

Inductive Displacement Transducer

Series SM21



- Stroke up to 20 mm
- External electronic modules
- Gauge type with return spring available
- Protection class IP66/67
- Accuracy 0,5% or 0,25%

Construction and operating principle:

A nickel-iron core will be moved linear inside of a coil form. The displacement of the core leads to an inductance variation in both coils. An external electronic circuit converts the variation into a signal proportional to the displacement.

Standard measuring strokes:

| | | | |
|------|-------|------|-------|
| 5 mm | 10 mm | 15mm | 20 mm |
|------|-------|------|-------|

Standard version:

| | |
|-----------|------------------|
| SM210 ..S | connector output |
| SM210 ..K | cable output |

Standard dimensions

| stroke | L1 mm | L2 mm | L3 mm | L4 mm |
|--------|-------|-------|-------|-------|
| 5 | 35 | 40 | ~18 | 64 |
| 10 | 35 | 40 | ~18 | 64 |
| 15 | 35 | 50 | ~28 | 74 |
| 20 | 34 | 50 | ~30 | 74 |

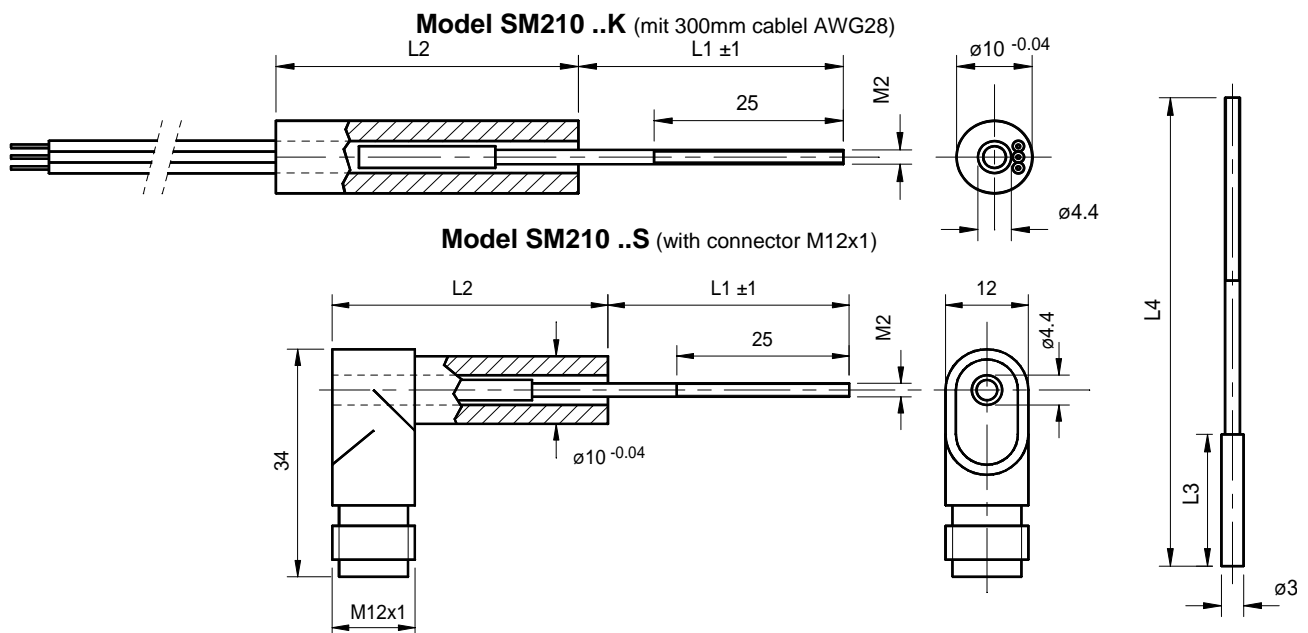
L1: plunger in centerposition

(using our electronic modules)

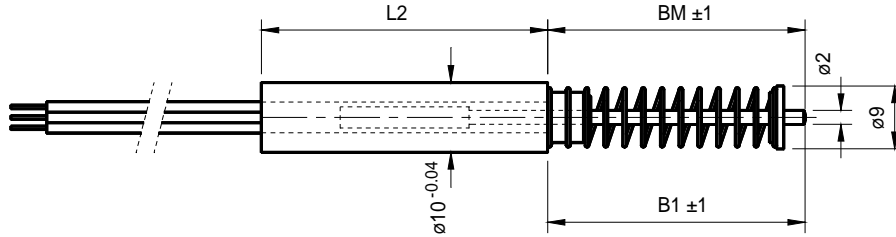
| | |
|----------------------------------|--------------------|
| Accuracy 5/10/15mm | < 0,5% or 0,25% |
| Accuracy 20mm | < 0,5% |
| Temperature drift | < 0,005% / °C |
| Temperature range with connector | -40°C up to +85°C |
| Temperature range with cable | -30°C up to +105°C |
| Resistance to shock | 250g SRS 20-2000Hz |
| Resistance to vibration | 20g rms (50g peak) |
| Mass transducer | ~20g |
| Mass plunger | ~ 4g |
| Protection class | IP66* |

*IP67 using mating plug with sealed cable

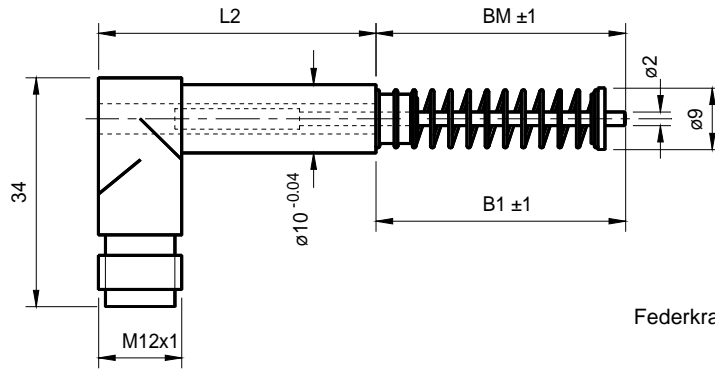
Technical data:



Model SM210 ..KT (with 300mm cable AWG 28)



Model SM210 ..ST (with connector M12x1)



Federkraft in Mittelstellung ~2N

Dimension gauge type:

| Stroke mm | L2 mm | BM mm | B1 mm | mech. stroke |
|-----------|-------|-------|-------|--------------|
| 5 | 50 | 22 | 36 | 24 |
| 10 | 50 | 22 | 36 | 24 |
| 15 | 60 | 26 | 40 | 28 |
| 20 | 60 | 26 | 40 | 28 |

BM: plunger in mid-position

B1: plunger full out

Sensitivity:

| stroke | mV / mm (±10%) |
|--------|----------------|
| 5mm | 400 |
| 10mm | 400 |
| 15mm | 300 |
| 20mm | 290 |

Excitation and signal processing

SM10: Oscillator / Demodulator in metal case

SM11: SM10 on Eurocard

SM12: Oscillator / Demodulator without case
2 channels

SM14: Eurocard up to 7 channels

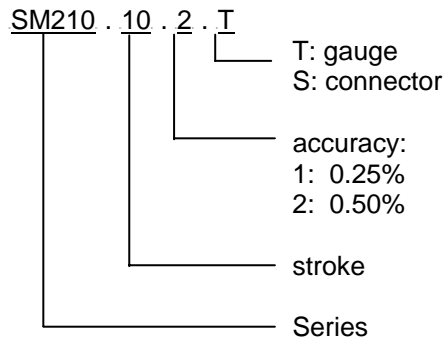
Material:

| | |
|---------------|-----------------------------|
| housing | Stainless nickel iron alloy |
| connector | Fiber reinforced polymer |
| Core | Stainless nickel iron alloy |
| Plunger | Brass |
| Gauge plunger | Stainless steel |
| Spring plate | Alu, black anodised |
| Spring | Stainless steel |

Electrical connection

| Cable output 3-pol. flatcable AWG28 | 4-pol. connector M12x1 |
|---|---|
| <p>Cable colour</p> <p>white brown green</p> | |
| <p>Connection at electronic:</p> <p>white: WM brown: MS green: WP</p> | <p>Connection at electronic:</p> <p>1: WP 2: n.c. 3: WM 4: MS</p> |

Order code



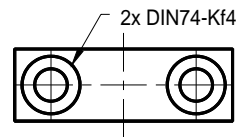
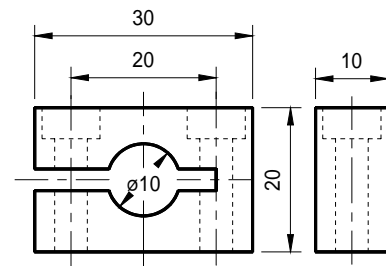
Order codes for customer specified versions will be named at plant.

Example.: SM210.10.2.ST

Gauge type series 210, 10mm stroke, accuracy 0.5%, connector M12x1

Mounting block SM906.202

(incl. 2 mounting screws M4x25 DIN912 VA)



other versions:

- Improved sensitivity difference ($\pm 1\%$)
- Stroke up to 24mm with accuracy (1%)
- Flat cable AWG28 with special connector CE100