KRYPTON® ONE | HUB

General description

The KRYPTON® ONE | HUB is an expandable measurement and control system within the NEON® ONE platform, designed for precise water quality monitoring and advanced process control. It supports up to six sensors, including desinfectant, biocides, total chlorine, sulfite, pH, ORP, conductivity, and flow and temperature (FT) monitoring. Pre-mounted on a panel, the system is delivered pre-configured and ready for measurement, ensuring quick installation and seamless integration. The NEON® ONE | HUB unit includes a built-in I/O board with three expansion slots, enabling a flexible setup with both analog and digital output modules. This guarantees smooth integration with external control systems. Plus, additional relays enhance functionality and expand system capabilities.

Key advantages

- Complete, ready-to-use system for water quality monitoring
- Supports up to six sensors, including control
- Integrated I/O board with modular expansion slots
- Integration of a relay board for external control
- Pre-mounted and pre-configured, reducing setup time
- Seamless integration with SCADA/PLC via mA outputs or Modbus TCP

Typical applications

Desinfection | Food & Beverage | Industrial Water | Pool & Spa

Technical data

Measurement specifications

Temperature	0 ..+50.0°C (32°F.. +122°F)
pH	pH 0..14
Free chlorine & bromine	0..20.00 ppm
Chlorine dioxide	0..20.00 ppm
Biocides & total chlorine	0..20.00 ppm
Ozone	0..20.00 ppm
Hydrogen peroxide	Hydrogen peroxide
Sulfite	0..20.00 ppm
Redox-potential (ORP)	−1500..+1500 mV
Conductivity	0..3.000 mS/cm

Measurement input characteristics

Flow input	> 30 L/h (8gph)
Pressure inlet	Min. 0.5 bar (7.25 psi) / max. 6 bar (87 psi)
pH range	• Free chlorine: pH 5..8 • Free bromine: pH 5..9 • Chlorine dioxide: pH 6..9 • Ozone: pH 6..9 • Biocides and total chlorine: pH 5..10
Temperature compensation	Disinfectant measurement: linear Conductivity: linear 0..5.0 %/K pH based on Nernst
pH compensation	Non-linear

Process condition

Storage temperature	• System: -20°C .. +65°C (-4°F .. +149°F) • Sensors: 5°C ..+30°C (32°F ..+86°F)
Ambient temperature	0 .. +50°C (32°F.. +122°F)
Minimum conductivity	>50 µS/cm
Humidity	Max. 90% rH at 40°C (non-condensing)
Protection rating	IP65

Performance specifications

Linearity	>99%
Responce time t90	• Free chlorine: 24s • Biocides and total chlorine: 36s • Chlorine dioxide: 24s • Ozone: 28s • Hydrogen peroxide: 40s • Sulfite: 37s
Limit of detection	• Free chlorine: 0.01 ppm • Total chlorine and biocides: 0.01 ppm • Chlorine dioxide: 0.02 ppm • Ozone: 0.03 ppm • Hydrogen: 0.15 ppm • Sulfite: 0.15 ppm
Limit of quantification	• Free chlorine: 0.05 ppm • Total chlorine and biocides: 0.05 ppm • Chlorine dioxide: 0.05 ppm • Ozone: 0.1 ppm • Hydrogen peroxide: 0.5 ppm • Sulfite: 0.5 ppm
Accuracy	• Free chlorine, chlorine dioxide, Ozone: ±2% of the reading or ±0.1 ppm, whichever is higher as low as ±0.02 ppm in the ppb range when using appropiate reference method • Total Chlorine and biocides: ±2% of the reading or ±0.1 ppm, whichever is higher as low as ±0.02 ppm in the ppb range when using appropiate reference method • Hydrogen Peroxide: ±1 ppm • Sulfite: ±1 ppm • Conductivity: ±2% of the reading or ±15µS/cm (whichever is higher)

System specifications

Ingress protection	• 100 .. 240 VAC/DC, 50..60Hz • 24 V DC
Power consumption	< 60W (total system including HUB)
Internal output	24 V DC regulated (for internal modules)
Surge protection category	Category I (if no plug connection)
CE-Symbol	The product meets the requirements of the harmonized European standards and complies with the legal requirements of the EC directives
EMC	EN 61000 6-1 (3) EN 61000 6-2 (4) EN 61326-1
CE declaration	Device complies with relevant EU directives

Controller options

Control parameter	Every measurement parameter except temperature can be controlled.
Control responce	• On / off controller (adjustable hysteresis) • P / PI / PID controller (pulse-pause, pulse-frequency or continous output)

Input & Output specifications

Digital input	• Optional module with 8 inputs • Input type: Open Collector (passive) • Galvanic isolation: Yes, against other modules • Max. voltage difference: 12 V • Trigger high: > 3,3 V • Trigger low: <2V • Max. pulse frequency: 50 Hz
Digital output	• Optional module with 8 outputs • Output type: Open Collector (passive) • Galvanic isolation: Yes, against other modules • Max. voltage: 24 V • Max. collector current: 30 mA • Max. pulse frequency: 50 Hz
Analog input	• Optional module with 2 or 4 inputs • Input type: Current, active • Input range: 0-24 mA • Galvanic isolation: Yes, against other modules and also individual isolation for 2 inputs • Max. resistance: 500 Ohm
Analog output	• Optional module with 2 or 4 outputs • Output type: Current, active • Output range: 0-24 mA • Galvanic isolation: Yes, against other modules and also individual isolation for 2 inputs • Max. resistance: 500 Ohm
Alarm relay	• 1 alarm relay on the I/O board module • Output type: Single Pole Double Throw • Switching: mechanical • Max. voltage: 250 V AC/DC • Max. current: 3 A
Mechanical relay	• Optional module with 4 relays • Output type: Single Pole Double Throw • Switching: mechanical • Max. voltage: 250 V AC/DC • Max. current: 6 A per relay, 8 A combined from mains connector
Solid state relay	• Optional module with 4 relays • Output type: Single Pole Single Throw • Switching: transistor • Max. voltage: 250 V AC • Max. current: 3 A

Design configuration

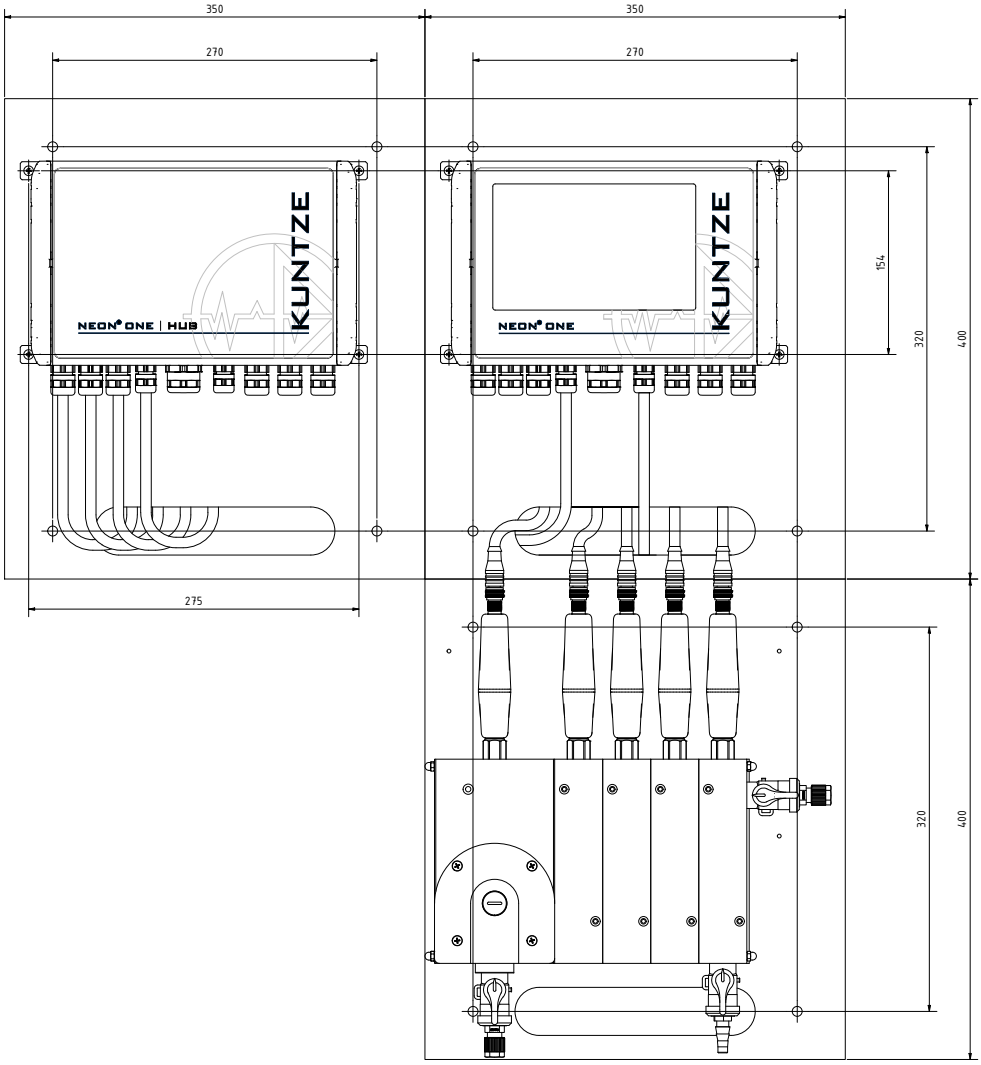
Material	Board: PVC
	STABIFLOW® ONE Assembly: PMMA
	NEON® ONE | CORE housing: PC
	NEON® ONE | HUB housing: PC
	NEON® ONE NODE: PBT/PMMA
	ZIRKON® ONE Sensor: Glass, Plastic, Gold, Platinum, Carbon
	NEON® ONE | NODE CABLE: PUR
	NEON® ONE HUB CABLE: PUR
Dimensions	Per each board 350 x 400 mm
Weight	Per each board approx. 1,9 kg
Connection	Cable inlet: 6 x M16, 8 x M12
	Plug-in terminal: Rigid / flexible
	Power supply: Rigid / flexible 0.2 - 1 / 0.2 - 1.5 mm²
	Distribution block: Rigid / flexible 0.5 - 1.5 / 0.5 - 1.5 mm²
	Water hose connection: DN

Software options

NE1 ASR®	The ASR® – Automatic Sensor Cleaning System is an automated cleaning solution designed for use with up to four ZIRKON® ONE DIS sensors connected to the NEON® ONE platform. It supports up to 4 ZIRKON® ONE DIS sensors per system.
NE1 Validation	The Validation Software Function in NEON® ONE ensures reliable chlorine measurement in chlorine-free water, particularly in applications such as before reverse osmosis systems or emergency chlorination. This function enables the system to switch to chlorinated water using additional valves, verifying that the measurement is functioning correctly. It requires additional Hardware and plumbing not provided by Kuntze.
NE1 Modbus TCP	The Modbus TCP Interface enables seamless industrial communication between the NEON® ONE platform and external control systems such as PLCs, SCADA, or building automation systems. It allows real-time data exchange of sensor measurements, system status, and control parameters using the Modbus TCP protocol over Ethernet.
NE1 Toolkit	The Toolkit Software Function in NEON® ONE allows users to define custom events for process control. It provides customized control of digital inputs, digital outputs, and relays, enabling adaptability and schedule-based automation within the NEON® ONE platform.

Mechanical drawings

Krypton® ONE| HUB



Articles

Item number	Name	Short description
70161000K	KRYPTON ONE | HUB - 1+FT	A measurement system within the NEON® ONE platform, designed for integrating a relay board and one sensor.
70161010K	KRYPTON ONE | HUB - 2+FT	A measurement system within the NEON® ONE platform, designed for integrating a relay board and up to two sensors.
70161020K	KRYPTON ONE | HUB - 3+FT	A measurement system within the NEON®ONE platform, designed for integrating a relay board and up to three sensors.

Item number	Name	Short description
70161030K	KRYPTON ONE | HUB - 4+FT	A measurement system within the NEON®ONE platform, designed for integrating a relay board and up to four sensors.
70161040K	KRYPTON ONE | HUB - 5+FT	A measurement system within the NEON®ONE platform, designed for integrating a relay board and up to five sensors.

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