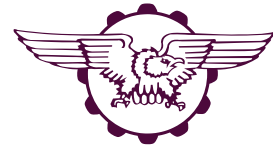


Industrial Dial Thermometer Polypropylene Case

P-3B



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Since 1971

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- All SS and heavy duty construction including, bulb, capillary and armour
- Liquid, mercury or gas actuation systems
- Chemical resistance polypropylene case
- Remote reading or directly local mounting
- Various thermal systems and bulbs for your applications

**DF
Series**



HAWK Industrial dial thermometers are designed to measure and indicate the temperature of a specific applications and conditions which are available in three actuation fills including liquid, mercury and gas. The dial thermometer can either be a directly local reading at the point of measurement or a remote reading by using a desired length of capillary tube. Model DFL and DFB are remote designs. Model DFE is a direct mounted type with adjust angle. Model DFR is a rigid thermometer for direct local mounting. HAWK Supplies a wide selection of the available temperature ranges from -50°C to 650°C or equivalent in °F.

Typical Application

- Petrochemical, oil and gas processing
- Medical and pharmaceutical industries
- Power generating stations
- Food and beverage processing
- Offshore oil platforms
- Pulp and paper mills
- Dairy processing
- Waste water treatment
- Industrial OEM equipments
- Marine industries
- Military

Specifications

Operating:

The temperature of the case should not be allowed to be exposed to continuous temperature in excess of 200°F (95°C). Stem and bulb should not be contact with sustained process temperature exceeding 50% over-ranger or 800°F (425°C).

Immersion:

For getting the correct temperature readings, the stem of all models in all ranges must be immersed 2" deep in liquid, and 4" deep in gas except for 0/50°C (32/122°F) which require 3" deep in liquid, and 4" deep in gas.

Thermowell:

Use of a thermowell is recommended when stem or bulb would be exposed to pressure, corrosive fluid or high velocity media. Use of a thermowell permits calibration check without interrupting or shutting the process, connections, materials and sizes. Please refer to HAWK Thermowell data sheets for detailed information.

Size:

4 1/2"(115mm)

Case&Ring:

Polypropylene with fiberglass case & ring.

Mounting:

DFL...back flange (surface, bottom)
DFB...back flange (surface, back)
DFR...rigid (stem, local)
DFE...adjust-Angle (stem, local)

Weatherproof:

NEMA 3 or IP54 enclosure.

Window:

Plain glass-standard
Tempered safety glass, polycarbonate or laminated safety glass-optional

Dial Face:

Aluminum, white background with black graduations and figures.

Pointer:

Anodized aluminum with black finish.

Scale:

°C, °F (single or dual scale)

Accuracy:

±1.0% of span (Grade A to ASME B40.3)

Capillary and Armor:

304SS capillary and armor
(316SS on request)

Connection Style:

-Fixed Rigid Male/Female
-Sliding Compression Male/Female
-Union Rotatable Male/Nut Female
-Swivel nut Male/Female Rotatable
-Plain

Connection Size:

1/2", 3/8", 1/4"NPT standard, JIS, DIN, M14*1.0, M20*1.5 and others available

Thermal Bulb:

304 Stainless Steel, 10mm diameter-Standard, 3/8" or others dia available.

Bulb Length:

2 1/2", 4", 6", 9", 12", 15", 18", 24" standard lengths, available in stem lengths up to 72" long.

Sensing Element:

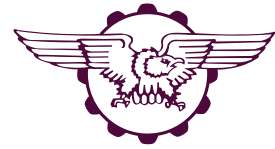
Bourdon Tube

External Adjustment:

Micro-Adjustable Pointer on request

Industrial Dial Thermometer Polypropylene Case

P-3B



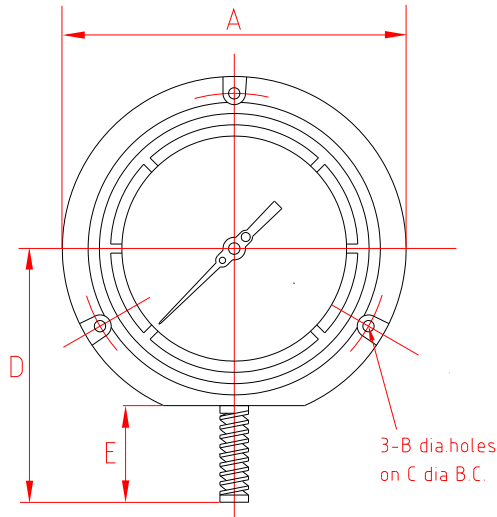
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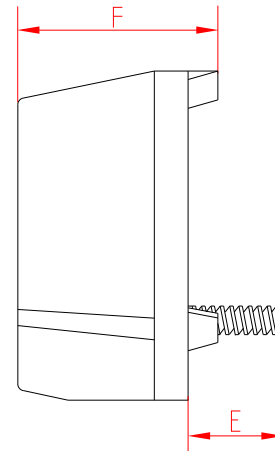
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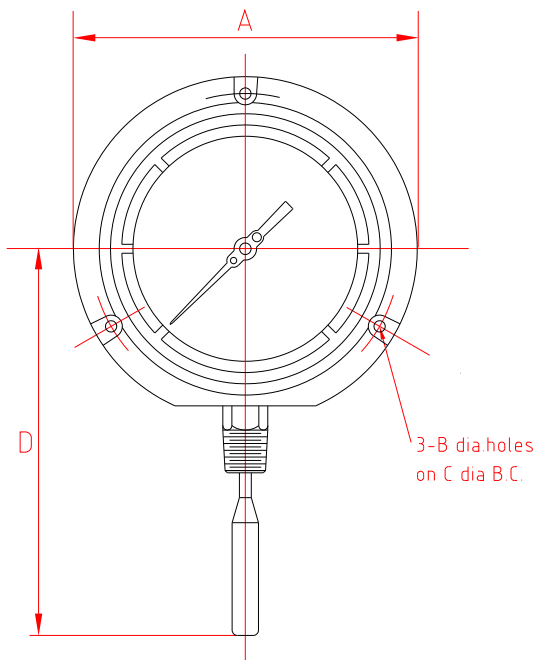
Dimensions



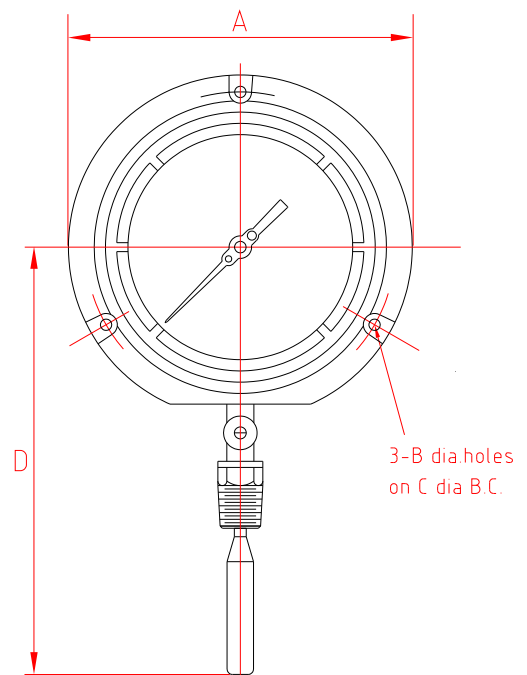
Model DFL



Model DFB



Model DFR



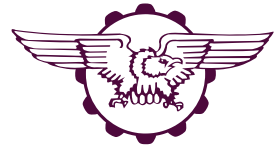
Model DFE

Dimensions, in.(mm)

Dial Size	A	B	C	D	E	F
4 1/2"(115mm)	5.813" (148mm)	0.197" (5mm)	5.375" (137mm)	2.632" (67mm)	0.118" (3mm)	2.283" (58mm)

Industrial Dial Thermometer Polypropylene Case

P-3B



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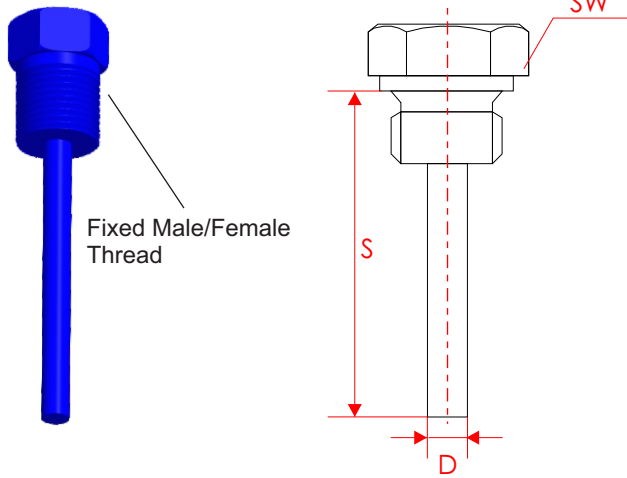
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Popular Connection

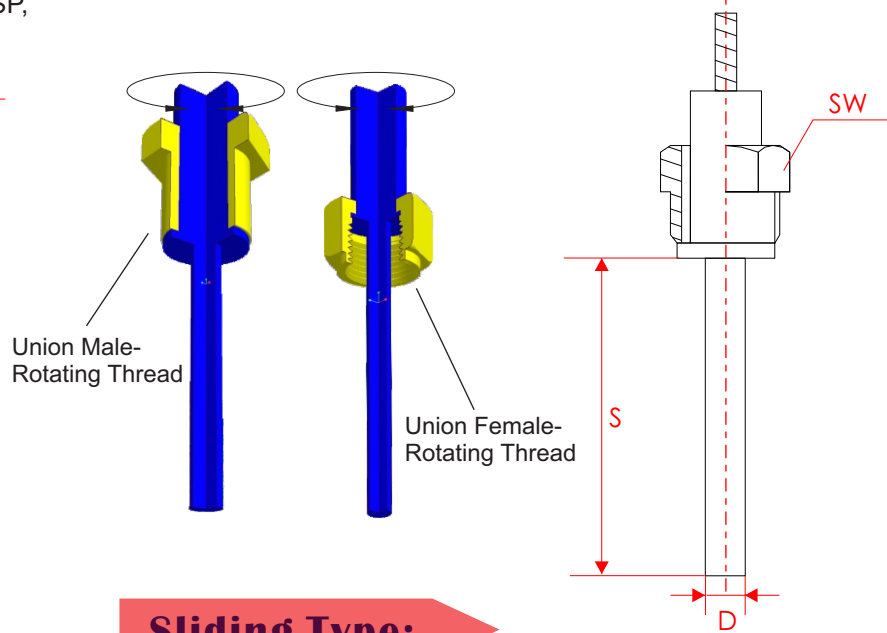
Fixed/Rigid Type:

The fixed/rigid type is the most common connection. This threaded type connection is directly attached to the process by means of a male or female NPT, BSP, BSPT or other threads.



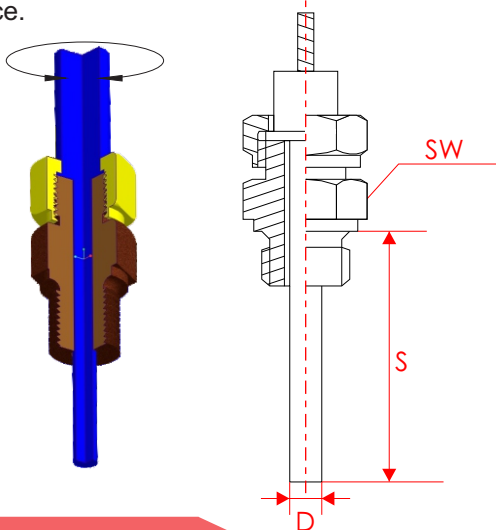
Union Type:

The Union type allows to tighten the rotating thread to fix the process connecting and turn the position of gauge face.



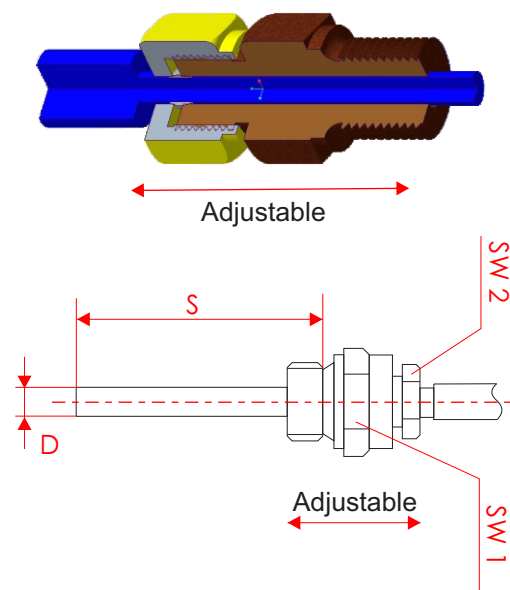
Swivel Nut:

The swivel connector is a double male adapter. It allows you to move around to turn the position of the gauge face.



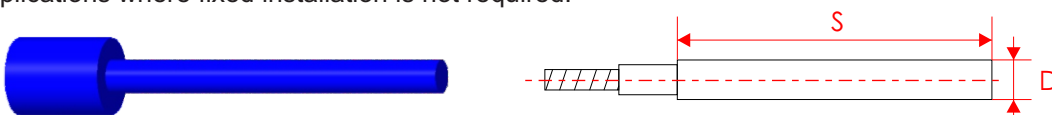
Sliding Type:

The sliding type allows to adjust the variable inserted length of bulb for best performance.



Plain Type:

The plain bulbs are suitable for open tank applications without any pressure or combine with thermowell for the applications where fixed installation is not required.



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P-3B



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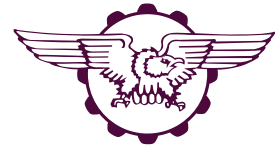
Temperature Range

- The other scales and ranges (DIN) are available in request.
- Not all listed ranges and scales are in stock, consult your distributors for available.

Temperature Ranges					
SINGLE SCALE				DUAL SCALE	
°C		°F		°C & °F	
Code	Range	Code	Range	Code	Range
C3A	-30/30	F7A	-40/70	D3A	-30/30
C4A	-20/40	F10	0/100	D4A	-20/40
C4C	-80/40	F10A	-100/100	D4C	-80/40
C5	0/50	F12A	-20/120	D5	0/50
C5A	-50/50	F12C	-40/120	D5A	-50/50
C5E	-30/50	F12D	-80/120	D5E	-30/50
C6	0/60	F12G	25/125	D6	0/60
C6B	-20/60	F14	0/140	D6B	-20/60
C7A	-40/70	F15	0/150	D7A	-40/70
C7B	-70/70	F15A	-70/150	D7B	-70/70
C7C	-10/70	F16A	-40/160	D7C	-10/70
C8	0/80	F16B	20/160	D8	0/80
C8C	-40/80	F18B	-40/180	D8C	-40/80
C10	0/100	F20	0/200	D10	0/100
C10A	-50/100	F20B	-320/200	D10A	-50/100
C10C	-200/100	F20C	-100/200	D10C	-200/100
C11A	-10/110	F22	0/220	D11A	-10/110
C11B	-10/115	F24A	20/240	D11B	-10/115
C12	0/120	F25	0/250	D12	0/120
C12A	-20/120	F30	0/300	D12A	-20/120
C12C	-60/120	F30A	-50/300	D12C	-60/120
C15	0/150	F30C	50/300	D15	0/150
C15B	50/150	F30D	200/300	D15B	50/150
C15C	10/150	F40A	50/400	D15C	10/150
C16	0/160	F50	0/500	D16	0/160
C16A	-40/160	F50A	50/500	D16A	-40/160
C20	0/200	F55A	50/550	D20	0/200
C20A	-50/200	F60	0/600	D20A	-50/200
C22A	-20/220	F75A	50/750	D22A	-20/220
C22B	-80/220	F75C	150/750	D22B	-80/220
C25	0/250	F80A	100/800	D25	0/250
C30	0/300	F100A	200/1000	D30	0/300
C40	0/400	F120	0/1200	D40	0/400
C40A	50/400	F120A	400/1200	D40A	50/400
C45	0/450			D45	0/450
C50	0/500			D50	0/500
C50A	100/500			D50A	100/500
C55A	100/550			D55A	100/550
C65B	-200/650			D65B	-200/650

Industrial Dial Thermometer Polypropylene Case

P-3B



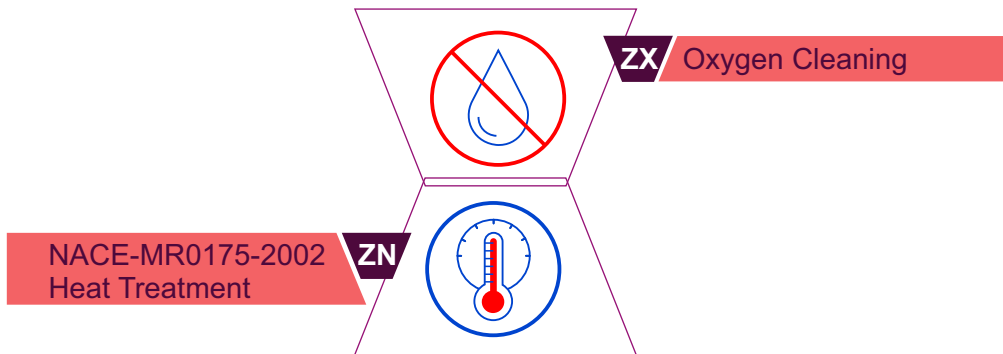
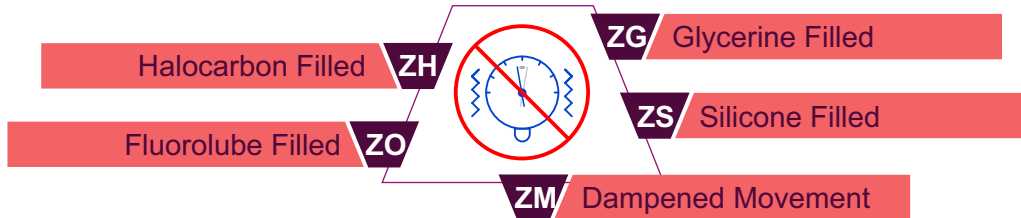
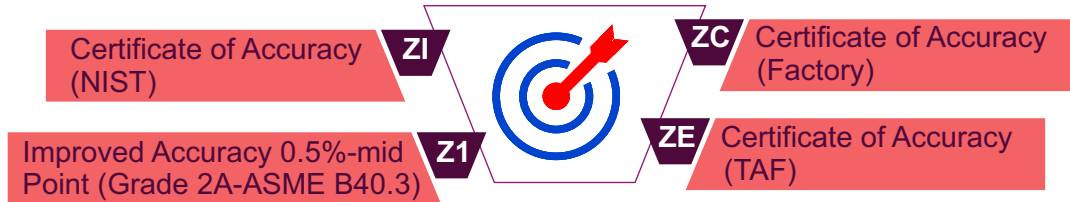
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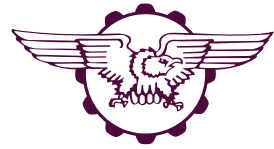


Option



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P-3B



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Option

PFA Lining Stem **TC**



316SS Stem **TB**



Pointed Stem **TA**



TE Titanium Coating Stem

TD PTFE Coating Stem



ZW Electrical Alarm Contact



Red Pointer **OA**



ZY Stainless Steel Tag Plate



ZJ Max/Min Registering Pointer



Anti Parallax with Gray Background Dial **TS**



Gray Background Dial **TQ**

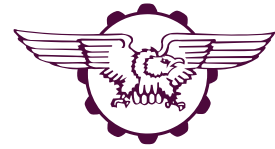


TR Anti Parallax Dial



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P-3B



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Thermowell

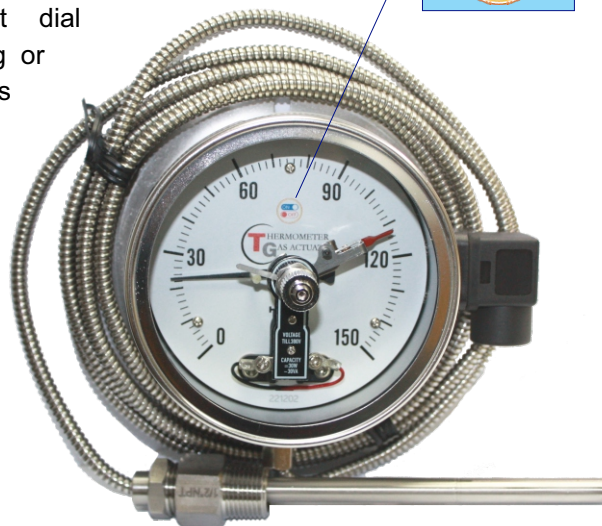
Model T	Threaded Configuration	Model F	Flanged Configuration	Model S	Sanitary Configuration
Model W	Weld-In Configuration	Model K	Socket Weld Configuration	Model V	Van Stone Configuration

Electrical Warning Contact

Switch function
On/Off for your system



HAWK electrical warning contact dial thermometer is designed for opening or closing electric and pneumatic circuits in relation to the position of the pointer on the thermometer. The contact can be set at any position through a removable knob to make the unit virtually tamper proof. The contacts are available on the 3", 4", 4 1/2" and 6" HAWK Bourdon tube dial thermometer. Contacts are usually used to activate alarms and relays.



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Order Information

Example	Type	Actuation	Dial Size	Process Connection	Stem Diameter	Stem Length	Capillary Length	Range	Option
P-3B-DF	L	G	45	M 2	008	2C5	04F	C15	XX

L-Back Flange, Surface Mount, Bottom Connection
B-Back Flange, Surface Mount, Back Connection
R-Rigid, Stem local Mount, Bottom Connection
E-Adjust-Angle, Stem local Mount, Bottom Connection

L-Liquid **M**-Mercury **G**-Gas

45-4 1/2" (115mm)

M-Fixed Rigid Male **X**-Swivel Nut Male Turnable
F-Fixed Rigid Female **Z**-Swivel Nut Female Turnable
U-Union Turnable Male **T**-Sliding Compression Male
K-Union Nut Female **Y**-Sliding Compression Female

0P-Plain
0L-Other

1-1"NPT	5-3/4"NPT	2-1/2"NPT	3-3/8"NPT	4-1/4"NPT
U-1"PT(R)	T-3/4"PT(R)	A-1/2"PT(R)	G-3/8"PT(R)	B-1/4"PT(R)
I-1"PF(G)	Q-3/4"PF(G)	D-1/2"PF(G)	H-3/8"PF(G)	E-1/4"PF(G)
J-M20*1.5	K-M14*1.0			

C25 -1/4"	C32 -5/16"	C38 -3/8"	006 -6mm	008 -8mm
010 -10mm	012 -12mm	013 -13mm	016 -16mm

2C5 -2 1/2"	04C -4"	06C -6"	09C -9"	12C -12"	16C -16"	24C -24"
075 -75mm	100 -100mm	150 -150mm	200 -200mm	250 -250mm	...and so on	

2F5 -2 1/2 Feet	04F -4 Feet	06F -6 Feet	09F -9 Feet	12F -12 Feet	15F -15 Feet	
18F -18 Feet	24F -24 Feet	01M -1m	03M -3m	05M -5m	10M -10m

Please refer to the temperature range table and write down the code you need.

Celsius		Fahrenheit	
ZP -Polycarbonate Lens	ZL -Laminated Safety Glass Lens	ZT -Tempered Safety Glass Lens	ZW -Electrical Alarm Contact
TR -Anti-Parallax Dial	TQ -Gray Background Dial	TS -Anti-Parallax with Gray Background Dial	

Please refer to the option code and write down the code you need.

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P-3B



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Limited Warranty and Liability

HAWK GAUGE CO.,LTD warrants all its mechanical instruments to be free from defects in materials and workmanship. HAWK agrees to repair or replace any pressure gauges if returned to our factory, transportation charges prepaid, and after which examination reveals is to be defective due to faculty workmanship or material. This warrant should not apply to subject to the following terms and conditions.

- A. The product has not been subjected to misuse, neglect, abuse , accident, incorrect mounting, improper use or misapplication such as negligence, accident, vandalism, shock or vibration.
- B. The performance of any system of which HAWK's products are a component part.
- C. The product has not been exposed to any other service, range or environment of greater severity than that for which the products were designed.
- D. The product has not been altered or repaired by anyone except HAWK GAUGE or its authorized service agencies.
- E. The serial number or date code has not been removed, defaced or changed.
- F. The actual pressure&temperature occurring exceed the values specified for HAWK Process gauge.

Unless otherwise specified in a manual or warranty card, or agree to in a writing signed by HAWK GAUGE office, HAWK Process gauge products shall be warranted for two years from the date of sale.

This warranty is in lieu of all other warranties expressed or implied, and of all obligations or liabilities on its part for damages including but not limited to consequential damages, following the use of misuse of instruments sold by it. No agent is authorized to assume for it any liability except as set forth above.

Note

HAWK GAUGE CO.,LTD reserves the right to make product improvements and change its specifications at any time stated throughout this brochure without notification. Please contact the factory on all critical dimensions and specifications for verification.

HAWK GAUGE is not expert in the customer's technical field and therefore doesn't warrant suitability of it's product for the application selected by customer.



Data Sheet No: MKDP3BDFA2-E