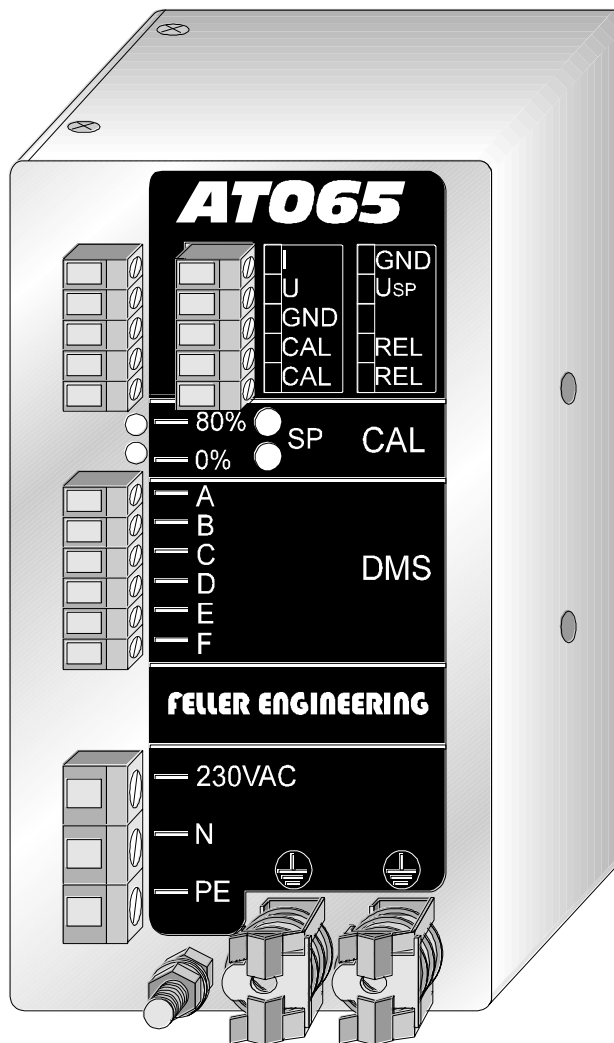


## Description

### **AT065**

DMS Amplifier  
with Alarm-Contact



## Contents

1 Technical Data.....	1
2 Description.....	1
3 Function of the Terminals .....	2
3.1 Circuit Diagramm of the DMS-Sensor - (Wheatstone-Bridge) .....	3
4 Calibration .....	3
4.1 Adjustment of the amplifier offset .....	3
4.2 Adjustment of the amplification .....	4
4.2 Adjustment of the alarm-level.....	4

## 1 TECHNICAL DATA

### Mechanical data:

- Dimensions 121 x 65 x 118 ( L x W x H )

### Elektrical data:

- Supply voltage 230V AC, 50/60Hz (normal)  
115V AC, 50/60Hz (option)
- Power consumption max. 2W
- Number of channels 1
- Sensor supply: 10V at 350Ω resistance
- Amplification: max. 300
- Voltage output 0..10V
- Current output 0..20mA or 4..20mA.
- Pre-fuse, max. 16A.

### Range of temperature:

- Operation temperature 10°C – 50°C / 50°F – 120°F
- Storage temperature >0°C / >32°F

### Response Time:

- of alarm chain (Analogue Input  
→Output Relay/24 VDC) < 20 ms

## 2 DESCRIPTION

The function of the amplifier module AT063 is identic to AT057. The new module is mounted into an aluminum box for protection regarding electro magnetic compatibility.

This module is designed for pressure sensors. According to the measured pressure the outputs offer analog signals at 0..10 V or 0..20 mA / 4..20 mA.

This module is fit with an alarm-contact. The alarm level gets set by the potentiometer SP. The status of the alarm-contact is indicated by the LED at the front of the modul. The LED lights with the active relay.

The sensors have to fulfil the following specification:

- Resistance of the bridge: 350 Ω
- Supply of the bridge: 10 V
- Signal at max. pressure: 33,3 mV

### 3 FUNCTION OF THE TERMINALS

The following terminals correspond to the picture on the front page.

#### Terminal strip J1, net supply

J1 L	phase from net
J1 N	neutral from net
J1 PE	protective earth from net

#### Terminal strip, connection for the sensor

J2 A	positive signal from the bridge
J2 B	negative signal from the bridge
J2 C	positive bridge supply
J2 D	negative bridge supply
J2 E	calibration
J2 F	calibration

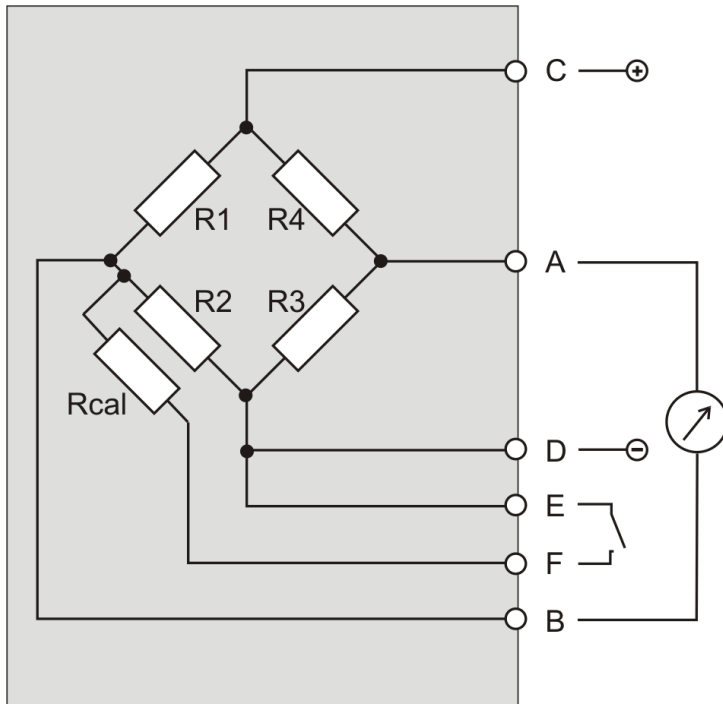
#### Terminal strip J3, signal outputs

J3 I	amplification output 0 / 4..20mA
J3 U	amplification output 0..10V
J3 GND	amplification output GND
J3 CAL	simulation (e.g. 80%)
J3 CAL	simulation (e.g. 80%)

#### Terminal strip J4, Alarm-contact

J4 GND	Voltage of alarm-level GND
J4 U <sub>SP</sub>	Voltage of alarm-level 0..12V
J4 NC	
J4 REL	Relay-contact NO
J4 REL	Relay-contact NO

### 3.1 CIRCUIT DIAGRAM OF THE DMS-SENSOR - (WHEATSTONE-BRIDGE)



## 4 CALIBRATION

The module is calibrated by the maker. Basic adaption may be done with the wired sensor.

For hardware calibration use potentiometer P1 (0 %) for amplifier offset and P2 (80 %) for amplification. Please follow this sequence:

- **Connect the module to the power supply and the sensor without pressure.**
- **The module should be warmed up; 10min after supply voltage.**

### 4.1 ADJUSTMENT OF THE AMPLIFIER OFFSET

- for 0..10V output signal:

Adjust by potentiometer P1 (0%) the output voltage to **0VDC (never below)** between the terminals J3 GND and J3 U (volt-meter).

- for 0..20mA output signal:

Adjust by potentiometer P1 (0%) the output current to **0 mA (never below)** between the terminals J3 GND and J3 I (ampere-meter).

- for 4..20mA output signal:

Adjust by potentiometer P1 (0%) the output current to **4 mA (never below)** between the terminals J3 GND and J3 I (ampere-meter).

#### **4.2 ADJUSTMENT OF THE AMPLIFICATION**

Using the activated bridge simulation (e.g. 80%) (link the 2 terminals CAL of the strip J3), if the transducer is fit for this.

- for 0..10V output signal:

Adjust by potentiometer P2 (80%) the output voltage to 8.0VDC between the terminals J3 GND and J3 U (volt-meter).

- for 0..20mA output signal:

Adjust by potentiometer P2 (80%) the output current to 16 mA between the terminals J3 GND and J3 I (ampere-meter).

- for 4..20mA output signal:

Adjust by potentiometer P2 (80%) the output current to 16,8 mA between the terminals J3 GND and J3 I (ampere-meter).

- ➔ The integrated calibration of the bridge maybe designed for the final value of the device. In this case the values of this signal have to refer to the final value of the selected type of signal.

#### **4.2 ADJUSTMENT OF THE ALARM-LEVEL**

Measure the voltage between terminal J4 GND and J4 USP. Adjust the alarm level referring to the required value in relation to the wired sensor. Use potentiometer P3 (SP). The level of the voltage is synchronous to the range of the sensor. A voltage >10VDC disable the alarm. This level maybe set with the actual pressure, if possible. The alarm-level is indicated by the LED in the front.