

AN-0002	DB640 Interconnections
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Init. JR	

SCOPE

This application note describes how to setup and connect the DB640 40-Channel Insulation Resistance Scanner with a DB62X Megohmmeter.

DESCRIPTION

The DB640 expands the DB62X series of megohmmeters with up to 40 current measurement channels. The DB640 withstands 5kV DC in the HV path. When used with a DB250 Combination Scanner the maximum allowed voltage is 2kV. The scanner is organized as a number (max 10) of 4-Ch. current measurement boards with an analog switch for each channel. The channels are connected one by one to a common line in the main board. The signal here is buffered/amplified before being sent to the DB62X current input.

In order to compensate for input resistance in the DB62X a 10V reference signal as well as system zero is send to the DB62X during the zero adjust procedure.

DB640 has 3 ranges which are common for all channels. The range must be set fixed, no auto range is provided.

Range		
1	1pA - 10nA	Ri = 1M or 10k
2	2nA - 1uA	Ri = 10k
3	0.2uA - 1mA	Ri = 10k

The DB640 is controlled from the DB62X via a serial link.

CONNECTING DB640

Fig. 1 shows the basic connection of the DB640. Note that the DB640 is grounded through the H.T. cable shield and nowhere else! This is to prevent the measure return current from flowing through the Power Earth (PE).

DB640 DETECTION AND SETUP PROCEDURE

In order to run the DB640 the scanner jumper in the DB62X CCPU must be set. Check this by pressing alt -> SW Release. Display shows: C-jumper: xxxx xxxx xxxx 0xxx. A DB621 with the scanner jumper set will show: 1111 1111 1110 0110 (0 means the jumper is set).

In order to establish the control connection between the DB640 must be switched on before the DB62X. The first time (and whenever in doubt) follow this procedure.

- 1) Turn off DB640
- 2) Turn off DB625 for 10 seconds
- 3) Turn on DB625
- 4) Alt->Reset->SW reset
- 5) Alt->Reset->HW reset
- 6) Alt->Reset->SW reset (Again)
- 7) Turn off DB625
- 8) Turn on DB640
- 9) Turn on DB625
- 10) Press menu to remove startup picture
- 11) Press menu and see if the scanner Control menu is there (on F7)

- If it is:
- 12) Press F7
 - 13) Choose auto scanning
 - 14) 1 x Exit
 - 15) F4 measure graphics
 - 16) F5 Text all channels
 - 17) 1xExit
 - 18) Measure Setup, range=1 (NOT Auto)
 - 19) Esc
 - 20) F1 - trig

ZERO ADJUST

Zero adjust is made after at least 1 hour of warm up for both the DB640 and the DB62X Megohmmeter. Make sure the Hum Reject frequency corresponds to the local mains frequency. Start with "Zero all ranges", then zero adjust range 1 again.

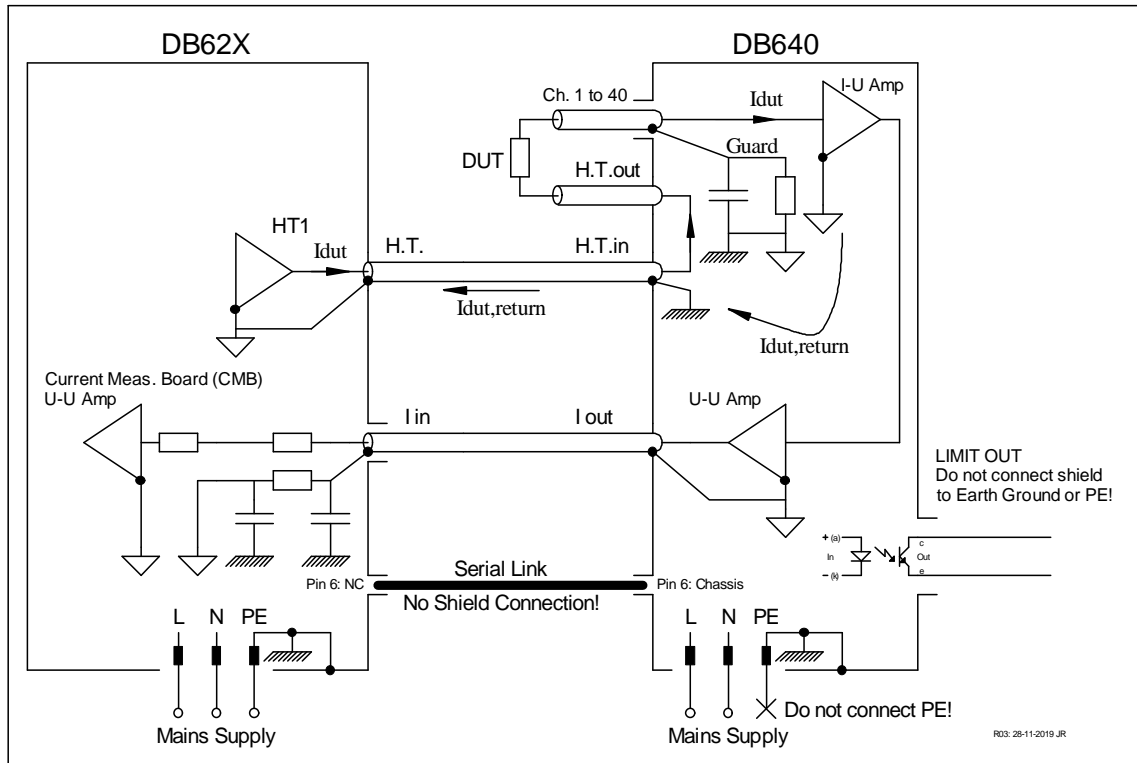


Fig. 1: Connecting the DB640 with a DB62X Megohmmeter.