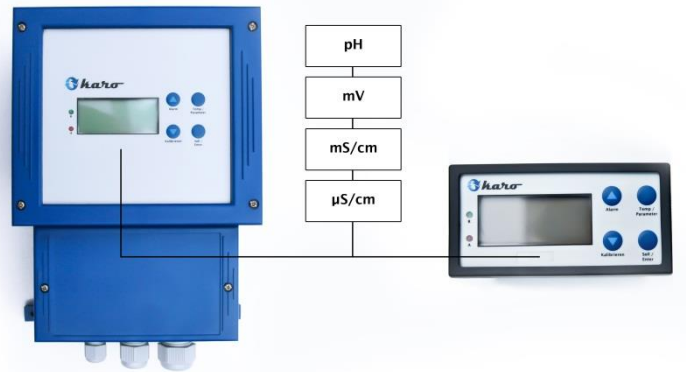


***karo***

measurement and control device for pH, redox and conductivity with limit switch



The ***karo*** is a high-resolution measurement and control device for measuring pH, redox and conductivity. The compact housing structure according to DIN IEC 61554 made of flame-retardant noryl is designed for panel mounting. The device is connected via screw-type connectors on the back side.

## Features

- high-impedance converter for direct connection of a pH, redox or conductivity electrode
- 3 ½-digit LCD-display, digit height 12.7 mm
- measuring range selectable
- output signal selectable
- power supply selectable
- automatic temperature compensation by integrated temperature sensor (PT100, 2 %/°C) within the measuring cell or manual input of temperature value
- available housing types for wall mounting as well as for installation in control cabinets

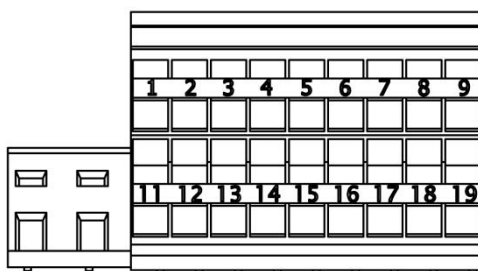
## Application fields

- swimming pools, fish farming and breweries
- sewage treatment plants, landfills and power plants
- continuous and batch waste water treatment plants
- pure and ultra-pure water plants, desalination and recirculation systems
- exhaust systems
- final inspection and monitoring

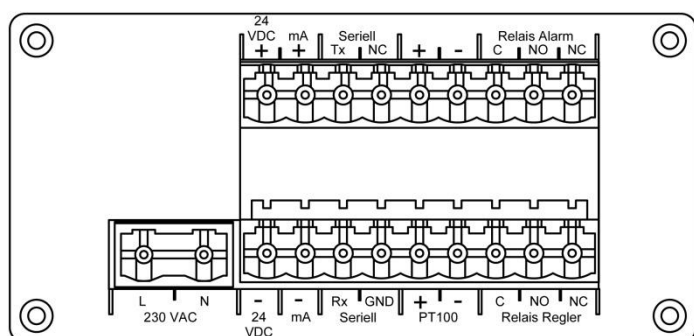
## Connections

No. (wall mounting housing)	labeling (housing for installation in control cabinets)	Description
1	24 V DC +	power supply
2	mA +	0 to 20 mA / 4 to 20 mA
3	Seriell Tx	serial interface
4	Seriell NC	serial interface
5	+	pH / redox / conductivity
6	-	pH / redox / conductivity
7	Relais Alarm C	alarm relay
8	Relais Alarm NO	alarm relay
9	Relais Alarm NC	alarm relay
10	230 V AC L	power supply
11	230 V AC N	power supply
12	24 V DC -	power supply
13	mA -	0 to 20 mA / 4 to 20 mA
14	Seriell Rx	serial interface
15	Seriell GND	serial interface
16	PT100 +	temperature sensorePT100
17	PT100 -	temperature sensor PT100
18	Relais Regler C	control relay
19	Relais Regler NO	control relay
20	Relais Regler NC	control relay

wall construction housing:



Panel mounting housing:



## Technical data

Parameter		Description	Order code: KARO-
measurement range (factory set)	pH	pH 0 to pH 14	pH
	redox	-1000 to +1000 mV	mV
	conductivity	0 to 20 $\mu\text{S}/\text{cm}$ , $K = 0.01 \text{ cm}^{-1}$	LWD-M002/0.01
		0 to 200 $\mu\text{S}/\text{cm}$ , $K = 0.1 \text{ cm}^{-1}$	LWD-M020/0.1
		0 to 2000 $\mu\text{S}/\text{cm}$ , $K = 0.1 \text{ cm}^{-1}$	LWD-M2/0.1
		0 to 2000 $\mu\text{S}/\text{cm}$ , $K = 1.0 \text{ cm}^{-1}$	LWD-M2/1.0
		0 to 20 mS/cm, $K = 1.0 \text{ cm}^{-1}$	LWD M20/1,0
		0 to 100 mS/cm, $K = 2.5 \text{ cm}^{-1}$	LWD-M100/2.5
0 to 200 mS/cm, $K = 10.0 \text{ cm}^{-1}$	LWD-M200/10.0		
resolution		0.05 %	
measuring voltage		0.14 V AC, $\pm 20 \%$	
power supply		230 V AC, 50-60 Hz / 6 VA, +10 % to -15 % or 24 V DC selectable	
current output (factory set, electrically isolated)		0 to 20 mA	S0
		4 to 20 mA	S4
max. load		600 $\Omega$	
temperature compensation		automatic, with PT100 in measuring cell (2 %/°C) or manual temperature input on the device	
front		3 ½-digit LCD-display, digit height 12.7 mm	
		4 multi-function buttons and two LEDs to indicate relay control and alarm conditions	
wall mounting housing	dimension	150 mm x 206 mm x 95.2 mm (W x H x D)	WA
	connector	20-pin terminal block	
housing for installation in control cabinets	dimension	96 mm x 48 mm x 150 mm (W x H x D incl. connectors)	SE
	panel cut out	91.3 mm x 45.2 mm, $\pm 0.2 \text{ mm}$	
	connector	20-pin screw terminal	
protection		front: IP54	
		rear: IP20	
operating and storage conditions		0 to +40 °C, < 90 % RH	
permitted degree of pollution		2 (according to DIN EN 60664-1)	
setpoint limits		limit switch selectable (factory set: switching when exceeding)	
		limit alarm, value and delay time selectable	
max. limit contact (potential free)		250 V AC / 5 A, 30 V DC / 5 A	

**Please specify measurement range, power supply and housing type when ordering.**

Specifications are subject to modifications.