

# ELECTRO CHEMISTRY & WATER

## ANALYSIS INSTRUMENTS

### PORTABLE MULTI-PARAMETER INSTRUMENTS "BLACK PEARL 27 SERIES" MODEL TMULTI-27

#### OTHER MODELS

TP 27, TD 27, TPC 27, TPI 27, TPCD 27



- "30 Sec" measurement
- "6 Click" Calibration
- European technology



#### TMULTI-27

pH	-2 .... 20 pH
mV	±2000 mV
Conductivity	0 .... 2000 mS/cm
Resistivity	0 .... 200 MΩ.cm
Salinity	0 .... 70 ppt
TDS	0 .... 100 g/l
Dissolved Oxygen	0 .... 60 mg/l
	0 .... 600%
Air Pressure	600 .... 1300 hPa
Ion	0.01 ng/l .... 100 g/l
Temperature	-5 .... +105°C

The leader in pH, ORP, Conductivity, TDS, Salinity, Resistivity, Dissolved Oxygen, Ion, Temperature measurement just got better with a completely advanced & highly sophisticated new range of Benchtop Instruments with a European collaboration for the following Parameters:

These Instruments have a list of numerous salient features which make this range incomparable & highly advanced when compared with most of the other meters available in the market & some of which are as follows

• pH • ORP • Conductivity • TDS • Salinity • Resistivity • Dissolved Oxygen • ION • Temp.

- Direct Printer & PC
- 3 Year warranty on the Instruments
- Data logging of up to 12000+ values including Temperature

- Stability Indicator
- GLP Report on LCD Screen
- White backlight for better viewing
- Robust dust & splash-proof cabinet

Manufactured by:

**TOSHNIWAL INSTRUMENTS MANUFACTURING PVT. LTD.**

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# COMMON FEATURES

## pH

Automatic calibration up to five buffers out of eleven pre-programmed pH buffers.

Reads pH with 0.001 pH resolution.

## mV

Features mV calibration for accurate ORP measurements.

Reads potentials with 0.1 mV resolution.

## Conductivity

Multi-point (1...3) calibration for more linearity. Extended conductivity range; to measure the full range from 0.001  $\mu$ S/cm to 2000 mS/cm requires 3 electrodes: 0.1, 1 and 10 cm<sup>-1</sup>.

Selectable reference temperature: 20° or 25°C.

Automatic cell constant determination with any of three preprogrammed standards (0.01, 0.1 or 1M KCL).

## Dissolved Oxygen

Operates with a galvanic dissolved oxygen electrode requiring no polarisation time and no zero calibration.

Selectable resolution from 0.01 mg/l (0.1%) to 0.1 mg/l (1%).

Manual salinity compensation 0-40 ppt.

Automatic air pressure compensation 600-1300 hPa.

Rapid Air Calibration.

## ION

Direct concentration measurement. Ion mode is easily calibrated with

any 2...5 standards and a blank correction.

Useable with Ion Selective Electrodes like F<sup>-</sup>, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NH<sub>3</sub>, NH<sub>4</sub><sup>+</sup>, Br<sup>-</sup>, I<sup>-</sup>, CN<sup>-</sup>, Ca<sup>++</sup> etc.

Stores calibration curves for up to 9 different electrodes.

## Temperature

Reads temperatures with 0.1°C resolution.

Manual or automatic temperature compensation.

Calibrates temperature probe for quality measurements.

## Inputs

1 BNC inputs for pH, mV, Conductivity, Dissolved oxygen and ION.

1 Corresponding reference inputs.

1 Corresponding temperature inputs.

1 Voltage DC input for e.g. a mains adaptor.

## Outputs

USB interface for connection to a computer.

RS232 interface for connection to a printer or computer.

## Display

Bright LCD screen for better readability.

White backlight for better viewing.

Stability indicator prompts the user when readings should be taken.

Shows a GLP report on the LCD screen.

The interactive LCD screen provides step by step instructions in the language of your choice (English, Dutch, French, German).

## Data-logging

Storage memory for 12,000+ values including temperature

**\*Cabinet:** Robust dust and splash-proof cabinet.

**\*Special features:** Two-way communication with a printer or computer using RS232 or USB.

## Standard Supply

Meter + Mains Adaptor + Electrode Stand + ATC

+ Instruction Manual + Test Certificate +Warranty Card

<b>pH</b>	
Range	-2...+20 pH
Resolution	0.001 pH
Accuracy	0.1% ± 1 Digit
Calibration	1...5 Points
Buffers	11 Pre-programmed
Temperature Compensation	-5...+105°C
ISO-PH	6...8 pH
Slope	80...120%
<b>mV</b>	
Range	±2000 mV
Resolution	0.1 mV
Accuracy	0.1% ± 1 Digit
Calibration	1 Point
<b>CONDUCTIVITY</b>	
Range	0...2000 mS/cm
Resolution	0.001 $\mu$ s/cm
Accuracy	0.5% F.S. Of Range
Calibration	1...3 Point
Standards	0.01/0.1/1m KCL
Cell Constant	3 User Specified
Temperature Compensation	0.1/10 cm <sup>-1</sup> ± 30%
Reference Temperature	-5...+105°C
Temperature Coefficient	20° Or 25°C
Range Lock	Natural Waters (En27888)
Capacitive Compensation	✓
<b>RESISTIVITY</b>	
Range	0...200 MΩcm
Resolution	1 Ω.cm
<b>SALINITY</b>	
Range	0...70 ppt
Resolution	0.1 ppt
<b>TDS</b>	
Range	0...100 g/l
Resolution	0.01 mg/l
<b>DISSOLVED OXYGEN</b>	
Range	0...60 mg/l (0...600%)
Resolution	0.01 mg/l (0.1%)
Accuracy	1% ± 1 Digit
Calibration	1 Point
Temperature Compensation	0...50°C
Salinity Compensation	0...40 ppt
<b>AIR PRESSURE COMPENSATION</b>	
Range	600...1300 hpa
Calibration	1 Point
<b>ION</b>	
Range	0.01 ng/l...100 g/l
Resolution	3 digits
Accuracy	0.5% ± 1 digit
Calibration	2...5 points + blank
<b>TEMPERATURE</b>	
Range	-5...+105°C
Resolution	0.1°C
Accuracy	0.3°C
Calibration	1 point
<b>INPUTS</b>	
pH/mV	1 BNC, 10 <sup>12</sup> Ω
Conductivity/ Dissolved Oxygen/Ion	White RC Plug, for Pt1000
Temperature	
Reminder	0...999 h
GLP	✓
<b>DISPLAY</b>	
LCD	240x64 pixels each
White Backlight	✓
Hold Function	✓
Selectable Resolution	✓
Real Time Clock	✓
<b>USB</b>	1 port
Interface with computer	✓
<b>RS 232</b>	1 port
Baud Rate	1200...115200 b/s
<b>DATA-LOGGING</b>	
Values	12000+ °C/date/time
Manul or Timed	✓
Interval	1...9999 s
<b>SECURITY</b>	
Identification number	✓
Password protection	✓
<b>AMBIENT CONDITIONS</b>	
Temperature	0...40°C
Humidity	0...95%, non-condensing
<b>POWER SUPPLY</b>	
Mains	210...250 VAC, 50/60 Hz
Low Voltage	9...15 VDC
<b>BATTERY RECHARGEABLE</b>	4 x 1.2V, AA, NiMH
<b>DIMENSIONS</b>	
WxDxH	25x12x5 cm
<b>WEIGHT METER</b>	635 gm

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