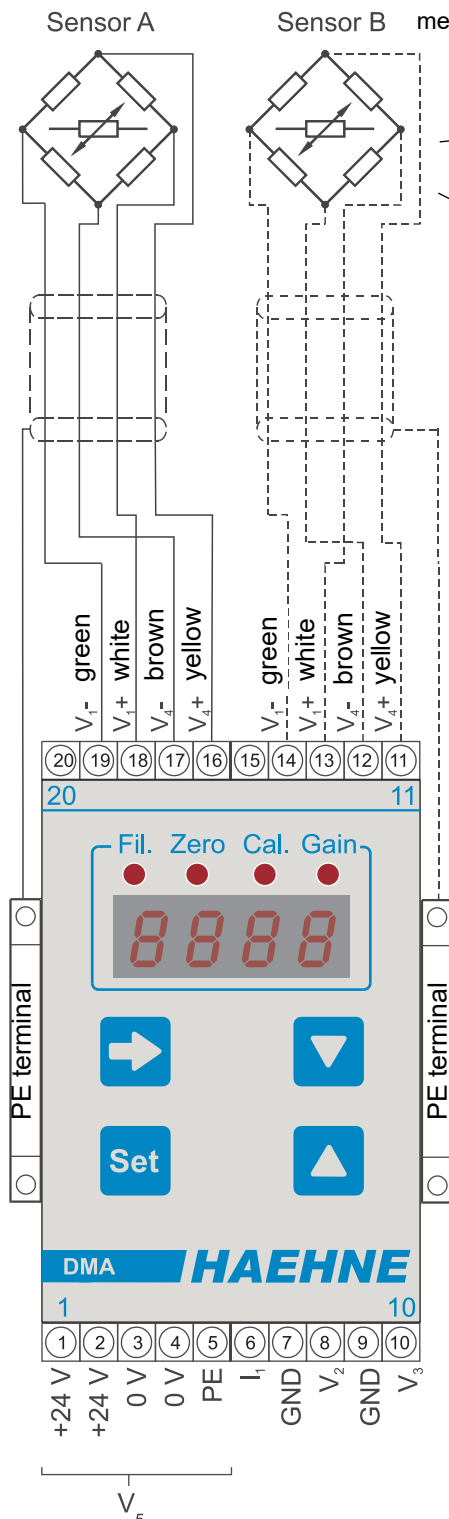


## Digital Measuring Amplifier DMA3

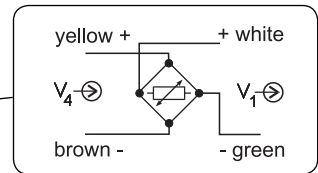
### Technical Information

#### Connection diagram

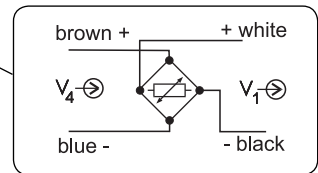


Sensor B does not exist in case of single-side measurement

Sensor cable lead color with connection variant: **N3, S, S3, S4, T**



Sensor cable lead color with connection variant: **N1, N2, S1, S2**



$V_1$ : Signal voltage  
 $V_4$ : Supply voltage

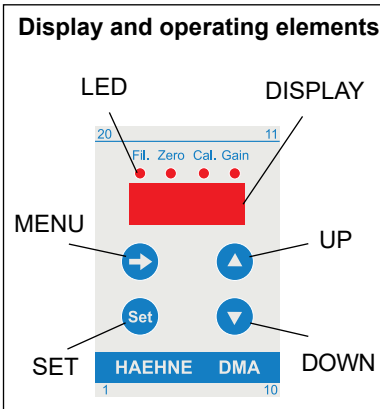
Different connection in case of explosion proof application

The four terminal blocks with five terminals each can be separately plugged in, simplifying trouble shooting in case of faults.

$V_1$	Output signal of full bridge strain gauge
$V_2$	Direct voltage output
$V_3$	Filtered voltage output
$V_4$	Excitation voltage to the full bridge strain gauge in the sensors
$V_5$	Supply voltage 24 V DC
$I_1$	Current output (option C and N)

For Zero point adjustment use the voltage output ( $V_2$ )

Recommendation: Connect the PE-terminal No. 5 of the amplifier with a short cable with one of the separate PE-terminals on the DIN rail.



- Adjustment instructions**
- Apply power and select filter type (filtered/unfiltered), only option C and N.
  - Allow 15 min warm-up time.
  - After the sensors are completely mounted remove all material exerting an external force, except the forces acting under normal conditions. In case of web tension sensors this is the measuring roll without web, e. g. plastic, film, paper...
  - Perform zero adjust.
  - Apply force or weight of approximately 70 to 110 % of nominal value (as available). Adjust to corresponding value on the display and store.
  - Remove force or weight and perform zero adjust if necessary.

**Operating Instructions**

To go to menu press **Set** + **→** simultaneously. However, **Set** need to be pushed first.

1. Select menu point with <b>→</b>	LED	Display	2. Adjusting	3. Storing	Note
Filter behaviour current output	Fil. ●	dir / Fil (direct/filtered)	▲ ▼	<b>Set</b> > 4 sec  Pressing the SET button illuminates the corresponding LED. The LED goes OFF after 4 seconds have elapsed and one can release the button. After that the LED is ON until the corresponding procedure is completed.	Fil. ● Is always ON if current output is set to „filtered“.
Zero point calibration	Zero ●	-10.0...100.0%			Enter a value different from 0 in order to activate the two-point calibration.
Calibration with defined load	Cal. ●	Calibration weight 10.0...110.0 %			Recommendation: 70 - 110%. If the two-point calibration is activated then values higher than first calibration point + 10% can be entered. If „Gain“ appears on the display, then the necessary amplification is out of the possible range. Under menu option „Gain“ the necessary amplification is indicated. appears „zero“ on the display, then the effective calibration weight is too small.
Manual amplification adjustment	Gain ●	Amplification factor 250...4000	The step range increases by holding the button		With two point calibration and in unipolar output mode the zero point is to be adjusted again.
Extended adjustment possibilities:					
Value display adjustments	Cal. ● Gain ●	range 100% = 100 ... 2000. 10.0 ... 200.0 1.00 ... 20.00			Standard: %-display (100 without decimal point) Actual value: display according to the selected dimensions with decimal (decimal point-display)
Peak value display	Fil. ● Gain ●	real time	maximal ▲ ▼ minimal		Set key deletes the peak values. A change of the real time display and the output mode deletes also the peak values.
Display intensity	all LED's ●●●●	all segments	strongly ▲ ▼ weakly		
Output mode	Zero ● Cal ●	bi / uni	bipolar ▲ ▼ unipolar		bipolar (standard) : ±100% = ± 10V 0 - 100% = 4(0) - 20mA unipolar: ±100% = 0 - 10V ±100% = 4(0) - 20mA  These are adjustments, therefore the calibration has to be made after the appropriate selection.

The menu is deactivated if no button is pressed within 20 seconds. Exit from the menu by pressing the key **→** several times. If the maximum output voltage during normal operating conditions is overloaded to approx. (-)12 volts the (-)OFL display will appear. Interrupted sensor cables lead to the IOFL display. During the adjustment procedure the display OFL has no special meaning.