

**FERMENTATION MONITOR mod. IF02 (FM01 Receiver with RP60)**
**OPERATING SPECIFICATIONS**

<b>Application:</b>	The IF02 Fermentation Measurement Assembly is a kit made up of a portable appliance and software to be installed on a PC. It can be used to measure natural must and fermented must/wines with control of the fermentation process in oenological plants.
<b>Type of measurement:</b>	Refractometric measurement of the Refractive Index and display of the relative concentration with temperature compensation already applied. The Conductivity measurement is performed in the field by manually dipping the probe into the analysis bowl or directly into the product container and entering the value in the RP60 Receiver using the Touch Screen. Once the series of measurements have been executed, it is necessary to connect the unit to the FM01 module using the relative USB cable and download the data.
<b>In-field measurement phases:</b>	Once in the field it is necessary to: Select the Tank/Batch on the touch screen using the scroll through menu. Take a product sample and measure the conductivity (mandatory for the first analysis and optional for the following ones). Dip the instrument into the must using the bowl provided or dip the probe directly into the container used to pick up the product sample. Press OK to acquire the datum.
<b>Notes:</b>	The mobile RP60 device always holds in its memory the last measurement performed, should the regular analysis return a result exceeding the previous one, the device notifies the operator of the anomaly. Repeat the measurement phase for all the tanks in question, once all the measurements have been completed, repeat the synchronization phase using the FM01 on which it is possible to see the fermentation trend as a graph together with the list of measurements performed, etc..
<b>Measurement limits:</b>	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 x for Dry Extract or Non-reducing Extract (NE) 0...5 mS/cm for Conductivity.
<b>Accuracy:</b>	>2 g/l x for sugars >0.2 % v/v x for Alcohol Content >2 g/l x for Dry Extract (NE) >0.05 mS/cm
<b>Repeatability:</b>	±0.03 Brix or equivalent for other scales The accuracy and repeatability values provided refer to standard sucrose solutions
<b>Measurement scale:</b>	"BRIX" based on the nD/Bx ICUMSA conversion table (1974)
<b>Product temperature:</b>	5...+50 °C [41...122 °F] with automatic compensation for temperature measured by internal Pt1000 Temperature Probe, Class "A" according to IEC-751

**GENERAL SPECIFICATIONS**

<b>Power supply RP60</b>	<b>Electric:</b> 4x1,2V AA rechargeable NiMH batteries with battery charger and additional battery pack included
<b>Interfaces</b>	<b>Usb:</b> Connector for connection to FM01 Fermentation Monitor
<b>Power supply FM01</b>	<b>Electric:</b> 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.
<b>Interfaces:</b>	<b>Usb:</b> Type A connector for external connection <b>Ethernet:</b> RJ-45 connector for external connection <b>Modbus RTU:</b> In additional plastic box (optional)

**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

<b>Refractometric probe RP60</b>	<b>Execution:</b> AISI 304 stainless steel Enbloc casing integrated with the Receiver or connected by means of a 1-m long cable
<b>Measurement section:</b>	Spinel measurement prism. Electronically compensated LED light source. CCD sensitive element with 2546 pixels. Pt1000 temperature probe inside the appliance.
<b>Notes:</b>	The optical section of the equipment is dehumidified by means of molecular sieve desiccant sachets
<b>Parts in contact with the product:</b>	Structure in AISI 316 stainless steel. ORING in Kalrez 6230 and Viton FKM 75.5. Spinel measurement prism.
<b>RP60 Receiver</b>	<b>Execution:</b> ABS casing (UL94HB) RAL 7035
<b>Function:</b>	Data processing, operator interface, interfacing with analysis units, interfacing with additional elements and with the process line
<b>Electronic section:</b>	Central "CPU" unit with microprocessor with management software on Flash, updatable via PC Indication of measurement, software menu display, diagnostics menu, error messages and operating status indicator icons on graphic backlit display LCD 320x240 color pix with "LCD Saving" function and touch-screen. 3-level programming software complete with password protection and check menu. 5 language options (Italian, English, Spanish, French, German) for menu and messages display Process temperature expressed in "°C" or in "°F".
<b>FM01 Receiver</b>	<b>Execution:</b> INOX AISI 304 stainless steel Enbloc casing
<b>Electronic section:</b>	Industrial "CPU" monoboard with microprocessor. Graphic display on LCD touch screen 800x600 10.4" monitor. 512 MB Flash Memory. Possibility to carry out "Batch Management" by recording all the operations and analysis to be executed periodically for each vat or tank in fermentation.
<b>Dimensions and weight</b>	<b>Refractometric Probe RP60:</b> 160 (w) x 380 (h) x 60 (d), 1.5 kg complete with batteries <b>Receiver FM01:</b> 420 (w) x 280 (h) x 200 (d), 12.5 kg

## TECHNICAL-NORMATIVE SPECIFICATIONS

<b>Environmental features</b>	<b>Temperature limits:</b> Environment: -10...+45 °C (14...113 °F) Storage: -20...+70 °C (-4...+158 °F) <b>Humidity limits:</b> Environment: 5%...95% (R.H without condensate) Storage: 5%...95% (R.H without condensate) <b>Altitude limits:</b> <2000 m a.s.l. <b>Degree of protection</b> IP52 in accordance EN60529 Receiver FM01 IP54 in accordance EN60529 Refractometric Probe RP60
<b>Conformity to Directives:</b>	EMC: 2014/30/EU LVD: 2014/35/EU CE marking of conformity to EU Directives