

Crimped-on ring case stainless steel

Diesel exhaust thermometers are primarily used for the measurement of exhaust and cooling water temperatures at diesel engines. They are specially designed for these high mechanical and technical loads, among others due to the "stem in jacket version" and the standard case filling with highly viscous silicone oil. To increase their durability, diesel exhaust thermometers should always be applied in combination with a thermowell.

Standard Versions

This data sheet contains detailed information on our standard versions and available options. In overview 8000 you will find additional information on the selection, metrological features, permissible ambient and storage temperatures as well as error limits, etc. Information on the metrologically optimal design of thermometers can be found in our technical information sheet T08-000-031.

Measuring Unit

With nitrogen filling (inert gas, physiologically safe)

Accuracy (DIN EN 13190)

Class 1

Case

With polished crimped-on ring, stainless steel 304 (1.4301)

Degree of Protection (DIN EN 60529 / IEC 60529)

IP65

Case Filling

Silicone oil

Nominal Case Sizes

63, 80, 100 mm (2½, 3, 4")

Case Configuration

Connection temperature sensor (stem)

- capillary line

Capillary line position

- vertical bottom position

- centre back position (**rm**)

Mounting device

- for bottom capillary line position

- back flange for surface mounting (**Rh**)

- collar for gauge holder bracket (**Mgh**)

- for centre back capillary line position

- u-clamp for panel mounting (**rmBFr**)

- back flange for surface mounting (**rmRh**)

Capillary Line

Stainless steel Ø 2 mm (0.08")

with bend protection spring at both ends

capillary line length L_{FL} selectable from 1 m to 5 m (3.28 to 16.4')

Temperature Ranges

0 – 120 °C (32 – 248 °F)

50 – 650 °C (122 – 1202 °F)

Temperature Sensor (Stem)

Made of stainless steel 316Ti (1.4571)

Max. static

operating pressure 25 bar

Stem types (jacket version) A5.5, A1.5 or A3.5

Stem Ø dF 10, 12 or 13 mm (0.39, 0.47 or 0.51")

Stem length (standard) 150, 200, 250, 300 or 400 mm

(5.91, 7.87, 9.84, 11.81 or 15.75")

Compression fitting

for stem type A5.5 stainless steel 1.4571



Window

Instrument glass

Movement

Brass / German silver

Dial

0 – 120 °C (32 – 248 °F) aluminum white, scale black

50 – 650 °C (122 – 1202 °F) aluminum natural finish, scale black

Pointer

Aluminum black

Indication Adjustment (±6 %)

Externally via screw

Ordering Information, Standard Ranges, Options

See page 4

Further Options

- Version for particularly extreme loads
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock or other than vertical installation (90°)

Special Versions Upon Request

- Other stem lengths and connection threads
- Capillary line $F_{FL} > 5$ m
- Other temperature ranges and / or special scales, e.g. dual scale °C / °F, coloured fields or ranges, dial inscriptions
- Case parts stainless steel 316L (1.4404)
- Other position of connection
- Certificates and approvals, e.g. GOST, DNV (see also website)

Thermowells

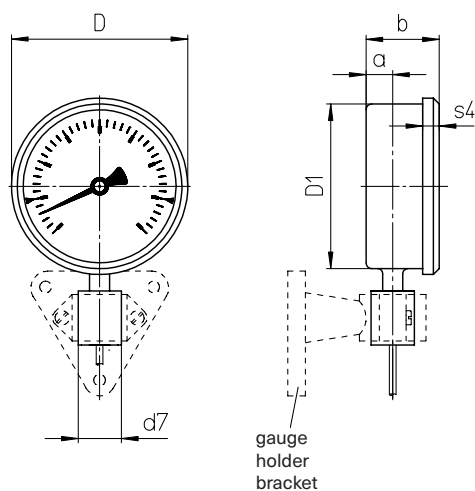
See data sheets 8.8110ff.

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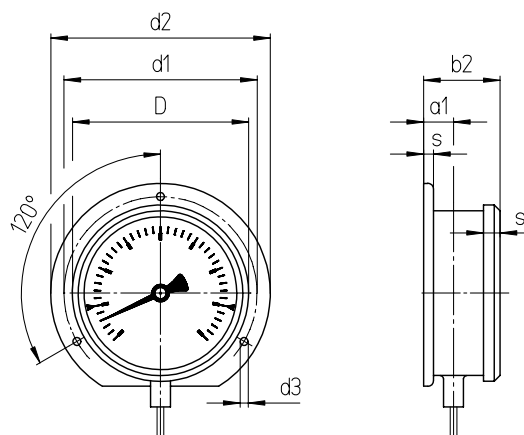
Capillary Line Position, Code Letters, Dimensional Data and Weight

Vertical Bottom Capillary Line Position

collar for gauge holder bracket¹⁾
code letters **Mgh**

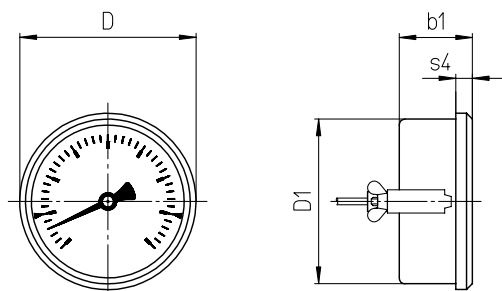


back flange for surface mounting
code letters **Rh**

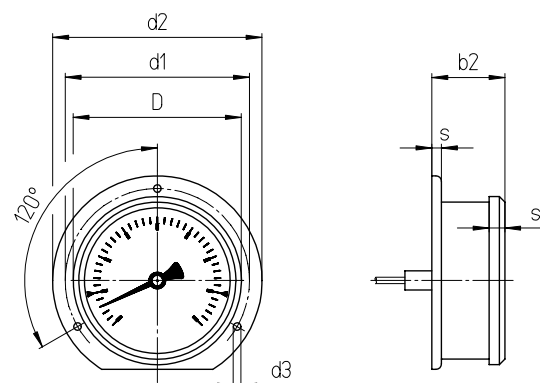


Centre Back Capillary Line Position

u-clamp for panel mounting
code letters **rmBFr**



back flange for surface mounting (not for NCS 80)
code letters **rmRh**



recommended panel cut out for
NCS 63 (2½") Ø 64 ±0.3 mm (2.52 ±0.01")
NCS 80 (3") Ø 81 ±0.3 mm (3.19 ±0.01")
NCS 100 (4") Ø 102 ±0.5 mm (4.02 ±0.02")

Dimensional Data (mm / inch) and Weight (kg / lb)

NCS	a	a1	b	b1	b2	D	D1	d1	d2	d3	d7	s	s4	approx. weight ²⁾ TAF
63 2½"	12 0.47	15 0.59	39 1.54	39 1.54	42 1.65	67 2.64	62 2.44	75 2.95	85 3.35	3.6 0.14	26 1.02	5 0.2	8 0.31	0.45 0.99
80 3"	15 0.59	18 0.71	42 1.65	42 1.65	45 1.77	86 3.39	79 3.11	95 3.74	110 4.33	4.8 0.19	26 1.02	5 0.2	8 0.31	0.6 1.32
100 4"	15 0.59	18.5 0.73	43 1.69	43 1.69	46.5 1.83	106 4.17	99 3.9	116 4.57	132 5.2	4.8 0.19	26 1.02	5 0.2	10 0.39	0.78 1.72

¹⁾ available versions can be found on our website in section Product Range, heading Accessories

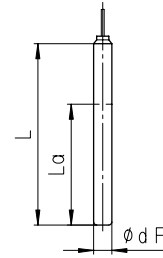
²⁾ example, data for version with collar for gauge holder bracket Mgh and stem A1.5, Ø 10 mm (0.39"), length 200 mm (7.87") and 1 m (3.28') capillary line

Stem Types

Stem Types

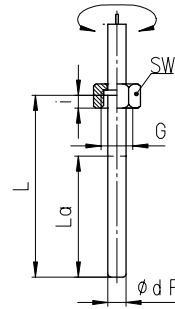
Process connection without screw fitting, plain stem

Stem type A1.5
Form acc. to DIN EN 13190 form 1
Stem material 1.4571
Stem Ø dF 10, 12, 13 mm
Order length L (standard length) 150, 200, 250, 300, 350, 400 mm
Suitable thermowell models SK2 (8.8141)
 (data sheet)



Process connection union nut

Stem type A3.5
Form acc. to DIN EN 13190 form 5
Stem material 1.4571
Stem Ø dF 10, 12, 13 mm
Screw fitting material 1.4571
Order length L (standard length) 150, 200, 250, 300, 350, 400 mm
Suitable thermowell models SF4.1 (8.8111), SF4.1F (8.8113)
 (data sheet) SF9 (8.8131)

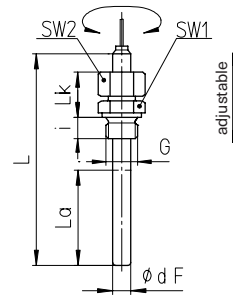


Thread
 (dimensional data in mm / inch)

G	SW	i
G ½	27 / 1.06	10 / 0.39
G ¾	32 / 1.26	12 / 0.47
M20x1.5	27 / 1.06	10 / 0.39
M27x2	32 / 1.26	12 / 0.47

Process connection male thread / compression fitting

Stem type A5.5
Form acc. to DIN EN 13190 form 2
Stem material 1.4571
Stem Ø dF 10, 12, 13 mm
Screw fitting material 1.4571
Order length L (standard length) 150, 200, 250, 300, 350, 400 mm
Suitable thermowell models SF4 (8.8110), SF4F (8.8112)
 (data sheet) SF6, SF7 (8.8121)



Thread
 (dimensional data in mm / inch)

G	SW1	i	Lk
G ½ B	27 / 1.06	14 / 0.55	35 / 1.38
G ¾ B	32 / 1.26	16 / 0.63	37 / 1.46
M20x1.5	27 / 1.06	14 / 0.55	35 / 1.38
M27x2	32 / 1.26	16 / 0.63	37 / 1.46

Stem Ø	SW2
10 / 0.39	19 / 0.75
12 / 0.47	22 / 0.87
13 / 0.51	24 / 0.94

Minimum Stem Length and Active Length (mm / inch)

stem type	capillary line incl. stem ≤ 5 m (≤ 16.4')		capillary line > 5 m (> 16.4')	
	La	Lmin	La	Lmin
A1.5	80 / 3.15	150 / 5.91	120 / 4.72	175 / 6.89
A3.5	80 / 3.15	150 / 5.91	120 / 4.72	150 / 5.91
A5.5	80 / 3.15	150 / 5.91	120 / 4.72	175 / 6.89
others	upon request			

The minimum length Lmin is the smallest feasible stem length.

Important: Please note the technical information sheet T08-000-031 on the metrologically optimal stem length.

The active length La is the temperature-sensitive part of the stem.

Ordering Information, Options

Basic Model	Diesel Exhaust Thermometer with Capillary Line	TAF
Case filling	silicone oil	without code letters
Nominal case size	case Ø 63, 80, 100 mm (2½, 3, 4")	63, 80, 100
Stem position / case configuration	vertical bottom position, collar for gauge holder bracket	Mgh
	vertical bottom position, back flange for surface mounting	Rh
	centre back position, back flange for surface mounting	rmRh
	centre back position, u-clamp for panel mounting	rmBFr
Temperature ranges	0 – 120 °C (32 – 248 °F)	0 – 120 °C
	50 – 650 °C (122 – 1202 °F)	50 – 650 °C
Stem in jacket version	A1.5	A1.5
	A3.5	A3.5
	A5.5	A5.5
Stem Ø dF	10, 12 or 13 mm (0.39, 0.47 or 0.51")	dF 10, 12, 13
Stem length	L 150, 200, 250, 300, 350, 400 mm (5.91, 7.87, 9.84, 11.81 or 15.75")	e.g. L = 150 mm
Capillary line length	L _{FL} ≥ 1 to 5 m (≥ 3.28 to 16.4')	L_{FL} = 3 m
Process connection	see page 3	e.g. G ½

These options are to be ordered in written form. Please contact us to ensure compatibility when combining options.

Red mark	on the dial
Plastic clip	red or green, external at crimped-on ring for NCS 80, 100
Window	tempered safety glass for NCS 80, 100
Movement	stainless steel
Case polished	
Protective sleeve for capillary line	spiral protective sleeve made of stainless steel
Instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17"), wire mounting sticker on the case

Example TAF 100, bottom Mgh, 0 – 120 °C, A3.5, dF 12, L = 150 mm, L_{FL} = 3 m, G ½

Special Versions: Please describe your requirements in cleartext!