EasyClean systems

Technical data

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EasyClean 200 e



Valve assembly



Automated in-line cleaning system for your sensors

Only a clean sensor can provide reliable and accurate measurement results. With our EasyClean systems, cleaning and calibration of sensors can be fully automated. Both the cleaning interval and the duration of flushing can be individually programmed for specific applications.

The EasyClean range starts with two comparatively basic versions intended for straightforward sensor flushing, the EasyClean 100 and EasyClean 150. These two systems are primarily intended for applications where contamination occurs in the form of water-soluble substances.

The EasyClean 200e can, besides the use of water alone, also be employed for cleaning with the aid of chemical solutions. Concentrated cleaning agent of your choice is pumped directly to the tip of the sensor. Cleaning and rinsing times as well as the cleaning interval can be adjusted individually.

Туре	Function
EasyClean 100	flush
EasyClean 150	flush
EasyClean 200 e	flush, chemical cleaning

Advantages through the employment of EasyClean:

- replacement/maintenance cost savings due to an extended lifetime of sensors
- higher safety standard through not having to remove the sensor during maintenance work
- increased process safety due to accurate, reliable measurement
- greater reproducibility of measurements for better process control
- defined and consistent product quality
- wide flexibility of system installation
- user-selectable cleaning medium/wide choice of cleaning media
- regular maintenance of poorly accessible installations.

Some typical applications

Wastewater:	Detoxification and neutralization of industrial wastewater
Pulp&paper:	Spreading on paper machines Bleaching process
CPI:	Optimization of dye manufacture Production of agrochemicals Monitoring of chemical reactions

EasyClean 100 – an ideal control unit for use with the InDip immersion housing



When taking measurements in open basins or channels, e.g., in wastewater neutralization plants, the sensor is mostly mounted in an immersion housing. This housing allows the sensor to be safely located in the basin or channel at a defined immersion depth. Conventional cleaning methods require removing the whole installation from the basin. Using EasyClean 100, this cleaning procedure can be fully automated, while the housing and sensor remain in the immersed position.

EasyClean 100 consists of a control unit and an additional spray head located at the submerged end of the InDip 550 immersion housing. Air or water is sprayed directly at the tip of the sensor to ensure effective cleaning. It is therefore completely unnecessary to remove the installation from its mounted position. Cleaning is carried out automatically through activation of the "Wash" contact in the associated transmitter. Depending upon the degree of contamination or fouling of the sensor, the cleaning interval and/or duration can be set individually as required.



Sensor cleaning with air using the cavitation effect.

Cavitation:

A localized low-pressure vaporization condition (cavities or bubbles) within a liquid, is not always appreciated. In our particular case, the sound and/or vibration on the sensor surface caused by bubble collapse is welcomed to remove contamination.

Dimensions EasyClean 100

For the exact dimensions relative to pipe/post or wall mounting, please refer to the specifications section on pages 14 and 15 of this documentation.



mm (inch)

EasyClean 100

Electrical connections EasyClean 100

Electrical connections of EasyClean 100 and a transmitter.



Electrical connections

Transmitter X100 e

Define rinse interval and rinse time according to the process requirements on the transmitter X100e.



Transmitter M300

Set relay #1 (default) or #2, #3, #4 on the transmitter to rinse contact.

Define rinse interval and rinse time according to the process requirements on the transmitter M300.



Transmitter M700

Set relays K3 (or K1 or K2) to rinse contact. Set it on NO (normally open).

Define the rinse interval and rinse time according to the process requirements.



Transmitter Trb 8300

Define rinse interval and rinse time according to the process requirements on the transmitter Trb 8300.



System configuration and ordering information EasyClean 100



The EasyClean 100 delivery consists of the following:

N°	Designation	Order no.
1	EasyClean 100	52 402 304
2	Water connection: G ¹ /4" female or ¹ /4" NPT male	
3	Connecting hose: \emptyset 6/4 mm, length 5 m (16.4 ft), material LDPE	
	\rightarrow connection control unit \rightarrow InDip	
	Accessories and spare parts (to be ordered seperately)	
4	Wall mounting kit, complete	52 402 306
5	Weatherproof hood	52 402 316
6	Spray head for InDip 550/PVC	52 402 291
7	Spray head for InDip 550/PVDF	52 402 290
8	Hose LDPE for compressed air connection (20 m/65.6 ft)	52 402 314
9	Connecting cable: control unit \rightarrow transmitter (5 m/16.4 ft)	52 300 265
10	Connecting cable: control unit \rightarrow transmitter (10 m/32.8 ft)	52 300 266
11	Panic button (emergency shutdown)	52 402 317
	Pipe/post mounting kit, complete (description on page 15)	52 402 308
	Instruction manual EasyClean 100/150 (e/g/f)	52 500 178

EasyClean 150 – the ideal control unit for use with the InDip immersion housing



Sensors installed in a pipe or reaction vessel must be withdrawn from the process periodically for maintenance. The InTrac retractable housing features a flushing chamber that is safely sealed off from the process. Using an InTrac retractable housing, sensors can easily be removed from the medium for cleaning, maintenance, or replacement without process interruption.

The EasyClean 150 is the simplest, safest, and most cost-effective way to automate sensor flushing. The flushing cycle and it's duration can be triggered automatically through the "Wash" contact in the transmitter, or performed manually by pressing the appropriate keys on the EasyClean control unit. The position of the retractable housing will be indicated through the EasyClean 150.

EasyClean 150 will work optimally with all pneumatic operated retractable housings such as the InTrac 777 e.

Dimensions EasyClean 150

For the exact dimensions relative to pipe/post or wall mounting, please refer to the specifications section on pages 14 and 15 of this documentation.





mm (inch)

EasyClean 150

Electrical connections EasyClean 150

Electrical connections of EasyClean 150 and a transmitter.



Electrical connections

Transmitter X100 e

NOTICE Bridge terminal 2 and 3 in the EasyClean150.

Define rinse interval and rinse time according to the process requirements on the transmitter X100e.



EasyClean 150

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Transmitter M300

NOTICE

Bridge terminal 2 and 3 in the EasyClean150.

Set relay #1 (default) or #2, #3, #4 on the transmitter to rinse contact.

Define rinse interval and rinse time according to the process requirements on the transmitter M300.



M700



EasyClean 100 and 150 are designed to work together with Mettler Toledo transmitters. Please consult relevant instruction manuals of third party transmitters for proper installation.

process require

Transmitter M700

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Bridge terminal 2 and 3 in the EasyClean150. Set relays K3 (or K1 or K2) to rinse contact and NO

(normally open). Define the rinse interval and rinse time according to the process requirements. Set input OK1 to HOLD (active 10–30 V) for the external hold signal.

Transmitter Trb 8300

Define rinse interval and rinse time according to the process requirements on the transmitter Trb 8300.

System configuration and ordering information EasyClean 150



The EasyClean 150 delivery consists of the following:

N°	Designation		Order no.
1	EasyClean 150		52 402 319
2	Water connection:	G 1/4" female or 1/4" NPT male	
3	Connecting hose:	\oslash 6/4 mm, length 5 m (16.4 ft), material LDPE	
		ightarrow connection control unit $ ightarrow$ retractable housing	
4	Drainwater hose:	\oslash 6/4 mm, length 5 m (16.4 ft), material LDPE	
		ightarrow connection retractable housing $ ightarrow$ drain	
	Accessories and		
3/4	Tubing PTFE 6/4 r	52 402 283	
5	Wall mounting kit,	52 402 306	
6	Weatherproof hoo	d	52 402 316
7	Hose LDPE for cor	mpressed air connection (20 m/65.6 ft)	52 402 314
8	Pneumatics hose	52 401 322	
9	Connecting cable:	control unit \rightarrow transmitter (5 m/16.4 ft)	52 300 265
10	Connecting cable:	control unit \rightarrow transmitter (10 m/32.8 ft)	52 300 266
11	Panic button (eme	ergency shutdown)	52 402 317
	Pipe/post mounti	ng kit, complete (description on page 15)	52 402 308
	Instruction manua	I EasyClean 100/150 (e/g/f)	52 500 178

EasyClean 200e - chemical sensor cleaning system for use with InTrac retractable housings



Heavy contamination of sensors has a direct impact on their performance and serviceable life. Only a clean sensor can guarantee optimum performance and accuracy in a process. EasyClean 200e has been developed specially for the regular cleaning of sensors in processes where there is a latent risk of fouling. To avoid any changes in the potential of the sensor due to fouling, EasyClean 200e first flushes the sensor with water and then cleans it with an individual cleaning agent according the degree of contamination. The cleaning cycle is activated by the "Wash" contact of the transmitter. EasyClean controls the entire cleaning sequence for a sensor fitted in an InTrac retractable housing.

The position of the retractable housing can be continuously monitored by an inductive position indicator. In the event of faulty operation of the system or of the retractable housing, the control unit of the EasyClean activates an alarm contact. Triggering of the cleaning cycle can be automated through the "Wash" contact in the transmitter, or manually by pressing the appropriate key on the EasyClean control unit.

Strict isolation of the electronics from the wet areas allows safe operation using appropriate cleaning solutions. The diaphragm pump installed in the valve assembly guarantees optimal cleaning at a predefined cleaning solution concentration.

Added accessories also allow the system to be adapted individually to suit local requirements.

Dimensions EasyClean 200 e



For the exact dimensions relative to pipe/post or wall mounting, please refer to the specifications on pages 14 and 15 of this documentation.

Electrical connections EasyClean 200 e

Electrical connections of EasyClean 200e and a transmitter.





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System configuration and ordering information EasyClean 200e

Transmitter X100e

NOTICE

Bridge terminal 10 and 13 in the EasyClean 200e.

Set rinse time to 5 sec. at the transmitter X100e and define the rinse interval according to the process requirements. Furthermore define rinse time (T2) and residence time for cleaning agent (T3) on the EasyClean 200e.



EasyClean 200e

Transmitter M300

NOTICE

Bridge terminal 10 and 13 in the EasyClean 200e.

Set relay #1 (default) or #2, #3, #4 on the transmitter to rinse contact.

Set rinse time to 5 sec. at the transmitter M300 and define the rinse interval according to the process requirements. Furthermore define rinse time (T2) and residence time for cleaning agent (T3) on the EasyClean 200 e.

Transmitter M 700

NOTICE

Bridge terminal 10 and 13 in the EasyClean 200e.

Set relays K3 (K1 or K2) to rinse contact and NO (normally open). Set rinse time to 5 sec. at the transmitter M 700 and define the rinse interval according to the process requirements. Furthermore define rinse time (T2) and residence time for cleaning agent (T3) on the EasyClean 200e. Set input OK1 to HOLD (active 10–30V) for the external hold signal.

Transmitter Trb 8300

Set rinse time to 5 sec. at the transmitter Trb8300 and define the rinse interval according to the process requirements. Furthermore define rinse time (T2) and residence time for cleaning agent (T3) on the EasyClean 200e.







EasyClean 200 e





The EasyClean 200 e delivery consists of the following:

N°	Description		Order no.			
1	EasyClean 200 e c	52 403 776				
2	Valve assembly wi	ith valves for hydraulics and control air				
3	Connecting cable:	control unit \rightarrow valve assembly, 1.5 m (5 ft)				
6	Water connection:	G ¹ /4" female or ¹ /4" NPT male				
	Tubing:	\oslash 6/4 mm, length 20 m (65.6 ft), material LDPE				
8	-	EasyClean \rightarrow InTrac (pneumatic)				
10		$InTrac \rightarrow drain$				
		arnothing 6/4 mm, length 10 m (32,8 ft), material PTFE				
9		EasyClean \rightarrow InTrac (liquids)				
7		EasyClean \rightarrow cleaning agent canister				
	Ontional accorden	vice and installation material				
4	Connecting cobles		52 402 790			
4 0		$\frac{1}{2} = \frac{1}{2} = \frac{1}$	52 403 780			
0		// mm (5 m / 16 / ft)	52 402 314			
<u>9</u> 11	Connecting cable	operation (0.111/10,4.11)	52 200 265			
11		control unit \rightarrow industrialier (3 m/10.4 m)	52 300 203			
11		$\frac{1}{10000000000000000000000000000000000$	52 300 200			
14	Wall mounting kit	52 403 024				
10	Woathorproof boor	52 402 300				
17	Compact capister 5000 ml/empty		52 402 310			
10	Demote control	52 110 003				
20	Warping light		52 402 355			
20	Danic button (eme	raency shutdown)	52 402 331			
21	Pine / nost mountin	ngency shallowing	52 402 317			
	Flow sensor (into)	52 402 500				
		52 405 555				
	Documentation					
	Instruction manual	I EasyClean 200e (e/g/f)	52 403 781			
	Snare narts					
	Power unit	Power unit				
	Print with PLC Fas	Drint with DI C Fasy/Clean				
		52 402 400				
	Water and air valv	A	52 403 531			
	Cleaning medium	52 403 530				
	Valve assembly Fo	52 403 778				
	Air control valve ho	52 402 320				
	Diaphraam numn	52 403 536				
	Spare part kit num	52 403 592				

Dimension drawings

Wall mounting EasyClean 100/150/200e



Pipe/post mounting EasyClean



Specifications

EasyClean 100/150/200e

Product type	EasyClean 100/150	EasyClean 200 e	
Housing	Steel housing, powder-coated with polyester resin material: Mild steel DIN 1.1203 Ck 55	Steel housing, powder-coated with polyester resin material: Mild steel DIN 1.1203 Ck55	
	Attention: housing may not be cleaned with solvents containing acetone	Attention: housing may not be cleaned with solvents containing acetone	
Weight of control unit	Approx. 3 kg (6.6 lbs)	Approx. 3 kg (6.6 lbs)	
Weight of valve assembly	-	Approx. 2.5 kg (5.5 lbs)	
Protection rating	IP 65	IP 65	
Ambient conditions	Temperature in operation: 055 °C (32131 °F) Transport/storage temperature: -10+70 °C (+14158 °F) Degree of pollution: 2 Overvoltage category: III	Temperature in operation: 055 °C (32131 °F) Transport/storage temperature: -10+70 °C (+14158 °F) Degree of pollution: 2 Overvoltage category: III	
Power supply	100230 V AC, 50/60 Hz, 0.180.3 A (± 15%)	100230 V AC, 50/60 Hz, 0.180.3 A (± 15%)	
System control	Process initiation: via a "Wash" contact in the associated transmitter Sequence: cannot be set on unit	Process initiation: via a "Wash" contact in the associated transmitter Sequence: controlled by the integrated programable PLC	
Control input	control input 1 control input for "Wash" contact 1 control input for "Wash" contact in transmitter 24 V in transmitter 24 V		
Transmitter	 METTLER TOLEDO transmitters: X050 e, X100 e M 700, Trb 8300 alternatively through any standard transmitter with "Wash" contact and "Hold" function 	METTLER TOLEDO transmitters: – X050 e, X100 e – M 700, Trb 8300 – alternatively through any standard transmitter with "Wash" contact and "Hold" function	
Electr. connections	Terminal strip $0.08 \dots 2.5 \text{ mm}^2$	Terminal strip $0.08 \dots 2.5 \text{ mm}^2$	
Connection to valve unit	_	10-wire control cable Length: standard 1.5 m (5 ft) optional 20 m (65.6 ft)	
Connection to transmitter	4-wire control cable, 4 x 0.5 mm ² Length: 5 m (16.4 ft), optional 10 m (32.8 ft)	4-wire control cable, 4 x 0.5 mm ² Length: 5 m (16.4 ft), optional 10 m (32.8 ft)	
Cable ducts \varnothing 3.5 10 mm \rightarrow M 16 \varnothing 3.5 \varnothing 2.5 \varnothing 2.5		$\varnothing 3.510 \text{ mm} \rightarrow M 16$ $\varnothing 2.56.5 \text{ mm} \rightarrow M 12$	
Compressed air supply	48 bar (400800 kPa, 58116 psi) Air quality according to ISO 8573-1 Moisture class 4 (dew point + 3 °C) Particles class 5 (filter 40 µm) Max. oil content class 2 (0.1 mg/m ³) Connection: thread G ¹ /8"	48 bar (400800 kPa, 58116 psi) Air quality according to ISO 8573-1 Moisture class 4 (dew point +3°C) Particles class 5 (filter 40 μm) Max. oil content class 2 (0.1 g/m ³) Connection: thread G ¹ /8"	

EasyClean 100/150/200e

Specifications

Product type	EasyClean 10	0/150	EasyClean 200 e	
Connection to InDip housing	Hose LDPE Tubing PTFE (\varnothing 6/4 mm (1 /	optional) '8"/1/4")	_	
Connection toHose LDPEretractable housingTubing PTFE (optional)Ø 6/4 mm (¹ /8"/ ¹ /4")		Pneumatics: LDPE hose \varnothing 6/4 mm (¹ /8"/ ¹ /4"), control air Medium: PTFE hose \varnothing 6/4 mm (¹ /8"/ ¹ /4") Hose length typ. 5 m (16.4 ft) Hose length max. 10 m (32.8 ft)		
Flushing water supply	Pressure: Connection: Adapter:	26 bar (200600 kPa, 2987 psi) thread G ¹ /4" female ¹ /4" NPT male (PP)	Pressure: Connection: Adapter: Particle filter: Volume:	28 bar (200800 kPa, 29116 psi) thread $G^{1}/4^{"}$ female $^{1}/4^{"}$ NPT male (PP) 50 µm \geq 4 I/min.
Pump	_		Pump height: Suction height: Feed rate: Materials: Connection:	max. 5 m (16.5 ft.) max. 3 m (9.8 ft.) 35 ml/s (depending on hose length and viscosity) PPS (pump body) EPDM (membrane and sealings) thread G ¹ /8" female, polymer (PP)
Viscosity	_		All liquids 25 mPc	a s/25 °C (77 °F)
Spray head material	PVC or PVDF		_	
Wetted materials, in contact with	Flushing water or cleaning me 1.4105, 1.43 PP, LDPE, Vito	r, compressed air edium: 03, 1.4310 n [®] , brass,	Rinsing water: Compressed air: Cleaning agents:	PP, EPDM, PTFE, PPS, Ni PP, EPDM, PTFE, PPS, LDPU, Ni PP, FFKM, PTFE, EPDM, PEEK
Liquid temperatures	_		Water: Cleaning agents:	080°C, max. 10 min/h at 95°C (32176°F, 203°F) 050°C (32122°F)

Specifications

Conformity

Low voltage guidelines • EU guidelines • Swiss guidelines • Safety regulations • IP protection rating	73/23/E0 SR734.2 EN61010 EN60525	9 6 NEV 0-1 9 IP65				
EMC guidelines • Emission • Harmonic oscillation • Voltage fluctuation • Immunity	EN61326-1, class B EN61000-3-2 EN61000-3-3 EN61326-1					
Certificates	CE	GS	ATEX	UL Class I Div I	NEPSI	
EasyClean 100	•	•	_	_	_	·
EasyClean 150	•	•	_	_	_	
EasyClean 200e	•	•	_	_	_	

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