

## TECHNICAL SPECIFICATIONS AND STANDARDS

### Ambient characteristics

#### 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% (R.H. non-condensing).

*Altitude Limits:* <2000 m a.s.l.

*Protection Category:* Refractometric unit in line IP67, Electric junction boxes and pH Measurement unit IP55, according to EN60529.

### Conformity to Directives

*EC:* REGULATION 1935/04/EC.  
*LVD:* 2006/95/EC and amendments;  
*EMC:* 2004/108/EC and amendments;

\* CE mark shows conformity to EU Directive.

## OPERATING SPECIFICATIONS

*Application:* Measurement System for evaluating a sample of grape must on delivery, with measurement of parameters Degree and/or pH directly on the de-stemming and crushing line. The System can be configured for the analysis of 1...4 lines.

The system consists mainly of 1...4 UR24, inserted in the relative deflectors DF15, on the main piping downline of the crushing unit. Connected in RS485 to a Box which powers it, it receives and transmits the data already compensated in temperature to a PC connected by means of a converter RS485/USB, which acquires and processes the data by means of management software. As option, 1...4 pH measuring devices can also be added to the system for the relative measurement; these too can be connected in the same manner to a Box for power supply, can receive and transmit the data already compensated in temperature to the PC for data acquisition connected by means of converter RS485/USB. Measurement of the pH (optional) is done by means of 1...4 "pH" electrodes, relative sensors Pt100 and Receivers. Each measurement section involves the assembly and installation of an electrode and a Pt100 in the line by means of appropriate accessories and at a max. distance of 3m of the relative Receiver, which must be fitted on the wall or on a plate.

A control panel receives the data from the refractometric units and from the pH measuring units, processes the data and saves these in memory in a specific database before transmission to a Central Computer. The control panel is usually installed on a platform (or box) on which an operator is present for monitoring 1 to 4 crushing lines, according to the sequence described below:

-Downloading the data of the lot from the Central Computer.

-Execution of the measurement cycle.  
-Printing the reports for the colleague at the end of the cycle, saving the data in memory and transferring these to the Central Computer.

*Type of measurement:* A) Refractometric measurement of the Refraction Index and display of the relative concentration already compensated for temperature on the PC in one of the 6 scales that can be selected.

B) Measurement of "pH" value by means of "Electrode" with polymer electrolyte, (optional).

#### Measurement Limits/scale:

### Measurement of Concentration

1.3403...1.3902 nD.

Automatic conversion of indication in the measurement scales listed below, with limits corresponding to:

5...35 degrees BRIX	4...30 degrees BABO
0...22 degrees ALCOHOL	3...20 degrees BAUME'
3...32 kg/q	20...153 degrees OECHSLE

The comparison in the various scales of measurement refers to the conversion Tables nD/xx ICUMSA (1974).

*Accuracy:* The values given below refer to a standard sucrose solution.

0.3% of Scale Field.

Accuracy ±0.10 Brix or equivalent for corresponding scales.

### pH measurement

2...14 pH.

*Accuracy:* ±0.05 unit of pH.

*Product temperature:* 5...45 °C (41...113 °F).

Automatic compensation of temperature measured by means of Temperature probes Pt100 made of AISI 316 Stainless steel ¼", Class "A" in accordance with IEC751.

*Line pressure:* max. 7 bar (101 psi) at 65 °C (149 °F).

## GENERAL SPECIFICATIONS

### Power Supplies

*Junction box with PSU for UR24:*

L/N/PE AC 85...264V, 50...60Hz, 60W.

Electric junction box IP55 made of ABS, internal connection by means of terminal board, connecting cables passing through PG cable glands.

*Junction box with PSU for RM01:*

L/N/PE AC 85...264V, 50...60Hz, 10W.

Electric junction box IP55 made of ABS, internal connection by means of terminal board, internal channels conversion module mA in RS485 (Analog Input MODULE I-7017), connecting cables passing through PG cable glands.

*Personal Computer and Printer Power Supply:*

L/N/PE AC 115...230V, 50...60Hz, 500W.

Personal Computer with LCD/LED 17" Monitor, Operating System Windows® 7 32/64 Bit.

### Interface

*Digital:* -USB converted by RS422/485 for serial connection of refractometric units and pH measuring units to the Computer.

-USB for connecting Computer-Printer.  
-USB converted by RS485 for connection with Remote Repeaters IRE0 (optional).  
-Ethernet for network connection of PC to a Central Computer, if present.  
-HDMI Output.

*Inputs:* No. 1 input for "Line Stopped" (HOLD) for each measuring line.

All connections to the Refractometric units are made by means of 16-pin metallic circular connectors

### CONSTRUCTION FEATURES UR24

**Execution:** Monoblock enclosure with AISI 316 stainless steel cover. Heat insulation flange made of PEEK™, Prism-holder made of AISI 316 stainless steel with Tri-Clamp® 3" fittings BS 4825 ASME-BPE for installation in process line.

*Measuring section:* -Measuring prism made of "Synthetic sapphire".  
-"LED" light source compensated electronically.  
-"CCD" detection elements.  
-"Pt100" temperature probe to be installed in line.

The optical section of the equipment is dehumidified by means of Dehydrating Cartridge with Molecular Sieve.

*Electronic section:* -"CPU" with microprocessor.  
-Indication of measurement, software menu and error messages display by means of backlit LCD 128x64 graphic display with "LCD Saving" function.  
-Control keypad made of scratch-proof polyester with dome-shaped preformed keys.  
-Possibility of selection from among 5 languages (Italian, English, German, Spanish, French) for displaying the menu and messages.  
-Temperature expressed in °C or in °F.

**Materials in contact with the product:**  
-Pt100 and Prism-holder made of AISI 316 Stainless steel.  
-O-RING and Gaskets made of Kalrez 6230.  
-Measuring prism made of "Synthetic Sapphire".

**Dimensions and weight:**  
*Standard version* Ø176 (b) x 192.5 (h) x 132.5 (p), 3.3 kg.

### CONSTRUCTION FEATURES RM01

**Execution:** Monoblock enclosure made of "Polycarbonate" colour RAL 7035 UV resistant, not flammable; measuring electrode made of PVDF complete with Pt100 to be installed on the process line made of dedicated accessories.

*Electronic section:* -"CPU" with microprocessor.  
-Indication of measurement and display of software menu by means of LCD 2x3 ½ digit + symbols backlit alphanumeric Display.  
-Control keypad made of scratch-proof polycarbonate with membrane keys.  
*Software:* -Simultaneous reading of "Main parameter"

and "Temperature" with display of measured value calculated and indication of alarm condition, if any.  
-Manual calibration of pH, mV scales, Temperature, Out mA with automatic acknowledgement of buffers.  
-Analog output proportional to the reading and configurable in values of "Top of Scale" e "End of Scale", converted in digital RS485.  
-Unit of measurement for the temperature scale which can be selected from °C or °F.

**Materials in contact with the product:**  
-Pt100 and Core made of AISI 316 stainless steel.  
-O-RING and Gaskets made of Viton/EPDM.  
-ELECTRODE Inpro 4501VP/PT100/SG.

**Dimensions and weight:**  
120 (b) x 122 (h) x 56 (p), 0.5 kg.

### DATA AND CYCLE ACQUISITION SOFTWARE

**General information:**  
The application software supplied with the BL01 allows the acquisition and management of data by means of the Personal Computer. It can individually control up to 4 delivery lines. The application is designed and produced to facilitate the job of the quality control laboratory staff and is in a position to provide in real time the data regarding the must delivered:

- Monitoring and controlling the production line.
- Providing data and information regarding plant performance in real time.
- Directly modifying the operating parameters on the line.

All the functions necessary for operation are displayed in the form of simple windows so that even someone who is not highly qualified can use the system. After the initial step of selection and setting of various operating parameters, the operator can, with minimum effort receive the values from the instrument connected, analyse the data received, print the Tables and obtain, from the program, an entire series of indications meant for improving the quality of the products controlled, for rationalising process times and costs.

*Software features:*

- Software Windows® software in DOTNET® language.
- Possibility of selecting from among 5 languages (Italian, English, Spanish, Portuguese, French).
- Possibility of simultaneously controlling up to 4 UR24 Units and 4 RM01 Units in remote.
- Management of a stability criterion for the measurement based on variance or on absolute value.
- Possibility of starting and completing the measurement manually by means of pushbuttons, or by means of contacts coming from outside.
- Displaying and saving in memory all the measured values received from the UR24

and RM01 units.  
-Interface management with the Customer's Management software.  
-Possibility of calling up, displaying and then printing all the measurements made earlier, including the individual samples included in the final result.  
-Password management to access the individual menus.

*Indicative operating cycle:*

-The System is ready to start the cycle.  
-Entering the lot number in the Central Computer.  
-Entering the lot number in the Control Station and relative reception of the data from the previous lot data entered earlier from the Central Computer.  
-Control for starting integration/measurement (indication of value by means of flashing light).  
-End of integration control (steady indicator light).  
-Cycle end control, after which the following operations are carried out:  
a) Printing data on the local printer.  
b) Saving data in the local database (Date and Time, Lot, Colleague, Average Brix value, Average pH value) and relative transmission to the Central Computer.  
-Activation of the free Line with the possibility of starting up a new analysis cycle.

***ACCESSORIES***

- Deflectors for installation in line, made of AISI 316 stainless steel (others on request) with Tri-Clamp® fittings to be welded, flanged, according to DIN standards and 1" to 4" pipes.

**NOTE:**

**The BL01 System is modular. This Technical Data Sheet refers to a complete standard configuration of the System. To know the exact composition of each and every system and extrapolate the technical features of each of these from this Data sheet, refer to the Offer or Confirmation to which this Technical Data Sheet is attached.**