

**REFRACTOMETER ANALYSIS UNIT model UR62 (IR02)**
**OPERATING SPECIFICATIONS**

<b>Application:</b>	Measurement of liquid products on process lines in food, chemical, textile, petrochemical industries etc., during continuous or batch production. Used in combination with a RC24 Repeater it is possible to view and manage the measured data. The UR62 - RC24 combination constitutes the IR02 assembly.
<b>Type of measurement:</b>	Continuous refractometric measurement of the Refractive Index and conversion into the "BRIX" or "USER" scale of the relative concentration, with temperature compensation already applied.
<b>Measurement limits:</b>	1.3170...1.4907 nD (0...80 Brix)
<b>Range:</b>	Min 0.0642 nD – Max 0.1577 nD Min 30 Brix – Max 80 Brix
<b>Accuracy:</b>	0.6% of the range; maximum accuracy $\pm 0.0004$ nD ( $\pm 0.20$ Brix) in the <b>UR62</b> only configuration. Maximum accuracy $\pm 0.0002$ nD ( $\pm 0.10$ Brix) in configuration with the <b>IR02</b> . The Brix values provided refer to standard sucrose solutions.
<b>Measurement scales:</b>	"BRIX" or "USER": the "BRIX" scale is based on the nD/Bx ICUMSA conversion table (1974); the "USER" scale can be configured during the ordering phase
<b>Resolution:</b>	0.2 Brix ( <b>UR62</b> ) or 0.1 Brix ( <b>IR02</b> )
<b>Product temperature during measuring:</b>	-25...+90 °C (-13...194 °F) with automatic temperature compensation measured using an internal Pt1000 temperature probe (Class "A" in accordance with IEC751); the maximum value depends on the type of installation (totally or partially immersed, presence of conditioning systems, etc.). For product temperatures exceeding 70°C (158 °F) maximum insertion of the instrument must be 30 mm. In the system with integrated prism cleaning system the maximum temperature is limited to 50°C (122°F).
<b>Maximum temperature during sanitization:</b>	hot water at 95 °C (203 °F) for 30' / steam (0.5 bar) at 110 °C (230 °F) for 30'.
<b>Response time to temperature variations:</b>	2' / 10 °C (18 °F)
<b>Relative line pressure:</b>	max. 10 bar (145 psi) at 20 °C (68 °F) max. 8 bar (116 psi) at 90 °C (194 °F)

**GENERAL SPECIFICATIONS**

<b>Power supplies</b>	<p><b>Electrical:</b> AC 24V <math>\pm 10\%</math>, 50...60Hz, 80mA DC 24V <math>\pm 10\%</math>, 80mA Connection box without Transformer (optional): Power supply according to UR62 specifications Terminal board connection Connection box with Transformer (optional): L/N/PE AC 85...264V 50...60Hz 24W Terminal board connection</p> <p><b>Pneumatic:</b> (only if equipped with automatic cleaner): Dehydrated air 4...8 bar (58... 116 psi) Connection using "Quick-fit Attachment" for tube (diameter 6x4 mm)</p>
<b>Interfaces</b>	<p><b>Analog:</b> 4...20mA on 470<math>\Omega</math> / proportional "step" with resolution = 0.2 Brix (<b>UR62</b>) or 0.1 Brix (<b>IR02</b>)</p> <p><b>Digital:</b> RS485 for connection to programming PC</p> <p><b>Digital: (IR02 only)</b> RS485 configurable with following protocols: OPTO22 LABTECH</p>

	<p>MASELLI for connection to the "CM00" (Multilab) remote control unit PROFIBUS DP or ETHERNET/IP (optional)</p> <p><b>Outputs: (UR62 only)</b> 2 relay outputs (alarm condition signaling) + 1 relay output for cleaning system control with DC/AC 24V/500mA contacts</p> <p><b>Inputs: (IRO2 only)</b> 2 configurable inputs</p> <p><b>Outputs:</b> 1 relay outputs for alarm condition signaling 1 configurable relay output for alarm condition signaling or time proportioning adjustment Each output has a maximum capacity of 1A/24V DC/AC</p>
<b>Notes:</b>	<p><b>UR62:</b> All power supply and signal connections are made via a metal circular M12 twelve-pole connector installed on the instrument; a shielded multipolar cable with twelve-pole flying connector is provided for external connection.</p> <p><b>IRO2:</b> All interfaces are optically isolated from the power supply (VDE0160) and are completely configurable from the keypad. All connections must be made via connections to connectors.</p>

### UR62 CONSTRUCTION FEATURES

<b>Execution:</b>	AISI 316 stainless steel Enbloc casing for installation on the process line by means of the special adapter
<b>Measurement section:</b>	<p>Spinel measurement prism Electronically compensated LED light source. CCD sensitive element with 2546 pixels. "Pt1000" temperature probe inside the equipment. Integrated prism cleaning system with electric actuator.</p>
<b>Notes:</b>	The optical section of the equipment is dehumidified by means of a desiccant molecular sieve cartridge
<b>Electronic section:</b>	<p>Central "CPU" unit with microprocessor which can be programmed with the special "Utility Software" for setup and configuration of the alarm threshold values, relative hysteresis, resetting and scale changeover. Internal temperature/humidity sensor for continuous detection of the temperature and presence of humidity with relative alarm signaling.</p>
<b>Materials in contact with the product</b>	<p>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 cleaning brush.</p>
<b>Accessories:</b>	<p>AISI 316 stainless steel fitting for installation on the line or in by-pass with Tri-Clamp® fittings® or fittings of a different type to be defined depending on the application. Conditioning system for forced cooling air circulation.</p>
<b>Dimensions and weight:</b>	Ø38.5 (b) x 173 (p), 500 g

### RC24 CONSTRUCTION FEATURES

<b>Execution:</b>	ABS casing (UL94HB) RAL 7035 for cabinet or wall installation
<b>Function:</b>	System management, data processing, operator interface, interfacing with analysis unit, interfacing with additional elements and with the process line.
<b>Electronic section:</b>	<p>Central "CPU" unit with microprocessor with management software on Flash, updatable via PC; communication, interfaceability with analysis unit via serial RS485 protocol. 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. 6 language options (Italian, English, German, Spanish, French, Chinese) for menu and message display. Process temperature expressed in "°C" or "°F" and pressure expressed in "kg/cm<sup>2</sup>" or "psi". Possibility to store and call up at any time groups of parameters known as "recipes" containing production parameters.</p>
<b>Accessories:</b>	Plate for installing the RC24 on the Electrical Cabinet
<b>Dimensions and weight:</b>	200 (b) x 120 (h) x 90 (d), 1.2 kg

## TECHNICAL-NORMATIVE SPECIFICATIONS

<b>Environmental features</b>	<b>Temperature limits:</b> Environment: -10...+45 °C (14...113 °F) Protected from direct sunlight when used in outdoor applications. 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> IP67 in accordance with EN60529 with connector/safety device inserted ( <b>UR62</b> ) IP65 in accordance with EN60529 ( <b>RC24</b> )
<b>Conformity to Directives:</b>	EMC: 2014/30/EU EC: REGULATION 1935/04/EC CE marking of conformity to EU Directives