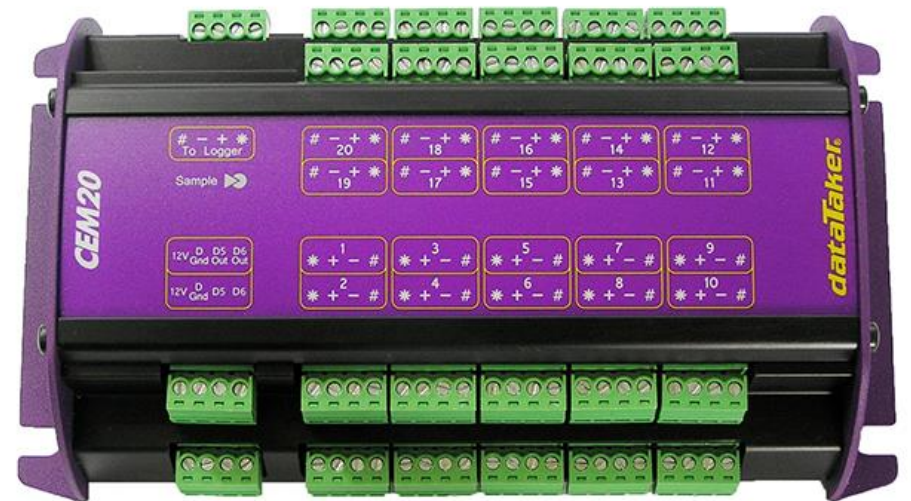


CEM20 Connection Guide

The CEM20 (Channel Expansion Module) is a 20-channel analog multiplexer which can be used to expand the number of analog input channels on a DT80 or DT85.



Connecting CEM20s

A 4-wire power/control, this cable connects to the *DT80*'s switched 12V power output in order to supply power to the CEM. The cable also contains two control signals, which are driven by two of the *DT80*'s digital outputs: **5D** and **6D**.

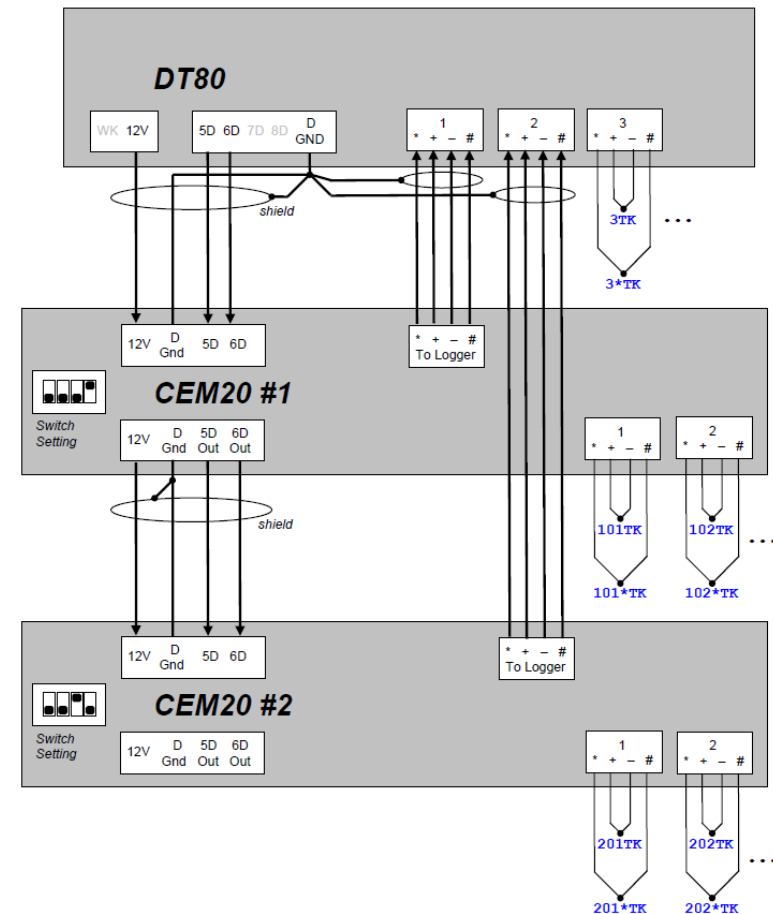
4-wire analog connection. This connects the analog output of the CEM20 to one of the *DT80*'s analog inputs. Each CEM20 connects to a separate analog input on the logger. (Thus for every CEM20 that you connect, you gain 20 analog inputs but lose one analog input on the logger.)



Shielded cable is recommended. The cable shield should be connected to DGND at one end only.

The maximum total cable length, from the *DT80* to the last CEM20 in the chain, is 100 metres.

In the diagram, the two CEM20s have been assigned addresses 1 and 2. However any addresses could have been chosen. The only rule is that a CEM20 with address *n* must have its analog output connected to analog input *n* on the *DT80*.



Accessing CEM20 channels

1 – 20 (CEM20)

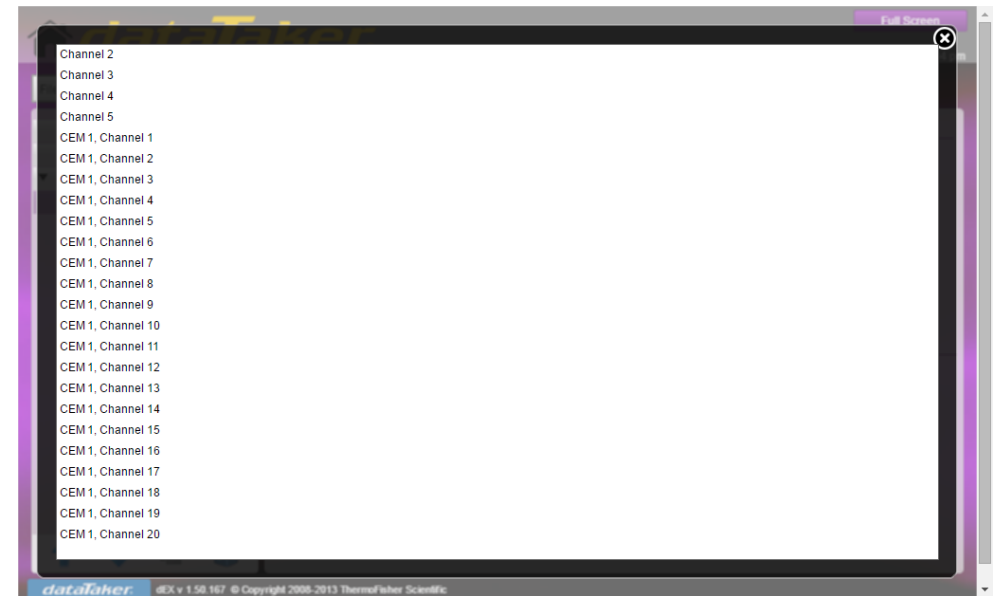
n01 – n20 (n = CEM20 number)

CEM20 channels are numbered in the same way as regular channels, but with the CEM number as the hundreds digit. Thus the first CEM20's channels are numbered from 101 to 120, the second from 201 to 220 and the sixteenth from 1601 to 1620. So to measure a thermocouple connected to the + and – terminals on first analog input channel on CEM20 #1 you would enter 101TK

A CEM20's internal temperature sensor can be read using the *nREFT* channel, where *n* is the CEM number (1-16).

For accessing CEM20 channels in dEX, Add the number of CEM20 connected on CEM page in web Interface.

Newly added channels will be accessible from the Channel number selection dialog.



Troubleshooting

If the appropriate CEM20's Sample LED does not flash when one of its inputs is measured then the most common explanations are:

- The CEM20 address switch is not set correctly.
- The power/control cable to the CEM20 is not connected properly, CEM20 is not powered.
- There is hardware or cabling problem with one of the "upstream" CEM20s. Try temporarily bypassing them by disconnecting the cable from CEM20 #1's power/control input and connecting it instead to the CEM20 in question.