

easy Line



**easy Line**

Plug & Play analytics

Complete solution package

Easy commissioning  
& installation

## Plug & Play Analytical Solutions

Making Basic Measurements Easy

**METTLER TOLEDO**

## A Complete Solution Package

### Exceeding Expectations for Routine Measurements

**The easy Line is designed around one central requirement: ease-of-use. From system selection to commissioning, operation and maintenance, all system components are narrowly tailored to eliminate all unnecessary hassle. The result: an unique solution in terms of convenience and performance for measuring pH, ORP, dissolved oxygen and conductivity.**

When no-fuss measurement solutions are required, choices abound but results can vary widely. From component selection to configuration through cumbersome calibration, time can be lost before tangible results are obtained. But with the METTLER TOLEDO easy Line, Plug & Play components fit together easily for maximum compatibility and simplicity of use.

#### A unique concept

The easy Line relies on digital technology for seamless communication between the transmitter and the sensors. This includes serial number, factory and user calibration, for Plug & Play measurement convenience. Simply connect the easySense™ sensors and the M200 easy does the rest. The same multi-parameter transmitter can be used for all sensor types: pH, ORP, oxygen and conductivity.

#### Flexible multi-parameter solutions

Water pre-treatment management is simple using the easy Line for pH adjustment or dechlorination monitoring with ORP measurement. Dual easySense conductivity sensors monitor RO membrane performance

with on-line percent rejection computation. At the other end of the plant, wastewater treatment is controlled effectively using easySense dissolved oxygen and pH sensors.

#### Savings in all phases

The M200 easy models offer panel, wall or pipe mounting with one or two channels of measurement for any combination of parameters. This greatly simplifies specification, documentation, purchasing, installation, startup, maintenance and spare parts. The cost of ownership is minimized at every project step.

#### Package for system fabricators

The easy Line particularly addresses the requirements of applications, where turn-key solutions are important:

- make-up water & pre-treatment
  - applications: chemical injection control, purity monitoring, pH adjustment
- primary filtration
  - applications: filter effectiveness, purity monitoring
- reverse osmosis and desalination
  - % rejection for membrane performance, pH pre-treatment



System fabricators



Utilities





Water pre-treatment

# As Easy as 1-2-3

Getting Started has Never Been so Easy

With system elements that are fully compatible, time-consuming component selection is a thing of the past. The result: the measurement loop is up and running in no time.

	1. Select Installation Type	2. Select Measurement	3. Select Process Connection
<b>Transmitter</b>	<p>M200 easy 1/2 DIN</p>  <p>Wall/pipe mount</p> <p>M200 easy 1/4 DIN</p>  <p>Panel mount</p>	<p><b>Conductivity</b></p> <ul style="list-style-type: none"><li>easySense Cond 71</li><li>easySense Cond 72</li><li>easySense Cond 73</li><li>easySense Cond 77</li></ul> <p><b>pH</b></p> <ul style="list-style-type: none"><li>easySense pH 31</li><li>easySense pH 32</li><li>easySense pH 33</li><li>easySense pH 34</li></ul> <p><b>ORP</b></p> <ul style="list-style-type: none"><li>easySense ORP 41</li></ul> <p><b>Oxygen</b></p> <ul style="list-style-type: none"><li>easySense O<sub>2</sub> 21</li></ul>	<p><b>Housings</b></p> <ul style="list-style-type: none"><li>easyFit 21, 22</li><li>easyFlow 21, 22</li><li>easyFlow 23</li><li>easyDip 21, 22</li></ul>

# M200 easy Multi-Parameter Transmitters

## All-in-one Solution With Maximum Convenience

**One transmitter, four measurement parameters: the versatile M200 easy minimizes your costs of ownership. Thanks to pre-calibrated digital sensors, minimal transmitter configuration is needed.**

M200 easy 1/2 DIN



M200 easy 1/4 DIN

When expectations for a field device go beyond just good measurement, the M200 easy is convincing with its exceptional user-friendliness. It accepts all digital easySense sensors without the need for calibration or configuration. For commissioning, a user-friendly "Quick Setup" routine will guide you through the first settings.

### Your benefits

#### Faster commissioning

Factory calibrated sensors can be installed and replaced without the need for recalibration at the measurement point.

#### Error-free configuration

Pre-calibrated sensors carrying their own data save installation time.

#### Large, easy-to-read interface

Intuitive operation for higher convenience and productivity gain.

### Selected specifications of the M200 easy

	M200 easy	
Parameters	pH, ORP, dissolved oxygen, conductivity	
Channels	single or dual	
Power	100 to 240 V AC or 20 to 30 V DC, 10 VA	
Enclosure	IP65	
Relays	2-SPDT mechanical rated at 250 V AC, 3 Amps resistive	
Digital input	2 (1 for single channel)	
User interface	4-line backlit LCD, 5-button key pad	
Password protection	yes	
Current outputs	two or four 0/4 to 20 mA, 22 mA alarm, galvanically isolated from input and from earth/ground	
Service interface	USB	
Analog sensors	no	
Digital easySense sensors	pH, ORP, dissolved oxygen, conductivity	
Order number	M200 easy 1/2 DIN	M200 easy 1/4 DIN
Single channel:	52 121 555	52 121 554
Dual channel:	52 121 557	52 121 556

# easySense™ Conductivity Sensors

## For Wide Application Coverage

The proven easySense™ sensors are designed for trustworthy performance with the convenience of digital technology. Their wide measurement range allows for installation in many applications.

With the easySense™ conductivity sensors, no need to key in the cell constant in the transmitter: the "Plug & Play" digital technology transmits all sensor data to the transmitter in seconds and without errors.

The 2-electrode sensors are ideal for measurement at low to very low conductivity, in filtration, pre-treatment or Reverse Osmosis (RO) applications. The 4-electrode sensor covers medium-conductivity wastewater applications.

Because the high performance measuring circuits are located right in the sensor bodies, measure-

### Your benefits

#### Complete application coverage

Compact choice of rugged and versatile sensors.

#### Time-saving installation

Plug & Play sensors carry their own calibration cell constant.

#### Low cost of ownership

Long-lasting sensors that do not require heavy maintenance.

ments are unaffected by cable resistance, capacitance or electrical noise susceptibility. Electrical connections are simplified and the digital signal is unaffected by cable length.

### Selected specifications of easySense™ Conductivity sensors

	71	72	73	77
Type	2-electrode	2-electrode	2-electrode	4-electrode
Cell constant	0.1 cm <sup>-1</sup>	0.1 cm <sup>-1</sup>	0.1 cm <sup>-1</sup>	0.350 cm <sup>-1</sup>
Measuring range	0.1 ... 2000 µS/cm	0.1 ... 2000 µS/cm	0.1 ... 2000 µS/cm	0.02 ... 400 mS/cm
System accuracy	±3.0% or better	±3.0% or better	±3.0% or better	±5.0% or better
Temperature compensation	standard high purity, cation, ammonia, Light 84, isopropanol, glycol			
Temperature sensor	30 kOhm NTC	30 kOhm NTC	30 kOhm NTC	30 kOhm NTC
Wetted parts	Titanium	Titanium	Titanium	1.4435 SS (316L)
Insertion fitting	¾" NPT	½" NPT	¾" NPT & subm.	¾" NPT
Cable Length/Order nr				
- 7.6 m (25 ft)	58 031 300	58 031 302	58 031 304	-
- 30.5 m (100 ft)	58 031 301	58 031 303	58 031 305	-
- K8S connector	-	-	-	52 003 810

easySense Conductivity 71



easySense Conductivity 72



easySense Conductivity 73



easySense Conductivity 77



# easySense™ pH/ORP & Oxygen Sensors

## Top Performance Meets Convenience

**When your basic applications require a reliable and long-lasting measurement point, easySense™ sensors are the answer. Using proven technology, they withstand harsh process conditions and are easy to use.**

pH measurement often requires skilled personnel in order to maintain and calibrate the sensors. easySense™ sensors are pre-calibrated, with no specialist know-how required for sensor replacement at the measurement point.

Designed using METTLER TOLEDO's long-standing expertise in process analytics, the easySense pH sensors are problem-solvers for basic applications. The easySense O<sub>2</sub> 21 sensor for dissolved oxygen (DO) uses rugged membranes that can easily be replaced in minutes.

### Your benefits

#### Long sensor lifetime

Leads to lower replacement costs – even under harsh process conditions.

#### Reliable design

METTLER TOLEDO technology for use in basic applications.

#### No need for pH buffers at startup

Pre-calibrated sensors do not require a first on-site calibration.

easySense pH 31



easySense pH 32, 33, 34



easySense ORP 41



easySense O<sub>2</sub> 21



### Selected specifications of easySense™ pH/ORP and oxygen sensors

	31	32	33	34	41	21
Parameter	pH	pH	pH	pH	ORP	Oxygen
Measurement range	0...14	0...14	0...14	0...14	± 1500 mV	0.03 ppm – 100% saturation
Temperature	-5...80°C 23...176°F	-5...80°C 23...176°F	-5...80°C 23...176°F	-5...80°C 23...176°F	-5...80°C 23...176°F	0...60°C 32...140°F
Pressure resistance	0...2 barg 0...29 psig	0...2 barg 0...29 psig	0...2 barg 0...29 psig	0...2 barg 0...29 psig	0...2 barg 0...29 psig	0.5...2 barg 7...29 psig
Pressure resistance 0...40°C/32...104°F	0...6 bar 0...87 psig	–	–	–	0...6 bar 0...87 psig	–
Reference system	Argenthal (Ag/AgCl)	Argenthal (Ag/AgCl)	Argenthal (Ag/AgCl)	Argenthal (Ag/AgCl)	Argenthal (Ag/AgCl)	–
Reference electrolyte	gel	pressurized gel	pressurized gel	pressurized gel	polymer	–
Diaphragm	1 ceramic	1 ceramic	1 ceramic	1 ceramic	open junction	–
Membrane glass	HA	HA	HF	LoT	– (Platinum ring)	–
Application	general purpose	harsh processes	HF resistant	low temperature	general purpose	general purp.
Plug head	K8S, Pg 13.5	K8S, Pg 13.5	K8S, Pg 13.5	K8S, Pg 13.5	K8S, Pg 13.5	K8S, Pg 13.5
Order number	52 003 771	52 003 768	52 003 770	52 003 769	52 003 772	52 206 406

# easy Housings

## Your Quickest Connection to the Process

**Housings represent the physical link between your process and the measurement system, providing a secure connection without complicated installation steps. The easy Line housings do just that.**

Housings must provide a correct placement of the sensor in the process, as well as withstand the sometimes harsh temperature, pressure and chemical conditions imposed by the process.

easy Housings are designed for the typical conditions that prevail in light industrial and utilities applications.

Their reliable and proven design make them a preferred choice for long-lasting operation and fast installation.

### Your benefits

#### Wide selection of installations

Solutions for installation in vessels, pipes and open basins.

#### Versatility

A choice of high-quality materials for medium to harsh process conditions.

#### Variable immersion length

Selectable immersion length for easy installation in each application.

### Selected specifications of easy housings

	easyFit 21	easyFit 22	easyFlow 21, 22	easyFlow 23	easyDip 21, 22
Material	CPVC	1.4404	CPVC	Polysulfon	PVC
Temperature	-5...80 °C 23...176 °F	-5...100 °C 23...212 °F	-5...80 °C 23...176 °F	-5...130 °C 23...266 °F	0...60 °C 32...140 °F
Max pressure at max temperature	7.0 barg/65 °C 3.5 barg/80 °C 100 psig/149 °F 50 psig/176 °F	10 barg/100 °C 145 psig/212 °F	3.5 barg/80 °C 50 psig/176 °F	7.0 barg/130 °C 100 psig/266 °F	ambient
Order number	52 403 951	52 403 952	<b>easyFlow 21:</b> 52 403 953	52 403 955	<b>easyDip 21:</b> 52 403 956
- US size			<b>easyFlow 22:</b> 52 403 954		<b>easyDip 22:</b> 52 403 957
- metric size					

easyFit 21, 22



easyFlow 21, 22



easyFlow 23



easyDip 21, 22



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