

Available protocols for the serial interface of the BlueBox System

Protocol	Export	Import	Parameter	Unit
Modbus Slave RTU / TCP	X	X	User def.	
Modbus Master RTU / TCP (optional)				
NMEA output (Value,Value,Value...)	X			
EMC / KOEM	X		User def.	
Printer DPU414 (external printer)	X		User def.	
Auto-sampler via EMC Protocol	X			
(in preparation) OPC UA	X	X		
IEC 60870-5-104	X	X		
PCT20 BGT Instuments GmbH		X	Sensor Values 1-12	
BioSendtry (Aquatech)		X	Sensor Values 1-12	
YSI Multiparameter Sonde		X	Sensor Values 1-12	
EXO Multiparameter Sonde		X	Sensor Values 1-12	
RAD7 Radon Detector		X	Sensor Values 1-3	
BBE AlgaeTorch		X	Pressure	bar
			Depth	m
			Int. Temperature	°C
			Raw 1	
			Raw 2	
			Raw 3	
			Raw 4	
			Turbidity	
			Blue algae	µg

Protocol	Export	Import	Parameter	Unit
			Algae sum	µg
			Count sum	
			Count blue	
WTW Conductivity		X		
			Conductivity	mS
			Temperature	°C
Space coded Values (Date Value Value...)		X	User def.	
Space coded Values (Value Value Value...)		X	User def.	
Tab coded Values (Value\tValue\tValue...)		X	User def.	
NMEA coded Values (Value,Value,Value...)		X	User def.	
Thies TLD14		X		
			Time	hhmmss
			Wind speed	m/s
			Wind direction	°
			Outdoor temperature	°C
			Humidity	%
			Air pressure	hPa
			Custom Sensor 1	
			Custom Sensor 2	
			Custom Sensor 3	
			Custom Sensor 4	
			Custom Sensor 5	
			Custom Sensor 6	
TOC Analyser via EMC Protocol		X		
			TOC	mg/l
			Status	
			Slope	
			Intercept	
			Zero	
			Span	
			Factor	
			Offset	
			Range	



Protocol	Export	Import	Parameter	Unit
OceanPack pCO2 Analyser		X		
			CO2	ppm
			H2O	ppt
			Dewpoint	°C
			Temperature	°C
			Pressure	mBar
			Vinput	V
			CO2 Corr	ppm
			H2O Corr	ppm
			Rel1 Airpump	ON/OFF
			Rel 2 Zero	ON/OFF
			Rel 2 Span1	ON/OFF
			Rel. Span2	ON/OFF
			Rel. Air input	ON/OFF
			Rel. Outlet	ON/OFF
			Rel. Seawater	ON/OFF
			Rel.8	ON/OFF
			Ana0	V
			Ana1	V
			Ana2	V
			Ana3	V
			Gas temperature	°C
			Gas RH	%RH
			Gas flow	l/min
			Water flow	l/min
			Sensor State	
			System State	
			System Error	
			Raw CO2	
			Raw CO2 R.	
			Raw H2O	
			Raw H2O R	
ALG control		X		
			0,BG: Value	
			0,FO: Value	
			0,BG: Value	
			0,FO: Value	
			0,BG: Value	
			0,FO: Value	
			0,BG: Value	
			0,FO: Value	
			0,BG: Value	

Protocol	Export	Import	Parameter	Unit
			0,FO: Value	
			0,BG: Value	
			0,FO: Value	
			Temperature	°C
			L Value	
Chemitec Sensors				
		X		
			Sensor 1	
			Sensor 2	
			Sensor 3	
			Sensor 4	
			Sensor 5	
			Sensor 6	
			Sensor 7	
			Sensor 8	
BBE Fluoroprobe				
		X		
			Conc. Algal Class 1	µg/l
			Conc. Algal Class 2	µg/l
			Conc. Algal Class 3	µg/l
			Conc. Algal Class 4	µg/l
			Conc. Algal Class 5	µg/l
			Conc. Algal Class 6	µg/l
			Conc. Algal Class 7	µg/l
			Conc. Algal Class 8	µg/l
			chi-square	
			Transmission	%
			Pressure	bar
			Int. temperature 1	°C
			Int. temperature 2	°C
			Raw transmission	
			Raw fluorescence 1	
			Raw fluorescence 2	
			Raw fluorescence 3	
			Raw fluorescence 4	
			Raw fluorescence 5	
			Raw fluorescence 6	
			Raw fluorescence 7	
			Temp. Medium	°C
			Status code	
4616740 Turbidity Sensor				
		X		
up to 8 Sensors via RS485			Temperature	°C
			Turbidity	NTU

Protocol	Export	Import	Parameter	Unit
			Turbidity	FNU
			Turbidity	mg/l
4614601 Optical O2 Sensor		X		
up to 8 Sensors via RS485			Temperature	°C
			Oxygen	%
			Oxygen	mg/l
4614600 Optical O2 Sensor		X		
up to 8 Sensors via RS485			Temperature	°C
			Oxygen	%
			Oxygen	ppm
ANSII Protocol		X	User def.	
up to 20 measured values				
Thies Cliema Sensor US		X		
			Main wind speed	m/s
			Main wind direction	°
			Air temperature	°C
			Relative humidity	%rh
			Dew-point	C
			Absolute air pres.	hPa
			Rel. Air pres.	hPa
			Brightness north	klux
			Brightness east	klux
			Brightness south	klux
			Brightness west	klux
			Brightness dir.	°
			PRECIP status	
			PRECIP intensity	mm/h
			PRECIP type	
			Sensor status	
			Twilight north	Lux
			Twilight east	Lux
			Twilight south	Lux
			Twilight west	Lux
			Global radiation	W/m ²
			Local radiation	W/m ²
Zpulse Doppler Current Sensor		X		
			Water flow velocity	cm/s
			Water flow direction	°
			North	m/s

Protocol	Export	Import	Parameter	Unit
			East	m/s
			Tilt X	°
			Tilt Y	°
			SP std.	
			Strength	
			Pint count	
			Abs Tilt	°
			Max Tilt	°
			Std Tilt	°
			Temperature	°C
			Strength X	
			Strength Y	
Seabird Thermosalinograph				
		X		
Sensor Values 1-12				
SonTek Argonaut				
		X		
			Water Level	m
			Main Temperature	°C
			Float	m3/h
			Area	1/m2
			Beam 1	m/s
			Beam 2	m/s
			Signal Strength 1	
			Signal Strength 2	
			Signal Strength 3	
Sontek IQ				
		X		
(based on NMEA protocol)				
			SonTek IQ ID (S/N)	
			Sample number	
			Year	
			Month	
			Day	
			Hour	
			Minute	
			Second	
			Flow rate	
			water depth user-defined channel	
			Mean velocity	
			Volume (Total)	
			Depth (relative to the top of the instrument)	
			Downstream velocity in center of channel	
			Area	

Protocol	Export	Import	Parameter	Unit
			Temperature Water	
			System Status	
			X Velocity, Center Beams	
			Z Velocity, Center Beams	
			X Velocity, Left Beam	
			X Velocity, Right Beam	
			Battery	
			Pitch	
			Roll	
			% System in water	
NivuFlow 750		X		
			Water Flow	m ³ /h
			Water Level	m
			Water Flow rate	m/s
			Water Temperature	°C
			Air Temperature	°C