

MICROMAC COPPER

ON LINE ANALYZER FOR
COPPER MONITORING IN WATER

MICROMAC COPPER is a microprocessor controlled On Line analyzer specifically designed for automatic Copper monitoring on several types of water matrix.

✓ **ROBUST AND RELIABLE**

Designed for industrial and Environmental On Line applications ensures the highest level of robustness in the electronics, mechanics and hydraulics components. Complete separation between electronics and hydraulics plus a simple and robust LFA* hydraulics allows easy maintenance and long terms reliable operations.

**LFA: Loop Flow Analysis patent pending*

✓ **EASY TO INSTALL**

The analyzer is delivered after a long and successful series of factory tests ready for installation and setup; it is provided with complete set of spares for start up. To start monitoring is enough to connect reagents, sample line, waste line and power supply.

✓ **AUTOMATIC CALIBRATION**

When the Calibration Time interval expires the analyzer performs a Calibration Cycle, storing and checking the new calibrant O. D. If new O.D. exceeds selected limits, an alarm contacts is closed.

✓ **SAMPLE DILUTION**

Sample can be analyzed as it is or after automatic dilution. Automatic dilution is factory adjusted for high range applications.

✓ **MEASURING INTERVAL**

User selectable; between two measurements the analyzer remains in stand by mode, without reagents consumption.

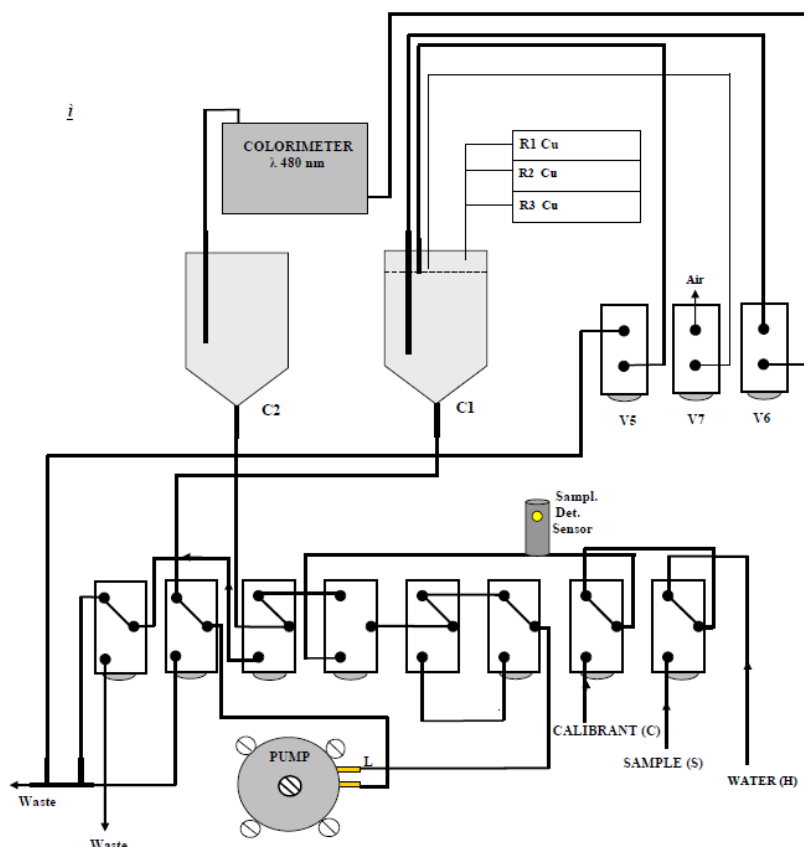
✓ **FEATURES AND BENEFITS**

- Fully automatic operation
- Long autonomy; low maintenance, low operating cost
- Low reagents consumption; short preparation time; low disposable costs
- Easy operation; plug in analyzer, no special training is required
- Electronics and hydraulics completely separated
- Serial interface for local o remote PC connection (option)

Copper measuring principle and hydraulic diagram

The sample, after proper filtration, reacts with a solution of hydroxylammonium chloride (R1) to reduce all copper ions to cuprous. Then the sample is buffered to pH 4, 5 with a reducing agent and after mixing reacts with bathocuproine, to form a brownish color that is measured at 480 nm.

The sample concentration is calculated against the calibration factor stored in the analyzer.



Technical Specifications

MEASURING PRINCIPLE: Colorimetric, bathocuproine.

COLORIMETER: dual beam, silicon detector

MEASUREMENT TYPE: cyclic

MEASURING INTERVAL: programmable

MEASURING TIME: about 10-12 minutes, depending on the range

MEASURING RANGE: 0 –0.3 up to 20 ppm Cu; other ranges available on request

DETECTION LIMIT: typically better 2% of the full scale, calculated as for EPA p. 136 appendix B

REPEATABILITY: better than 5% ; SD% of 7 replicates at 50% of the full scale

ACCURACY: better than 5% , average of 7 replicates at 20% of the full scale

OUTPUT SIGNAL: 4-20 mA

INPUT SIGNALS: n. 1 Analysis, n. 1 calibration; digital contacts

ALARMS: n. 1 High Limit, n. 1 General, n. 1 Calibration; potential free contacts

SAMPLE AND WASTE DELIVERY: pressure free;

SAMPLE TEMPERATURE: 10 °C - 30 °C

REAGENTS REPLACEMENT: 3/4 weeks depending on the operating temperature

PROTECTION: IP55

HARDWARE: PC104 industrial standard, Integrated keyboard and graphics display, RS232 option

POWER SUPPLY: 12 V DC external power supply included; 4W Standby; 10 W (mean) analysis

WEIGHT: 33 Kg without reagents;

DIMENSION: 800x420x280 mm (hxxwxd)

Subject to change without notice

SYSTEA S.p.A.

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Document ID: MicC_Copper-04-E (20210628)

