

Operating instructions for pressure measurement amplifier type DMV 311



Please read these instructions carefully before connecting or operating the equipment.

**Certified according to
ISO 9001**

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1. General description:

The Gneuß pressure measurement amplifier type DMV 311 is a measurement amplifier for pressure transducers with strain gauge technology. Because of the many setting possibilities, all market-common transducers can be operated with this unit. For further processing, an analog signal 0-20 VDC or 2-10 VDC and/or 0-20 mA or 4-20 mA and a freely-adjustable limit value can be used. The DMV 311 is based on a Europe card for integration in a 19" rack.

2. Technical data:

Input	: Resistance strain gauge bridge 350 Ohm
Input voltage	: Adjustable 6 - 10 VDC (adjusted to 6 VDC by Gneuß)
Input sensitivity	: 1 mV/V, 2mV/V, 3,3mV/V
Analog output	: Adjustable 0-10 VDC or 0-20 mA or 2-10 VDC or 4-20mA
Limit value relay	: Freely adjustable over the whole measuring range Switching capacity: 230 VAC = 5Amp. / 120 VDC = 1 Amp.
Sensor break	: Circuit-break control sensor connection.
Linearity error	: +/- 0,1 % from the measuring range
Power supply	: Supply voltage 230 VAC +/- 10 % Optional 120 VAC or 24 VAC
Connection	: 32-pole strip according to D / DIN 41612
Unit design	: Europe card 160x100 mm front plate 3HE/8TE
Ambient conditions	: Operating temperature 0-60 °C / storing temperature -20 up to + 70 °C

3. Installation:

The unit is designed for installation in 19" racks. It must be installed to protect it from humidity, contamination and vibrations. The ambient temperature should not exceed 50°C.

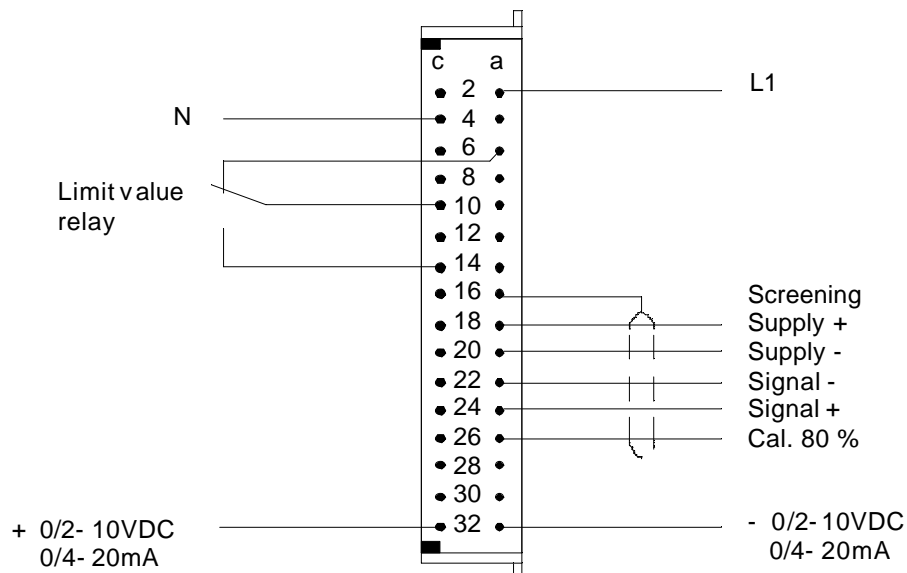
4. Electrical connection:

Work on electrical connections must only be carried out by qualified staff in accordance with local regulations. Connection is carried out in accordance with the wiring diagram. The local regulations referring to the installation and operation of electrical appliances have to be paid attention to.

Analog signal cables have to be screened and/or twisted and laid separately from control cables or power cables.

Terminal connection

Plug assembly DIN 41612, design D



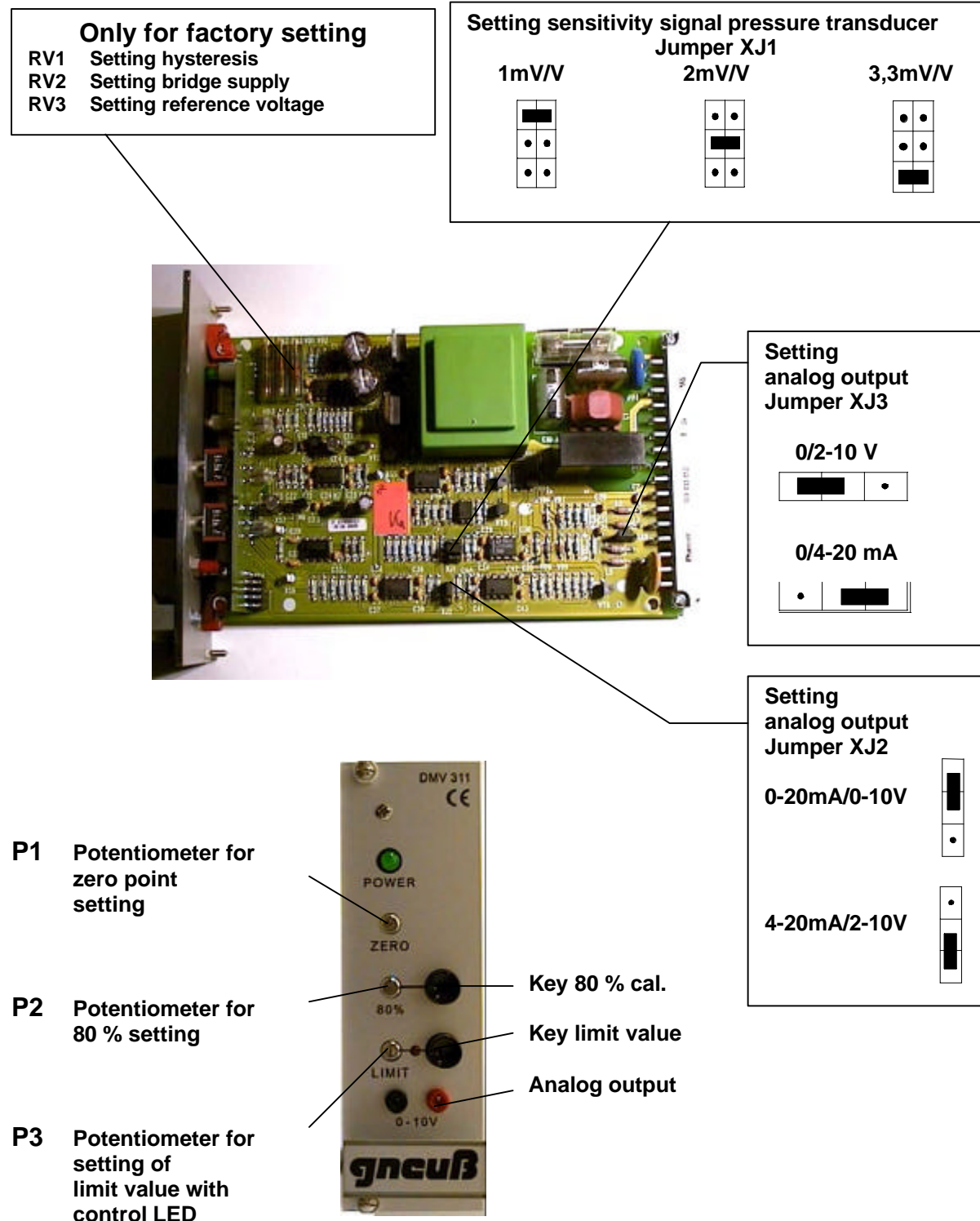
2 a	=	Power supply L1
4 c	=	Power supply N
6 a	=	Limit value relay opening contact
10 c	=	Limit value relay centre contact
14 c	=	Limit value relay closing contact
16 a/c	=	Screening and protective conductor
18 a	=	Transducer supply +
20 a	=	Transducer supply -
22 a	=	Signal voltage -
24 a	=	Signal voltage +
26 a	=	Calibration resistance 80 %
		of the sensor
32 a	=	Analog output -
32 c	=	Analog output +

Wire colours Gneuß
connecting cables
pressure transducer

18 a	=	brown
20 a	=	green
22 a	=	white
24 a	=	yellow
26 a	=	grey

5. Setting possibilities:

The DMV 311 can be adjusted to any pressure transducer with strain gauge bridge 350 Ohm, independent of the pressure range. Further, the analog output can be chosen as voltage or current signal and the limit value is freely adjustable over the whole measuring range. The following diagram shows all possible settings.



6. Commissioning

Install the terminal strip of the unit inside the 19" rack. Connect the unit as described under point 4.

The following settings at the unit have to be carried out as described under point 5.

- ◆ Pressure transducer sensitivity (see identification plate) via Jumper **XJ1**. (e.g. 3,3 mV/V)
- ◆ Required analog output via Jumper **XJ2**. (voltage or current)
- ◆ Required analog output signal (0-20mA or 4-20mA or 0-10V or 2-10V)

Install the unit in the 19" rack.

The unit has to be balanced via the analog output. An amperemeter and/or a voltmeter must be connected in accordance with the set signal output.

For this purpose, the rear connections 32a and 32c or the 2 mm front test jacks can be used. Please note that the connections 32a and 32c are switched parallelly with the front test jacks. Please do not connect two consumers in case of one current signal output only.

Attention: For exact balancing of the unit, the pressure transducer has to be connected, but not heated or loaded. If the pressure transducer is not connected, the sensor break control would become active and would switch the limit value and/or the analog output to the maximum value.

For balancing the unit, please take the following steps:

- ◆ Set the analog output via the front potentiometer **P1** (zero) to zero.
- ◆ Press the 80 % key, keep it pressed and set the analog output via potentiometer **P2** to 80 % (e.g. 16.8 mA). Release the key.
- ◆ Press the limit value key (Limit), keep it pressed and set the requested switching point of the limit value via potentiometer **P3**.

Example: Measuring range of the sensor 0 400 bar
 Analog output 4-20 mA
 Requested limit value 200 bar = 12 mA

The unit is now balanced.

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