

## Product Information Two-channel Controller TOPAX® DE

### Important values securely under control

As a two-channel controller the TOPAX DE monitors the current water values during the preparation of the water and it controls in real-time the connected metering system for treating the water. In this way it ensures constant water values in the most varied of applications – taking into account the given norms and guidelines – it is universally applicable.

One of its main applications is to ensure the quality of the water in water systems by evaluating the measurements of, amongst other things, the free chlorine, chlorine dioxide, pH, redox and to control the chlorine gas meter – and/ or salt-flow rate electro-analysis unit.

### Convincing features

The TOPAX DE is available in different variants, which differ only in their measurement and control units: depending on the model, it measures and controls free chlorine (TOPAX DE 1 to DE 4) and/or chlorine dioxide (TOPAX DE 5 and DE 6). All models measure the pH-value and the temperature. In addition the TOPAX DE 4 can measure the Redox potential and/or the pH-value can be controlled with the TOPAX DE 2. It is possible to circuit a disturbance variable with the TOPAX DE 3 and the TOPAX DE 6.

Encased in a classic industrial housing, the TOPAX DE can be smoothly integrated into existing systems. It is operated via the menu using graphic supported LCD, with a plastic film keyboard and it displays measured values, temperature, operating-, status reports and diagrams. All messages are in plaintext. A password feature protects it against unauthorised use.

The possibility to directly connect the most diverse sensors for measuring the water parameters completes every TOPAX DE model's set requirement for optimal water treatment.

A logbook feature with graphical trend displays makes it possible to review the measured values and controller behaviour, just as with the serial RS 485 interface to a PC (optional).

### Mode of operation

The TOPAX DE has a digital input and up to four analogue inputs, and/or three analogue outputs 0/4 ... 20 mA and 3 relay. All in- and outputs are galvanically isolated. The controllers

work as P-/PI- and/or PID-controllers with two adjustable switching points in the direction of action. Thus enabling the dosing pumps as well as the actuators and solenoid valves to be controlled.

The compensation for the temperature measurement can be done either automatically or manually. An alarm feature monitors the measurement on the basis of freely configurable min. and max. limit values. The free chlorine and chlorine dioxide can be measured using optionally a potentiostatic or an amperometric measuring cell.

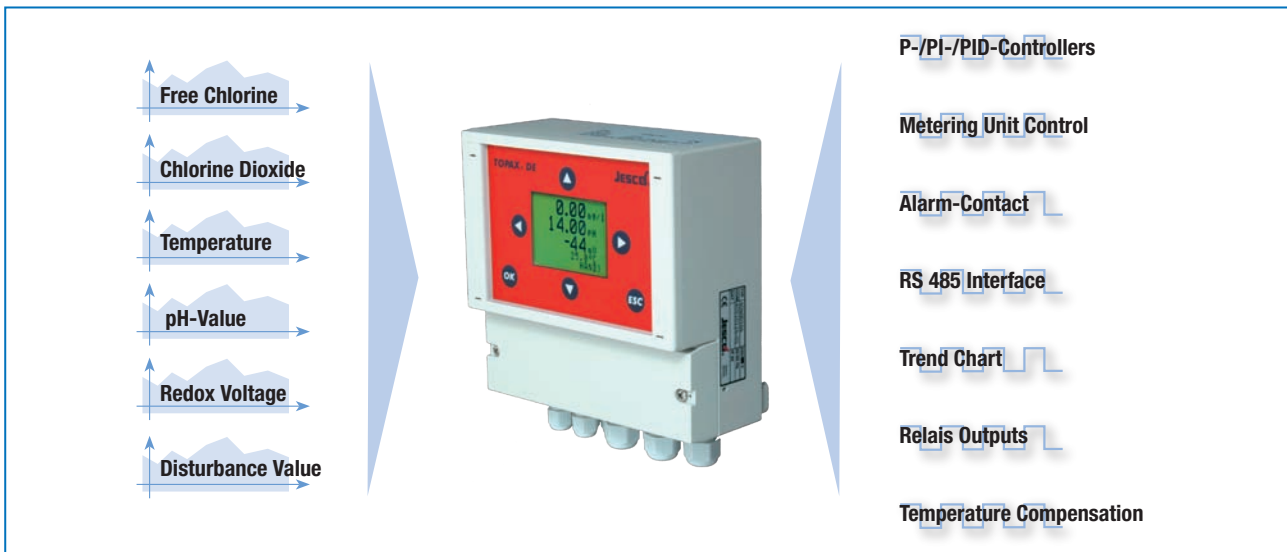
Very accurate and quick controls are attained thanks to its microprocessor-controlled measurement amplifier and controller. The Lutz-Jesco sensors and/or test water panels are connected in the easiest of ways using terminal blocks.



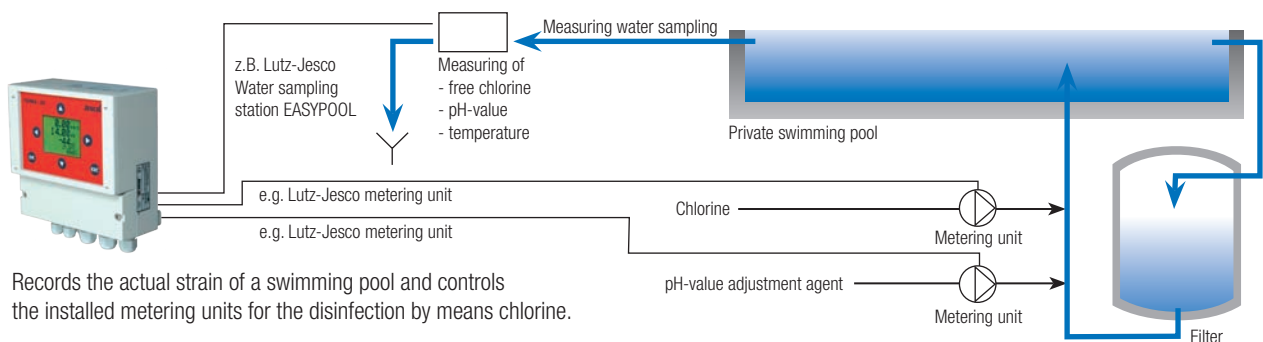
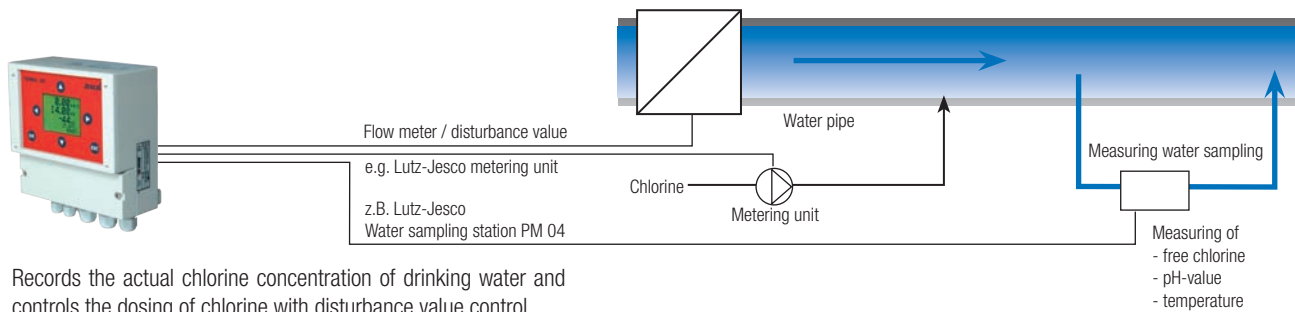
### In short

- Measuring input for free chlorine or chlorine dioxide
- Measuring input for pH-value, Redox (depending on model variant) and temperature
- Disturbance variable settings (depending on model variant)
- P-/PI- or PID-controllers
- Up to 3 analog outputs (0/4 ... 20 mA)
- Up to 3 relay outputs
- Digital input
- Electrically isolated in- and outputs
- pH-compensation for free chlorine
- Automatical temperature compensation of pH-value
- Alarm function
- RS 485 interface (optional)
- LCD graphic display with membrane keypad and password protection
- Trend chart and log file

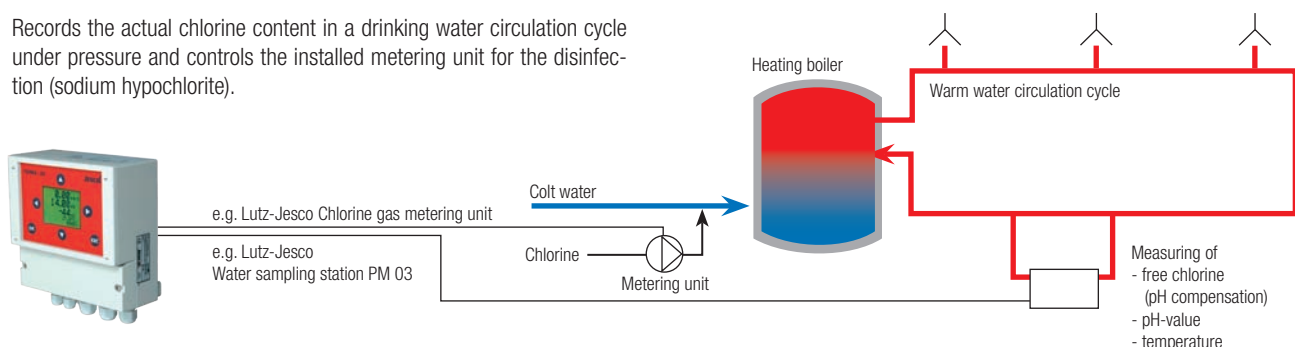
### Measurement inputs (depending on model variant) and main functions of the TOPAX DE



### Application of the TOPAX DE



Records the actual chlorine content in a drinking water circulation cycle under pressure and controls the installed metering unit for the disinfection (sodium hypochlorite).



## Technical Data

Metering range	DE 1 ... DE 4	DE 5, DE 6	DE 1-10 ... DE 4-10	DE 5-20, DE 6-20
	free Chlorine (Cl <sub>2</sub> )	Chlorine dioxide (ClO <sub>2</sub> )	free Chlorine (Cl <sub>2</sub> )	Chlorine dioxide (ClO <sub>2</sub> )
Amperometric measuring cell	0.0 ... 4.0 mg/l	-	0.0 ... 10.0 mg/l	-
Potentiostatic measuring cell	0.0 ... 4.0 mg/l	0.0 ... 4.0 mg/l	0.0 ... 10.0 mg/l	0.0 ... 20.0 mg/l
pH-value measurement	0.0 ... 14.0 pH, pH compensation of free chlorine			
Redox measurement (DE4)	-1500 ... +1500 V			
Temperature measurement	-30.0 ... +140.0 °C			
Temperature compensation	manual or automatic with Pt100			
Display	Measurement values with relative units. Status messages, sensors, calibration, controller and alarm.			

Features	
Measuring inputs	3 inputs (4 with TOPAX DE 4), accuracy < 0.1 mV or. < 0.01 °C
Digital input	External controller stop or water deficiency sensor.
Analog outputs	3 analog outputs, 0/4 ... 20 mA, electrically isolated, maximum 500 Ohm load
Relay outputs	3 potential-free dry contacts, freely configurable, 6 A, 250 V, max. 550 VA
Controller variants	1 controller (2 with TOPAX DE 2) <ul style="list-style-type: none"> <li>• ON/OFF Controlling with hysteresis option</li> <li>• Proportional (P), Proportional Integral (PI) or Proportional Integral, Derivative (PID) Controller, either pulse-pause or pulse-frequency or continuous output controller. (0/4 ... 20 mA),</li> </ul>
Switch-points	2 dual switch points, with adjustable operation mode
Alarm function	for each controller: 2 minimum and maximum threshold values and delay times (0 ... 2000 s)
Housing material	ABS
Dimensions (W x H x D)	165 x 160 (190) x 80 mm
Weight	1.0 kg
Connectors	Spring-load terminal for up to maximum 1.5 mm <sup>2</sup> section wiring
Protection class	IP 65
Supply voltage	230 V AC, + 6 %, - 10 %, 40 ... 60 Hz 120 V AC, 1 Ph, 50 ... 60 Hz 24 V AC, 1 Ph, 50 ... 60 Hz
Power input	10 VA
Internal fuse	230 V: 63 mA delayed-action fuse 110 V: 125 mA delayed-action fuse 24 V: 800 mA semi delayed-action fuse
Display	128 x 62 backlit graphical display, displays measurement values and relative units, operating conditions and text lines
Operating temperature	0 ... 50 °C
Atmospheric moisture	0 ... 90 % non condensing
Interface (Optional)	RS 485, baud rate 9600, data format 8 Bit, 1 start and 1 stop bit, no even parity It is possible to activate the TOPAX DE with the software TopView (Windows, A/N 78349). TopView offers a log file function, central logging, graphical visualisation and remote alarm visualisation. To connect a TOPAX DE with the USB interface of a PC the adapter „USB to RS 485“ (A/N 44300102) is needed.

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### Model variants

The TOPAX DE is available in several different variations:

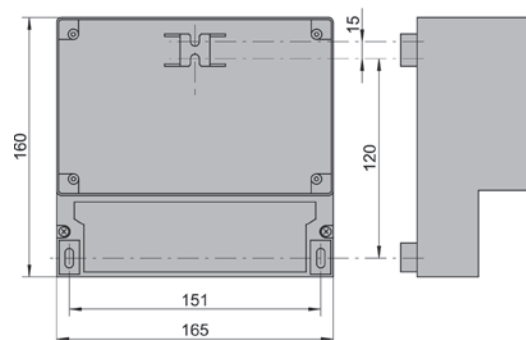
Function	TOPAX DE 1	TOPAX DE 2	TOPAX DE 3	TOPAX DE 4	TOPAX DE 5	TOPAX DE 6
Free chlorine	Metering & Controlling					
Chlorine dioxide					Metering & Controlling	
pH-value	Metering	Metering & Controlling	Metering			
Temperature	Metering					
Redox				Metering		
Disturbance value			X			X
<b>Order No.</b>						
Wall mounting housing, 230 V AC	40400101	40400102	40400103	40400104	40400105	40400106
Wall mounting housing, 120 V AC	40400111	40400112	40400113	40400114	40400115	40400116
Wall mounting housing, 24 V AC	40400141	40400142	40400143	40400144	40400145	40400146
Wall mounting housing, 24 V DC	40400161	40400162	40400163	40400164	40400165	40400166

### Scope of Delivery

- TOPAX DE
- Mounting material
- Operating manual
- Measurement protocol
- Terminal plan for the sensors

The product is delivered as a free-standing unit or mounted on a water measurement panel.

### Dimensional figure



All measurements are given in mm

TOPAX® is a registered trademark of Lutz-Jesco GmbH, Wedemark.