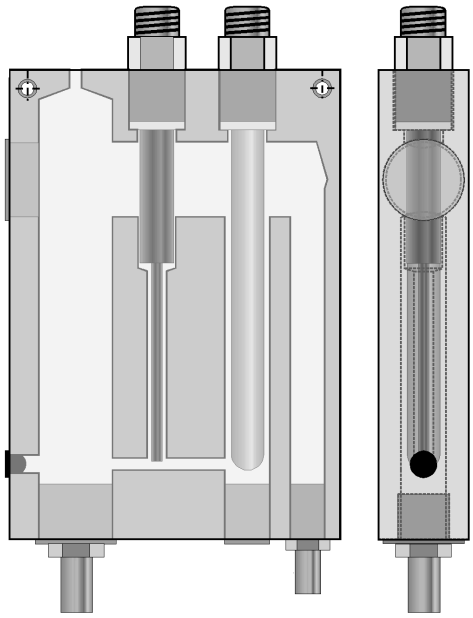
605BxxB0

Cell for selective measurements of chlorine, chlorine dioxide, chlorite, ozone, peracetic acid, bromine and other oxidising substances



Series 605 cells are sensors for oxidising substances in aqueous solutions including special electrodes and peculiar operating features; their selectivity, sensitivity, accuracy and reliability cannot be easily found in other analysers presently available on the market. These cells are designed for applications where selective and accurate oxidant analysis is a basic issue because the concentration to be detected is very low, or because high reliability for long operating periods with no maintenance needs is required. Another typical application of this cell is for oxidising substances measurements in sea water. The sensor is made of a Plexiglas chamber that houses the measuring electrode, the counter electrode, the reference electrode and the system for automatic sample flow rate adjustment. The electrodes are directly immersed into the sample that flows in the chamber with a constant flow rate, controlled by the cell itself even with highly variable sample flow rates at the cell inlet (16 to 200 l/h); the electrodes are kept clean and active by the movement of the sample itself.
Typical applications of these cells are in drinking water plants, food and beverage industry, bottled waters industry, sea water swimming pools, thermal springs swimming pools, once through cooling systems, recirculating cooling systems, fish breeding and seafood breeding.

Advantages

- **Small dimensions, sturdy execution**
- **Three electrodes polarographic cell**
- **High selectivity to various oxidising substances**
- **Remarkable linearity and repeatability, no drift**
- **High immunity to interferences**
- **Self-adjusted sample flow rate for 16 to 200 l/h variable sample flow rate**
- **Measuring range: 0-2000 ppb, 0-10 ppm**
- **Very little maintenance requirements**
- **Remarkable small sample consumption (down to 16 l/h)**

Operating principle and realization

Series 605 measuring cells include three electrodes: measuring electrode, counter electrode and reference electrode. The counter electrode imposes a fixed potential to the measuring electrode where the oxidizing substance is reduced. The reduction of the measured substance at the measuring electrode causes a current flow that is proportional to the concentration of this substance in the sample. The polarization voltage impressed across measuring electrode and counter electrode and the proper amplification factor makes the cell selective to different oxidising substances. The cell is absolutely free of unwanted effects like corrosion of the electrodes: noises due to these phenomena are so forth completely avoided even in critical applications like sea water measurements. 605 cells are made of a Plexiglas chamber that houses the counter electrode (C), the reference electrode (R) and the working electrode (W) combined in a single rod (R/W) and the system for the automatic adjustment of the sample flow rate. The special hydraulic design inside the cell assures high precision of the measure by keeping constant the flow rate of the sample inside the cell with no regard to the process sample flow rate that can vary inside the limits 16 to 200 l/h. The electrodes are kept active and clean by the action of the sample flow itself, thank to the measuring chamber design. Series 605 cells are available with the options listed in the Order Code Breakdown.

Cell for selective measurement of oxidising substances

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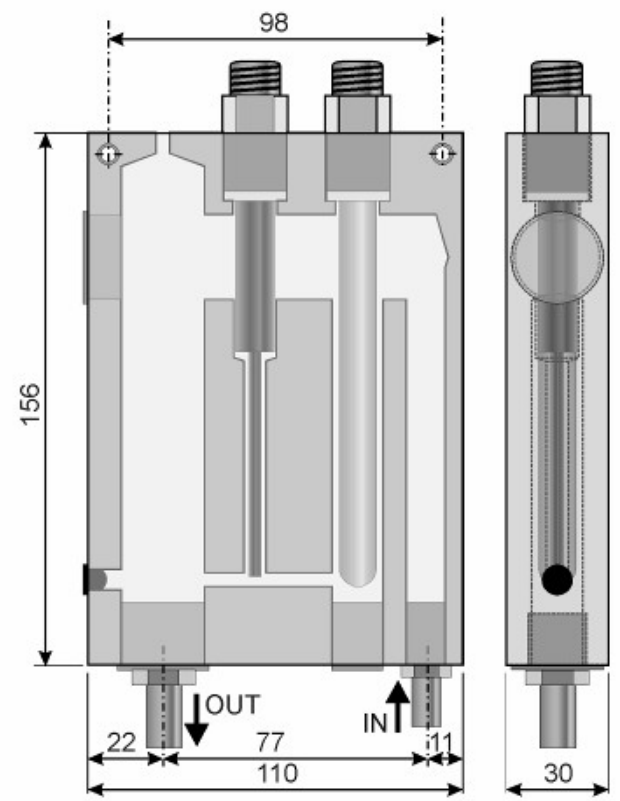
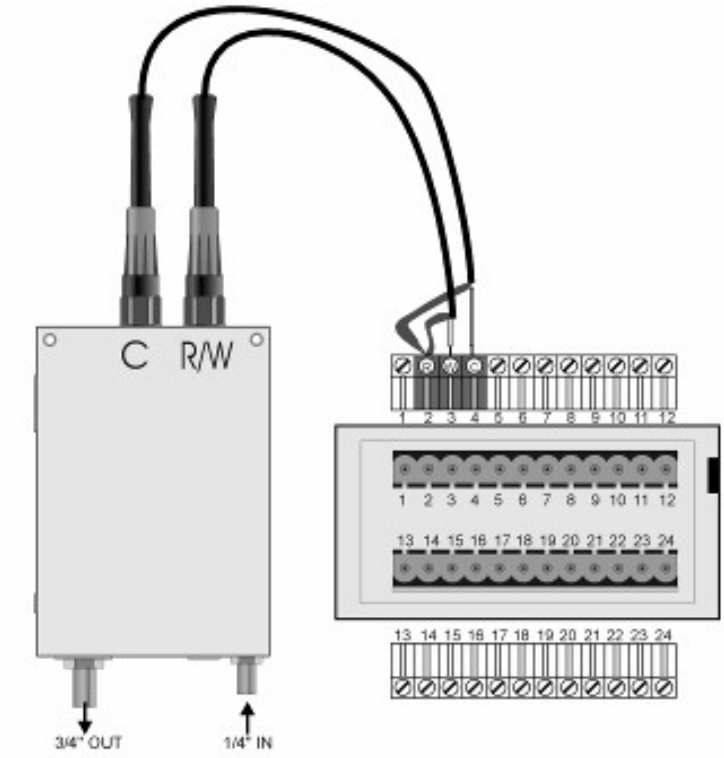
Installation, Maintenance and Calibration



The cell is designed to be wall mounted through two screws ∅5 x 50mm; process connections are threaded, 1/4" GAS F for the sample inlet and 3/4" GAS F for the drain. The drain must be free (ambient pressure).
We highly recommend the installation of a filter able to prevent suspended particles with a diameter higher than 0,7 - 0,8 mm from entering the measuring cell.
The presence of iron - Fe(II) and Fe(III) – in the sample at a concentration higher than 1 ppm may cause malfunctioning of the cell because iron may react with the electrodes.
No maintenance is required for Mod.605- cells because electrodes aren't subject to corrosion and are kept clean and active by means of the sample flow itself. Some fouling may appear in the electrodes chamber, depending upon process characteristics: in such event clean the electrodes chamber with diluted HCl solution or with a small brush; the Plexiglas body allows to visually inspect possible fouling inside the cell.
For cell conditioning and the following calibration it is enough to allow the process fluid flow through the cell for at least 30 minutes. "Zero" calibration is operated allowing a sample free of chlorine (or other oxidant in measure) to flow into the cell. For the calibration of sensitivity introduce chlorine or other oxidant. After the stabilization of the measure, compare the obtained value with that of a colorimeter with precision and repeatability in accordance with process requirements, and always better than 2%.



Wirings

605BxxB0

Technical Specifications

Body material:.....Plexiglas
Electrodes:.....inert material
Operating temperature limits: .....5 to 50°C
Storage temperature limits: ..... –10 to +50 °C
Measuring ranges: ..... 0.00÷2000 ppb, 0.00÷10 ppm
Accuracy :.....±2% f.s.
Max distance cell/transmitter: .....5 m
Connection cable:.....coaxial cables, 5 m, included in the supply
Process connections: .....inlet: 1/4" GAS F; drain 3/4" GAS F
Sample flow rate: .....self adjusted by the cell for flow rates varying within the range 16 - 200 l/h
Operating pressure: .....atmospheric, drain must be free (at atmospheric pressure)
Max. salt concentration :.....100 g/l of chlorides
Max.concentration for iron salts Fe(II) and Fe(III):.....1 ppm as Fe
Sample conditioning:.....install a filter stopping particles with a diameter > than 0,7 - 0,8 mm
Sample hardness limit:.....10°f; above this limit a frequent electrodes cleaning may be required
Operating pH limits (only for measures of hypochlorites and chlorites):.....6.0 to 7.7 pH
Response time:..... 60" for increasing measure (to reach 90%of final value),
.....90" for decreasing measure (to reach 90% of final value)
Dimensions:.....w.110 x h.158 x d.40 mm

Order code breakdown

	605	x	x	x	x
Cell for selective meas. of oxidizing and reducing substances, plexiglas body	605				
Tiype of application					
Low concentrations, 603 and 605		B			
Measured parameter					
Reserved			00		
Chlorine (Cl_2)			01		
Chlorine dioxide (ClO_2)			02		
Chlorites (ClO_2^-)			03		
Ozone (O_3)			04		
Peracetic acid (PAA)			05		
Bromine (Br_2)			06		
Hydrogen Peroxide (H_2O_2)			07		
Permanganate ($KMnO_4$)			08		
Oxidizing power (Ox)			09		
Other parameters			99		
Fixed Code				B	
Fixed Code					0

Accessories and Spare Parts

Combined R/W electrode (reference + working) for 605 cells Mod.201/GEL-GV-PG
Counter electrode C for 605 cells.....Mod.201/GV-d6-PG
Cable for the connection of each electrode to electronic unit, 5 m Mod.CV/S7-5
Spare 605 cell body w/o electrodes.....605-A01-3