

# BSV Electronic, S.L.

## CHLORINATOR CONTROLLERS P906 AND P913. SERIAL COMMUNICATION.

RS232 serial line.

19200 bauds

Data: 8 bits

Parity: None

Stop bit: One

Flux Control: None

Frames are always 3 bytes long.

Maximum delay between bytes of the same frame is 10ms (incomplete frames are discarded).

The remote controller is the master; the chlorinator acts as a slave unit, does not send anything if not asked.

### Requesting a data to the chlorinator:

'?' **B1 EOT** where '?' is the character ASCII(63), B1 the first byte of the table below corresponding to the requested parameter and EOT = ASCII(4)

Answer from the chlorinator: **B1 B2 B3** (bytes corresponding to the table below).

If there is a transmission error or a command is not understood, the chlorinator answers '**E' 'R' n**' where

n = 1: unknown command (first byte)

n = 2: unknown parameter (2nd byte after a '?').

n = 3: time out error

### Sending commands to the chlorinator:

The table below shows the commands that can write data to the chlorinator.

**B1 B2 B3** (B1 = parameter to change, B2 low byte of data, B3 high byte of data)

Answer from the chlorinator: **B1 B2 B3**, with the same error answer as before.

Commands out of range are not accepted, for example pH set higher than 800 or lower than 700.

In the table B1 is the first byte, B2 the second byte, B3 the third byte, EOT = ASCII(4)

**For software version 70 or higher.**

B1	Description	Unit	User Write	B2	B3
'Z'	Chlorinator size		No	Unit type 0 = P927 10 g/h 1 = P927 15 g/h 2 = P950 20 g/h 3 = P950 25 g/h 4 = P953 35 g/h 5 = P956 50 g/h 6 = P956 70 g/h 7 = P957 100 g/h 8 = P957 150 g/h 9 = P954 200 g/h 10 = P910 35 g/h 11 = P910 50 g/h 12 = P910 70 g/h 13 = P910 100 g/h 14 = P910 200 g/h	EOT

'L'	Language		Yes	0: English 1: Spanish 2: Catalan 3: French 4: Italian 5: Dutch 6: Portuguese 7: Turkish 8: Hebrew 9: German 10: Czech	EOT
'v'	Swimming pool volume	1 m <sup>3</sup>	Yes	Volume low	Volume high
'm'	Control mode		Yes	0: Manual 1: Automatic 2: Semi-automatic	EOT
'b'	Cleaning Cycle in minutes / 10 i.e. 4 hours → 240minutes → 24	10 minutes	Yes	Delay	EOT
'T'	Select power 0...100%		Yes	Power	EOT
'S'	Stops chlorinator, pH pump and clears alarms.		Yes	0: Start 1: Stop	EOT
'A'	Alarms		No	<i>Definition is for bit = 1</i> b0: ORP probe saturated b1: overtemperature inside the chlorinator b2: open circuit b3: lack of water flow b4: Short circuit b5: P954 unit stopped b6: communication error to P954	EOT
'w'	Warnings		No	<i>Definition is for bit = 1</i> b2: Too few salt b3: Too much salt	b0: pH problem, pump has run for too long b1: Acid warning b2: clock has been set b3: ORP or chlorine probe disconnected
's'	Status flags		No	<i>Description is for bit = 1</i> b0: polarity of output voltage b1: filter pump running b2: chlorination in process b3: Stopped by remote controller ('S' command). b4: ORP sensor reading is stable b5: Salt sensor connected b6: Electrode cleaning in process. b7: Super-chlorination in process.	EOT
'r'	user flags		Yes	b0: 0=outdoors, 1=indoors b1: 0=cover not installed or switch ON when cover is ON. 1=cover switch OFF when cover is ON b2: 0=flow switch not installed 1=flow switch installed b3: 0=ORP not displayed 1=ORP displayed b4: 0=pH alarm active 1=pH alarm off b5: 0=pH corrector acid 1=pH corrector alkaline b6: 0=pH control on 1=pH control off b7: 0=cover not installed 1=cover installed	EOT
'c'	Cell intensity in amperes x 10 Example: 23.4 A → 234 → B2=0xEA, B3=0	100mA	No	I low	I high
'C'	Cell intensity measured in % of maximum	%	No	Percent	EOT

131	Cell intensity in % P954 unit 1	%	No	Percent	EOT
132	Cell intensity in % P954 unit 2	%	No	Percent	EOT
133	Cell intensity in % P954 unit 3	%	No	Percent	EOT
134	Cell intensity in % P954 unit 4	%	No	Percent	EOT
'V'	Cell voltage in volts x 10 Example: 7.5 Volts → 75 → B2=0x4B, B3=0 Example: 27 Volts → 270 → B2=0x14, B3=1	100mV	No	V low	V high
141	Cell voltage in volts x 10 P954 unit no. 1	100mV	No	V low	V high
142	Cell voltage in volts x 10 P954 unit no. 2	100mV	No	V low	V high
143	Cell voltage in volts x 10 P954 unit no. 3	100mV	No	V low	V high
144	Cell voltage in volts x 10 P954 unit no. 4	100mV	No	V low	V high
'O'	ORP (0 – 800) target value	1 mV	Yes	ORP low	ORP high
	Free chl. (0.4 – 2 ppm) x 100	0.01 ppm	Yes	ppm x 100	0b10000000
'o'	Current ORP value	mV	No	ORP low	ORP high
	Current free chl. (ppm x 100)	0.01 ppm	No	ppm low x 100	ppm high x 100, highest bit set (0b1xxxxxxx)
'P'	pH target (x 100) Ex: 7.1pH → 710 → B2=0xC6, B3=0x2	0.01pH	Yes	pH low	pH high
'p'	pH measurement Ex: 7.1pH → 710 → B2=0xC6, B3=0x2 If not installed, B2=B3=FFh	0.01pH	No	pH low	pH high
'N'	Salt concentration (0 ... 10,00 g/l) FFFFh = no salt sensor installed	g/l x 100	No	Salt, low byte	Salt, high byte
'W'	Water temperature (-255 = no probe installed)	1°C	Yes	Water temperature	Sign 0 = positive 1 = negative
'R'	Relay status (set times before set status > 1)		Yes	0: set OFF 1: set ON 2: timed ON 3: 1 cycle/24h 4: 2 cycles/24h	Read: 0= relay is off 1= relay is on Write: EOT
'D'	Relay delay (when status = 1)	1 min	Yes	Minutes	EOT
201	Start time of program 1	1 min	Yes	Minutes	Hours
202	Stop time of program 1	1 min	Yes	Minutes	Hours
203	Start time of program 2	1 min	Yes	Minutes	Hours
204	Stop time of program 2	1 min	Yes	Minutes	Hours
'H'	Time.		Yes	Minutes 0...59	Hours 0...23
'F'	Hours of operation (Minutes and Low byte)	1 min, 1 h	No	Minutes 0...59	Hours Low byte
'G'	Hours of operation (High Bytes)	1 h	No	Hours, middle byte 1	Hours, high byte 2
211	Hours of operation, P954 unit 1		No	Hours, low byte	Hours, high byte
212	Hours of operation, P954 unit 2		No	Hours, low byte	Hours, high byte
213	Hours of operation, P954 unit 3		No	Hours, low byte	Hours, high byte
214	Hours of operation, P954 unit 4		No	Hours, low byte	Hours, high byte
'y'	Software version		No	Version, integer part	Version, decimal part

**CLORINATOR P913**

B1	Description	Unit	User Write	B2	B3
'L'	Language		Yes	0: English 1: Spanish 2: Catalan 3: French 4: Italian 5: Dutch 6: Portuguese 7: Turkish 8: Hebrew 9: German	EOT
'm'	Control mode		Yes	0: Manual 1: Automatic	EOT
'T'	Select power 0...100%		Yes	% Power	EOT
'A'	Alarms		No	<i>Definition is for bit = 1</i> b0: ORP problem, pump has run for too long b3: lack of water flow	EOT
'w'	Warnings		No	-	b0: pH problem, pump has run for too long.
'r'	user flags		Yes	b2: 0=flow switch disabled 1=flow switch enabled b3: 0=ORP not displayed 1=ORP displayed b5: 0=pH corrector acid 1=pH corrector alkaline b6: 0=pH control enabled 1=pH control disabled b7: 0=Chl. control enabled 1=Chl. Control disabled	EOT
'C'	Selected power 0...100%		No	% Power	EOT
'O'	ORP (0 – 800) target value	1 mV	Yes	ORP low	ORP high
	Free chl. (0.4 – 2 ppm) x 100	0.01 ppm	Yes	ppm x 100	0b10000000
'o'	Current ORP value	mV	No	ORP low	ORP high
	Current free chl. (ppm x 100)	0.01 ppm	No	ppm low x 100	ppm high, highest bit set (0b1xxxxxxx)
'P'	pH target (x 100) Ex: 7.1pH → 710 → B2=0xC6, B3=0x2	0.01pH	Yes	pH low	pH high
'p'	pH measurement Ex: 7.1pH → 710 → B2=0xC6, B3=0x2 If not installed, B2=B3=FFh	0.01pH	No	pH low	pH high
'F'	Hours of operation (Minutes and Low byte)	1 min, 1 h	No	Minutes 0...59	Hours Low byte
'G'	Hours of operation (High Bytes)	1 h	No	Hours, middle byte 1	Hours, high byte 2
'y'	Software version		No	Version, integer part	Version, decimal part

1<sup>st</sup> version 11-X-2011

Revision 1, 13-IX-2013: added b3 of swimming pool flags

Revision 2, 24-IX-2014: current, voltage and run hours of P954 units

Revision 3, 7-II-2015, for software 47.

Added Hebrew, German and Czech in 'L'

Modified 'Z' to unit type, only one byte.

Slave mode cancelled: pH and ORP cannot be modified by the master.

Revision 4, 21-IV-2015.

Added 'W', water temperature

Added free chlorine (ppm).

Revision 5, 1-VII-2016

Added salt concentration reading ('N')

Added new chlorinator units

'w', warnings modified

'r', user flags modified

's', status flags modified

'A', alarms bits added

Revision 6, 7-XII-2016: P913 table added

Revision 7, 11-I-2017: 'C' command in P913

Revision 8, 13-I-2017: 'w', warnings command updated for software version 47 or higher.

Revision 9, 17-V-2019: 'o' command accepts values up to 7FFh.

Revision 10, 12-VII-2019: 'S' command also stops pH pump and clears alarms.