# OPERATING SPECIFICATIONS

**Application:** 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.

**Type of measurement:** Continuous refractometric measurement of the Refractive Index and conversion into the "BRIX" or "USER" scale of the relative concentration, with temperature compensation already applied.

**Measurement limits:** 1.3170…1.4907 nD (0…80 Brix)

**Range:**
- Min 0.0642 nD – Max 0.1577 nD
- Min 30 Brix – Max 80 Brix

**Accuracy:**
- 0.6% of the range; maximum accuracy ±0.0004 nD (±0.20 Brix) in the **UR62** only configuration. Maximum accuracy ±0.0002 nD (±0.10 Brix) in configuration with the **IR02**.
- The Brix values provided refer to standard sucrose solutions.

**Measurement scales:**
- "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

**Resolution:**
- 0.2 Brix (**UR62**) or 0.1 Brix (**IR02**)

**Product temperature during measuring:** -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).

**Maximum temperature during sanitization:**
- hot water at 95 °C (203 °F) for 30’ / steam (0.5 bar) at 110 °C (230 °F) for 30’.

**Response time to temperature variations:**
- 2’ / 10 °C (18 °F)

**Relative line pressure:**
- max. 10 bar (145 psi) at 20 °C (68 °F)
- max. 8 bar (116 psi) at 90 °C (194 °F)

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# GENERAL SPECIFICATIONS

**Power supplies**

| Electrical: | AC 24V ±10%, 50...60Hz, 80mA  
DC 24V ±10%, 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  
Pneumatic:  
(only if equipped with automatic cleaner):  
Dehydrated air 4...8 bar (58...116 psi)  
Connection using "Quick-fit Attachment" for tube (diameter 6x4 mm) |
|---|---|

**Interfaces**

<table>
<thead>
<tr>
<th>Analog:</th>
<th>4...20mA on 470Ω / proportional &quot;step&quot; with resolution = 0.2 Brix (<strong>UR62</strong>) or 0.1 Brix (<strong>IR02</strong>)</th>
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</thead>
<tbody>
<tr>
<td>Digital:</td>
<td>RS485 for connection to programming PC</td>
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</table>
| Digital: (**IR02** only) | RS485 configurable with following protocols:  
OPTO22  
LABTECH |
MASELLI for connection to the “CM00” (Multilab) remote control unit

**PROFIBUS DP or ETHERNET/IP (optional)**

**Outputs: (UR62 only)**
- 2 relay outputs (alarm condition signaling) + 1 relay output for cleaning system control with DC/AC 24V/500mA contacts

**Inputs: (IR02 only)**
- 2 configurable inputs

**Outputs:**
- 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

**Notes:**

**UR62:**
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.

**IR02:**
All interfaces are optically isolated from the power supply (VDEO160) and are completely configurable from the keypad. All connections must be made via connections to connectors.

### UR62 CONSTRUCTION FEATURES

**Execution:**
AISI 316 stainless steel Enbloc casing for installation on the process line 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 equipment.
- Integrated prism cleaning system with electric actuator.

**Notes:**
The optical section of the equipment is dehumidified by means of a desiccant molecular sieve cartridge

**Electronic section:**
- 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.

**Materials 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 cleaning brush.

**Accessories:**
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.

**Dimensions and weight:**
Ø38.5 (b) x 173 (p), 500 g

### RC24 CONSTRUCTION FEATURES

**Execution:**
ABS casing (UL94HB) RAL 7035 for cabinet or wall installation

**Function:**
System management, data processing, operator interface, interfacing with analysis unit, interfacing with additional elements and with the process line.

**Electronic section:**
- 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/cm² or psi.
- Possibility to store and call up at any time groups of parameters known as "recipes" containing production parameters.

**Accessories:**
Plate for installing the RC24 on the Electrical Cabinet

**Dimensions and weight:**
200 (b) x 120 (h) x 90 (d), 1.2 kg
| 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 a.s.l.  
| Degree of Protection:  
|                       | IP67 in accordance with EN60529 with connector/safety device inserted (UR62)  
|                       | IP65 in accordance with EN60529 (RC24)  
| Conformity to Directives: | EMC: 2014/30/EU  
|                       | EC: REGULATION 1935/04/EC  
|                       | CE marking of conformity to EU Directives |