

Product Catalogue

Pressure & Temperature Gauges



WATTS[®]
INDUSTRIES

A Division of Watts Water Technologies Inc.

OUR EUROPEAN PRESENCE

- Headquarters
- Manufacturing and sales
- Manufacturing
- Sales



WATTS WATER TECHNOLOGIES

Watts Water Technologies is on the global market with several companies, each with their own history and product line. Within their diversity the companies of the Watts Water Technologies Group share the object of an intense technological development. Each product, designed represents an optimum example of synergy between technology, innovation and protection of the environment.



Watts Water Technologies family with operations in North America, Europe and Asia designs, manufactures and sells an extensive line of flow control products for the water quality, residential plumbing & heating, commercial and OEM markets.

For years, Watts Water Technology is quoted at the New York Stock Exchange (NYSE) with symbol WTS performing a continuous and consolidated growth.




Watts Water Technologies, established in 1874 in New England as regulation valves manufacturer for the growing textile industry, has offered, in the last Century, a wide range of high quality and technically innovative products for industrial applications.



In 1987 **Watts Water Technologies** moved the first step in Europe, beginning an ambitious acquisition program, addressed to integrate companies with a strong technical know-how and with a consolidated customers support under the European company name **Watts Industries**. All European subsidiaries offer a certified quality system both for local and international markets.

Assembling department

Watts Instrumentation is a subsidiary company of the Watts Industries Group, with experience and skills in design and manufacturing of pressure and temperature gauges dating back more than 30 years .

Watts Instrumentation, with the brands of WATTS and  is now a world leading producer in the gauge business. The range covers all the needs for industrial pressure and temperature measurement, from the simplest to the more sophisticated needs. HVAC, pneumatic, hydraulic and virtually all industries are taking daily benefit from the use of our gauges. The commercial subsidiaries of the Group, present in all continents, are ensuring distribution and support throughout the world.

Watts Industries can provide a wealth of knowledge in instrumentation design, a first class standard product range and world-wide distribution network. In addition we can offer bespoke products made to your requirements.

Millions of our pressure and temperature gauges are already worldwide in use, manufactured to ISO 9001:2000 Quality Standards and special industry standards.

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All technical specifications given in this catalogue reflect state of engineering at the time of printing and are subject to modifications which may take place without prior notice.

Pressure gauges



FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



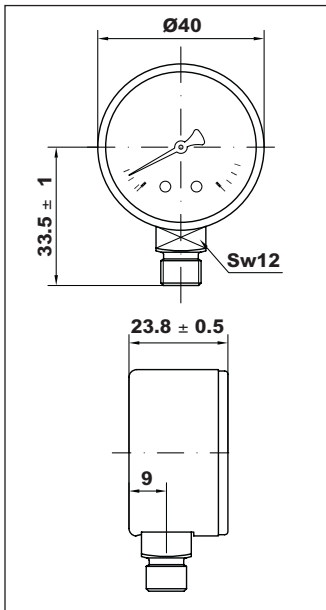
M1-ABS 40

EX F+R 200 DN40

Dry Plastic Case DN40 Bottom Entry

Materials

- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 12 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, $>$ 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.042 kg

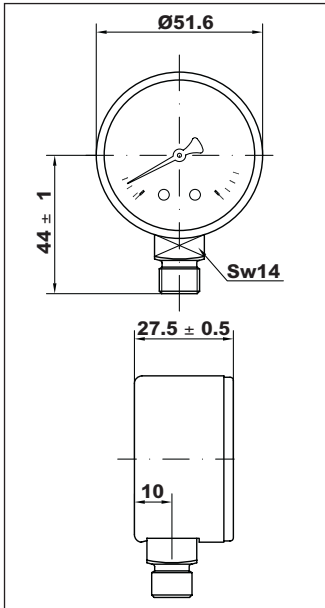
Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 40	PA1102DI00	0-1.6 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1203DI00	0-2.5 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1204DI00	0-4 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA120623	0-6 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1210DI00	0-10 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1216DI00	0-16 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1225DI00	0-25 bar/psi	G 1/8 B	240/240
M1-ABS 40		0-40 bar/psi	G 1/8 B	240/240
M1-ABS 40		0-60 bar/psi	G 1/8 B	240/240
M1-ABS 40		0-100 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1354DI00	0-160 bar/psi	G 1/8 B	240/240
M1-ABS 40		0-250 bar/psi	G 1/8 B	240/240
M1-ABS 40	PA1362DI00	0-315 bar/psi	G 1/8 B	240/240
M1-ABS 40		0-400 bar/psi	G 1/8 B	240/240

Options : see page 11

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-ABS 50
EX F+R 200 DN50
Dry Plastic Case DN50 Bottom Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	$\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.073 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 50	PA2101EJ00	-1/0 bar/inHg	G 1/4 B	100/100
M1-ABS 50	PA2101DJ00	0-1 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA210214	0-1.6 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA2203DJ00	0-2.5 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA2204DJ00	0-4 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA220624	0-6 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA2210DJ00	0-10 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA2216DJ00	0-16 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA222514	0-25 bar/psi	G 1/4 B	100/100
M1-ABS 50	PA224014	0-40 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-60 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-100 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-160 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-250 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-315 bar/psi	G 1/4 B	100/100
M1-ABS 50		0-400 bar/psi	G 1/4 B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



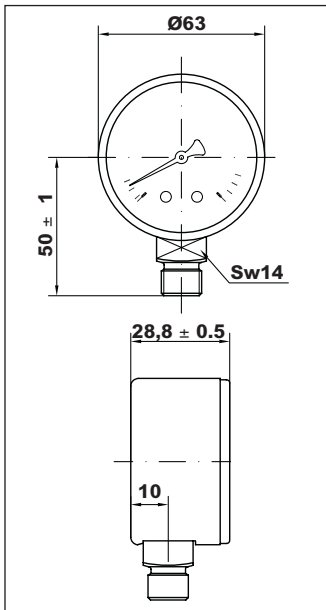
M1-ABS 63

EX F+R 200 DN63

Dry Plastic Case DN63 Bottom Entry

Materials

- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.089 kg

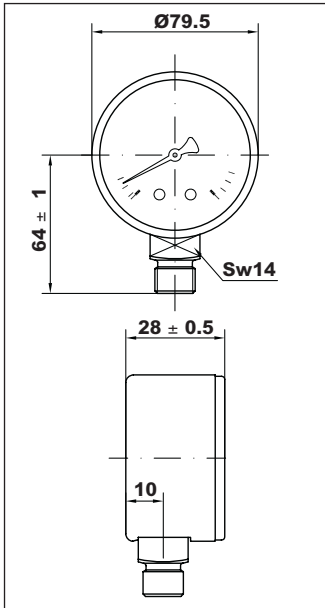
Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 63	PA3101DJ00	-1/0 bar/inHg	G 1/4 B	100/100
M1-ABS 63	PA3101DJ01	0-1 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3102DJ00	0-1.6 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3203DJ00	0-2.5 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3204DJ00	0-4 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3206DJ00	0-6 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3210DJ02	0-10 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3216DJ00	0-16 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3225DJ00	0-25 bar/psi	G 1/4 B	100/100
M1-ABS 63	PA3240DJ00	0-40 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-60 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-100 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-160 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-250 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-315 bar/psi	G 1/4 B	100/100
M1-ABS 63		0-400 bar/psi	G 1/4 B	100/100

Options : see page 11

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-ABS 80
EX F+R 200 DN80
Dry Plastic Case DN80 Bottom Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

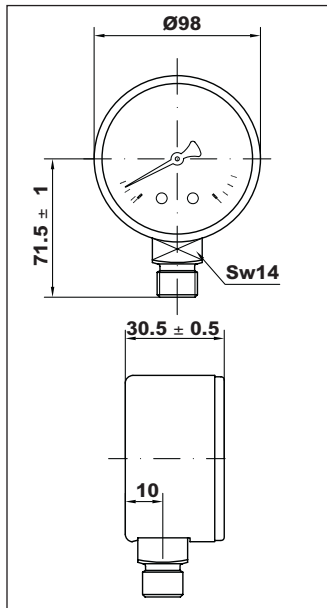
Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.128 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 80		-1/0 bar/inHg	G3/8B	1/50
M1-ABS 80		0-1 bar/psi	G3/8B	1/50
M1-ABS 80		0-1.6 bar/psi	G3/8B	1/50
M1-ABS 80		0-2.5 bar/psi	G3/8B	1/50
M1-ABS 80		0-4 bar/psi	G3/8B	1/50
M1-ABS 80		0-6 bar/psi	G3/8B	1/50
M1-ABS 80	PA4210DC00	0-10 bar/psi	G3/8B	1/50
M1-ABS 80		0-16 bar/psi	G3/8B	1/50
M1-ABS 80		0-25 bar/psi	G3/8B	1/50
M1-ABS 80		0-40 bar/psi	G3/8B	1/50
M1-ABS 80		0-60 bar/psi	G3/8B	1/50
M1-ABS 80		0-100 bar/psi	G3/8B	1/50
M1-ABS 80		0-160 bar/psi	G3/8B	1/50
M1-ABS 80		0-250 bar/psi	G3/8B	1/50
M1-ABS 80		0-315 bar/psi	G3/8B	1/50
M1-ABS 80		0-400 bar/psi	G3/8B	1/50

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M1-ABS 100****EX F+R 200 DN100****Dry Plastic Case DN100 Bottom Entry****Materials**

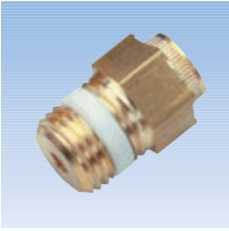
Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

**Technical Specifications**

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.175 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 100		-1/0 bar/inHg	G 1/2 B	1/30
M1-ABS 100	PA5101DL00	0-1 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-1.6 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-2.5 bar/psi	G 1/2 B	1/30
M1-ABS 100	PA5204DD01	0-4 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-6 bar/psi	G 1/2 B	1/30
M1-ABS 100	PA5210DD01	0-10 bar/psi	G 1/2 B	1/30
M1-ABS 100	PA5216BD01	0-16 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-25 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-40 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-60 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-100 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-160 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-250 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-315 bar/psi	G 1/2 B	1/30
M1-ABS 100		0-400 bar/psi	G 1/2 B	1/30

M1-ABS 40/50/63/80/100



Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only

M1-ABS 40/50/63/80/100

High temperature version c.l. 2.5 only

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer, (QA+I)

M1-ABS 40/50/63/80/100

Options subject to minimum quantity

Z - Restrictor 0.5mm

M1-ABS 50/63/80/100

Options subject to minimum quantity

MS - silicone movement for dampened pointer travel

M1-ABS 40/50/63/80/100

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



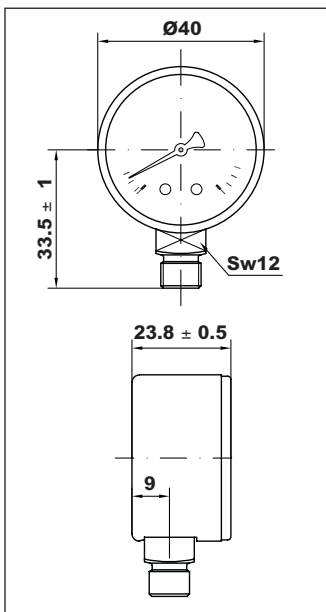
M1-ABS 40/R

EX F+R 201 DN40

Dry Plastic Case DN40 Bottom Entry

Materials

Case: Black plastic
 Window: Clear plastic with adjustable red mark pointer
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 12 mm flats
 Pressure element: Bourdon tube Cu-alloy soft soldered C-type
 Movement: Cu-alloy



Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 2.5, cl. 1.6 on request
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.042 kg

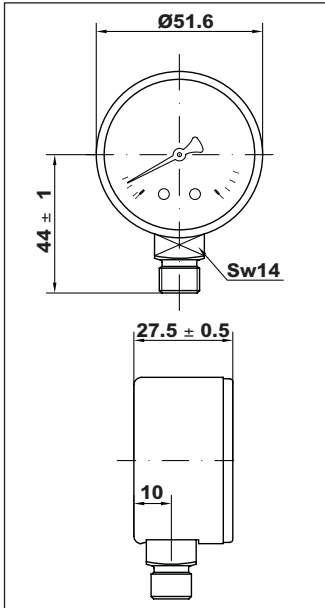
Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 40/R		0-2.5 bar	G1/8B	240/240
M1-ABS 40/R		0-4 bar	G1/8B	240/240
M1-ABS 40/R		0-6 bar	G1/8B	240/240
M1-ABS 40/R	PA1210BA00	0-10 bar	G1/8B	240/240
M1-ABS 40/R		0-16 bar	G1/8B	240/240
M1-ABS 40/R		0-25 bar	G1/8B	240/240
M1-ABS 40/R		0-40 bar	G1/8B	240/240

Options : see page 17

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-ABS 50/R
EX F+R 201 DN50
Dry Plastic Case DN50 Bottom Entry
Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.073 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 50/R		0-2.5 bar	G1/4B	100/100
M1-ABS 50/R	PA220401	0-4 bar	G1/4B	100/100
M1-ABS 50/R	PA220601	0-6 bar	G1/4B	100/100
M1-ABS 50/R	PA221001	0-10 bar	G1/4B	100/100
M1-ABS 50/R	PA221601	0-16 bar	G1/4B	100/100
M1-ABS 50/R	PA222501	0-25 bar	G1/4B	100/100
M1-ABS 50/R	PA2240BB00	0-40 bar	G1/4B	100/100

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



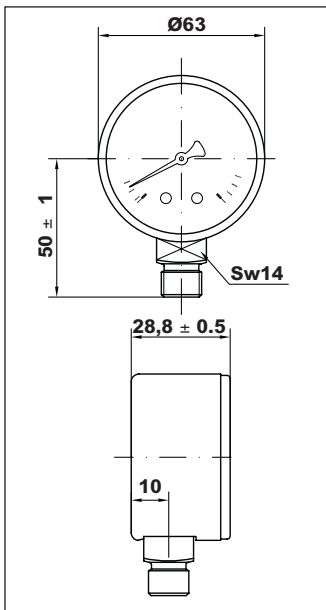
M1-ABS 63/R

EX F+R 201 DN63

Dry Plastic Case DN63 Bottom Entry

Materials

- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
cl. 2.5, cl. 1.6 on request
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.089 kg

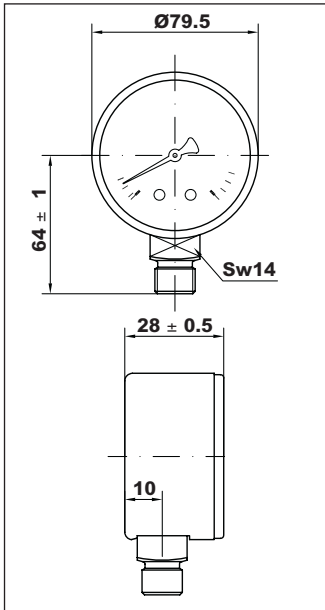
Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 63/R		0-2.5 bar	G1/4B	100/100
M1-ABS 63/R		0-4 bar	G1/4B	100/100
M1-ABS 63/R		0-6 bar	G1/4B	100/100
M1-ABS 63/R		0-10 bar	G1/4B	100/100
M1-ABS 63/R		0-16 bar	G1/4B	100/100
M1-ABS 63/R	PA322501	0-25 bar	G1/4B	100/100
M1-ABS 63/R	PA324001	0-40 bar	G1/4B	100/100

Options : see page 17

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-ABS 80/R
EX F+R 201 DN80
Dry Plastic Case DN80 Bottom Entry
Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

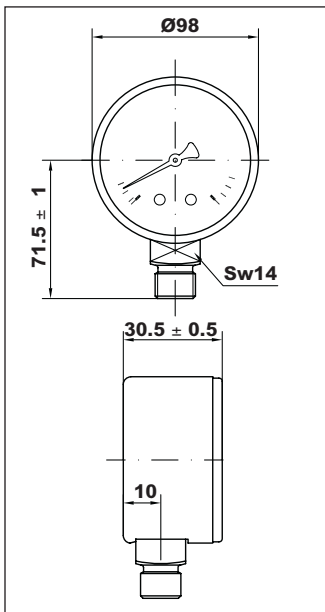
Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.128 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 80/R		0-2.5 bar	G3/8B	1/50
M1-ABS 80/R		0-4 bar	G3/8B	1/50
M1-ABS 80/R		0-6 bar	G3/8B	1/50
M1-ABS 80/R		0-10 bar	G3/8B	1/50
M1-ABS 80/R		0-16 bar	G3/8B	1/50
M1-ABS 80/R	PA4225BC00	0-25 bar	G3/8B	1/50
M1-ABS 80/R	PA4240BC00	0-40 bar	G3/8B	1/50

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M1-ABS 100/R****EX F+R 201 DN100****Dry Plastic Case DN100 Bottom Entry****Materials**

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

**Technical Specifications**

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.175 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 100/R	PA5203BD00	0-2.5 bar	G1/2B	1/50
M1-ABS 100/R	PA5204BD00	0-4 bar	G1/2B	1/50
M1-ABS 100/R	PA5206BD00	0-6 bar	G1/2B	1/50
M1-ABS 100/R	PA5210BD00	0-10 bar	G1/2B	1/50
M1-ABS 100/R	PA5216BD00	0-16 bar	G1/2B	1/50
M1-ABS 100/R	PA5225BD00	0-25 bar	G1/2B	1/50
M1-ABS 100/R	PA5240BD00	0-40 bar	G1/2B	1/50

M1-ABS 50/63/80/100/R



Options subject to minimum quantity

V - adjustable red mark pointer with green sector

M1-ABS 40/50/63/80/100/R



Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only

M1-ABS 40/50/63/80/100/R

High temperature version c.l. 2.5 only

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer, (QA+I)

M1-ABS 40/50/63/80/100/R

Options subject to minimum quantity

Z - Restrictor 0.5mm

M1-ABS 50/63/80/100/R

Options subject to minimum quantity

MS - silicone movement for dampened pointer travel

M1-ABS 40/50/63/80/100/R

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR EXPANSION VESSEL TESTING IN HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



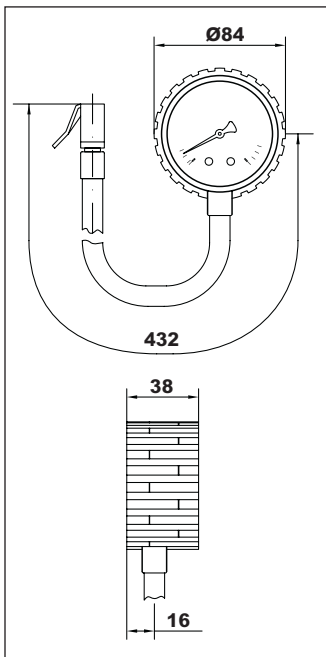
PV M1-ABS 63/QG

EX F+R 280 DN63

Dry Plastic Case DN63 Bottom Entry

Materials

Case:	Black plastic with black rubber cap
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Valve with rubber hose
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
	cl. 1.6
Accuracy class:	IP 31 per EN 60 529 / IEC 529
Degree of protection:	0.200 kg
Individual Weight:	

Type	Part No.	Pressure Range	Connection	Packaging
PV M1-ABS 63/QG	PV3112DC00	0-12 bar/psi	V40	50/50

Options : see below

OPTIONAL EXTRAS

280 PV M1-ABS 63/QG

Options subject to minimum order
Customized dials on request

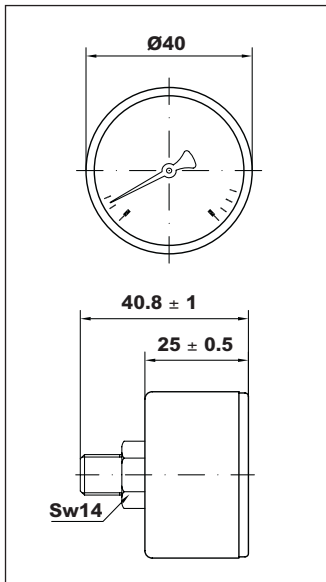
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 40/FR
EX F+R 100 DN40
Dry Plastic Case DN40 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.039 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 40/FR	190401001694	-1/0 bar	G1/8B	100/100
M3A-ABS 40/FR	001401001051	0-1 bar	G1/8B	100/100
M3A-ABS 40/FR	106401000190	0-1.6 bar	G1/8B	100/100
M3A-ABS 40/FR	205401000234	0-2.5 bar	G1/8B	100/100
M3A-ABS 40/FR	004401000274	0-4 bar	G1/8B	100/100
M3A-ABS 40/FR	006401000318	0-6 bar	G1/8B	100/100
M3A-ABS 40/FR	010401000386	0-10 bar	G1/8B	100/100
M3A-ABS 40/FR	016401000046	0-16 bar	G1/8B	100/100
M3A-ABS 40/FR	025401000428	0-25 bar	G1/8B	100/100

Higher pressure ranges : see M3A-ABS 40 on page 20

Options : see page 26

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

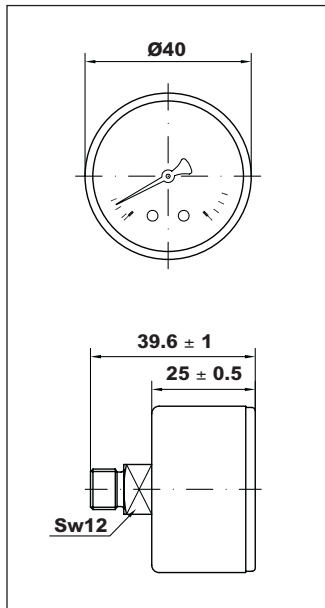


M3A-ABS 40

Dry Plastic Case DN40 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.048 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 40		0-40 bar/psi	G1/8B	240/240
M3A-ABS 40		0-60 bar/psi	G1/8B	240/240
M3A-ABS 40		0-100 bar/psi	G1/8B	240/240
M3A-ABS 40		0-160 bar/psi	G1/8B	240/240
M3A-ABS 40		0-250 bar/psi	G1/8B	240/240
M3A-ABS 40		0-315 bar/psi	G1/8B	240/240
M3A-ABS 40		0-400 bar/psi	G1/8B	240/240

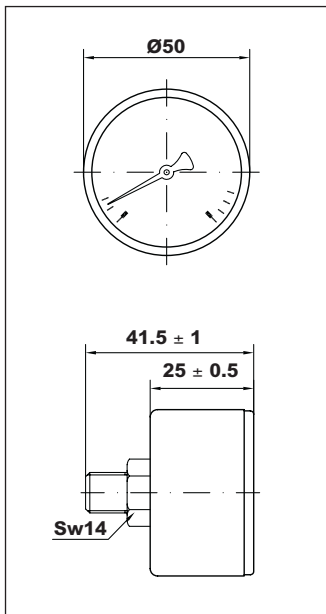
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 50/FR
EX F+R 100 DN50
Dry Plastic Case DN50 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.052 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50/FR	190501001599	-1/0 bar	G 1/4 B	100/100
M3A-ABS 50/FR	001501001541	0-1 bar	G 1/4 B	100/100
M3A-ABS 50/FR	106501000218	0-1.6 bar	G 1/4 B	100/100
M3A-ABS 50/FR	205501000062	0-2.5 bar	G 1/4 B	100/100
M3A-ABS 50/FR	004501000296	0-4 bar	G 1/4 B	100/100
M3A-ABS 50/FR	006501000152	0-6 bar	G 1/4 B	100/100
M3A-ABS 50/FR	010501000103	0-10 bar	G 1/4 B	100/100
M3A-ABS 50/FR	016501000068	0-16 bar	G 1/4 B	100/100
M3A-ABS 50/FR	025501000453	0-25 bar	G 1/4 B	100/100

Higher pressure ranges : see M3A-ABS 50 on page 22

Options : see page 26

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

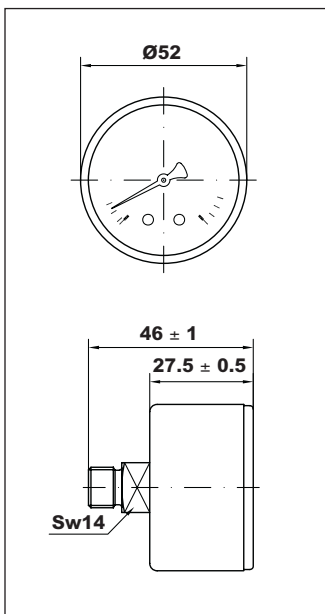


M3A-ABS 50

Dry Plastic Case DN50 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
	Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.086 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50	PB224014	0-40 bar/psi	G1/4B	100/100
M3A-ABS 50		0-60 bar/psi	G1/4B	100/100
M3A-ABS 50		0-100 bar/psi	G1/4B	100/100
M3A-ABS 50		0-160 bar/psi	G1/4B	100/100
M3A-ABS 50		0-250 bar/psi	G1/4B	100/100
M3A-ABS 50		0-315 bar/psi	G1/4B	100/100
M3A-ABS 50		0-400 bar/psi	G1/4B	100/100

Options : see page 26

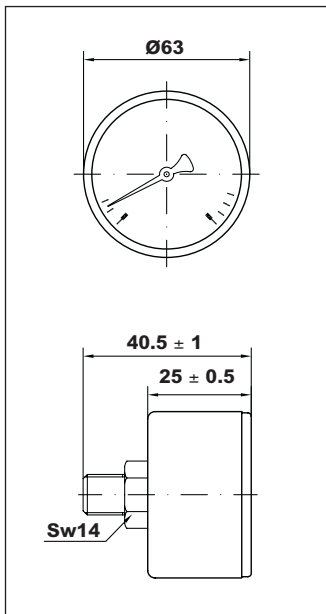
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 63/FR
EX F+R 100 DN63
Dry Plastic Case DN63 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.060 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63/FR		-1/0 bar	G 1/4 B	100/100
M3A-ABS 63/FR	001631001587	0-1 bar	G 1/4 B	100/100
M3A-ABS 63/FR	106631000219	0-1.6 bar	G 1/4 B	100/100
M3A-ABS 63/FR	205631000258	0-2.5 bar	G 1/4 B	100/100
M3A-ABS 63/FR	004631000109	0-4 bar	G 1/4 B	100/100
M3A-ABS 63/FR	006631000096	0-6 bar	G 1/4 B	100/100
M3A-ABS 63/FR	010631000002	0-10 bar	G 1/4 B	100/100
M3A-ABS 63/FR	016631000071	0-16 bar	G 1/4 B	100/100
M3A-ABS 63/FR	025631000104	0-25 bar	G 1/4 B	100/100

Higher pressure ranges : see M3A-ABS 63 on page 24

Options : see page 26

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

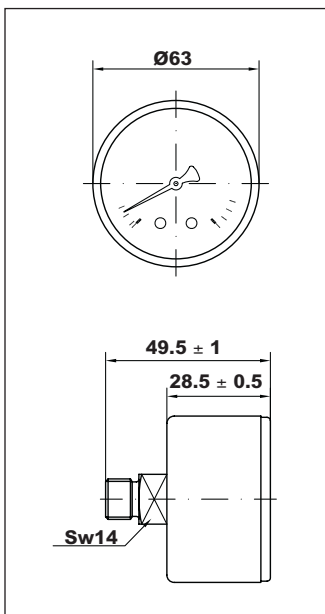


M3A-ABS 63

Dry Plastic Case DN63 Centre Back Entry

Materials

- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.094 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63	PB324014	0-40 bar/psi	G1/4B	100/100
M3A-ABS 63		0-60 bar/psi	G1/4B	100/100
M3A-ABS 63		0-100 bar/psi	G1/4B	100/100
M3A-ABS 63	PB335414	0-160 bar/psi	G1/4B	100/100
M3A-ABS 63	PB336014	0-250 bar/psi	G1/4B	100/100
M3A-ABS 63		0-315 bar/psi	G1/4B	100/100
M3A-ABS 63		0-400 bar/psi	G1/4B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS 80

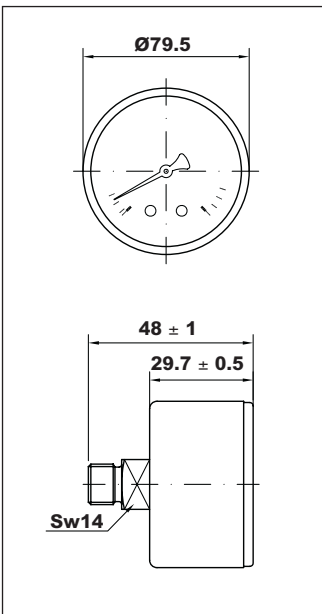
Dry Plastic Case DN80 Centre Back Entry

Materials

- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

Technical Specifications

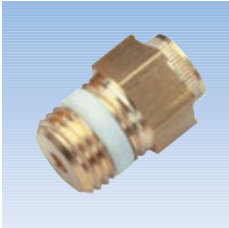
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.109 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 80		-1/0 bar	G3/8B	50/50
M3A-ABS 80		0-1 bar	G3/8B	50/50
M3A-ABS 80		0-1.6 bar	G3/8B	50/50
M3A-ABS 80		0-2.5 bar	G3/8B	50/50
M3A-ABS 80		0-4 bar	G3/8B	50/50
M3A-ABS 80		0-6 bar	G3/8B	50/50
M3A-ABS 80		0-10 bar	G3/8B	50/50
M3A-ABS 80		0-16 bar	G3/8B	50/50
M3A-ABS 80		0-25 bar	G3/8B	50/50
M3A-ABS 80		0-40 bar	G3/8B	50/50
M3A-ABS 80		0- 60 bar	G3/8B	50/50
M3A-ABS 80		0-100 bar	G3/8B	50/50
M3A-ABS 80		0-160 bar	G3/8B	50/50
M3A-ABS 80		0-250 bar	G3/8B	50/50
M3A-ABS 80		0-315 bar	G3/8B	50/50
M3A-ABS 80		0-400 bar	G3/8B	50/50

Options : see page 26

OPTIONAL EXTRAS

M3A-ABS 40/50/63/FR
M3A-ABS 40/50/63/80


Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only
M3A-ABS 40/50/63/80
High temperature version c.l. 2.5 only

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer, (QA+I)
M3A-ABS 40/50/63/FR

Options subject to minimum quantity

Z3 - Restrictor 0.35 mm
M3A-ABS 40/50/63/80

Options subject to minimum quantity

Z - Restrictor 0.5 mm
M3A-ABS 40/50/63/FR
M3A-ABS 50/63/80

Options subject to minimum quantity

MS - silicone movement for dampened pointer travel
M3A-ABS 40/50/63/FR
M3A-ABS 40/50/63/80

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

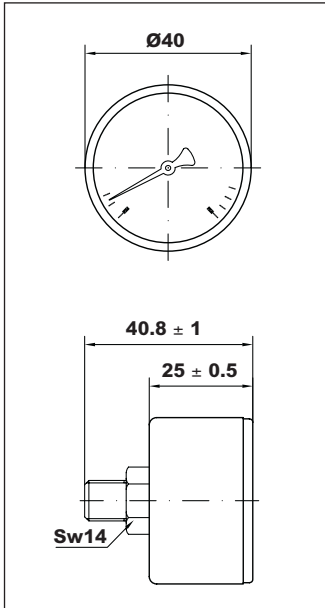
FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 40/FR/R
EX F+R 101 DN40
Dry Plastic Case DN40 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic with printed red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.039 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 40/FR/R		0-2.5 bar	G1/8B	100/100
M3A-ABS 40/FR/R	004401013720	0-4 bar	G1/8B	100/100
M3A-ABS 40/FR/R	006401013180	0-6 bar	G1/8B	100/100
M3A-ABS 40/FR/R		0-10 bar	G1/8B	100/100
M3A-ABS 40/FR/R	016401013353	0-16 bar	G1/8B	100/100
M3A-ABS 40/FR/R		0-25 bar	G1/8B	100/100

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS 50/FR/R

EX F+R 101 DN50

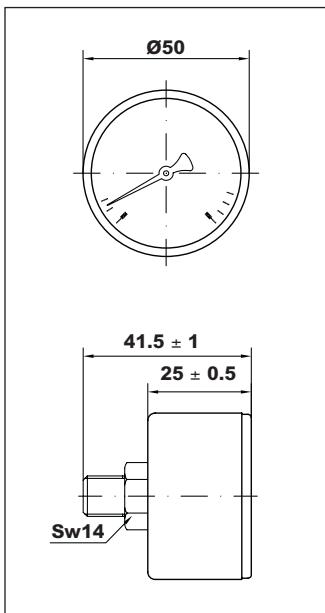
Dry Plastic Case DN50 Centre Back Entry

Materials

Case: Black plastic
 Window: Clear plastic with adjustable red mark pointer
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats
 Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
 Movement: Cu-alloy / Polyester combination

Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 2.5, cl. 1.6 on request
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.052 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50/FR/R		0-2.5 bar	G1/4B	100/100
M3A-ABS 50/FR/R		0-4 bar	G1/4B	100/100
M3A-ABS 50/FR/R	006501013187	0-6 bar	G1/4B	100/100
M3A-ABS 50/FR/R	010501013188	0-10 bar	G1/4B	100/100
M3A-ABS 50/FR/R	016501013171	0-16 bar	G1/4B	100/100
M3A-ABS 50/FR/R		0-25 bar	G1/4B	100/100

Higher pressure ranges : see M3A-ABS 50/R on page 29

Options : see page 32

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS 50/R

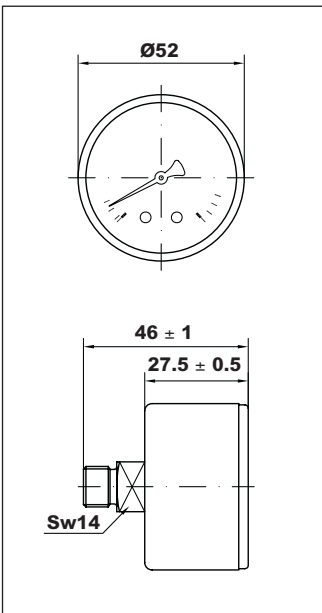
Dry Plastic Case DN50 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
	Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.086 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50/R		0-40 bar	G1/4B	100/100
M3A-ABS 50/R		0-60 bar	G1/4B	100/100
M3A-ABS 50/R		0-100 bar	G1/4B	100/100
M3A-ABS 50/R		0-160 bar	G1/4B	100/100
M3A-ABS 50/R		0-250 bar	G1/4B	100/100
M3A-ABS 50/R		0-315 bar	G1/4B	100/100
M3A-ABS 50/R		0-400 bar	G1/4B	100/100

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS 63/FR/R

EX F+R 101 DN63

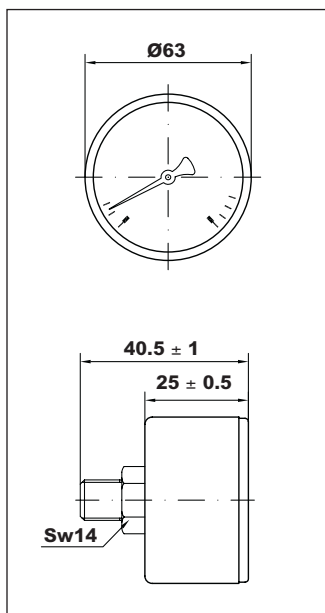
Dry Plastic Case DN63 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.060 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63/FR/R	205631013168	0-2.5 bar	G1/4B	100/100
M3A-ABS 63/FR/R	004631013273	0-4 bar	G1/4B	100/100
M3A-ABS 63/FR/R	006631016337	0-6 bar	G1/4B	100/100
M3A-ABS 63/FR/R	010631016336	0-10 bar	G1/4B	100/100
M3A-ABS 63/FR/R		0-16 bar	G1/4B	100/100
M3A-ABS 63/FR/R	025631013166	0-25 bar	G1/4B	100/100

Higher pressure ranges : see M3A-ABS 63/R on page 31

Options : see page 32

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS 63/R

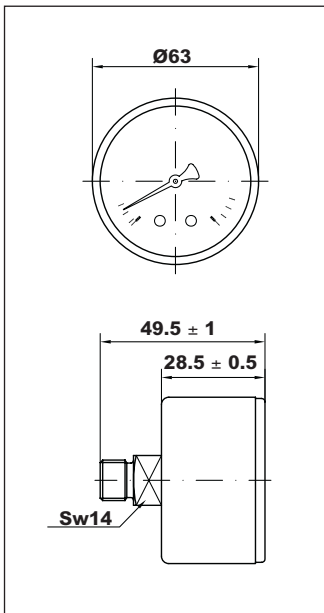
Dry Plastic Case DN63 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.094 kg

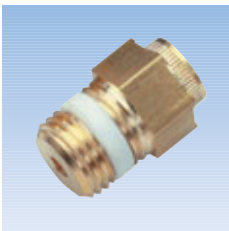


Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63/R		0-40 bar	G1/4B	100/100
M3A-ABS 63/R		0-60 bar	G1/4B	100/100
M3A-ABS 63/R		0-100 bar	G1/4B	100/100
M3A-ABS 63/R		0-160 bar	G1/4B	100/100
M3A-ABS 63/R		0-250 bar	G1/4B	100/100
M3A-ABS 63/R		0-315 bar	G1/4B	100/100
M3A-ABS 63/R		0-400 bar	G1/4B	100/100

OPTIONAL EXTRAS

M3A-ABS 50/63/FR/R
M3A-ABS 50/63/R


Options subject to minimum quantity

V - adjustable red mark pointer with green sector
M3A-ABS 40/50/63/FR/R
M3A-ABS 40/R


Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only
M3A-ABS 40/50/63/R
High temperature version c.l. 2.5 only

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer, (QA+I)
M3A-ABS 40/50/63/FR/R

Options subject to minimum quantity

Z3 - Restrictor 0.35 mm
M3A-ABS 50/63/R

Options subject to minimum quantity

Z - Restrictor 0.5 mm
M3A-ABS 40/50/63/FR/R
M3A-ABS 50/63/80/R

Options subject to minimum quantity

MS - silicone movement for dampened pointer travel
M3A-ABS 40/50/63/FR/R
M3A-ABS 40/50/63/R

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

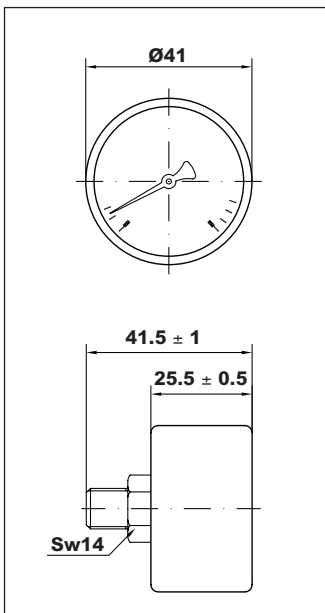
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 40/TP
EX F+R 400 DN40
Dry Plastic Case DN40 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Black plastic
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.032 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 40/TP		-1/0 bar	G1/8B	100/100
M3A-ABS 40/TP		0-1 bar	G1/8B	100/100
M3A-ABS 40/TP		0-1.6 bar	G1/8B	100/100
M3A-ABS 40/TP		0-2.5 bar	G1/8B	100/100
M3A-ABS 40/TP		0-4 bar	G1/8B	100/100
M3A-ABS 40/TP		0-6 bar	G1/8B	100/100
M3A-ABS 40/TP	010404005561	0-10 bar	G1/8B	100/100
M3A-ABS 40/TP	016404004490	0-16 bar	G1/8B	100/100
M3A-ABS 40/TP		0-25 bar	G1/8B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



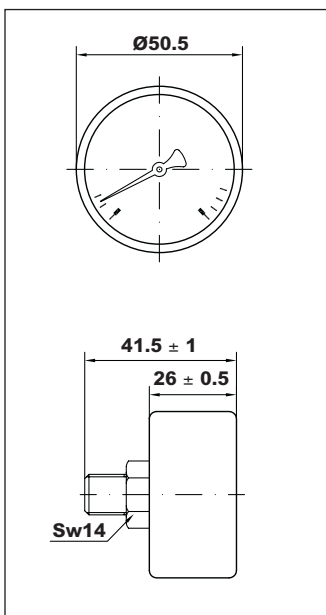
M3A-ABS 50/TP

EX F+R 400 DN50

Dry Plastic Case DN50 Centre Back Entry

Materials

Case: Black plastic
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Black plastic
 Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
 Movement: Cu-alloy / Polyester combination



Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 2.5, cl. 1.6 on request
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.046 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50/TP		-1/0 bar	G1/4B	100/100
M3A-ABS 50/TP		0-1 bar	G1/4B	100/100
M3A-ABS 50/TP		0-1.6 bar	G1/4B	100/100
M3A-ABS 50/TP		0-2.5 bar	G1/4B	100/100
M3A-ABS 50/TP		0-4 bar	G1/4B	100/100
M3A-ABS 50/TP		0-6 bar	G1/4B	100/100
M3A-ABS 50/TP		0-10 bar	G1/4B	100/100
M3A-ABS 50/TP		0-16 bar	G1/4B	100/100
M3A-ABS 50/TP		0-25 bar	G1/4B	100/100

Options : see page 35

M3A-ABS 40/TP

Options subject to minimum quantity

R - printed red mark pointer

M3A-ABS 50/TP

Options subject to minimum quantity

R - adjustable red mark pointer

M3A-ABS 50/TP

Options subject to minimum quantity

V - adjustable red mark pointer with green sector

M3A-ABS 40/50/TP

Options subject to minimum quantity

Z3 - Restrictor 0.35 mm

M3A-ABS 40/50/TP

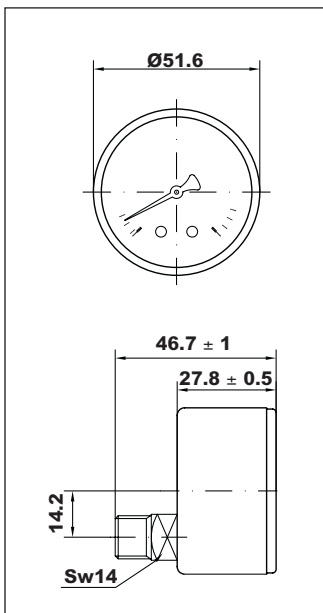
Options subject to minimum quantity

Customized dials, other scale ranges on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3A-ABS 50/ECC****EX F+R 300 DN50****Dry Plastic Case DN50 Lower Back Entry****Materials**

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy

**Technical Specifications**

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.086 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 50/ECC		0-4 bar	G1/4B	100/100
M3A-ABS 50/ECC		0-6 bar	G1/4B	100/100
M3A-ABS 50/ECC	PB2E10BB03	0-10 bar	G1/4B	100/100
M3A-ABS 50/ECC		0-16 bar	G1/4B	100/100

M3A-ABS 50/ECC

Options subject to minimum quantity

R - adjustable red mark pointer

M3A-ABS 50/ECC

Options subject to minimum quantity

V - adjustable red mark pointer with green sector

M3A-ABS 50/ECC

Options subject to minimum quantity

PTFE - Sealing ring on G1/4B only

M3A-ABS 50/ECC

Options subject to minimum quantity

Z3 - Restrictor 0.5mm

M3A-ABS 50/ECC

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-ABS CLIPS 40

EX F+R 109 DN40

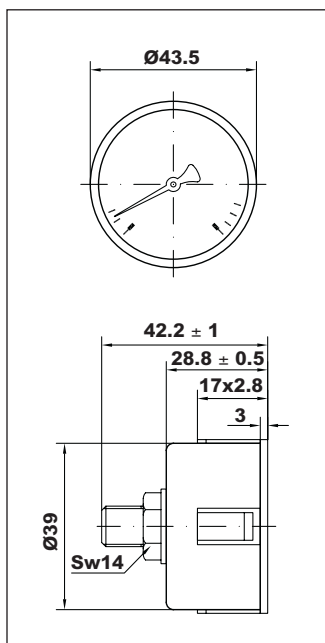
Dry Plastic Case with Clips DN40 Centre Back Entry

Materials

Case with clips:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 30 per EN 60 529 / IEC 529
Individual Weight:	0.042 kg

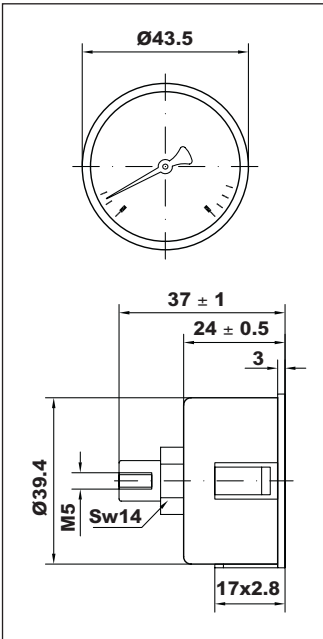


Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS CLIPS 40	190401094236	-1/0 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-1 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-1.6 bar	G1/8B	50/50
M3A-ABS CLIPS 40	205401094228	0-2.5 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-4 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-6 bar	G1/8B	50/50
M3A-ABS CLIPS 40	010401094242	0-10 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-16 bar	G1/8B	50/50
M3A-ABS CLIPS 40		0-25 bar	G1/8B	50/50

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS CLIPS 40/M5
EX F+R 409 DN40
**Dry Plastic Case with Clips DN40
Plastic Centre Back Entry for Capillary**
Materials

Case with clips:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, M5 female for fixing capillary only
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination


Technical Specifications

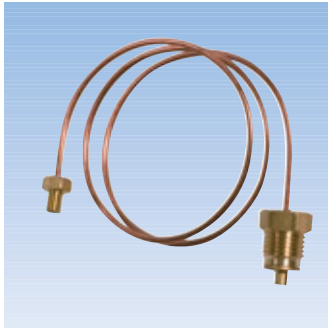
Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 30 per EN 60 529 / IEC 529
Individual Weight:	0.030 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS CLIPS 40/M5		-1/0 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-1 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-1.6 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-2.5 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-4 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-6 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-10 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-16 bar	M5 female	50/50
M3A-ABS CLIPS 40/M5		0-25 bar	M5 female	50/50

Capillary : see page 40

Options : see page 41

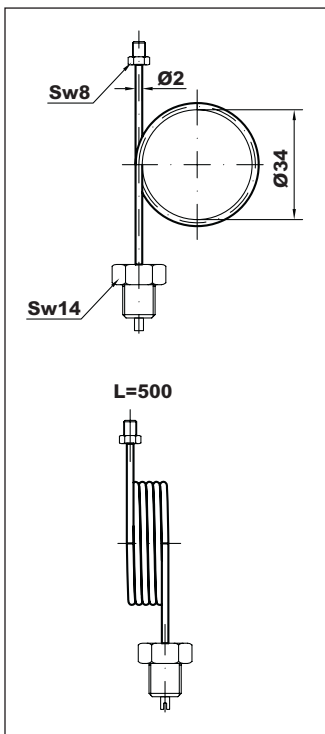
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



COPPER CAPILLARY

EX F+R 999

for M3A-ABS CLIPS 40/M5



Type	Part No.	Length	Connection	Packaging
COPPER CAPILLARY	999999994115	500mm	G1/4B rotary	50/50

Options : see page 41

M3A-ABS CLIPS 40

Options subject to minimum quantity

Z3 - Restrictor 0.35mm

M3A-ABS CLIPS 40
M3A-ABS CLIPS 40/M5

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



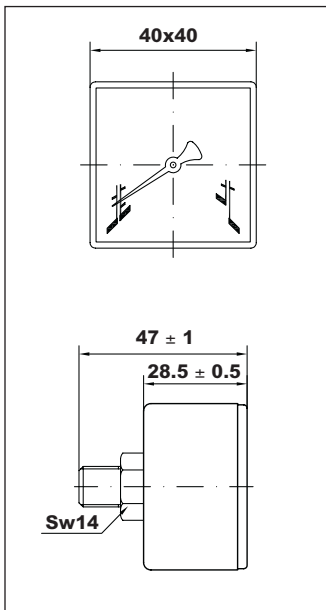
M3A-ABS QUA 40

EX F+R 107 DN40x40

Dry Plastic Square Case DN40x40 Centre Back Entry

Materials

Case: Black plastic
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats
 Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
 Movement: Cu-alloy / Polyester combination



Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 2.5, cl. 1.6 on request
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.054 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS QUA 40	190401072187	-1/0 bar	G1/8B	100/100
M3A-ABS QUA 40	001401072189	0-1 bar	G1/8B	100/100
M3A-ABS QUA 40	106401072250	0-1.6 bar	G1/8B	100/100
M3A-ABS QUA 40		0-2.5 bar	G1/8B	100/100
M3A-ABS QUA 40		0-4 bar	G1/8B	100/100
M3A-ABS QUA 40	006401072180	0-6 bar	G1/8B	100/100
M3A-ABS QUA 40	010401072181	0-10 bar	G1/8B	100/100
M3A-ABS QUA 40	016401073752	0-16 bar	G1/8B	100/100
M3A-ABS QUA 40	025401072188	0-25 bar	G1/8B	100/100

Options : see page 46

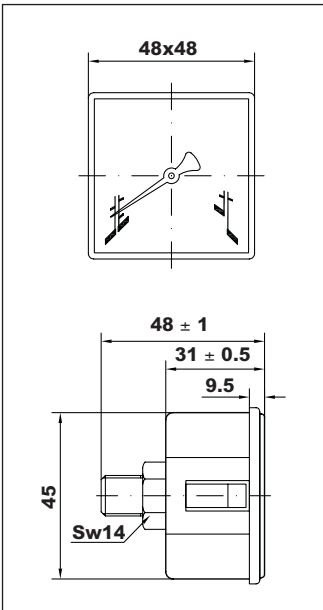
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS QUA 48/CLIPS
EX F+R 107 DN48x48
Dry Plastic Square Case with Clips DN48x48 Centre Back Entry
Materials

Case with clips:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 30 per EN 60 529 / IEC 529
Individual Weight:	0.060 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS QUA 48/CLIPS	190481071545	-1/0 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-1 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-1.6 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-2.5 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-4 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS	006481074756	0-6 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS	010481071600	0-10 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-16 bar	G1/4B	100/100
M3A-ABS QUA 48/CLIPS		0-25 bar	G1/4B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

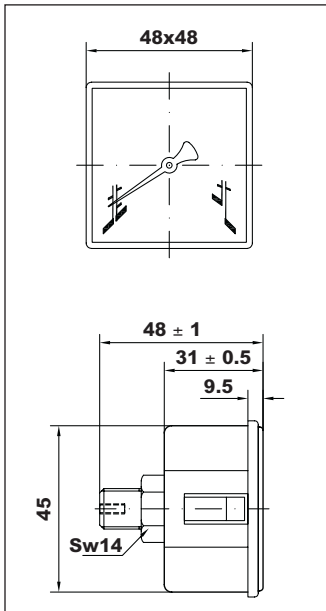


M3A-ABS QUA 48/M5 CLIPS EX F+R 407 DN48x48

Dry Plastic Square Case with Clips DN48x48 M5 Centre Back Entry for Capillary

Materials

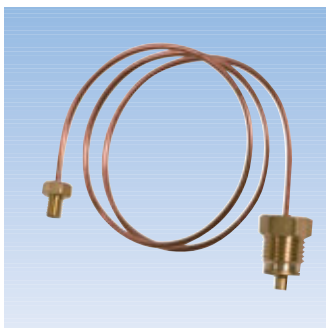
- Case with clips: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Copper alloy, M 5 female for fixing capillary only
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
- Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 30 per EN 60 529 / IEC 529
- Individual Weight: 0.052 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS QUA 48/M5 CLIPS		-1/0 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-1 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-1.6 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-2.5 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-4 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-6 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-10 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-16 bar	M5 female	100/100
M3A-ABS QUA 48/M5 CLIPS		0-25 bar	M5 female	100/100



COPPER CAPILLARY

EX F+R 999

for M3A-ABS QUA 48/M5 CLIPS

For Nominal dimensions see page 40

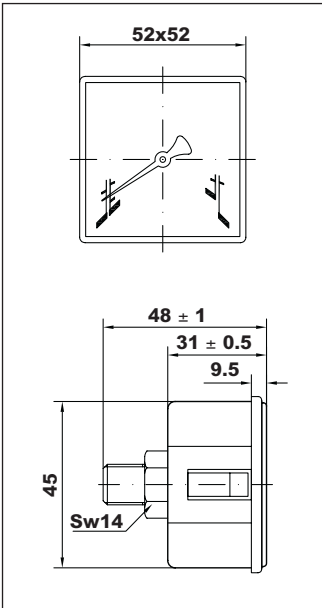
Type	Part No.	Length	Connection	Packaging
COPPER CAPILLARY	999999994115	500mm	G1/4B rotary	50/50

Options : see page 46

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS QUA 52/CLIPS
EX F+R 107 DN52x52
Dry Plastic Square Case with Clips DN52x52 Centre Back Entry
Materials

Case with clips:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 30 per EN 60 529 / IEC 529
Individual Weight:	0.070 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS QUA 52/CLIPS		-1/0 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-1 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-1.6 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-2.5 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-4 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-6 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-10 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS	016521071529	0-16 bar	G1/4B	100/100
M3A-ABS QUA 52/CLIPS		0-25 bar	G1/4B	100/100

Options : see page 46

OPTIONAL EXTRAS

M3A-ABS QUA 40
M3A-ABS QUA CLIPS 48/52

Options subject to minimum quantity

Z3 - Restrictor 0.35mm**M3A-ABS QUA CLIPS 48/M5**

Options subject to minimum quantity

R - adjustable red mark pointer**M3A-ABS QUA 40**
M3A-ABS QUA CLIPS 48/52

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3A-ABS QUA 40**
M3A-ABS QUA CLIPS 48/52
M3A-ABS QUA CLIPS 48/M5

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

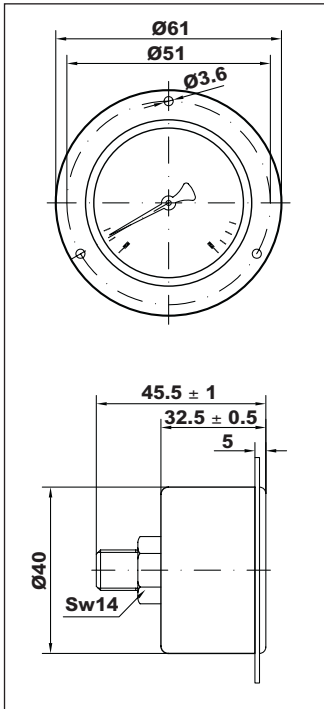
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3B-ABS 40/C
EX F+R 106 DN40
Dry Plastic Case DN40 Centre Back Entry with 3-Hole Panel Mounting Flange
Materials

Case:	Black plastic
3-hole flange:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.060 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-ABS 40/C	190401062247	-1/0 bar	G1/8B	1/125
M3B-ABS 40/C	001401062215	0-1 bar	G1/8B	1/125
M3B-ABS 40/C	106401062273	0-1.6 bar	G1/8B	1/125
M3B-ABS 40/C	205401062217	0-2.5 bar	G1/8B	1/125
M3B-ABS 40/C	004401062107	0-4 bar	G1/8B	1/125
M3B-ABS 40/C	006401062628	0-6 bar	G1/8B	1/125
M3B-ABS 40/C	010401061707	0-10 bar	G1/8B	1/125
M3B-ABS 40/C	016401062390	0-16 bar	G1/8B	1/125
M3B-ABS 40/C	025401062216	0-25 bar	G1/8B	1/125

Options : see page 50

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3B-ABS 50/C

EX F+R 106 DN50

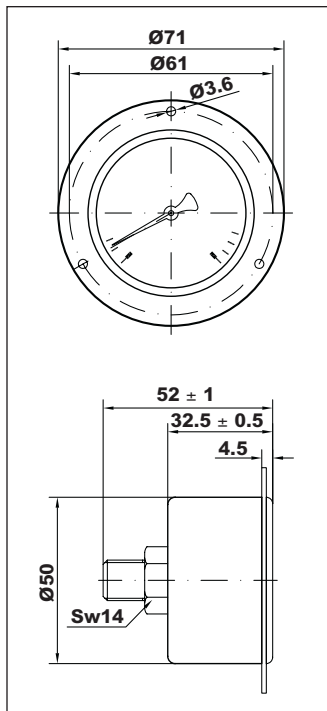
Dry Plastic Case DN50 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials

Case:	Black plastic
3-hole flange:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.070 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-ABS 50/C		-1/0 bar	G1/4B	1/125
M3B-ABS 50/C		0-1 bar	G1/4B	1/125
M3B-ABS 50/C		0-1.6 bar	G1/4B	1/125
M3B-ABS 50/C		0-2.5 bar	G1/4B	1/125
M3B-ABS 50/C	004501061741	0-4 bar	G1/4B	1/125
M3B-ABS 50/C		0-6 bar	G1/4B	1/125
M3B-ABS 50/C	010501060539	0-10 bar	G1/4B	1/125
M3B-ABS 50/C		0-16 bar	G1/4B	1/125
M3B-ABS 50/C	025501060728	0-25 bar	G1/4B	1/125

Options : see page 50

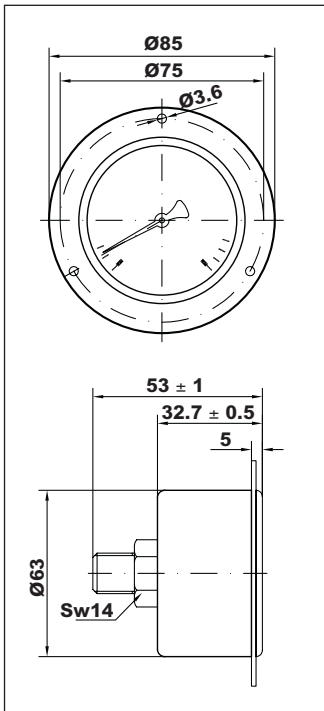
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3B-ABS 63/C
EX F+R 106 DN63
Dry Plastic Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange
Materials

Case:	Black plastic
3-hole flange:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.080 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-ABS 63/C	190631062221	-1/0 bar	G1/4B	1/72
M3B-ABS 63/C		0-1 bar	G1/4B	1/72
M3B-ABS 63/C	106631062223	0-1.6 bar	G1/4B	1/72
M3B-ABS 63/C	205631062276	0-2.5 bar	G1/4B	1/72
M3B-ABS 63/C	004631060673	0-4 bar	G1/4B	1/72
M3B-ABS 63/C	006631060690	0-6 bar	G1/4B	1/72
M3B-ABS 63/C	010631060691	0-10 bar	G1/4B	1/72
M3B-ABS 63/C	016631060692	0-16 bar	G1/4B	1/72
M3B-ABS 63/C	025631062222	0-25 bar	G1/4B	1/72

OPTIONAL EXTRAS

M3B-ABS 40/50/63/N

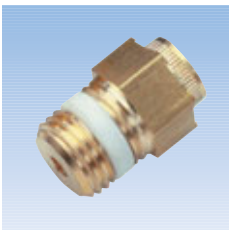
Options subject to minimum quantity

FNA - 3-Hole flange black plastic**M3B-ABS 40/50/63/C**

Options subject to minimum quantity

VV - instrument glass**M3B-ABS 50/63/C**

Options subject to minimum quantity

R - adjustable red mark pointer for clear plastic window only**M3B-ABS 40/50/63/C**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3B-ABS 40/50/63/C**

Options subject to minimum quantity

Z3 - Restrictor 0.35mm**M3B-ABS 40/50/63/C**

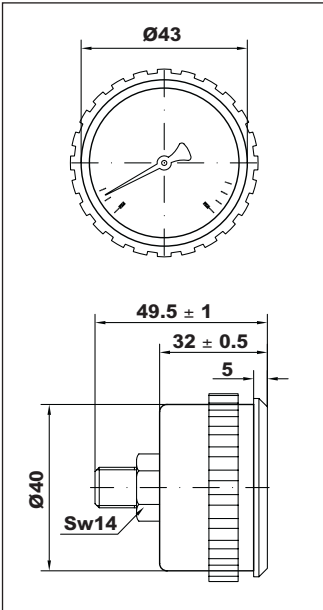
Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3F-ABS 40/C
EX F+R 111 DN40
Dry Plastic Case DN40 Centre Back Entry with Panel Mounting Fixing Ring
Materials

Case + Fixing ring:	Black plastic
Triangular ring:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.055 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3F-ABS 40/C	190401113358	-1/0 bar	G1/8B	1/100
M3F-ABS 40/C		0-1 bar	G1/8B	1/100
M3F-ABS 40/C	106401112235	0-1.6 bar	G1/8B	1/100
M3F-ABS 40/C	205401112267	0-2.5 bar	G1/8B	1/100
M3F-ABS 40/C	004401112644	0-4 bar	G1/8B	1/100
M3F-ABS 40/C	006401111711	0-6 bar	G1/8B	1/100
M3F-ABS 40/C	010401112084	0-10 bar	G1/8B	1/100
M3F-ABS 40/C	016401112401	0-16 bar	G1/8B	1/100
M3F-ABS 40/C	025401112338	0-25 bar	G1/8B	1/100

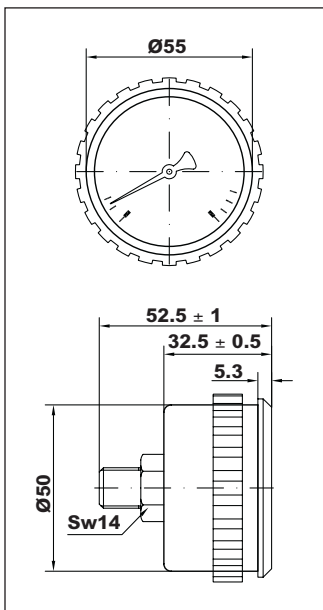
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3F-ABS 50/C****EX F+R 111 DN50****Dry Plastic Case DN50 Centre Back Entry with Panel Mounting Fixing Ring****Materials**

Case + Fixing ring:	Black plastic
Triangular ring:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.065 kg

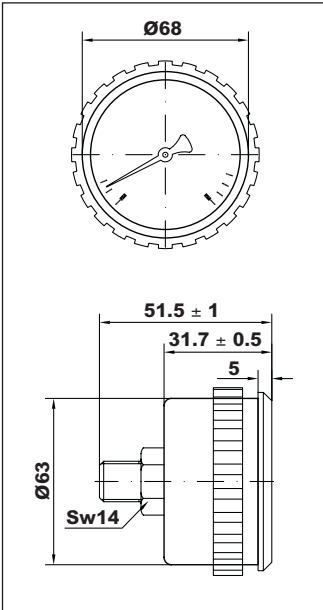


Type	Part No.	Pressure Range	Connection	Packaging
M3F-ABS 50/C	190501111938	-1/0 bar	G1/4B	1/125
M3F-ABS 50/C		0-1 bar	G1/4B	1/125
M3F-ABS 50/C		0-1.6 bar	G1/4B	1/125
M3F-ABS 50/C	205501111175	0-2.5 bar	G1/4B	1/125
M3F-ABS 50/C	004501111172	0-4 bar	G1/4B	1/125
M3F-ABS 50/C	006501111170	0-6 bar	G1/4B	1/125
M3F-ABS 50/C	010501111176	0-10 bar	G1/4B	1/125
M3F-ABS 50/C	016501111171	0-16 bar	G1/4B	1/125
M3F-ABS 50/C		0-25 bar	G1/4B	1/125

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3F-ABS 63/C
EX F+R 111 DN63
Dry Plastic Case DN63 Centre Back Entry with Panel Mounting Fixing Ring
Materials

Case + Fixing ring:	Black plastic
Triangular ring:	Chrome-plated plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy / Polyester combination


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.075 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3F-ABS 63/C	190631112238	-1/0 bar	G1/4B	1/72
M3F-ABS 63/C		0-1 bar	G1/4B	1/72
M3F-ABS 63/C	106631112271	0-1.6 bar	G1/4B	1/72
M3F-ABS 63/C	205631113512	0-2.5 bar	G1/4B	1/72
M3F-ABS 63/C	004631114791	0-4 bar	G1/4B	1/72
M3F-ABS 63/C	006631111076	0-6 bar	G1/4B	1/72
M3F-ABS 63/C	010631113726	0-10 bar	G1/4B	1/72
M3F-ABS 63/C	016631111169	0-16 bar	G1/4B	1/72
M3F-ABS 63/C	025631112239	0-25 bar	G1/4B	1/72

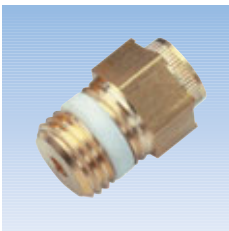
OPTIONAL EXTRAS

M3F-ABS 40/50/63/N

Options subject to minimum quantity

GAN - triangular ring black plastic**M3F-ABS 40/50/63/C**

Options subject to minimum quantity

VV - instrument glass**M3F-ABS 40/50/63/C**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3F-ABS 40/50/63/C**

Options subject to minimum quantity

Z3 - Restrictor 0.35mm**M3F-ABS 40/50/63/C**

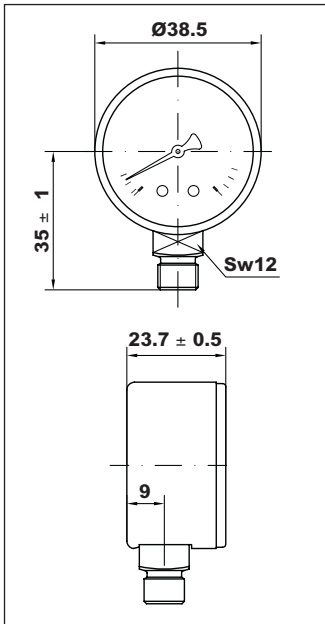
Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-40
EX F+R 250 DN40
Dry Steel Case DN40 Bottom Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
	Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.060 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-40		0-1.6 bar	G1/8B	240/240
M1-40		0-2.5 bar	G1/8B	240/240
M1-40	PA150421	0-4 bar	G1/8B	240/240
M1-40	PA1506B100	0-6 bar	G1/8B	240/240
M1-40	PA151021	0-10 bar	G1/8B	240/240
M1-40		0-16 bar	G1/8B	240/240
M1-40		0-25 bar	G1/8B	240/240
M1-40		0-40 bar	G1/8B	240/240
M1-40		0-60 bar	G1/8B	240/240
M1-40		0-100 bar	G1/8B	240/240
M1-40		0-160 bar	G1/8B	240/240
M1-40		0-250 bar	G1/8B	240/240
M1-40		0-315 bar	G1/8B	240/240
M1-40		0-400 bar	G1/8B	240/240

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



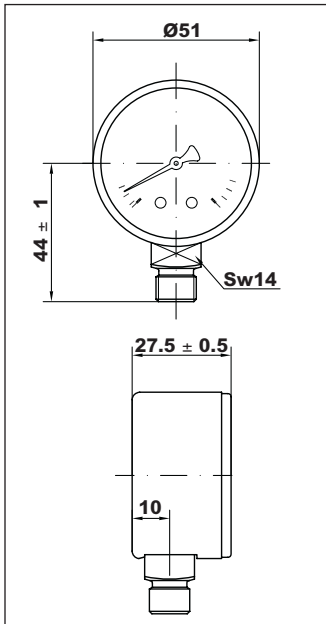
M1-50

EX F+R 250 DN50

Dry Steel Case DN50 Bottom Entry

Materials

- Case: Black steel, powder coated
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.095 kg

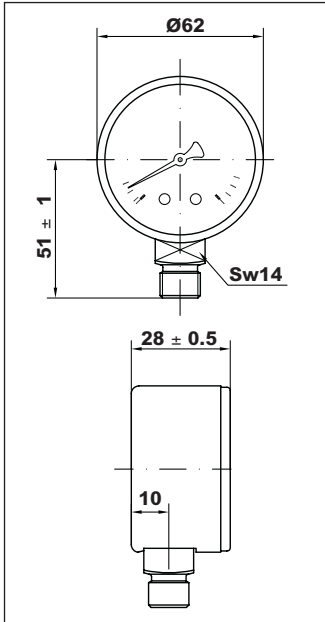
Type	Part No.	Pressure Range	Connection	Packaging
M1-50	PA2401BJ00	-1/0 bar	G1/4B	100/100
M1-50		0-1 bar	G1/4B	100/100
M1-50		0-1.6 bar	G1/4B	100/100
M1-50		0-2.5 bar	G1/4B	100/100
M1-50		0-4 bar	G1/4B	100/100
M1-50		0-6 bar	G1/4B	100/100
M1-50		0-10 bar	G1/4B	100/100
M1-50		0-16 bar	G1/4B	100/100
M1-50		0-25 bar	G1/4B	100/100
M1-50		0-40 bar	G1/4B	100/100
M1-50		0-60 bar	G1/4B	100/100
M1-50		0-100 bar	G1/4B	100/100
M1-50		0-160 bar	G1/4B	100/100
M1-50		0-250 bar	G1/4B	100/100
M1-50		0-315 bar	G1/4B	100/100
M1-50		0-400 bar	G1/4B	100/100

Options : see page 60

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-63
EX F+R 250 DN63
Dry Steel Case DN63 Bottom Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
	Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.115 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-63		-1/0 bar	G1/4B	100/100
M1-63		0-1 bar	G1/4B	100/100
M1-63		0-1.6 bar	G1/4B	100/100
M1-63		0-2.5 bar	G1/4B	100/100
M1-63		0-4 bar	G1/4B	100/100
M1-63	PA350607	0-6 bar	G1/4B	100/100
M1-63		0-10 bar	G1/4B	100/100
M1-63	PA3516BB00	0-16 bar	G1/4B	100/100
M1-63	PA352507	0-25 bar	G1/4B	100/100
M1-63	PA354007	0-40 bar	G1/4B	100/100
M1-63		0-60 bar	G1/4B	100/100
M1-63		0-100 bar	G1/4B	100/100
M1-63		0-160 bar	G1/4B	100/100
M1-63		0-250 bar	G1/4B	100/100
M1-63		0-315 bar	G1/4B	100/100
M1-63		0-400 bar	G1/4B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



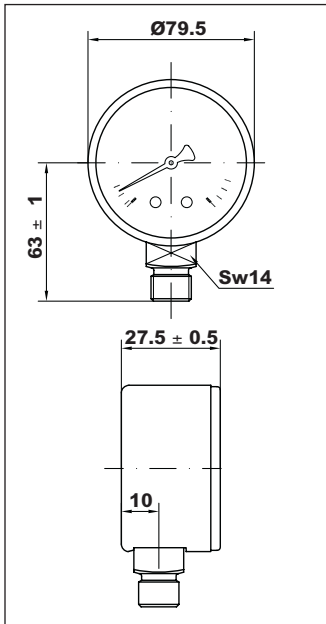
M1-80

EX F+R 250 DN80

Dry Steel Case DN50 Bottom Entry

Materials

- Case: Black steel, powder coated
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.170 kg

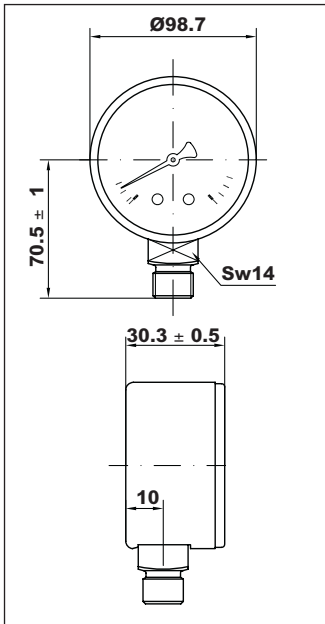
Type	Part No.	Pressure Range	Connection	Packaging
M1-80		-1/0 bar	G3/8B	1/50
M1-80		0-1 bar	G3/8B	1/50
M1-80		0-1.6 bar	G3/8B	1/50
M1-80	PA4403BC01	0-2.5 bar	G3/8B	1/50
M1-80	PA4504BC03	0-4 bar	G3/8B	1/50
M1-80		0-6 bar	G3/8B	1/50
M1-80		0-10 bar	G3/8B	1/50
M1-80		0-16 bar	G3/8B	1/50
M1-80		0-25 bar	G3/8B	1/50
M1-80		0-40 bar	G3/8B	1/50
M1-80		0-60 bar	G3/8B	1/50
M1-80		0-100 bar	G3/8B	1/50
M1-80		0-160 bar	G3/8B	1/50
M1-80		0-250 bar	G3/8B	1/50
M1-80		0-315 bar	G3/8B	1/50
M1-80		0-400 bar	G3/8B	1/50

Options : see page 60

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-100
EX F+R 250 DN100
Dry Steel Case DN63 Bottom Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.255 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-100		-1/0 bar	G1/2B	1/30
M1-100		0-1 bar	G1/2B	1/30
M1-100		0-1.6 bar	G1/2B	1/30
M1-100		0-2.5 bar	G1/2B	1/30
M1-100		0-4 bar	G1/2B	1/30
M1-100		0-6 bar	G1/2B	1/30
M1-100	PA5510BD00	0-10 bar	G1/2B	1/30
M1-100		0-16 bar	G1/2B	1/30
M1-100		0-25 bar	G1/2B	1/30
M1-100		0-40 bar	G1/2B	1/30
M1-100		0-60 bar	G1/2B	1/30
M1-100		0-100 bar	G1/2B	1/30
M1-100		0-160 bar	G1/2B	1/30
M1-100		0-250 bar	G1/2B	1/30
M1-100		0-315 bar	G1/2B	1/30
M1-100		0-400 bar	G1/2B	1/30

Options : see page 60

OPTIONAL EXTRAS

M1-50/63/80/100

Options subject to minimum quantity

R - adjustable red mark pointer**M1-40/50/63/80/100****High temperature version c.l. 2.5 only**

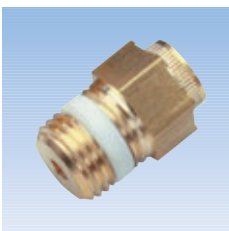
Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)**T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+A+VV)**M1-40/50/63/80/100**

Options subject to minimum quantity

Z - Restrictor 0.5mm**M1-40/50/63/80/100**

Options subject to minimum quantity

A+VV - Chrome-plated bezel ring + instrument glass window**M1-40/50/63/80/100**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M1-40/50/63/80/100**

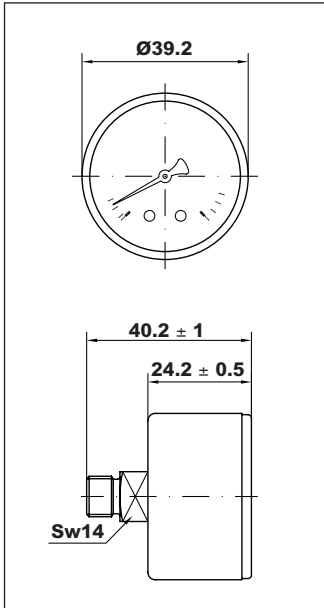
Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-40
EX F+R 150 DN40
Dry Steel Case DN40 Centre Back Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.069 kg

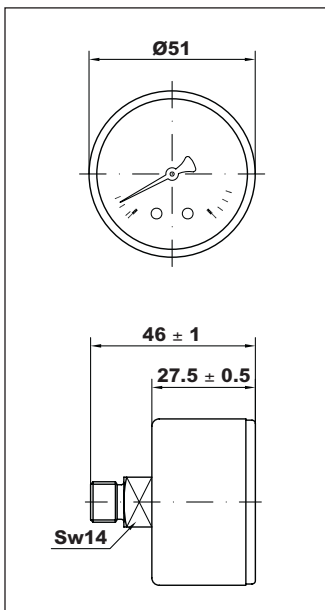
Type	Part No.	Pressure Range	Connection	Packaging
M3A-40		-1/0 bar	G1/8B	240/240
M3A-40		0-1 bar	G1/8B	240/240
M3A-40		0-1.6 bar	G1/8B	240/240
M3A-40		0-2.5 bar	G1/8B	240/240
M3A-40	PB150421	0-4 bar	G1/8B	240/240
M3A-40		0-6 bar	G1/8B	240/240
M3A-40		0-10 bar	G1/8B	240/240
M3A-40		0-16 bar	G1/8B	240/240
M3A-40		0-25 bar	G1/8B	240/240
M3A-40		0-40 bar	G1/8B	240/240
M3A-40		0-60 bar	G1/8B	240/240
M3A-40		0-100 bar	G1/8B	240/240
M3A-40		0-160 bar	G1/8B	240/240
M3A-40		0-250 bar	G1/8B	240/240
M3A-40		0-315 bar	G1/8B	240/240
M3A-40		0-400 bar	G1/8B	240/240

Options : see page 66

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3A-50****EX F+R 150 DN50****Dry Steel Case DN50 Centre Back Entry****Materials**

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

**Technical Specifications**

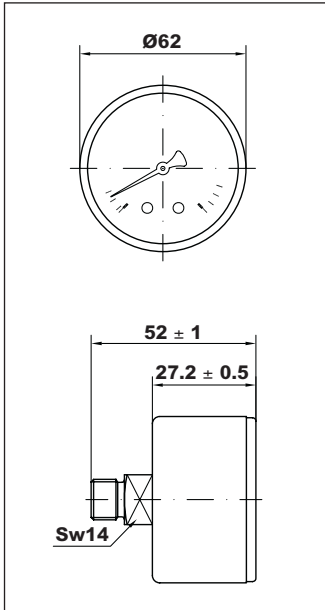
Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.116 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-50		-1/0 bar	G1/4B	100/100
M3A-50		0-1 bar	G1/4B	100/100
M3A-50		0-1.6 bar	G1/4B	100/100
M3A-50		0-2.5 bar	G1/4B	100/100
M3A-50	PB2504BB00	0-4 bar	G1/4B	100/100
M3A-50		0-6 bar	G1/4B	100/100
M3A-50		0-10 bar	G1/4B	100/100
M3A-50		0-16 bar	G1/4B	100/100
M3A-50		0-25 bar	G1/4B	100/100
M3A-50		0-40 bar	G1/4B	100/100
M3A-50		0-60 bar	G1/4B	100/100
M3A-50		0-100 bar	G1/4B	100/100
M3A-50		0-160 bar	G1/4B	100/100
M3A-50		0-250 bar	G1/4B	100/100
M3A-50		0-315 bar	G1/4B	100/100
M3A-50		0-400 bar	G1/4B	100/100

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-63
EX F+R 150 DN63
Dry Steel Case DN63 Centre Back Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.126 kg

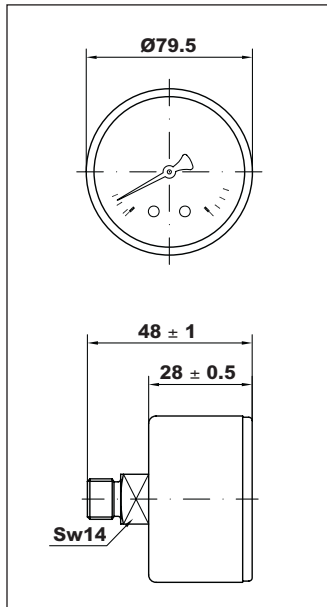
Type	Part No.	Pressure Range	Connection	Packaging
M3A-63		-1/0 bar	G1/4B	100/100
M3A-63		0-1 bar	G1/4B	100/100
M3A-63		0-1.6 bar	G1/4B	100/100
M3A-63		0-2.5 bar	G1/4B	100/100
M3A-63		0-4 bar	G1/4B	100/100
M3A-63		0-6 bar	G1/4B	100/100
M3A-63		0-10 bar	G1/4B	100/100
M3A-63	PB351622	0-16 bar	G1/4B	100/100
M3A-63		0-25 bar	G1/4B	100/100
M3A-63		0-40 bar	G1/4B	100/100
M3A-63		0-60 bar	G1/4B	100/100
M3A-63		0-100 bar	G1/4B	100/100
M3A-63		0-160 bar	G1/4B	100/100
M3A-63		0-250 bar	G1/4B	100/100
M3A-63		0-315 bar	G1/4B	100/100
M3A-63		0-400 bar	G1/4B	100/100

Options : see page 66

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3A-80****EX F+R 150 DN80****Dry Steel Case DN80 Centre Back Entry****Materials**

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

**Technical Specifications**

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.156 kg

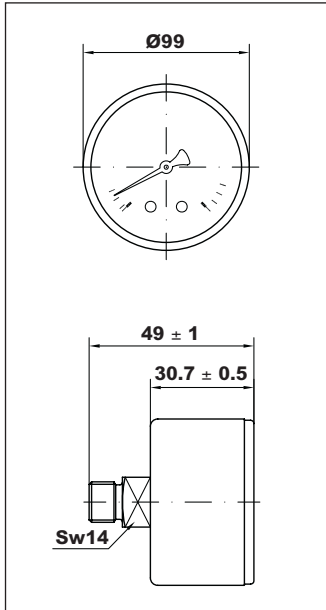
Type	Part No.	Pressure Range	Connection	Packaging
M3A-80		-1/0 bar	G3/8B	50/50
M3A-80		0-1 bar	G3/8B	50/50
M3A-80		0-1.6 bar	G3/8B	50/50
M3A-80		0-2.5 bar	G3/8B	50/50
M3A-80		0-4 bar	G3/8B	50/50
M3A-80		0-6 bar	G3/8B	50/50
M3A-80		0-10 bar	G3/8B	50/50
M3A-80		0-16 bar	G3/8B	50/50
M3A-80		0-25 bar	G3/8B	50/50
M3A-80		0-40 bar	G3/8B	50/50
M3A-80		0-60 bar	G3/8B	50/50
M3A-80		0-100 bar	G3/8B	50/50
M3A-80		0-160 bar	G3/8B	50/50
M3A-80		0-250 bar	G3/8B	50/50
M3A-80		0-315 bar	G3/8B	50/50
M3A-80		0-400 bar	G3/8B	50/50

Options : see page 66

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-100
EX F+R 150 DN100
Dry Steel Case DN100 Centre Back Entry
Materials

Case:	Black steel, powder coated
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.176 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-100		-1/0 bar	G1/2B	1/30
M3A-100		0-1 bar	G1/2B	1/30
M3A-100		0-1.6 bar	G1/2B	1/30
M3A-100		0-2.5 bar	G1/2B	1/30
M3A-100		0-4 bar	G1/2B	1/30
M3A-100		0-6 bar	G1/2B	1/30
M3A-100		0-10 bar	G1/2B	1/30
M3A-100		0-16 bar	G1/2B	1/30
M3A-100		0-25 bar	G1/2B	1/30
M3A-100		0-40 bar	G1/2B	1/30
M3A-100		0-60 bar	G1/2B	1/30
M3A-100		0-100 bar	G1/2B	1/30
M3A-100		0-160 bar	G1/2B	1/30
M3A-100		0-250 bar	G1/2B	1/30
M3A-100		0-315 bar	G1/2B	1/30
M3A-100		0-400 bar	G1/2B	1/30

Options : see page 66

OPTIONAL EXTRAS

M3A-50/63/80/100

Options subject to minimum quantity

R - adjustable red mark pointer**M3A-40/50/63/80/100**

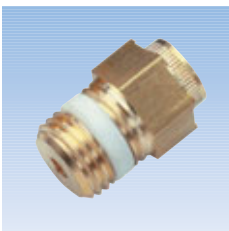
Options subject to minimum quantity

Z - Restrictor 0.5mm**M3A-40/50/63/80/100****High temperature version c.l. 2.5 only**

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)**T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+A+VV)**M3A-40/50/63/80/100**

Options subject to minimum quantity

A+VV - Chrome-plated bezel ring + instrument glass window**M3A-40/50/63/80/100**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3A-40/50/63/80/100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

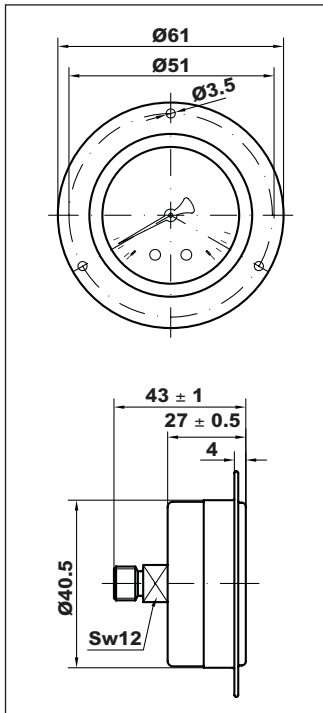
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3B-40
EX F+R 152 DN40
Dry Steel Case DN40 Centre Back Entry with 3-Hole Panel Mounting Flange
Materials

Case:	Black steel, powder coated
3-hole flange:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.086 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-40	PC1401EI00	-1/0 bar/inHg	G1/8B	100/100
M3B-40		0-1 bar/psi	G1/8B	100/100
M3B-40		0-1.6 bar/psi	G1/8B	100/100
M3B-40	PC1503DI00	0-2.5 bar/psi	G1/8B	100/100
M3B-40	PC1504DI00	0-4 bar/psi	G1/8B	100/100
M3B-40	PC1506DI00	0-6 bar/psi	G1/8B	100/100
M3B-40	PC1510DI00	0-10 bar/psi	G1/8B	100/100
M3B-40	PC1516DI00	0-16 bar/psi	G1/8B	100/100
M3B-40		0-25 bar/psi	G1/8B	100/100
M3B-40		0-40 bar/psi	G1/8B	100/100

Options : see page 70

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3B-50

EX F+R 152 DN50

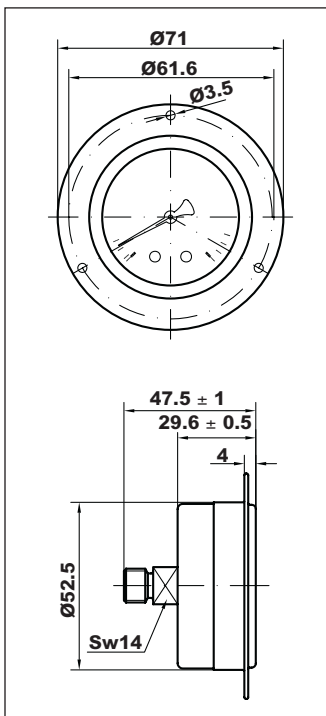
Dry Steel Case DN50 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials

Case:	Black steel, powder coated
3-hole flange:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.126 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-50		-1/0 bar/inHg	G1/4B	100/100
M3B-50		0-1 bar/psi	G1/4B	100/100
M3B-50		0-1.6 bar/psi	G1/4B	100/100
M3B-50		0-2.5 bar/psi	G1/4B	100/100
M3B-50		0-4 bar/psi	G1/4B	100/100
M3B-50		0-6 bar/psi	G1/4B	100/100
M3B-50		0-10 bar/psi	G1/4B	100/100
M3B-50		0-16 bar/psi	G1/4B	100/100
M3B-50		0-25 bar/psi	G1/4B	100/100
M3B-50		0-40 bar/psi	G1/4B	100/100

Options : see page 70

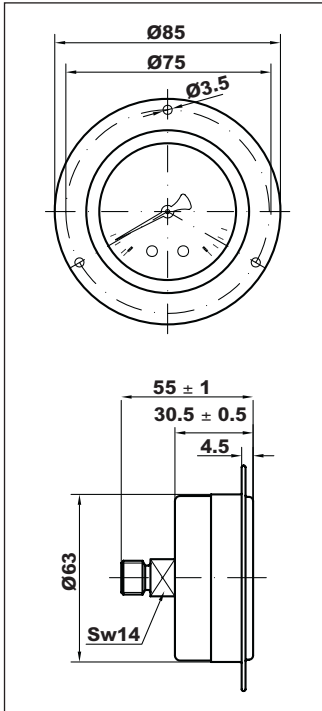
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3B-63
EX F+R 152 DN63
Dry Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange
Materials

Case:	Black steel, powder coated
3-hole flange:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.126 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3B-63	PC3401EJ00	-1/0 bar/inHg	G1/4B	1/50
M3B-63		0-1 bar/psi	G1/4B	1/50
M3B-63		0-1.6 bar/psi	G1/4B	1/50
M3B-63	PC3503DJ00	0-2.5 bar/psi	G1/4B	1/50
M3B-63	PC3504DJ00	0-4 bar/psi	G1/4B	1/50
M3B-63	PC3506DJ00	0-6 bar/psi	G1/4B	1/50
M3B-63	PC3510DJ00	0-10 bar/psi	G1/4B	1/50
M3B-63	PC3516DJ00	0-16 bar/psi	G1/4B	1/50
M3B-63	PC3525DB00	0-25 bar/psi	G1/4B	1/50
M3B-63		0-40 bar/psi	G1/4B	1/50

OPTIONAL EXTRAS

M3B-50/63

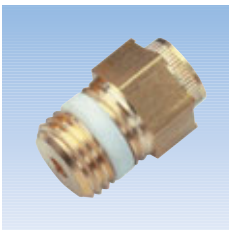
Options subject to minimum quantity

R - adjustable red mark pointer**M3B-40/50/63**

Options subject to minimum quantity

Z - Restrictor 0.5mm**M3B-40/50/63****High temperature version c.i. 2.5 only**

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)**T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+VV)**M3B-40/50/63**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3B-40/50/63**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

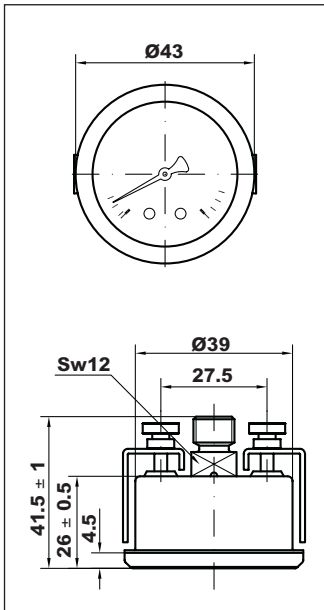
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3F-40
EX F+R 152 DN40
Dry Steel Case DN40 Centre Back Entry with Panel Mounting Brackets
Materials

Case and brackets:	Zinc-plated steel
Triangular ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.094 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3F-40	PD1401EI00	-1/0 bar/inHg	G1/8B	1/50
M3F-40	PD1401DI01	0-1 bar/psi	G1/8B	1/50
M3F-40	PD1402DI00	0-1.6 bar/psi	G1/8B	1/50
M3F-40	PD1503DI00	0-2.5 bar/psi	G1/8B	1/50
M3F-40	PD1504DI00	0-4 bar/psi	G1/8B	1/50
M3F-40	PD1506DI00	0-6 bar/psi	G1/8B	1/50
M3F-40	PD1510DI00	0-10 bar/psi	G1/8B	1/50
M3F-40	PD1516DI00	0-16 bar/psi	G1/8B	1/50
M3F-40		0-25 bar/psi	G1/8B	1/50
M3F-40		0-40 bar/psi	G1/8B	1/50

Options : see page 76

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



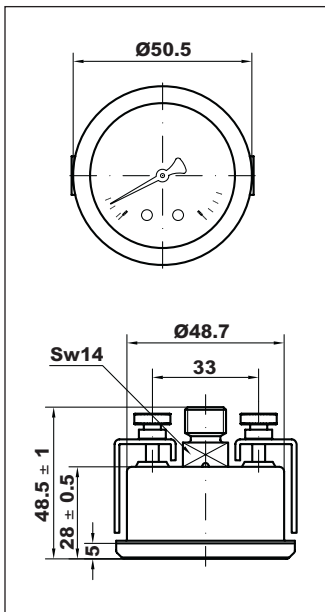
M3F-50

EX F+R 152 DN50

Dry Steel Case DN50 Centre Back Entry with Panel Mounting Brackets

Materials

Case and brackets:	Zinc-plated steel
Triangular ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
	cl. 2.5, cl. 1.6 on request
Accuracy class:	IP 43 per EN 60 529 / IEC 529
Degree of protection:	0.108 kg
Individual Weight:	

Type	Part No.	Pressure Range	Connection	Packaging
M3F-50	PD2401EJ00	-1/0 bar/inHg	G1/4B	1/50
M3F-50		0-1 bar/psi	G1/4B	1/50
M3F-50		0-1.6 bar/psi	G1/4B	1/50
M3F-50	PD250314	0-2.5 bar/psi	G1/4B	1/50
M3F-50		0-4 bar/psi	G1/4B	1/50
M3F-50	PD2506DJ00	0-6 bar/psi	G1/4B	1/50
M3F-50	PD2510DJ00	0-10 bar/psi	G1/4B	1/50
M3F-50	PD2516DJ00	0-16 bar/psi	G1/4B	1/50
M3F-50		0-25 bar/psi	G1/4B	1/50
M3F-50		0-40 bar/psi	G1/4B	1/50

Options : see page 76

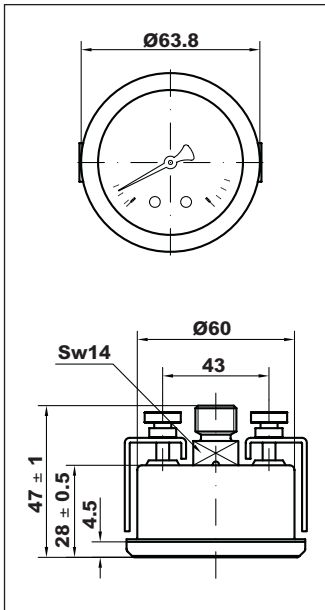
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3F-63
EX F+R 152 DN63
Dry Steel Case DN63 Centre Back Entry with Panel Mounting Brackets
Materials

Case and brackets:	Zinc-plated steel
Triangular ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.146 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3F-63	PD3401EJ00	-1/0 bar/inHg	G1/4B	1/50
M3F-63	PD3401DJ01	0-1 bar/psi	G1/4B	1/50
M3F-63		0-1.6 bar/psi	G1/4B	1/50
M3F-63	PD3503DJ00	0-2.5 bar/psi	G1/4B	1/50
M3F-63	PD3504DJ00	0-4 bar/psi	G1/4B	1/50
M3F-63	PD3506DJ00	0-6 bar/psi	G1/4B	1/50
M3F-63	PD3510DJ00	0-10 bar/psi	G1/4B	1/50
M3F-63	PD3516DJ01	0-16 bar/psi	G1/4B	1/50
M3F-63		0-25 bar/psi	G1/4B	1/50
M3F-63		0-40 bar/psi	G1/4B	1/50

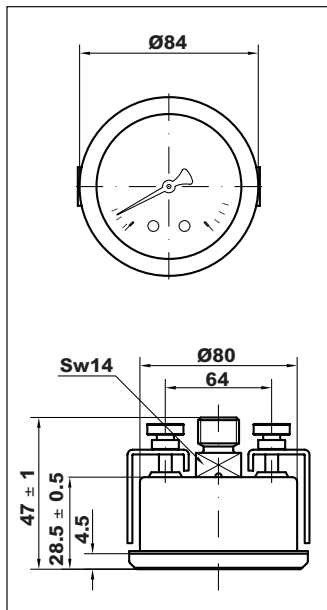
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3F-80****EX F+R 152 DN80****Dry Steel Case DN80 Centre Back Entry with Panel Mounting Brackets****Materials**

Case and brackets:	Zinc-plated steel
Triangular ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C):
	±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.248 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3F-80		-1/0 bar	G1/4B	1/18
M3F-80		0-1 bar	G1/4B	1/18
M3F-80		0-1.6 bar	G1/4B	1/18
M3F-80		0-2.5 bar	G1/4B	1/18
M3F-80		0-4 bar	G1/4B	1/18
M3F-80		0-6 bar	G1/4B	1/18
M3F-80		0-10 bar	G1/4B	1/18
M3F-80		0-16 bar	G1/4B	1/18
M3F-80		0-25 bar	G1/4B	1/18
M3F-80		0-40 bar	G1/4B	1/18

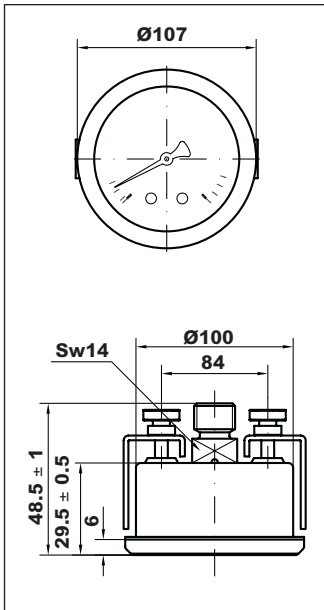
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3F-100
EX F+R 152 DN100
Dry Steel Case DN100 Centre Back Entry with Panel Mounting Brackets
Materials

Case and brackets:	Zinc-plated steel
Triangular ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 43 per EN 60 529 / IEC 529
Individual Weight:	0.181 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3F-100		-1/0 bar	G1/4B	1/18
M3F-100		0-1 bar	G1/4B	1/18
M3F-100		0-1.6 bar	G1/4B	1/18
M3F-100		0-2.5 bar	G1/4B	1/18
M3F-100		0-4 bar	G1/4B	1/18
M3F-100		0-6 bar	G1/4B	1/18
M3F-100		0-10 bar	G1/4B	1/18
M3F-100		0-16 bar	G1/4B	1/18
M3F-100		0-25 bar	G1/4B	1/18
M3F-100		0-40 bar	G1/4B	1/18

Options : see page 76

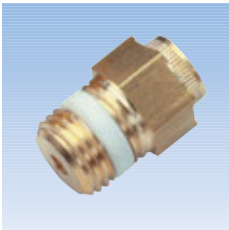
OPTIONAL EXTRAS

M3F-40/50/63/80/100

Options subject to minimum quantity

Z - Restrictor 0.5mm**M3F-40/50/63/80/100****High temperature version c.l. 2.5 only**

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)**T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+VV)**M3F-40/50/63/80/100**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3F-40/50/63/80/100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

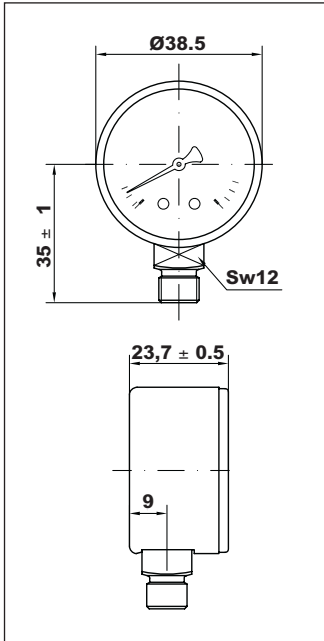
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M1-40 INOX
EX F+R 251 DN40
Dry Stainless Steel DN40 Bottom Entry
Materials

Case:	Stainless steel 1.4301
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 12 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.065 kg



Type	Part No.	Pressure Range	Connection	Packaging
M1-40 INOX		0-1.6 bar	G1/8B	240/240
M1-40 INOX		0-2.5 bar	G1/8B	240/240
M1-40 INOX		0-4 bar	G1/8B	240/240
M1-40 INOX		0-6 bar	G1/8B	240/240
M1-40 INOX		0-10 bar	G1/8B	240/240
M1-40 INOX		0-16 bar	G1/8B	240/240
M1-40 INOX		0-25 bar	G1/8B	240/240
M1-40 INOX		0-40 bar	G1/8B	240/240
M1-40 INOX		0-60 bar	G1/8B	240/240
M1-40 INOX		0-100 bar	G1/8B	240/240
M1-40 INOX		0-160 bar	G1/8B	240/240
M1-40 INOX		0-250 bar	G1/8B	240/240
M1-40 INOX		0-315 bar	G1/8B	240/240
M1-40 INOX		0-400 bar	G1/8B	240/240

Options : see page 79

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



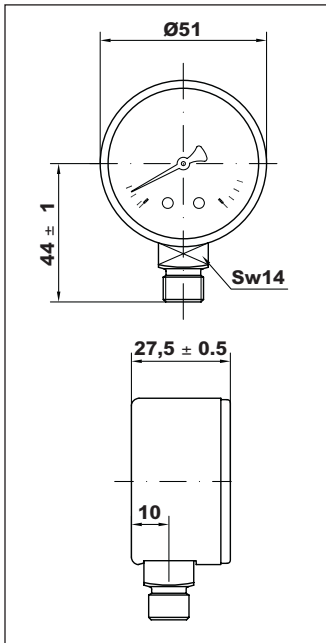
M1-50 INOX

EX F+R 251 DN50

Dry Stainless Steel DN50 Bottom Entry

Materials

- Case: Stainless steel 1.4301
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy



Tecnical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.105 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-50 INOX		-1/0 bar	G1/4B	100/100
M1-50 INOX		0-1 bar	G1/4B	100/100
M1-50 INOX		0-1.6 bar	G1/4B	100/100
M1-50 INOX		0-2.5 bar	G1/4B	100/100
M1-50 INOX		0-4 bar	G1/4B	100/100
M1-50 INOX		0-6 bar	G1/4B	100/100
M1-50 INOX		0-10 bar	G1/4B	100/100
M1-50 INOX		0-16 bar	G1/4B	100/100
M1-50 INOX		0-25 bar	G1/4B	100/100
M1-50 INOX		0-40 bar	G1/4B	100/100
M1-50 INOX		0-60 bar	G1/4B	100/100
M1-50 INOX		0-100 bar	G1/4B	100/100
M1-50 INOX		0-160 bar	G1/4B	100/100
M1-50 INOX		0-250 bar	G1/4B	100/100
M1-50 INOX		0-315 bar	G1/4B	100/100
M1-50 INOX		0-400 bar	G1/4B	100/100

Options : see page 79

M1- 50 INOX



Options subject to minimum quantity

R - adjustable red mark pointer

M1- 40/50 INOX

Options subject to minimum quantity

Z - Restrictor 0.5mm

M1- 40/50 INOX

High temperature version c.l. 2.5 only

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)

T1 - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+AX+VV)

M1- 40/50 INOX



Options subject to minimum quantity

AX+VV - Bezel ring + instrument glass

M1- 40/50 INOX



Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only

M1- 40/50 INOX

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



M3A-40 INOX

EX F+R 151 DN40

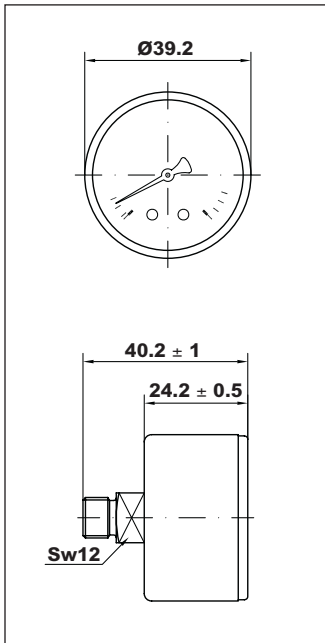
Dry Stainless Steel DN40 Centre Back Entry

Materials

Case: Stainless steel 1.4301
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 12 mm flats
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type

Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 2.5, cl. 1.6 on request
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.069 kg



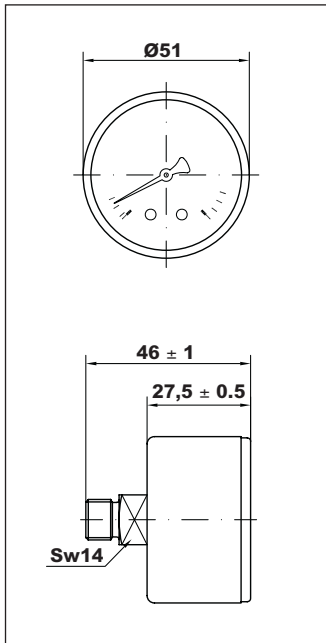
Type	Part No.	Pressure Range	Connection	Packaging
M3A-40 INOX		-1/0 bar	G1/8B	240/240
M3A-40 INOX		0-1 bar	G1/8B	240/240
M3A-40 INOX		0-1.6 bar	G1/8B	240/240
M3A-40 INOX		0-2.5 bar	G1/8B	240/240
M3A-40 INOX		0-4 bar	G1/8B	240/240
M3A-40 INOX		0-6 bar	G1/8B	240/240
M3A-40 INOX		0-10 bar	G1/8B	240/240
M3A-40 INOX		0-16 bar	G1/8B	240/240
M3A-40 INOX	PK1825B100	0-25 bar	G1/8B	240/240
M3A-40 INOX		0-40 bar	G1/8B	240/240
M3A-40 INOX		0-60 bar	G1/8B	240/240
M3A-40 INOX		0-100 bar	G1/8B	240/240
M3A-40 INOX		0-160 bar	G1/8B	240/240
M3A-40 INOX		0-250 bar	G1/8B	240/240
M3A-40 INOX		0-315 bar	G1/8B	240/240
M3A-40 INOX		0-400 bar	G1/8B	240/240

Options : see page 82

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-50 INOX
EX F+R 151 DN50
Dry Stainless Steel DN50 Centre Back Entry
Materials

Case:	Stainless steel 1.4301
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 2.5, cl. 1.6 on request
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.119 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-50 INOX		-1/0 bar	G1/4B	100/100
M3A-50 INOX		0-1 bar	G1/4B	100/100
M3A-50 INOX		0-1.6 bar	G1/4B	100/100
M3A-50 INOX		0-2.5 bar	G1/4B	100/100
M3A-50 INOX		0-4 bar	G1/4B	100/100
M3A-50 INOX	PK2506BB00	0-6 bar	G1/4B	100/100
M3A-50 INOX		0-10 bar	G1/4B	100/100
M3A-50 INOX		0-16 bar	G1/4B	100/100
M3A-50 INOX		0-25 bar	G1/4B	100/100
M3A-50 INOX		0-40 bar	G1/4B	100/100
M3A-50 INOX		0-60 bar	G1/4B	100/100
M3A-50 INOX		0-100 bar	G1/4B	100/100
M3A-50 INOX		0-160 bar	G1/4B	100/100
M3A-50 INOX		0-250 bar	G1/4B	100/100
M3A-50 INOX		0-315 bar	G1/4B	100/100
M3A-50 INOX		0-400 bar	G1/4B	100/100

Options : see page 82

OPTIONAL EXTRAS

M3A-50 INOX

Options subject to minimum quantity

R - adjustable red mark pointer**M3A-40/50 INOX****High temperature version c.l. 2.5 only**

Options subject to minimum quantity

T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)**T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+AX+VV)**M3A-40/50 INOX**

Options subject to minimum quantity

Z - Restrictor 0.5mm**M3A- 40/50 INOX**

Options subject to minimum quantity

AX+VV - Bezel ring + instrument glass**M3A-40/50 INOX**

Options subject to minimum quantity

AT - PTFE sealing ring on parallel threads only**M3A-40/50 INOX**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request



M1-ABS 63/QG

EX F+R 280 DN63

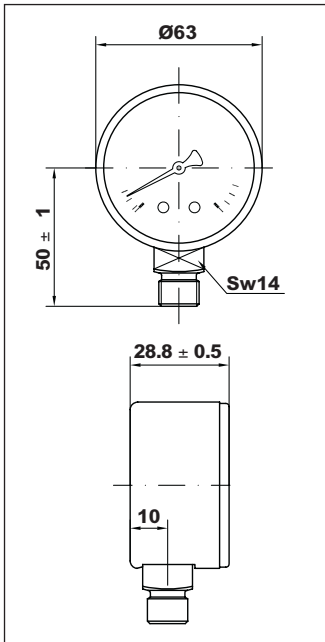
Dry Plastic Case DN63 Bottom Entry

Materials

Case: Black plastic
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats
 Pressure element: Bourdon tube Cu-alloy soft soldered C-type
 Movement: Cu-alloy

Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -20 ... +60 °C
 Medium: +60 °C maximum
 Storage: -20 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C):
 ±0,04%/1K of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 31 per EN 60 529 / IEC 529
 Individual Weight: 0.089 kg



Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 63/QG		0-12 bar/psi	G1/4B	100/100

Options : see page 86

FOR TYRE INFLATING



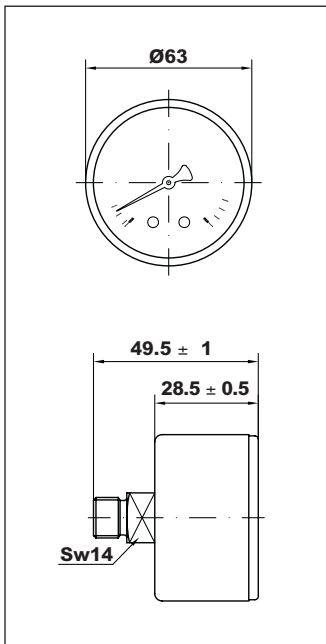
M3A-ABS 63/QG

EX F+R 180 DN63

Dry Plastic Case DN63 Centre Back Entry

Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60°C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
	cl. 1.6
Accuracy class:	IP 31 per EN 60 529 / IEC 529
Degree of protection:	0.109 kg
Individual Weight:	

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63/QG		0-10 bar/psi	G1/4B	100/100

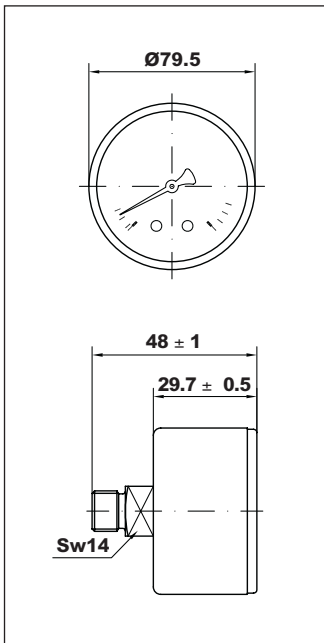
Options : see page 86


M3A-ABS 80/QG
EX F+R 180 DN80
Dry Plastic Case DN80 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60°C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 1.6
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.109 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 80/QG		0-10 bar/psi	G1/4B	1/50

OPTIONAL EXTRAS

M1-ABS 63/QG
M3A-ABS 63/QG


Type	Part No.	Description
CP M1-63	PCUSGOM001	Protective rubber cap
CP M3A-63	PCUSGOM002	Protective rubber cap

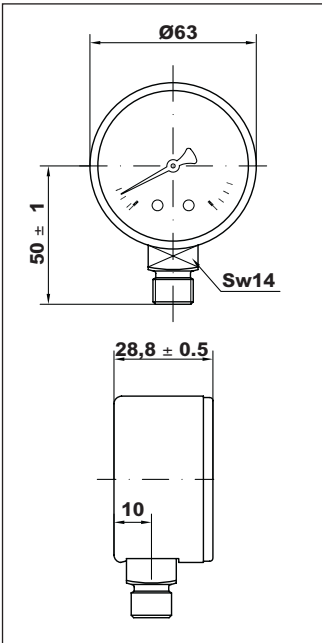
M1-ABS 63/QG
M3A-ABS 63/80/QG

Options subject to minimum quantity

Customized dials, other connections on request


M1-ABS 63/CEE
EX F+R 280 DN63
Dry Plastic Case DN63 Bottom Entry
Materials

Case:	Black plastic
Window:	Clear plastic, Ultra-Sonic welded
Dial:	White plastic, without pointer stopper
Pointer:	Black aluminium, knife-edge type
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy


Technical Specifications

Design:	EEC No. 83/575
Approval:	No.00,04,01,002
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -10 ... +40 °C Medium: +40 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 0.08 ≤ 4 bar, > 4bar cl. 1.6
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.089 kg

Type	Part No.	Pressure Range	Connection	Packaging
M1-ABS 63/CEE		0-10 bar/psi	G1/4B	100/100

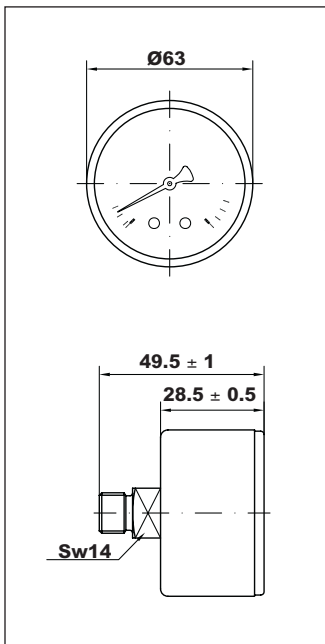
FOR TYRE INFLATING EEC CERTIFIED

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PRESSURE GAUGES

**M3A-ABS 63/CEE****EX F+R 180 DN63****Dry Plastic Case DN63 Centre Back Entry****Materials**

Case:	Black plastic
Window:	Clear plastic, Ultra-Sonic welded
Dial:	White plastic, without pointer stopper
Pointer:	Black aluminium, knife-edge type
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy

**Technical Specifications**

Design:	EEC No. 83/575
Approval:	No.00,04,01,002
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -10 ... +40 °C Medium: +40 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 0.08 ≤ 4 bar, > 4bar cl. 1.6
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.094 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 63/CEE		0-10 bar/psi	G1/4B	100/100

Options : see page 89



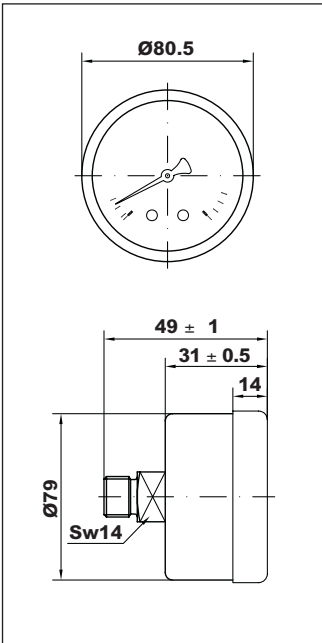
M3A-80/CEE

EX F+R 180 DN80

Dry Steel Case DN80 Centre Back Entry

Materials

Case + bezel ring:	Black steel, powder coated, sealed by rivets
Window:	Clear plastic
Dial:	White plastic, without pointer stopper
Pointer:	Black aluminium, knife edge type
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered C-type
Movement:	Cu-alloy



Technical Specifications

Design:	EEC No. 83/575
Approval:	No.00,04,01,002
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -10 ... +40 °C Medium: +40 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 0.08 ≤ 4 bar, > 4bar cl. 1.6
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.156 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-80/CEE		0-10 bar	G1/4B	1/50

Options : see below

OPTIONAL EXTRAS

M1-ABS 63/CEE
M3A-ABS 63/CEE
M3A-80/CEE

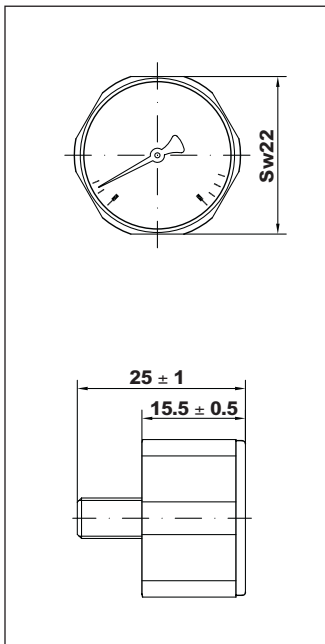
Options subject to minimum quantity

Company logo on the dial, other connections on request

FOR PNEUMATIC APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M3A-OTT 23****EX F+R 123 DN23****Dry Brass Case DN23 Centre Back Entry****Materials**

Case/connection:	Cu-alloy, in one-piece
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Cu-alloy, 22 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy/polyester combination

**Technical Specifications**

Design:	According to EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 4.0
Degree of protection:	IP 54 per EN 60 529 / IEC 529
Individual Weight:	0.020 kg

Type	Part No.	Pressure Range	Connection	Packaging
M3A-OTT 23	004231234317	0-4 bar	G1/8B	500/500
M3A-OTT 23	006231234318	0-6 bar	G1/8B	500/500
M3A-OTT 23	010231234319	0-10 bar	G1/8B	500/500
M3A-OTT 23	016231236507	0-16 bar	G1/8B	500/500

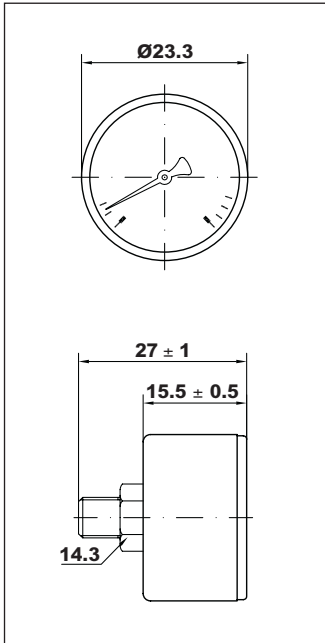
FOR PNEUMATIC APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


M3A-ABS 23
EX F+R 423 DN23
Dry Plastic Case DN23 Centre Back Entry
Materials

Case/connection:	Black plastic, in one-piece
Window:	Clear plastic
Dial:	White plastic
Pointer:	Black plastic
Pressure connection:	Plastic, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy/polyester combination

Technical Specifications

Design:	According to EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class:	cl. 4.0
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.010 kg



Type	Part No.	Pressure Range	Connection	Packaging
M3A-ABS 23		0-4 bar	G1/8B	500/500
M3A-ABS 23	006234235662	0-6 bar	G1/8B	500/500
M3A-ABS 23	010234235642	0-10 bar	G1/8B	500/500
M3A-ABS 23	016234235498	0-16 bar	G1/8B	500/500

OPTIONAL EXTRAS

M3A-OTT 23/NIC

Options subject to minimum quantity

Brass nickel-plated

M3A-OTT 23**M3A-ABS 23**

Options subject to minimum quantity

Z3 - Restrictor 0.35mm

M3A-OTT 23

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

M3A-ABS 23

Options subject to minimum quantity

Customized dials, other scale ranges on request

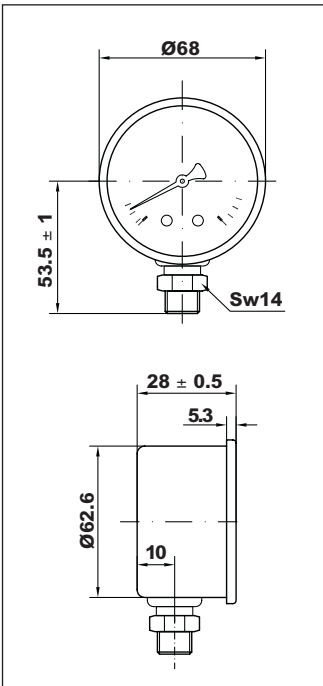
FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG1-ABS 63
EX F+R 204 DN63
Glycerine Filled Plastic Case DN63 Bottom Entry
Materials

Case: ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
 Window: PMMA, Ultra-Sonic welded
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%

Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.154 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG1-ABS 63		-1/0 bar/inHg	G1/4B	100/100
MG1-ABS 63		0-1 bar/psi	G1/4B	100/100
MG1-ABS 63		0-1.6 bar/psi	G1/4B	100/100
MG1-ABS 63		0-2.5 bar/psi	G1/4B	100/100
MG1-ABS 63	PE3204DJ01	0-4 bar/psi	G1/4B	100/100
MG1-ABS 63	PE3206DJ00	0-6 bar/psi	G1/4B	100/100
MG1-ABS 63	PE321014	0-10 bar/psi	G1/4B	100/100
MG1-ABS 63		0-16 bar/psi	G1/4B	100/100
MG1-ABS 63		0-25 bar/psi	G1/4B	100/100
MG1-ABS 63		0-40 bar/psi	G1/4B	100/100
MG1-ABS 63		0-60 bar/psi	G1/4B	100/100
MG1-ABS 63		0-100 bar/psi	G1/4B	100/100
MG1-ABS 63	PE3354DJ00	0-160 bar/psi	G1/4B	100/100
MG1-ABS 63		0-250 bar/psi	G1/4B	100/100
MG1-ABS 63	PE3362DJ00	0-315 bar/psi	G1/4B	100/100
MG1-ABS 63	PE336614	0-400 bar/psi	G1/4B	100/100
MG1-ABS 63		0-600 bar/psi	G1/4B	100/100

Options : see page 94

OPTIONAL EXTRAS

MG1-ABS 63

Options subject to minimum quantity

Z - Restrictor 0.5mm for ranges < 40 bar

Z0 - Without restrictor for ranges \geq 40 bar

MG1-ABS 63

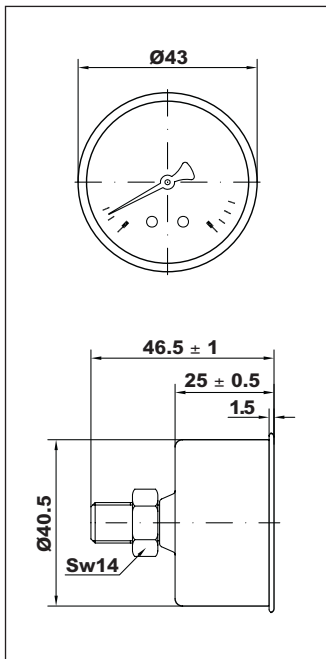
Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG3A-ABS 40
EX F+R 104 DN40
Glycerine Filled Plastic Case DN40 Centre Back Entry
Materials

Case: ABS black with blow out/ranges $\leq 16\text{bar}$ to be vented by piercing a hole on the rear side
 Window: PMMA, Ultra-Sonic welded
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%


Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1\text{K}$ of the span
 Accuracy class: cl. 2.5
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.075 kg

Type	Part No.	Pressure Range	Connection	Packaging
MG3A-ABS 40		0-4 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-6 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-10 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-16 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-25 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-100 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-160 bar/psi	G1/8B	240/240
MG3A-ABS 40	PF1360DA00	0-250 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-315 bar/psi	G1/8B	240/240
MG3A-ABS 40		0-400 bar/psi	G1/8B	240/240

FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS.
SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE
AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



MG3A-ABS 50

EX F+R 104 DN50

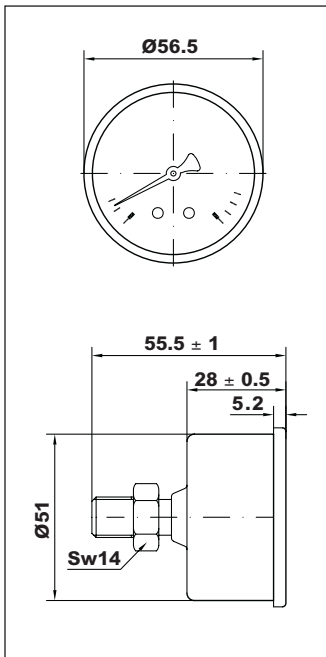
Glycerine Filled Plastic Case DN50 Centre Back Entry

Materials

Case: ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
Window: PMMA, Ultra-Sonic welded
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Technical Specifications

Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class: cl. 1.6
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.126 kg



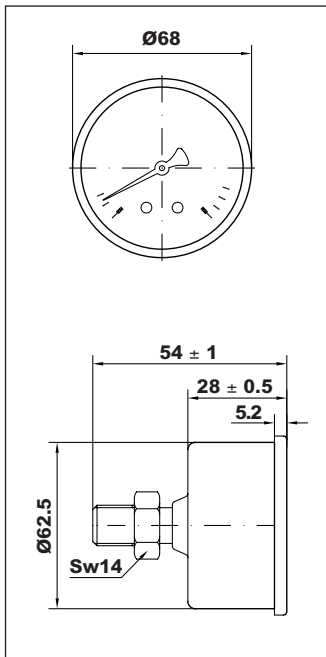
Type	Part No.	Pressure Range	Connection	Packaging
MG3A-ABS 50		-1/0 bar/inHg	G1/4B	50/50
MG3A-ABS 50		0-1 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-1.6 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-2.5 bar/psi	G1/4B	50/50
MG3A-ABS 50	PF2204DJ00	0-4 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-6 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-10 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-16 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-25 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-40 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-60 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-100 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-160 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-250 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-315 bar/psi	G1/4B	50/50
MG3A-ABS 50	PF2366DB00	0-400 bar/psi	G1/4B	50/50
MG3A-ABS 50		0-600 bar/psi	G1/4B	50/50

Options : see page 98

FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG3A-ABS 63
EX F+R 104 DN63
Glycerine Filled Plastic Case DN63 Centre Back Entry
Materials

Case: ABS black with blow out/ranges $\leq 16\text{bar}$ to be vented by cutting the rubber nipple at the top
 Window: PMMA, Ultra-Sonic welded
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%


Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1\text{K}$ of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.166 kg

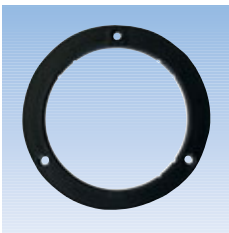
Type	Part No.	Pressure Range	Connection	Packaging
MG3A-ABS 63		-1/0 bar/inHg.	G1/4B	50/50
MG3A-ABS 63		0-1 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-1.6 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-2.5 bar/psi	G1/4B	50/50
MG3A-ABS 63	PF3204DJ01	0-4 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-6 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-10 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-16 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-25 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-40 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-60 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-100 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-160 bar/psi	G1/4B	50/50
MG3A-ABS 63	PF336024	0-250 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-315 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-400 bar/psi	G1/4B	50/50
MG3A-ABS 63		0-600 bar/psi	G1/4B	50/50

Options : see page 98

OPTIONAL EXTRAS

MG3A-ABS 50
MG3A-ABS 63


Type	Part No.	Description	DN
S ABS 50	PMINACC048	Mounting Bracket - Supplied separately	50
S ABS 63	PMINACC046	Mounting Bracket - Supplied separately	63

MG3A-ABS 63


Type	Part No.	Description
F ABS 63	PMINABS048	3-hole flange supplied separately
FM		3-hole flange supplied mounted

MG3A-ABS 40/50/63

Options subject to minimum quantity	
Z	- Restrictor 0.5mm for ranges < 40 bar
Z0	- Without restrictor for ranges ≥ 40 bar

MG3A-ABS 40/50/63

Options subject to minimum quantity	
Customized dials, other scale ranges or connections on request	

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG1-INOX 63
EX F+R 214 DN63
Glycerine Filled Stainless Steel Case DN63 Bottom Entry
Materials

Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges \leq 16 bar to be vented by cutting the rubber nipple at the top

Window: Clear plastic

Dial: White plastic

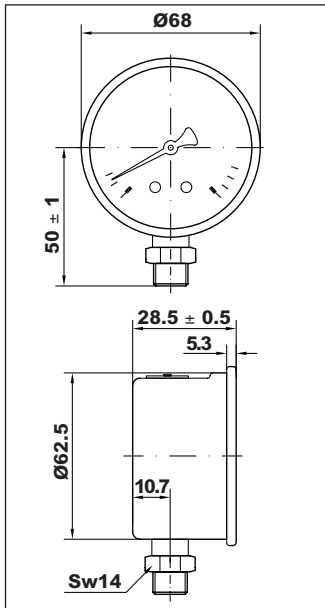
Pointer: Black plastic

Pressure connection: Cu-alloy, 14 mm flats, \geq 40 bar restrictor 0.5mm

Pressure element: Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, $>$ 60 bar helical type

Movement: Cu-alloy

Liquid filling: Glycerine 86.5%


Technical Specifications

Design: EN 837-1

Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value

Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C

Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span

Accuracy class: cl. 1.6

Degree of protection: IP 65 per EN 60 529 / IEC 529

Individual Weight: 0.206 kg

Type	Part No.	Pressure Range	Connection	Packaging
MG1-INOX 63	PE3401DJ03	-1/0 bar/inHg	G1/4B	100/100
MG1-INOX 63		0-1 bar/psi	G1/4B	100/100
MG1-INOX 63	PE340214	0-1.6 bar/psi	G1/4B	100/100
MG1-INOX 63		0-2.5 bar/psi	G1/4B	100/100
MG1-INOX 63	PE3504DJ03	0-4 bar/psi	G1/4B	100/100
MG1-INOX 63		0-6 bar/psi	G1/4B	100/100
MG1-INOX 63	PE3510DJ07	0-10 bar/psi	G1/4B	100/100
MG1-INOX 63	PE3516DJ06	0-16 bar/psi	G1/4B	100/100
MG1-INOX 63	PE3525DJ03	0-25 bar/psi	G1/4B	100/100
MG1-INOX 63	PE354014	0-40 bar/psi	G1/4B	100/100
MG1-INOX 63	PE364414	0-60 bar/psi	G1/4B	100/100
MG1-INOX 63	PE364814	0-100 bar/psi	G1/4B	100/100
MG1-INOX 63	PE365414	0-160 bar/psi	G1/4B	100/100
MG1-INOX 63	PE366014	0-250 bar/psi	G1/4B	100/100
MG1-INOX 63	PE366214	0-315 bar/psi	G1/4B	100/100
MG1-INOX 63	PE366614	0-400 bar/psi	G1/4B	100/100
MG1-INOX 63	PE367014	0-600 bar/psi	G1/4B	100/100

Options : see page 101

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



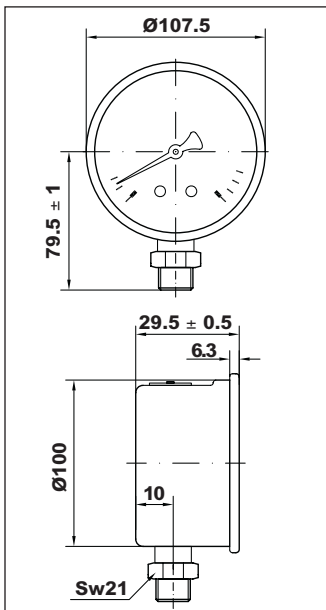
MG1-INOX 100

EX F+R 214 DN100

Glycerine Filled Stainless Steel Case DN100 Bottom Entry

Materials

Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges \leq 16bar to be vented by cutting the rubber nipple at the top
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 21 mm flats, \geq 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, $>$ 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%



Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.526 kg

Type	Part No.	Pressure Range	Connection	Packaging
MG1-INOX 100	PE509916	-1/0 bar/inHg	G1/2B	1/30
MG1-INOX 100	PE540116	0-1 bar/psi	G1/2B	1/30
MG1-INOX 100	PE540216	0-1.6 bar/psi	G1/2B	1/30
MG1-INOX 100	PE550316	0-2.5 bar/psi	G1/2B	1/30
MG1-INOX 100	PE550416	0-4 bar/psi	G1/2B	1/30
MG1-INOX 100		0-6 bar/psi	G1/2B	1/30
MG1-INOX 100	PE5510DJ01	0-10 bar/psi	G1/2B	1/30
MG1-INOX 100		0-16 bar/psi	G1/2B	1/30
MG1-INOX 100		0-25 bar/psi	G1/2B	1/30
MG1-INOX 100	PE554016	0-40 bar/psi	G1/2B	1/30
MG1-INOX 100	PE554416	0-60 bar/psi	G1/2B	1/30
MG1-INOX 100	PE564816	0-100 bar/psi	G1/2B	1/30
MG1-INOX 100	PE565416	0-160 bar/psi	G1/2B	1/30
MG1-INOX 100	PE566016	0-250 bar/psi	G1/2B	1/30
MG1-INOX 100	PE566216	0-315 bar/psi	G1/2B	1/30
MG1-INOX 100	PE566616	0-400 bar/psi	G1/2B	1/30
MG1-INOX 100	PE567016	0-600 bar/psi	G1/2B	1/30

Options : see page 101

MG1-INOX 63/100

Options subject to minimum quantity

Z - Restrictor 0.5mm for ranges < 40 bar**Z0** - Without restrictor for ranges ≥ 40 bar**MG1-INOX 63/100**

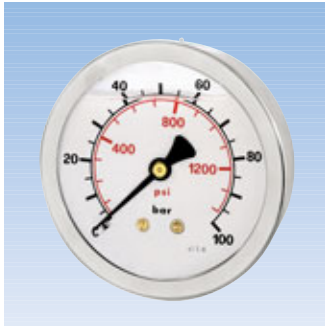
Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)**MG1-INOX 63/100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



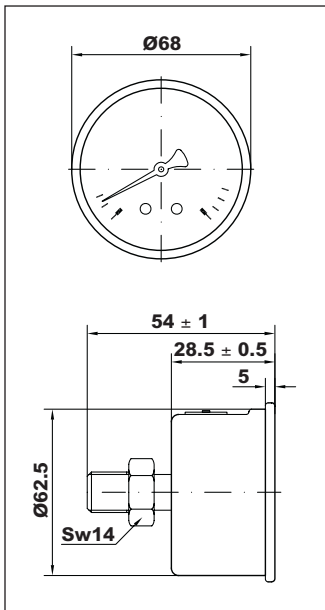
MG3A-INOX 63

EX F+R 114 DN63

Glycerine Filled Stainless Steel Case DN63 Centre Back Entry

Materials

Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%



Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.209 kg

Type	Part No.	Pressure Range	Connection	Packaging
MG3A-INOX 63		-1/0 bar/inHg	G1/4B	50/50
MG3A-INOX 63	PF340114	0-1 bar/psi	G1/4B	50/50
MG3A-INOX 63		0-1.6 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF3503DJ00	0-2.5 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF3504DJ00	0-4 bar/psi	G1/4B	50/50
MG3A-INOX 63		0-6 bar/psi	G1/4B	50/50
MG3A-INOX 63		0-10 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF3516DJ03	0-16 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF352514	0-25 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF354014	0-40 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF364414	0-60 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF364814	0-100 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF365414	0-160 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF366014	0-250 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF366214	0-315 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF366614	0-400 bar/psi	G1/4B	50/50
MG3A-INOX 63	PF367014	0-600 bar/psi	G1/4B	50/50

Options : see page 104

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG3A-INOX 100
EX F+R 114 DN100
Glycerine Filled Stainless Steel Case DN100 Centre Back Entry
Materials

Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges \leq 16bar to be vented by cutting the rubber nipple at the top

Window: Clear plastic

Dial: White plastic

Pointer: Black plastic

Pressure connection: Cu-alloy, 21 mm flats, \geq 40 bar restrictor 0.5mm

Pressure element: Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, $>$ 60 bar helical type

Movement: Cu-alloy

Liquid filling: Glycerine 86.5%

Technical Specifications

Design: EN 837-1

Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value

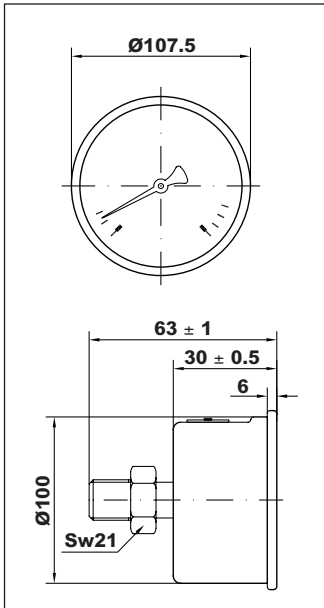
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C

Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span

Accuracy class: cl. 1.6

Degree of protection: IP 65 per EN 60 529 / IEC 529

Individual Weight: 0.506 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3A-INOX 100	PF509916	-1/0 bar/inHg	G1/2B	1/12
MG3A-INOX 100	PF540116	0-1 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF5402DL00	0-1.6 bar/psi	G1/2B	1/12
MG3A-INOX 100		0-2.5 bar/psi	G1/2B	1/12
MG3A-INOX 100		0-4 bar/psi	G1/2B	1/12
MG3A-INOX 100		0-6 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF551016	0-10 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF551616	0-16 bar/psi	G1/2B	1/12
MG3A-INOX 100		0-25 bar/psi	G1/2B	1/12
MG3A-INOX 100		0-40 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF564416	0-60 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF564816	0-100 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF565416	0-160 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF566016	0-250 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF566216	0-315 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF566616	0-400 bar/psi	G1/2B	1/12
MG3A-INOX 100	PF567016	0-600 bar/psi	G1/2B	1/12

Options : see page 104

OPTIONAL EXTRAS

MG3A-INOX 63

Type	Part No.	Description
S INOX 63	PMINACC047	Mounting bracket - Supplied separately

MG3A-INOX 63/100

Options subject to minimum quantity

Z - Restrictor 0.5mm for ranges < 40 bar**Z0** - Without restrictor for ranges ≥ 40 bar**MG3A-INOX 63/100**

Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)**MG3A-INOX 63/100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS


MG3B-INOX 63
EX F+R 125 DN63
Glycerine Filled Stainless Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange
Materials

Case + 3-hole flange: Stainless Steel 1.4301 with blow out/ranges \leq 16bar to be vented by cutting the rubber nipple at the top

Window: Clear plastic

Dial: White plastic

Pointer: Black plastic

Pressure connection: Cu-alloy, 14 mm flats, \geq 40 bar restrictor 0.5mm

Pressure element: Bourdon tube Cu-alloy soft soldered \leq 60 bar C-type, $>$ 60 bar helical type

Movement: Cu-alloy

Liquid filling: Glycerine 86.5%

Technical Specifications

Design: EN 837-1

Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value

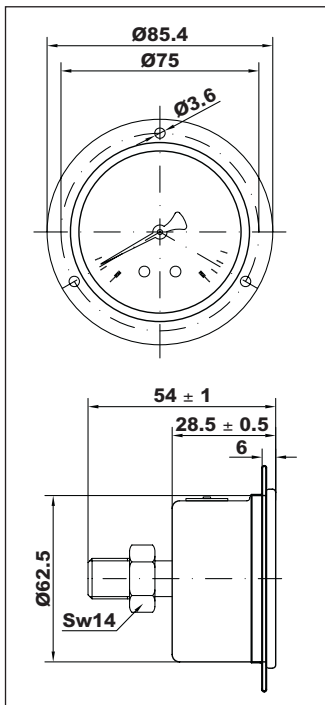
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C

Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span

Accuracy class: cl. 1.6

Degree of protection: IP 65 per EN 60 529 / IEC 529

Individual Weight: 0.224 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3B-INOX 63	PG309914	-1/0 bar/inHg	G1/4B	50/50
MG3B-INOX 63	PG340114	0-1 bar/psi	G1/4B	50/50
MG3B-INOX 63		0-1.6 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG350314	0-2.5 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG350414	0-4 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG350614	0-6 bar/psi	G1/4B	50/50
MG3B-INOX 63		0-10 bar/psi	G1/4B	50/50
MG3B-INOX 63		0-16 bar/psi	G1/4B	50/50
MG3B-INOX 63		0-25 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG354014	0-40 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG364414	0-60 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG364814	0-100 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG365414	0-160 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG366014	0-250 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG366214	0-315 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG366614	0-400 bar/psi	G1/4B	50/50
MG3B-INOX 63	PG367014	0-600 bar/psi	G1/4B	50/50

Options : see page 107

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



MG3B-INOX 100

EX F+R 125 DN100

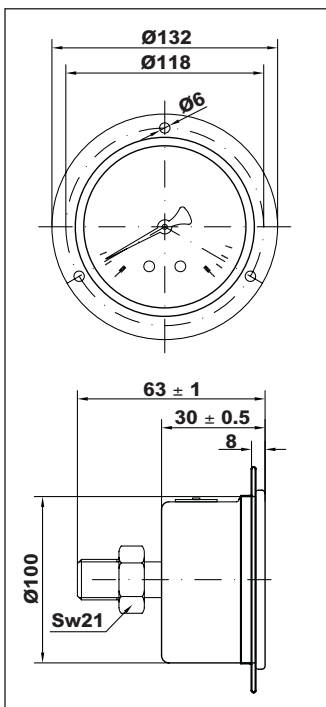
Glycerine Filled Stainless Steel Case DN100 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials

Case + 3-hole flange: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
 Window: Clear plastic
 Dial: White plastic
 Pointer: Black plastic
 Pressure connection: Cu-alloy, 21 mm flats, ≥ 40 bar restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%

Technical Specifications

Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.585 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3B-INOX 100	PG509916	-1/0 bar/inHg	G1/2B	1/12
MG3B-INOX 100		0-1 bar/psi	G1/2B	1/12
MG3B-INOX 100		0-1.6 bar/psi	G1/2B	1/12
MG3B-INOX 100		0-2.5 bar/psi	G1/2B	1/12
MG3B-INOX 100		0-4 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG550616	0-6 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG551016	0-10 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG551616	0-16 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG552516	0-25 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG554016	0-40 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG564416	0-60 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG564816	0-100 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG565416	0-160 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG566016	0-250 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG566216	0-315 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG566616	0-400 bar/psi	G1/2B	1/12
MG3B-INOX 100	PG567016	0-600 bar/psi	G1/2B	1/12

Options : see page 107

MG3B-INOX 63/100

Options subject to minimum quantity

Z - Restrictor 0.5mm for ranges < 40 bar**Z0** - Without restrictor for ranges ≥ 40 bar**MG3B-INOX 63/100**

Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)**MG3B-INOX 63/100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS



MG3F-INOX 100

EX F+R 125 DN100

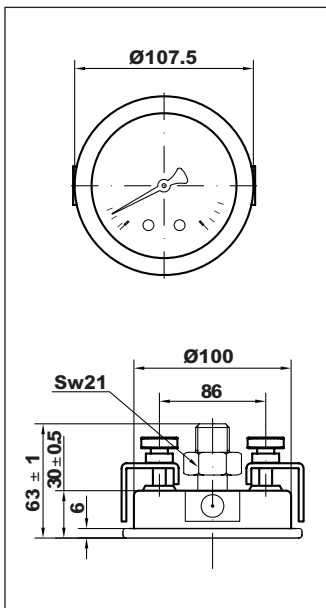
Glycerine Filled Stainless Steel Case DN100 Centre Back Entry with Panel Mounting Brackets

Materials

- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
- Mounting brackets: Zinc-plated steel
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 21 mm flats, ≥ 40 bar restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

Technical Specifications

- Design: EN 837-1
- Working pressure:
 - Steady: 75 % of full scale value
 - Fluctuating: 60 % of full scale value
 - Short time: full scale value
- Operating temperature:
 - Ambient: -10 ... +60 °C
 - Medium: +60 °C maximum
 - Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.535 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3F-INOX 100		-1/0 bar/inHg	G1/2B	1/12
MG3F-INOX 100		0-1 bar/psi	G1/2B	1/12
MG3F-INOX 100		0-1.6 bar/psi	G1/2B	1/12
MG3F-INOX 100		0-2.5 bar/psi	G1/2B	1/12
MG3F-INOX 100		0-4 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH550616	0-6 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH551016	0-10 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH551616	0-16 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH552516	0-25 bar/psi	G1/2B	1/12
MG3F-INOX 100		0-40 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH564416	0-60 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH564816	0-100 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH565416	0-160 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH566016	0-250 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH566216	0-315 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH566616	0-400 bar/psi	G1/2B	1/12
MG3F-INOX 100	PH567016	0-600 bar/psi	G1/2B	1/12

Options : see page 109

MG3F-INOX 100

Options subject to minimum quantity

Z - Restrictor 0.5mm for ranges < 40 bar**Z0** - Without restrictor for ranges ≥ 40 bar**MG3F-INOX 100**

Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)**MG3F-INOX 100**

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

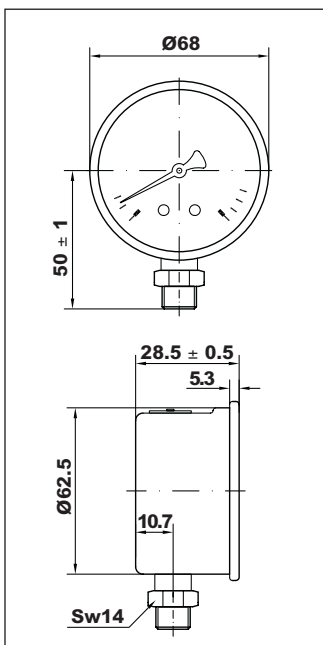
FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS,
PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION

**MG1-ABS 63/QF****EX F+R 204 DN63****Glycerine Filled Plastic Case DN63 Bottom Entry****Materials**

Case:	ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
Window:	PMMA, Ultra-Sonic welded
Dial:	White plastic
Pointer:	Black aluminium, knife edge type
Pressure connection:	Cu-alloy, 14 mm flats, with restrictor 0.5mm
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy
Liquid filling:	Glycerine 86.5%

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -10 ... +60 °C Medium: +60 °C maximum Storage: -10 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 1.6
Degree of protection:	IP 65 per EN 60 529 / IEC 529
Individual Weight:	0.154 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG1-ABS 63/QF		-1 + 15 bar	1/4 SAE	100/100
MG1-ABS 63/QF		-1 + 30 bar	1/4 SAE	100/100

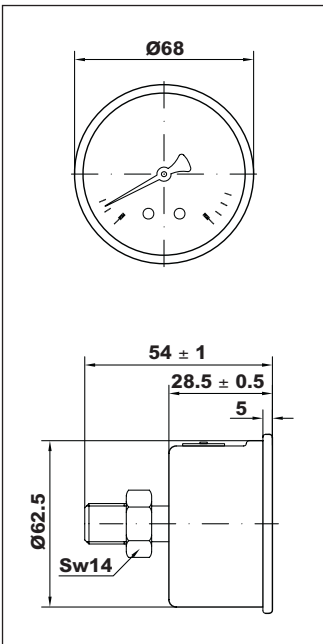
FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION


MG3A-ABS 63/QF
EX F+R 104 DN63
Glycerine Filled Plastic Case DN63 Centre Back Entry
Materials

Case: ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
 Window: PMMA, Ultra-Sonic welded
 Dial: White plastic
 Pointer: Black aluminium, knife edge type
 Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5mm
 Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
 Movement: Cu-alloy
 Liquid filling: Glycerine 86.5%

Technical Specifications

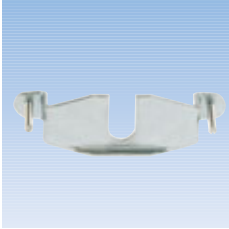
Design: EN 837-1
 Working pressure: Steady: 75 % of full scale value
 Fluctuating: 60 % of full scale value
 Short time: full scale value
 Operating temperature: Ambient: -10 ... +60 °C
 Medium: +60 °C maximum
 Storage: -10 ... +60 °C
 Temperature effect: Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
 Accuracy class: cl. 1.6
 Degree of protection: IP 65 per EN 60 529 / IEC 529
 Individual Weight: 0.166 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3A-ABS 63/QF		-1 + 15 bar	1/4 SAE	50/50
MG3A-ABS 63/QF		-1 + 30 bar	1/4 SAE	50/50

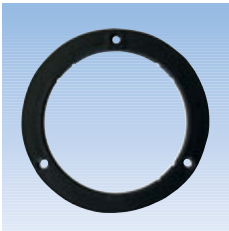
OPTIONAL EXTRAS

MG1-ABS 63/QF



Type	Part No.	Description
S ABS 63	PMINACC046	Mounting bracket - Supplied separately

MG1-ABS 63/QF

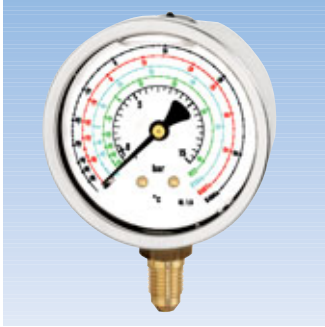


Type	Part No.	Description
F ABS 63	PMINABS048	3-hole flange supplied separately
FM		3-hole flange supplied mounted

MG1-ABS 63/QF - MG3A-ABS 63/QF

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request

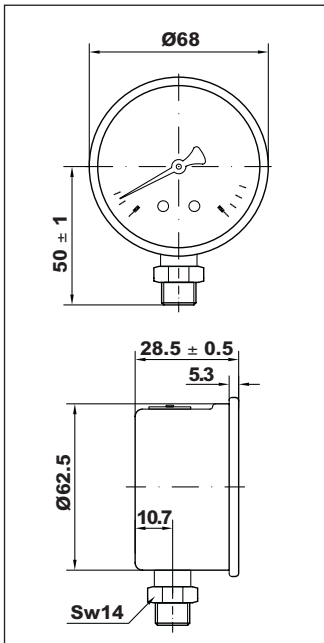
HIGHLY DURABLE, FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION


MG1-INOX 63/QF
EX F+R 215 DN63
Glycerine Filled Stainless Steel Case DN63 Bottom Entry
Materials

Case + roll on bezel:	Stainless Steel 1.4301 with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black aluminium, knife edge type
Pressure connection:	Cu-alloy, 14 mm flats, with restrictor 0.5mm
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy
Liquid filling:	Glycerine 86.5%

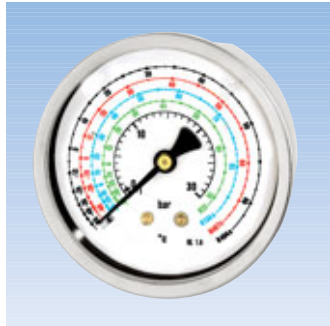
Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: full scale value
Operating temperature:	Ambient: -10 ... +60 °C
	Medium: +60 °C maximum
	Storage: -10 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
Accuracy class:	cl. 1.6
Degree of protection:	IP 65 per EN 60 529 / IEC 529
Individual Weight:	0.206 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG1-INOX 63/QF		-1+15 bar	1/4 SAE	100/100
MG1-INOX 63/QF		-1 + 30 bar	1/4 SAE	100/100

HIGHLY DURABLE, FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION



MG3A-INOX 63/QF

EX F+R 115 DN63

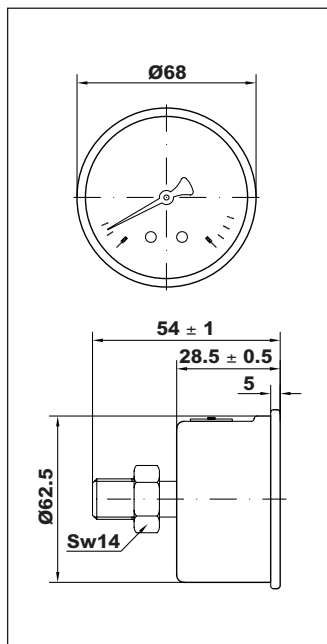
Glycerine Filled Stainless Steel Case DN63 Centre Back Entry

Materials

- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black aluminium, knife edge type
- Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

Technical Specifications

- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
- Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.209 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3A-INOX 63/QF		-1+15 bar	1/4 SAE	50/50
MG3A-INOX 63/QF		-1+30 bar	1/4 SAE	50/50

Options : see page 115

MG3A-INOX 63/QF



Type	Part No.	Description
S INOX 63	PMINACC047	Mounting bracket - Supplied separately

MG1-INOX 63/QF
MG3A-INOX 63/QF

Options subject to minimum quantity
Silicone Oil filling for temperatures -40+90°C

MG1-INOX 63/QF
MG3A-INOX 63/QF

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request

HIGHLY DURABLE, FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION

**MG3B-INOX 63/QF****EX F+R 115 DN63**

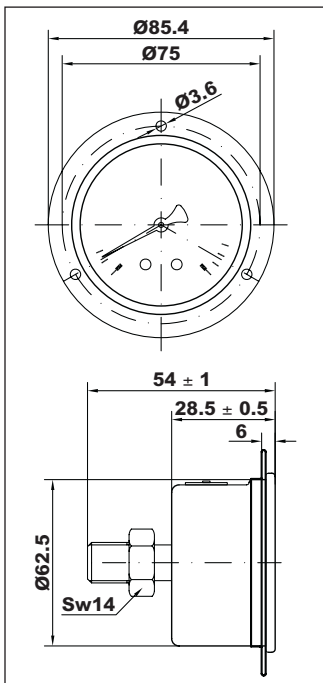
Glycerine Filled Stainless Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials

Case + 3-hole flange:	Stainless Steel 1.4301 with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black aluminium, knife edge type
Pressure connection:	Cu-alloy, 14 mm flats, with restrictor 0.5mm
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy
Liquid filling:	Glycerine 86.5%

Technical Specifications

Design:	EN 837-1
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: full scale value
Operating temperature:	Ambient: -10 ... +60 °C Medium: +60 °C maximum Storage: -10 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): $\pm 0,04\%/1K$ of the span
Accuracy class:	cl. 1.6
Degree of protection:	IP 65 per EN 60 529 / IEC 529
Individual Weight:	0.224 kg



Type	Part No.	Pressure Range	Connection	Packaging
MG3B-INOX 63/QF		-1+15 bar	1/4 SAE	50/50
MG3B-INOX 63/QF		-1+30 bar	1/4 SAE	50/50

Options : see below

OPTIONAL EXTRAS

MG3B-INOX 63/QF

Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C

MG3B-INOX 63/QF

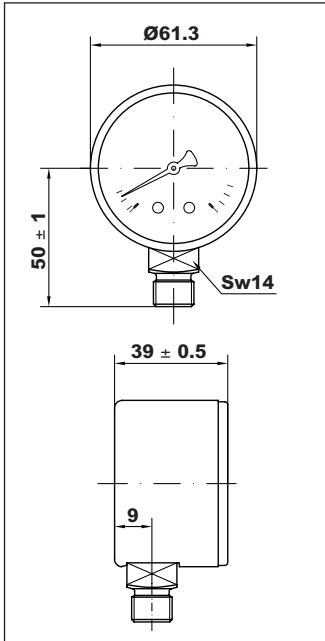
Options subject to minimum quantity

Customized dials, other scale ranges or connections on request

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR DRY AND CLEAN GASEOUS MEDIA WHICH ARE NOT AGGRESSIVE TO COPPER ALLOYS


MP1-63
EX F+R 260 DN63
Dry Steel Case DN63 Bottom Entry
Materials

Case:	Chrome-plated steel
Window:	Clear plastic
Dial:	Aluminium white
Pointer:	Aluminium black
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Capsule Cu-alloy, O-ring Perbunan
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-3
Working pressure:	Steady: 75 % of full scale value Fluctuating: 60 % of full scale value Short time: 125% of full scale value
Operating temperature:	Ambient: -20 ... +60 °C Medium: +60 °C maximum Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,06%/1K of the span
Accuracy class:	cl. 2.5 with zero point adjustment
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.175 kg

Type	Part No.	Pressure Range	Connection	Packaging
MP1-63	PP35441003	0-60 mbar/mmH ² O	G1/4B	1/50
MP1-63	PP35481001	0-100 mbar/mmH ² O	G1/4B	1/50
MP1-63	PP35601000	0-250 mbar/mmH ² O	G1/4B	1/50
MP1-63	PP35661000	0-400 mbar/mmH ² O	G1/4B	1/50
MP1-63	PP35701000	0-600 mbar/mmH ² O	G1/4B	1/50

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR DRY AND CLEAN GASEOUS MEDIA WHICH ARE NOT AGGRESSIVE TO COPPER ALLOYS



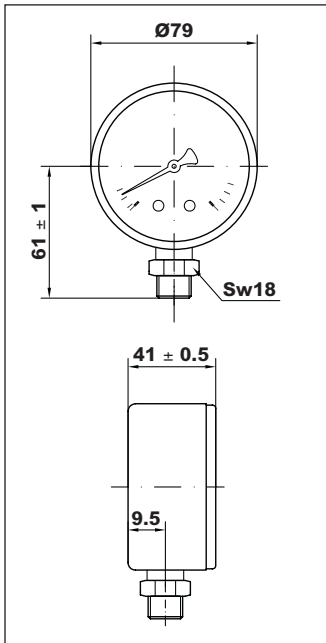
MP1-80

EX F+R 260 DN80

Dry Steel Case DN63 Bottom Entry

Materials

Case:	Chrome-plated steel
Window:	Clear plastic
Dial:	Aluminium white
Pointer:	Aluminium black
Pressure connection:	Cu-alloy, 18 mm flats
Pressure element:	Capsule Cu-alloy, O-ring Perbunan
Movement:	Cu-alloy



Technical Specifications

Design:	EN 837-3
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: 125% of full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,06%/1K of the span
	cl. 2.5 with zero point adjustment
Accuracy class:	IP 31 per EN 60 529 / IEC 529
Degree of protection:	0.265 kg
Individual Weight:	

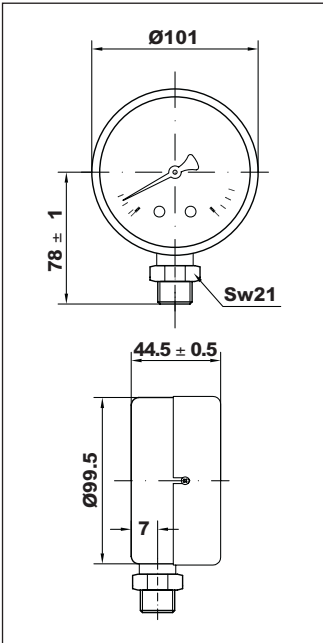
Type	Part No.	Pressure Range	Connection	Packaging
MP1-80	PP45441100	0-60 mbar/mmH ² O	G3/8B	1/50
MP1-80	PP45481101	0-100 mbar/mmH ² O	G3/8B	1/50
MP1-80	PP45601100	0-250 mbar/mmH ² O	G3/8B	1/50
MP1-80	PP45661100	0-400 mbar/mmH ² O	G3/8B	1/50
MP1-80	PP45701100	0-600 mbar/mmH ² O	G3/8B	1/50

Options : see page 119

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR DRY AND CLEAN GASEOUS MEDIA WHICH ARE NOT AGGRESSIVE TO COPPER ALLOYS


MP1-100
EX F+R 260 DN100
Dry Steel Case DN100 Bottom Entry
Materials

Case+ Bezel ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	Aluminium white
Pointer:	Aluminium black
Pressure connection:	Cu-alloy, 21 mm flats
Pressure element:	Capsule Cu-alloy, O-ring Perbunan
Movement:	Cu-alloy


Technical Specifications

Design:	EN 837-3
Working pressure:	Steady: 75 % of full scale value
	Fluctuating: 60 % of full scale value
	Short time: 125% of full scale value
Operating temperature:	Ambient: -20 ... +60 °C
	Medium: +60 °C maximum
	Storage: -20 ... +60 °C
Temperature effect:	Deviation from reference temperature (+20°C): ±0,06%/1K of the span
Accuracy class:	cl. 2.5
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.440 kg

Type	Part No.	Pressure Range	Connection	Packaging
MP1-100	PP554412	0-60 mbar/mmH ² O	G1/2B	1/12
MP1-100	PP554812	0-100 mbar/mmH ² O	G1/2B	1/12
MP1-100	PP556012	0-250 mbar/mmH ² O	G1/2B	1/12
MP1-100	PP556612	0-400 mbar/mmH ² O	G1/2B	1/12
MP1-100	PP557012	0-600 mbar/mmH ² O	G1/2B	1/12

Options : see below

OPTIONAL EXTRAS

MP1-63/80/100

Options subject to minimum quantity

Customized dials, other connections on request

MAIN PRESSURE UNITS

Positive pressures

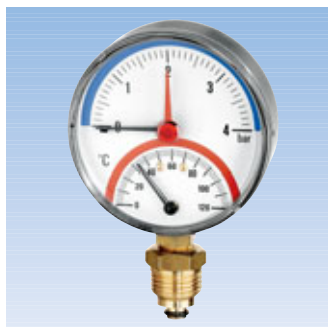
kPa	MPa	mbar	bar	mmCA	psi	in. Hg
0,25		2,5		25		0,08
0,4		4		40		0,1
0,6		6		60		0,2
1		10		100		0,3
1,6		16		160		0,5
2,5		25		250		0,8
4		40		400		1
6		60		600		2
10		100		1000		3
16		160		1600		5
25		250		2500		8
40		400		4000		12
60		600	0,6	6000	10	20
100	0,1	1000	1	10000	15	
	0,16		1,6		20	
	0,25		2,5		30	
	0,4		4		60	
	0,6		6		100	
	1		10		160	
	1,6		16		200	
	-		-		300	
	2,5		25		400	
	4		40		600	
	-		-		800	
	6		60		1000	
	10		100		1600	
	12,5		125		1800	
	16		160		2000	
	-		-		3000	
	25		250		4000	
	31,5		315		4500	
	-		-		5000	
	40		400		6000	
	-		-		8000	
	60		600		10000	
	100		1000		16000	
	160		1600		20000	
	-		-		30000	
	250		2500		40000	
	300		3000		45000	
	350		3500		50000	
	400		4000		60000	

CAUTION ! The EN 837 standard specifies: "BAR is the preferred unit of pressure".

Combined temperature and pressure gauges



FOR WATER HEATING SYSTEMS, BOILERS, POOLS AND SPAS



TIRM-ABS 80

EX F+R 828 DN80

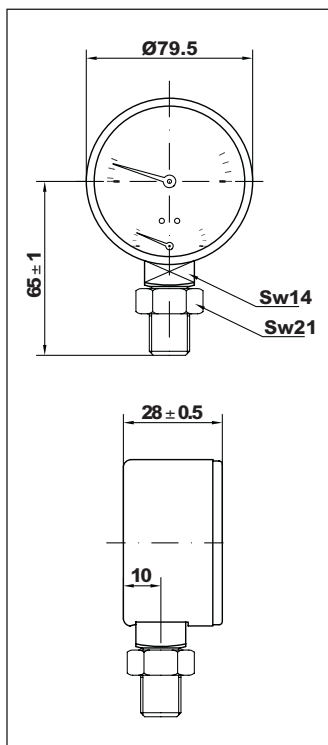
Plastic Case DN80 bottom entry

Materials

- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: Aluminium white
- Pointers: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Temperature element: Bimetal spiralled
- Automatic valve: Cu-alloy / Polypropylene combination, 21 mm flats

Technical Specifications

- Design: According to EN 837-1 & EN 13190
- Working pressure: Steady: 75 % of full scale value
Fluctuating: not applicable
Short time: not applicable
- Operating temperature: Ambient: +5 ... +60 °C
Medium: +120 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: For pressure only: Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
- Accuracy class: cl. 2.5 (Pressure), cl. 2 (Temperature)
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.135 kg



Type	Part No.	Scale Range	Connection	Packaging
TIRM-ABS 80	PL4203BD00	0-2.5 bar / 0-120° C	G1/2B	1/50
TIRM-ABS 80	PL4204BD00	0-4 bar / 0-120° C	G1/2B	1/50
TIRM-ABS 80	PL4206BD00	0- 6 bar / 0-120° C	G1/2B	1/50

Options : see page 124

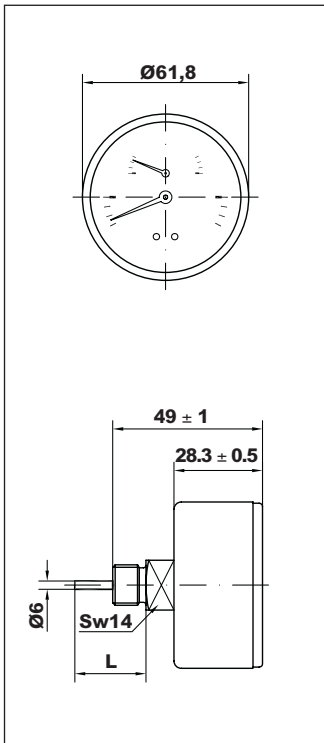
FOR WATER HEATING SYSTEMS, BOILERS, POOLS AND SPAS


TIM-ABS 63
EX F+R 818 DN63
Plastic Case DN63 Centre Back Entry
Materials

Case:	Black plastic
Window:	Clear plastic with adjustable red mark pointer
Dial:	Aluminium white
Pointers:	Black plastic
Pressure connection:	Cu-alloy, 14 mm flats
Pressure element:	Bourdon tube Cu-alloy soft soldered, C-type
Movement:	Cu-alloy
Temperature element:	Bimetal spiralled
Automatic valve:	Cu-alloy / Polypropylene combination, 21 mm flats

Technical Specifications

Design:	According to EN 837-1 & EN 13190
Working pressure:	Steady: 75 % of full scale value Fluctuating: not applicable Short time: not applicable
Operating temperature:	Ambient: +5 ... +60 °C Medium: +120 °C maximum Storage: -20 ... +60 °C
Temperature effect:	For pressure only: Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
Accuracy class:	cl. 2.5 (Pressure), cl. 2 (Temperature)
Degree of protection:	IP 31 per EN 60 529 / IEC 529
Individual Weight:	0.125 kg



Type	Part No.	Scale Range	Connection	Packaging
TIM-ABS 63		0-2.5 bar / 0-120° C	G1/2B	1/50
TIM-ABS 63	PN3204BD00	0-4 bar / 0-120° C	G1/2B	1/50
TIM-ABS 63		0-6 bar / 0-120° C	G1/2B	1/50

Options : see page 124

FOR WATER HEATING SYSTEMS, BOILERS, POOLS AND SPAS



TIM-ABS 80

EX F+R 818 DN80

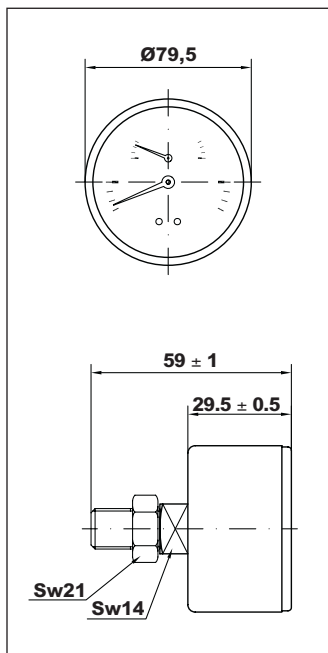
Plastic Case DN80 Centre Back Entry

Materials

- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: Aluminium white
- Pointers: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Temperature element: Bimetal spiralled
- Automatic valve: Cu-alloy / Polypropylene combination, 21 mm flats

Technical Specifications

- Design: According to EN 837-1 & EN 13190
- Working pressure: Steady: 75 % of full scale value
Fluctuating: not applicable
Short time: not applicable
- Operating temperature: Ambient: +5 ... +60 °C
Medium: +120 °C maximum
Storage: -20 ... +60 °C
- Temperature effect: For pressure only: Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
- Accuracy class: cl. 2.5 (Pressure), cl. 2 (Temperature)
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.165 kg



Type	Part No.	Scale Range	Connection	Packaging
TIM-ABS 80	PN4203BD01	0-2.5 bar / 0-120° C	G1/2B	1/50
TIM-ABS 80	PN4204BD01	0-4 bar / 0-120° C	G1/2B	1/50
TIM-ABS 80	PN4206BD01	0- 6 bar / 0-120° C	G1/2B	1/50

Options : see below

OPTIONAL EXTRAS

**TIRM-ABS 80
TIM-ABS 63/80**

Options subject to minimum quantity
Customized dials, other scale ranges on request

Thermometers



FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TBR-80/VE

EX F+R 802 DN80

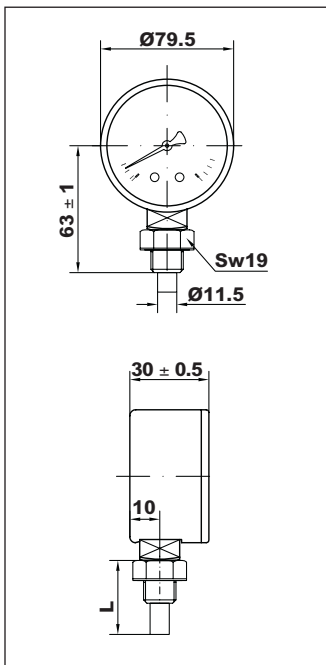
Chrome-Plated Steel Case DN80 Bottom Entry

Materials

Case:	Chrome-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Stem:	Cu-alloy Ø 9mm with O-Ring for clamping
Temperature element:	Bimetal, spiralled
Movement:	Cu-alloy / Polyester combination
Pocket:	Cu-alloy, 19 mm flats

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 31 per EN 60 529/IEC 529
Individual Weight:	0.202 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TBR-80/VE	PT8A507004	50	0-120 °C	G1/2B	1/50
TBR-80/VE	PT8A987001	75	-30+50°C	G1/2B	1/50
TBR-80/VE		75	0-60 °C	G1/2B	1/50
TBR-80/VE	PT8B987001	100	-30+50°C	G1/2B	1/50
TBR-80/VE	PT8B447001	100	0-60 °C	G1/2B	1/50
TBR-80/VE	PT8B507003	100	0-120 °C	G1/2B	1/50

Options : see below

OPTIONAL EXTRAS

TBR-80/VE

Options subject to minimum quantity
Customized dials, other scale ranges on request

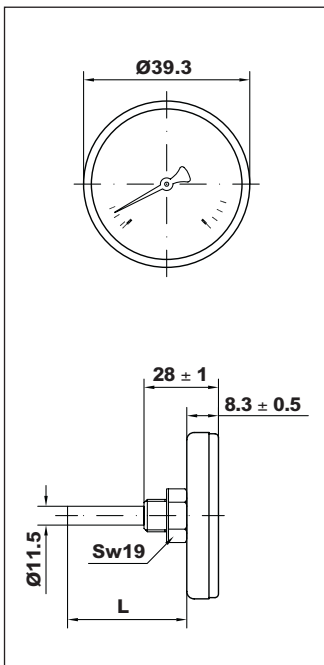
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY


TB-40/VE
EX F+R 801 DN40
Zinc-Plated Steel Case DN40 Centre Back Entry
Materials

Case:	Zinc-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy, 19mm flats with fixing screw

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.059 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-40/VE	PT1A457002	30	0-80 °C	G3/8B	240/240
TB-40/VE	PT1A507001	30	0-120 °C	G3/8B	240/240
TB-40/VE		50	30+50 °C	G1/2B	240/240
TB-40/VE	PT1A447000	50	0-60 °C	G1/2B	240/240
TB-40/VE		50	0-80 °C	G1/2B	240/240
TB-40/VE		50	0-120 °C	G1/2B	240/240

Options : see page 131

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-63/VE

EX F+R 801 DN63

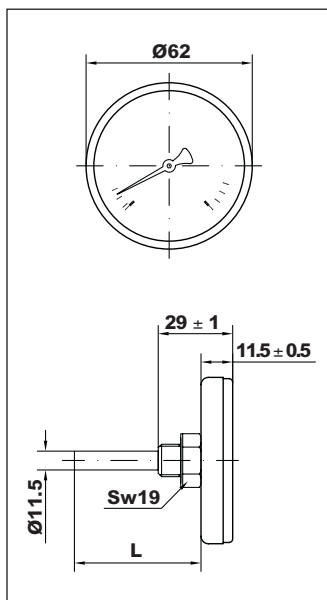
Zinc-Plated Steel Case DN63 Centre Back Entry

Materials

- Case: Zinc-plated steel
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black plastic
- Stem: Zinc-plated steel Ø 9mm
- Temperature element: Bimetal, spiralled
- Pocket: Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

Tecnical Specifications

- Design: EN 13190
- Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.112 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-63/VE		50	-30+50 °C	G1/2B	50/50
TB-63/VE	PT3A447001	50	0-60 °C	G1/2B	50/50
TB-63/VE		50	0-80 °C	G1/2B	50/50
TB-63/VE	PT3A507001	50	0-120 °C	G1/2B	50/50
TB-63/VE		100	-30+50 °C	G1/2B	50/50
TB-63/VE		100	0-60 °C	G1/2B	50/50
TB-63/VE		100	0-80 °C	G1/2B	50/50
TB-63/VE		100	0-120 °C	G1/2B	50/50
TB-63/VE		150	-30+50 °C	G1/2B	50/50
TB-63/VE		150	0-60 °C	G1/2B	50/50
TB-63/VE		150	0-80 °C	G1/2B	50/50
TB-63/VE		150	0-120 °C	G1/2B	50/50
TB-63/VE		200	-30+50 °C	G1/2B	50/50
TB-63/VE		200	0-60 °C	G1/2B	50/50
TB-63/VE		200	0-80 °C	G1/2B	50/50
TB-63/VE		200	0-120 °C	G1/2B	50/50
TB-63/VE		300	-30+50 °C	G1/2B	50/50
TB-63/VE		300	0-60 °C	G1/2B	50/50
TB-63/VE		300	0-80 °C	G1/2B	50/50
TB-63/VE		300	0-120 °C	G1/2B	50/50

Options : see page 131

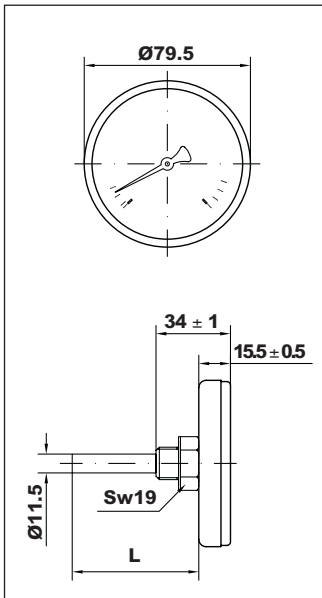
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY


TB-80/VE
EX F+R 801 DN80
Zinc-Plated Steel Case DN80 Centre Back Entry
Materials

Case:	Zinc-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.130 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-80/VE	PT4A987001	50	-30+50 °C	G1/2B	50/50
TB-80/VE	PT4A447001	50	0-60 °C	G1/2B	50/50
TB-80/VE		50	0-80 °C	G1/2B	50/50
TB-80/VE	PT4A507003	50	0-120 °C	G1/2B	50/50
TB-80/VE	PT4B987001	100	-30+50 °C	G1/2B	50/50
TB-80/VE	PT4B447001	100	0-60 °C	G1/2B	50/50
TB-80/VE		100	0-80 °C	G1/2B	50/50
TB-80/VE	PT4B507004	100	0-120 °C	G1/2B	50/50
TB-80/VE		150	-30+50 °C	G1/2B	50/50
TB-80/VE		150	0-60 °C	G1/2B	50/50
TB-80/VE		150	0-80 °C	G1/2B	50/50
TB-80/VE	PT4C507001	150	0-120 °C	G1/2B	50/50
TB-80/VE		200	-30+50 °C	G1/2B	50/50
TB-80/VE		200	0-60 °C	G1/2B	50/50
TB-80/VE		200	0-80 °C	G1/2B	50/50
TB-80/VE		200	0-120 °C	G1/2B	50/50
TB-80/VE		300	-30+50 °C	G1/2B	50/50
TB-80/VE		300	0-60 °C	G1/2B	50/50
TB-80/VE		300	0-80 °C	G1/2B	50/50
TB-80/VE		300	0-120 °C	G1/2B	50/50

Options : see page 131

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-100/VE

EX F+R 801 DN100

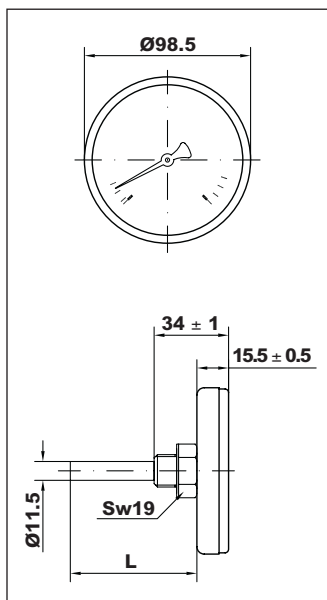
Zinc-Plated Steel Case DN100 Centre Back Entry

Materials

- Case: Zinc-plated steel
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black plastic
- Stem: Zinc-plated steel Ø 9mm
- Temperature element: Bimetal, spiralled
- Pocket: Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

Tecnical Specifications

- Design: EN 13190
- Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.175 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-100/VE	PT5A987001	50	-30+50 °C	G1/2B	32/32
TB-100/VE	PT5A447001	50	0-60 °C	G1/2B	32/32
TB-100/VE		50	0-80 °C	G1/2B	32/32
TB-100/VE		50	0-120 °C	G1/2B	32/32
TB-100/VE	PT5B987001	100	-30+50 °C	G1/2B	32/32
TB-100/VE	PT5B447001	100	0-60 °C	G1/2B	32/32
TB-100/VE		100	0-80 °C	G1/2B	32/32
TB-100/VE	PT5B507003	100	0-120 °C	G1/2B	32/32
TB-100/VE		150	-30+50 °C	G1/2B	32/32
TB-100/VE		150	0-60 °C	G1/2B	32/32
TB-100/VE		150	0-80 °C	G1/2B	32/32
TB-100/VE		150	0-120 °C	G1/2B	32/32
TB-100/VE		200	-30+50 °C	G1/2B	32/32
TB-100/VE		200	0-60 °C	G1/2B	32/32
TB-100/VE		200	0-80 °C	G1/2B	32/32
TB-100/VE		200	0-120 °C	G1/2B	32/32
TB-100/VE		300	-30+50 °C	G1/2B	32/32
TB-100/VE		300	0-60 °C	G1/2B	32/32
TB-100/VE		300	0-80 °C	G1/2B	32/32
TB-100/VE		300	0-120 °C	G1/2B	32/32

Options : see page 131

TB-40-63-80-100/VE

Options subject to minimum quantity

GSS - Stainless steel pocket

See accessories

TB-40-63-80-100/VE

Options subject to minimum quantity

Customized dials, other scale ranges on request

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-33

EX F+R 801 DN33

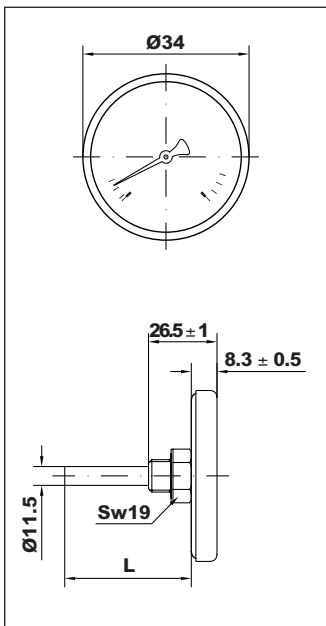
Zinc-Plated Steel Case DN33 With Chrome-Plated Bezel Centre Back Entry

Materials

Case:	Zinc-plated steel
Bezel ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy, 19mm flats with fixing screw

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.046 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-33	PT10447000	30	0-60 °C	G3/8B	240/240
TB-33		30	0-80 °C	G3/8B	240/240
TB-33	PT10507003	30	0-120 °C	G3/8B	240/240
TB-33		50	-30+50 °C	G1/2B	240/240
TB-33		50	0-60 °C	G1/2B	240/240
TB-33		50	0-80 °C	G1/2B	240/240
TB-33	PT10507000	50	0-120 °C	G1/2B	240/240

Options : see page 138

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-40

EX F+R 801 DN40

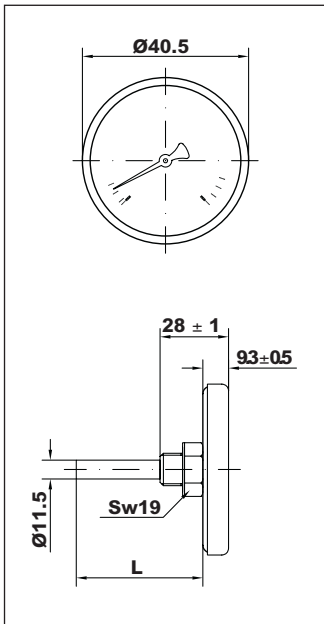
Zinc-Plated Steel Case DN40 With Chrome-Plated Bezel Centre Back Entry

Materials

Case:	Zinc-plated steel
Bezel ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy, 19mm flats with fixing screw

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.060 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-40	PT10457801	30	0-80 °C	G3/8B	240/240
TB-40	PT10507001	30	0-120 °C	G3/8B	240/240
TB-40		30	-30+50 °C	G1/2B	240/240
TB-40		50	0-60 °C	G1/2B	240/240
TB-40		50	0-80 °C	G1/2B	240/240
TB-40		50	0-120 °C	G1/2B	240/240

Options : see page 138

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-52

EX F+R 801 DN52

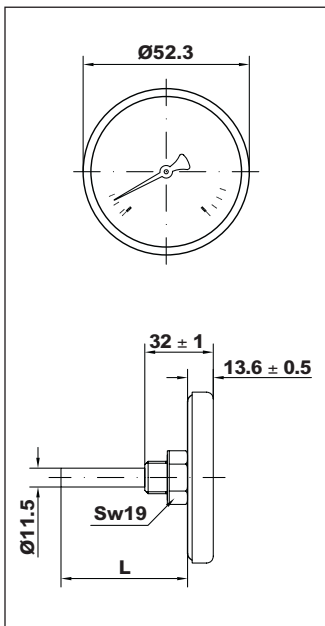
Zinc-Plated Steel Case DN52 With Chrome-Plated Bezel Centre Back Entry

Materials

Case:	Zinc-plated steel
Bezel ring:	Chrome-plated steel
Window:	Clear plastic, > 120°C instrument glass
Dial:	White aluminium
Pointer:	Black plastic, > 120°C black aluminium
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy, 19mm flats with fixing screw

Tecnical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.100 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-52		50	-30+50 °C	G1/2B	100/100
TB-52		50	0-60 °C	G1/2B	100/100
TB-52	PT20457000	50	0-80 °C	G1/2B	100/100
TB-52	PT205070	50	0-120 °C	G1/2B	100/100
TB-52		50	0-200 °C	G1/2B	100/100
TB-52		50	0-250 °C	G1/2B	100/100
TB-52		50	0-350 °C	G1/2B	100/100
TB-52		100	-30+50 °C	G1/2B	100/100
TB-52		100	0-60 °C	G1/2B	100/100
TB-52		100	0-80 °C	G1/2B	100/100
TB-52		100	0-120 °C	G1/2B	100/100
TB-52		100	0-200 °C	G1/2B	100/100
TB-52		100	0-250 °C	G1/2B	100/100
TB-52		100	0-350 °C	G1/2B	100/100
TB-52	PT21687001	100	0-500 °C	G1/2B	100/100

Options : see page 138

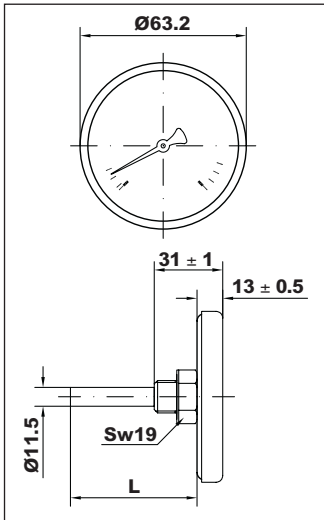
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY


TB-63
EX F+R 801 DN63
Zinc-Plated Steel Case DN63 With Chrome-Plated Bezel Centre Back Entry
Materials

Case: Zinc-plated steel
 Bezel ring: Chrome-plated steel
 Window: Clear plastic, > 120°C instrument glass
 Dial: White plastic, > 120°C aluminium
 Pointer: Black plastic, > 120°C black aluminium
 Stem: Zinc-plated steel Ø 9mm
 Temperature element: Bimetal, spiralled
 Pocket: Cu-alloy, up to length 100 mm, above Cu-alloy-copper 19 mm flats with fixing screw

Technical Specifications

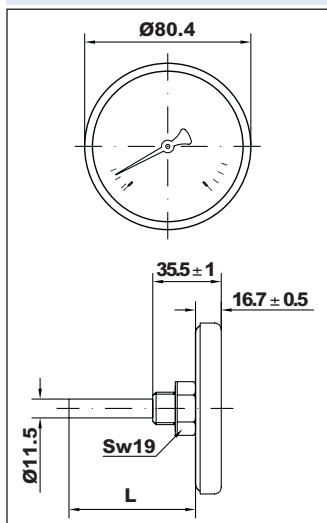
Design: EN 13190
 Temperature limits: Ambient: -20 ... +60 °C
 Medium: as per scale indication
 Storage: -20 ... +60 °C
 Operating temperature: As per scale indication
 Temperature effect: Not applicable
 Accuracy class: cl. 2
 Degree of protection: IP 41 per EN 60 529/IEC 529
 Individual Weight: 0.110 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-63	PT309870	50	-30+50 °C	G1/2B	50/50
TB-63	PT304470	50	0-60 °C	G1/2B	50/50
TB-63		50	0-80 °C	G1/2B	50/50
TB-63	PT30507015	50	0-120 °C	G1/2B	50/50
TB-63	PT30587001	50	0-200 °C	G1/2B	50/50
TB-63		50	0-250 °C	G1/2B	50/50
TB-63	PT306470	50	0-350 °C	G1/2B	50/50
TB-63	PT31987001	100	-30+50 °C	G1/2B	50/50
TB-63	PT31447001	100	0-60 °C	G1/2B	50/50
TB-63		100	0-80 °C	G1/2B	50/50
TB-63	PT31507001	100	0-120 °C	G1/2B	50/50
TB-63	PT31587001	100	0-200 °C	G1/2B	50/50
TB-63		100	0-250 °C	G1/2B	50/50
TB-63	PT316470	100	0-350 °C	G1/2B	50/50
TB-63		100	0-500 °C	G1/2B	50/50
TB-63		150	-30+50 °C	G1/2B	50/50
TB-63		150	0-60 °C	G1/2B	50/50
TB-63		150	0-80 °C	G1/2B	50/50
TB-63		150	0-120 °C	G1/2B	50/50
TB-63		150	0-200 °C	G1/2B	50/50
TB-63	PT32607001	150	0-250 °C	G1/2B	50/50
TB-63		150	0-350 °C	G1/2B	50/50
TB-63		150	0-500 °C	G1/2B	50/50
TB-63		200	-30+50 °C	G1/2B	50/50
TB-63		200	0-60 °C	G1/2B	50/50
TB-63		200	0-80 °C	G1/2B	50/50
TB-63		200	0-120 °C	G1/2B	50/50
TB-63		200	0-200 °C	G1/2B	50/50
TB-63		200	0-250 °C	G1/2B	50/50
TB-63		200	0-350 °C	G1/2B	50/50
TB-63	PT33687000	200	0-500 °C	G1/2B	50/50
TB-63		300	-30+50 °C	G1/2B	50/50
TB-63		300	0-60 °C	G1/2B	50/50
TB-63		300	0-80 °C	G1/2B	50/50
TB-63		300	0-120 °C	G1/2B	50/50
TB-63		300	0-200 °C	G1/2B	50/50
TB-63		300	0-250 °C	G1/2B	50/50
TB-63		300	0-350 °C	G1/2B	50/50
TB-63		300	0-500 °C	G1/2B	50/50

Options : see page 138

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY



TB-80

EX F+R 801 DN80

Zinc-Plated Steel Case DN80 With Chrome-Plated Bezel Centre Back Entry

Materials

- Case: Zinc-plated steel
- Bezel ring: Chrome-plated steel
- Window: Clear plastic, > 120°C instrument glass
- Dial: White plastic, > 120°C aluminium
- Pointer: Black plastic, > 120°C black aluminium
- Stem: Zinc-plated steel Ø 9mm
- Temperature element: Bimetal, spiralled
- Pocket: Cu-alloy, up to length 100 mm, above Cu-alloy-copper 19 mm flats with fixing screw

Technical Specifications

- Design: EN 13190
- Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.150 kg

Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-80	PT409870	50	-30+50 °C	G1/2B	50/50
TB-80	PT404470	50	0-60 °C	G1/2B	50/50
TB-80		50	0-80 °C	G1/2B	50/50
TB-80	PT40507007	50	0-120 °C	G1/2B	50/50
TB-80	PT406170	50	0-200 °C	G1/2B	50/50
TB-80		50	0-250 °C	G1/2B	50/50
TB-80		50	0-350 °C	G1/2B	50/50
TB-80	PT419870	100	-30+50 °C	G1/2B	50/50
TB-80	PT414470	100	0-60 °C	G1/2B	50/50
TB-80	PT41457001	100	0-80 °C	G1/2B	50/50
TB-80	PT41507002	100	0-120 °C	G1/2B	50/50
TB-80	PT415870	100	0-200 °C	G1/2B	50/50
TB-80	PT41607001	100	0-250 °C	G1/2B	50/50
TB-80	PT41647000	100	0-350 °C	G1/2B	50/50
TB-80	PT41687001	100	0-500 °C	G1/2B	50/50
TB-80	PT479870	150	-30+50 °C	G1/2B	50/50
TB-80		150	0-60 °C	G1/2B	50/50
TB-80	PT424670	150	0-80 °C	G1/2B	50/50
TB-80		150	0-120 °C	G1/2B	50/50
TB-80		150	0-200 °C	G1/2B	50/50
TB-80	PT42607001	150	0-250 °C	G1/2B	50/50
TB-80		150	0-350 °C	G1/2B	50/50
TB-80	PT42687001	150	0-500 °C	G1/2B	50/50
TB-80		200	-30+50 °C	G1/2B	50/50
TB-80		200	0-60 °C	G1/2B	50/50
TB-80		200	0-80 °C	G1/2B	50/50
TB-80		200	0-120 °C	G1/2B	50/50
TB-80	PT43687001	200	0-200 °C	G1/2B	50/50
TB-80		200	0-250 °C	G1/2B	50/50
TB-80	PT43647001	200	0-350 °C	G1/2B	50/50
TB-80		200	0-500 °C	G1/2B	50/50
TB-80		300	-30+50 °C	G1/2B	50/50
TB-80		300	0-60 °C	G1/2B	50/50
TB-80		300	0-80 °C	G1/2B	50/50
TB-80		300	0-120 °C	G1/2B	50/50
TB-80		300	0-200 °C	G1/2B	50/50
TB-80		300	0-250 °C	G1/2B	50/50
TB-80		300	0-350 °C	G1/2B	50/50
TB-80	PT44687000	300	0-500 °C	G1/2B	50/50

Options : see page 138

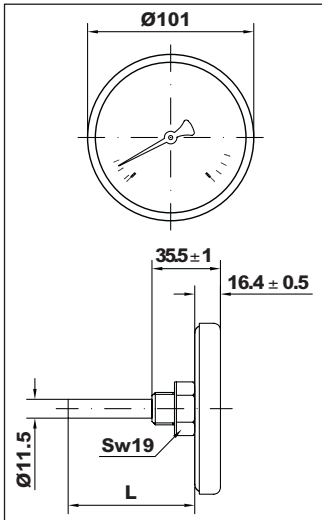
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY


TB-100
EX F+R 801 DN100
Zinc-Plated Steel Case DN100 With Chrome-Plated Bezel Centre Back Entry
Materials

Case:	Zinc-plated steel
Bezel ring:	Chrome-plated steel
Window:	Clear plastic, > 120°C instrument glass
Dial:	White plastic, > 120°C aluminium
Pointer:	Black plastic, > 120°C black aluminium
Stem:	Zinc-plated steel Ø 9mm
Temperature element:	Bimetal, spiralled
Pocket:	Cu-alloy, up to length 100mm, above Cu-alloy-copper 19 mm flats with fixing screw

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.220 kg



Type	Part No.	L (mm)	Scale Range	Connection	Packaging
TB-100	PT509870	50	-30+50 °C	G1/2B	32/32
TB-100	PT504470	50	0-60 °C	G1/2B	32/32
TB-100		50	0-80 °C	G1/2B	32/32
TB-100	PT50507003	50	0-120 °C	G1/2B	32/32
TB-100		50	0-200 °C	G1/2B	32/32
TB-100		50	0-250 °C	G1/2B	32/32
TB-100		50	0-350 °C	G1/2B	32/32
TB-100	PT519870	100	-30+50 °C	G1/2B	32/32
TB-100	PT514470	100	0-60 °C	G1/2B	32/32
TB-100		100	0-80 °C	G1/2B	32/32
TB-100	PT51507003	100	0-120 °C	G1/2B	32/32
TB-100	PT515870	100	0-200 °C	G1/2B	32/32
TB-100		100	0-250 °C	G1/2B	32/32
TB-100	PT516470	100	0-350 °C	G1/2B	32/32
TB-100	PT51687000	100	0-500 °C	G1/2B	32/32
TB-100		150	-30+50 °C	G1/2B	32/32
TB-100	PT52447000	150	0-60 °C	G1/2B	32/32
TB-100		150	0-80 °C	G1/2B	32/32
TB-100		150	0-120 °C	G1/2B	32/32
TB-100	PT52587000	150	0-200 °C	G1/2B	32/32
TB-100	PT52607000	150	0-250 °C	G1/2B	32/32
TB-100	PT526470	150	0-350 °C	G1/2B	32/32
TB-100		150	0-500 °C	G1/2B	32/32
TB-100	PT539870	200	-30+50 °C	G1/2B	32/32
TB-100		200	0-60 °C	G1/2B	32/32
TB-100		200	0-80 °C	G1/2B	32/32
TB-100		200	0-120 °C	G1/2B	32/32
TB-100		200	0-200 °C	G1/2B	32/32
TB-100		200	0-250 °C	G1/2B	32/32
TB-100	PT536470	200	0-350 °C	G1/2B	32/32
TB-100		200	0-500 °C	G1/2B	32/32
TB-100		300	-30+50 °C	G1/2B	32/32
TB-100	PT54447001	300	0-60 °C	G1/2B	32/32
TB-100		300	0-80 °C	G1/2B	32/32
TB-100		300	0-120 °C	G1/2B	32/32
TB-100		300	0-200 °C	G1/2B	32/32
TB-100		300	0-250 °C	G1/2B	32/32
TB-100		300	0-350 °C	G1/2B	32/32
TB-100		300	0-500 °C	G1/2B	32/32

Options : see page 138

OPTIONAL EXTRAS

TB-33-40-52-63-80-100

Options subject to minimum quantity

GSS - Stainless steel pocket

See accessories

TB-33-40-52-63-80-100

Options subject to minimum quantity

Customized dials, other scale ranges on request

FOR SURFACE MOUNTING ON PIPES IN DOMESTIC AND INDUSTRIAL HEATING SYSTEMS



TCM-63

EX F+R 810 DN63

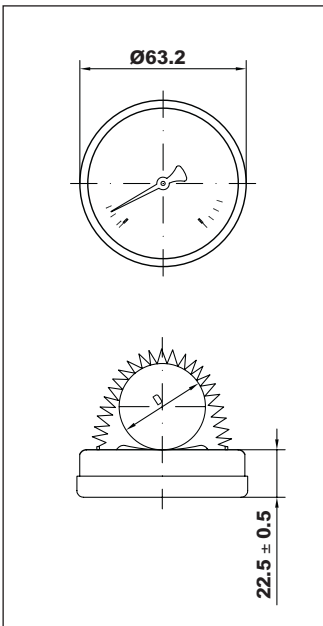
**Black Steel Case DN63
With Chrome-Plated Bezel and Fixing Spring**

Materials

Case:	Black steel, powder coated
Bezel ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Fixing spring:	Spring steel, for pipe connections from Ø 30 to 65 mm
Temperature element:	Bimetal, spiralled
Temperature connection:	By contact on the rear surface

Technical Specifications

Design:	According EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 31 per EN 60 529/IEC 529
Individual Weight:	0.065 kg



Type	Part No.	Scale Range	Packaging
TCM-63		0-60 °C	100/100
TCM-63	PT055070	0-120°C	100/100

Options : see page 140

FOR SURFACE MOUNTING ON PIPES IN DOMESTIC AND INDUSTRIAL HEATING SYSTEMS



TCF-63

EX F+R 810 DN63

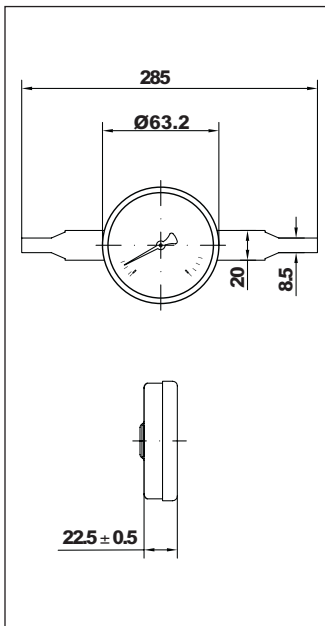
Black Steel Case DN63 With Chrome-Plated Bezel and Fixing Strip

Materials

Case:	Black steel, powder coated
Bezel ring:	Chrome-plated steel
Window:	Clear plastic
Dial:	White aluminium
Pointer:	Black plastic
Fixing strip:	Copper, for pipe connections from Ø 30 to 76 mm
Temperature element:	Bimetal, spiralled
Temperature connection:	By contact on the rear surface

Technical Specifications

Design:	According EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 31 per EN 60 529/IEC 529
Individual Weight:	0.065 kg



Type	Part No.	Scale Range	Packaging
TCF-63		0-60 °C	50/50
TCF-63	PT065070	0-120°C	50/50

Options : see below

OPTIONAL EXTRAS

**TCM-63
TCF-63**

Options subject to minimum quantity
Customized dials on request

FOR CHIMNEY SYSTEMS (EXHAUST GASES)



TB-63/FUMI

EX F+R 801 DN63

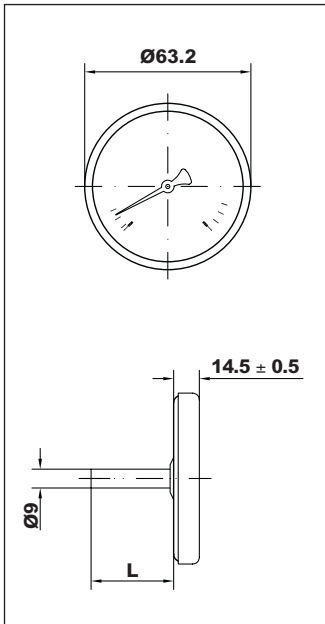
Zinc-plated Steel Case DN63 With Chrome-Plated Bezel Centre Back Entry

Materials

Case:	Zinc-plated steel
Bezel ring:	Chrome-plated steel
Window:	Instrument glass
Dial:	White aluminium
Pointer:	Black aluminium
Stem:	Zinc-plated steel Ø 9mm, without pocket
Temperature element:	Bimetal, spiralled

Technical Specifications

Design:	EN 13190
Temperature limits:	Ambient: -20 ... +60 °C Medium: as per scale indication Storage: -20 ... +60 °C
Operating temperature:	As per scale indication
Temperature effect:	Not applicable
Accuracy class:	cl. 2
Degree of protection:	IP 41 per EN 60 529/IEC 529
Individual Weight:	0.095 kg



Type	Part No.	L (mm)	Scale Range	Packaging
TB-63/FUMI	PT366870	100	0-500°C	50/50
TB-63/FUMI	PT376870	150	0-500°C	50/50
TB-63/FUMI	PT386870	200	0-500°C	40/40
TB-63/FUMI	PT396870	300	0-500°C	20/20

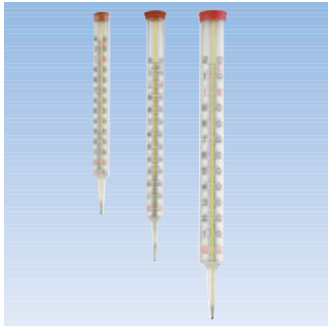
Options : see below

OPTIONAL EXTRAS

TB-63/FUMI

Options subject to minimum quantity
Customized dials on request

FOR APPLICATIONS SUBJECT TO VIBRATIONS IN INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY.



TV

EX F+R 804

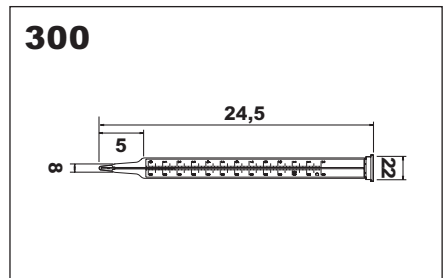
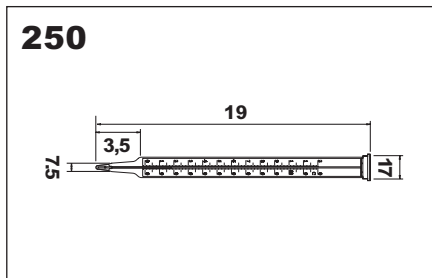
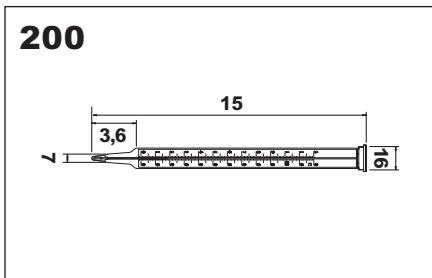
Straight Glass Thermometer

Materials

Case: Glass tube with stem
 Dial: White plastic
 Temperature element: Xylen-filled bulb

Technical Specifications

Temperature limits: Ambient: -20 ... +60 °C
 Medium: as per scale indication
 Storage: -20 ... +60 °C
 Operating temperature: As per scale indication
 Temperature effect: Not applicable
 Accuracy class: cl. 2
 Degree of protection: IP 41 per EN 60 529/IEC 529
 Individual Weight: 0.020 kg



Type	Part Number	Length (mm)	Scale range	Packaging
TV	PZ185070	200	-10+120 °C	20/20
TV	PZ205070	250	-10+120 °C	20/20
TV	PZ225070	300	-10+120 °C	20/20



C

EX F+R 998

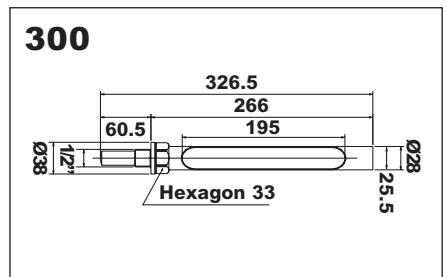
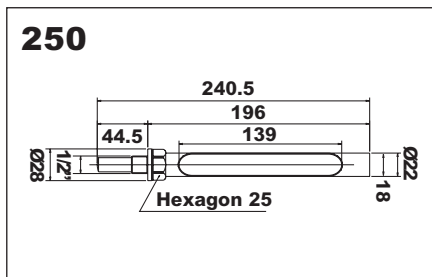
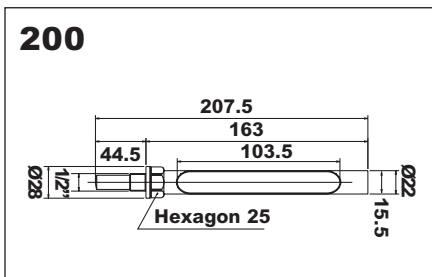
Straight Case with pocket for Glass Thermometer TV

Materials

Case + cap: Cu-alloy
 Pocket: Cu-alloy, 50 mm
 Connection: Cu-alloy 25 mm flats

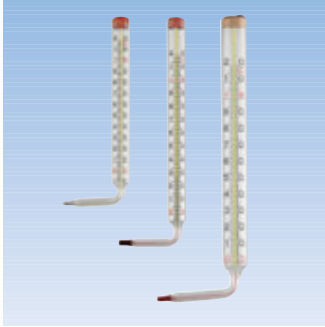
Technical Specifications

Individual Weight: 0.120 kg



Type	Part Number	Length (mm)	Scale range	Packaging
C	PZ050000	200	-10+120 °C	50/50
C	PZ060000	250	-10+120 °C	50/50
C	PZ070000	300	-10+120 °C	50/50

FOR APPLICATIONS SUBJECT TO VIBRATIONS IN INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY.



TVA

EX F+R 804

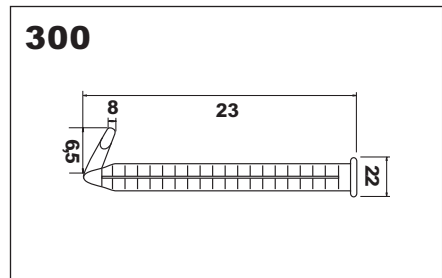
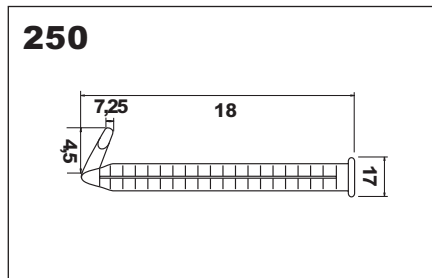
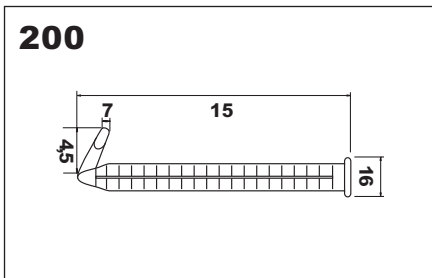
Bent Glass Thermometer

Materials

Case: Glass tube with stem at 90° angle
 Dial: White plastic
 Temperature element: Xylen-filled bulb

Technical Specifications

Temperature limits: Ambient: -20 ... +60 °C
 Medium: as per scale indication
 Storage: -20 ... +60 °C
 Operating temperature: As per scale indication
 Temperature effect: Not applicable
 Accuracy class: cl. 2
 Degree of protection: IP 41 per EN 60 529/IEC 529
 Individual Weight: 0.023 kg



Type	Part Number	Length (mm)	Scale range	Packaging
TVA	PZ265070	200	-10+120 °C	20/20
TVA	PZ275070	250	-10+120 °C	20/20
TVA	PZ285070	300	-10+120 °C	20/20



CA

EX F+R 998

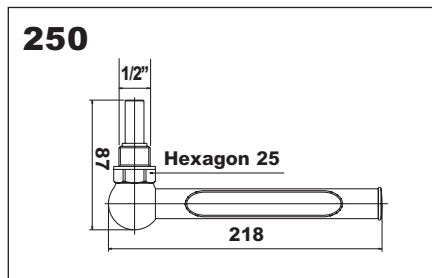
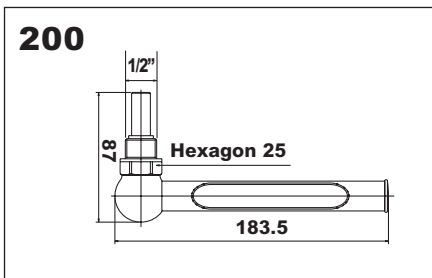
Bent Case with pocket for Glass Thermometer TVA

Materials

Case + cap: Cu-alloy
 Pocket: Cu-alloy, 50 mm
 Connection: Cu-alloy 25 mm flats at 90° angle

Technical Specifications

Individual Weight: 0.220 kg



Type	Part Number	Length (mm)	Scale range	Packaging
CA	PZ080000	200	-10+120 °C	10/10
CA	PZ090000	250	-10+120 °C	10/10

NOTES

Accessories



FOR PRESSURE GAUGES AND THERMOMETERS

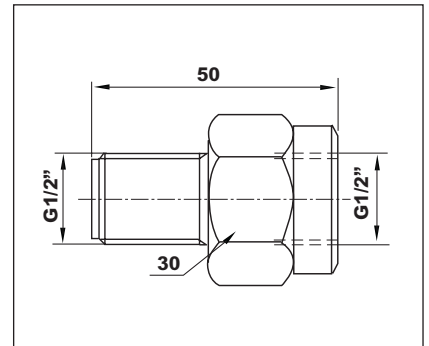
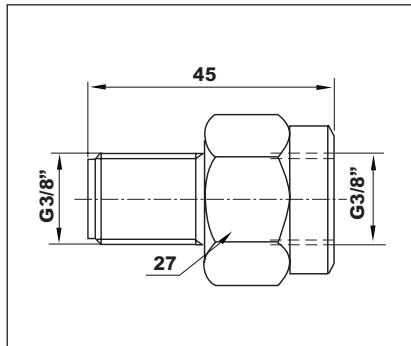
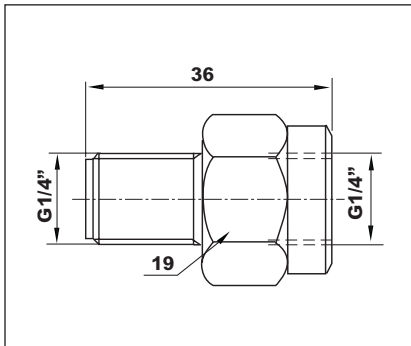


AM

Pressure Dampener

Materials

Body: Cu-alloy
 Thread Connection: Cu-alloy, male-female



Type	Part No.	Connection	Weight (kg)	Packaging
AM	PZ010000	G1/4B	0.060	20/20
AM	PZ020000	G3/8B	0.060	20/20
AM	PZ030000	G1/2B	0.060	20/20



RF

EX F+R 998

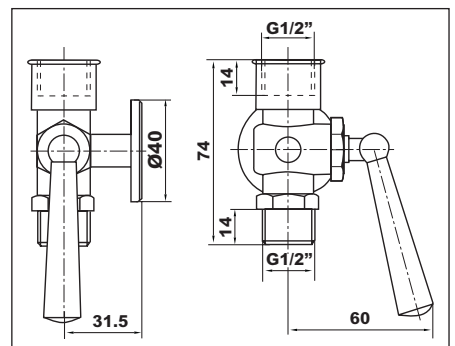
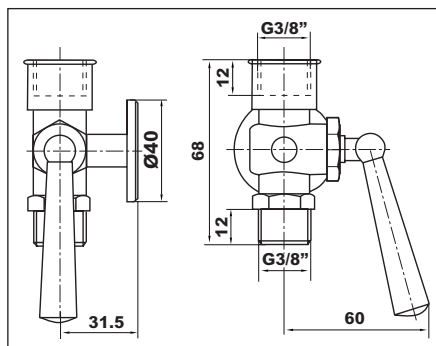
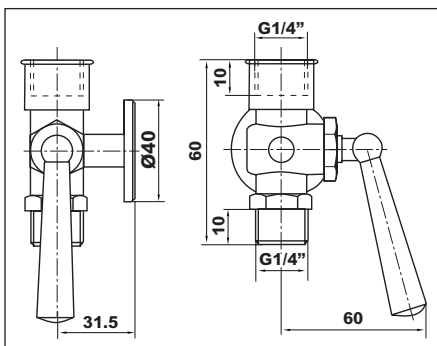
Ball Valve With Test Flange

Materials

Body: Cu-alloy, three-way
 Thread Connection: Cu-alloy, male-female
 Test flange: Cu-alloy, DN40

Technical Specifications

Temperature limits: Max. 80°C
 Working pressure: PN 16 max.



Type	Part No.	Connection	Weight (kg)	Packaging
RF	PZ110000	G1/4B	0.200	20/20
RF	PZ120000	G3/8B	0.200	20/20
RF	PZ130000	G1/2B	0.200	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



RS

EX F+R 998

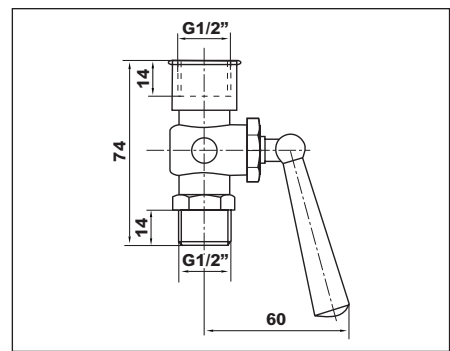
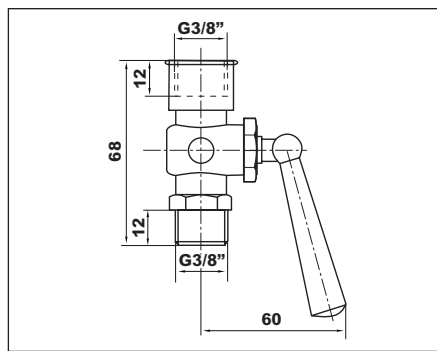
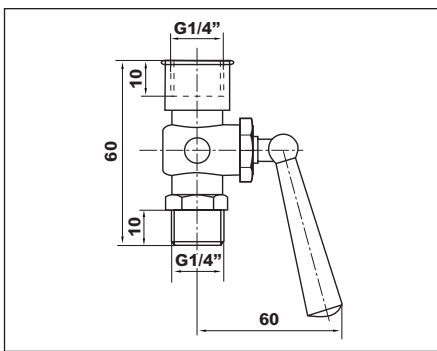
Ball Valve

Materials

Body: Cu-alloy, two-way
Thread Connection: Cu-alloy, male-female

Technical Specifications

Temperature limits: Max. 80°C
Working pressure: PN 16 max



Type	Part No.	Connection	Weight (kg)	Packaging
RS	PZ112000	G1/4B	0.130	20/20
RS	PZ122000	G3/8B	0.130	20/20
RS	PZ132000	G1/2B	0.130	20/20



RFX

EX F+R 998

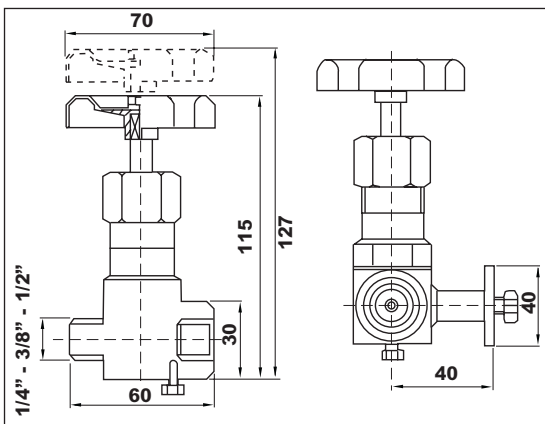
Manual Shut Off Valve With Stainless Steel Test Flange

Materials

Body: Stainless steel AISI 316, three-way
Thread Connection: Stainless steel, male-female
Test flange: Stainless steel, DN40

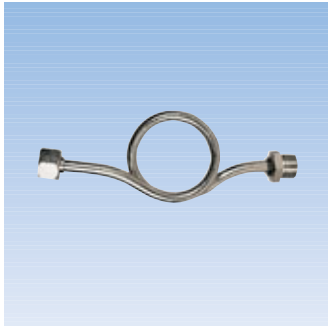
Technical Specifications

Temperature limits: Max. 220°C
Working pressure: PN 210 max.



Type	Part No.	Connection	Weight (kg)	Packaging
RFX	PZ11010000	G1/4B	1.120	20/20
RFX	PZ12010000	G3/8B	1.120	20/20
RFX	PZ13010000	G1/2B	1.120	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



SRN

EX F+R 998

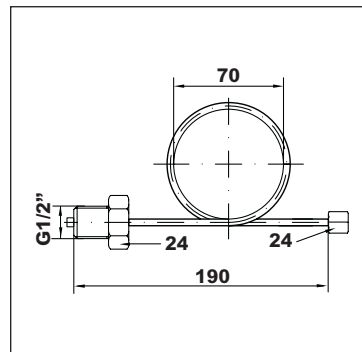
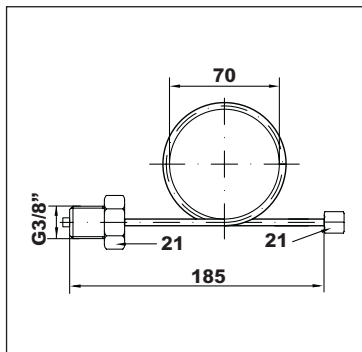
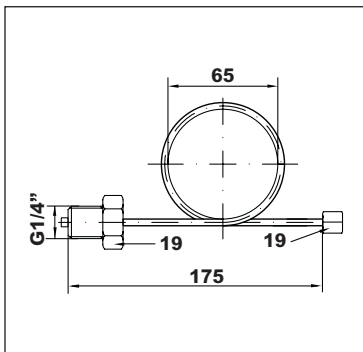
Copper Nickel-plated Syphon (Trumpet form)

Materials

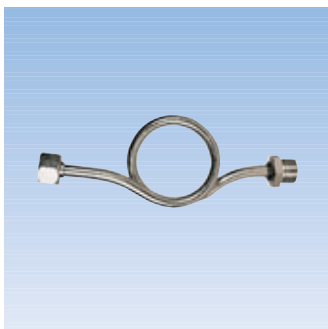
Tube: Copper, nickel-plated
 Thread Connection: Copper, nickel-plated, male-female

Technical Specifications

Temperature limits: Max. 120°C
 Working pressure: PN 25 max



Type	Part No.	Connection	Weight (kg.)	Packaging
SRN	407D14	G1/4B	0.090	20/20
SRN	407D38	G3/8B	0.090	20/20
SRN	407D12	G1/2B	0.090	20/20



SRX

EX F+R 998

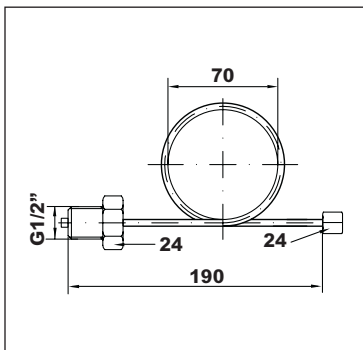
Stainless Steel Syphon (Trumpet form)

Materials

Tube: Stainless steel AISI 316
 Thread Connection: Stainless steel AISI 316, male-female

Technical Specifications

Temperature limits: Max. 200°C
 Working pressure: PN 100 max.



Type	Part No.	Connection	Weight (kg.)	Packaging
SRX	PZ16100000	G1/2B	0.011	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



RP

EX F+R 998

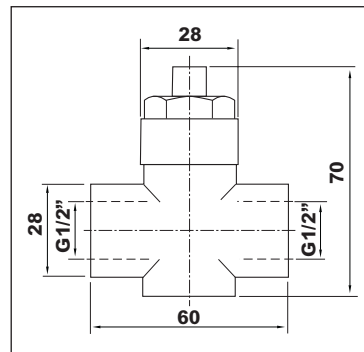
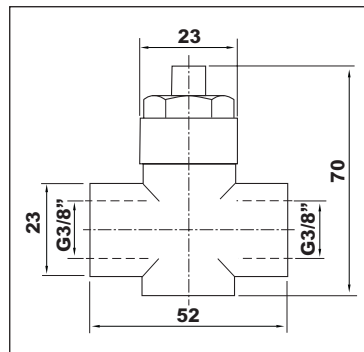
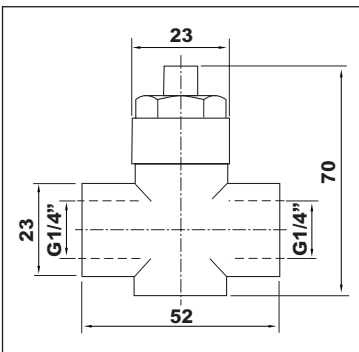
Push Button Valve

Materials

Body: Cu-alloy, nickel-plated with button for pressure release
Thread Connection: Cu-alloy, nickel-plated, male-male

Technical Specifications

Temperature limits: Max. 80°C
Working pressure: PN 4 max.



Type	Part No.	Connection	Weight (kg)	Packaging
RP	PZ111000	G1/4B	0.220	20/20
RP	PZ121000	G3/8B	0.220	20/20
RP	PZ131000	G1/2B	0.220	20/20



VR

EX F+R 998

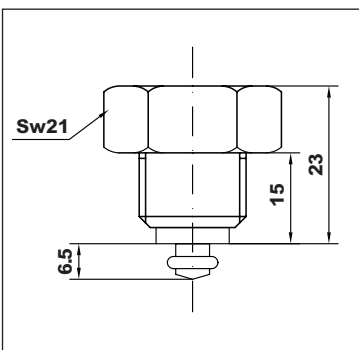
Automatic Valve

Materials

Body: Cu-alloy
Thread Connection: Cu-alloy, with O-Ring, male-female

Technical Specifications

Temperature limits: Max. 120°C
Working pressure: PN 10 max.



Type	Part No.	Connection	Weight (kg)	Packaging
VR	PZ04000K00	G3/8B x G3/8B	0.100	20/20
VR	PZ04000D00	G1/2B x G1/4B	0.100	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



G

EX F+R 998

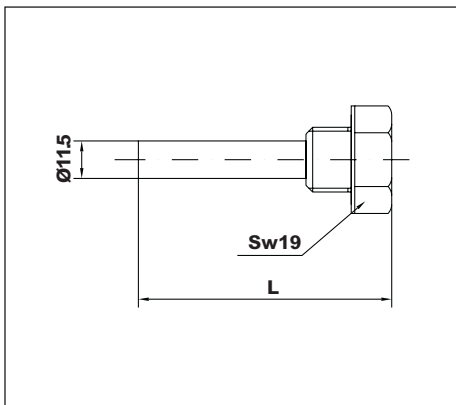
Pocket For Thermometers

Materials

Body: Cu-alloy up to length 100mm, above cu-alloy-copper, 19 mm flats with fixing screw (TBR with O-Ring)
 Connection: Brass

Technical Specifications

Temperature limits: Max. 500°C
 Working pressure: PN 10 max.



Type	Part No.	L (mm)	Connection	Weight (kg)	Packaging
G-30 for TB	PGUAOTT011	30	G3/8B	0.029	20/20
G-50 for TB	PGUAOTT002	50	G1/2B	0.042	20/20
G-100 for TB	PGUAOTT005	100	G1/2B	0.051	20/20
G-150 for TB	PGUAOTT006	150	G1/2B	0.057	20/20
G-200 for TB	PGUAOTT007	200	G1/2B	0.080	20/20
G-300 for TB	PGUAOTT008	300	G1/2B	0.091	20/20
G-50 push type for TBR	PGUAOTT019	50	G1/2B	0.035	20/20
G-75 push type for TBR	PGUAOTT023	75	G1/2B	0.040	20/20
G-100 push type for TBR	PGUAOTT020	100	G1/2B	0.050	20/20



G-INOX

EX F+R 998

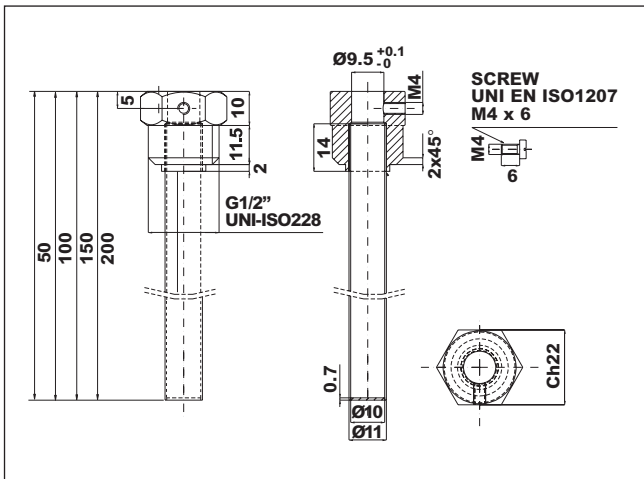
Stainless Steel Pocket For Thermometers

Materials

Body: Stainless steel AISI 304, 10mm hole for stem \varnothing 9 mm
 Connection: Stainless steel AISI 304

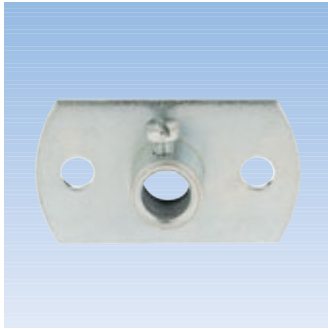
Technical Specifications

Temperature limits: Max. 500°C
 Working pressure: PN 25 max.



Type	Part No.	Length	Connection	Packaging
G-INOX-50 for TB	PGUAINX006	50	G1/2B	20/20
G-INOX-100 for TB	PGUAINX004	100	G1/2B	20/20
G-INOX-150 for TB	PGUAINX013	150	G1/2B	20/20
G-INOX-200 for TB	PGUAINX011	200	G1/2B	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



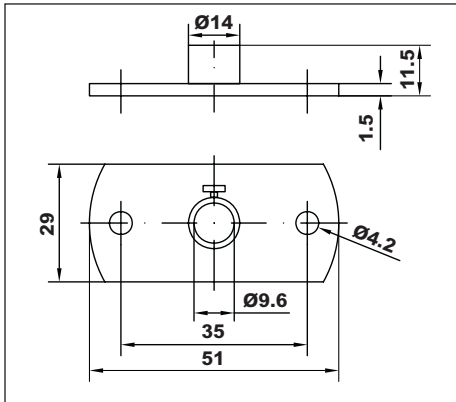
SC

EX F+R 998

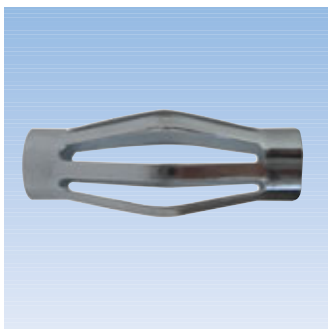
**Bracket For Thermometer Stem
(for Ventilation Ducts)**

Materials

Case and fixing screw: Zinc-plated steel



Type	Part No.	Weight (kg)	Packaging
SC	PMINACC034	0.025	20/20



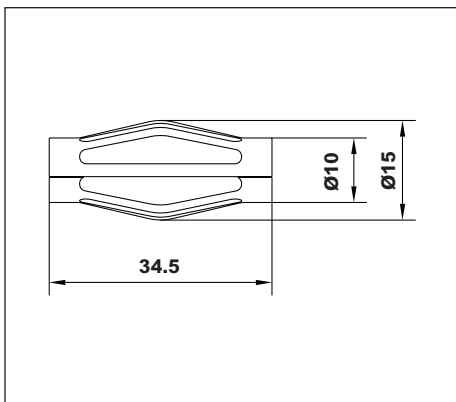
MC

EX F+R 998

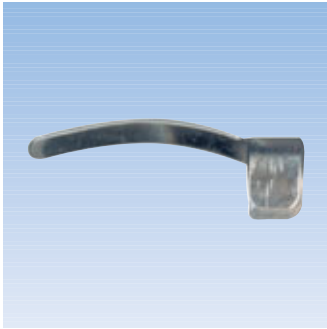
Spring For Thermometer Stem

Materials

Spring: Bluish zinc-plated steel for stem \geq 50 mm



Type	Part No.	Weight (kg)	Packaging
MC	PMINACC037	0.010	20/20



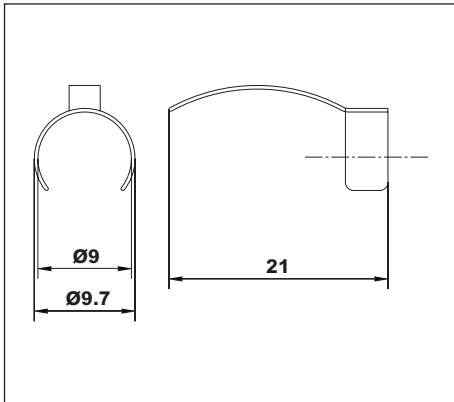
MCL

EX F+R 998

Spring Clips For Thermometer Stem

Materials

Spring: Zinc-plated steel for stem 30 mm



Type	Part No.	Weight (kg)	Packaging
MCL	PMINACC049	0.003	20/20



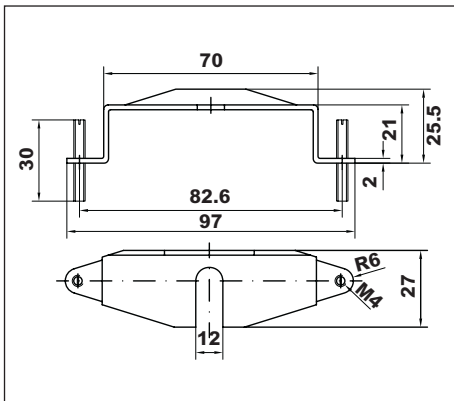
S INOX 63

EX F+R 998

Mounting Bracket For MG3A-INOX 63

Materials

U-clamp and fixing screws: Zinc-plated steel



Type	Part No.	Weight (kg)	Packaging
S INOX 63	PMINACC047	0.040	20/20

FOR PRESSURE GAUGES AND THERMOMETERS



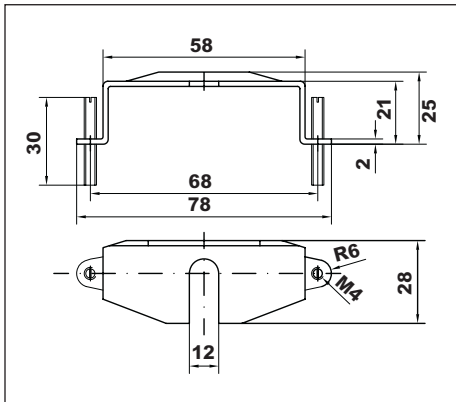
S ABS 50

EX F+R 998

Mounting Bracket For MG3A-ABS 50

Materials

U-clamp and fixing screws: Zinc-plated steel



Type	Part No.	Weight (kg)	Packaging
S ABS 50	PMINACC048	0.040	20/20



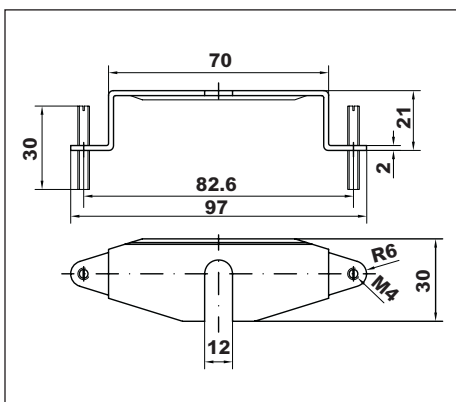
S ABS 63

EX F+R 998

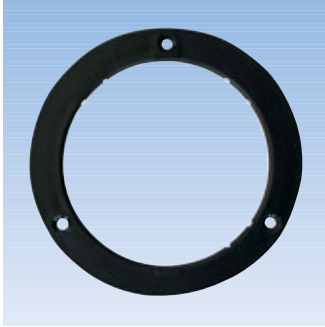
Mounting Bracket For MG3A-ABS 63

Materials

U-clamp and fixing screws: Zinc-plated steel



Type	Part No.	Weight (kg)	Packaging
S ABS 63	PMINACC046	0.040	20/20



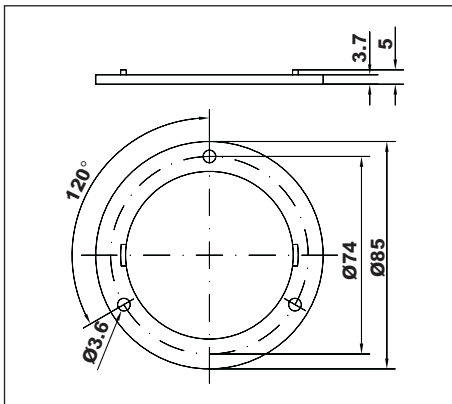
F ABS 63

EX F+R 998

3-Hole Front Flange For MG3A-ABS 63

Materials

Flange: Black plastic



Type	Part No.	Weight (kg)	Packaging
F ABS 63	PMINABS048	0.003	20/20



CP

EX F+R 998

Protective rubber cap for Gauges DN63

Materials

Black rubber

Type	Part No.	Connection	Weight (kg)	Packaging
CP M1-63	PCUSGOM001	Bottom Entry	0.060	20/20
CP M3A-63	PCUSGOM002	Back entry	0.060	20/20

PRESSURE GAUGES

Company :						
Project / Enquire No :						
Quantity :	Per year :			Per order :		
Application :						
Medium :	<input type="checkbox"/> Gaseous			<input type="checkbox"/> Liquid		
Temperature medium :	Min :			Max :		
Temperature ambient :	Min :			Max :		
Working pressure :	Steady at :			Fluctuating from : to :		
Pressure :	Range :			Units : / /		
Dial :	Customized :					
Accuracy class :	<input type="checkbox"/> 2,5			<input type="checkbox"/> 1,6		
Connecting thread size :	<input type="checkbox"/> G /.....B		<input type="checkbox"/> R..... /.....DIN2999		<input type="checkbox"/> /.....NPT	
	<input type="checkbox"/> other :					
Location :	<input type="checkbox"/> Bottom		<input type="checkbox"/> Centre Back		<input type="checkbox"/> Lower Back	
Material of wetted parts :	<input type="checkbox"/> Copper alloy		<input type="checkbox"/> Stainless steel 1.4571			
Diameter nominal :	<input type="checkbox"/> 40	<input type="checkbox"/> 50	<input type="checkbox"/> 63	<input type="checkbox"/> 80	<input type="checkbox"/> 100	<input type="checkbox"/> 160
Case material :	<input type="checkbox"/> Plastic		<input type="checkbox"/> Steel		<input type="checkbox"/> Stainless steel	
Mounting :	<input type="checkbox"/> Direct		<input type="checkbox"/> Panel		<input type="checkbox"/> Surface	
Case design :	<input type="checkbox"/> Dry		<input type="checkbox"/> Liquid filled			
Degree of protection :	<input type="checkbox"/> 31		<input type="checkbox"/> 54		<input type="checkbox"/> 65	
<i>In case of special features, please contact our sales service</i>						

Company :						
Project / Enquire No :						
Quantity :	<i>Per year :</i>			<i>Per order :</i>		
Application :						
Medium :	<input type="checkbox"/> <i>Gaseous</i>			<input type="checkbox"/> <i>Liquid</i>		
Medium pressure :	<i>PN :</i>					
Working temperature :	<i>Min :</i>			<i>Max :</i>		
Temperature :	<i>Range :</i>		<input type="checkbox"/> °C		<input type="checkbox"/> °F	
Dial :	<i>Customized :</i>					
Accurancy class :	<input type="checkbox"/> 2		<input type="checkbox"/> 1			
Stem location :	<input type="checkbox"/> <i>Centre Back</i>			<input type="checkbox"/> <i>Bottom (DN80)</i>		
Stem material :	<input type="checkbox"/> <i>Zinc-plated steel</i>			<input type="checkbox"/> <i>Brass (DN80)</i>		
Stem length :	<input type="checkbox"/> 30 mm	<input type="checkbox"/> 50 mm	<input type="checkbox"/> 100 mm	<input type="checkbox"/> 150 mm	<input type="checkbox"/> 200 mm	<input type="checkbox"/> 300 mm
Pocket material :	<input type="checkbox"/> <i>Brass</i>			<input type="checkbox"/> <i>Stainless steel</i>		
Pocket fixation :	<input type="checkbox"/> <i>Fixing screw</i>		<input type="checkbox"/> <i>Cramped</i>			
Diameter Nominal :	<input type="checkbox"/> 33	<input type="checkbox"/> 40	<input type="checkbox"/> 52	<input type="checkbox"/> 63	<input type="checkbox"/> 80	<input type="checkbox"/> 100
Case material :	<input type="checkbox"/> <i>Zinc-plated steel</i>			<input type="checkbox"/> <i>Stainless steel</i>		
<i>In case of special features, please contact our sales service</i>						

WATTS INSTRUMENTATION

1 Scope · Conclusion of contract

1. Our terms and conditions of sale apply only to enterprise (section 14 BGB). They also apply to all future transactions with the purchaser.
2. Only our terms and conditions of sale apply. Conditions of the purchaser which conflict with or differ from our conditions of sale will not be recognised; this also applies if the contract is performed without reservation.
3. All agreements made between us and the purchaser for purposes of carrying out this contract must be made in writing in this contract or in an amending contract.
4. Insofar as nothing else arises from these conditions, the terms and definitions of INCOTERMS 2000 apply.

2 Offer · Offer documentation

1. Documents pertaining to the offer such as drawings, weight details etc. are only approximately definitive, unless they are expressly designated as binding. Prices are without engagement and cost estimates are not binding.
2. In the case of cost estimates, drawings and other documents, the supplier reserves the rights of ownership and copyright. These may only be made available to third parties with our consent.
3. If the order is deemed to be an offer pursuant to section 145 BGB (German Civil Code), we are entitled to accept it within 15 working days.
4. Details within the meaning of paragraph 1 and also in public statements by us, by the manufacturer and his/her qualified assistants (section 434, 1, 3 BGB) only become part of the performance description when expressly referred to in this contract.

3 Prices · Conditions of payment

1. The scope of the delivery is defined by the supplier's written order confirmation. Collateral agreements and alterations require written confirmation by the supplier.
2. Our prices are ex works, exclusive of packaging. In the case of shipments with a net goods value over € 75,00 we deliver free of charge to address of buyer including packaging. We only accept orders with a minimum order value of € 75,00. In the case of orders with a total value of less than € 75,00 we charge a handling fee of € 10,00.
3. The prices correspond to the cost situation at the time of concluding the contract (date of order confirmation). If the cost factors, e.g. important collectively bargained wages or materials prices, change before the agreed time of delivery, we are entitled to increase prices up to the amount of the higher costs actually incurred.
4. The statutory value-added tax is not included in our prices; it will be separately stated in the invoice at the statutory level on the day of invoicing.
5. The deduction of cash discount requires a special written agreement. Prompt payment as agreed determines the granting of cash discount.
6. All taxes and other charges incurred for our goods and services in the country of receipt are for the account of the purchaser. In the case of shipments within

the European Union, the purchaser is required to inform us of his/her VAT registration number when placing the order. If he/she does not do so or does so incorrectly, he/she bears the resulting damage to the supplier.

7. The purchaser waives the assertion of a right of retention arising from prior or other transactions in the case of current business relations. Setoff against counterclaims is only permissible insofar as they are uncontested or legally established.
8. Cheques will only be accepted on agreement and only in lieu of performance and on condition of their discountability. Costs and charges are borne by the purchaser, discount charges will be calculated from the due date of the invoice onwards. No guarantee is undertaken for the timely presentation of the cheque.

4 Passage of risk · Supply of materials

1. Risk passes to the purchaser at the latest with the delivery of the delivery items to the persons entrusted with carrying out their dispatch. If dispatch is delayed owing to circumstances for which the purchaser is responsible, the risk passes to the purchaser from the date on which the shipment is ready for dispatch.
2. In the cases of defective, incorrect or delayed supply of materials, the purchaser bears the costs and damage thus caused to the supplier.

5 Execution of delivery · Delivery time · Cooperation duties

1. The scope of our duty to deliver is derived solely from this contract. Alterations in construction, form and colour based on technological improvements or legal requirements are reserved, insofar as the alterations are not material or in any other way unacceptable to the purchaser.
2. If part deliveries are reasonable to expect from the purchaser, these may take place and be invoiced.
3. Our duty to deliver is under reservation as to complete and correct own delivery, unless the non-delivery or delay is caused by us. If we do not receive our delivery in this respect, although we have placed congruent orders with reliable suppliers, we are freed from our obligation to deliver and may rescind the contract.
4. The naming of delivery periods is in principle subject to the reservation of cooperation by the purchaser in conformity with the contract. Compliance with our obligation to deliver presupposes the fulfilment of the purchaser's duties in a timely and orderly fashion.
5. The commencement of the delivery time stated by us presupposes the clarification of all technical questions.
6. Delivery periods begin with the date of our order confirmation. In the event of an industrial conflict, delivery periods are extended for the duration of the disruption caused thereby. This applies analogously to delivery dates.
7. Compliance with delivery periods and dates is determined by the time of dispatch from the factory or warehouse. They are deemed to have been kept in the event of notification of readiness for shipping if the goods cannot be dispatched on time through no fault of ours.
8. If it turns out after conclusion of the contract that the purchaser is not able to

offer an adequate guarantee of his/her ability to pay and our claim to payment is at risk, we are entitled to refuse delivery until the purchaser has made payment or provided collateral for it. If payment or the provision of collateral does not take place within 7 working days of such a request, we are entitled to rescind the contract.

9. If the purchaser is in delay in drawing down, accepting or collecting the shipment or if he/she is responsible for a delay in dispatch or in delivery, we are entitled, without prejudice to more far-reaching claims, to demand a lumpsum amounting to locally customary storage costs, regardless of whether we store the goods ourselves or with a third party. The purchaser retains the right to prove that no damage or less damage has occurred.
10. Returned merchandise will only be accepted after prior consultation and our express consent; the credit note will be issued immediately subject to a minimum processing fee of 30%.

6 Delay in delivery

1. If the agreed delivery period cannot be kept owing to circumstances beyond our control on our part or that of our suppliers, it is extended to an appropriate extent. We shall inform the purchaser immediately in such a case. If the hindering circumstances still persist one month after expiry of the agreed delivery period, either party may rescind the contract. More far-reaching claims owing to exceeding the delivery period through no fault of our own are excluded.
2. If we are in delay in delivery due to our own fault, the purchaser is entitled to demand compensation of a maximum of 1% of the value of our outstanding delivery/ service for each full week of delay, subject to a limit of 10% of the outstanding delivery value, if he/she shows that damage has ensued to him/her from the delayed delivery. Other or more far-reaching claims to compensation by the purchaser are excluded in all cases of delayed delivery or performance of services, even after expiry of any extension of time granted to us, unless our delay is due to intent or gross negligence. The purchaser's right to rescind remains unaffected, however only after unsuccessful expiry of any extension of time granted us, which must amount to at least 15 working days.

7 Dispatch · Passage of risk

1. If the goods are sent to the purchaser at his/her wish, the risks of accidental destruction and accidental deterioration pass to the purchaser on their delivery to our shipping agent, at the latest however on leaving the factory or the warehouse independently of whether dispatch is from the place of performance and who bears the freight costs. If the goods are ready for shipment and the dispatch or the acceptance are delayed owing to grounds for which the purchaser is responsible, the risk passes to the purchaser on receipt of notification of readiness for shipping.
2. The choice of the means and route of transport is at best judgement, unless special instructions have been given. No liability is accepted for the cheapest and quickest shipment.

8 Reservation of ownership

1. Ownership of the goods delivered remains reserved until such time as all our claims on the purchaser arising from the business relationship, including any future claims arising from contracts concluded simultaneously or at a later

date, have been settled. This also applies where claims have been posted to a current account and the balance has been struck and is recognised.

2. The purchaser is entitled to sell or process the goods in the ordinary course of business. Any processing is undertaken on our behalf, without duties ensuing for us therefrom. In the case of processing, joining or commingling of the goods subject to reservation of ownership with other goods, our joint ownership in the new corporeal thing arises in principle, in the case of processing in the proportion of the value (= gross invoiced value including incidental expenses and taxes) of the goods subject to reservation of ownership to the value of the other goods. The purchaser holds the sole ownership or joint ownership in safe custody for us.
3. The purchaser hereby assigns to us all claims against a customer or third parties which accrue to him/her from the resale. The purchaser remains empowered to collect such receivables also after their assignment. Our right to collect such receivables is not affected thereby; however, we undertake not to collect such receivables as long as the customer meets his payment and other commitments in the proper manner. The purchaser is required on request to disclose to us the assigned receivables and the names of the debtors, supply all particulars necessary for collection, make available the records pertaining thereto, and inform the debtors of the assignment.
4. In the case of conduct in violation of the contract by the purchaser, in particular in the case of late payment, we are entitled to rescind the contract and recover the goods. For purposes of recovery of the goods, the purchaser hereby irrevocably allows us to enter his/her business and warehouse premises unimpeded and take the goods away.
5. The purchaser is not permitted to assign for security or pledge goods or items manufactured with them without our consent, so long as the reservation of ownership subsists. The conclusion of financing agreements (e.g. leasing) which include the assignment of our rights of reservation require our prior written consent, unless the agreement binds the financing institution to pay us directly the purchase price portion due to us.
6. In the event of attachment and other intervention by third parties, the customer is required to notify us in writing without delay. He/she is forbidden to make arrangements with his/her customers which could interfere with our rights.
7. We undertake to release the collateral we are entitled to at the request of the purchaser to the extent that the realisable value of the collateral exceeds the value of the receivables to be secured by more than 20%, or their nominal value exceeds the value of the receivables by more than 50%.

9 Industrial property rights, tools, models and drawings

If deliveries are made according to drawings or other details provided by the purchaser, the latter bears the responsibility for their correctness and that property rights of third parties are not infringed. He/she is obliged to indemnify us against all claims by third parties in this respect. Chills, models, tools and equipment required for the purchased goods may be invoiced by us in full or in part. They remain our property, even if we have manufactured them on behalf of the purchaser and/or the purchaser has paid for them in full or in part. If they have been manufactured according to instructions from the purchaser, they will be used exclusively for deliveries to the purchaser, as long as the latter meets his/her acceptance and payment obligations and the business relationship subsists.

WATTS INSTRUMENTATION

10 Material defects

1. With respect to material defects, the purchaser is in the first instance subject to the statutory inspection and complaint duties pursuant to section 377 HGB (German Commercial Code).
2. The purchaser may not derive any further rights from material defects which do not or do not materially impair the value of the goods and their suitability for the purpose recognisable to us.
3. If the goods exhibit a material defect at the time of the passing of risk, we are entitled and bound to subsequent performance. Subsequent performance takes place by rectification or substitute delivery, at our choice. The costs of subsequent performance, in particular transport, travel, labour and materials costs are for our account. If the costs amount to more than 50% of the value of the delivery, we are entitled to refuse subsequent performance.
4. To the extent that the subsequent performance is unsuccessful, does not take place within a reasonable period granted by the purchaser, or is refused, the purchaser is entitled, at his/her choice, to rescind the contract, to demand a reduction of the purchase price (abatement) corresponding to the impairment in value or - within the limits of the following paragraphs - compensation for damages instead of performance.
5. If a material defect leads to damage, we are liable in accordance with the statutory regulations, insofar as injury to a person is concerned, the damage is covered by the Product Liability Law or is based on intent or gross negligence.
6. Insofar as the damage is based on a culpable breach of a main contractual obligation or cardinal obligation, we are otherwise only liable for damages typical for the type of contract.
7. More far-reaching claims by the purchaser in contract or in tort are excluded. In particular we are not liable for damages which have not occurred in connection with the delivered item itself; nor for loss of prospective profits or other economic loss by the purchaser.
8. The above regulations do not apply to used goods. We are only liable for material defects in the event of express acceptance of a guarantee, intent or gross negligence, not otherwise.
9. No guarantee can be given for damages arising for any of the following reasons:
 - unsuitable or improper use,
 - incorrect installation, non-observance of existing guidelines and test specifications on installation of our goods in plant,
 - erroneous assembly and/or commissioning, repair or maintenance by the purchaser or third parties,
 - erroneous, forcible or careless treatment,
 - unsuitable expendables,
 - components damaging to materials or excessive pollution of the water, gas, oil or other media used,
 - and also natural wear and tear.
10. Section 478 BGB remains unaffected by the above-mentioned paragraphs 2 to 9.

11 Other liability for compensation in damages

1. The above-mentioned regulations in paragraph 10 also apply to claims for compensation in damages on account of other breaches of obligations.

2. In the event of breach of a pre-contractual obligation or of an obstacle to performance already in existence on conclusion of the contract (sections 311 II, 311a BGB), our obligation to compensate is limited to the negative interest.
3. The regulations in the above-mentioned in paragraphs 10 apply analogously to our liability in tort.
4. Insofar as our liability is excluded or limited, this also applies to the personal liability of our staff, workers, employees, representatives, executive bodies and vicarious agents.

12 Limitation

1. The purchaser's entitlement to subsequent performance is statute-barred, subject to sections 438, 479 BGB, one year after delivery of the goods. Guarantee is excluded in the case of used goods. There are correspondingly no guarantee rights in used items.
2. In the case of compensation for damages, the period of limitation is one year, subject to sections 438, 479 BGB. In the cases of claims under Product Liability Law and of intent and gross negligence, the statutory limitations apply.

13 Place of performance · Place of jurisdiction for domestic contracts

1. Unless otherwise apparent from the order confirmation, the place of performance is the registered office of our Company.
2. Insofar as the purchaser is a fully qualified merchant, the place of jurisdiction is our registered office; however, we are entitled to bring an action against the purchaser at his/her registered office.
3. The law relating to the legal relationships of domestic parties at our registered office applies to all legal relationships between us and the purchaser.

14 International business dealings

1. German law applies exclusively to international business dealings with us, excluding the United Nations Convention on Contracts for the International Sale of Goods (CISG).
2. In cases of doubt, the INCOTERMS 2000 are definitive for the interpretation of trade terms.
3. Our above-mentioned conditions presented in sections 1 to 13 inclusive also apply to international business dealings, subject to the application of German law.

15 General

1. The purchaser's rights under this contract are not trans-ferable.
2. The invalidity of individual provisions does not affect the validity of the remaining provisions.

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