

AUTOMATIC STATION mod. SA00+GT27
OPERATIVE SPECIFICATIONS

Application:	Measure and analysis, in cycles with automatic loading, of a sample of grape must at the time of reception of grapes
Measurement type:	Refractometric measurement of the Refraction Index and display, in one of the 6 selectable scales, of the concentration values with automatic temperature compensation. Measurement of pH values by means of an Electrode with polymer electrolyte. Analysis of "Total Acidity" by pH-metric titration of a must sample of known volume, and conversion of measured value into "g/l" of tartaric acid. Spectrophotometric measurements based on the principle of diffused reflectance. Through this principle it is possible to obtain the absorption spectrum of the must without the need for filtering and/or centrifuging. From the absorption spectrum the CPU derives the Phenolic Quality Index (PQ) and the Tonality.
Concentration measurement:	For instruments marketed in France, in Spain, in Portugal or any other European Union Member State, or any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized, the measurement for the sugar level in natural wine must is subject to all relative decrees of approval for type analysis.
Limits/measurement scale:	0...18% vol. calculated conventionally on the basis of 16.83 g/l per 1% in volume of alcohol
Accuracy:	±0.1% vol. maximum tolerated error is applied to indications which are not rounded off
Concentration measurement:	For instruments marketed in countries where type analysis is not envisaged
Limits/measurement scales:	1.3403...1.3902 nD Automatic conversion of reading in the following measurement scales, with limits corresponding to 5...35 degrees BRIX 4...30 degrees BABO 0...22 degrees ALCOLE 3...20 degrees BAUME' 3...32 kg/q 20...153 degrees OECHSLE Readings in the various scales are referred to the nD/xx ICUMSA (1974) conversion tables
Accuracy:	0.3% of Scale Range. Maximum accuracy >±0.1 Brix or equivalent for corresponding scales.
PQ/Tonality measurement	Measurement limits: PQ: 90...250 unità PQ Tonality: 0...2.5 Accuracy: PQ: ±1 PQ unit Tonality: ±0.03
Notes:	The measurement is to be considered that on a turbid product (i.e. must)
pH measurement	Measurement limits: 2...14 pH Accuracy: ±0.05 pH unit
Total acidity analysis	Measurement scale span: 0...30 g/l of tartaric acid Accuracy: ±0.10 g/l of tartaric acid
Product temperature:	5...40 °C with automatic compensation of the temperature measured with Temperature Sensor Pt1000 in INOX 304, Class "A" in accordance with IEC751
Quantity of analyzed sample:	~500 cc for concentration measurement, 50 cc for analysis of pH and Total Acidity. In the version SA01/13, total quantity = ~630 cc
Quantity of sample transferred:	~1500 cc/analysis cycle
Capacity of transfer tank:	~5 litres; minimum 2 litres per cycle
Cycle duration:	Variable in accordance with time required for collection from trailer by the operator and

	programmed print parameters. Minimum 70 s, mean 90 s.
Consumables:	NaOH 2% Consumption ~5 ml/Analysis; pH4 and pH7 calibration solutions, Consumption ~25 cc. each/24 h

GENERAL SPECIFICATIONS

Supplies	Electrical: AC 230V ±10%, 50...60Hz ±2%, 300VA Connection via prewired cable with "2P+T" plug to CEI EN60309-2
Pneumatic:	Dehydrated air 4...10 bar (58...145 psi), consumption ~1.5 l/cycle. Connection via quick coupler for 6x4 mm diameter plastic tube.
Water:	Water 1.5...4 bar (22...58 psi), consumption data ~1 l/analysis; connection via hose fitting for reinforced hose with ID of 15 mm. Additional connection to Must Transfer System for routine cleaning, made with quick coupler for 18 mm diameter reinforced hose.
Must:	Connection to Sampling Probe tube on trailer via PVC hose fitting for hose with ID of 50 mm. The hose fitting is secured to the Transfer System by means of "Garolla" type fittings. Connection of Tank drain by means of PVC hose fitting for hose with ID of 50 mm. Connection of Tank Overflow by means of Stainless steel Hose Fitting for hose with ID of 32 mm.
Interfaces:	For instruments marketed in France, in Spain, in Portugal or any other European Union Member State, or any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized, the serial connections are not attested.
Digital:	RS485 for connection to personal computer and/or the Remote Oenological Indicator "IREO".
Inputs:	N°1 input for the acquisition of the "Print" command from the remote control panel, normally utilized in the version with external printer. N°1 input for the acquisition of the "Start" command from the external Transfer unit control panel.
Output:	N°1 relay output to signal the "Measurement End" status, normally utilized in the version with external printer. N°3 relay outputs for signalling of "Start Enable", "Acquire Must", "Line Free" on the Transfer System external control panel.

CONSTRUCTION FEATURES

Note:	<p>Automatic Station "SA00" with "Must Transfer unit GT27" is the more complete element of analysis of the "System for evaluation of grapes at reception" with automatic loading, which, in the full version, permits the complete administration of analytical parameters with Acquisition and crushing of grape samples using the Sample Acquisition from Trailer Probe, and Remote Indication facility. Thanks to its modular design, the system can be configured in accordance with specific needs and, if required, subsequently integrated with additional modules. The modular Automatic Station is basically composed of: Base unit with microprocessor controller for administration of the Unit and external interface functions; Refractometric Unit model "UR25", Colorimetric Unit "UK05", "Dispenser" Group, Analysis Bowl, Print Unit for various size cards, Must Transfer system with remote control panel. The entire system is installed, assembled and interconnected in a compact structure.</p> <p>The table below contains all the different models of the SA00 Automatic Station available on the market.</p> <table border="1" data-bbox="606 1691 1364 1915"> <thead> <tr> <th></th> <th>CONCENTRATION</th> <th>pH</th> <th>TOTAL ACIDITY</th> <th>COLOR</th> </tr> </thead> <tbody> <tr> <td>SA01</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SA02</td> <td>X</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>SA03</td> <td>X</td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td>SA11</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>SA12</td> <td>X</td> <td>X</td> <td></td> <td>X</td> </tr> <tr> <td>SA13</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>		CONCENTRATION	pH	TOTAL ACIDITY	COLOR	SA01	X				SA02	X	X			SA03	X	X	X		SA11	X			X	SA12	X	X		X	SA13	X	X	X	X
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Base Unit	Function: System administration, data processing, operator interface, interface with ancillary elements and with process systems.
Execution:	Specially designed structure in 304 AISI stainless steel (IP55) with large size rear door and lock closure; housing for printer on board machine.

Electronic section:	<p>Microprocessor CPU main unit.</p> <p>Indication of the concentration measurement, Service indication, display of software menus and pH, A.T. and PQ/Tonality values via a high contrast "Graphic Display".</p> <p>Keypad in polyester with dome keys for access to program menus, personalization of unit, administration of cycles and manual activation of main functions (wash, drain, print).</p> <p>Facility to select the type of measurement required (only Sugar contents, + pH, + T.A., +PQ and Tonality) and operating mode (Manual or Automatic).</p> <p>Sampling cycle can be performed while the analysis cycle is in progress.</p> <p>Autodiagnosics program with display of error messages in the presence of faults.</p> <p>Totally personalizable titration curve.</p>
Electrical section:	<p>Overcurrent protection with 5x20 mm fuses.</p> <p>Yellow-Red disconnect switch located externally on side of structure.</p> <p>Terminal board for connection of inputs and outputs.</p> <p>Movements provided by low-voltage electropneumatic commands.</p> <p>Grape species selector for classifying lots based on PQ (PQ/tonality on request).</p>
Digital refractometer UR25	<p>Execution:</p> <p>Monobloc unit (IP67) in black anodized aluminum anticorrosive, located internally to the Automatic Station.</p>
Measurement section:	<p>Measurement prism in "Fused Silica"; the prism is cleaned automatically by means of a pneumatically driven rubber wiper.</p> <p>Electronically compensated "LED" light source.</p> <p>CCD sensor element.</p>
Notes:	<p>The Refractometer, which is without an internal processing system, is controlled by the CPU in the Base Unit.</p>
Titration dispenser unit	<p>Execution:</p> <p>Monobloc unit with main parts made of aluminium with anodized/black paint finish, installed on one side of the Automatic Station and protected by a Perspex cover.</p>
Features	<p>Administration of unit with dedicated microprocessor CPU; dialogue with Base Unit by means of RS485 serial connection.</p> <p>10 ml glass syringe for metering of NaOH for neutralization of must.</p> <p>Syringe driven by Helical Screw and Stepping Motor arrangement.</p> <p>Syringe filling, emptying and washing cycles are completely automatic, with control of limit positions by means of an optical sensor.</p> <p>5 l reagent tank.</p>
UK05 Spectrophotometric unit	<p>Execution:</p> <p>Enbloc unit (IP67) in black painted/anodized aluminium, located inside the Automatic Station.</p>
Measurement section:	<p>Reflectance measurement geometry for determining the absorption spectrum in accordance with the Kubelka-Munk model.</p> <p>8 monochromatic LED light sources (wave lengths 420, 520, 670, 880 nanometres).</p> <p>Detector: photodiode with large sensitive surface area.</p> <p>Time of measure: 12 s.</p>
Notes:	<p>The spectrophotometer is electronically managed by the "CPU" located in the Base Unit.</p>
Analysis bowl	<p>Execution:</p> <p>304 AISI stainless steel bowl accommodated externally to the appliance with drainage system operated by pneumatic pistons</p>
Features:	<p>Grape pressing and pre-flushing with must before execution of the measurement.</p> <p>Automatic water washing at the end of each analysis cycle; pressure adjustment by means of pressure Reducer.</p> <p>Automatic control of "Max" level.</p> <p>Piston drainage system with automatic preparation of volume for titration.</p> <p>Temperature sensor "Pt1000", "pH" measurement electrode, electromechanical agitator for dilution of titrating reagent, mounted on easily removable.</p>
Printer unit:	<p>The printer is not attested; in the event of a discrepancy with the printer only the indications given on the display of the Automatic Station are guaranteed and are to be considered authentic.</p>
Execution:	<p>Unidirectional desktop printer (RS232 interface) with impact print system and ink ribbon.</p>
Features:	<p>Printing on cards of various dimensions (min. 70x75, max. 120x220).</p> <p>Facility for printing multiple cards (1 original + 2 copies) and/or with cardboard backing.</p> <p>Completely personalized selection of the type of values to print (Sugar contents, pH, T.A., Date, Time, etc.).</p> <p>Completely personalized setup of the position of the printed area on card by means of "Line-</p>

	Column" matrix settings. Facility for remote positioning of the printer, with optional supply of "External control panel".
Must transfer unit:	Execution: Pyrex container with base and cover in grey PVC installed on one side of the unit
Features:	Pneumatically controlled "Fill", "Drain" and "Transfer" membrane valves. Air insufflation system to prevent layering of must. "Overflow" outlet to provide for mixing of large quantities of must. Automatic control of "Minimum" and "Maximum" levels. Grape pressing with pre-flushing with must before filling the tank with the must to be measured. Fully automatic fill, empty and transfer cycle (the operator is only required to transmit the analysis "Start Enable" command, if the "Autostart" function is not programmed). External polycarbonate keypad (IP55) with indication of transfer cycle operative information Sprayball for washing internal tank walls with water.
Product contact materials:	Electrodes in 304 AISI stainless steel. Measurement prism in Fused Silica and pH electrode in glass. Seals and membranes in sanitary rubber. Pt1000 sensor in 304 AISI stainless steel and Agitator Blade in Polypropylene. "NaOH" titrating reagent. Rubber prism cleaning brush. Components of the discharge unit in PVC. Components of Transfer System in Pyrex, PVC.
Overall dimensions and weight:	915 (b) x 1750 (h) x 500 (p) ~100 kg

TECHNICAL SPECIFICATIONS AND STANDARDS

Ambient characteristic	Temperature limits: Ambient: 5...45 °C (41...113 °F) Storage: -20...+50 °C (-4...+122 °F) Humidity limits: Ambient: 5%...95% (R.H. non-condensing) Storage: 5%...95% (U.R. non-condensing) Altitude limits: <2000 m a.s.l. Protection category: IP65 to EN60529
Conformity to Directives:	EC REGULATION 1935/04/EC MSD: 2006/42/EC LVD: 2014/35/EU EMC: 2014/30/EU RAEE: 2012/19/EU CE mark shows conformity to EU Directives French Ministry of Industry, Postal and Telecommunications" Approval No. "LNE-7313 rév. 0 du 08 juin 2007" for the specific market. Spanish Center of Metrology/Ministry of Industry, Tourism and Commerce" Approval No. 090905001. Portuguese Institute of Quality" Approval No.  602.12/20.