

### TECHNICAL-NORMATIVE SPECIFICATIONS

#### Environmental features

##### Temperature limits:

*Environment:* -10...+45 °C (14...113 °F)  
protected from direct sunlight when used in outdoor applications.

*Storage:* -20...+70 °C (-4...+158 °F).

##### Humidity limits:

*Environment:* 5%...95% (R.H without condensate)

*Storage:* 5%...95% (R.H without condensate)

*Altitude limits:* <2000 m above sea level

##### Degree of Protection in accordance with EN60529:

IP52 – Receiver FM01

IP67 – Refractometric Unit UR61 with connector/safety device inserted

#### Conformity to Directives

*EMC:* 2004/108/EEC and subsequent amendments

*LVD:* 2006/95/EC and subsequent amendments (Receiver FM01 only).

*EC:* REGULATION 1935/04/EC (Refractometric Unit)

\* CE marking of conformity to EU Directives.

### OPERATING SPECIFICATIONS

*Application:* The fermentation measurement assembly is a kit made up of sensors for installation in the field and a laboratory Receiver. It can be used to measure natural must and must/wines or fermented liquids, with control of the fermentation process in oenological plants.

*Type of measurement:* Refractometric and conductimetric measurement with display of temperature-compensated data, control over fermentation trend, management of enrichment and cutting with recording and graphic processing of the analysis data.

*Measurement limits:* 1.3300...1.3999 nD (0...40 Brix)

Automatic processing of the measurement with calculation of:  
0...400 g/l (0...40 g/100 ml) for sugars  
0...30 % v/v for Alcohol content  
0...40 g/l for Dry Extract or Non-reducing Extract (NE)  
0...5 mS/cm for Conductivity

*Accuracy:*  
>2 g/l for Sugars  
>0.2 % v/v for Alcohol Content  
>2 g/l for Dry Extract (NE)  
>0.05 mS/cm

*Product temperature:* 5...+50 °C (41...122 °F)  
with automatic compensation for temperature measured by internal Pt1000 Temperature Probe, Class "A" (IEC-751).

*Repeatability:* ±0.03 Brix or equivalent for other scales.

The values provided refer to standard sucrose solutions.

*Relative line pressure:* max. 10 bar (145 psi) at 20 °C (68 °F)  
max. 8 bar (116 psi) at 100 °C (212 °F)

*Duration of cycle:* Settable measurement interval.

### GENERAL SPECIFICATIONS

#### Power supplies

*Electric:* AC 100...240V ±10% 50...60Hz 250VA  
Connection by means of cable with SP7748 (EEC-7) 10A/250V plug for EC versions or with P620 15A/125V plug for USA versions.

#### Serial interfaces:

*RS485:* M12 connector for connection to a Refractometric Unit UR61. It is possible to connect up to 32 Refractometric Units by using the special adapters. The maximum distance between the Refractometric Units and the Monitor is 500 meters.

*USB:* Type A connector for external connection.

*Ethernet:* RJ-45 connector for external connection.

*Modbus RTU:* In additional plastic box (optional).

*GSM:* Additional GSM Dual Band 900/1800 module.

*Outputs:* 3 relay outputs for alarm condition signaling which can be set based on progress of fermentation, with DC/AC 24V/500mA contacts.

### CONSTRUCTION FEATURES

#### REFRACTOMETRIC UNIT UR61

*Execution:* AISI 316 stainless steel Enbloc casing for direct installation onto the fermenter body by means of the special adapter.

##### Measurement section:

- Spinel measurement prism.
- Electronically compensated LED light source.
- CCD sensitive element with 2546 pixels.
- Pt1000 temperature probe inside the appliance.
- Integrated prism cleaning system with electric actuator.

The optical section of the equipment is dehumidified by means of molecular sieve desiccant sachets.

*Electronic section:* Central "CPU" unit with microprocessor which can be programmed with the special "Utility Software" and "User Scale"

- Internal temperature/humidity sensor for continuous temperature readings and the detection of humidity with relative alarm signaling.

#### Parts in contact with the product:

- Structure in AISI 316 stainless steel
- O-ring in Kalrez 6230 (Kalrez 6375 or 6380 on request) and Viton FKM 75.5.
- Spinel measurement prism.
- EPDM cleaner brush.

#### RECEIVER FM01

*Execution:* INOX AISI 304 stainless steel Enbloc casing

*Electronic section:* - Industrial "CPU" monoboard with microprocessor

- Graphic display on LCD touch screen 800x600 10.4" monitor.

- 512 MB Flash Memory.

- External transformer in the event of connecting more than one Refractometric Units UR61.

- Possibility to carry out "Batch Management" by recording all the operations and analysis to be executed periodically for each vat or tank in fermentation.

- Additional Modbus Interface in plastic box with relative management software for connection to the PLC for remote control of measured events.

- Optional GSM device for sending SMS relative to a series of selectable events.

-Software for viewing the state of fermentation processes via Web (FM01 on network).

**Dimensions and weight**

**Refractometric Unit UR61:**

Ø38.5 (b) x 290 (d), 830 g for standard length.

**Receiver FM01:** 420 (b) x 280 (h) x 200 (d), 12.5 kg

**ACCESSORIES**

- AISI 316 stainless steel fitting for direct installation onto the fermenter body with fittings (type and length) to be defined depending on the application.

- Possibility to adapt the length of the appliance to meet application requirements.