

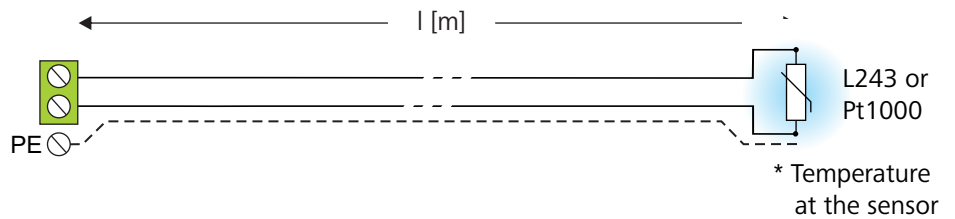
## E\*LDS for systematic cooling

Determining the expected temperature sensor measuring error following a lengthening of the cable.



It is important that all cables are shielded. The shielding must be connected to the PE across a large area and single sided.

### 2-wire temperature sensor



Example with cable type „2x0,75 with an ohmic loop resistance of 186 Ohm/km“

As a general rule: If e.g. a cable with only half the loop resistance of 93 Ohm/km is deployed, then the resulting measuring error is also halved!

### A. Measuring error for temperature sensor NTC L243 :

	Cable length 5 m	50 m	150 m
at -22 °C	0,006 K	0,06 K	0,18 K
-18 °C	0,007 K	0,07 K	0,21 K
-6 °C	0,013 K	0,13 K	0,39 K
0 °C	0,018 K	0,18 K	0,54 K
2 °C	0,022 K	0,22 K	0,66 K
5 °C	0,025 K	0,25 K	0,75 K

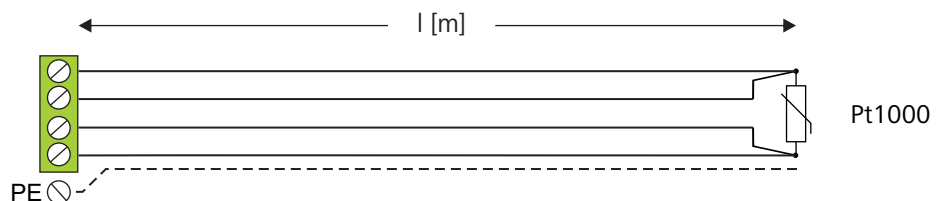


With increasing temperature the measuring error is greater !

### B. Measuring error for temperature sensor PTC Pt1000 (independent of temperature and sensor):

at cable length 1,0 m:	0,186 K
2,5 m:	0,465 K
5,0 m:	0,930 K
50 m :	9,300 K !

### 4-wire temperature sensor



Measuring error:

Practically none as the cable length is compensated for during the measuring procedure.