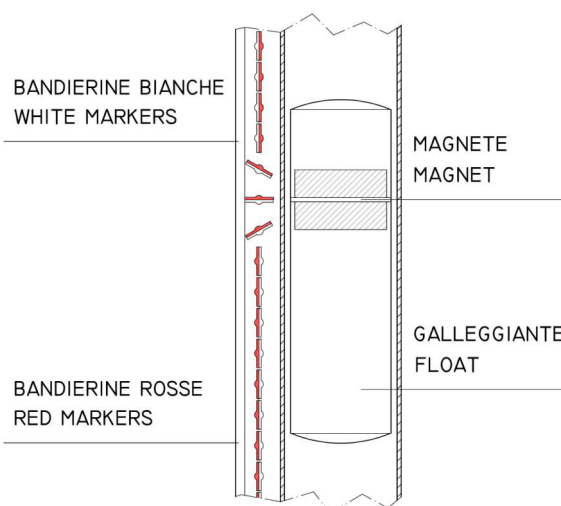


MAGNETIC level gauges

Magnetic level gauge indicates the level of fluid inside a tank by using the magnetic properties of its elements.

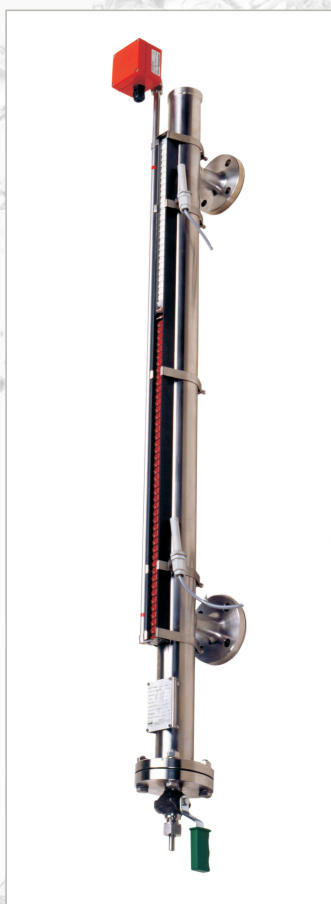
A by-pass (which mainly consists of a tube longer than the fluid range) is connected to the tank containing the fluid whose level is to be measured.

A float containing a magnet moves up and down the main chamber, and its position determines the tank fluid level (the level is clearly indicated by red and white markers). Variation in fluid level causes the float to move and the float magnet then makes the roller display (which also contains a magnet) rotate. Red markers are normally shown in the part of the tank holding the fluid and white markers in the part containing the gas/steam.



Magnetic level gauge with flanged connections, magnetic switches and level transmitter

Magnetic level gauge with flanged cut off cocks, drain cock and level transmitter



Magnetic level gauges are built exclusively according to the centre-to-centre distance specified by the customer. The reading length usually matches the centre-to-centre distance.

The roller display reading point and the height of the level switches can be adjusted quickly and easily thanks to specially designed clamping brackets.

The simple mounting principle means that electronic accessories can be fitted to the gauge at a later stage.

The materials used to manufacture the gauges differ depending on their intended use.

Given that the level gauge works as a result of its magnetic properties, no ferromagnetic materials have been used in its construction.

The standard model features an AISI 316 L stainless steel main chamber and an AISI 316L stainless steel or Titanium Grade 2 float.

DIESSE also offers a wide range of optional accessories, including: shut-off valves, drain valves, vent valves, calibrated scale, bistable switches and level transmitters (described later on in the catalogue).

TO RECOMMEND THE MOST SUITABLE LEVEL GAUGE FOR A PARTICULAR PURPOSE,
PLEASE PROVIDE THE FOLLOWING DATA WHEN ASKING FOR ADVICE OR A QUOTATION.

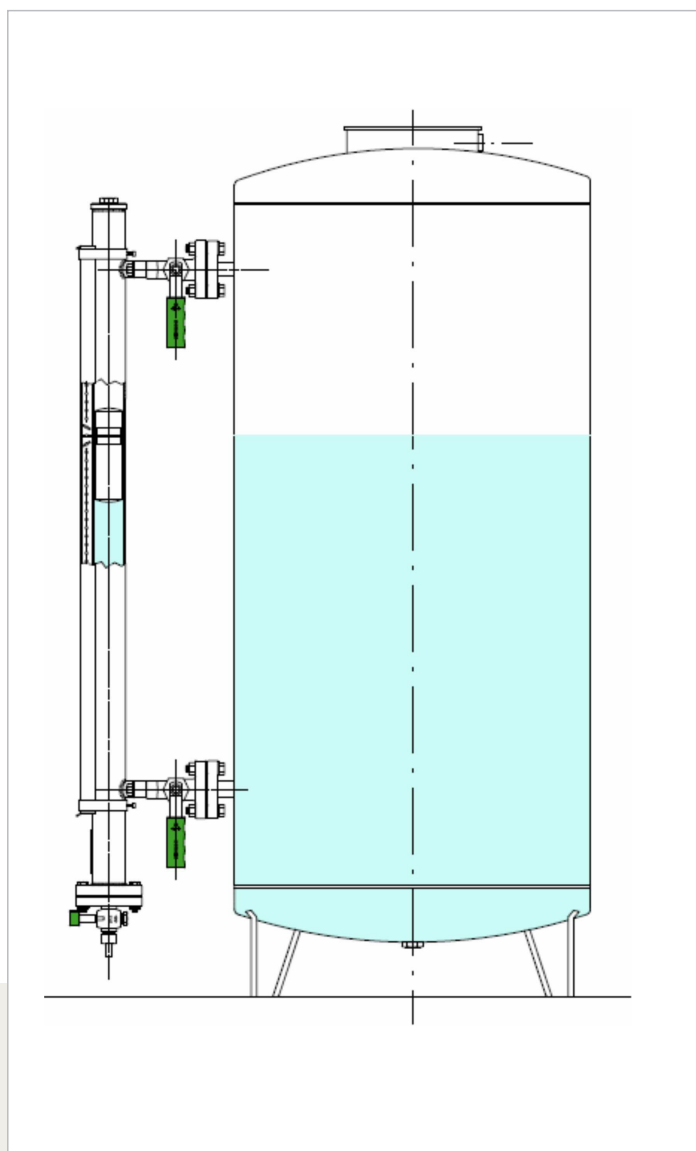
► essential data

- ► **CENTRE-TO-CENTRE DISTANCE** (distance between process connections)
- ► **TYPE OF CONNECTIONS** (flanged-threaded-weld-on) and related **STANDARDS** (UNI-ANSI-DIN...)
- POSITION OF PROCESS CONNECTIONS
- POSITION OF THE VALVE HANDLING
- ► **TYPE OF FLUID**
- ► **SPECIFIC WEIGHT OF FLUID**
- ► **DESIGN AND MAXIMUM OPERATING PRESSURES**
- ► **DESIGN AND MAXIMUM OPERATING TEMPERATURES**
- ANY ADDITIONAL ACCESSORIES

Magnetic level gauges are suitable for a wide range of applications and are a perfect alternative to glass level gauges if the latter cannot be used safely.

They are particularly recommended:

- in cases where a particularly accurate fluid level reading is not necessary
- in cases where the maximum pressure and temperature values exceed those listed in the technical specifications of the glasses
- if remote readings have to be taken (e.g. if the level gauge is positioned above or a considerable distance away from the observer's position)
- if continuous readings using a remote gauge situated some distance away from the system are necessary
- if one or more signals (i.e. alarm signals) are required to indicate various tank liquid levels
- if the centre-to-centre distance exceeds 3 metres



MAGNETIC level gauges

DIESSE magnetic level gauges are manufactured and certified in accordance with the strictest international standards.



Aside from the type of fluid in the tank, the choice of level gauge mainly depends on the operating and design temperature/pressure values. These must always be clearly specified when asking for a quote or placing an order.

Magnetic level gauges differ in terms of their pressure ratings under operating conditions: low, medium and high.

Materials / Specifications:

The different versions available are as follows:

Main Chamber:

- Standard: Stainless steel AISI 316L Ø 60.3 mm, thickness 2 mm or 2.7 mm

Float:

- Standard: Stainless steel AISI 316L or Titanium Grade 2 Ø 50 mm

Rollers / Housing:

- Standard: brass rollers with red and white epoxy paint / anodised aluminum housing, glass cover
- Options: stainless steel rollers red and white / anodised aluminum or stainless steel housing, polycarbonate or glass cover

Process connections position:

- Standard: side/side
- Additional Options: side/bottom; top/side; top/bottom

Process connections type:

- Standard: with flanges, threaded tubes and butt weld tubes
- Additional Options: shut-off cocks (side/side) on request

Drain:

- Standard: threaded 1/2" with plug
- Additional Options: threaded cock; other extras on request

Vent:

- Standard: threaded 1/2" with plug
- Additional Options: threaded cock; other extras on request

Gaskets:

- Standard: graphite/AISI 316
- Options: PTFE/AISI 316, other extras on request

Accessories:

Magnetic switch, Level transmitter, Calibrated scale, Shut-off cocks, Drain cock, Vent cock, Cocks handles lock (see from page 2.13)

Certifications (on request):

- Marine Approval
- Others on request

All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.



MAGNETIC LEVEL GAUGES

Code

1 Basic Type

DS MG DIESESE Magnetic level gauge

2 Level Gauge Model

Pos. 1: Level Gauge type

DS BP Stainless steel AISI 316L (Low / Medium pressure)
DS MP Stainless steel AISI 316L (High Pressure)

3 Process connections

Pos. 1: Nominal dimension

Pos. 2: Nominal pressure

Pos. 3: Type / Finish

Pos. 4: Position

Standard Side / Side
/SB Side / Bottom
/TS Top / Side
/TB Top / Bottom

4 Distance Centre-to-centre

M... Distance between connections centres in mm

5 Materials

Pos. 1: Main chamber

SS Stainless steel AISI 316L

Pos. 2: Connections / Bottom flanges / Flat top with plug

SS Stainless steel AISI 316L

Pos. 3: Roller display - Housing / Rollers

DAB Aluminium housing / brass with epoxy paint rollers
BMDAA Aluminium housing / stainless steel rollers
BMDSS Stainless steel housing / stainless steel rollers

Pos. 4: Float

SS Stainless steel AISI 316L
TG2 Titanium Grade 2
TG2R Titanium Grade 2 with reinforcements

Pos. 5: Gaskets

Standard: Graphite/AISI 316
PF PTFE/AISI 316

6 Accessories

| | | | | | |
|------------|---------------------------------|------|---------------------------------|------|--|
| EBS (Type) | Magnetic switch | LTM | Level transmitter | VSG | Calibrated scale |
| GR18 | Cylindrical plug shut-off cocks | D12 | Cylindrical plug drain cock | D12S | Cylindrical plug vent cock |
| SHV | Shut-off globe valves | DHV | Drain globe valve | DHVS | Vent globe valve |
| CB | Support bracket | SSHD | Cocks handles lock | | |
| LFC | Weight closing for lower handle | UFC | Weight closing for upper handle | LUFC | Weight closing for all handles (lower + upper) |

7 Approvals

SHP... Marine

Code

1 2 3 4 5 6

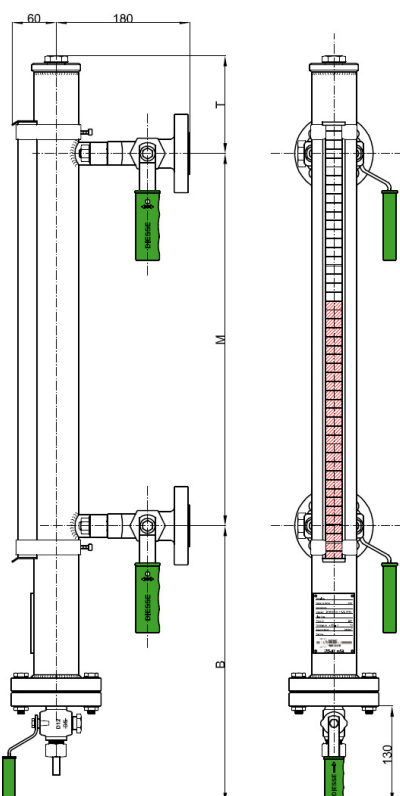
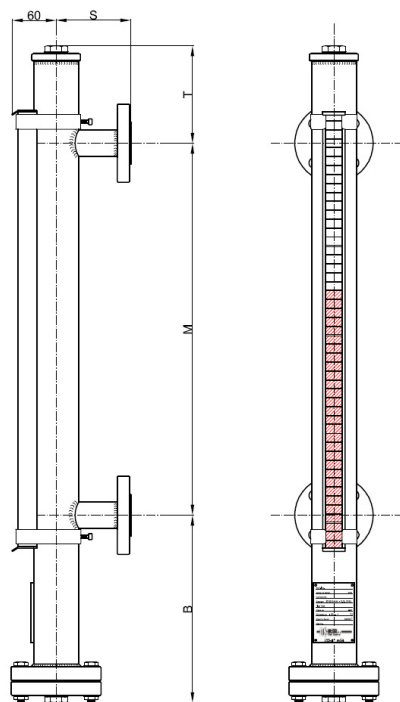
e.g. DS MG - DSBP - 20/16/RF - M 1000 - SS/SS/DAB/SS - GR18 / D12 / VSG

MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP

Code: DS MG - DSBP - ... /16/RF - M...- SS/SS/.../SS



Technical data

Service conditions

Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2 \text{ mm}$)
Float: Stainless steel 316L ($\varnothing 50 \text{ mm}$)
Titanium Grade 2 ($\varnothing 50 \text{ mm}$)
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|--|--|
| Standard flanges: | UNI PN16/40 DN15-20-25 | ANSI #150/RF DN $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard threaded pipes: | BSP-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| | BSP-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard butt weld pipes: | BW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | SW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions

B = Distance depending on the specific weight of the fluid

T = 130 mm (Standard); Option: on request

S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN16)

Cocks DS GR18: Kg. 6,2 approx. (With flanges UNI DN20 PN40)

Valves DS SHV: Kg. 10,6 approx. (With flanges UNI DN20 PN40)

Spare parts

For routine maintenance are not necessary spare parts.

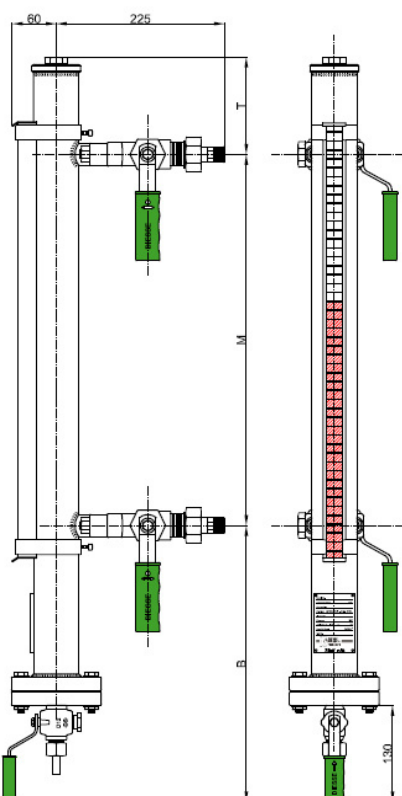
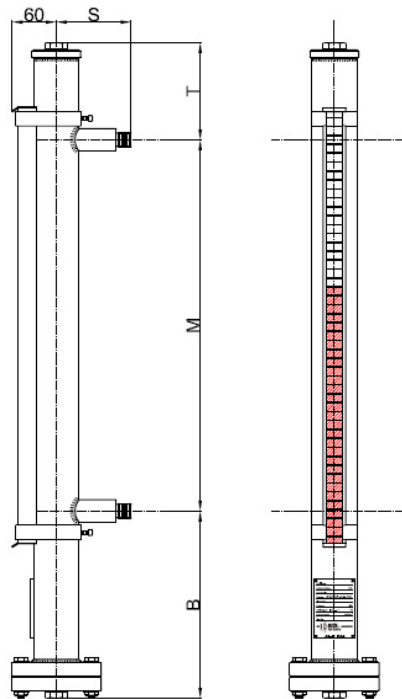
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP

Code: DS MG - DSBP - 1/2" GAS-M - M...- SS/SS/.../SS



Technical data

Service conditions

Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L (Ø 60,3 x 2 mm)
Float: Stainless steel 316L (Ø 50 mm)
Titanium Grade 2 (Ø 50 mm)
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|------------------------|----------------------------------|
| Standard flanges: | UNI PN16/40 DN15-20-25 | ANSI #150/RF DN 1/2" - 3/4" - 1" |
| Standard threaded pipes: | BSP-M 1/2" - 3/4" - 1" | NPT-M 1/2" - 3/4" - 1" |
| | BSP-F 1/2" - 3/4" - 1" | NPT-F 1/2" - 3/4" - 1" |
| Standard butt weld pipes: | BW 1/2" - 3/4" - 1" | SW 1/2" - 3/4" - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded 1/2" with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded 1/2" with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 10,0 approx. (with centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18: Kg. 3,8 approx. (with threads 1/2" BSP-M)
Valves DS SHV: Kg. 8,8 approx. (with threads 1/2" BSP-M)

Spare parts

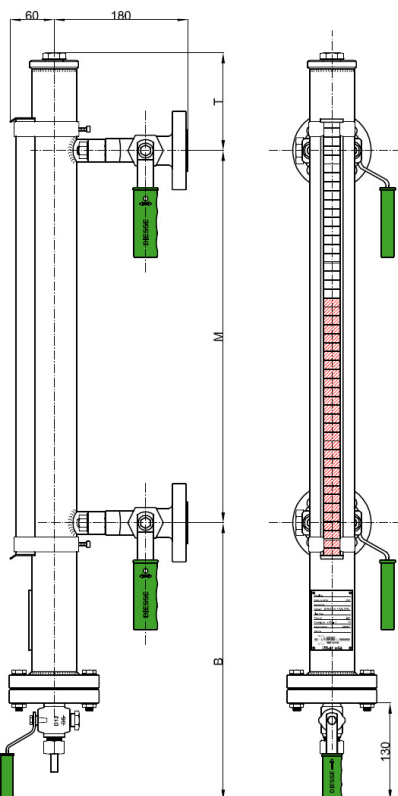
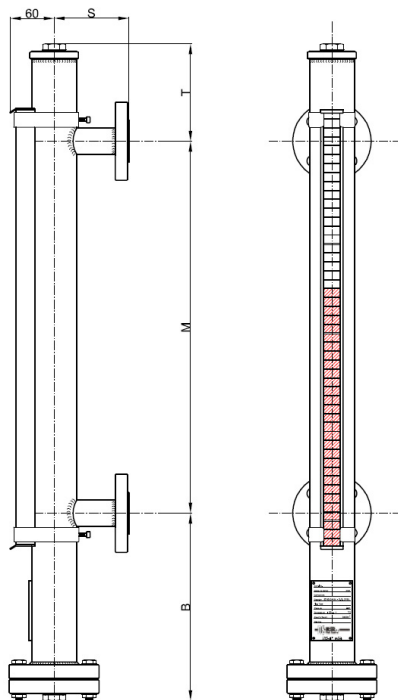
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP

Code: DS MG - DSMP - ... /40/RF - M...- SS/SS/.../SS



Technical data

Service conditions

Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2,77 \text{ mm}$)
Float: Titanium Grade 2 ($\varnothing 50 \text{ mm}$) with reinforcements
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|--|--|
| Standard flanges: | UNI PN40 DN15-20-25 | ANSI #300/RF DN $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard threaded pipes: | BSP-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| | BSP-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard butt weld pipes: | BW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | SW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN40)
Cocks DS GR18: Kg. 6,2 approx. (With flanges UNI DN20 PN40)
Valves DS SHV: Kg. 10,6 approx. (With flanges UNI DN20 PN40)

Spare parts

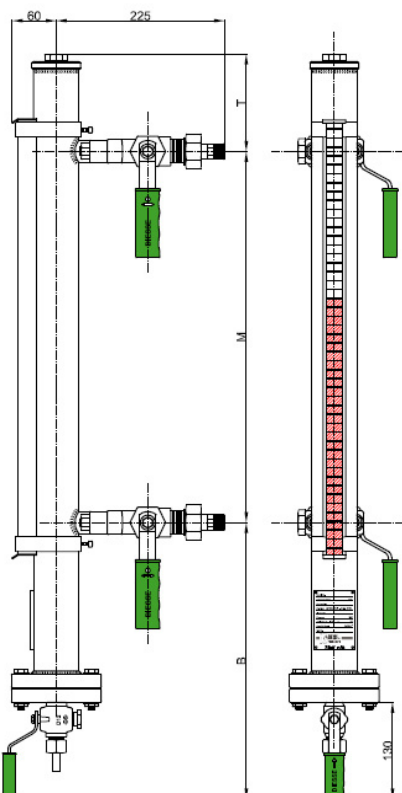
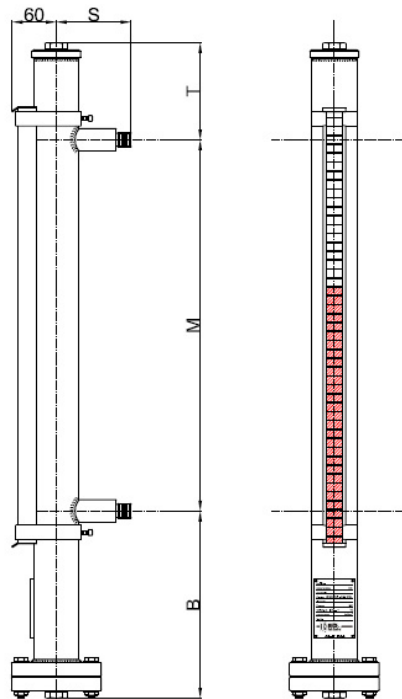
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP

Code: DS MG - DSBP - 1/2" GAS-M - M...- SS/SS/.../SS



Technical data

Service conditions

Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2,77 \text{ mm}$)
Float: Titanium Grade 2 ($\varnothing 50 \text{ mm}$) with reinforcements
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|--|--|
| Standard flanges: | UNI PN40 DN15-20-25 | ANSI #300/RF DN $\frac{1}{2}" - \frac{3}{4}" - 1"$ |
| Standard threaded pipes: | BSP-M $\frac{1}{2}" - \frac{3}{4}" - 1"$ | NPT-M $\frac{1}{2}" - \frac{3}{4}" - 1"$ |
| | BSP-F $\frac{1}{2}" - \frac{3}{4}" - 1"$ | NPT-F $\frac{1}{2}" - \frac{3}{4}" - 1"$ |
| Standard butt weld pipes: | BW $\frac{1}{2}" - \frac{3}{4}" - 1"$ | SW $\frac{1}{2}" - \frac{3}{4}" - 1"$ |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded $\frac{1}{2}"$ with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded $\frac{1}{2}"$ with plug Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 10,0 approx. (with centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18: Kg. 3,8 approx. (with threads 1/2" BSP-M)
Valves DS SHV: Kg. 8,8 approx. (with threads 1/2" BSP-M)

Spare parts

For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.



MAGNETIC MARINE LEVEL GAUGES

On request the product is available also with
the approval certificate of Lloyd's Register

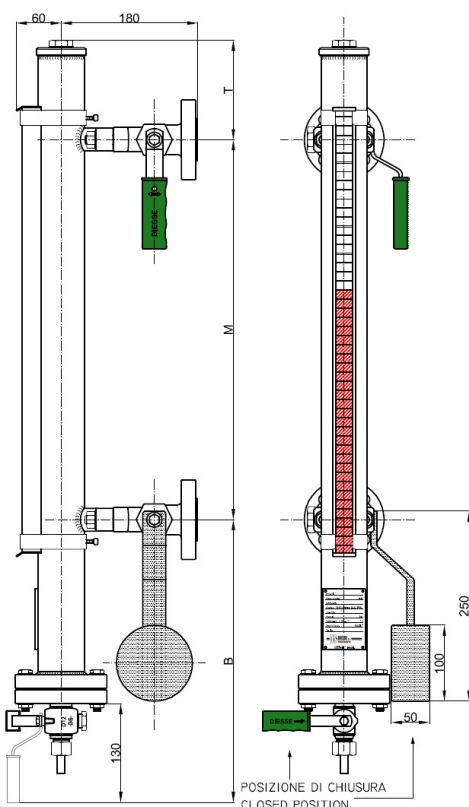
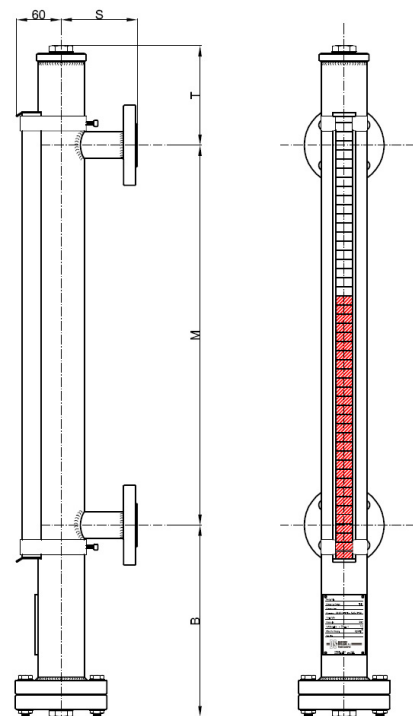


MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP - SHP

Code: DS MG - DSBP - ... /16/RF - M...- SS/SS/.../SS - SHP



Technical data

Service conditions

Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

Application

Fluid storage tanks also aboard of ships

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2 \text{ mm}$)
Float: Stainless steel 316L ($\varnothing 50 \text{ mm}$)
Titanium Grade 2 ($\varnothing 50 \text{ mm}$)
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|--|--|
| Standard flanges: | UNI PN16/40 DN15-20-25 | ANSI #150/RF DN $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard threaded pipes: | BSP-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| | BSP-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard butt weld pipes: | BW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | SW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded $\frac{1}{2}$ " with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded $\frac{1}{2}$ " with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN16)
Cocks DS GR18 with weight closing for lower handle: Kg. 9,6 approx. (With flanges DN20 PN40)

Spare parts

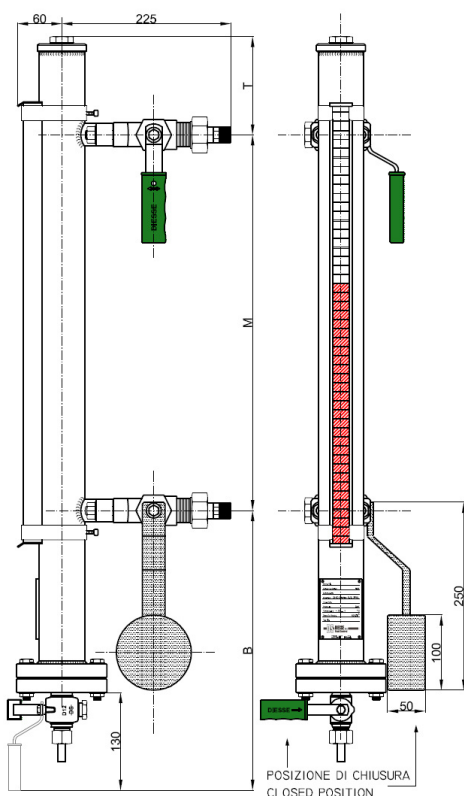
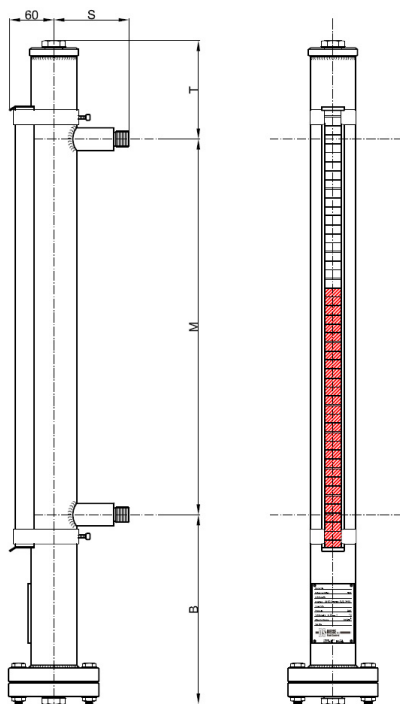
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP - SHP

Code: DS MG - DSBP - 1/2" GAS-M - M...-SS/SS/.../SS-SHP



Technical data

Service conditions

Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

Application

Fluid storage tanks also aboard of ships

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2 \text{ mm}$)
Float: Stainless steel 316L ($\varnothing 50 \text{ mm}$)
Titanium Grade 2 ($\varnothing 50 \text{ mm}$)
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|------------------------|----------------------------------|
| Standard flanges: | UNI PN16/40 DN15-20-25 | ANSI #150/RF DN 1/2" - 3/4" - 1" |
| Standard threaded pipes: | BSP-M 1/2" - 3/4" - 1" | NPT-M 1/2" - 3/4" - 1" |
| | BSP-F 1/2" - 3/4" - 1" | NPT-F 1/2" - 3/4" - 1" |
| Standard butt weld pipes: | BW 1/2" - 3/4" - 1" | SW 1/2" - 3/4" - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded 1/2" with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded 1/2" with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 10,0 approx. (With centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18 with weight closing for lower handle: Kg. 7,2 approx. (With threads 1/2" BSP-M)

Spare parts

For routine maintenance are not necessary spare parts.

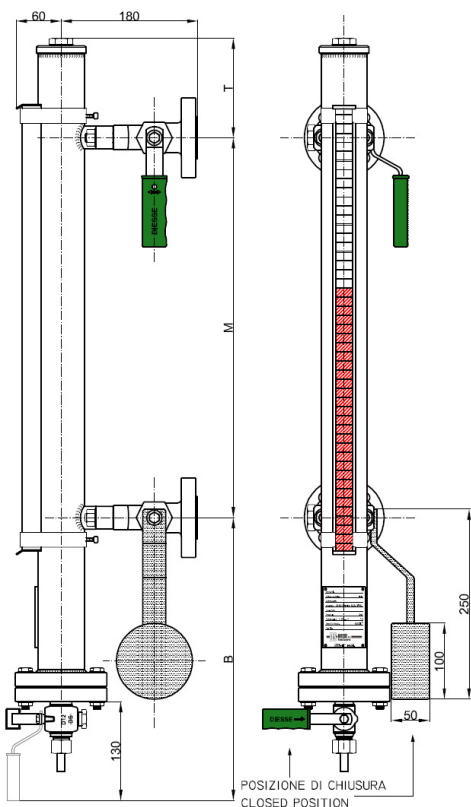
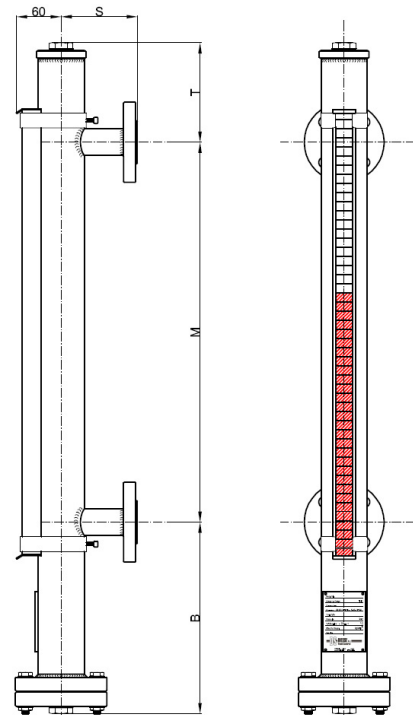
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP - SHP

Code: DS MG - DSMP - ... /40/RF - M... - SS/SS/.../SS - SHP



Technical data

Service conditions

Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

Application

Fluid storage tanks also aboard of ships

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2,77 \text{ mm}$)
Float: Titanium Grade 2 ($\varnothing 50 \text{ mm}$) with reinforcements
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|--|--|
| Standard flanges: | UNI PN40 DN15-20-25 | ANSI #300/RF DN $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard threaded pipes: | BSP-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-M $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| | BSP-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | NPT-F $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |
| Standard butt weld pipes: | BW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" | SW $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded $\frac{1}{2}$ " with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN40)
Cocks DS GR18 with weight closing for lower handle: Kg. 9,6 approx. (With flanges DN20 PN40)

Spare parts

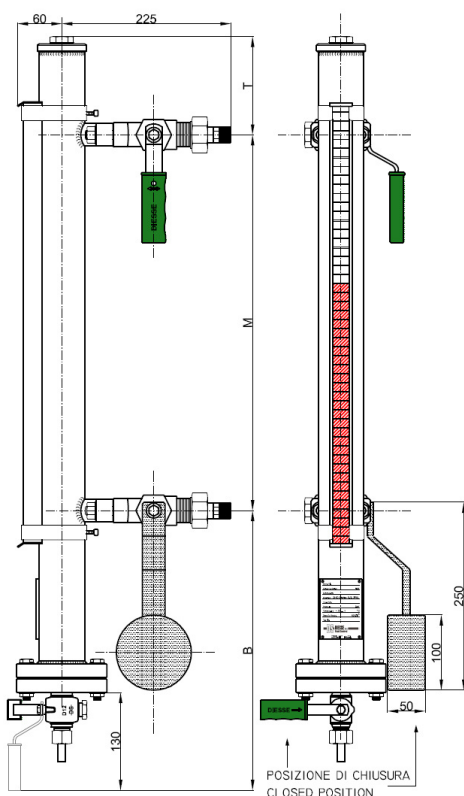
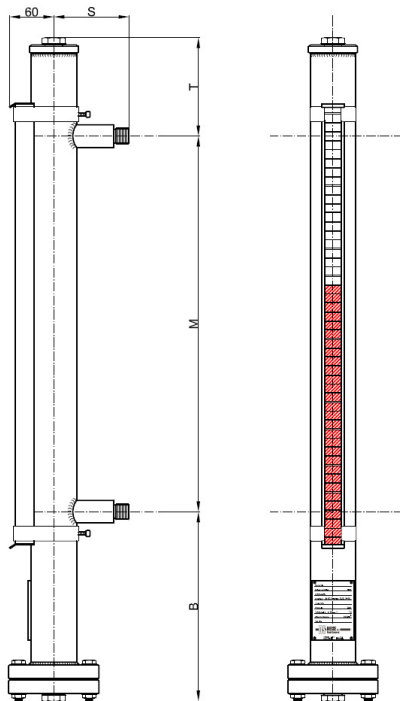
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP - SHP

Code: DS MG - DSBP - 1/2" GAS-M - M...-SS/SS/.../SS-SHP



Technical data

Service conditions

Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

Application

Fluid storage tanks also aboard of ships

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2,77 \text{ mm}$)
Float: Titanium Grade 2 ($\varnothing 50 \text{ mm}$) with reinforcements
Process connections: Stainless steel 316L (flanged, threaded pipes, butt weld pipes)
With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Process connections

| | | |
|---------------------------|------------------------|----------------------------------|
| Standard flanges: | UNI PN40 DN15-20-25 | ANSI #300/RF DN 1/2" - 3/4" - 1" |
| Standard threaded pipes: | BSP-M 1/2" - 3/4" - 1" | NPT-M 1/2" - 3/4" - 1" |
| | BSP-F 1/2" - 3/4" - 1" | NPT-F 1/2" - 3/4" - 1" |
| Standard butt weld pipes: | BW 1/2" - 3/4" - 1" | SW 1/2" - 3/4" - 1" |

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded 1/2" with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Drain: Standard: threaded 1/2" with plug

Options: On request, with flange or with cock
(See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)

Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

| | |
|-------------------|------------------------------|
| Shut-off cocks | (See details from page 2.13) |
| Drain cock | (See details from page 2.13) |
| Vent cock | (See details from page 2.13) |
| Calibrated scale | (See details from page 2.14) |
| Magnetic switches | (See details from page 2.15) |
| Level transmitter | (See details from page 2.29) |

Weights

Magnetic level gauge: Kg. 10,0 approx. (With centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18 with weight closing for lower handle: Kg. 7,2 approx. (With threads 1/2" BSP-M)

Spare parts

For routine maintenance are not necessary spare parts.

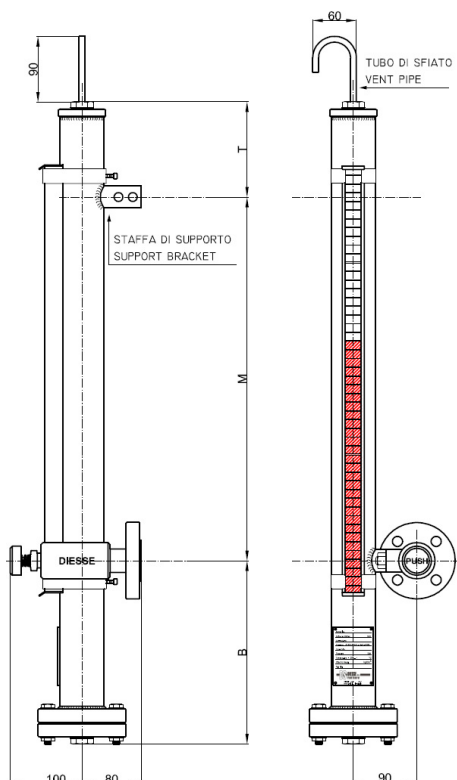
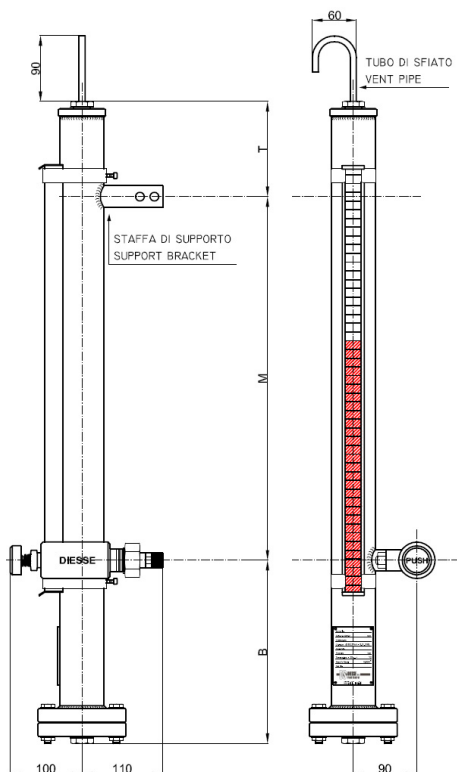
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

MAGNETIC LEVEL GAUGE

PN16

DS MG - DS BP - NPV - SHP

Code: DS MG-DSBP-... /16/RF-M...- SS/SS/.../SS-NPV- SHP



Technical data

Service conditions

Pressure: PN16
Temperature: up to 150°C
Specific weight: $\geq 0,6 \text{ g/cm}^3$

Application

Fluid storage tanks also aboard of ships

View

Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)

On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (In several pieces)

Materials (Standard)

Main chamber: Stainless steel 316L ($\varnothing 60,3 \times 2 \text{ mm}$)
Float: Stainless steel 316L ($\varnothing 50 \text{ mm}$)
Titanium Grade 2 ($\varnothing 50 \text{ mm}$)
Process connections: Self closing valve DS NPV, push button type in carbon steel ASTM A105 galvanized or stainless steel 316L
Rollers: Brass with red and white epoxy paint, anodised aluminium housing, glass cover
Options: roller display housing with stainless steel cover

Gaskets

Standard: graphite/AISI 316

Options: PTFE/AISI 316

Self-closing Valve

DS NPV: self-closing, push button type

Handling: opening by push button (Standard: valve on the right side; On request on the left side)

Process connection:

Standard flange: UNI PN16 DN15-20-25 ANSI #150/RF DN $\frac{1}{2}$ " - $\frac{3}{4}$ " - 1"
Standard threaded union: BSP-M $\frac{1}{2}$ " - $\frac{3}{4}$ " NPT-M $\frac{1}{2}$ " - $\frac{3}{4}$ "

Option: further connection types

Vent: Standard: threaded $\frac{1}{2}$ " with vent pipe

Option: on request (see details at page 1.52)

Drain: Standard: threaded $\frac{1}{2}$ " with plug

Option: on request (see details at page 1.52)

Dimensions

B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request

Accessories

Shut-off cocks (see details from page 2.13)
Drain cock (see details from page 2.13)
Vent cock (see details from page 2.13)
Calibrated scale (see details from page 2.14)
Magnetic switches (see details from page 2.15)
Level transmitter (see details from page 2.29)

Weights

Magnetic level gauge: Kg. 13,5 approx. (with centre-to-centre 1.000 mm and valve DS NPV flanged DN20 PN16)

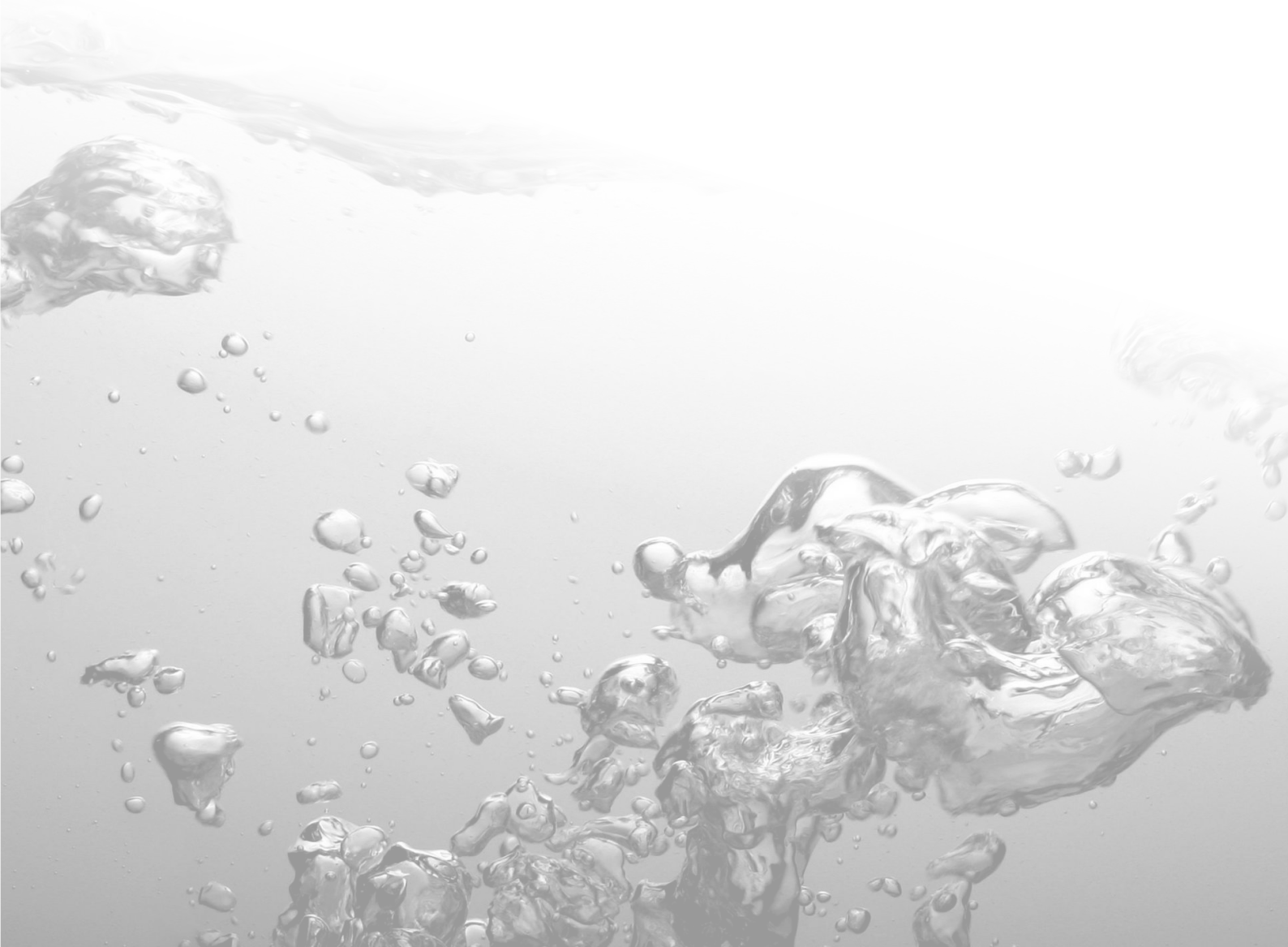
Spare parts

For routine maintenance are not necessary spare parts.

For valve DS NPV: see from page 1.74 (drawing with components and parts list see page 1.67) of the catalogue relative to the glass level gauges.



accessories for magnetic level gauges

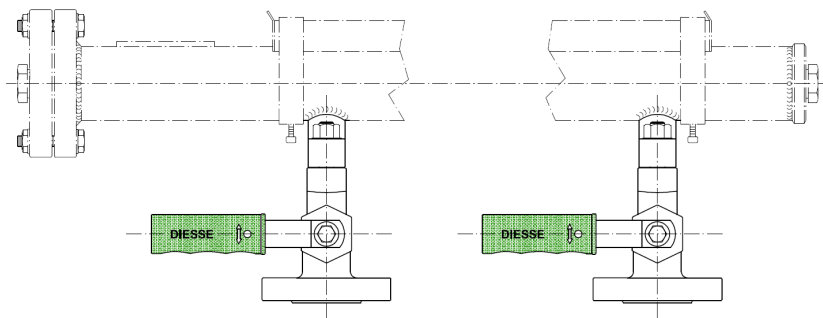


ACCESSORIES FOR MAGNETIC LEVEL GAUGES

The DIESSE magnetic level gauges can be equipped with shut-off cocks, drain cock and vent cock.
The shut-off cocks are connected to the main chamber by special T flanges with stainless steel AISI 316 gaskets.

SHUT OFF COCKS cylindrical plug type

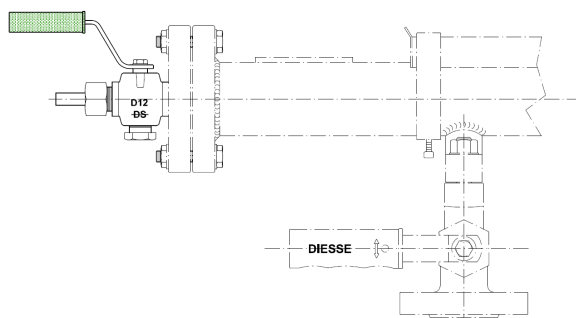
Handling: lever operated with PP handle - Quick 90° closing



Code: GR18

DRAIN COCK cylindrical plug type

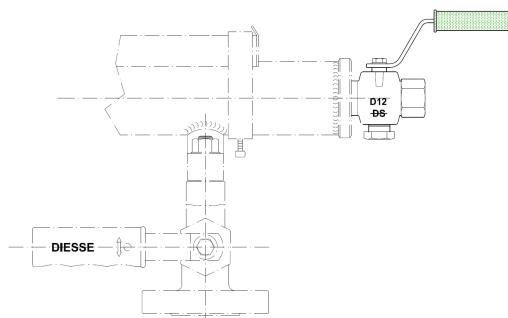
Handling: lever operated with PP handle - Quick 90° closing



Code: D12

VENT COCK cylindrical plug type

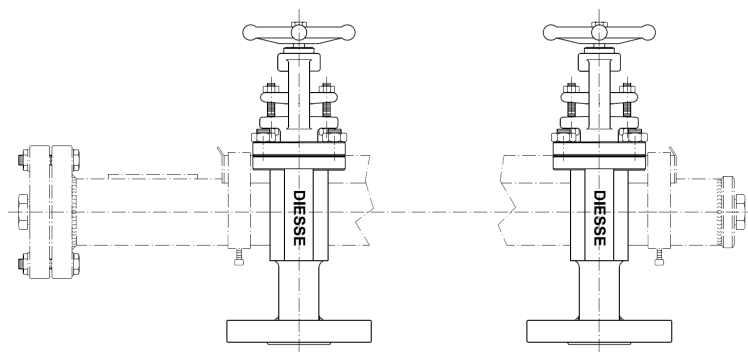
Handling: lever operated with PP handle - Quick 90° closing



Code: D12S

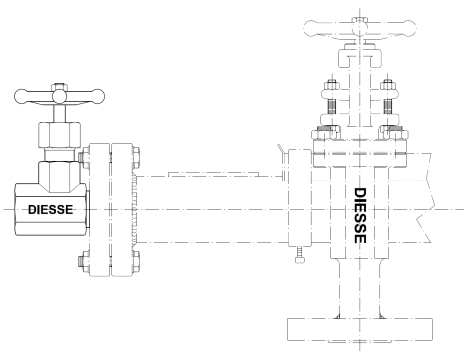
ACCESSORIES FOR MAGNETIC LEVEL GAUGES

SHUT OFF VALVES globe type



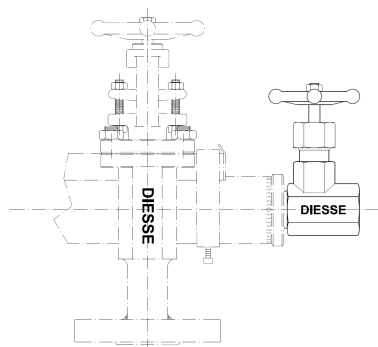
Code: SHV

DRAIN VALVE globe type



Code: DHV

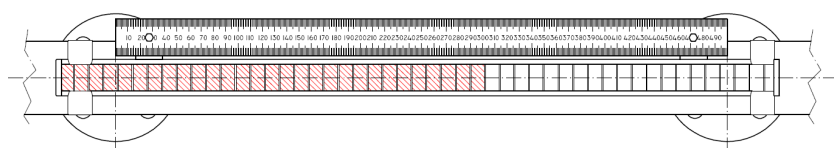
VENT VALVE globe type



Code: DHVS

CALIBRATED SCALE

The calibrated scale (millimeters) is in stainless steel, the values are engraved and black coloured. The standard indication correspond to the centre-to-centre distance of the level gauge. On request other materials and graduations can be supplied.

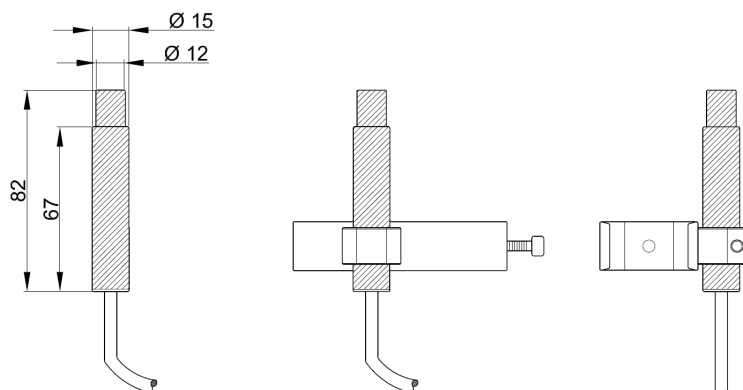


Code: VSG

ACCESSORIES FOR MAGNETIC LEVEL GAUGES

MAGNETIC SWITCH type TIM NSB 1240

Magnetic switches are used to monitor certain limits of the level.
The obtained binary signal can be forwarded to trigger alarms or other controls.

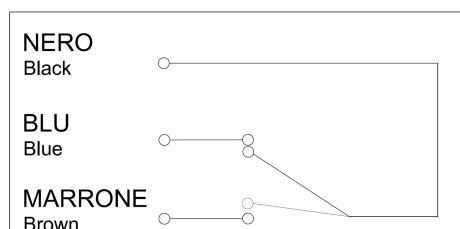


Code: TIM NSB 1240

Technical data:

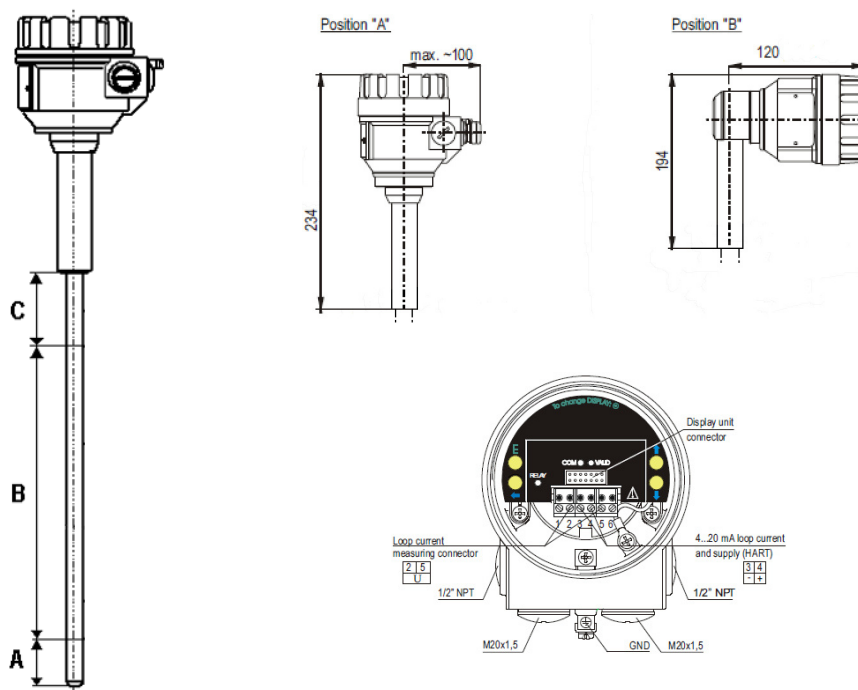
| Code | TIM NSB 1240 |
|-------------------------|--|
| Contact type | SPDT |
| Contact behaviour | Bistable |
| Working | Change-over |
| Contact material | Fe/Ni with Rodio |
| Max. power rating | 60 VA / 30 W |
| Max. current rating | 0,8 A |
| Max. voltage rating | 220 V |
| Life time | 100 million of controls |
| Operating frequency | 250 imp/s |
| Repeatability precision | 0,1 mm |
| Impact resistance | 30 g / 11 ms |
| Vibrations resistance | 0,35 mm 10-55Hz |
| Working temperature | -30°C / +160°C |
| Housing protection | IP 67 |
| Housing material | LAESTRA (SPS) G40 |
| Connection cable | Silicone 3 x 0,75 mmq; Length 3 m Nominal voltage 300 / 500 V Test voltage 2 KV According to table 5 of Standards CEI 20-29 |

Connection diagram:



ACCESSORIES FOR MAGNETIC LEVEL GAUGES

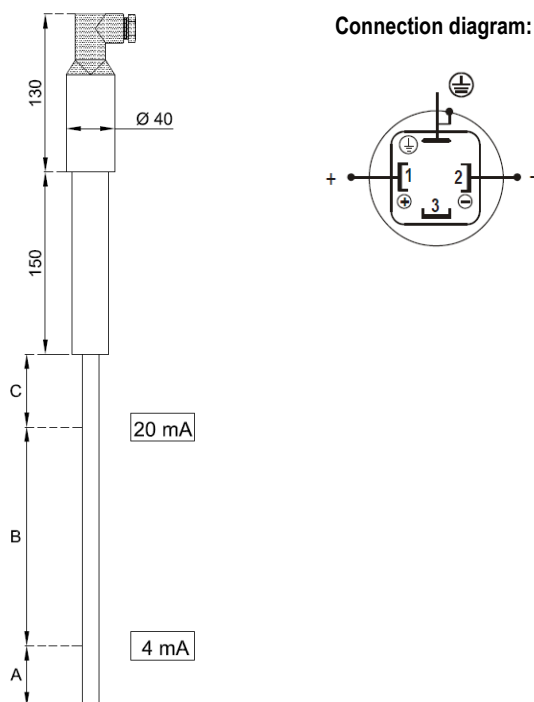
LEVEL TRANSMITTER



Technical data:

| | |
|------------------------|--|
| Code | DS LTM-MTU-5- ... |
| Contact type | Magnetostrictive |
| Measured process value | Liquid level, distance, volume |
| Housing material | Paint coated aluminium |
| Tube material | Stainless steel 316 Ti |
| Measure A | 50 mm (Standard) Other measures on request |
| Measure C | 120 mm (Standard) 140 mm (High temperature) |
| Ambient temperature | -40 ... 70°C, with display -25 ... 70°C On request: execution for high temperature with thermal insulation |
| Output | Analogue: 4 ... 20 mA (Limit values: 3,9 ... 20,5 mA) On request: with SAP 300 graphic display |
| Damping time | Adjustable 0 s ... 99 s |
| Error indication | 22 mA oppure 3,8 mA or "holding" |
| Output load | $R_t = (U_t - 12,5V) / 0,02 A$, U_t = Power supply voltage |
| Power supply | 12,5 V - 36 V DC, 2 wires |
| Electrical protection | Class III |
| Ingress protection | IP 67 |
| Electric connection | 2x M20x1,5 plastic cable glands for 6 ... 12 mm + 2x NPT 1/2" internal thread for cable protective pipe terminal block for 0,5 ... 1,5 mm ² (AWG 20 ... AWG 15) |
| Resolution | 1 mm |
| Nonlinearity | ± 2 mm or ± 0,02% |
| Hysteresis | < ± 1 mm |
| Temperature error | 0,04 mm / 10°C (between -25°C ... 50°C) |
| Current output data | Resolution: 2 µA, Accuracy: 10 µA, Temperature error: 200 ppm/°C |
| Accessories | SAP-300 Plug-in display module |

LEVEL TRANSMITTER



Technical data:

| Code | DS LTM-MIU-X- ... |
|---|--|
| Contact type | Magnetostrictive |
| Measured process value | Liquid level, distance, volume |
| Tube material | Stainless steel 316 Ti |
| Measure A | 50 mm (Standard) Other measures on request |
| Measure C | 60 mm (Standard) 130 mm (High temperature) |
| Ambient temperature | -40 ... 70°C On request: execution for high temperature with thermal insulation |
| Output | Analogue: 4 ... 20 mA (Limit values: 3,9 ... 20,5 mA) Digital communication: HART® (minimum loop resistance: 250 Ω) |
| Error indication | Output signal = 22 mA or 3,8 mA |
| Output load | $R_t = (U_t - 12,5V) / 0,02 A$, U_t = Power supply voltage |
| Power supply | 12,5 V - 36 V, 2 wires |
| Electrical protection | Class III |
| Ingress protection | IP 65 |
| Electric connection | Electrical connector DIN 43650 |
| Resolution (on HART® trasmitted value) | 1 mm |
| Nonlinearity (on HART® trasmitted value) | ± 2 mm or ± 0,085% F.S. whichever is greater |
| Hysteresis | ± 0,25 mm |
| Temperature error | 0,04 mm / 10°C (between -25°C ... 50°C) |
| Current output data | Resolution: 0,4 µA, Accuracy: 33 µA, Temperature error: 6 ppm/°C |