

A photograph of an industrial control panel mounted on a wall. The panel is white and features two digital displays showing '1406', a small analog gauge, and several buttons and switches. To the left of the panel are three indicator lights (red, green, red) and a yellow emergency stop button. Above the panel, there are blue electrical components and copper pipes. To the right, there is a blue emergency stop button and a white electrical box. The background shows industrial equipment and a tiled floor.

## ELECTRIC COMPONENTS

- Digital controllers
- Analog controllers
- Electric switch gears





RE 3172

## Series

¼ DIN 96 x 96	½" DIN 48 x 96
RE 3172	RE 3172-M
RE 3472	RE 3472-M
RE 3672	RE 3672-M
RE 3972	RE 3972-M
	RE 3173-M
	RE 3473-M
	RE 3673-M
	RE 3973-M

### On request

RE 3173
RE 3473
RE 3673
RE 3973

### Digital controllers with PID control RE3072/73 free configurable as:

- 3-term-step-controller for driving electric actuators e.g. RTK actuators series ST 5100

or

- Continuous controller for driving pneumatic actuators with positioner e.g.: RTK series SR 6136 , SR 6137

### Inputs:

- Feedback potentiometer from actuator
- External set point

### Additional RE3073/RE3073M

- Programmer function
- Second analogue/digital output

### On request

- Interface RS485 or Profibus DP

## Technical data

Typ	RE 3172 RE 3172-M	RE 3472 RE 3472-M	RE 3173 RE 3173-M	RE 3473 RE 3473-M	RE 3672 RE 3672-M	RE 3972 RE 3972-M	RE 3673 RE 3673-M	RE 3973 RE 3973-M
Input	PT100	0(4)–20 mA	PT100	0(4)–20 mA	PT100	0(4)–20 mA	PT100	0(4)–20 mA
Output	3-point step				0(4)–20 mA			
Additional outputs	2 Alarm contacts 1 Measuring transducer SP, PV				3 Alarm contacts			
Regulations for electrical apparatus	Directives 73 / 23 / EEC as amended by directives 93 / 68 / EEC EN61010-1:93 + A2:95							
Regulations for electromagnetic compatibility	Directives 89 / 336 / EEC as amended by directives 92 / 13 / EEC							
Regulations for RF émissions	EN61000-6-3:2001 for residential environments EN61000-6-4:2001 for industrial environments							
Regulation for HF immunity	EN61000-6-2:2001 for industrial equipment and systems							
Power supply	Standard On request			100–240 V AC / 50–60 Hz 24 V DC / 50–60 Hz				
Power consumption	Max. 3 VA							
Ambient temperature	Rear terminal block Housing Front			IP20 IP00 IP65				
E-connection	Screw terminal / 1 mm²							
Housing	Switchboard mounting			96 (48) x 96 x 110 mm				
Ambient temperature	0 to 50 °C							
Humidity	Max. 95 % rel							
Approvals	CE, UL and cUL							



Data sheet under <http://www.rtk.de/en/produkte0/elektrischebauteile/process-controller.html>





### Series

RE 3304

RE 3304

#### Electronic 3-term step-controllers with PI-control

- For driving electric actuators
- Set point selection by manual controllers
- Indication of actual value
- Integrated power supply for transducer 24 VDC
- Switches for limiting values
- Manual and automatic operation
- Component mark  
TÜV.WRS(WR).91-355 for application in  
boiler feed controls

## Technical data

<b>Power supply</b>	115 AC / 230 V AC ca. 10 VA
<b>Input resistance</b>	50 $\Omega$
<b>Input</b>	4 – 20 mA
<b>Output as power supply for the transducer</b>	e.g. NI 1341      24 V DC / 80 mA
<b>Ambient temperature</b>	-10 °C ... +40 °C
<b>Housing</b>	Plastic case 144 x 72 x 165 mm for switch board mounting
<b>Controlled variable</b>	Level
<b>Transducer</b>	NI 1341 / 42
<b>Set point range</b>	0 to 100 %
<b>Sensitivity</b>	Adjustable from 1 to 10 %
<b>Proportional band</b>	Adjustable from 10 to 100 %
<b>Connection to feedback potentiometer</b>	For P-intrusion 1000 $\Omega$
<b>Protection</b>	IP20
<b>Operation</b>	Set value and measured value are compared in a voltage comparator. The different between the two values causes switching pulses which are transmitted to the control valve via mutually interlocked contacts. Simultaneous to the circuit of the relay, proportional band-capacitors are loaded nearly linear, and a saw-tooth impulse opposed to the difference of actual value and set value. The value of this proportional band impulses its increasing and fall time, are adjustable at the adjustments Xp, Tn, Ty. Two indicator lamps show whether The regulator has reached its final opened or closed position. Two integrated switches for limit values can be connected on demand, indicator lamps show whether the level is >NW<, >middle level<, or >HW<.



Data sheet under <http://www.rtk.de/en/produkte0/elektrischebauteile/process-controller.html>



SG 2411

## Series

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SG 2411

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### Electronic switchgear for 2-point control including 2 limit contacts

- 3 potential-free change over contacts
- Control contact with adjustable on / off switch points
- 2 freely adjustable limit contacts between 4 and 20 mA
- LED-indication for the input signal

## Technical data

<b>Connection</b>	230 V AC ca. 10 VA	
<b>Input resistance</b>	$R_i = 50 \, \Omega$	
<b>Input</b>	4 – 20 mA	
<b>Output as power supply for the transducer</b>	e.g. NI 1341	24 V DC / 80 mA
<b>Switching power</b>	230 V, 2 A	
<b>Ambient temperature</b>	-10 ... +40 °C	
<b>Housing</b>	Plastic case 150 x 200 x 75 mm for wall	
<b>Transducer</b>	e.g. NI 1341 / 42	
<b>LED-indication</b>	10 LEDs 10 to 100 % $\pm 5\%$	
<b>Switch hysteresis</b>	NW / HW / RE	Approx. 3 %, freely adjustable 0-100 % Min. 6 %, max 100 %, freely adjustable 0-100 %
<b>Protection</b>	IP 65	
<b>Operation</b>	<p>The switchgear SG 2411, input 4 – 20 mA, is suitable for diverse applications, e.g. as level supervising gear or as a pump switch in compound with the level transducer NI 1331 / NI 1332.</p> <p>It compares the input signal with the adjusted set point and switches corresponding relays. There are 3 switching stages. At the 2-point control &gt;RE&lt;, the on / off point can be freely adjusted between 0 and 100 %, the switching difference has to be at least 6 %. The two limit contacts have a fixed switching difference of 3 %, only the resolution sensitively has to be adjusted, and this can be freely adjusted between 0 – 100 %.</p>	



Data sheet under <http://www.rtk.de/en/produkte0/elektrischebauteile/switch-gears.html>





SG 2431

## Series

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 SG 2431
 

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### Electronic limit switch

- Input  
Motor voltage 0(4) – 20 mA or  
Voltage 0(2) – 10 V
- Output  
2 x relays (Changer)
- Contact status indication via LED
- Actual value indication via bar graph display
- Limit value adjustment via front side pushbuttons
- Additional functions such as:  
Hysteresis, window, On / off-delay, alarm, inverse operation
- Galvanic 3-way-isolation (up to 4 kV)

## Technical data

<b>Input</b>	Load independent DC Motor voltage	0(4) – 20 mA
	Ri	ca. 100 Ω
	or DC voltage	0(2) – 10 V DC
	Ri	ca. 100 kΩ
	Temperature error	< 30 ppm / °C
	Actual value indication	By bar graph display Up to 100 % green, from 100 % yellow over 110% red LED
	Status indication	Relays A and B
<b>Power supply</b>	A.C. voltage	230 V AC / 10 m
<b>Directive</b>	MV 2004 / 108 / EG	
<b>Low Voltage Directive</b>	MV 2006 / 95 / EG	
<b>Output</b>	2 x relays	
	Changeover contact	+250 V AC / max. 8 A resistive load
	Contact life cycle	10 <sup>5</sup> Cycles (8 A)
	Mech. Life cycle	30 x 10 <sup>6</sup> Cycles
<b>Ambient conditions</b>	Storage temperature	-40 max. +70 °C
	Operating temperature	0 max. 55 °C
	Isolation voltage:	< 4 kV In / output < 4 kV power supply
<b>Mounting details</b>	Housing for top hat rail	
	Protection class	IP20 Housing / IP10 Clamps
	Mounting rail fixed	According to EN 50022-35
	Width	22.5 mm
	Weight	160 g
<b>Operation</b>	<p>The limit switch SG 2431 is used to control limit values of standardized Motor voltage or voltage signals. Due to the two output relays with one potential free change over contact, two switching functions can be realized. The switching status of the operated relay is indicated by the LED display. The switching point can be adjusted by the front side push buttons and the effective relay direction by the slide switch on the side. Applications include: Threshold switching, supervisory relay, pump control, positioning element control of final signals.</p>	



Data sheet under <http://www.rtk.de/en/produkte0/elektrischebauteile/switch-gears.html>