

Total Iron Measurement

Colorimetric method: in a medium buffered to pH 4.6, iron III is reduced to iron II. Phenanthroline then forms a complex with iron II of red color which is detected by the analyzer.

Reaction time 15-18 min.

Sensors/Measurement Equipment

Detection wavelength 470 nm
Temperature controlled measuring chamber

Analyzer Measuring range

Topaz Total Iron LR 0-100 or 0-1000 ppb
Limit of Detection 8 ppb
Repeatability < ± 2 % FS or ± 0.008ppm (whichever is greater)
Precision < ± 2 % FS or ± 0.008ppm (whichever is greater)

Topaz Total Iron HR 0-2 or 0-5 ppm
Limit of Detection 8 ppb
Repeatability < ± 2 % FS
Precision < ± 2 % FS

Automatic baseline adjustment.

Sample flow surveillance.

Specifications and Functionality

Pump type peristaltic
Pump quantity 3

Power supply

Voltage: 110 - 240 VAC
Frequency: 50 /60 Hz
Power consumption: Typical 150 VA, 300 max.

Operation

Display: Color LCD display, 7", touch-screen

Display of process value, alarm status and time during operation.

Smart and intuitive interface based on separate menu sections: "Measurement", "Diagnostic" and "Tools".

User menus in English and French.

Password protection and storage of data records. Storage and graphical display of measurement history.

Topaz Total Iron Measurement Scheme

Alarm Relays

1 summary alarm for "analyzer failure"

Maximum load: 1A / 24 V

Relay Outputs

2 potential-free contacts for each channel programmable as limit switches for measuring values (high/low thresholds)
1 sample flow alarm for each channel
1 output for indication of the active sample stream for each channel.
1 output for maintenance indication.

Rated load: 1A / 24 V

Signal outputs

2 programmable signal outputs for measured values (freely scalable, linear).

Current loop: 4 - 20 mA

Communication interface

RS485 interface (galvanically separated) with Modbus/JBUS RTU protocol included in standard.

Ethernet interface (TCP/IP) optional.

Analyzer Data

Sample conditions

Flow rate: min 30 l/h
optimum 40 l/h
Temperature: 5 to 40 °C
Inlet pressure_{Abs.} (25 °C): 0.1 up to 2.0 bar
Outlet pressure: pressure-free
Particle size: < 20 µm

Ambient Conditions

Temperature: 5 to 40°C
Humidity 10 to 80% rel.

Sample connections

Sample inlet: 1/4" BSP F
Sample outlet: soft tubing D INT 9
Sample outlet waste: soft tubing D INT 12

Wall cabinet

Dimensions: 780 x 570 x 370 mm
Material: Stainless Steel 316L
Total weight: 35 kg
Protection degree: IP 55

Reagent specifications

Type	Code
pH buffer acetate pH 4.5	RXX237
Reagent Consumption LR/HR	0.6l/month

Phenanthroline 1.10	RXX151
Reagent Consumption LR	1.6 l/month
Reagent Consumption HR	2.4 l/month

Topaz Total Iron LR

Hydrochloric acid 2N + 0.4mg/l iron	RXX153MI400
Reagent Consumption	0.6l/month

Topaz Total Iron HR

Hydrochloric acid 2N	RXX150
Reagent Consumption	0.6l/month