IC 6587.103 – IC 7687.103

ISE - pH – redox – conductivity controller

The triple-measurement controllers **IC 6587.103** and **IC 7687.103** belong to the latest series of B&C Electronics instruments and contain over 40 years of company experience in measuring and regulating electrochemical quantities using selective ion sensors (ISE), pH, redox and conductivity.

The above mentioned sensors allow the simultaneous display of up to three measurements on the display in addition to the temperature measurement which also operates in automatic compensation.

The flexibility of use of the various types of sensor makes the instrument suitable for many applications and types of system.

Main features

Inputs
The three inputs allow the selection of the following measurements:
Input A: conductivity/TDS/resistivity/indirect
Input B: ISE/pH/redox
Input C: ISE/pH/redox

Conductivity, TDS and resistivity scales
Cell K: 0.01- 0.1 - 0.5 - 1.0 - 10
from 200.0 nS to 2000 mS
from 100.0 ppb to 0.01 ppt
from 100 Mohm to 0.5 ohm

pH and redox scales
from 0.00 to 14.00 pH
from -2000 to +2000 mV

ISE scales
Ions: Cl^- $NO3^-$ $NH4^+$ Ca^{+++}, others editable
from 0.01 to 1000 ppm, others editable

Temperature scales
from 0.0 to 100.0 °C
from 32.0 to 212.0 °F

Configuration
It can be configured for single measurement, double measurement or triple measurement.

Temperature compensation
It operates manually or automatically on pH, ISE, conductivity measurements.

Display
The graphic display shows all measurement values and guidance messages in the various phases of use, referring to the configured inputs.

Keyboards
The keys include those dedicated to zero and sensitivity calibration and set point setting.

Operating mode
Operation in automatic mode, measuring only or in the simulation mode for each input, in order to facilitate operations during start-up or maintenance of the system.

Two programmable software filters
They allow you to set values for small and large variations in order to obtain reading stability and speed of response to measurement variations in the process.

Two analogue outputs
Addressable on the inputs and programmable in the range 0/4 - 20 mA on two points of the measuring scale and they allow PID adjustment or transmission of measurement values.

Digital output
Isolated RS485 serial, with B&C ASCII protocol (text string) and Modbus RTU (03, 06, 16 function).
Boot-loader function for firmware updates.

4 relays
Addressable for on-off adjustments, alarms, self-cleaning, automatic calibration or degassing.

PID adjustment
In PID adjustment via the analogue output, the level of the actuation is shown on the display.The user can select a PFM (pulse frequency) or PWM (pulse duration) addressed to the corresponding relay.

Alarms
Relay dedicated to these functions, settable on the min/max values of the measurements, the excessive permanence of the set points, the presence of the logic inputs, the failure of the automatic calibration or the exhaustion of the calibration solutions. Alternatively, this relay can be addressed and dedicated to the regulation function.

Logic inputs
Two independent dry contacts on closure that can create hold or alarm conditions.

Sensor cleaning
Programming software and relay dedicated to an external sensor self-cleaning device. Alternatively this relay can be addressed to the control function.

Automatic calibration
Relay dedicated to the activation of an external system for automatic one-point or two-point calibration of ISE sensors.

Reagent consumption measurement
Measurement of reagent consumption for the automatic calibration of ISE sensors to prepare their refilling.

Universal power supply
Single-phase AC voltage from 85 to 264V, 50-60 Hz.
An option is available for use in DC voltage from 9 to 36V or AC voltage from 12 to 24V, 50-60 Hz.

Easy installation
IC 6587.103 with IP66 protection, wall mounting, DIN rail mounting.
IC 7687.103 with IP 65 front panel protection, panel mounting.

Compatible and versatile
The controller is compatible with any pH, redox and 2 or 4-electrode conductivity sensor.
Monovalent or bivalent non pre-configured ISE sensors can be configured by the operator.
Temperature measurement and compensation can be performed using a Pt100 or Pt1000 resistance thermometer with 2 or 3 wire connection.

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Applications

- Drinking water
- Aquaculture
- Food and beverage
- Chemical Industry
- Pharmaceutical Industry
- Textile Industry
- Fertirrigation
- Swimming pools
- Water Treatment

Technical specifications

Inputs:	2 or 4 electrode conductivity cells glass or antimony pH electrode redox electrode ISE electrodes Pt100 or Pt1000
Zero:	adjustable according to measure
Sensitivity:	adjustable according to measure
Resolution:	1 digit
Accuracy:	0.2 %
Repeatability:	0.1 %
Non linearity:	0.1 %
Dual filter software:	0.4 ÷ 50.0 seconds for small and large variations
Dual analog output:	0-20 mA / 4-20 mA Rmax 600 Ω
Digital output:	isolated RS485. B&C ASCII e Modbus RTU protocols (03, 06,16 functions)
HI/LO set point:	ON/OFF - PID - PFM – PWM
Hysteresis:	0 ÷ 10 % of the scale
Delay:	0 ÷ 100.0 seconds
Alarm:	SPDT relay, 0 ÷ 100,0 seconds delay
Cleaning function:	off / autoclean / manual SPDT relay repetition time 0.1 ÷ 100.0 hours cleaning time 1.0 ÷ 60.0 seconds holding time 0.0 ÷20.0 minutes
Automatic calibration of the ISE electrodes:	1-point or 2-point, degassing
SPST and SPDT relay contacts:	220 Vac - 5 A resistive
Operating temperature:	-10 ÷ 60 °C
Humidity:	95% without condensation
Power supply:	85 ÷ 264 Vac - 50/60 Hz 9 ÷ 36 Vdc, 12 ÷ 24 Vac (091.42x option)
Terminal blocks:	removable
Net weight:	1360 g (IC 6587.103) 450 g (IC 7687.103)
Enclosure:	ABS, IP 66 protection (IC 6587.103) metallic, IP 65 front panel (IC 6587.103)
Dimensions:	256x230x89 mm (IC 6587.103) 98x98x104 mm, 90x90x95 mm nel quadro (IC 7687.103)
EMC/RFI conformity:	EN 61326
Ornamental design nbr.:	002564666-002 (IC 6587.103) 002564666-003 (IC 7687.103

The technical specifications may be changed without notice