HEIDENHAIN

Product Information

SPECTO
ST 3087 RC

Incremental Length Gauge
for Harsh Environments

04/2017

SPECTO 3087 RC

Incremental length gauge for in-process measurements
- **Special plunger guard**
- **IP 67 protection**
- **Especially durable ball-bush guide**

The ST 3087 RC was specially developed for use in harsh environments. Its special plunger guard offers protection for in-process measurements such as in grinding or turning. Its application in the work envelope can decisively increase productivity.

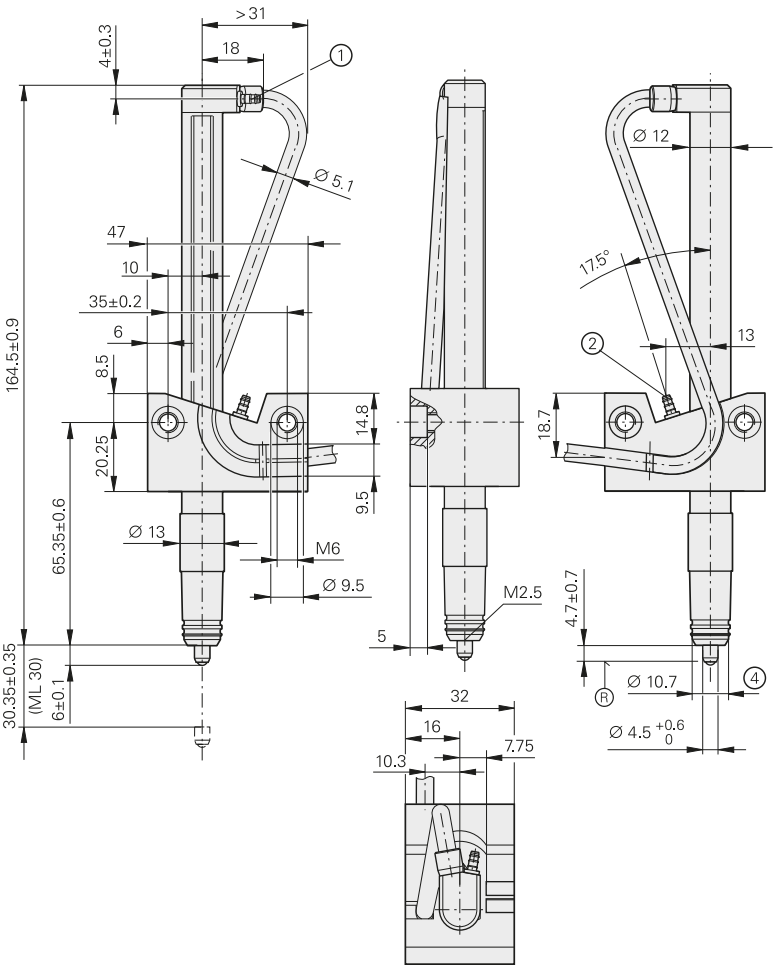
If offers system accuracy of ±1 µm over its complete measuring range of 30 mm. Its high-precision and durable ball-bush guide ensures probing repeatability on oblique and curved surfaces.

Plunger actuation
The plunger of the ST 3087 RC is actuated manually. The built-in spring keeps the plunger retracted in its rest position. It is extended to the measuring position by application of compressed air. When the plunger is retracted, an additional guard and cover cap protect the length gauge.

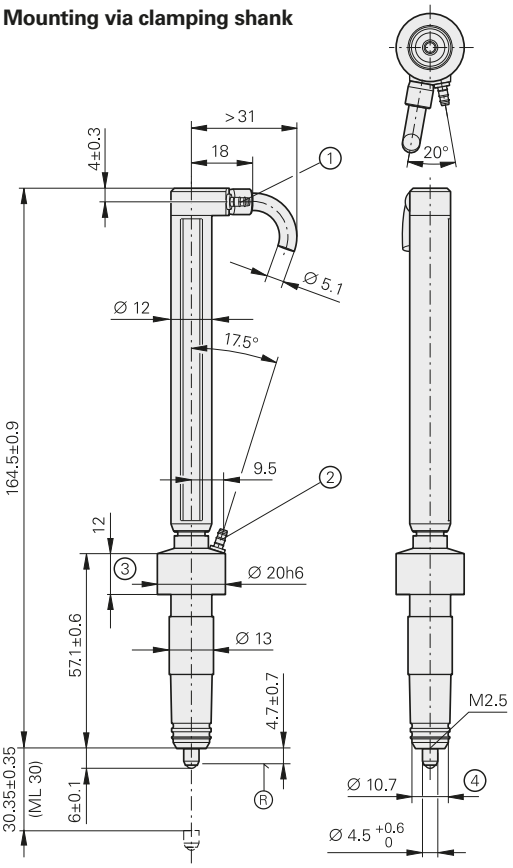
Mounting
There are two methods of mounting the length gauge: using the clamping shank of Ø 20h6 or through a plane surface by means of M6 screws. When mounting using the plane surface, the base provides the option of introducing cables and compressed air hoses in a targeted manner.

Interface
The ST 3087 RC features a 1 V_{PP} interface and therefore opens a multitude of possibilities for further processing of the measurement results.

Mounting via plane surface



Mounting via clamping shank



Ⓡ = Reference mark position
① = Air connection for 2 mm tube
② = Air out
③ = Clamping area
④ = Extends with tip

mm
Tolerancing ISO 8015
ISO 2768 - m H
≤ 6 mm: ±0.2 mm

Mechanical data	ST 3087RC
Plunger actuation Position of plunger at rest	Pneumatic Retracted
Measuring standard	DIADUR grating on glass; grating period 20 µm
System accuracy	± 1 µm
Position error per signal period	≤ ±0.2 µm
Short-range accuracy typically	0.3 µm
Reference mark	≈ 5 mm below upper stop
Measuring range	30 mm
Working pressure	1.5 bar to 2.5 bars
Radial force	≤ 0.5 N (mechanically permissible)
Fastening	• Clamping shank Ø 20h6 • Planar mounting surface (two M6 screws)
Operating attitude	Any
Vibration 55 Hz to 2000 Hz **Shock** 11 ms	≤ 100 m/s^2 (EN 60068-2-6) ≤ 1000 m/s^2 (EN 60068-2-27)
Operating temperature	10 °C to 40 °C; reference temperature 20 °C
Protection EN 60529	IP67
Mass without cable	Clamping shank 100 g Planar mounting surface 300 g

Electrical data	ST 3087RC
Interface	⁓ 1 V_{PP}
Signal period	20 µm
Electrical connection	1.5 m cable with M23 connector (male), 12-pin
Cable outlet	Radial
Cable length	≤ 30 m with HEIDENHAIN cable
Voltage supply	DC 5 V ±0.5 V
Current consumption	< 55 mA

Electrical connection

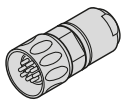
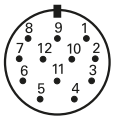
1 V_{PP} connecting cables

PUR connecting cable [4(2 · 0.14 mm²) + (4 · 0.5 mm²)]; A_P = 0.5 mm²		Ø 8 mm
Complete With M23 coupling (female), 12-pin and D-sub connector (male), 15-pin for ND 28x, EIB 741, ND 11xx, ND 12xx		309784-xx
Complete With M23 coupling (female), 12-pin and D-sub connector (male), 19-pin for ND 11xx		617513-xx
Complete With M23 coupling (male), 12-pin and D-sub connector (male), 15-pin for ND 780, PT 880, IK 220		309783-xx
With one connector With M23 coupling (female), 12-pin		298402-xx
Complete With M23 coupling (female), 12-pin and M23 connector (male), 12-pin		298400-xx

[1] Cable length up to 9 m
A_P: Cross section of power supply lines

Pin layout

12-pin connector, M23

	Voltage supply				Incremental signals						Other signals		
	12	**2**	**10**	**11**	**5**	**6**	**8**	**1**	**3**	**4**	**9**	**7**	**/**
	U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	**Vacant**	**Vacant**	**Vacant**
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	/	Violet	Yellow

Shield on housing; **U_P** = Power supply
Sensor: The sensor line is connected in the encoder with the corresponding power line.
Vacant pins or wires must not be used.
Color assignment applies only to extension cable.

HEIDENHAIN

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