

## Low-cost amplifier for force and strain sensors

### Variants

#### X-219-IP03



Strain gauge measuring amplifier in  
solid plastic housing

**Measuring amplifier with 4...20 mA and 0...10 V (0-5 V) analog output**  
**Zero point adjustment (installation tare) by means of onboard potentiometer**

### Functions

- Cost-effective design for static applications
- Wide input range from 1.0 mV/V to 4.0 mV/V for universal connection of strain, force and weight sensors with strain gauge full bridge
- Variable adjustment of measurement gain

### Anwendung

The measurement amplifiers from X-Sensors are suitable for universal signal conditioning of force and strain sensors with strain gauge full bridges.

Due to the simple "onboard" adjustment of zero point and sensitivity, the measurement amplifiers are optimally designed for use in static measurements, such as those found in the monitoring of structures or plants.

The measuring amplifiers are predestined for use in the following applications:

- Weight measurement
- Determination of mechanical loads in structures
- Limit value monitoring and monitoring of mechanical loads to avoid critical conditions in plants and structures

The connection to a sensor and to the control system is made via two cable bushings and via terminals.

## Ordering code

Description	Input sensitivity	Output signal	Feature	Specification
X-219-IP03-x-KL-3-KL-4	0...1.0 mV/V 0...1.25 mV/V 0...1.5 mV/V 0...2.0 mV/V 0...3.0 mV/V 0...4.0 mV/V	0...10 V 4...20 mA (simultaneously)	Field housing, plastic Sensor side: cable bushing with screw terminal Control side: cable bushing with screw terminal	page 3

# X-219-IP03

Strain gauge measuring amplifier in robust plastic housing



## Specification

### Performance

<b>Sensitivity</b>	0...1.0 mV/V 0...1.25 mV/V 0...1.5 mV/V 0...2.0 mV/V 0...3.0 mV/V 0...4.0 mV/V
<b>Linearity</b>	< 0.3 % from fullscale
<b>Signal path</b>	only analog

### Electrical data

<b>Supply voltage</b>	18...27 VDC, <60mA
<b>Output signal referred to the final value</b>	± 10 V / 4-20 mA
<b>Output signal referred to the final value</b>	
<b>Voltage output</b>	0...10 V / 0...5 V
<b>Current output</b>	4...20 mA
<b>Terminal resistance strain gauge measuring bridge</b>	4x 350 Ω (parallel)
<b>Bridge supply voltage</b>	5 VDC (±5 %)

### Adjustment options

<b>Zero point adjustment ranges</b>	
<b>Fine adjustment</b>	Potentiometer
<b>Max. Trim range zero point</b>	±0.2 mV (current and voltage)  ±0.8 mV (voltage only)

### Mechanical data

<b>Material</b>	ABS housing
<b>Electrical connection sensor</b>	Clamps for cable connection
<b>Electrical connection control</b>	Terminals for cable connection

### Environmental data

<b>Ambient temperature</b>	-10...+50 °C
<b>Storage temperature</b>	-20...+80 °C
<b>EMC test</b>	EN 61000-4
<b>Protection rate</b>	IP 67

## Mechanical dimensions

