

**ANALYSIS UNIT mod. IB07**
**OPERATING SPECIFICATIONS**

<b>Application:</b>	Measurement of sugar-sweetened beverages, carbonated soft drinks, beer and mineral waters on the process line
<b>Type of measurement:</b>	Continuous refractometric measurement of the Refractive Index and transmission of the relative concentration value with temperature compensation already applied. Dissolved CO <sub>2</sub> concentration measurement, based on IR ray absorption and transmission of the relative value. The technique used is known as "Attenuated Total Reflectance" (ATR): a collimated beam of infrared radiation passes through a prism in contact with the liquid, undergoes a number of internal reflections and is then collected by a suitably filtered detector as it exits the prism. The relationship between the intensity of the beam on exiting and on entering the prism is proportional to the concentration of dissolved CO <sub>2</sub> .
<b>Concentration measurement</b>	<b>Measurement limits:</b> 0...20 Brix <b>Accuracy:</b> The values provided below refer to standard sucrose solutions. 0.1% of the range, maximum accuracy $\pm 0.02$ Brix with variation of $\pm 10$ °C ( $\pm 18$ °F).
<b>Measurement scale:</b>	"BRIX" based on the nD/Bx ICUMSA conversion tables (1974)
<b>Response time:</b>	1.0 sec.
<b>Product temperature during measuring:</b>	-5...+90 °C [23...194 °F] with automatic compensation of the influence temperature has on the sugar concentration, measured by Pt1000 Temperature Probe, Class "A" according to IEC751.
<b>CO<sub>2</sub> measurement:</b>	<b>Measurement limits:</b> 0...6 v/v (0...12 g/l) <b>Accuracy:</b> $\pm 0.05$ v/v ( $\pm 0.1$ g/l) <b>Measurement scales:</b> "v/v (Gas/Vol)" or "g/l" <b>Measurement interval:</b> 3 sec. <b>Product temperature during measuring:</b> -5...+35 °C [23...95 °F] with automatic compensation for temperature measured by Pt1000 Temperature Probe, Class "A" according to IEC751 <b>Relative line pressure:</b> max. 10 bar (145 psi) at 20 °C (68 °F) max. 8 bar (116 psi) at 100 °C (212 °F) Special version for pressure at 15 bar (217 psi) at 100 °C (212 °F) <b>Sanitization limit conditions:</b> See specific Table

**GENERAL SPECIFICATIONS**

<b>Power supplies</b>	<b>Electric:</b> DC 24V $\pm 10\%$ 6A Max Connection box without Transformer (optional): Power supply according to IB07 specifications Terminal board connection. Connection box with Transformer (optional): AC 100...240V $\pm 10\%$ 50...60Hz 150VA Terminal board connection.
<b>Interfaces</b>	<b>Analog:</b> N° 2 output channels 0...20mA or 4...20mA active (470 $\Omega$ ) which can be configured in the "Initial and End Scale" values. 4 auxiliary input channels. <b>Digital:</b> RS485 for connection to the "M8" remote control unit. RS485 for connection to Maselli analyzers.

	PROFIBUS DP or ETHERNET/IP (optional). <b>Inputs:</b> N° 2 configurable inputs <b>Outputs:</b> 2 relay outputs for alarm signals with contacts of a maximum capacity of 1A/24V DC/AC
<b>Note:</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.

## CONSTRUCTION FEATURES

<b>Execution:</b>	The system is essentially made up of: Multiparametric Receiver MP01/02. Digital Refractometer, model UR29. Digital Carbometric Unit, model UC09.
<b>Note:</b>	The system is modular and allows the user to completely control analytical parameters (concentration and CO <sub>2</sub> measurement) directly on the process lines with Remote Indication, Registration, Acquisition and Processing of data.
<b>Multiparametric Receiver MP01/02</b>	<b>Execution:</b> AISI 304 casing for wall or post mounting.
<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>	Central "CPU" unit with microprocessor with management software, updatable via PC; communication, interfaceability with analysis units via serial RS485 protocol. Processing and indication of measurements, software menu display, diagnostics menus, error messages and operating status indicator icons on graphic backlit LCD 240x128 pix display with "LCD Saving" function or 10" 2048x2048 monitor. Multi-level programming software complete with password protection for certain functions and check menu. Possibility to choose one of several menu and messages display languages. 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.
<b>Dimensions and weight:</b>	<b>MP01:</b> 270 (b) x 201.5 (h) x 115.5 (p), 3.2 kg. <b>MP02:</b> 340 (b) x 389.5 (h) x 157.5 (p), ~5.5 kg
<b>Digital Refractometer UR29</b>	<b>Execution:</b> Enbloc housing with AISI 316 stainless steel lid, PEEK™ heat insulating flange, AISI 316 stainless steel prism holder with 3" BS 4825 ASME-BPE Tri-Clamp® fitting or N type Varivent® fitting for installation on the process line. <b>Measurement section:</b> Measurement prism in optical glass (Crown "N-K5"). Electronically compensated LED light source. CCD sensitive element. Pt1000 temperature probe inside the appliance. <b>Electronic section:</b> Central "CPU" unit with microprocessor
<b>Note</b>	The optical section of the equipment is dehumidified by means of a moisture extractor
<b>Interfaces:</b>	<b>Digital:</b> RS485 for connection to the Multiparametric Receiver MP01/02, the PC or auxiliary services
<b>Note:</b>	The connections to the Appliance are made by means of a circular multipolar connector, pre-assembled and complete with cable. The appliance is usually supplied accompanied by a Multiparametric Receiver MP01/02 to which it must be electrically connected.
<b>Power supply</b>	<b>Electric:</b> DC 24V ±10%, 0.6A
<b>Parts in contact with the product:</b>	Pt1000. Prism holder in AISI 316 stainless steel. O-ring and gaskets in Kalrez 6230 + Viton or EPDM (silicone available on request). Synthetic sapphire measurement prism.
<b>Dimensions and weight:</b>	∅176 (b) x 255 (h) x 132.5 (p), 3.3 kg

<b>Carbometric Unit UC09</b>	<b>Execution:</b> Enbloc housing with AISI 316 stainless steel lid, PEEK™ heat insulating flange, AISI 316L stainless steel prism holder with N type Varivent® fitting for installation on the process line
<b>Power supplies</b>	<b>Electric:</b> DC 24V ±10% 10W
<b>Measurement section:</b>	Synthetic sapphire measurement prism. Pt1000 temperature probe inside the appliance.
<b>Electronic section:</b>	Central "CPU" unit with microprocessor
<b>Note:</b>	The optical section of the analyzer is dehumidified by means of a moisture extractor
<b>Interfaces:</b>	<b>Digital:</b> RS485 for connection to the Multiparametric Receiver MP01/02, the PC or auxiliary services
<b>Note:</b>	The connections to the Appliance are executed by means of a circular multipolar connector, pre-assembled and complete with cable. The appliance is usually supplied accompanied by a Multiparametric Receiver MP01/02 to which it must be electrically connected.
<b>Parts in contact with the product:</b>	Prism holder in AISI 316L stainless steel ORING and gaskets in VITON + KALREZ 6230. Synthetic sapphire measurement prism.
<b>Dimensions and weight:</b>	Ø176 (b) x 255 (h) x 143 (p), 3.3 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> IP67 in accordance with EN60529 "on board line". IP65 in accordance with EN60529 "MP01/02".
<b>Conformity to Directives</b>	EMC: 2014/30/EU EC: REGULATION 1935/04/EC EC marking of conformity to EU Directives