

WATER SUPPLIES DEPARTMENT
STANDARD SPECIFICATION EM-02-05
CHLORINE RESIDUAL ANALYZER

1. **GENERAL**

The chlorine residual analyzer shall be capable of continuously measuring either free or total chlorine residual in the sampled water. All parts of the analyzer in contact with the sampled water shall be resistant to corrosion by chlorinated water and the chemical reagents required for measurement.

2. **DESIGN**

The chlorine residual analyzer shall use colorimetric DPD chemistry (N,N-diethyl-p-phenylenediamine) to continuously measure either free or total residual chlorine, depending on the type of reagents installed in the instrument. The analyzer shall be of low maintenance design capable of continuous unattended operation for at least 30 days.

A controller shall be provided in the analyzer for controlling the chlorination process. The analyzer shall have self-testing diagnostics and a LCD/LED display on the front panel to display measurement reading and system status. One 4-20 mA analogue output signal for the measurement, one signal limit alarm adjustable from 0% to 100% of the measuring range, and one equipment failure alarm shall be provided for remote monitoring and alarm annunciation.

The analyzer shall meet the following requirements:

Measuring range	:	0-10 mg/litre (free or total residual chlorine)
Accuracy	:	better than $\pm 5\%$ of span from 0-5 mg/litre and $\pm 10\%$ of span from 5-10 mg/litre
Lower limit of detection	:	0.05 mg/litre
Cycle time	:	less than 3 minutes
Operating temperature	:	5-40°C
Enclosure rating	:	IP65 with corrosion-resistant material
Analogue output signal	:	4-20 mA, capable of driving a 500 ohm load
Alarm output contacts	:	Volt-free contact rated at 2A 220V a.c.
Supply voltage	:	220V 50Hz a.c.

3. ACCESSORIES

Where associated instruments such as sample water inlet strainer, water flow regulator valve, water gauge, chemical solution feeder and reservoir, etc. are specified in the Particular Specification, such instruments together with the analyzer shall be housed in a freestanding floor mounted stainless steel panel.

Unless otherwise specified in the Particular Specification, the following accessories and consumables sufficient for continuous operation of one year shall be provided with the analyzer :-

- (a) Chemicals
- (b) Installation kit
- (c) Maintenance kit

- End of this Specification -