xylem
Let's Solve Water

Meters and Electrodes

pH, ISE, COND AND O_2 | PRECISE - RELIABLE - SELECTIVE
IN LAB AND FIELD

SI Analytics

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1.1 Meters decision tree

Laboratory meters Lab and ProLab series

	Lab pH meters			Oxygen meter	Lab Conductivity meters		Multifunctional meters		
Parameters		pH	pH + ISE	oxygen	Conductivity	Conductivity	pH/mV + LF + oxygen (D.O. optisch)	pH/mV + LF + ISE + oxygen (D.O. optisch)	pH/mV + LF + ISE + oxygen (D.O.)
Channels		1 channel for pH/mV	1 channel for pH/mV/ISE	1 channel	1 channel	1 channel	1 channel IDS for pH/mV/Cond/OX	3 channel IDS for pH/mV or 2 channel IDS +1 channel DIN for ISE	up to 4 channel
Display	LCD display	black/white grafics display	grafics LCD display	grafics LCD display	grafics LCD display	LCD display	black/white grafics display	Color grafics display	TFT display with touch control
Accuracy	0.005 pH	0.005 pH	0.01 pH	+/- 0.5%	+/- 0.5%	+/- 0.5%	dependent of the sensor being used	dependent of the sensor being used	0.005 pH all others +/- 0.5%
Calibration points	3-point	5-point	3-point	1-point	1-point	1-point	5-point	5-point	pH: 3-point all others 1-point
Buffer sets	Autocal with technical or DIN buffer solutions	24 buffer sets	4 buffer sets	Steam saturated air	0.01N KCl oder 0.1N KCl	0.01N KCl	24 buffer sets	24 buffer sets	pH: 21 buffer sets pre-set + 3 free to define
Calibration log								10 data sets calibration log	
Data base		500 data sets man. 5,000 automatical	4,000 data sets	4,000 data sets	4,000 data sets		500 data sets man. 4,500 automatical	500 data sets man. 10,000 automatical	100,000 data sets 48h data log
Data output / Interface		Mini USB slave	4-pin USB	4-pin USB	4-Pol USB		Mini USB slave	Mini USB slave USB 2.0 Host	RS232, Ethernet, USB active
Sensor ID							Sensor ID	Sensor ID	
User ID							User ID	User ID	
Password			Password protection	Password protection	Password protection				Password protection
Instrument	 Lab 855	 Lab 865	 Lab 845	 Lab 745	 Lab 945	 Lab 955	 Lab 875 (P)	 ProLab 2500	 ProLab 5000

*Product pictures are not to scale

Lab and ProLab

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Functionalities at a glance

Laboratory meters Lab and ProLab series

Features	Lab 745	Lab 845	Lab 945	Lab 855	Lab 865	Lab 875	Lab 875 P	ProLab 2500	ProLab 5000
Page	8	8	8	10	10	12	14	16	20
Measuring parameters & special functions									
pH	■	■		■	■	■	■	■	■
Measuring channels (electrically isolated)	1	1	1	1	1	1	1	3	4
4 pre-programmed pH buffer sets		■							
24 pre-programmed pH buffer sets					■	■	■	■	
21 pre-programmed and 3 free defineable pH buffer sets									■
automatic buffer recognition display		■	■	■		■	■	■	■
pH calibration points, max.		3		3	3	5	5	5	3
ConCal: manual calibration with optional buffers		■			■	■	■	■	■
mV		■		■	■	■	■	■	■
ISE		■						■	■
Activation of external burettes in ISE measuring mode									■
Conductivity			■				■	■	■
Oxygen (diss.), optical (ProLab 5000: amperometrical)						■	■	■	■
Temperature - simultaneaous display	■	■	■	■	■	■	■	■	■
GLP and ease of use									
Automatical recognition of IDS sensores						■	■	■	
Automatical user recognition						■	■	■	■
Additional password security	■	■	■			■	■	■	■
Sensor evaluation	■	■	■	■	■	■	■	■	■
Programmable frequency of checks				■	■	■	■	■	■
Display of current calibration data including date / time	■	■	■	■	■	■	■	■	■
Display of calibration history (10 records) incl. date / time					■	■	■	■	
Measurement with stability control					■	■	■	■	
Adjustable resolution of measuring value	■	■	■	■	■	■	■	■	
Display	LCD graphics	LCD graphics	LCD graphics	LCD	LCD	LCD	B/W LCD graphics	QVGA-colour	QVGA-colour
Recording function (Display of measured values)		■							■
Tactile feedback	■	■	■	■	■	■	■	■	■
Data storage	■	■	■		■	■	■	■	■
USB (Slave)		■	■	■	■	■	■	■	■
USB host interface: plug-and-play connection of USB hub, USB printer, USB storage, keyboard, mouse								■	■
Quality and service									
Scope of delivery: • Device, power supply and tripod • Set: plus electrode and buffer	■	■	■	■	■	■	■	■	
IQ and OQ documents available	■	■	■	■	■	■	■	■	■
Applicable for 3 years warranty	■	■	■	■	■	■	■	■	■

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Components of the ProLab 5000

The ProLab 5000 multiparameter measuring instrument is based on a modular system structure that links the measurement modules to the central unit and to each other via a bus connection. It is the complete solution for measurement, control, and regulation in laboratory and technical centers. Choose up to four measurement modules can determine any combination of pH, conductivity, dissolved oxygen, ORP/redox potential, temperature and other parameters.

The main components of the multiparameter laboratory measurement system ProLab 5000 are:

- ProLab 5000 with power supply, touch screen display, internal modules, data logger and logbook, various digital interfaces such as RS232, USB and ethernet
- PC visualization program
- Measurement modules
- Sensors
- Optional samplers, depending on type, up to 72 samples (i.e. TW Alpha plus)
- Optional dosing system (TITRONIC® 500)
- Optional stirrer

Color graphical touchscreen display

The distinguishing outward feature of the ProLab 5000 is the color touchscreen graphical display, which significantly simplifies operation, configuration, and calibration. Up to four measured values with their units, temperature values, a possible second value as well as an individual name can be presented simultaneously on a display page.

Four integrated threshold relays

Four integrated threshold relays for simple control, regulation, or alarm tasks are standard. Two PID-regulators that work independently of each other are available for complex regulation tasks. The regulators can be assigned to any parameter and function as analog, pulse width or pulse frequency regulators using the analog current outputs and the relay outputs of the measuring instrument.

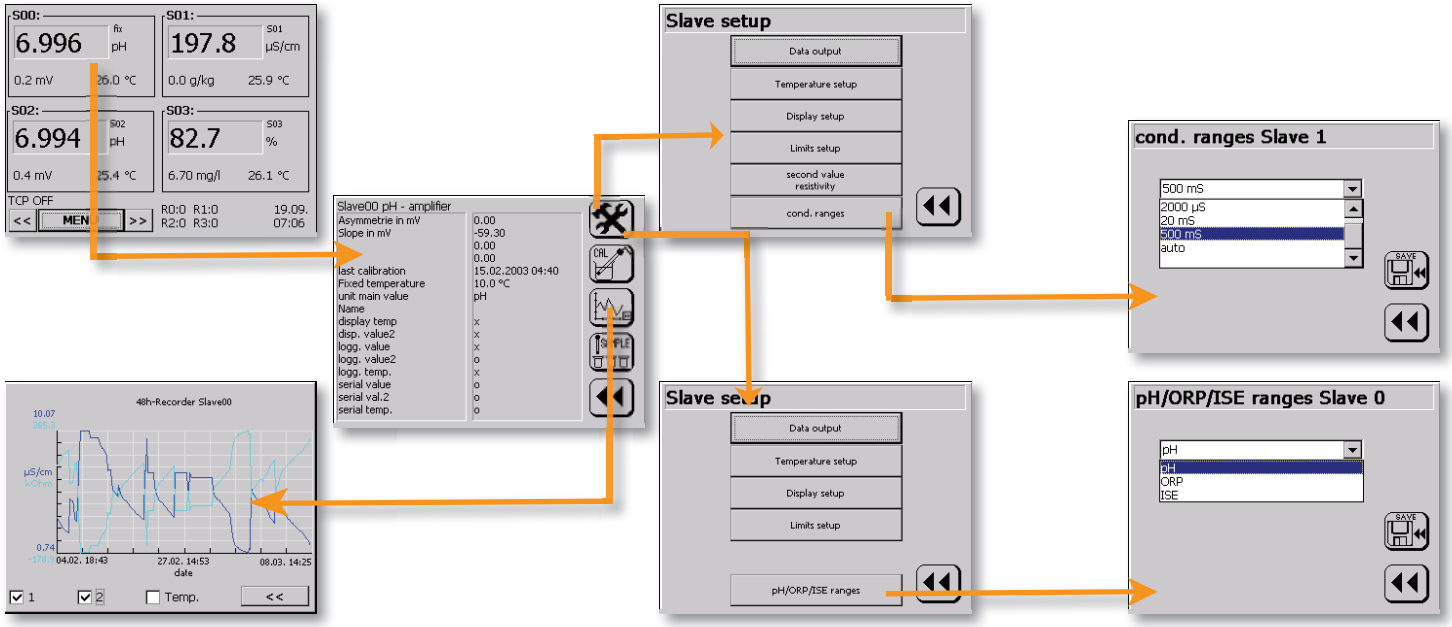
ProLab 5000 Pilot visualization program

All values can be cyclically output and displayed graphically via the USB interface or ethernet connected to the PC visualization program ProLab 5000 Pilot. The visualization program ProLab 5000 Pilot simultaneously contains all functions for reading the data logger. The data logger can be used via the USB interface and the data can be transferred directly to a USB without the program ProLab 5000 Pilot.

Data recorder

The data recorder graphically displays the measured value curve of the parameters of each measurement module over the past 48 hours on the touch screen. This representation gives the operator a quick overview of the measurement progress, indicating the average, maximum, and minimum readings.

Setting options



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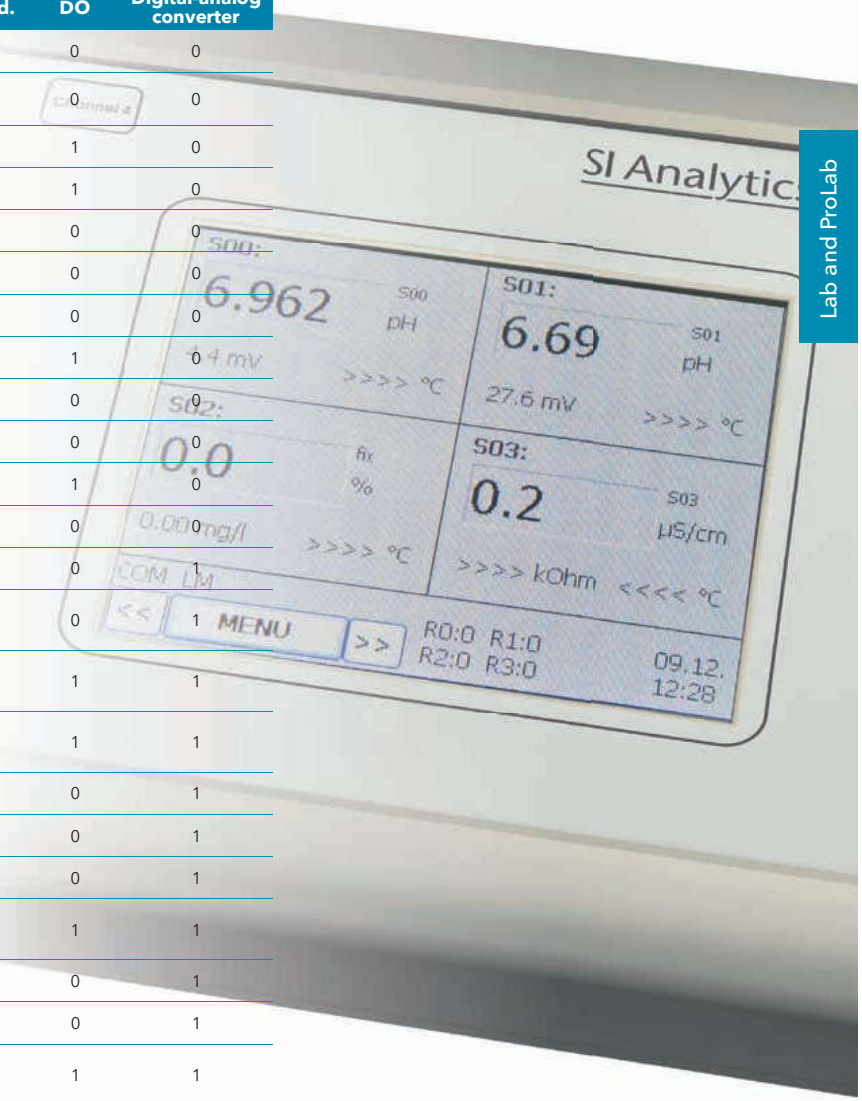
1.1.4.1 Ordering information - ProLab 5000

Type No.	Order No.	Product hierarchy No.	Description	Number of modules			
				pH/mV/ISE	Cond.	DO	Digital-analog converter
PL5000 0D 1pH 0LF 0OX	285206010	07	Multiparameter measuring instrument ProLab 5000 with one pH/mV/ISE module	1	0	0	0
PL5000 0D 1pH 1LF 0OX	285206020	07	Multiparameter measuring instrument ProLab 5000 with one each pH/mV/ISE and conductivity module	1	1	0	0
PL5000 0D 1pH 1LF 1OX	285206030	07	Multiparameter measuring instrument ProLab 5000 with one each pH/mV/ISE, conductivity and dissolved oxygen module	1	1	1	0
PL5000 0D 1pH 2LF 1OX	285206040	07	Multiparameter measuring instrument ProLab 5000 with one each pH/mV/ISE and dissolved oxygen as well as two conductivity modules	1	2	1	0
PL5000 0D 2pH 0LF 0OX	285206050	07	Multiparameter measuring instrument ProLab 5000 with two pH/mV/ISE modules	2	0	0	0
PL5000 0D 2pH 1LF 0OX	285206060	07	Multiparameter measuring instrument ProLab 5000 with two pH/mV/ISE and one conductivity modules	2	1	0	0
PL5000 0D 2pH 2LF 0OX	285206070	07	Multiparameter measuring instrument ProLab 5000 with each two pH/mV/ISE and conductivity modules	2	2	0	0
PL5000 0D 2pH 1LF 1OX	285206080	07	Multiparameter measuring instrument ProLab 5000 with one each conductivity, dissolved oxygen and two pH/mV/ISE modules	2	1	1	0
PL5000 0D 3pH 0LF 0OX	285206090	07	Multiparameter measuring instrument ProLab 5000 with three pH/mV/ISE modules	3	0	0	0
PL5000 0D 3pH 1LF 0OX	285206100	07	Multiparameter measuring instrument ProLab 5000 with three pH/mV/ISE and one conductivity modules	3	1	0	0
PL5000 0D 3pH 0LF 1OX	285206110	07	Multiparameter measuring instrument ProLab 5000 with three pH/mV/ISE and one dissolved oxygen modules	3	0	1	0
PL5000 0D 4pH 0LF 0OX	285206120	07	Multiparameter measuring instrument ProLab 5000 with four pH/mV/ISE modules	4	0	0	0
PL5000 1D 1pH 0LF 0OX	285206130	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter and one pH/mV/ISE module	1	0	0	1
PL5000 1D 1pH 1LF 0OX	285206140	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter as well as one each pH/mV/ISE and conductivity module	1	1	0	1
PL5000 1D 1pH 1LF 1OX	285206150	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter as well as one each pH/mV/ISE, conductivity and dissolved oxygen module	1	1	1	1
PL5000 1D 1pH 2LF 1OX	285206160	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter as well as one each pH/mV/ISE, dissolved oxygen and two conductivity modules	1	2	1	1
PL5000 1D 2pH 0LF 0OX	285206170	07	Multiparameter measuring instrument ProLab 5000 with digital-analog-converter and two pH/mV/ISE-modules	2	0	0	1
PL5000 1D 2pH 1LF 0OX	285206180	07	Multiparameter measuring instrument ProLab 5000 with digital-analog-converter, two pH/mV/ISE- and one conductivity-modules	2	1	0	1
PL5000 1D 2pH 2LF 0OX	285206190	07	Multiparameter measuring instrument ProLab 5000 with digital-analog-converter, each two pH/mV/ISE- and conductivity-modules	2	2	0	1
PL5000 1D 2pH 1LF 1OX	285206200	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter, one each conductivity and dissolved oxygen as well as two pH/mV/ISE modules	2	1	1	1
PL5000 1D 3pH 0LF 0OX	285206210	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter and three pH/mV/ISE modules	3	0	0	1
PL5000 1D 3pH 1LF 0OX	285206220	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter, three pH/mV/ISE and one conductivity modules	3	1	0	1
PL5000 1D 3pH 0LF 1OX	285206230	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter, three pH/mV/ISE and one dissolved oxygen modules	3	0	1	1
PL5000 1D 4pH 0LF 0OX	285206240	07	Multiparameter measuring instrument ProLab 5000 with digital-analog converter and four pH/mV/ISE modules	4	0	0	1
Z570	285206250	04	USB cable for ProLab 5000				
Z573	285206260	04	Cable for connecting the ProLab 5000 to sample changer				
Z575	285206270	04	Wall mount for ProLab 5000				



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1.1.4.2 Technical data ProLab 5000

Auxiliary energy	24 V DC desktop power supply, voltage disconnect via the unit switch
Ambient temperature	0 ... + 40 °C
Display	Touch screen graphic display 320 x 240 pixel, 256-color, back lit
Menu languages	German, English
Data transmission	Serial interface RS-232, ethernet port, USB port for PC Connection
Control outputs	4 potential-free relay outputs; resistive load I ≤ 1 A, U ≤ 24 V DC for threshold or alarm function; including a relay with timer function (wash contact; adjustable time interval 1 ... 9,999 hours)
Data storage	Integrated data logger for approx. 100,000 values including date and time, 48 hour data recorder
Logbook	Approx. 200 activities including date and time
Housing	Aluminum housing IP 40/DIN EN 60529; Dimensions see dimensional drawings, wall-mount kit available
Connections	BNC, banana, 8-pin Din, BK, USB, ethernet
Electromagnetic compatibility	89/336/EEC, EN 61326 Class B
Measurement modules	Four internal measurement modules; in any combination; inputs galvanically separated; calibration data storage; sensor monitoring via adjustable threshold bands; manual and automatic temperature compensation
Regulator module	Optional regulator module PL5000DAC: Standard signal module 4 x 0(4) ... 20 mA
Safety	Protection class III, EC Directive 73/23 EN 61010-1: 2001
GLP	GLP functions (data recording)

Measurements ProLab 5000:

Multifunctional connections:

Back panel connections

Lateral connections

Measurement modules:

Internal modules	Main parameter measuring range/resolution	Secondary parameters/ resolution	Temperature measurement measuring range/ resolution	Electrodes/sensors
PL5000 pH; ORP, ISE	pH value pH 0 ... 14 / 0.001 pH Accuracy: 0.005 pH	Chain voltage 0.1 mV	-10…130 °C / 0.1 °C	pH single rod measuring cell, separated measuring chain, Pt 1000 temperature sensor
	Redox potential -2000… +2000 mV > 0.1 mV	Redox voltage relative to the standard hydrogen electrode 0.1 mV	-10…130 °C / 0.1 °C	Redox single rod measuring cell, separate measuring chain, Pt 1000 temperature sensor
	Ion concentration corr. sensor specification (ISE) and calibration	Chain voltage 0.1 mV	-10…130 °C / 0.1 °C	Ion-selective electrode (ISE), separate measuring chain, Pt 1000 temperature sensor
PL5000LF	Conductivity 0…200 µS/cm 0.1 µS/cm (4-pol) 0…2 mS/cm 1 µS/cm 0…20 mS/cm 0.01 mS/cm 0…500 mS/cm 0.1 mS/cm automatic switching	Salinity 2 ... 42 g/kg	-10…130 °C / 0.1 °C	4-electrode conductivity measurement cell, NTC30kOhm temperature sensor
PL5000OX	O_2 saturation 0…120% / 0.1%	O_2 concentration 0…20 mg/l / 0.1	-10…130 °C / 0.1 °C	Membrane-covered amperometric O_2 sensor, NTC30kOhm temperature sensor