

# SMART ONE →✘←

## Colorimetric (DPD) Chlorine Analyzer

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**SMART  
NET**

# SMART ONE

## Customized Multi-Parameter Analyzer

Each SMART ONE analyzer can measure up to 7 parameters, including free and/or total chlorine, pH, temperature, ORP, conductivity, and turbidity. Its versatility significantly lowers costs by eliminating the need to purchase multiple analyzers.

## Low Maintenance

SMART ONE's cutting edge, proprietary technology includes automatic mixing, bubble elimination and photo-cell self-cleaning, for minimum ongoing maintenance.

## Advanced, Intuitive User Interface

SMART ONE's user interface is the most advanced in the market today. Actions that are usually considered complicated - such as toggling parameters on and off, defining thresholds and alerts, connecting 4/20 mAmp outputs and adjusting relays, have been simplified for non-technical staff. Data can be easily visualized on-site as tables or graphs, allowing all levels of personnel to benefit from the system's advanced capabilities.

## Connect Better, Know Better, Operate Better, Protect Better

SMART ONE can easily be connected to the Blue I secured online data-center via Ethernet, Wifi, or cellular. This connection gives the operator full remote access to the measured data as well as to the operation and maintenance interface. The operator can also access real-time assistance and troubleshooting from an authorized representative, ensuring optimal service and saving time, energy and money.



**SMART  
INSIGHT**

# Features



Free and/or total chlorine in one analyzer



Wide chlorine measurement range of 0-10 ppm



Customized cycle time and low reagent usage



Unattended operation of up to 2 months (at 5 min cycle time)



Proprietary mixing and colorimeter self-cleaning technology



Multi-parameter analysis of free and/or total chlorine, turbidity, pH, ORP, temp, EC, pressure and flow



Robust enclosure (IP65 rating) suitable for outdoor installations

## DISPLAY

- ▼ Intuitive and wide 7" touchscreen
- ▼ Up to 6 months of data logging capacity, stored and available when needed
- ▼ Past data, event history and calibration records available on device as tables and graphs

## INPUTS AND OUTPUTS

- ▼ Up to 2 optional 4/20 mA inputs (fully displayed)
- ▼ Up to 8 optional 4/20 mA outputs (any parameter)
- ▼ Up to 8 optional relays (any parameter)

## COMMUNICATION

- ▼ Ready-to-connect with Blue I's secured online data-center Smart NET
- ▼ Full remote access to view data as well as to modify settings, thresholds and alarms through Smart NET
- ▼ Real-time text messages and email alerts through Smart NET

# Technical Specification

## MEASURED PARAMETERS

Colorimetric Cell	Free and/or Total Chlorine
Internal / External Flow Cell	Temp, pH, ORP, Conductivity, Turbidity
External connection	Two optional 4/20 mA inputs (fully displayed)

## CHLORINE MEASUREMENT

Type of measurement	Colorimetric DPD Method
Measuring Range (Chlorine)	0 - 10 ppm
Accuracy	± 5 % or ± 10 ppb whichever is greater
Repeatability	± 10ppb
Minimum Detection Limit	10 ppb
Cycle Time Free or Total Chlorine	2:00 to 60 minutes
Cycle Time Free and Total Chlorine	2:45 to 60 minutes
Reagent usage	DPD up to 2 months at 5 min. cycle time
Reagent type	DPD1, DPD3, DPD4
Colorimetric cell cleaning	Automatic self-cleaning (Patented)
Reagent mixing	Inner solenoid activated mixer (Patented)

## TURBIDITY (TurbidPlus) MEASUREMENT

Sensor	White LED Light (90° and 180°)
Measuring Range	0-20 NTU or 0-100 NTU
Accuracy	4% ± 0.05 NTU

## pH MEASUREMENT

Electrode	Ceramic diaphragm and gel filling
Measurement Range	0 to 12

## ORP (REDOX) MEASUREMENT

Sensor	Ceramic diaphragm and gel filling
Measurement range	0 to 2000 mV

## TEMPERATURE MEASUREMENT

Sensor	PT-100
Measurement range	1°C to 50°C (35°F to 122°F)

## CONDUCTIVITY MEASUREMENT

Sensor	k=1 cell constant conductivity
Measurement Range	20-5000 µS/cm
Accuracy	2% 20-500 µS/cm 4% 500-5000 µS/cm

## PRESSURE SENSOR (MAIN LINE)

Type	Pressure membrane
Measurement range	0 -10 bar (0 -145 psi)
Accuracy	3% FS
Resolution	0.01 bar

## FLOW MEASUREMENT (MAIN LINE)

Measurement range	0-5000 pulses per minute
Power supply	12V DC

## ANLYZER FLOW CONTROL

Flow sensor	Inductive proximity switch
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## OPERATIONAL REQUIREMENTS

Sample and drain connection	Pressurized sample inlet and gravity drain
Inlet Pressure range	0.5 to 10 Bar (7.25 to 145 psi)
Operating Pressure	0.5 to 0.7 bar (7.25-10 psi)
flow rate	35-60 l/h (9-16 gph)
Ambient temperature	2°C to 50°C (35.6°F to 122°F)
Sample temperature	1°C to 45°C (33.8°F to 113°F)
Operation Humidity	Up to 90% at 40°C (104°F)

## MECHANICAL DATA

Dimensions	(L x W x D )
Electronics enclosure	280 x 380 x 180 mm / 11.0 x 15.0 x 7.1 inch
Lab enclosure	560 x 380 x 180 mm / 22.0 x 15.0 x 7.1 inch
Complete enclosure	840 x 380 x 180 mm / 33.0 x 15.0 x 7.1 inch
Weight	16 kg (35.2 lbs.)
Enclosure rating	IP 65 (Polycarbonate)
Cable entries	PG 7 and PG 9 cable glands
UV resistance	UL 508
Display	7" Touchscreen display

## ELECTRICAL CONNECTION

Power supply	100-115 VAC, 50/60 Hz
(Earth ground required)	200-230 VAC, 50/60 Hz
Maximum power consumption	Up to 50 VA
Power supply for RTC	3V coin Battery memory (CR2032)

## RELAYS

8 outputs, any parameter	250 VAC/DC 8 Amp max per channel
Maximal Amp for all relays	24 Amp
Control functions options	Above / below set point with hysteresis Inside / outside range PID PWM/PFM (manually configured)

## ANALOG INPUTS/OUTPUTS

Inputs	0 or 2 analog 4/20 mA inputs Internal 24 V power supply up to 50 mAmp
Outputs	0 or 4 or 8 analog 4/20 mA outputs
Source	Any of the measurements

## DIGITAL OUTPUTS

Modbus RS 485	Twisted pair up to 100 m (328 feet)
Modbus RS 485	USB type B connector up to 5 m (16.4 feet)

## DATA LOGGING

Average logging period time	about 6 months
Recording Interval	1 minute
All sensors reading history	YES (cyclic-configurable cycle )
All events and calibration history	YES (cyclic-configurable cycle )
Data download	USB flash drive

## COMMUNICATION TO SCADA OR REMOTE SERVER

SCADA or FTP site	One way communication CSV files (FTP / SFTP)
Blue I SMART NET SERVER	One way or two way communication Complete view and control
Communication options	TCP IP LAN connection 3G/4G GSM (USB dongle Modem) Internal Wi-Fi or external Wi-Fi dongle

## ANALYZER SECURITY ACCESS

Privilege use and password	User / Engineer
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## ANALYZER INTERFACE AND CONTROL

Raspberry PI	
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## CERTIFICATIONS

US EPA Accepted method	Yes
UL Certified	Yes
CE Certified (Safety and EMC)	Yes