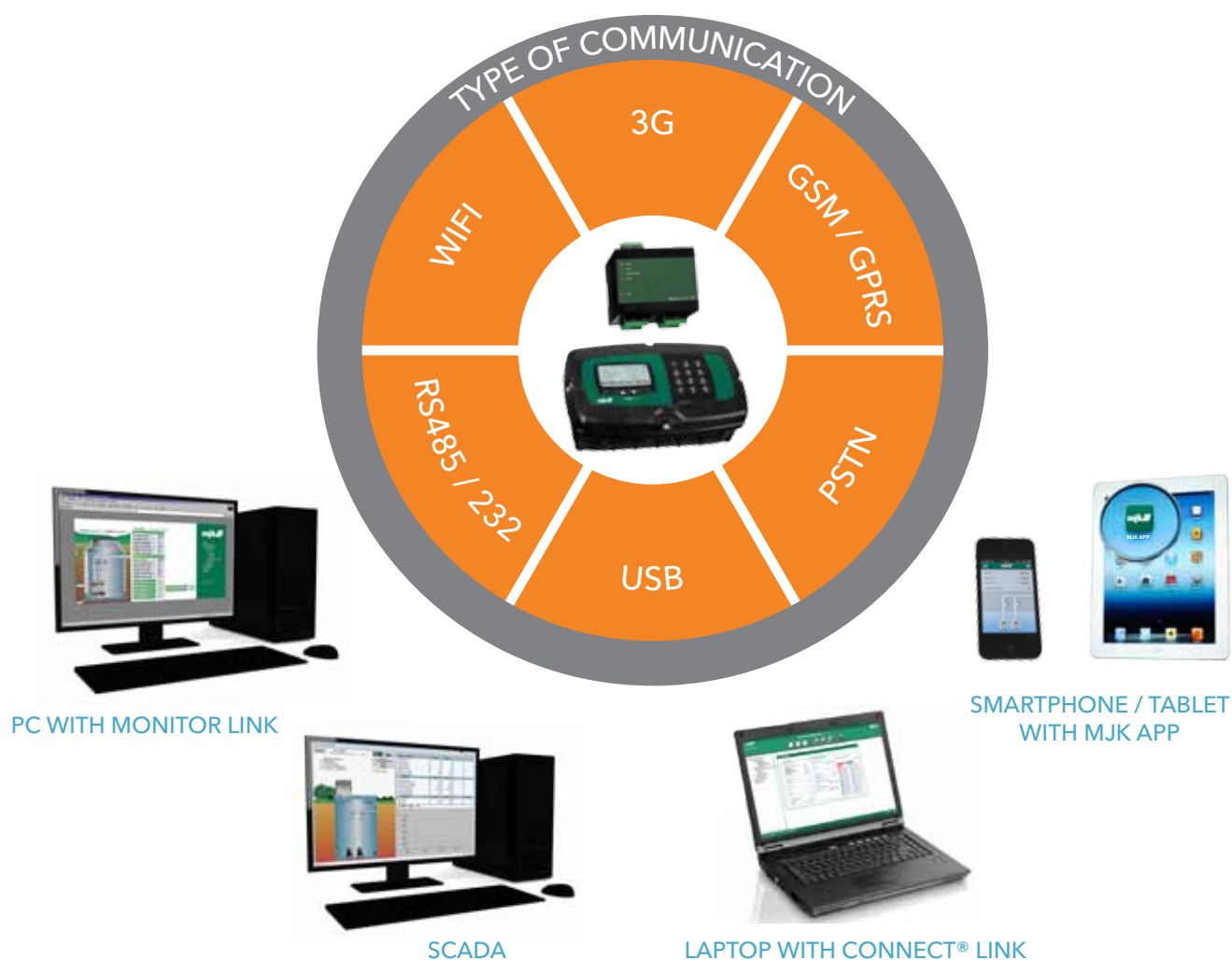
MJK controllers offer versatile communication options. You can read values on the installation site itself or via communication with a SCADA system.

Many MJK instruments are supplied with Modbus, Profibus, RS232 and RS485 communication modules.








Several of our control and data-logging units have PC communication, where the PC software simplifies instrument configuration. Any configuration can be saved as a file and sent by e-mail if you need a similar configuration at another installation.

M μ Connect has built-in wifi for communication with e.g. smartphones.

Monitoring devices, such as Connect, M μ Connect and Chatter, have built-in modem to communicate with SCADA systems and a number of communication protocols, including Modbus RTU and COMLI.





FEATURES				
UNIT	M μ CONNECT®	I/O MODULE	CONNECT®	HMI DISPLAY
Fitting	DIN rail	DIN rail	Wall	Panel front
Housing	PC / ABS	PC / ABS	Fibreglass-reinf. Polycarbonate	Aluminium
Analogue AI / AO	3 AI	Max. 16 AI Max. 16 AO	6 AI 1 AO	
Digital DI / DO	6 DI 2 DO	Max. 32 DI Mac. 32 DO	16 DI 8 DO	
Communication protocol	Modbus RTU / COMLI / AquaCom	Internal	Modbus RTU / COMLI/ AquaCom	Modbus RTU
Interface	GSM / GPRS / 3G / RS232 / RS485	Via DIN bus system	GSM / GPRS / 3G / RS232 / RS485	RS232 / RS485 / Ethernet Port / USB 2.0
IP enclosure class	IP20	IP20	IP67	IP66
Built-in data logger	160,000 logs		160,000 logs and graph view	Graph view 3 hours, 1-7 days
Display	Remote at up to 1,000 m		Remote at up to 1,000 m	7" TFT / Resolution 800 x 480 pixels
Approvals	c  US LISTED 	c  US LISTED 	c  US LISTED 	

Connect® / M μ Connect® can be used with



Level [page12-13]



Fittings [page 65]



Accessories [page 68-7171]



CONTROLLER WITHOUT COMMUNICATION

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In practise, there is often a need for local controllers which have no communication or remote control functions. MJK controllers are well-known for their reliability, flexible connections and simple, logical control system.

701 PUMP CONTROLLER - 1 OR 2 PUMPS

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The most simple pump controller in the MJK range. The 701 Pump Controller is widely used to control pumps in buildings and small pumping stations and anywhere where pumps or valves are controlled by the measured level.

704 PUMP CONTROLLER - UP TO 4 PUMPS

.....

For many years, the 704 Pump Controller has been synonymous with "the simplest pump controller possible". The 704 Pump Controller is used across the globe both in stand-alone applications and in connection with SCADA systems, where the controller is connected to a MJK RTU unit.

The 704 Pump Controller controls up to four pumps and is available with either an ultrasonic or a hydrostatic level measuring system. The configuration is controlled from an LCD menu display. You can choose between 10 different languages. Values can be read off as both metric and imperial units.

The 704 Pump Controller offers alternating pump routines, sump cleaning, timed pumping, etc.

712 PUMP CONTROLLER - GRINDER PUMPING STATION

.....

The 712 Pump Controller is first and foremost a cost-effective electrode based controller for controlling small pumping stations with grinder pumps. Level is controlled using standard electrodes and monitored by a timer to prevent "running dry" if a cloth or something similar should get caught in the electrodes.



FEATURES				
PUMP CONTROLLER	701	704 P	704 U	712
Sensor	Hydrostatic	Hydrostatic	Ultrasonic	Electrodes
Measurement range	Min. 30 cm Max. 300 m	Min. 30 cm Max. 300 m	Min. 30 cm Max. 10 m	Depending on electrode lengths
Analogue 4-20 mA	•	•	•	
Digital outputs	2	4	4	3
Approvals	CE	UL CE	UL CE	CE

MJK pump controllers can be used with

 Fittings [page 64-65]

 Accessories [page 69]





DATA LOGGER



[Data-logging requirements have been increased quite considerably in recent years. What is logged is not necessarily system data but increasingly other parameters, such as the natural water level. Data about lakes, streams, groundwater and, of course, also wastewater plants and potable water supply plants must now be collected and stored - regardless of the available power supply and internet connections.]



DEVELOPMENT PARTNERSHIP

The MJK Data Logger was developed over a number of years. We felt it was important to develop this product in collaboration with customers who use measurements and statistics on a daily basis.



SMS

Chatter can send data in a text message, directly to a mobile phone combined with communication from the Chatter in 3 ways: to a database, using a standard RTU protocol directly to a Scada system or by sending e-mail. The unit can also send a text message simply to notify of an alarm.

DATABASE

Chatter sends data to a database. From here, measurements and alarm signals can be uploaded for further processing or transmitted to a SCADA system.

The database solution is ideal for systems which have many Chatter units because an individual or several Chatter units can be re-configured from the server.



E-MAIL

The data is sent either by e-mail, as a plain text message or as a CSV attachment. This application is ideal for use with installations which have only one or just a few Chatter devices.

SCADA

Chatter functions as a battery-driven logger unit which communicates directly with a SCADA system using RTU protocol. Chatter can be integrated into systems which have, e.g. MJK controllers with communication at pumping stations.



MONITORING GROUNDWATER LEVELS

In water supply, Chatter is used to measure and monitor water level in monitoring wells.

On delivery, Chatter is built with an aluminium pipe with an impact-resistant plastic cover, into which the data logger, modem, antenna and battery are packed to form a compact unit. Chatter is connected to a MJK digital Expert Level Transmitter.



STORM FLOW REGISTRATION

Chatter can be used to register storm flow in a sewerage system. Chatter is activated when the wastewater reaches storm flow level.

Chatter measures the level behind the weir and calculates the volume of water. Chatter's measurements intervals can be adjusted, e.g. to take measurements at two-minute intervals. Regular measurement and logging continue as long as the flow continues over the edge of the weir. At selected times, e.g. once a day, all the logged data is transmitted to log storm flow volume, times and the number of storm flow events.



ALARM NOTIFICATION

To prevent unauthorised access to technical installations, Chatter can send an alarm notification to a SCADA system or as a text message.





CONSTRUCTION SITE MONITORING

Chatter is used in major construction projects to monitor the groundwater level. The example shown here is from a tunnel construction project in Malmö, Sweden. MJK supplied monitoring equipment to measure groundwater lowering at 120 water wells during the construction phase.



RECORDING AND ALARM NOTIFICATION OF EXTREME WEATHER CONDITIONS

Chatter is beneficial when used to monitor water levels in streams and watercourses in coastal areas or to report rainfall.



STORM FLOW RECORDING TO ENSURE HEALTHY BATHING CONDITIONS

Chatter is used by many Danish local authorities to notify if the water at their beaches is polluted and bathing has to be prohibited. Heavy rain can cause drains to overflow so that wastewater flows directly into storm flow basins, into the sea, streams and watercourses. When Chatter registers an emergency storm flow, it sends a message to the officer in charge of water quality at the beaches, who can warn visitors about the pollution, as described in the Danish Ministry of the Environment's bathing water regulations.





PIPE- OR WALL-MOUNTED DATA LOGGER

The Chatter data logger is available in two variants, either for fitting on a drilling pipe or for mounting e.g. on a wall.

New and existing meters are connected to the system using analogue, digital and Modbus-controlled inputs.

To save energy, Chatter only supplies power to connected transmitters while they are measuring, i.e. usually for less than 10 sec per measurement.

Chatter is also available as a 230 V AC unit with battery back-up.



PIPE FITTING

FEATURES			
CHATTER®	FOR PIPE	FOR WALL	FOR WALL
Power supply	3.6 V DC, 19 Ah li. battery	3.6 V DC, 19 Ah li. battery	230 V AC / 10-30 VDC
Battery lifetime	> 5 years *	> 5 years *	Built-in 3.7 v Li-Ion back-up battery
Memory	> 100,000 logs **	> 100,000 logs **	> 100,000 logs **
Log intervals	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours
Event log intervals	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours	1, 2, 5, 10 min., 1, 2, 4, 8, 12, 24 hours
Call intervals	1, 2, 4, 8, 12, 24 hours 10, 25, 50 100, 250, 500 or 1,000 logs	1, 2, 4, 8, 12, 24 hours 10, 25, 50 100, 250, 500 or 1,000 logs	1, 2, 4, 8, 12, 24 hours 10, 25, 50 100, 250, 500 or 1,000 logs
Fitting	On monitor pipe	Wall	Wall
Housing	Cover PC / Base alu	PC (Polycarbonate)	PC (Polycarbonate)
IP ingress protection class	IP67	IP67	IP67
Approval	CE	CE	CE

* at 1 measurement/day and 1 call/day

** date and time stamp



MJK Expert digital pressure transmitters with Modbus communication are ideal to measure level. As digital transmitters require no analogue/digital conversion, they achieve maximum precision.

Connect to the power supply and your digital transmitter is ready to measure. A digital transmitter can measure level and temperature, and consumes less power than a conventional transmitter.

You can connect 4 transmitters to the Modbus input to measure, for example, 4 levels or 2 levels and 2 temperatures.



FEATURES			
	700D	7070D	7060D
Power supply	10 V DC from Chatter®	3.6 V DC from Chatter®	3.6 V DC from Chatter®
Application	Water well drilling	Water well, Process fluids	Wastewater, Process fluids
Measurement range	0-30/100 m	0-3/10/30 m	0-3/5/10/30 m
Accuracy (+10-30°C)	±0.5%	±0,25%	±0,25%
Housing	1.4404 / AISI 316L	1.4404 / AISI 316L	PP
Membrane	1.4404 / AISI 316L	1.4404 / AISI 316L	1.4404 / AISI 316L
External diameter	Ø 16 mm	Ø 22 mm	Ø 60 mm
Output: Modbus RS485	•	•	•
Output: 0,1-2.5 VDC	•	•	•
Approval	CE	CE	CE



WALL MOUNTING

Chatter® can be used with



MagFlux® [page 22-23]



Level [page 12-13]



Fittings [page 65]



SAMPLER 780

nV/ccm
hjk
AUTOMATIC



SAMPLING



[For laboratory testing, physical samples of incoming and discharge fluids are important. You can take samples manually but, in the long term, automatic solutions are cheaper and more precise.]

ENVIRONMENTAL PROTECTION

Many wastewater outlets from water purification plants and industries are required to analyse discharge water before it is discharged into the natural environment. The MJK Sampler 780 is ideal for these purposes.

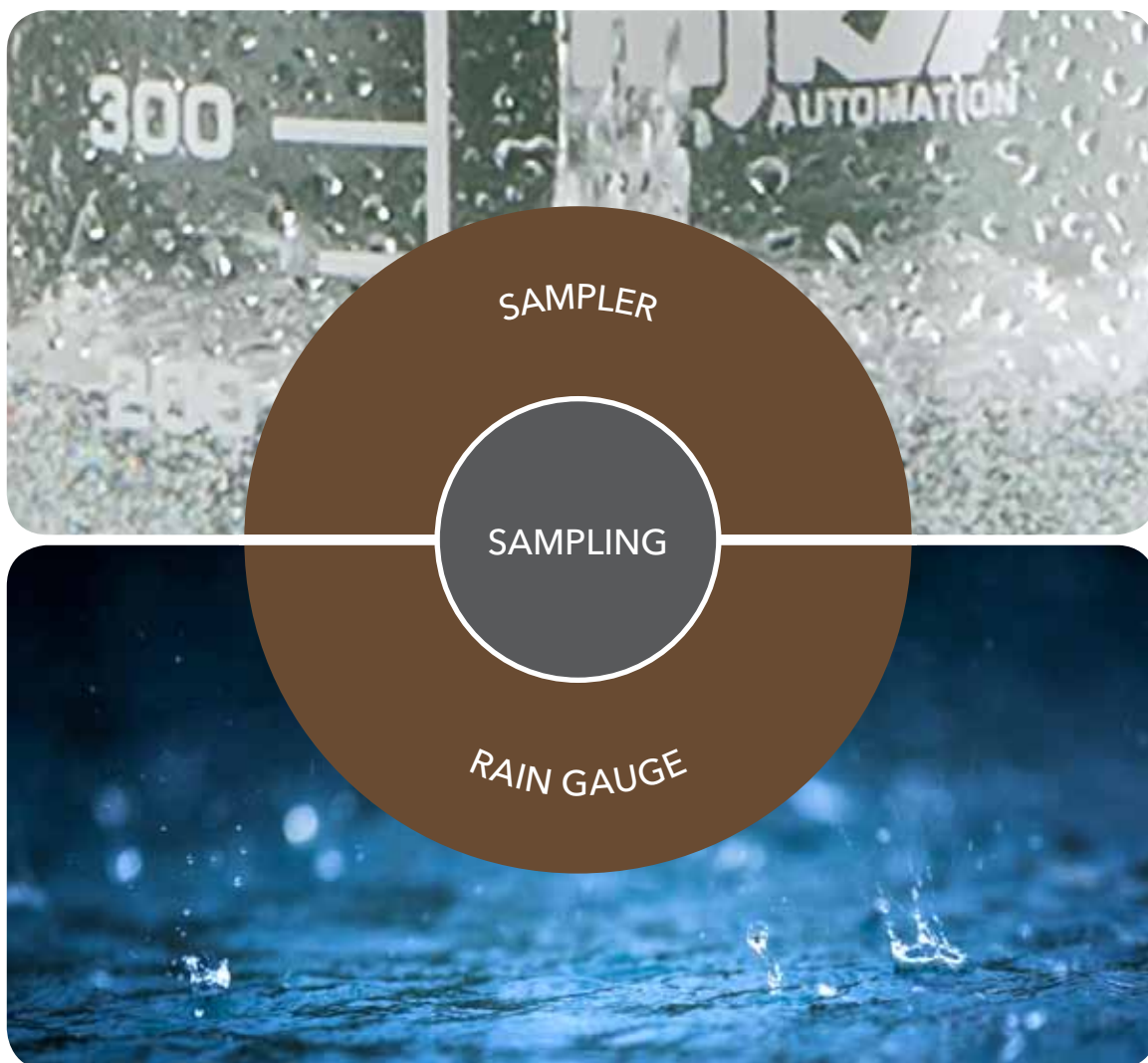




STRONG SAMPLER

When you want to collect water samples from a wastewater plant or stream, the equipment you use has to meet a number of stringent requirements.

For many years, MJK has supplied samplers to purification plants and industrial customers to collect samples at pre-determined intervals or in proportion to volume flows.



RELIABLE RAIN GAUGE

rainAhead is a strong, reliable and up-to-date rain gauge which measures rainfall intensity and quantity.

The unique self-emptying bowl is a patented solution, which makes rainAhead one of the most accurate rain gauges on the market.



SAMPLER 780

The MJK Sampler 780 sets the gold standard for the design and function of a sampler. The cabinet is welded in stainless steel. Parts that come into contact with fluids are made of either plastic or glass. The unit is operated from a waterproof touch panel.

We have done our utmost to create an instrument that is extremely reliable in operation. The sampler is splash proof (IP65). The valves are fitted inside the cabinet, while parts in contact with fluids (the parts that needs cleaning) are easily accessible on the outside.





FEATURES

SAMPLER

780

Sample volume

20 - 500 ml

Fitting

Wall

Housing

1.4404 / AISI 316L

Enclosure rating

IP67

Approval

CE

Sampler 780 can be used with



Open channel flow converter 713 [page 26]



RAINFALL QUANTITY

Climate change means that accurate measurements and reliable data are a must. Rainfall quantity is interesting as the data can be used when planning new installations and to control, e.g. pumping and wastewater storage.



RAINAhead

rainAhead is a strong, reliable and up-to-date rain gauge, which measures rainfall intensity and quantity.

The rain gauge can be fitted to a stand. It collects rain in a funnel which leads the water into the rainAhead measuring system. rainAhead is calibrated from the factory at 0.2 mm rain per pulse. The unique self-emptying bowl is covered by a global patent. rainAhead is one of the most accurate rain gauges on the market.

A Mµ Connect or Chatter unit can then measure and calculate rainfall intensity and quantity and activate pumps to avert storm flow.



FEATURES	
RAINAhead	
Capacity	max. 2.4 mm per minute
Solution	0.20 mm per pulse
Fitting	Fitting / Stand
Housing	Styrosun
Enclosure rating	IP68
Approval	CE

rainAhead can be used with



RTU & Controllers [page 36-43]



Fittings [page 64]

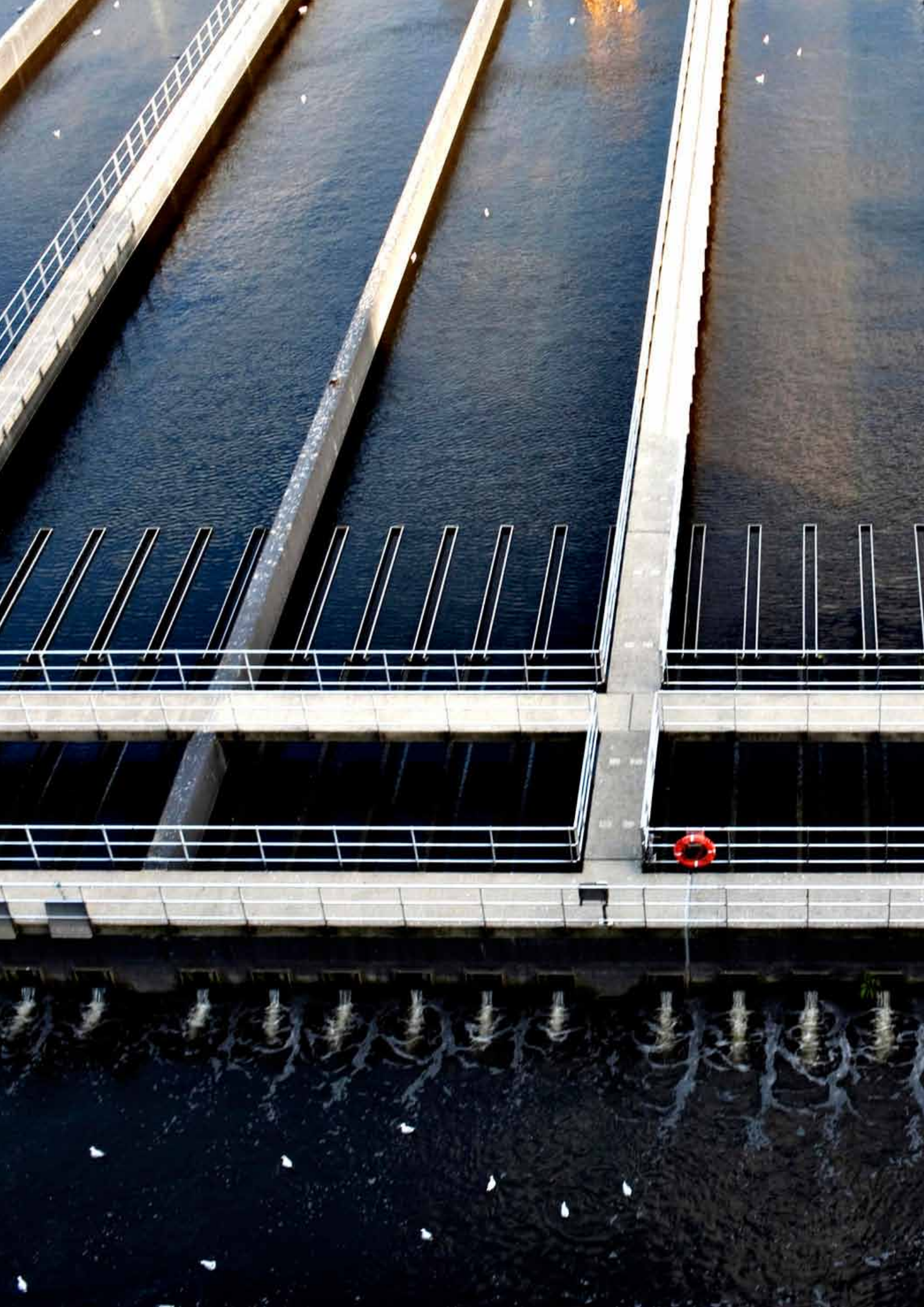




ACCESSORIES



[Precise and reliable measurement requires that sensors and transmitters are installed correctly and taken into account the need for regular cleaning and maintenance.]

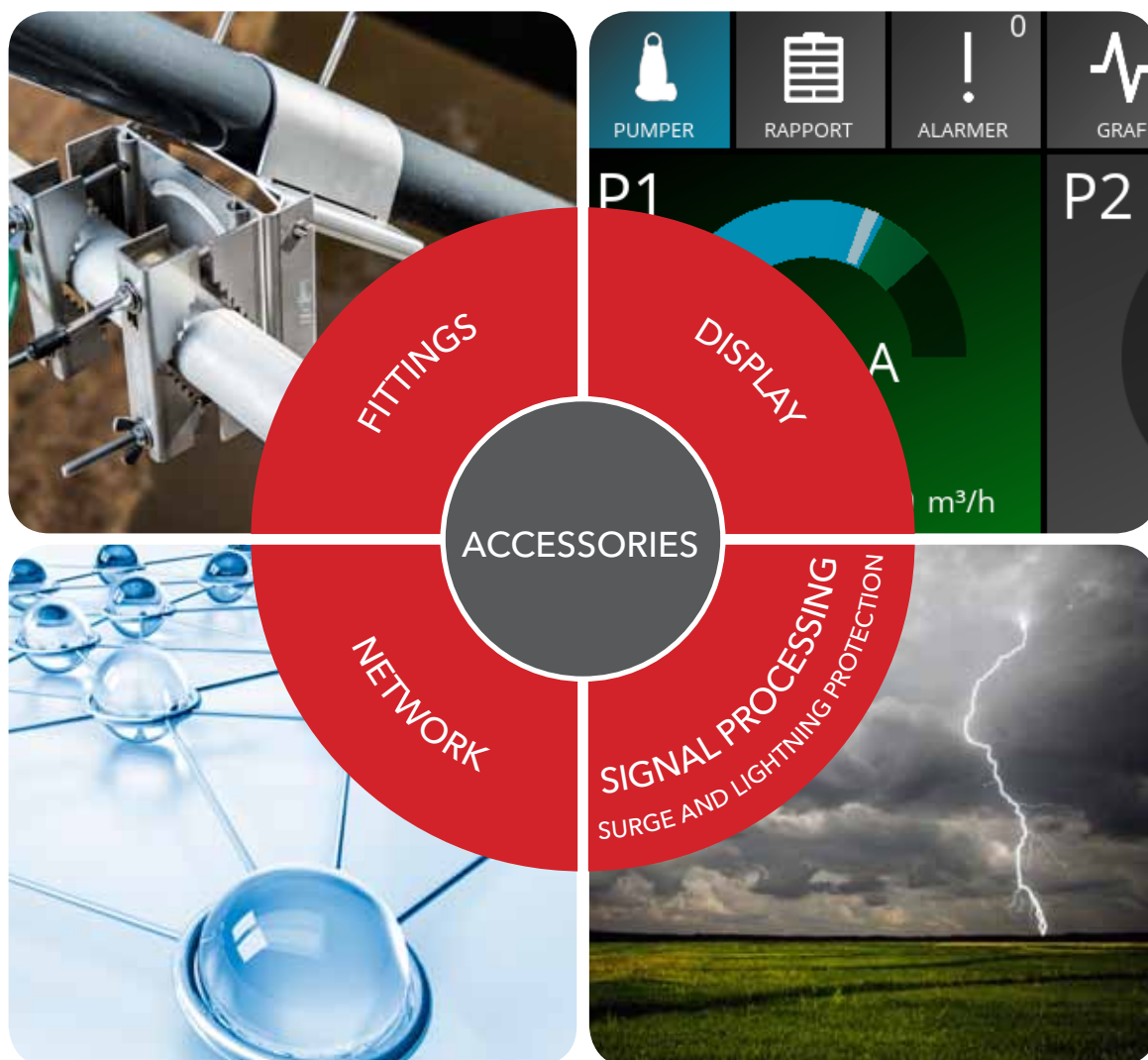




ACCESSORIES

MJK's comprehensive range of accessories and parts includes brackets for mounting sensors to walls or railings. Our brackets have a modular design and can be combined.

The system also includes brackets and fittings for mounting converters.





BRACKETS AND FITTINGS

.....

The brackets and fittings shown here are modular and can be combined to fit any MJK equipment or system.

Universal bracket

Universal pipe bracket. Developed with grip clamps for mounting on pipes. Our universal pipe bracket can be mounted on most other brackets and fittings.



Extension bracket

Extension bracket for wall or channel wall mounting. Suitable for use with analysis sensor fittings. Two-part bracket - easy to detach for cleaning and maintenance. Fitting can be released using a foot.



Shielding

To protect converters from the worst impacts of the weather.



Ultrasonic sensor bracket

Standard ultrasonic sensor fitting to mount on a wall or inside a well. Fitting also suitable for electrode base.

Fitting for ultrasonic sensor in open channels and gutters. Available in 2 widths - adapts to most channel widths.





Expert cable protector

For use with cable-hung pressure transmitters.
Cable protector available in several different sizes.



Converter protective cap

Stainless steel protective cap and fittings set.
Protects MagFlux, Oxix and SuSix from falling objects, branches, etc.



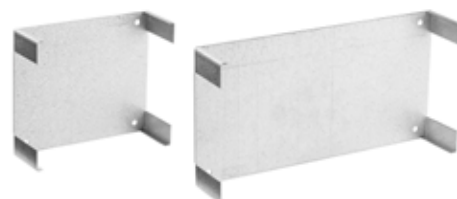
Converter mounting plate

Makes it possible to fit converter to an uneven surface.
Mounting plate is compatible with universal bracket.
Can also be used to mount converter on pipe or stand.



Converter panel bracket

Bracket specially designed for narrow or wide converter cabinet. For fitting cabinet in panel front



Converter solar/rain protection

Protects MagFlux, SuSix and Oxix display from strong sunlight/rain/contact.



Shuttle® mounting bracket

Use to fit Shuttle converter to panel front.





Angled bracket

Angled bracket to mount Oxix fitting to railings. This bracket ensure the sensor measures on the surface. Suitable for use with a universal bracket.



Submersion - Oxix® ball float

Floating device for Oxix sensor to measure at the surface. Use with angled bracket.



Submersion - SuSix®

Submersion fitting for SuSix turbidity and suspended solids sensor.





SuSix® in-line fitting

SuSix sensor flow in-line fitting are available with a valve (to remove sensor while it is in use) and a simpler version, which requires that pressure is released from the system before removing the sensor.



Submersion - pHix®

Fitting for the pHix Compact Transmitter.



pHix® in-line fitting

pHix Compact can be fitted in pipes and tanks if you install 2" Union nut fitting to allow pHix Compact Transmitter to mount directly into a pipe or on a tank.





DISPLAYS

The displays shown here are used to display measured values and can be used on field and panel mounting.

531

531 is a 4-20 mA loop powered indicator. The display is available as a stand-alone unit or mounted in a cabinet with pressure transmitters, when local indication of measured values are required.



532

532 is a 4-20 mA loop supplied indicator for panel mounting. Available with optional back lighting (requires separate DC voltage connection to the instrument).



533

533 has a 230 V AC power supply and supplies 24 V DC to power a dual-wire transmitter, e.g. pressure transmitter or pHix pH transmitter. The 533 display has 2 output circuits, which can be used either as a simple controller or as alarm indication.



HMI Display

HMI is a 7" graphic colour touch display. The HMI Display offers Modbus communication. Standard factory configuration for connection to M μ Connect to monitor and control a pumping station with 1-4 pumps.





SIGNAL PROCESSING

Signal converter

Diff-Calc calculates the difference between 4-20 mA signals from transmitters.

Diff-Calc is specially designed to measure level differences where Diff-Calc is connected to two ultrasonic or hydrostatic level transmitters. Diff-Calc can be applied to all 4-20 mA signals for calculation of temperature difference, difference between pH values, etc.



A / mA converter

The Ampere / mA converter is used to monitor current where the motor current from one of the phase conductors is converted to an mA-signal, so the motor current can be applied for control, monitoring and recording.

The converter is supplied with two separate channels and specifically designed to monitor twin-pump pumping stations.



Insulation amplifiers

ISO Power insulation amplifiers are used to insulate measurement circuits and power supply in two-wire transmitters. ISO Power is suitable for DIN rail fitting and wall mounting. The wall version has IP67 enclosure protection rating.



Surge and lightning protection

MJK Surge Arresters are used in applications where excessive voltages caused by lightning or other transients can be expected.

Surge Arresters are constructed with dual protection to cover both intermediate and primary protection.





NETWORK

.....

Transmitters and controllers can be connected via a Modbus network, which is included in most MJK units. However, if you also need to communicate with an external system, you are advised to fit a communication module to separate the systems.



Modbus

To communicate with an external Modbus network, MJK offers a Modbus module suitable for mounting in the MagFlux, SuSix or Oxix display. The MJK Modbus communication module separates the internal network from the external network, e.g. to a PLC. The MJK Modbus communication module can transmit data from 4 interconnected MJK transmitters.



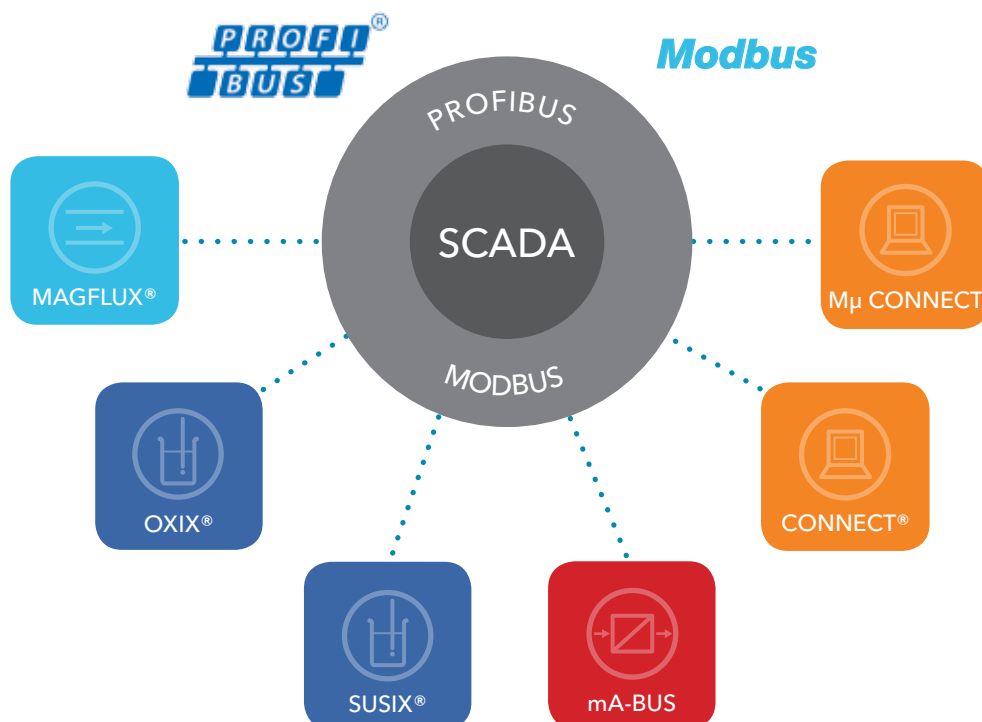
Profibus

To communicate with an external Profibus network, we supply a Profibus module suitable for mounting in the MagFlux, SuSix or Oxix display. The MJK Profibus communication module can transmit data from 4 interconnected MJK transmitters.



mA-Bus Converter™

The MJK mA-Bus Converter is used to convert mA signals to Modbus so that the measured value can be displayed on an MJK Display with e.g. flow. In terms of communication, the mA-Modbus Converter operates like, e.g. a MagFlux, and can transmit data to an external Modbus or Profibus network.



TECHNOLOGY AND DESIGN

MJK products are continuously improved and we strive consistently to introduce new ideas and technologies into our products.



PRODUCTION

Our production methods and consistent efforts to improve processes and testing ensure that products leaving the factory meet the highest standards of precision and operating reliability.



WAREHOUSE

MJK stocks all standard units with standard measuring ranges and can therefore deliver at short notice.



SALES AND HOTLINE

Our Sales Team is more than willing to drop by for a chat about your current needs in relation to Xylem's broad range of products. We can supply a single product and comprehensive project solutions.

When you have received an MJK product, we are at your disposal, providing support and advice to ensure that you get the full benefit of your purchase.



TRAINING COURSES

MJK also offers a full programme of training courses, the purpose of which is to teach end-users how to use our products and all the options available to them when they choose an MJK solution. Our training courses also equip the employee to maintain and service your MJK solution in the future.



SERVICE AND MAINTENANCE

MJK offers a global programme of service and maintenance. We have an extensive network of authorised MJK / Xylem partners and distributors, who are always on hand to help our customers with everything from technical advice and support to, if necessary, hands-on assistance in the field.

We have a highly professional approach to servicing and maintaining MJK products. We can supply detailed documentation and instruction manuals for every product to guide the user to an understanding of the service and maintenance that the individual MJK product requires.





PROFESSIONAL ADVICE -
RELIABLE PROCESS - CLEAN WATER

ENVIRONMENTAL GOAL

Through an improved and optimized process we intent to lower the consumption of natural resources. MJK develops products that will ensure a cleaner, healthier and more efficient drinking water and wastewater environment whilst continuously reducing the energy consumption of the process.

We have been doing this for more than 40 years, and we will strive to continue developing our knowledge, abilities and products, because we know that an effective process provides a cleaner environment.



COMPLETE SOLUTIONS

At MJK travelling from idea to final product is not far. Our sales team is working closely with the developers' team creating new products, solving concrete assignments whilst keeping coherence to the networks and diversity known from the drinking water and waste water businesses globally.

We prefer to deliver more than just a box, we mount, perform service and maintenance of all MJK products as well as we offer a wide range of specific courses, sharing our knowledge with you.



Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xyleminc.com



MJK Automation
Byageren 7
DK-2850 Nærum
Denmark
Tel +45 45 56 06 56
Fax +45 45 56 06 46
www.mjk.com

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