

PLT User Guide



Revision 1



Revision 2

PERIPHERAL LEVEL TRANSFORMER (PLT) Specifications

Interfacing/connectivity		DB37, connects in-line with data cable/ peripheral output
power requirements		powered from peripheral port
Size	revision 1:	w x d x h = 7.5 x 5.3 x 1.5 cm
	revision 2:	w x d x h = 7.0 x 3.7 x 1.5 cm
Weight		50 gram
Use		only i.c.w. Ivium potentiostats

Functionality: increase the potential range of the analog inputs 1 & 2 and the analog outputs 1 & 2 of the peripheral port to $\pm 10V$.

Installation: The male side of PLT module can be placed directly on the peripheral port connector of the IviumStat/CompactStat^[Note 4]. Any external equipment can be connected to the female side, as before. It is thus connected between the instrument and the periphery. All signals are passed through this module, so it is fully compatible with the situation without PLT. Only the analog inputs/outputs 1 & 2 are changed.

Application: The IviumStat and CompactStat are equipped with a 37-pins expansion port that can be used to apply analog output signals and measure analog input signals. The standard input/output-range is 0 to +4V. The PLT adapter module can be used to extend this range. The PLT transforms the range of the analog inputs 1 & 2 to $\pm 10V$, and the analog outputs to 0 to +10V (or $\pm 10V$ see note 2) for revision 1, and to $\pm 10V$ for revision 2.

When the PLT is connected, the externally measured/applied potential E can be calculated from E_{PLT}

Revision 1:

- analog inputs 1 and 2 : $E_{PLT} = -0.185 * E + 1.96$ range -10V to +10V
(where E_{PLT} = reading on screen; E = actual input on peripheral port)
- analog outputs 1 and 2 : $E = 5 * E_{PLT}$ range 0V to +10V^[Note 3]
(where E_{PLT} = setting on screen; E = actual output of peripheral port)

Revision 2:

- analog inputs 1 and 2 : $E_{PLT} = (0.2 * E) + 2.048$ range -10V to +10V
(where E_{PLT} = reading on screen; E = actual input on peripheral port)
- analog outputs 1 and 2 : $E = 5 * (E_{PLT} - 2.048)$ range -10V to +10V
(where E_{PLT} = setting on screen; E = actual output of peripheral port)

Note 1: Because of small variations in electronic components and their precision, the above equations are an approximation. If higher precision is required it is advisable to create your own calibration relationship for your specific instrument.

Note 2: The analog inputs 3-8 remain unchanged, the other connections of the peripheral port also remain unchanged.

Note 3: On request the analog output range can be adjusted to $\pm 10V$. In such case, the potential transformation will be: $E = 5 * (E_PLT - 2.048V)$.

Note 4: For the CompactStat, when using the PLT, it is advised to make sure that the CompactStat is fed from adapter power.