

Addendum for: Thornton 200CR Two-Channel Instrument for Conductivity, Resistivity Instruction Manual 84295

The 200CR meter has been upgraded to version 3.4 with relay setpoints to measure for compliance with European Pharmacopoeia standards. These are the standards for Water For Injection (EP WFI) and Purified Water (EP PW). These setpoints come directly from conductivity limits set by the European Pharmacopoeia, and are functions of water temperature. The EP publishes these limits in the form of tables as shown below.

EP WFI

The conductivity limit is determined by measuring the temperature, rounding down to the next 5°C interval, and the limit is determined from the corresponding conductivity in the table below. In all cases, the temperature is rounded DOWN to the next 5°C interval. It is NOT rounded to the nearest 5°C interval.

EP WFI Limits

Temp (°C)	EPWFI (µS/cm)	Temp (°C)	EPWFI (µS/cm)	Temp (°C)	EPWFI (µS/cm)	Temp (°C)	EPWFI (µS/cm)
0	0.6	30	1.4	55	2.1	80	2.7
5	0.8	35	1.5	60	2.2	85	2.7
10	0.9	40	1.7	65	2.4	90	2.7
15	1.0	45	1.8	70	2.5	95	2.9
20	1.1	50	1.9	75	2.7	100	3.1
25	1.3						

EP PW

The EP PW conductivity limit is NOT determined in the same way as the USP and EPWFI limits are determined. The EP PW conductivity limit is determined by interpolating the conductivity from the interpolated temperature in the table below. Note that the temperature intervals vary.

EP PW Limits

Temp (°C)	EP PW (µS/cm)	Temp (°C)	EP PW (µS/cm)
0	2.4	60	8.1
10	3.6	70	9.1
20	4.3	75	9.7
25	5.1	80	9.7
30	5.4	90	9.7
40	6.5	100	10.2
50	7.1		

The 200CR meter is now able to calculate these limits and use them as setpoints to activate the internal relays if they are exceeded. In the relay menus, the options of %EP WFI and %EP PW can be chosen. The “%” of the setpoint to activate the relay(s) is set by the user, and the hysteresis, delay, and normal state functions are identical for any other setpoint type.