

Mini-transducer with integral electronic circuit

Series **SM34**

- Stroke up to 20 mm
- Housing diameter 10 mm
- Integral electronic
- Small operating current
- Accuracy $\leq \pm 0,5 \%$ or $\leq \pm 0,25 \%$
- Protection class up to IP67



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. The integral electronic circuit converts the variation into a signal proportional to the displacement.

Standard-measuring stroke:

5 mm	10 mm	15 mm	20 mm
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Standard versions:

Type	Current output	Supply voltage UB	Signal**	Mid
	- JB	+ JB		
SM343 SM344	4 .. 20 mA (2-wire)	9 .. 32 V *	increasing decreasing	12 mA

Pole reversal protection. ** Increasing signal by moving the plunger in the direction towards the plug..

* Min supply voltage depending on load resistance RB: $9 \text{ V} + \text{RB} [\text{in Ohm}] \times 20 \text{ mA}$

Type	Voltage output	Supply voltage UB	Signal	Mid
	UA *	+UB, -UB		
SM347 SM348	0 .. 10 V	24 V \pm 20 %	increasing decreasing	5 V
SM349 SM34A	0 .. 5 V	12 V \pm 20 %	increasing decreasing	2,5 V
SM34B (SM277) SM34C (SM278)	0 .. 4 V	5 V \pm 10 %	increasing decreasing	2 V

Pole reversal protection. (Please note: Output UA may not be connected with + supply voltage and output UA may not be connected with – supply voltage, if at the same time - UB is connected with + supply voltage.)

* Permissible load $\geq 10 \text{ kOhm}$

Technical data:

Accuracy	Measuring stroke up to 15 mm Measuring stroke up to 20 mm	$\leq \pm 0,5 \%$ or $\leq \pm 0,25 \%$ $\leq \pm 0,5 \%$
Temperature drift		$\leq \pm 0,01 \%$ / °C
Signal count rate		1 kHz
Temperature range		- 20 .. + 85 °C
Resistance to shock		250 g SRS 20 .. 2000 Hz
Resistance to vibration		20 g rms (50 g peak)
Protection class		IP66 / IP67 *

* IP67 by use of a mating plug prefabricated with sealed M12 connector or version .K flat cable.

Voltage output	Typical supply current JB	Max. supply current JB
Type	by UB = nom. value, UA = max. value, RL = 10 kOhm	by UB = nom. value, UA = max. value, RL = 10 kOhm
SM347 / SM348	8,2 mA	12,1 mA
SM349 / SM34A	7,7 mA	11,9 mA
SM34B / SM34C	3,6 mA	5,6 mA

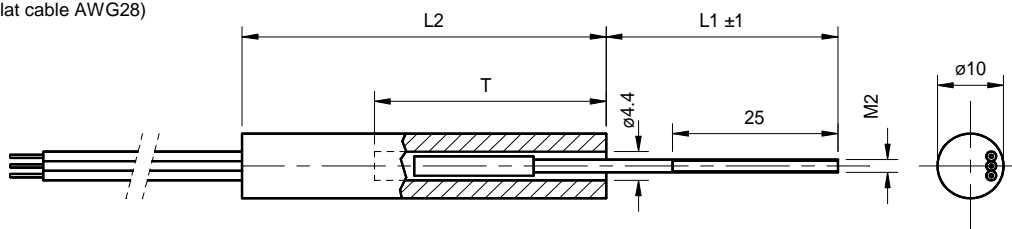
Unless otherwise stated, all values are valid at +20°C ambient temperature and nominal supply voltage, starting 10 minutes after switch-on.

SM34 Standard:

Measuring stroke mm	L1 mm	L2 mm	L3 mm	T mm
	Plunger in central position	In brackets SM343 / SM344		
5	35	64 (66)	53	27
10	35	76 (78)	64	40
15	35	86 (88)	74	50
20	34	90 (92)	74	53

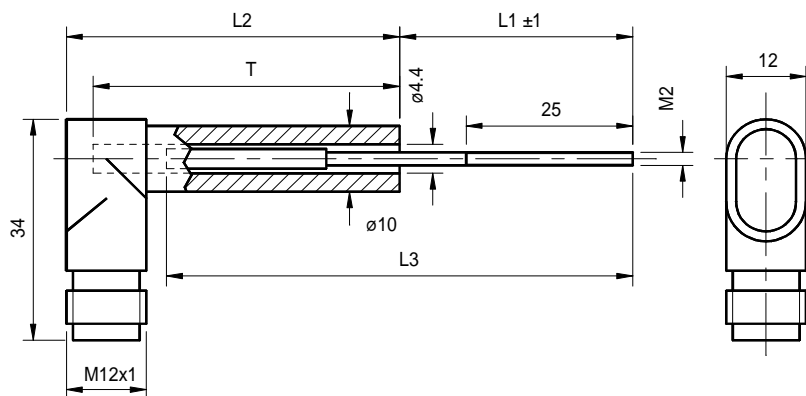
SM34 .K

(With 300 mm flat cable AWG28)
Core Ø 3 mm



SM34 .S

(With connector M12)
Core Ø 3 mm

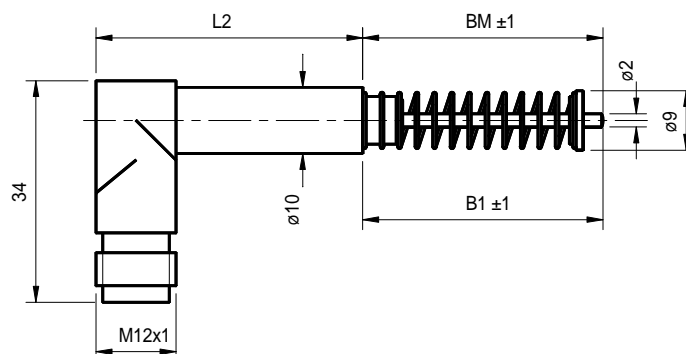


SM34 .T Gauge type:

Measuring stroke mm	L2 mm	B1 mm	BM mm	Mech. stroke mm
	In brackets SM343 / SM344	Plunger full out	Plunger in mid-position	
5	74 (76)	23,5	18	12
10	86 (88)	36	22	24
15	96 (98)	40	26	28
20	100 (102)	38	25	26

SM34 .ST

(With connector M12)



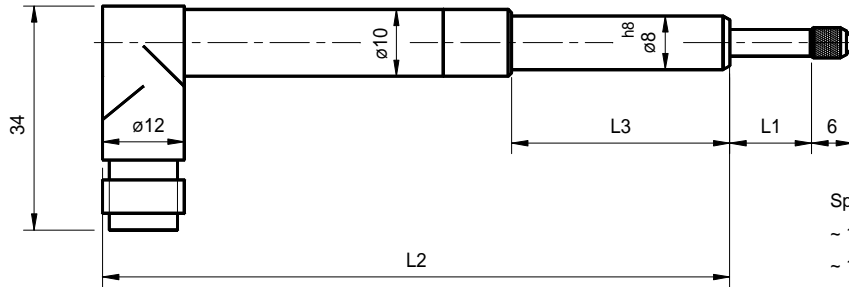
Spring force in mid.-position
~ 1 N (stroke 5 mm)
~ 2 N (stroke 10, 15 and 20 mm)

SM34 .U Precision indication gauge:

Measuring stroke mm	L2 mm	L3 mm	BM mm ± 1 mm	Mech. stroke L1 mm
	In brackets SM343 / SM344		Plunger in mid-position	
5	110(112)	24	7	12
10	120(122)	24	6	12
15	138(140)	32	11	22
20	142(144)	32	11	22

SM34 .SU

(With connector M12)



Spring force
 ~ 1,5 N (stroke 5 and 10 mm)
 ~ 1,1 N (stroke 15 and 20 mm)

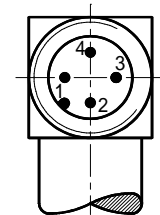
SM34 .KU according to drawing SM34 standard

Electrical connections:

Voltage output	Current output	.K Flat cable	.L 3x 0,14 ² shielded	.S Connector M12
+UB	+JB	brown	red	1
-UB	Not connected	white	black	4
UA	-JB	green	brown	3

.S: PIN 2 not connected.

4-pin connector M12



Material:

Case	Stainless nickel iron alloy
Connector	Fibre reinforced polymer
Core	Stainless nickel iron alloy
Plunger	Brass
Gauge plunger	Stainless steel
Spring	Stainless steel
Spring plate	Alu, black anodised

Accessories:

SM901.211.3.K5	Mating plug prefabricated with sealed M12 connector (5 m)
SM901.210	Mating plug, straight
SM901.212	Mating plug, angled
SM906.200	Mounting block ϕ 8 mm, nickel-plated brass
SM906.202	Mounting block ϕ 10 mm, nickel-plated brass
SM906.203	Mounting block ϕ 10 mm, polypropylene

Option:

.S	Connector M12
.K	Flat cable
.T	Gauge
.U	Precision indication gauge

More options:

.L	Radial cable
.X01	Supply voltage $U_B = 15 \text{ V} \pm 10 \%$ (with output signal $U_A = 0 \dots 10 \text{ V}$)

Order code:

Example: SM347.10.1.S

SM34	Series
SM347	Current or voltage output (increasing or decreasing) , here 0 .. 10 V increasing
SM347.10	Measuring stroke in mm, here 10 mm
SM347.10.1	Accuracy (.1) $\leq \pm 0,25 \%$ (.2) $\leq \pm 0,5 \%$, here $\leq \pm 0,25 \%$
SM347.10.1.S	Option, here connector output M12

Distributor



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