SCHREIBER MESSTECHNIK

Electronic-module

Series SM10

- **Mounted in a sealed metal case**
- **For use with inductive transducers**
- **Also available in snap-on mounting cases**

Construction and operating principle

The module series SM10 containes an oscillator and demodulator for use with one inductive sensor. The module supplies the sensor with a stabilised carrier frequency and demodulates the measuring signal into a DC voltage or current signal proportional to the measuring stroke or angle. The gain could be adjusted by trimmers.
The electronic board is mounted in a nickel plated brass housing, complete sealed and protected against humidity, shock and vibration.

Standard versions:

Type	output	supply voltage U_B *	mid
SM101	0 .. 20 mA	21,5 .. 32V	10 mA
SM103	4 .. 20 mA	21,5 .. 32V	12 mA
SM105	± 10 V	±12 .. ±16V	0 V

** Pole reversal protection

Technical data:

Operating frequency	10 kHz
Amplitude	13,6 V_{p-p} sine-wave
Measurement frequency	800 Hz
Temperature drift	< 0,005% / °C
Temperature range	-20°C .. +85°C

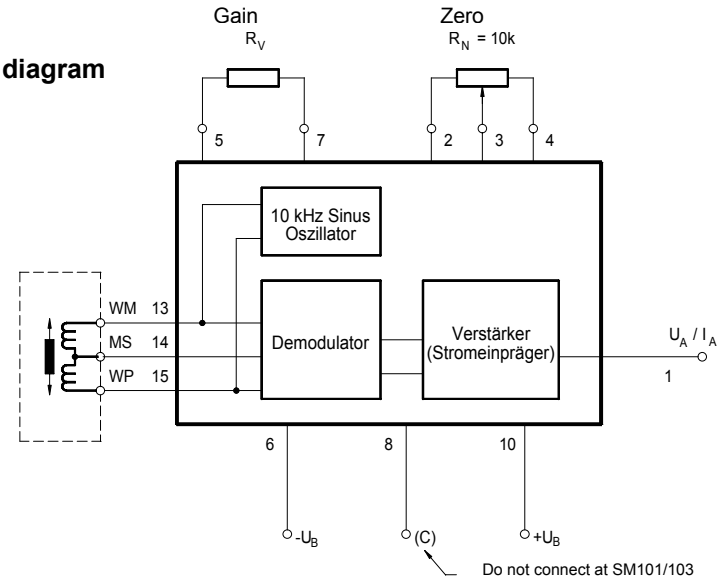
Current output (SM101 / SM103):

gain	adjustable
Adjustable zero point	±10%
Supply current I_B	max. 60 mA
Load resistance R_B	0..500Ω
Residual ripple	< 0,005 mA_{pp}

Voltage output (SM105):

gain	adjustable
Adjustable zero point	±10%
Supply current I_B	max. 60 mA
Permissible load R_L	≥ 2 kΩ (short-circuit proof))
Residual ripple	< 5 mV_{pp}

Block diagram



Between Pin 5 and Pin 8 the demodulated signal can be measured
0 V means plunger in mid-position

Gain (nominal):

R_V	SM101	SM103	SM105
not connected	2.20 mA/V	1.80 mA/V	1.40 V/V
50k	3.25 mA/V	2.70 mA/V	2.05 V/V
10k	7.35 mA/V	6.10 mA/V	4.65 V/V

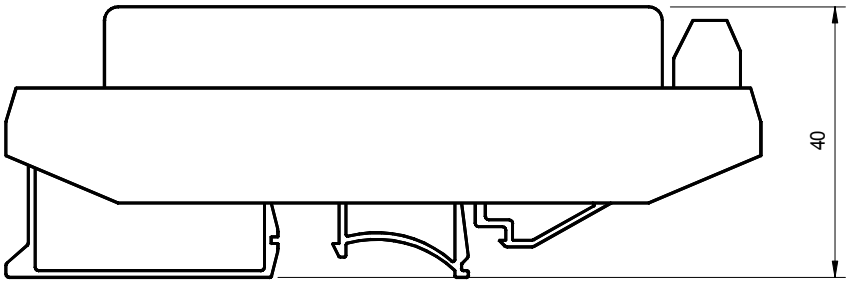
Example:

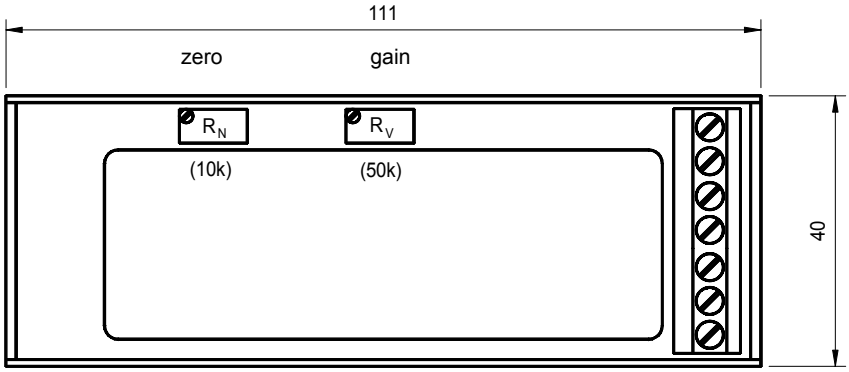
Inductive sensor SM200.4; stroke 4mm; sensitivity 440 mV/mm; connect to an electronic module SM101; R_V = 10k; gain 7.35 mA/V

Output current: 0.44 V/mm x 7.35 mA/V = 3.23 mA/mm

Electronic module mounted on a snap on case:

Order code: SM10x.N

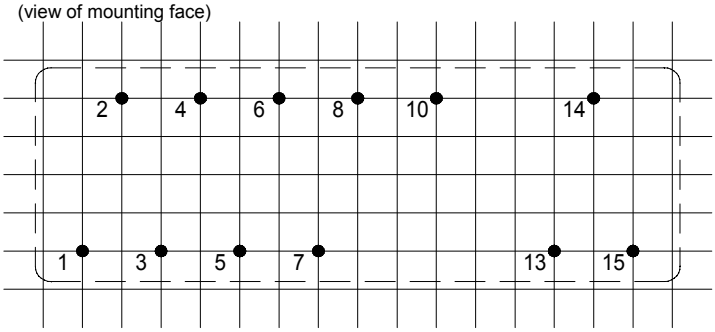




Single electronic module:

Order code: SM10x

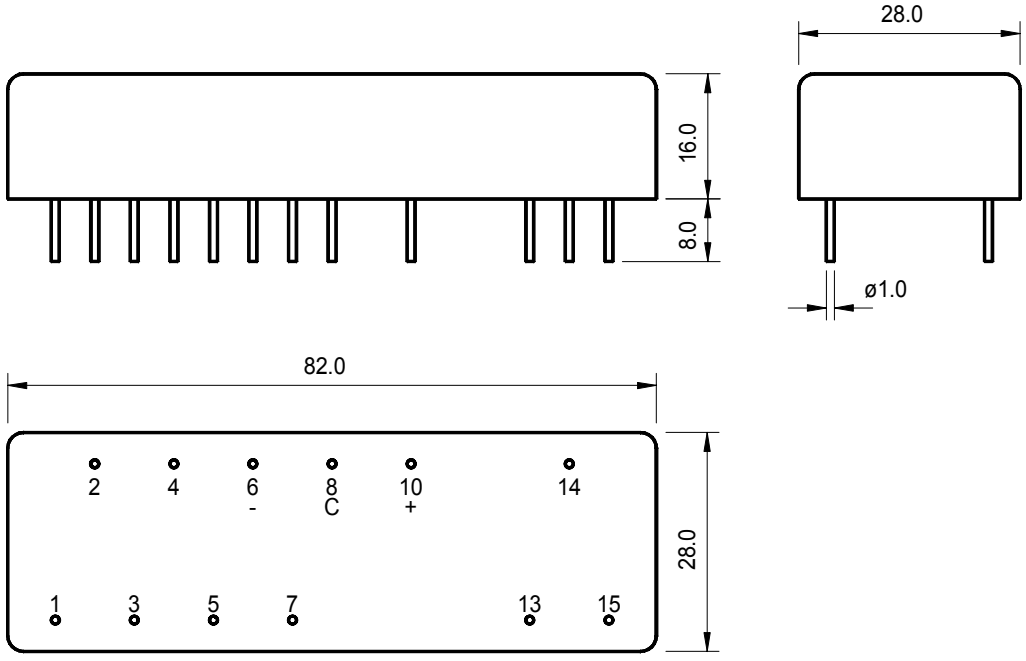
Raster dimension 5mm
(view of mounting face)



housing dimensions 82 x 28 x 14 mm Masse ~70g

Note
The transmission line between the transducer and the electronic module may measure up to 100 meters. Screened cables should be used to avoid the interference of outside noise

Dimensions in mm



Other versions / accessories:

- SM103 (output 4-20mA) with line break sensor (order code: SM103.D(N))
- Up to 3 modules mounted on Eurocard
- Power supply SM109.230(N)