AT 02

MULTI-PARAMETRIC

AUTOMATIC

PROCESS

TITRATOR

maselli misure

PROCESS ANALYZERS

Multi-parametric titrator AT-02
Titration from the laboratory to the production line.

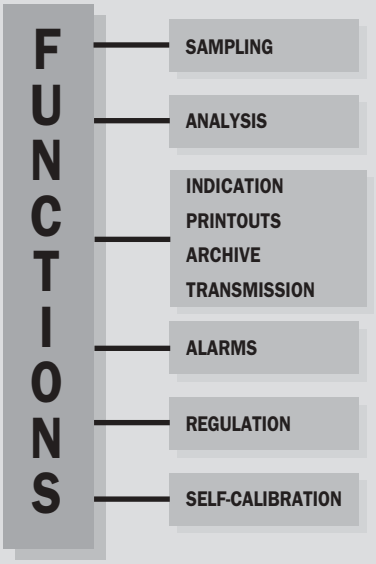
Titration analysis of process parameters, until recently carried out only in the laboratory, is moving into a new era. New, increasingly automatic systems require the continual monitoring of process variables but feedback from laboratory testing simply isn't fast enough for today's needs. There is a growing need to transfer titration procedures from the laboratory to the production line itself and the answer to this problem lies in the use of specific and personalized automatic titrators which can be used directly on site.
The Maselli AT-02 Titrator, designed to be used directly on the production line for multi-parametric analyses on a wide range of products is the perfect solution.

The AT-02 unit: multifunctional analysis centre
The AT-02 Titrator has been designed for use in working environment conditions without the need for specialized personnel. The AT-02 can be used as an 'analysis centre' checking various processes simultaneously and carrying out different types of analysis for each process. The integrated multifunctional unit is held within a stainless steel, air-tight container using simple and robust mechanical components; the hardware system allows samples to be taken from 6 lines and can carry out various analyses per line. The unit ensures that automatic self-calibration programmes are routinely carried out, its clear and simple operative menus are easy to use by non-specialized personnel and high standard personalized options can be configured directly from a keyboard by qualified personnel.

MAIN CHARACTERISTICS

- **Monobloc stainless steel structure**
- **Easy installation**
- **6-line sampling capacity**
- **Differentiated line analysis**
- **Automatic self-calibration**
- **Analogue and serial output**
- **Data printouts**
- **Configuration of alarms**
- **On board controller**
- **data archive storage**
- **Reliable results**
- **Easy to use**

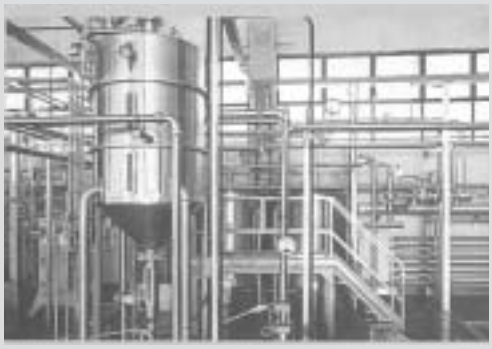
AT-02 Titrator



Titrator AT-02: Multi-parametric for various sectors

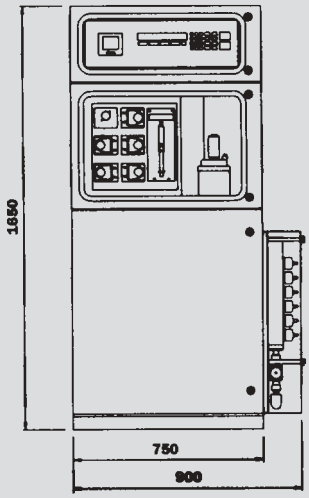
The AT-02, with its modular conception with options for a wide range of personalized settings can be used in diverse sectors. A number of applications are shown in the table below.

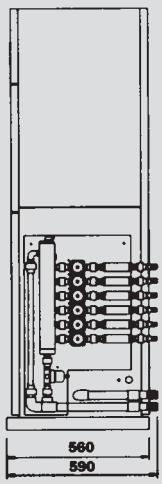
SECTOR	PRODUCT	ANALYSES
Food and drink industry	Juice	pH, total acidity, formalin number, °Brix
	Treated primary water	pH, Conductivity, Redox, Alkalinity/Acidity, Chlorine total/residue, hardness, turbidity, selective ions
	Milk	Lactic acid
	Preserving liquids	Total acidity, salt concentration, sugar concentration, dry residue
	Mayonnaise	Total acidity
Chemical and biochemical industries	Base products	Acids, bases, intermediates, finished products
	Synthetic fibres	DMF, formic acid
	Soaps	Alkalinity, sodium chloride
	Culture mediums	pH, total acidity, formalin number, °Brix
Mechanical Industry	Lubricant-cooling oils	% Oil, pH, Alkalinity, Conductivity
Metal treatments	Metals	Iron II, Iron III, Acceleration (hydrogen peroxide), Fluorides, Zinc, Nitrates
Ecology	Treated sewage	Metals, Neutralization
	Waste discharges	pH, turbidity, Metals
Energy	Treated primary waters	pH, Conductivity, hardness, Chlorides
	Condensation	pH, Conductivity, turbidity, Alkalizers



AT 02

Overall Dimensions





MASELLI MISURE s.p.a.

43100 Parma - Italy
Via Baganza 4/3
Tel. +39 (0521) 257411
Fax +39 (0521) 250484
info@masellimisure.com
www.masellimisure.com

maselli misure
PROCESS ANALYZERS

GENERAL CHARACTERISTICS

TECHNICAL CHARACTERISTICS

Measurement limits:
pH measurement: 0...14 pH
Redox measurement: 0...2000mV
Conductivity measurement: 0...20 mS/cm
Fluorides measurement: 100...1000 ppm
Data relative to other measurements and analyses, which the appliance can perform, are not given since they vary depending on personalized setting options

Accuracy:
pH measurement: ±0.1 pH
Redox measurement: ±1mV
Conductivity measurement: ±0.1 mS/cm
Fluorides measurement: ±1 ppm

Temperature compensation:
Automatic between 0 °C...+45 °C
(+32 °F...+113 °F)

Number of lines sampled:
The appliance can sample up to 6 lines
Product analysis sampling carried out in by-pass circuit
Quantity of product analysed: 50 cc
Quantity of product sampled: ~ 800 cc
Interfaces:
(optically isolated)
- Analogue optional:
  N° 6,12 or 36 independent channels
  4...20mA (on 470Ω)
- Digital:
  RS232 for connection to PC or serial printer
  RS422 for connection to PC, serial printer or data acquisition and processing systems
- Input contacts:
  N° 6 inputs for acquisition of "External Start" command relative to the line to be analyser
- Output contacts:
  N° 3 relay outputs for signalling alarms and "Start Stand-by" status, with contact rating of 24V/2A DC/AC
- Optional outputs:
  N° 6,12 o 18 optional relay outputs for On/Off control

Supplies:
- Power supply:
  AC 115/230V ±10% 50...60Hz 200VA
- Pneumatic:
  Dehydrated air 6...10 bar
  Connection via "Quick Coupler" for Plastic tube, diameter 6x4 mm
- Water:
  Water 1.5...4 bar
  Estimated consumption ~2 litres/analysis
  Connection via "hose connector" for reinforced
  Hose with 15 mm internal diameter

CONSTRUCTION FEATURES

Elements of measurements:
Multiparametric analysis by means of "Titration Acid/Base, Oxide/Reductant, Complexometric, Precipitation", of a product sample of known volume, by means of measurement electrodes and various sensor options

Element of temperature measurement:
Thermometric probe Pt100 inserted on the line
Controls:
Polyester scratch-proof keyboard with dome keys
Display:
- Alphanumeric Display 2 rows x 40 characters
- Ribbon printer with paper reel and winder
Execution:
- Structure in INOX 304stainless steel
- Protection IP65 (EN60529)
Pump section:
Possibility to install between 1 and 6 pumps (expandable up to 8) with characteristic (rpm, pipeline material, etc.) which can be personalized depending on the type of application
Tank section:
Capacity to house up to 8 plastic 5-litre tanks or 6 10-litre tanks. Minimum level controlled by ball-cock and alarm system
Dispenser section:
Possibility to install between 1 and 3 glass or PES syringes with 5ml or 10ml capacity for correct Dosage of reagents and product to be analysed. Fully automatic filling, emptying and cleaning cycles
Analysis bowl:
Cylindrical bowl in transparent Plexiglas or PES Fitted with electromechanical shaker for mixing reagents.
Possibility to insert up to 3 different electrodes for single or combined readings.
Automatic cleaning cycle
Weight:
~190 kg (~419 lb)

FLUID OPERATING LIMITS

Temperature:
0 °C...+45 °C (+32 °F...+113 °F)
Pressure:
1...6 bar (14.5...87 psi) a 20 °C (68 °F)

OPTIONAL

Digital refractometer for refractometric measurements

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