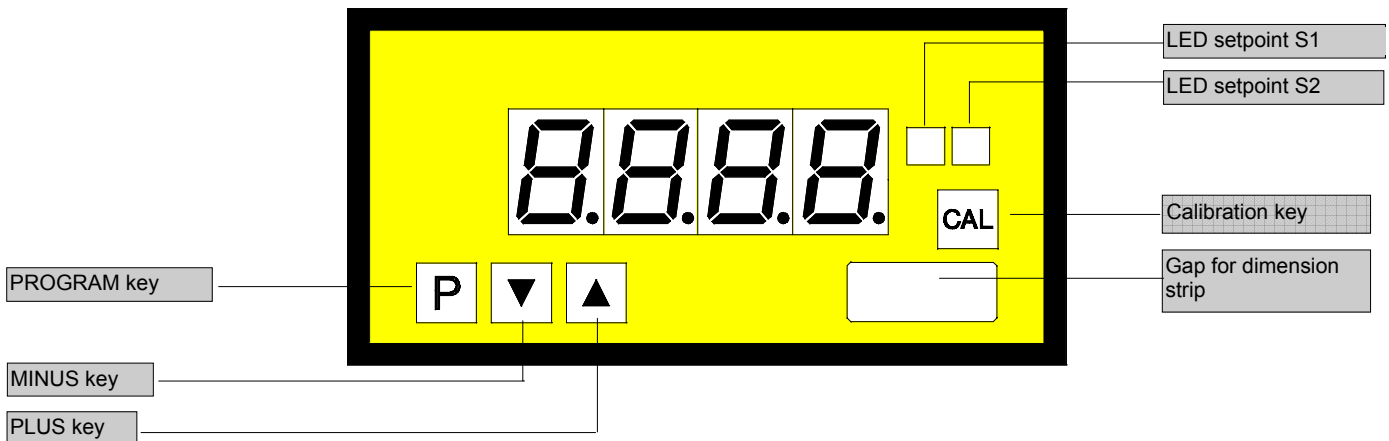


DMS Amplifier – with calibration

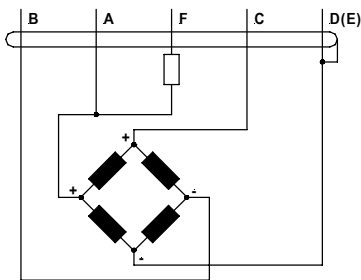
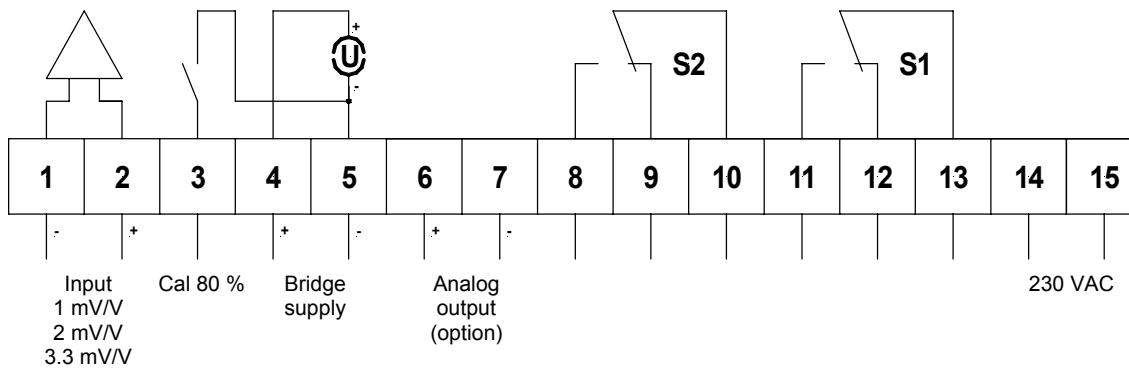
- Standard: 2 setpoints, min/max memory, IP54, plug in terminal
- Mounting into panels up to 50 mm – optional: analogue output

96x48

8888



ORDER NUMBER OF TYPE
PME 4.20x.1592B



Power supply 115 VAC
(connection via terminal 14 and 15)

PME 4.20x.1492B

Power supply 24 VDC
- **galv. insulated** - (15=plus, 14=minus)

PME 4.20x.1792B

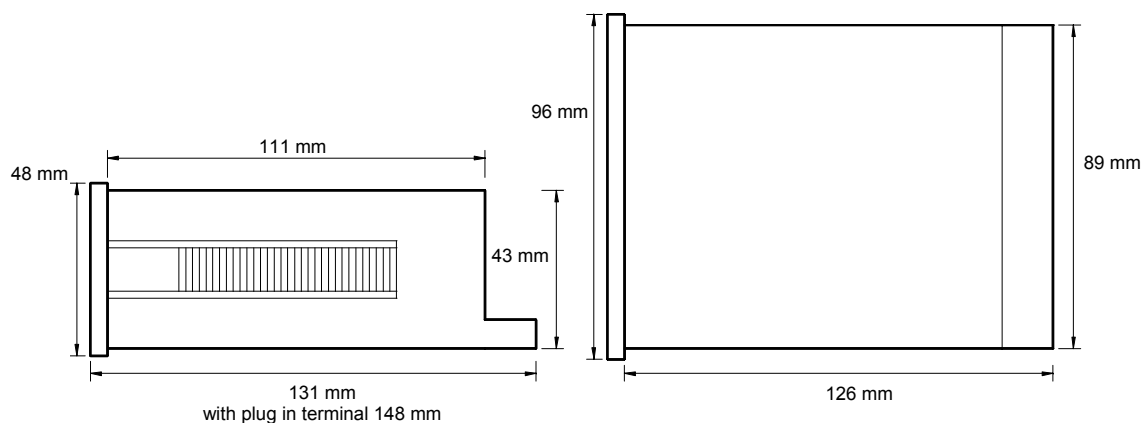
Options

- green LED
- Plug in terminal and protection IP65
- Analog output 0-10 VDC (12 bit)
- Analog output 0-20 mA/load 500 Ω (12 bit)
- Analog output 4-20 mA/load 500 Ω (12 bit)
- Analog output 0-10 VDC (12 bit) *(supply voltage 24 VDC galvanically insulated)*
- Analog output 0-20 mA/load 500 Ω (12 bit) *(supply voltage 24 VDC galvanically insulated)*
- Analog output 4-20 mA/load 500 Ω (12 bit) *(supply voltage 24 VDC galvanically insulated)*
- Other power supplies on demand

Technical data

Dimensions	Housing	96 x 48 x 134 mm, including screw terminal
	Assembly cut out	92.0 ^{+0.8} x 45.0 ^{+0.6} mm
	Fastening	special quick plastic clamp proper to fix in wall thickness up to 50 mm
	Housing material	PC/ABS-plastic blend, colour black, UL94V-0
	Protective system	at the front IP54 connection IP00
	Weight	approx. 0.450 kg
	Connection	at the rear side via screw terminal up to 2.5 mm ²
Input	Measuring range	1 mV/V – 2 mV/V – 3.3 mV/V
Output	Sensor supply	10 VDC/350 Ω (power supply for other strain gauges)
	Relay output	charge 230 VAC/5 A – 30 VDC/2 A, with ohm resistive burden
	Switching cycles	0.5 * 10 ⁵ at max. contact rating 5 * 10 ⁶ mechanically
	Analogue output	Separation appropriate to DIN EN 50178/ Specification appropriate to DIN EN60255 0-10 VDC (12 bit) 0-20 mA (12 bit) – max. load 500 Ohm 4-20 mA (12 bit) – max. load 500 Ohm
		} The analogue output is galvanic insulated from the measuring input!
Accuracy	Resolution	-999 to +9999
	Measuring fault	+/-0.2 % of measuring range, +/- 1 digit
	Temp. drift	100 ppm/K
	Measuring principle	voltage/frequency converter
Power unit	Supply voltage	230/115 VAC +/- 10 % (50-60 Hz), 24 VDC +/-10 % galvanic insulated
	Power consumption	approx. 5 VA
Indication	Display	LED with 7 segments, 14 mm high, red 4-digit = indication 9999
	Overflow	4 horizontal bars if the input value is 10-20 % higher than full scale
	Line break	4 horizontal bars
	Measuring time	adjustable from 0.1 up to 10.0 seconds
Ambient conditions	Working temperature	0 up to + 60 °C
	Storing temperature	-20 up to + 80 °C

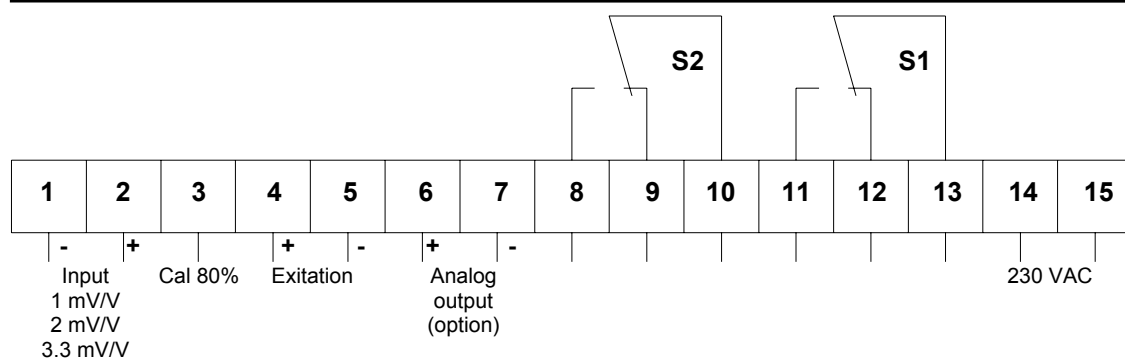
Housing:



CE-sign

For unlimited use of the instrument within the directives for electromagnetic compatibility 89/336/EC analogue input wires have to be used with shielded cable and cable's shield connected to earth ground at one end only.

Wiring diagram, programming, instructions



Adjustment (also see programming example on the next page)

1. Connect the instrument according to the connection scheme. Connect the screen of the sensor line with the earthed conductor.
2. Switch-on supply voltage. There is a segment test with switching-over to the operating mode.
3. Connect the DMS sensor. (Put on maximum load) – Press program key **P**. Program number **1** lights up.
4. Change the program number by simultaneous pressing of programme (**P**) and **▲** key.
5. Pressing the **▲** or **▼** key results in a change of indication to the value stored under this program number.
6. Change the indicated value by pressing the **▼** or **▲** key.
7. If no key is pressed, the device changes to the normal operating mode after 7 seconds. With this, final storing of all adjusted values is effected.

Calling of MIN/MAX values from memory

Press key [**▲**] to indicate **MAX** memory.

Press key [**▼**] to indicate **MIN** memory.

Simultaneous pressing of keys [**▼**] and [**▲**] deletes and updates the **MIN/MAX** memory.

Calibration procedure

<u>Operator</u>	<u>Unit</u>	
Press CAL key	Indication of "CAL1" for 2 seconds	Indication of the present measuring value
Press CAL key	Indication of "CAL2" for 2 seconds	When the measuring value is within the defined window - approx. +/-10% - the new zero point is taken over. Otherwise the indication "PPPP" is shown for 2 seconds – which shows the unit returns to normal operation.
Press CAL key	Indication of "CAL3" for 2 seconds	The present measuring value is being indicated.
Press CAL key	Indication of "CAL4" for 2 seconds	When the measuring value is within the defined window - approx. +/-10% - (80% of final value), the new final value is taken over. Otherwise the indication "PPPP" is shown for 2 seconds - calibration is finished by the return to normal operation.
Press CAL key	Indication of "END" for 2 seconds	Calibration is finished, return to normal operation.

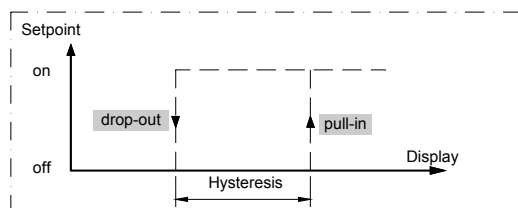
With an indication period > 2 seconds, the indication "CALx" remains for the time of the indication period. During this time a measuring cycle is worked upon internally.

Instructions

After power on the instrument with his inbuilt microcontroller starts with an initial program activating a segment test and readout of memorized parameters in an EEPROM. In case of loosing parameters or any defects in hardware the system generates an error message "HELP". This function prevents damage from peripherals and human life, totally reset is required. After a new power on, the system remains in lamp test while pressing **P**-key. Then the unit stores the default parameters and is ready for new programming.

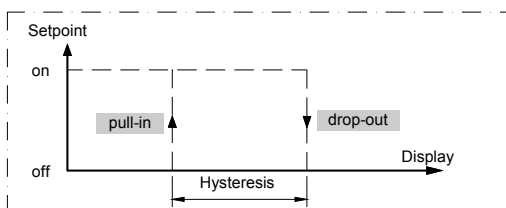
The following diagrams are showing the switching operation of PME4 relay contacts. The hysteresis is free programmable. There are two kinds of operation:

Example: operation current



Operation current means that the relay will be pulled in if reaching the adjusted setpoint.

Example: quiescent current



Quiescent current means that the relay will be dropped out by reaching the adjusted setpoint.

Operation, setting instructions

Subject to technical alteration – status 03/2006 - PME431GB

Program table 1

Program-number (PN)	Function	Remark	Display	Basic parameter after reset
1	Indication of desired initial value		-999 up to +9999	0.0
2	Indication of desired final value		-999 zp to +9999	400,0
3	Setting of decimal point	Press ▲ until the desired decimal point is shown		xxx,x
4	display refresh		0.1 up to 10.0 seconds	0.5 seconds
5	final value for analog output	Option	-999 up to +9999	400,0
6	offset for analog output	Option	-999 up to +9999	0,0
7	Calibration in %	Range 1-100 % (ex works 80 %)	1 – 100	80
8	measuring range	1= 1 mV/V - 2= 2 mV/V - 3= 3.3 mV/V	1 / 2 / 3	2
14	Release CAL-key	0= locked / 1= unlocked	0/1	1
61	Setpoint 1		-999 up to +9999	100.0
62	Setpoint 1 hysteresis		0 up to +9999	0.1
63	Setpoint 1 operating/quiescent current	0=R / 1=A	0 / 1	0
66	Setpoint 2		-999 up to +9999	200.0
67	Setpoint 2 hysteresis		0 up to +9999	0.1
68	Setpoint 2 operating/quiescent current	0=R / 1=A	0 / 1	0

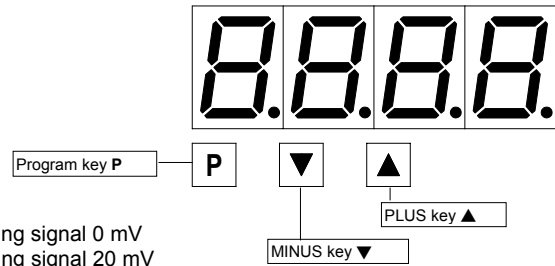
Before the first operation or after changes of the above mentioned parameters, a calibration is necessary!

Example for programming

Measuring range: 2 mV/V
 Measuring signal: 0 – 20 mV
 Display: 0 – 300.0
 Display refresh: 2.0 seconds
 Setpoints: S1 ==> 60.0 and quiescent current

relay pull in = 58.0 → hysteresis 2.0
 S2 ==> 150.0 and operation current
 relay drop out = 80.0 → hysteresis 70.0

Analog output: 0 V output ==> display 0.0 ==> Measuring signal 0 mV
 10 V output ==> display 300.0 ==> Measuring signal 20 mV



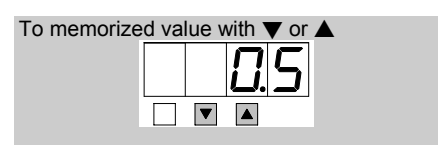
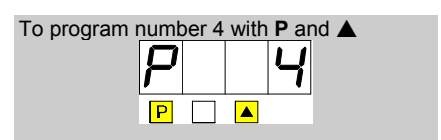
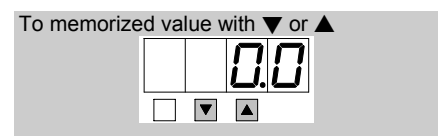
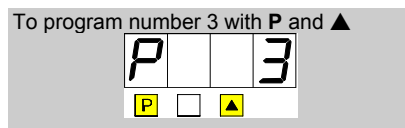
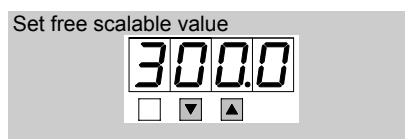
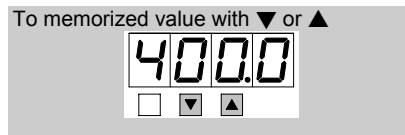
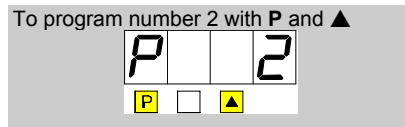
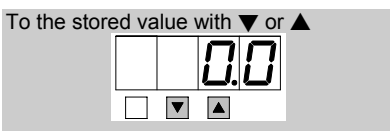
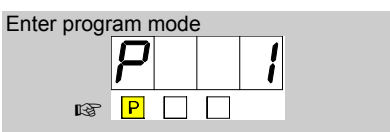
The basic adjustments concerning to the following program example are the ground parameters after a total reset occurring through a power on with pressing **P**-key (see previous page).

Program advices:

Pressing the **P**-key enters **always** the program mode with program number **1**. The "P1" starts to blink in change with the current value after 3 seconds. After further 4 seconds the system leaves the program mode and goes to the standard mode. In program mode pressing ▼ or ▲- key selects the current values which is free scalable with both of the keys. Under program number 1 and 2 the memorization will be executed by pressing the **P**- and ▼- key simultaneously - 4 horizontal bars indicate the storage. All other parameters will be stored automatically after leaving program mode.

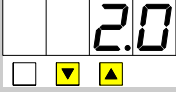
Programming

Switch power on!



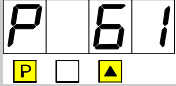
Example for programming

Set display time

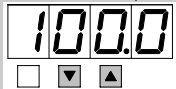


The following programming steps are necessary for the setpoint programming of S1 and S2 only.

To program number 61 with P and ▲



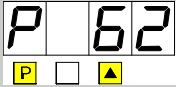
To memorized value with ▼ or ▲



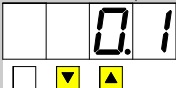
Set free scalable value for setpoint S1



To program number 62 with P and ▲



To memorized value with ▼ or ▲



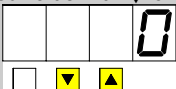
Set hysteresis for S1



To program number 61 with P and ▲



To memorized value with ▼ or ▲



To program number 66 with P and ▲



To memorized value with ▼ or ▲



Set free scalable value for setpoint S2



To program number 67 with P and ▲



To memorized value with ▼ or ▲



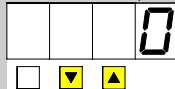
Set hysteresis S2



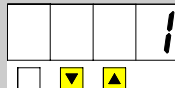
To program number 68 with P and ▲



To memorized value with ▼ or ▲



Set operation current

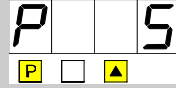


Programming finished.

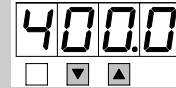
All programmed values are memorized after 7 seconds. Jumps back into standard mode automatically. Calibration necessary!

The program numbers 5 and 6 are available with option analogue output only.

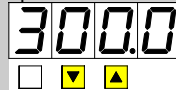
To program number 5 with P and ▲



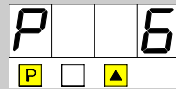
To memorized value with ▼ or ▲



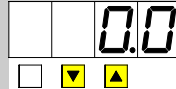
Set free scalable final indication value for analogue output.



To program number 6 with P and ▲



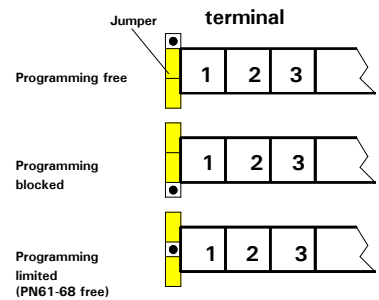
To memorized value with ▼ or ▲



Programming finished.

All programmed values are memorized after 7 seconds. Jumps back into standard mode automatically. Calibration necessary!

Setting possibilities of the jumper field on the rear side.



Subject to technical alteration status 03/2006 - PME431GB