



These instruments are designed for use in food, beverage, pharmaceutical, chemical, petrolchemical processing industries. They are built to resist the most severe operating conditions created by the environment and the process medium. An Argon arc welded case / bulb strengthens the whole construction.

Functional and constructive

06.TB7

Measuring range: the °C measuring range has been marked by two "♦" stamped on the dial.

Accuracy: class 2 as per DIN 16203.

Ambient temperature: -25 / +65 °C.

Overtemperature limit: 10% of full scale range for temperature ≤ 400 °C; max 500 °C.

Max working pressure: 15 bar (without thermowell).

Protection degree: IP 65 as per IEC 529, UNI 8896.

Process connection: AISI 303 st.st.

Bulb: AISI 304 st.st.

ø 6-8 mm. for DS 80, DS 100, DS 125;

ø 6 mm. for DS 63.

Standard bulb length: 100 - 150 - 200 - 250.

Measuring element: bi-metal spiral shaped.

Welding: AISI 304 st.st. TIG.

Case: AISI 304 st.st.

Ring: AISI 304 st.st., crimped.

Window: plexiglas.

Dial: aluminium white with black markings.

Pointer: black anodized aluminium.

Window gasket: EPDM.

MEASURING PRINCIPLES

The bi-metal thermometers are built from a stainless steel tube inside of which a bi-metal helicoidal spiral is placed.

This spiral is welded to the tip of the tube and on the other side to a transmission shaft directly connected to the pointer.

The temperature vibrations create a deformation of the bi-metal which is transmitted to the pointer through a shaft rotation.

SCALE RANGES - "C"=DS63;"D"=DS80,"E"=DS100,"F"=DS125..

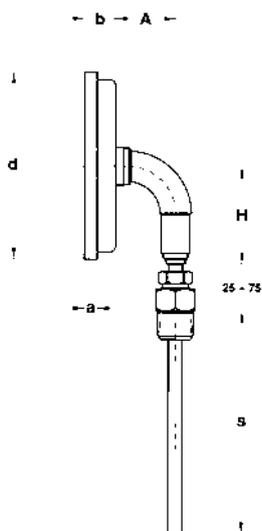
Tab.1 - Single scales °C and bulb length "S"

°C	DS	"S"
-20/+40	C-D-E-F	100÷250
0/+6	C-D-E-F	100÷250
0/+10	C-D-E-F	100÷250
0/+12	C-D-E-F	100÷250
0/+16	C-D-E-F	100÷250
0/+20	C-D-E-F	100÷250
0/+30	C-D-E-F	100÷250
0/+40	C-D-E-F	150÷250
0/+50	C-D-E-F	150÷250

Tab.2 - Dual scales °C / °F and bulb length "S"

Primary °C (ext.)	Secondary °F (int.)	DS	"S"
-20/+40	-4/ +104	D-E-F	100÷250
0/+6	+32/ +140	D-E-F	100÷250
0/+10	+32/ +212	D-E-F	100÷250
0/+12	+32/ +248	D-E-F	100÷250
0/+16	+32/ +320	D-E-F	100÷250
0/+20	+32/ +392	D-E-F	100÷250
0/+30	+32/ +572	D-E-F	100÷250
0/+40	+32/ +752	D-E-F	150÷250
0/+500	+32/ +932	D-E-F	150÷250

LOWER CONNECTION (code 1)



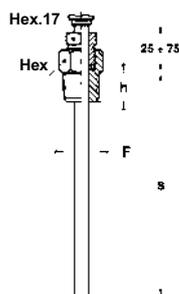
DS	a	b	d	A	H
80	8,2	17	79,5	34,5	57
100	7,4	18	109,8	34,5	57
125	6,5	16,5	129,2	34,5	57

PROCESS CONNECTION

Without threaded connection (Code 0)

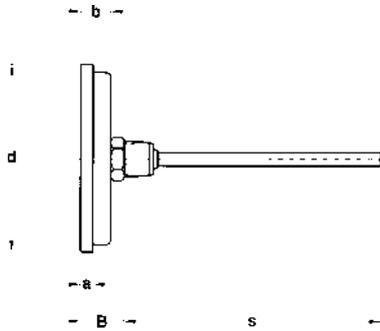


Sliding male and swivel nut (Code 9)



F	Code	Hex.	h
1/2" Bsp	41M	22	17
1/2" NPT	43M	22	14

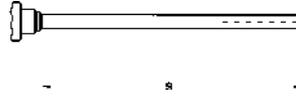
BACK CONNECTION (code 4)



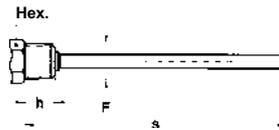
DS	a	b	d	B
63	5,8	13	67,9	21
80	8,2	17	79,5	25
100	7,4	17,7	109,8	25,7
125	6,5	16,5	129,2	24,5

PROCESS CONNECTION

Without threaded connection
(Code 0)



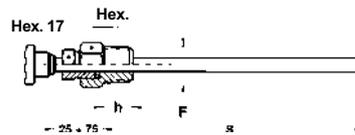
Fixed male (Code 3)



F	Code	Hex.	h
1/2" Bsp	41M	22	17
1/2" NPT	43M	22	14
1/4" Bsp(*)	21M	17	12
1/4" NPT(*)	23M	17	14

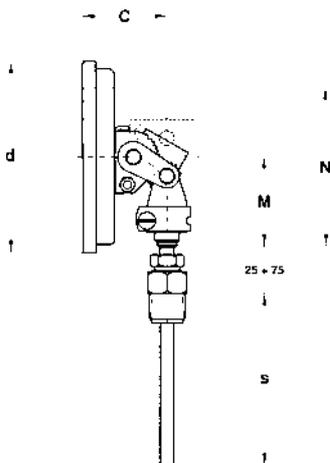
(*)DS63only

Sliding male and swivel nut
(Cod. 9)



F	Code.	Hex.	h
1/2" Bsp	41M	22	17
1/2" NPT	43M	22	14

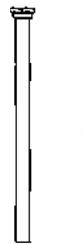
EVERY-ANGLE CONNECTION (code 9)



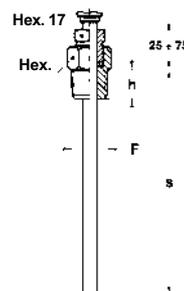
DS	d	C	M	N
100	109,8	47,7	51,5	91,2
125	129,2	46,5	51,5	90

PROCESS CONNECTION

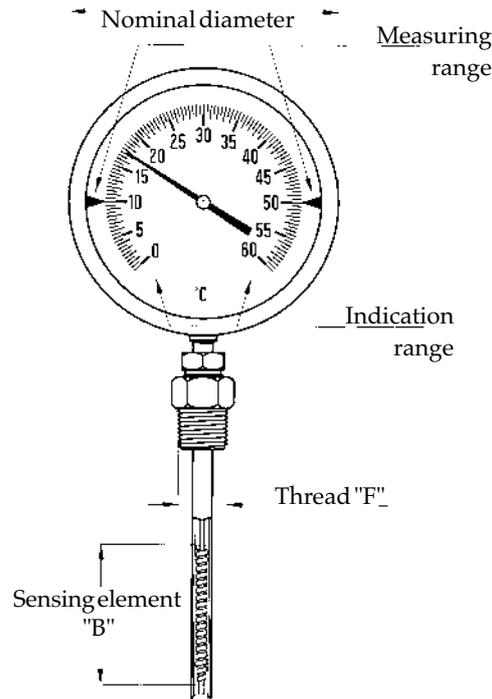
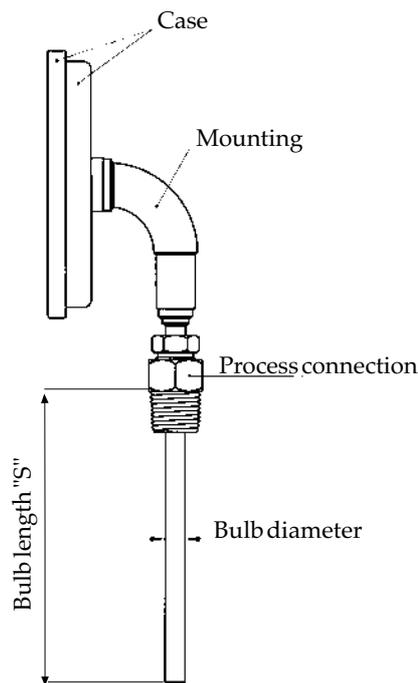
Without threaded connection
(Code 0)



Sliding male and swivel nut
(Code 9)



F	Code	Es.	h
1/2" Bsp	41M	22	17
1/2" NPT	43M	22	14



HOW TO ORDER

CODE & DESCRIPTION	
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06	06 - thermometer section
TB	TB - bi-metal thermometer
7	7 - standard serie
4	1 - Lower connection 4 - Back connection 9 - Every-angle connection
9	0 - Without 3 - Fixed male 9 - Sliding male swivel nut
E	C - DS63 F - DS125 D - DS80 E - DS100
41M	21M - 1/4" Bsp male (connection type 3xDS63) 23M - 1/4" NPT male (conn. type 3xDS63) 41M - 1/2" Bsp male (connection type 3-9) 43M - 1/2" NPT male (connection type 3-9) 000 - Without connection
S5	S4 - ø6 mm. bulb S5 - ø8 mm. bulb
200	bulb length (mm.)
0/10 °C	see ranges tables
S63	Options S63 - bulb ø8mm. length 63mm. for connection type 9 and ranges up to 300°C.

THERMOWELLS

Must be used on all applications where thermometer bulb is subjected to pressure, corrosive fluid or flow rate. Thermowells will make thermometer disassemble for calibration or replacement easier as the process will not be disturbed.

Thermowells available:

-thermowells with thread connection either built up type or machined from bar stock;

-thermowells with flange either built up type or machined from a bar stock;

-thermowells to be welded machined from a bar stock.

Type, material and constructive characteristics on catalogue sheet "09".



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