Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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Технические характеристики на аксессуары для приборов давления и температуры компании Delta Mobrey

Виды товаров: одинарные или двойные контакты для манометров и датчиков температуры EC, контроллеры DMCU800, градирни CT, сифоны, устройства защиты от превышения диапазона, демпферы, защитные гильзы, портативные коммуникаторы D-COMM, мембранные разделители для приборов давления, игольчатые клапаны 2, 3 и 5 ходовые, манифольды для прямого или выносного монтажа и др.

Technical **Datasheet**

delta-mobrey

Electric Contact for Pressure and Temperature Gauges
EC Series

Key **Features**

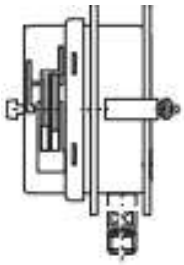
- Applicable to 100 & 150 mm gauges
- Degree of protection IP55 or filled
- Snap action or inductive type
- Intrinsically Safe Certified version for use in hazardous area
- Suitable for any range of pressure gauge from 0 to 600mbar.
- They can be applied to **Pressure, Differential; Pressure** and Gas Filled **Temperature gauges**

Series Overview

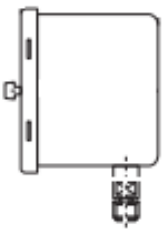
The CE type of contacts are suitable when a simple alarm signal needs to be added to the local mechanical indication.
The contacts can be mounted over the dial, protected by a methacrylate hood applied to a standard gauge case, or behind the dial (standard configuration), inside a higher protective higher case.
In both versions, the contact is adjustable from the front with a removable key. Differential pressure gauges DG, are supplied as standard with a hood. High case available is only upon request.

with hood

.



with high case



Product applications

The CP range is suitable for OEM manufacturers of :

- Burners & Furnaces
- Water treatment systems
- Chemical & Petrochemical applications
- Filtration systems

The choice of models available ensures suitability for use in:

- Corrosive atmospheres
- Resistant to chemical attack
- Hazardous areas

Other products

Other accessories we can offer:
• Overrange protectors
• Manifolds
• Thermowells

Magnetic Contacts Snap-Action, type CM/CS

These are contacts mechanically actuated by the pointer. The set point is adjustable from the front, on the whole scale, of the gauge. When the instrument pointer clashes with the set limit value, the contact elements, touch each other, causing the switch to open or close the circuit.
With double type contacts, this occurs at two values.
These contacts includes a permanent magnet fixed near the contact. This magnet speeds up both opening and closure, independently from the instrument pointer rotation speed, minimizing the reflection.
The magnetic attraction drastically reduces the effects of vibrations.
Intensity of attraction can be adjusted in factory according to the customer's need.

Technical Specification

Application:	Applicable to Gauges series GG, SG, GE, DG
Switching action:	Single or double contacts in single or separate circuits
Adjusting lock:	Fixed key installed as standard. Removable key on request
Action and selection:	See table below
Window material:	High case version: Methacrylate disk or Laminated Safety disc 6mm thickness. Methacrylate hood for version with contacts above the dial
Contacts materials:	Golden silver alloy as standard covering most of the industrial application Gold alloy or platinum alloy as special version
High case enclosure material:	Enclosure case and ring in AISI 304 stainless steel with bayonet bezel
Effect of magnet on switching:	Interference in advance closure or delayed opening, between 2 and 4% fsv, (depends by pointer speed). Instrument is supplied settling the deviation at 3%
Contacts rating:	See table
Electric connection:	DIN Connector with cable gland PG9 or cable gland M20x1.5
Ambient temperature limits:	-20 / + 60 ^{0}C

CONTACT RATING				
Voltage	**Direct Current**	**Control Category**	**Alternating Current**	**Control Category**
230 V	100 mA	DC 12	120 mA	AC 12
	55 mA	DC 13	65 mA	AC 14
110 V	200 mA	DC 12	240 mA	AC 12
	100mA	DC 13	130 mA	AC 14
50 V	300 mA	DC 12	450 mA	AC 12
	1260 mA	DC 13	200 mA	AC 14
24 V	400 mA	DC 12	600 mA	AC 12
	200 mA	DC 13	250 mA	AC 14
NO/NC contacts: **Maximum Load = 30 W / 50VA Maximum Thermal Current : 0.7A** **NO/C/NC contacts (supplied without magnets)** **Maximum Load = 10W / 18 VA Maximum Thernal Current : 0.4 A**				

See page 4 and 5 for the selection of the wiring and function

Inductive Contacts Intrinsically Safe type CI

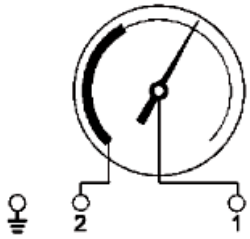
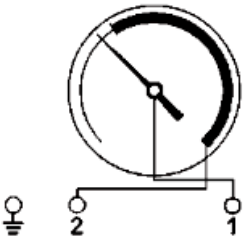
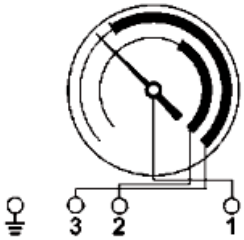
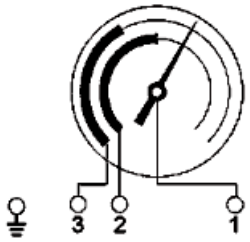
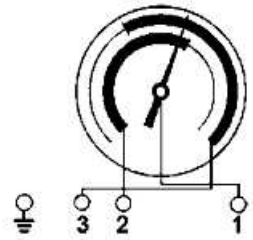
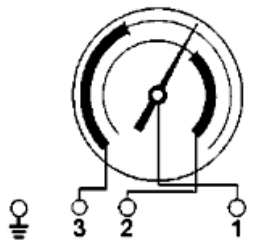
These contact functions like electric switches, but the switching action is activated by a proximity switch SJ2-N type, covered by certificate PTB 99 ATEX 2219 X for use in Hazardous Areas.
The set point is adjustable from the front on the whole scale of the gauge. The instrument pointer drives a metal flag in or outside the control head. As long as the metal flag is in the control head, a low control current of <1mA flows and the initiator is at low impedance Whenever the metal flag is outside the control head, a high control current of >3mA flows and the initiator is at high impedance.
The signal is then converted into an on/off signal by a remotely mounted Safety Barrier and relay (not included).
Upon reversal of the operation mode from operating current to rest current, the types of description must be changed accordingly.
The instrument will be ATEX construction and 2 related documents will be supplied: the ATEX Declaration of Conformity of the gauge and the Intrinsically Safe Certificate of the inductive contact.

Technical Specification

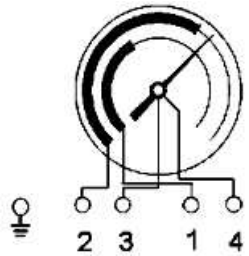
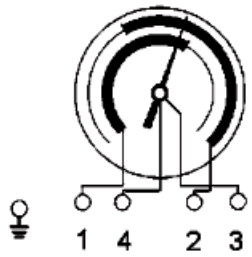
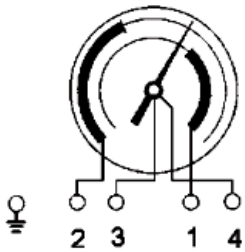
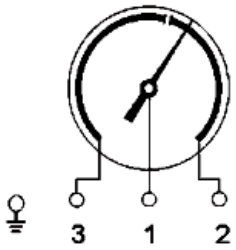
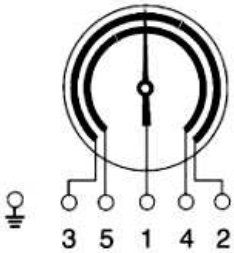
Application:	Applicable to Gauges series GG, SG, GE, DG
Switching action:	Single or double contacts.
Adjusting lock:	Fixed key installed as standard. Removable key on request.
Action and selection:	See table below
Window material:	High case version: Methacrylate disk or Laminated Safety disc 6mm thickness. Methacrylate hood for version with contacts above the dial
Contacts materials:	Golden silver alloy as standard covering most of the industrial application. Gold alloy or platinum alloy as special version
High case enclosure material:	Enclosure case and ring in AISI 304 stainless steel with bayonet bezel
Effect of magnet on switching:	Interference in advance closure or delayed opening, between 2 and 4% fsv, (depends by pointer speed). Instrument is supplied settling the deviation at 3%
Power Supply:	8 Vdc
Electric connection::	DIN Connector with cable gland PG9 or cable gland M20x1.5
Ambient temperature limits:	-20 / + 60 ^{0}C

See page 6 for wiring and function

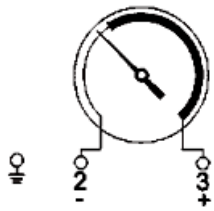
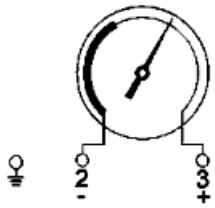
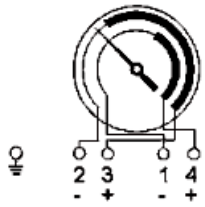
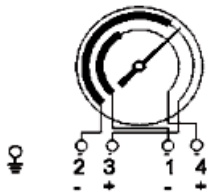
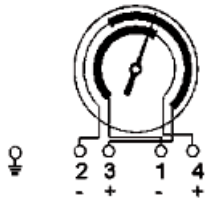
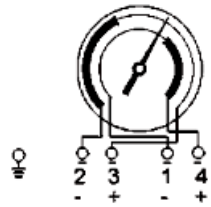
WIRING MAGNETIC 1 OR 2 CONTACT, SINGLE CIRCUIT

WIIRING SCHEME	TYPE	The instrument pointer moves clockwise and when it reaches the set point…..	After the interference
	CM01	…..Makes the contact	…..circuit is closed
	CM02	….Breaks the contact	…..circuit is open
	CM11	….makes the 1st contact ….makes the 2nd contact	….1st circuit is closed ….2nd circuit is closed
	CM22	….breaks the 1st contact ….breaks the 2nd contact	….1st circuit is open ….2nd circuit is open
	CM12	….makes the 1st contact ….breaks the 2nd contact	….1st circuit is closed ….2nd circuit is open
	CM21	….breaks the 1st contact ….makes the 2nd contact	….1st circuit is open ….2nd circuit is closed

WIRING MAGNETIC 2 CONTACT, SEPARATE CIRCUIT & SPDT

WIIRING SCHEME	TYPE	The instrument pointer moves clockwise and when it reaches the set point…..	After the interference
	CS11	….makes the 1st contact ….makes the 2nd contact	….1st circuit is closed ….2nd circuit is closed
	CSS22	….breaks the 1st contact ….breaks the 2nd contact	….1st circuit is open ….2nd circuit is open
	CS12	….makes the 1st contact ….breaks the 2nd contact	….1st circuit is closed ….2nd circuit is open
	CS21	….breaks the 1st contact ….makes the 2nd contact	….1st circuit is open ….2nd circuit is closed
	CM03	….makes and in the same time breaks the contacts	SPDT
	CM33	….makes and in the same time breaks the 1st contacts ….makes and in the same time breaks the 2nd contacts	DPDT

WIRING INDUCTIVE CONTACTS

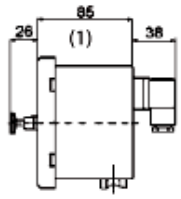
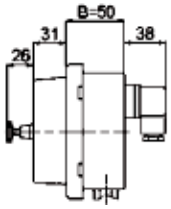
WIIRING SCHEME	TYPE	The instrument pointer moves clockwise and when it reaches the set point…..	After the interference
	CII01	…..Out of the control head	…..circuit is closed
	CI02	….into the control head	…..circuit is open
	CI11	..1st contact out of the control head ..2nd contact out of the control head	….1st circuit is closed ….2nd circuit is closed
	CI22	..1st contact into the control head ..2nd contact into the control head	….1st circuit is open ….2nd circuit is open
	CI12	..1st contact out of the control head ..2nd contact into the control head	….1st circuit is closed ….2nd circuit is open
	CI21	..1st contact into the control head ..2nd contact out of the control head	….1st circuit is open ….2nd circuit is closed

“+” = brown ; “-”= blue

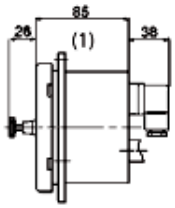
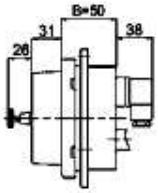
Dimensions

Pressure and temperature gauges GG, GE, SG (only direct bottom conn.)

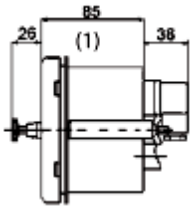
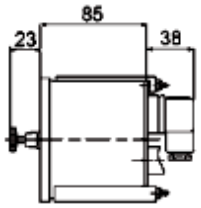
Direct mount gauge, with bottom connection

High case	Hood
	

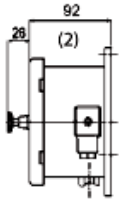
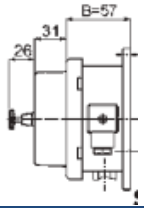
Flush mount with 3 holes fixing

High Case	Hood
	

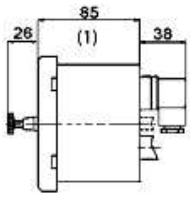
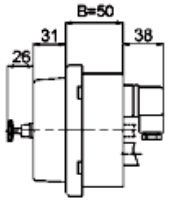
Flush mount with clamp

High case	Hood
	

Surface mounting with 3 holes fixing

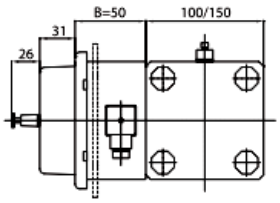
High case	Hood
	

Direct mount gauge with back connection

High case	Hood
	

Differential Pressure gauges DG

Direct and surface mount



Technical **Datasheet**

Process Controllers
Programmable Controller DMCU800

Key **Features**

- Low cost solution
- 4 digit bright LED display
- Panel Mount and Wall Mount models
- Suitable for use with loop powered 4-20mA transmitters
- Linearisation for non-linear tank shapes using look-up table
- Universal input for 4-20mA, RTDs, 6 T/Cs, and 4 linear types
- Five relay outputs available
- RS485 serial interface available
- 24Vdc supply for 2-wire transmitters

Series **Overview**

The Delta Mobrey DMCU800 can be used in a wide range of applications. It has a large 4-digit LED display and a simple user interface. The DMCU800 accepts a number of input types, such as 4-20mA, voltage, Pt100, Pt1000, PTC. The device has a built-in circuit for self-testing and self-calibration, manual measurement offset setting, and automatic software compensation of line resistance and cold junction temperature.

The display-to-input correspondence (in case of linear input), decimal point position, temperature measurement unit, and offset value are also programmable. Thanks to its universal input, the available enclosure options and a serial interface, combined with excellent price-to-performance ratio, the DMCU800 is an exceptionally versatile device.

Other related products

- D21 Pressure Transmitters
- Submergible Type Level Transmitters
- DMSP422 Ultrasonic Level Transmitter

Product **applications**

The Process Controllers can be used in a range of applications and offer several options to adapt to many different applications :

- Wastewater and Water Treatment
- Chemical & Petrochemical Industry
- Marine Industry
- Power Industry
- Hydraulic & Pneumatic Industry
- Food Industry

How can we **help you?**

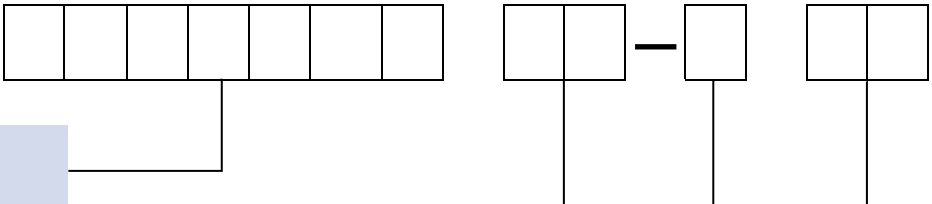
Delta Mobrey's offers fast, efficient and knowledgeable support when and where you need it. Please visit our website at to find your local support centre or call us on:

+44 (0) 1252 729140

Process Controller
Model: DMCU800

How to order

DMCU800 controllers can be configured by selecting codes representing the desired features from the tables that follow. The chart below, describes how the model code is built up. For assistance in configuring a controller that best suits your needs, please contact your local sales office.



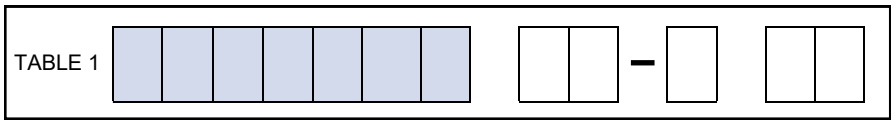
Control Unit Family
Table 1

Mounting
Table 2

Usage
Table 3

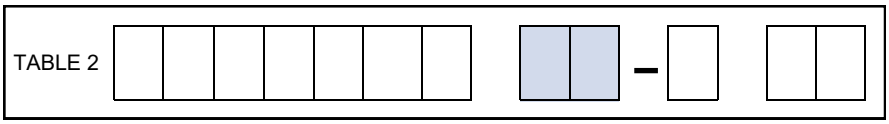
Supply Voltage
Table 4

Control Unit Family



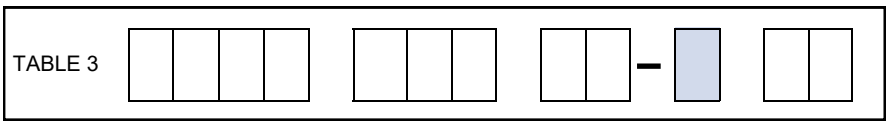
Description	Code
Control unit. 4-20mA and RTD inputs. mA and 5 relay output	**DMCU801**

Mounting



Description	Code
Wall mount	**WX**
Panel mount	**PX**

Usage



Description	Code
Safe area use only	**N**

Process Controller
Model: DMCU800

Supply Voltage

TABLE 4 [ ][ ][ ][ ] [ ][ ][ ] [ ][ ]–[ ] [ ][ ]

Description	Code
230 VAC or 115 VAC	**no code**
24 VDC	**24**

Technical Data

PROGRAMMABLE INPUT

Two-wire external transmitter	4…..20mA **(note 1)**
Pt100 (w=1.385); 3-wire	-100…..850 ^{0}C
Pt1000 (w=1.385); 3-wire	-100…..600 ^{0}C
PTC (1k at 25 °C); 3-wire	-50…..150 ^{0}C
PTC (2k at 25 °C); 3-wire	-50…..150 ^{0}C
Thermocouple "T"	-40…..400 ^{0}C
Thermocouple "J"	-20…..1000 ^{0}C
Thermocouple "K"	-20…..1300 ^{0}C
Thermocouple "S"	0…..1700 ^{0}C
Thermocouple "R"	0…..1700 ^{0}C
Thermocouple "B"	100…..1800 ^{0}C
Linear voltage 0...10 V	-1999…..9999 programmable
Linear current 0(4)...20 mA	-1999…..9999 programmable
Linear resistive 0...1 kΩ	-1999…..9999 programmable
Custom linear (option)	-1999…..9999 programmable
Manual input offset	programmable
Input type selection	programmable
Decimal point selection	programmable
Temperature measurement uni	^{0}C or ^{0}F programmable

ACCURACY

Measurement error	0.3% from span
Temperature drift	0.02% from span for 1 °C
Cold junction compensation	automatic, -10...80 °C
RTD line compensation	automatic, up to 2 x 25 Ω

POWER SUPPLY

Mains supply voltage	230 VAC or 115 VAC
SMPS voltage	90…250 V
Isolated low voltage	12…24 V or 24 VAC
Non-isolated low voltage	12…24 V
External mains transformer	9(12) VAC
Consumption	max. 2 VA

INDICATION AND CONTROLS

Digital display	4 LED indicators
LEDs	5 LEDs for relay output status
Keyboard	3 membrane keys

OPERATING CONDITIONS

Panel mount	IP54
Wall mount	IP65
Ambient temperature	-10...65 °C
Ambient humidity	0...85 %RH

NOTE 1:
Provides loop supply voltage - 24 VDC (only w/ isolated power supply).

OUTPUTS

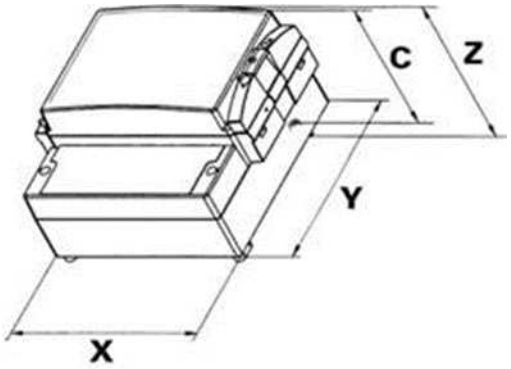
PROGRAMMABLE INPUT

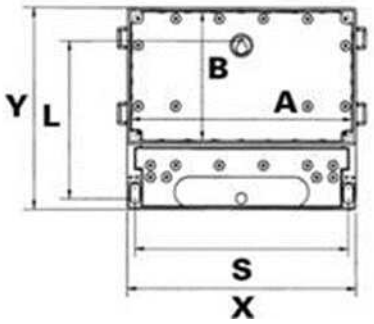
Relay electromechanical	5A/250V w/NO/NC
Solid state relay	1A/250Vac
Output for external SSR	5…24 V, 30 mA
Control algorithm	ON/OFF
Set point	within input range limits
Alarms	programmable
Serial interface	RS485, isolated
Input type selection	programmable
Decimal point selection	programmable
Temperature measurement unit	^{0}C or ^{0}F programmable

DIMENSIONAL DRAWINGS

WALL MOUNT IP65 MODEL

X=188mm, Y=160mm, Z=134mm

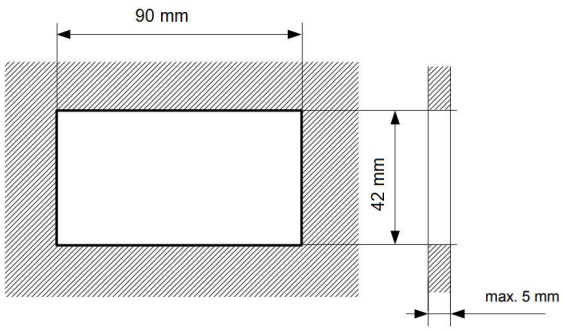




PANEL MOUNT IP54 MODEL

External dimensions 96mm x 48mm

Panel cut out:



Mounting depth: 98mm

Approvals

EMC Directive 2014/30/EU
Models: DMCU801**-N, DMCU801**-N**
Conformity assessment procedure: module A
The following standards were applied: EN 61326-1:2013; EN61326-2-3:2013

Low Voltage (LVD) 2014/35/EU
Models: DMCU801**-N.
The following standard was applied: EN IEC 63000:2018

Restriction of hazardous substances (RoHS 2) 2011/65/EU
Models: DMCU801**-N, DMCU801**-N**
The following standard was applied: EN IEC 63000:2018

Technical **Datasheet**

delta-mobrey

COOLING TOWER

For Pressure Devices

Key **Features**

- All 316L St.St. construction
- Exotic material available as option
- Connections G1/2B (1/2"G or BSP) or 1/2" –14 NPT
- Compact, single piece construction
- Weight approx. 0.2 kg with 5 fins
- Max process pressure 600bar
- Max process temperature 200ºC

Series Overview

The cooling tower, is a simple device largely used to protect the instrument from excessive process temperatures.

The high temperature of the process fluid is reduced by the radiation of heat and circulation of air through the cooling fins.

The temperature of the fluid is therefore lowered sufficiently so the temperature limits of the connected instrument are not exceeded. In addition any possible measurement errors linked to the temperature are consequently reduced.

At the ambient temperature condition of 20ºC, it reduces the temperature of the fluid from 200ºC to approx. 70ºC.

The use of the cooling tower, extends the working life of the instrument, and enables a direct connection where fluids are up to 200ºC.

Product **applications**

- Oil & gas, Chemical and Petrochemical
- Gas and liquids
- Applicable on any type of pressure instruments
- Standard wetted parts are in SS316. Wetted parts material in accordance with NACE are available as extra.

Other products

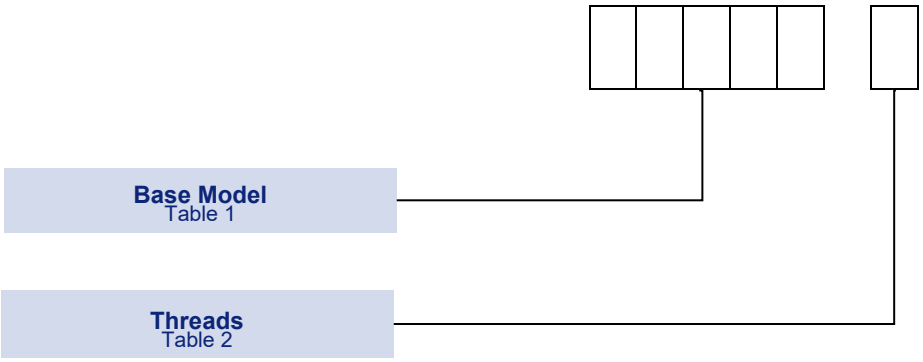
Other products we can offer :

- Overrange protectors
- Needle valves
- Syphons

Cooling Tower
Series CT

How to order

The instrument can be configured by selecting the codes representing the desired features from the tables below. The chart below, describes how the model code is built up. For assistance in configuring a device that best suits your needs, please contact your local sales office.



Models

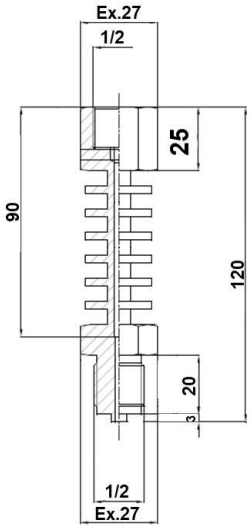
TABLE 1

Description	Code
Cooling Tower in Stainless Steel 316	**CT316**
Cooling Tower in exotic material (on request)	**CTXXX**

Threads

TABLE 2

Description	Code
1/2inch NPT MxF	**N**
1/2inch GAS (or BSP) MxF	**G**



internal hole: approx. 4mm.

ISO9001
FM00720

Technical **Datasheet**

delta-mobrey

OVERRANGE PROTECTOR

For Pressure Gauges

Key **Features**

- High overload allowed
- All 316L St.St. construction
- FPM (Viton) seals
- Exotic material available as option
- Connections G1/2B (1/2"G or BSP) or 1/2" –14 NPT
- 6 adjustable setting ranges
- Weight 0,53 kg

Series Overview

The overrange protector is used to protect the instrument (gauges, switches and transmitters) from an overpressure.

If, due to an occasional fault or condition, the process pressure exceed the maximum allowed overpressure of the instrument, this device mounted between the process and the instrument, automatically by-pass the instrument from the process until the pressure value is back again below approx. the 30% of the setting value. Once the valve opens, it is ready to protect again the instrument from another event.

Max pressure 500bar and temperature 100degC

Different spring ranges are available to set accurately the setting ranges and cover the instrument's ranges

Product **applications**

- Oil & gas, Chemical and Petrochemical
- Gas and liquids
- Bourdon tube or diaphragm type pressure intruments
- Wetted parts material according to NACE are available as extra in 316L or MONEL

Other products

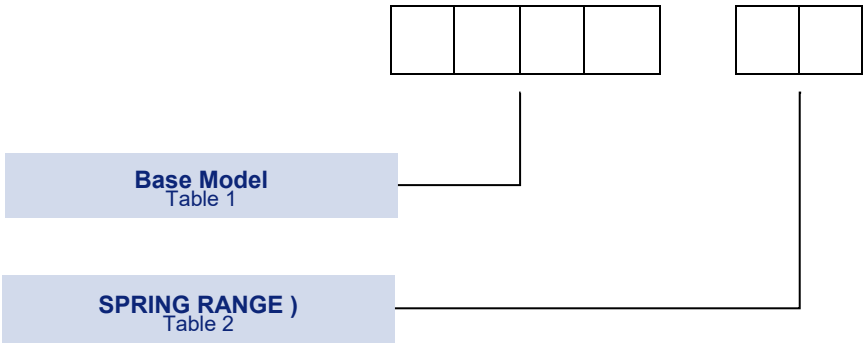
Other products we can offer :

- Pressure snubber
- Needle valves
- Syphons

How to order

Instrument can be configured by selecting codes representing the desired features from the tables that follow.

The chart below, describes how the model code is built up. For assistance in configuring a switch that best suits your needs, please contact your local sales office.



Models

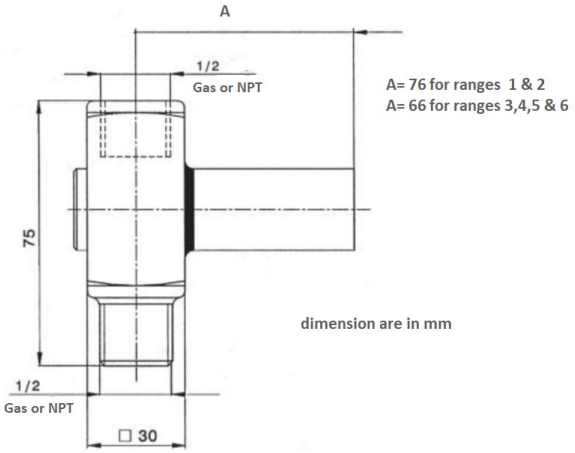
TABLE 1 | | | | | / | |

Description	Code
Overrange Protector with 1/2” NPT	**OVPA**
Overrange Protector with 1/2” Gas (or BSP) connection	**OVPB**

Spring Range

TABLE 2 | | | | | / | |

Description	Code
Spring range 0,2 to 1 bar	1
Spring range 1 to 3 bar	2
Spring range 3 to 16 bar	3
Spring range 16 to 35 bar	4
Spring range 35 to 160 bar	5
Spring range 160 t o 350 bar	6



OVERRANGE PROTECTOR
Series OVP

Technical **Datasheet**

delta-mobrey

PIGTAIL SYPHON

For Pressure Gauges

Key **Features**

- Available for high (SHP) and low (SLP) pressure
- Standard construction, all 316L St.St.
- Carbon Steel (high pressure only) or Exotic material are available as option
- Connections G1/2B (1/2"G or BSP) or 1/2" –14 NPT
- Low pressure type weight 0,28 kg
- High pressure type weight 0,88 kg

Series **Overview**

Pigtails siphons are used when measuring pressure of steam and are mounted between the instrument (gauge, switch or transmitter) and the process.

Once installed with process media steam, the lower part of the syphon will be permanently filled with condensate, preventing the instrument to get directly in contact with the steam at high temperature.

These accessories may also be used with other process media for heating dispersion, preventing the instrument to operate with dangerous temperature.

The standard construction in 316 Stainless Steel, High pressure type, is also available in ASTM A106 Gr. B

Low pressure **SLP** is suitable for max **60bar** and **300 degC** and is manufactured from dn 10 pipe.

High Pressure **SHP** is suitable for max **180bar** and **400 degC** and is manufactured from Sch. 80 pipe (dn 21.3mm).

Instrument connection Gas are swivel. Instrument connection NPT are fixed. Process connection Gas or NPT are fixed (female are available as option

Product **applications**

- Oil & gas, Chemical and Petrochemical
- Steam, Gas or Liquids
- Bourdon tube or diaphragm type pressure gauges
- Wetted parts material according to NACE are available as extra in 316L or MONEL

Other products

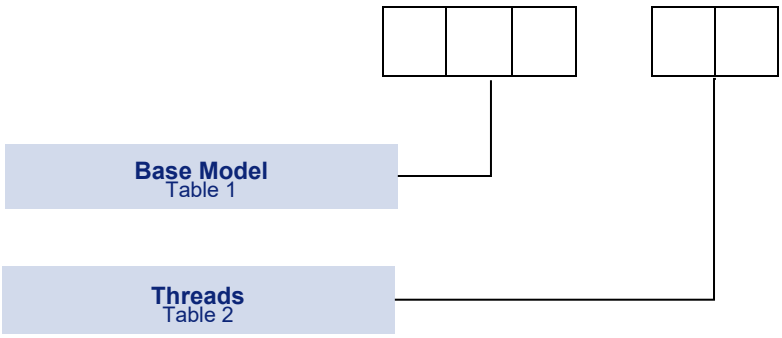
Other products we can offer :

- Pressure snubber
- Needle valves
- Overrange protector

How to order

Instrument can be configured by selecting codes representing the desired features from the tables that follow.

The chart below, describes how the model code is built up. For assistance in configuring the accessory that best suits your needs, please contact your local sales office.



Models

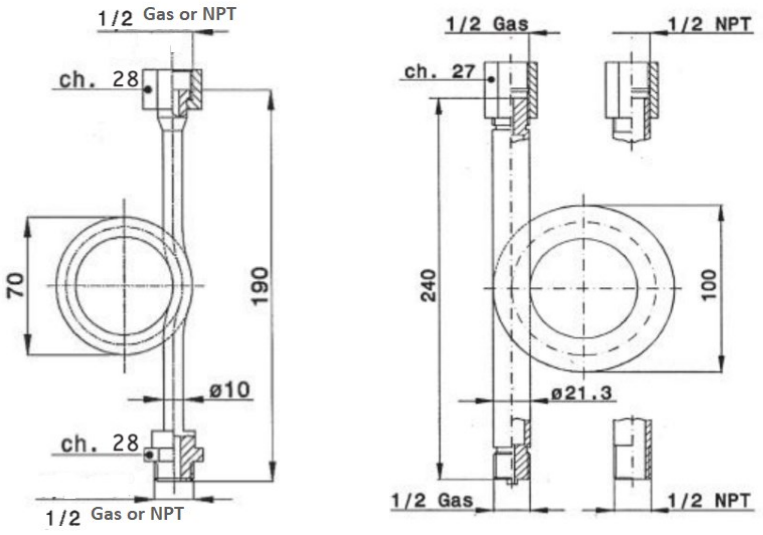
TABLE 1 [ ][ ][ ] / [ ][ ]

Description	Code
Low Pressure/Temperature Syphon	**SLP**
High Pressure/Temperature Syphon	**SHP**
High Pressure/Temperature Syphon in AISI 316/316L Nace Mr.0175	**SHN**

Threads

TABLE 2 [ ][ ][ ] / [ ][ ]

Description	Code
1/2” NPT Female, fixed x 1/2” NPT Male fixed	**A**
1/2” Gas (or BSP) Female, swivel x 1/2” Gas (or BSP) Male fixed	**B**



dimension are in mm

Technical **Datasheet**

delta-mobrey

PULSATION DAMPENER

For Pressure Instruments

Key **Features**

- High overload allowed
- All 316L St.St. construction with Viton gaskets
- Exotic material available as option
- Connections G1/2B (1/2"G or BSP) or 1/2" –14 NPT
- Complete of adjustable screw
- Weight 0,22 kg

Series Overview

The pulsation snubber is a device used to protect the instrument from excessive pulsation of the process pressure.

The dampener can be adjusted through an external screw, reducing the orifice area.

Any peak of pressure of the process fluid generated, for example, by compressors, pumps, steam generators, hydraulic circuits is compensated by this device.

The dampener, warrantee a longer life of mechanical part of the instrument and allows a more accurate reading of the pressure intruments.

Max pressure 400bar and temperature 150degC

Product **applications**

- Oil & gas, Chemical and Petrochemical
- Gas and liquids
- Bourdon tube or diaphragm type pressure intruments
- Wetted parts material according to NACE are available as extra in 316L or MONEL

Other products

Other products we can offer :

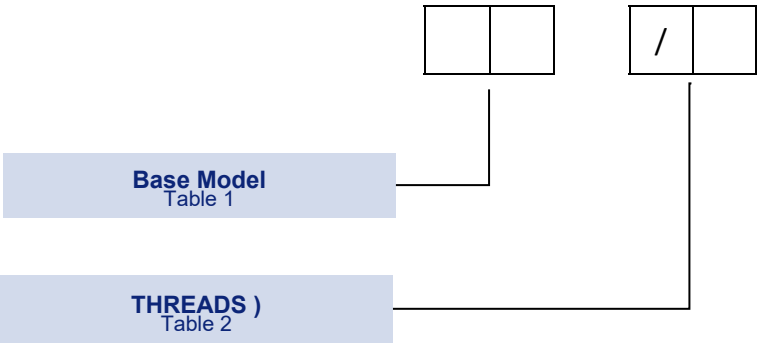
- Overrange protectors
- Needle valves
- Syphons

PULSATION DAMPENERS
Series PD

How to order

Instrument can be configured by selecting codes representing the desired features from the tables that follow.

The chart below, describes how the model code is built up. For assistance in configuring a switch that best suits your needs, please contact your local sales office.



Models

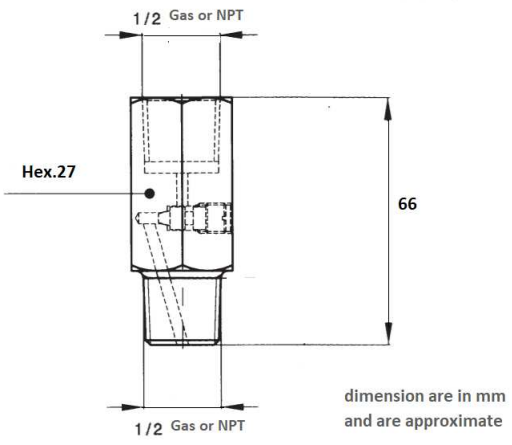
TABLE 1 ☐☐ / ☐☐

Description	Code
Pulsation Dampener	**PD**

Threads

TABLE 2 ☐☐ / ☐☐

Description	Code
1/2inch NPT Connections	**A**
1/2inch GAS (or BSP) Connections	**B**



Technical **Datasheet**

delta-mobrey

Thermowells

Bar stock or manufactured type

Key **Features**

- Solid bar stock construction or machined from a pipe
- 1 piece, forged construction available
- Different materials available or covered with PTFE
- Full penetration welds available
- Flanges according to ANSI, DIN standard
- ASME PTC 19.3 Stress calculation available
- Stop Ring available in case of need
- Special and customised construction

Series **Overview**

Thermowells are a very important component for all temperature measurements. They are used to protect the sensing element of the temperature instrument from corrosion abrasion and high pressures.

It allows the measuring instrument to be removed for recalibration or replacement, without interrupting the flow or stopping the process.

The bar stock thermowells are available in parallel, tapered or step manufactured variations as required.

We offer a large number of variants, such as customised thermowell designs or materials, to meet the specific requirements of our customers. The high accuracy and quality of production is an important aspect for our thermowells.

Product **applications**

- Chemical, petrochemical industry
- Power and steam generation
- Food and pharmaceutical industry
- Marine and offshore application
- Oil & Gas
- Water Treatment
- Fire fighting system
- Hydraulic systems

Other products

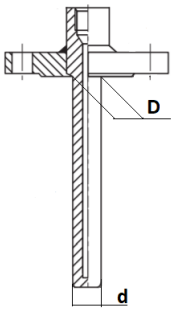
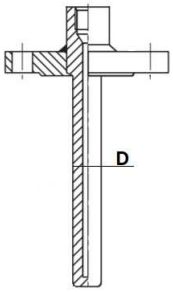
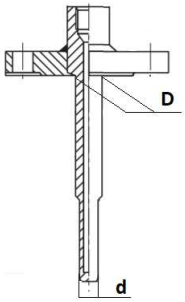
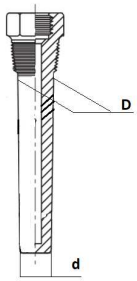
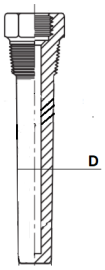
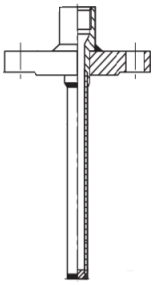
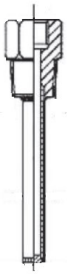
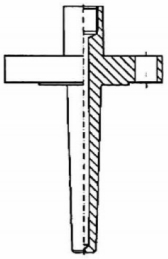
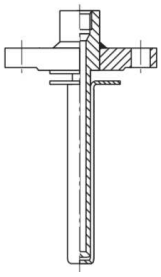
Other products we can offer :

• Flanged/threaded chemical seals

• Manifolds

• Overrange protectors, snubbers, electric contact

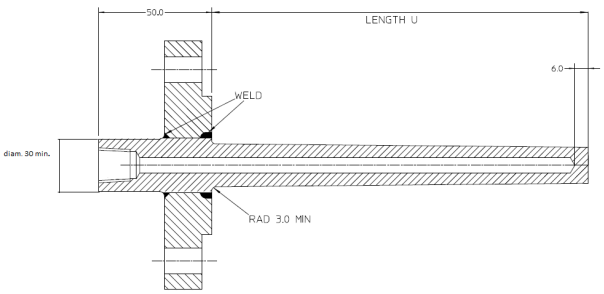
Type and Construction

STANDARD BARSTOCK TYPE FLANGED OR THREADED				
FT	**FP**	**FR**	**ST**	**SP**
FLANGED, TAPERED	FLANGED, PARALLEL	FLANGED, REDUCED TIP	SCREWED, TAPERED	SCREWED, PARALLEL
				
SPECIAL CONSTRUCTIONS ON REQUEST				
CODE 37----(For special construction)				
FLANGED, FROM PIPE	**SCREWED, FROM PIPE**	**BARSTOCK, WELDED DIN TYPE**	**ONE PIECE, FORGED**	**COVERED WITH PTFE, EXOTIC MAT.**
				

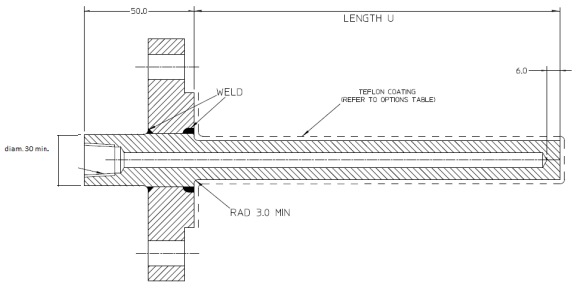
GENERAL CHARACTERISTICS	**Bar stock type Material**	AISI316L, AISI316TI, AISI304, DUPLEX, SAF2205, Hastelloy, Monel 400, Inconel 625, F51, F22, and others on request
	Pipe Material	AISI316L, AISI304, P22, others on request
	Flange type	Blind as standard, Slip-on on request
	Welding	Single, full penetration as option
	Flange material	AISI316, AISI316TI, AISI304, and others on request
	Flanged connection	ANSI: ½, ¾, 1, 1 ½, 2, 3, 4, and others on request DIN 15, 20, 25, 40, 50, 80, 100, and others on request
	Flange Rating	ASME: 150, 300, 600, 900, 1500, 2500 DIN: 16, 25, 40, 100
	Flange finish	RF, RTJ
	Threads	NPT, BSPP, BSPT
	Bore diameter	Suitable for stem 4,6,9,10,12,14 outer diameter
	Insertion length	As requested
	Standard length over "U"	50mm (no extension)
	Standard thickness at end	6mm
	Standard surface roughness	0.8 μ (▽▽▽)
	Flange marking	Flange size/rating/material/tag
	ASME PTC 19.3 calculation	Stress calculation, as requested
	EN10204 3.1	Material Certificate
	Pressure test	Available on request
	Liquid penetrant Test	Available on request

STANDARD FLANGED THERMOWELLS

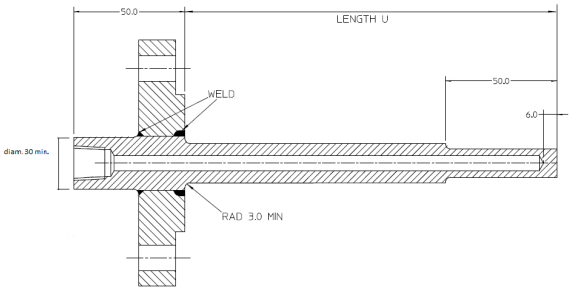
Tapered stem



Parallel stem



Reduced tip



Models

TABLE 1 ☐☐ ☐ ☐ ☐ ☐ ☐ ☐☐ ☐☐ ☐ ☐☐☐ / ☐ ☐

Description	Code
Bar stock flanged, **Parallel Stem**	**FP**
Bar stock flanged, **Parallel Stem and Reduced Tip**	**FR**
Bar stock flanged, **Tapered Stem**	**FT**

Materials

TABLE 2 ☐☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐☐ ☐☐ ☐ ☐☐☐ / ☐ ☐

Description	Code
AISI 304	**A**
AISI316L	**B**
AISI310	**C**
Inconel 600	**D**
Monel 400	**E**
Hastelloy C	**F**
Carbon Steel	**H**
Inconel 625	**K**
Stainless Steel Duplex	**L**

Process Connection (Flange Size)

TABLE 3

Description	Code
½" to ANSI B 16.5	D
¾ " to ANSI B 16.5 or DN20 to BS4504	E
1" to ANSI B 16.5 or DN25 to BS4504	F
1 ½ "to ANSI B 16.5 or DN40 to BS4504	H
2" to ANSI B 16.5 or DN50 to BS4504	K
3" to ANSI B 16.5 or DN80 to BS4504	L

Flange Rating

TABLE 4

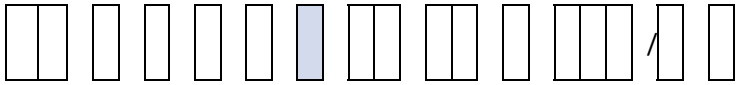
Description	Code
150 lbs.	A
300 lbs.	B
600 lbs.	C
900 lbs.	D
1500 lbs.	E
2500 lbs.	F
PN6	G
PN10	H
PN16	I
PN25	J
PN40	K

Flange Face

TABLE 5

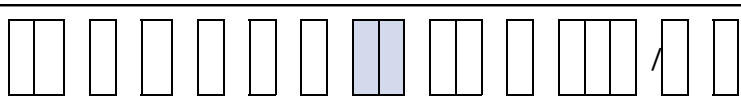
Description	Code
Raised Face RF	R
Flat Face FF	F
Ring Joint RTJ	J

Instrument Connection

TABLE 6 

Description	Code
3/8 “ NPT	**A**
½ “NPT	**B**
R½ “ BSPT	**C**
G½ “ BSPP	**E**

Stem Diameter at Connection

TABLE 7 

Description	Code
44 mm	**44**
43 mm	**43**
39 mm	**39**
37 mm	**37**
35 mm	**35**
34 mm	**34**
33 mm	**33**
32 mm	**32**
30 mm	**30**
28 mm	**28**
27 mm	**27**
26 mm	**26**
25 mm	**25**
24 mm	**24**
22 mm	**22**
19 mm	**19**
18.5 mm	**18**
17 mm	**17**
16 mm	**16**
12 mm	**12**

Stem Diameter at Tip

TABLE 8

Description	Code
18 mm	**AH**
44 mm	**44**
43 mm	**43**
39 mm	**39**
37 mm	**37**
35 mm	**35**
34 mm	**34**
33 mm	**33**
32 mm	**32**
30 mm	**30**
28 mm	**28**
27 mm	**27**
26 mm	**26**
25 mm	**25**
24 mm	**24**
22 mm	**22**
19 mm	**19**
18.5 mm	**18**
17 mm	**17**
16 mm	**16**
12 mm	**12**

Bore Diameter

TABLE 9

Description	Code
6.2 – 6.4 mm (for stem 6mm OD)	**A**
9.8 – 10 mm (for stem 9.5mm OD)	**B**
12.5 – 12.8 mm (for stem 12mm OD)	**C**
17 – 17.5 mm (for stem 16mm OD)	**D**
8.3 – 8.5 mm (for stem 8mm OD)	**E**

'U' Length

TABLE 10 [ ][ ] [ ] [ ] [ ] [ ] [ ] [ ][ ] [ ][ ] [ ] [ ][ ][ ] / [ ] [ ]

Description	Code
U Length in mm	**XXXX**

Options

TABLE 11 [ ][ ] [ ] [ ] [ ] [ ] [ ] [ ][ ] [ ][ ] [ ] [ ][ ][ ] / [ ] [ ]

Description	Code
None required	**0**
Tag no. Stamped on flange	**1**
Full penetration welds	**2**
Supplied with screw plug and chain	**3**
Teflon Jacket (17µm thick Min.) wetted parts incl. Flange face	**4**
Tag no. Stamped on flange and full penetration welds	**A**
Tag no. Stamped on flange and screw plug and chain	**B**
Tag no. Stamped on flange and full penetration welds and screw plug and chain	**C**
Tag No. Stamped on Flange and Teflon Jacket (17m Min.) On Wetted Parts	**D**

Treatments

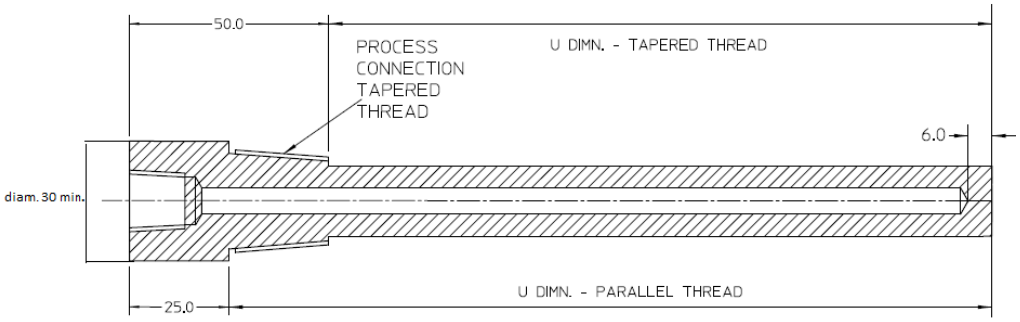
TABLE 12 [ ][ ] [ ] [ ] [ ] [ ] [ ] [ ][ ] [ ][ ] [ ] [ ][ ][ ] / [ ] [ ]

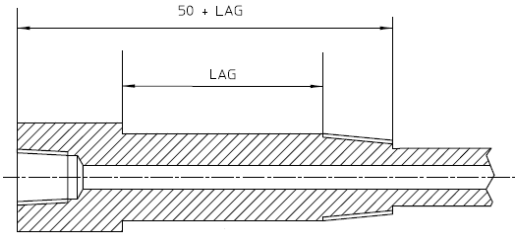
Description	Code
None required	**0**
Nace MR 01-75 compliant material	**1**
Dye penetrant weld inspection	**2**
Radiograph inspection (X-Ray)	**3**
NACE MR 01-75 and MR 01-03 compliant material	**5**
NACE MR 01.75 and MR 01.03 compliant material + Dye penetrant weld inspection	**A**
Dye penetrant weld inspection + Radiograph inspection (X-Ray)	**B**
NACE + Dye penetrant weld inspection + Radiograph inspection (X-Ray)	**C**

STANDARD FLANGED THERMOWELLS

Tapered and parallel Stem

Total length for TAPERED thread process connection = U+50
Total length for PARALLEL thread process connection = U+25





Models

TABLE 1

Description	Code
Bar stock threaded, **Parallel**	**SP**
Bar stock threaded, **Tapered**	**ST**

Materials

TABLE 2

Description	Code
AISI 304	**A**
AISI316L	**B**
AISI310	**C**
Inconel 600	**D**
Monel 400	**E**
Hastelloy C	**F**
Carbon Steel	**H**
Titanium Gr2	**M**
Inconel 625	**K**
Stainless Steel Duplex	**L**

Process Connection (Thread Size)

TABLE 3

Description	Code
½” NPT external	**DN**
G½” (½ “ BSPP external)	**DP**
R½” (½ “ BSPT external)	**DT**
¾” NPT external	**EN**
G¾” (¾” BSPP external)	**EP**
R¾” (¾” BSPT external)	**ET**
1” NPT external	**FN**
G1” (1” BSPP external)	**FP**
R1” (1” BSPT external)	**FT**
G 1 ¼” (1 ¼” BSPP external)	**GP**
M20x1.5 external	**HM**

Instrument Connection

TABLE 4

Description	Code
3/8” NPT Internal	**A**
½” NPT internal	**B**
Rc½” (½” BSPT internal)	**C**
R3/8” (3/8” BSPT Internal)	**D**
G½” (½” BSPP internal)	**E**
M20x1.5 internal	**F**

Lagging Extension

TABLE 5

Description	Code
None required	**0**
25 mm Long	**A**
50 mm Long	**B**
75 mm Long	**C**
100 mm Long	**D**

Stem Diameter at Connection

TABLE 6

Description	Code
12 mm	**12**
16 mm	**16**
17mm	**17**
19 mm	**19**
26 mm	**26**
27 mm	**27**

Stem Diameter at Tip

TABLE 7

Description	Code
12 mm	**12**
16 mm	**16**
17mm	**17**
19 mm	**19**
26 mm	**26**
27 mm	**27**

Bore Diameter

TABLE 8

Description	Code
6.2 – 6.4 mm (for stem 6mm OD)	**A**
9.8 – 10 mm (for stem 9.5mm OD)	**B**
12.5 – 12.8 mm (for stem 12mm OD)	**C**
17 – 17.5 mm (for stem 16mm OD)	**D**
8.3 – 8.5 mm (for sensing element 8mm OD)	**E**

'U' Length

TABLE 9

Description	Code
U Length in mm	**XXXX**

Options

TABLE 10 ☐☐ ☐ ☐☐ ☐ ☐ ☐ ☐☐ ☐☐ ☐ ☐☐☐ / ☐ ☐

Description	Code
None required	**0**
Tag no. Stamped on flange	**1**
Supplied with screw plug and chain	**3**
Tag no. Stamped on flange and supplied with screw plug and chain	**B**

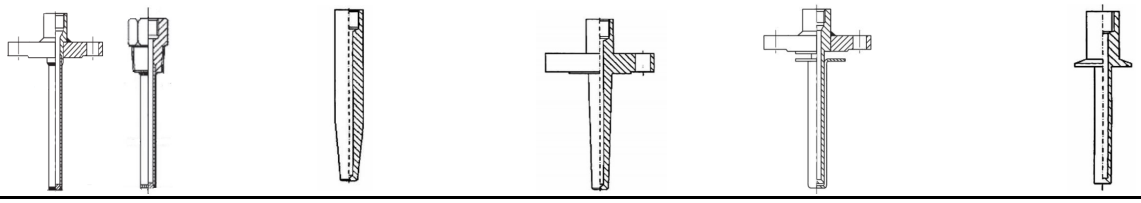
Treatments

TABLE 11 ☐☐ ☐ ☐☐ ☐ ☐ ☐ ☐☐ ☐☐ ☐ ☐☐☐ / ☐ ☐

Description	Code
None required	**0**
NACE MR 01.75 compliant material	**1**
Radiograph Inspection (X-Ray)	**3**
Cleaned for Oxygen Service	**4**

NON STANDARD THERMOWELLS

From pipe **DIN type welded** **Forged** **Covered** **Customised construction**



Models

TABLE 1 ☐☐ ☐☐☐☐☐☐

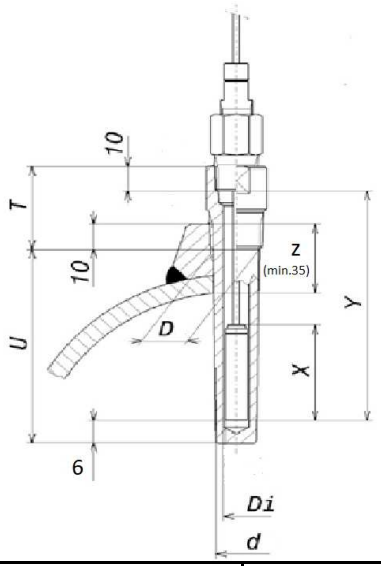
Description	Code
Special construction	**37**

Materials

TABLE 2 ☐☐ ☐☐☐☐☐☐

Description	Code
Unique identification code according to customer's specific requirement	-

Correct Dimensioning of Insertion Length of Thermowells



For our flanged and threaded thermowells type :
FT, FR, FP, SP, ST
length "T" is 50mm as standard.

In case of thermowell with extension, this must be considered and added.

Where: ***Sensor dimensions***: **D=** outer diameter of bulb **X=** length of sensitive part (=bulb) **Y=** stem length **Z=** dimension of the process connection With all thread tapered type, 10 mm of insertion must be considered. With parallel type threads, 25mm of insertion must be considered.	***Thermowell dimensions***: **Di=** inside diameter (bore) **de=** external diameter **U=** insertion length (length below thread/flange) **T=** remaining length (insertion + thread/flange + nut) EXCLUDING extension

Relationship between dimensions T;U;X;Y
U≥ X+Z (insertion length must be higher than bulb length + dimension of connection)
Y (with all **tapered threads**) =U+T-16mm (= total length of the thermowell, less 10mm for insertion of the thread and 6mm for thickness of the bottom of the thermowell)
Y (with all **parallel threads**) =U+T-31mm (= total length of the thermowell, less 25mm for insertion of the thread and 6mm for thickness of the bottom of the thermowell)
X must be always fully immersed in the fluid, so X must be < U-Z

CASE 1	**CASE 2**
Given: "X" & "Z", select "U" min and "Y" (considering a tapered thread and no extension) U min= X+Z+10mm Example: WTO2 having: Bulb "X"= 81 ; Coupling length "Z" = 50mm U min= 81+10= 91mm U+T=91+50=141mm Y min= 141 – 16mm = 125mm	**Given : "X" and "U", select "Y"** (considering a tapered threads and no extension) Check first of all that following rules are respected : X < U-Z and U min= X+Z+10mm Then: Y min=U+(T-16mm) extension, if any) Example: WTO2 having X=81mm Immersion "U"= 150 ; Y = 150 + 31 = 181mm

Technical **Datasheet**

Communication tools

Delta Mobrey offers different tools for the communication & configuration of the D SERIES pressure and temperature transmitters:
- Hand Held Communicator
- Software for laptop/desktop

Key **Features**

- Identification of a transmitter.
- Configuration of its output parameters.
- Reading of a PV values (e.g. pressure, output current, degree of output setting in %).
- Enforcement of output current with a given value.
- Transmitter calibration in relation to master pressure.
- Function linearization (user characteristic creator).
- Zeroing.

Product **applications**

The D-COMM communicator is suitable for a wide range of (safe area) applications in:

- Oil & Gas
- Chemical
- Petrochemical
- Refining
- Power
- Marine
- Food Industry
- OEM

Hart Field Communicators D-COMM

The D-COMM HART field communicator is a portable battery supplied device used for communication and exchange of data with smart transmitters e. g. pressure, differential pressure, temperature transmitters. It features an output built as a standard current loop 4-20 mA, using FSK modulation type BEL 202 with an implemented HART communication protocol revision 5 and revision 6. The communicator is specially designed to configure smart transmitters manufactured by Delta Mobrey.

D-COMM is available in 2 version:
- **D-COMM/P** with software for pressure and differential pressure transmitters.

- **D-COMM/T** with software for temperature instruments

Please specify in case of order.

Hart Converter

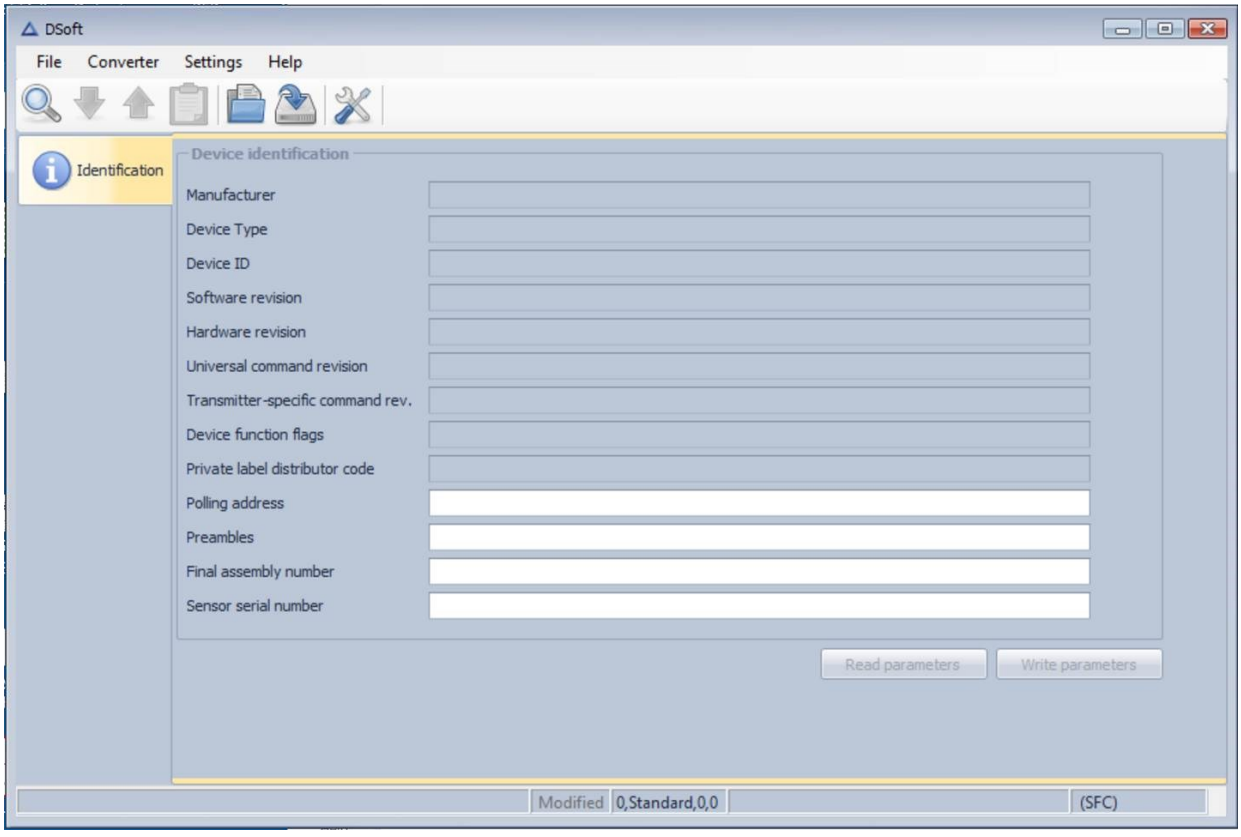
HART converter allows for connecting and configuration of Hart transmitters via USB port. It works also with devices equipped in Bluetooth. It is supplied in combination with DSoft

DSoft

DSoft is a software designed for communication and data transfer from transmitters with Hart protocol made by DELTA.

The communication with the transmitters enables:

- Identification of a transmitter,
- Configuration of its output parameters:
- set the display parameters
- Reading of a PV values (e.g. pressure, output current, degree of output setting in %).
- Enforcement of output current with a given value,
- Transmitter calibration in relation to master pressure,
- Function linearization (user characteristic creator),



Technical **Datasheet**

delta-mobrey

CHEMICAL SEALS

For Pressure Instruments

Key **Features**

- All 316L St.St. standard construction
- Wide range of exotic material available as option
- Connections threaded or flanged
- Welded diaphragm
- Max process pressure 600bar
- Max process temperature 120ºC direct (200ºC with cooling tower) ; 300ºC remote.
- Diaphragm welded on upper flange allowing inspection
- Flushing ring addition available within flanged on threaded chemical seals or serrated between process and chemical seal flanges

Series **Overview**

Chemical Filled Seals are accessories mounted between pressure devices and process, to protect the instruments from difficult media: dangerous, aggressive or highly viscous fluids.
It is made by a process connection flanged or threaded with a welded diaphragm in contact with the process and an adequate filling oil necessary to transfer the pressure signal from the process to the sensing element of the instrument.
Because this is a closed system and because we have different type of sensing elements requiring different performance of the separation diaphragm and different displacement, we have 3 type of chemical seals according to the type of instrument associated :

1. **CFS for pressure and differential pressure SWITCHES**
2. **CFS for pressure and differential pressure TRANSMITTERS**
3. **CFS for pressure and differential pressure GAUGES**

The selection of the correct Chemical Seal is associated to the main part number of the instrument and the description is shown on the last 4 digits of the instrument.

Product **applications**

- Oil & gas, Chemical and Petrochemical, Pharmaceutical
- Gas and liquids
- Applicable on any type of pressure instruments
- Standard wetted parts are in SS316. Wetted parts material in accordance with NACE are available as extra.

Other products

Other accessories we can offer :

- Overrange protectors
- Needle valves
- Syphons

General for CHEMICAL SEALS

The diaphragm seal is an accessory for pressure instrument to be mounted between the instrument and the process fluid. The process pressure is transmitted through an elastic element and a filling fluid, to the sensing element of the instrument. This means that the assembly INSTRUMENT+CHEMICAL SEAL is a sealed system, assembled in vacuum condition and that cannot be dismounted by the user to warrantee the correct functioning.
Chemical seal are used where process has:
− high viscosity.
- deposit and impurity content;
− corrosive action of the medium;
− installation with high vibrations (remote separation)
It is not suggested to consider the addition of the chemical seal as separation from hot/cold process, unless it can be also included in the above list.
Delta Mobrey range of diaphragm seals, covers the majority of the application.
They can be :

- Directly mounted
- Remotely mounted with armored St.St. capillary also covered with PVC as option

can be divided according to the process connection & material:

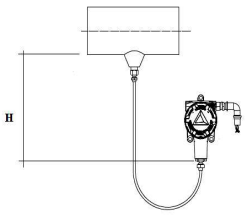
- Flanged seals with flush diaphragm;
- Flanged seals with extended diaphragm for measuring crystallising media in multi-walled tanks;
- Sanitary diaphragm seals - with designs suitable for measurement under aseptic conditions. In special versions, a liquid approved for contact with food may be used. Attested by PZH (National Institute of Hygiene);
- Oxygen seals - the chemically passive liquid is used as the gauge liquid;
- Diaphragm seals for hot, high-viscosity media (e.g. mazut);
- Chemical flanged seals;
- Special seals - of non-standard construction.

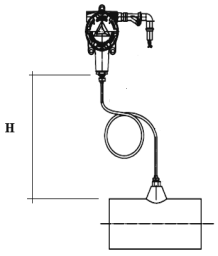
Installation of INSTRUMENTS WITH CHEMICAL SEALS

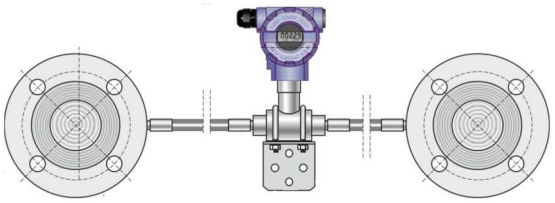
The addition of chemical seals to an instrument for the measurement of pressure or differential pressure, should be done considering the physical phenomena associated to the principle of operation:

- the sealed system filled with oil, introduce an additional absolute zero error due to expansion of the manometric fluid, according to the ambient temperature and the process temperature. For an **electronic transmitter** this can be compensated electronically by configuring the transmitter, but for **switches** and **gauges**, thius should be considered in calibrating the setting point or the scale.
- The position of the installation of the instrument and the subsequent effect of the weight of the oil on the pressure signal detected by the sensor, must be considered and compensated (see *Fig.1 +2)*

Fig.1 ***Fig. 2*** ***Fig.3***

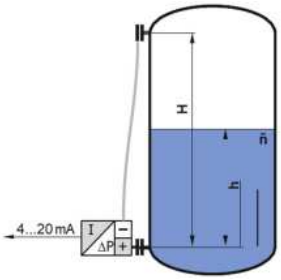




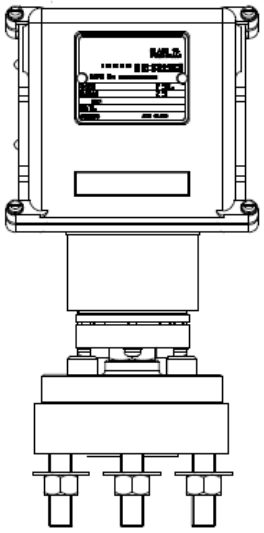


- Chemical seals applied to a differential pressure instrument, must be identical: same size and length of the capillary (see *Fig.3*).
- Chemical seals applied to differential pressure transmitters for level measurement could be different, providing that the instrument offer a range with possibility of elevation or suppression of zero (Smart Transmitters) or are calibrated according to the installation. (see *Fig.4*).

Fig.4



1. Chemical Seal for PRESSURE and DIFFERENTIAL PRESSURE SWITCHES



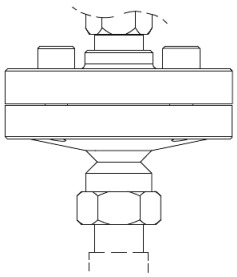
The chemical seal for Pressure and Differential Pressure switches are manufactured considering the different displacement and elastic performance of the sensing element available for this type of instruments. For this reason, the design of the standard chemical seal, is unique and applicable to threaded or flanged process connection where the diaphragm is always in back configuration (not flush) and always welded. This offers the largest diaphragm possible able to compensate the errors generated by the expansion of the filling fluid at different temperatures which is a mandatory condition for mechanical instrument used for safety application like switches are..
To maximise the performance offered by elasticity of the diaphragm, the standard material of the diaphragm is limited to Monel or AISI316, but other material can be evaluated according to the set point and range.
Many different configurations of the chemical seal are possible, but these needs to be evaluated with our engineering department.
Particular care of the distance between the sensing element and the pressure tap must be considered for an accurate calibration of the switching point.

Technical Specification

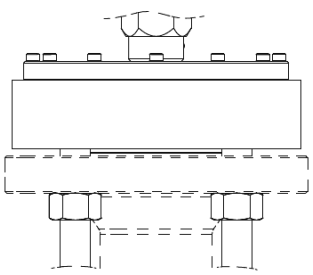
Ambient Temperature:	limited to the selected filling fluid
Process Temperature:	limited to the selected filling fluid and gasket
Max pressure at –50 to 85 °C:	see table 1
Top part:	AISI 300 SS
Connection to the instrument:	Direct (up to process temperature 85°C) or Remote with capillary
Sealing:	PTFE or Graphite on request
Screws:	Carbon steel Xylan coated (optional AISI 300 SS with reduced max pressure see table 1)
Process Connection:	**Material:** see table 3 **Threaded:** Rc 1/4 or ¼ - 18 NPT F or 1/2 –14 NPT M or 1/2 –14 NPT F or G 1/2 B (ISO 228/1) **Flanged:** From 1/2 " to 3" see details on ES code
Minimum setting range:	see table below
Outlet capillary position from flange	always Axial
Weight:	1.5kg / 3.3lbs approx.
Filling fluid	**See table.** For vacuum application the process temperature range can be different, contact factory

Code	Filling Fluid	Process Working Temperature	Process Extreme Temperature limits	Application
1	ST66 (Therminol)	+20 to +300°C N/A	-32 to 359 °C	High Temperature
2	SL 200/20 (Silicone)	-50 to +200°C	-52 to 246 °C	Standard
3	FLB (Flurolube)	-20 to +100°C	-40 to 200 °C	Oxy Service + Chlorine
4	Medical White oil	-30 to +150°C	-40 to 200 °C	Halal, Kosher, and FDA 21CFR certified

TYPE OF CONNECTION A,J,H
CFS CODE F,M,V,W,Y,Z



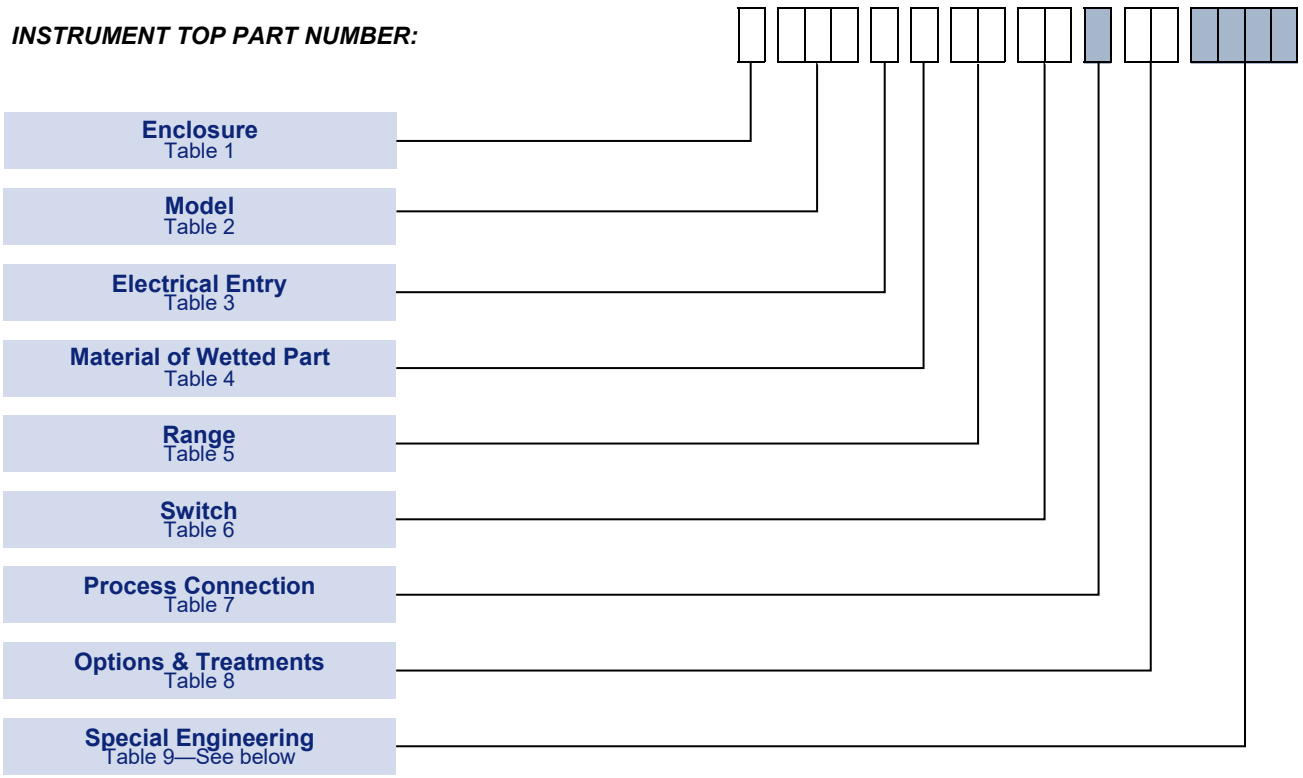
TYPE OF CONNECTION 0 TO 9
CFS CODE F,M,V,W,Y,Z



How to order

Refer to the table below for the identification of the Chemical Seal as part of the product code of the instrument (see data sheet of each instrument)

INSTRUMENT TOP PART NUMBER:



Process Connection

Note: Table number, refers to TABLE number of the Technical Data Sheet of the Instrument associated.

TABLE 7

	Code
For diaphragm seal threaded or flanged suitable to be assembled with instrument with span from 0.4 to 1.5 bar	**2**
For diaphragm seal threaded or flanged suitable to be assembled with instrument with span over 1.5 bar	**1**

1st digit of Special Engineering

For remote mounted chemical seal with capillary length above 10mt, for example 15mt, select code 1 in 1st digit and code 5 in 2nd digit.

For remote mounted chemical seal with capillary length below 10mt, for example 9mt select code 0 in 1st digit and code 9 in second digit.

TABLE 9

	Code
Direct mount or remote mount with capillary length up to 10mt	**0**
Remote mount with 10mt or above of St.St. armoured capillary	**1**

2nd digit of Special Engineering

Second digit for mounting/capillary length.

TABLE 9

	Code
Direct mount	**0**
Remote mount with 1m of St.St armoured capillary	**1**
Remote mount with 2m of St.St armoured capillary	**2**
Remote mount with 3m of St.St armoured capillary	**3**
Remote mount with 4m of St.St armoured capillary	**4**
Remote mount with 5m of St.St armoured capillary	**5**
Remote mount with 6m of St.St armoured capillary	**6**
Special construction	**X**

3rd digit of Special Engineering

Note: Other material for process connection and diaphragm are available. Please contact our sales department for all the details.

TABLE 9

Process connection	Top part	Diaphragm	Gasket	Code
AISI316L	AISI300	AISI316L	PTFE	**F**
Monel 400	Monel 400	Monel 400	PTFE	**M**
AISI316L	AISI300	Monel 400	PTFE	**V**
AISI316L	AISI300	Tantalum	PTFE	**W**
AISI316L	AISI300	AISI316L with PTFE overlay	PTFE	**Y**
AISI316L+PTFE lining	AISI300	AISI316L with PTFE overlay	PTFE	**Z**

4th digit of Special Engineering

Note 1: Other Process Connection type and size not listed here, could be available.

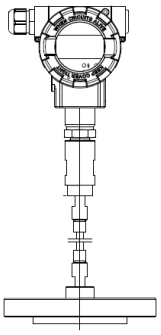
Please contact our engineering team to evaluate any request..

Note 2: when wetted parts with PTFE overlay are required, only G 1/2"B for threaded connection or FF finishing for flanged connection, are possible.

TABLE 9

	Code
1/2" ANSI 150 lb RF	**0**
1" ANSI 150 lb RF	**1**
1-1/2" ANSI 150 lb RF	**2**
2" ANSI 150 lb RF	**3**
3" ANSI 150 lb RF	**4**
1/2" ANSI 300 lb RF	**5**
1" ANSI 300 lb RF	**6**
1-1/2" ANSI 300 lb RF	**7**
2" ANSI 300 lb RF	**8**
3" ANSI 300 lb RF	**9**
Rc 1/4"	**A**
1/2" -14 NPT- M	**J**
1/2" -14 NPT –F	**H**
Non Standard connection size & type	**X**

2. Chemical Seal for PRESSURE and DIFFERENTIAL PRESSURE TRANSMITTERS



The application of chemical seals to Pressure and Differential Pressure transmitter offers less limitation because the displacement of fluid is drastically reduced and the electronic amplifiers permit a correction of the signal, compensating partially the effect of the filling fluid and diaphragm errors. This allow many different combination of assembly transmitter—chemical seal freely selectable as standard, and also allows a basic flush diaphragm design of the chemical seal when flanged connection is required. Flush chemical seal with exotic material, include a step "h" in the side in contact with the process.

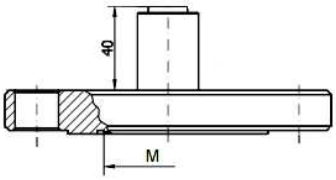
Technical Specification

Ambient Temperature:	limited to the selected filling fluid				
Process Temperature:	limited to the selected filling fluid and gasket				
Max pressure at –50 to 85 °C:	see table 1				
Top part:	AISI 300 SS				
Connection to the instrument:	Direct (up to process temperature 85°C) or Remote with capillary				
Sealing:	NBR, PTFE or Graphite on request				
Screws:	Carbon steel (optional AISI 300 SS with reduced max pressure see table 1)				
Process Connection:	**Material:** see table 3				
	Threaded: Rc 1/4 or ¼ - 18 NPT F or 1/2 –14 NPT M or 1/2 –14 NPT F or G 1/2 B (ISO 228/1)				
	Flanged: From 1/2 " to 3" see details on ES code				
Minimum calibrated (*)range:		**threaded 1/2"**	**flanged DN50/2"**	**flanged DN80/3"**	**Flanged 4"**
Analogue	*Direct*	*0.2 bar*	*0.1 bar*	*0.1 bar*	*0.1 bar*
	Remote (2m)	*0.5 bar*	*1.0 bar*	*0.25 bar*	*0.25 bar*
Digital Smart "Hart"	*Direct*	*0.2 bar*	*0.1 bar*	*0.025 bar*	*0.025 bar*
	Remote (2m)	*0.5 bar*	*1.0 bar*	*0.25 bar*	*0.25 bar*
Zero drift	**see table**				
Outlet capillary position from flange:	always Axial				
Weight:	1.5kg / 3.3lbs approx.				
Filling fluid	**See table.** For vacuum application the process temperature range can be different, contact factory				

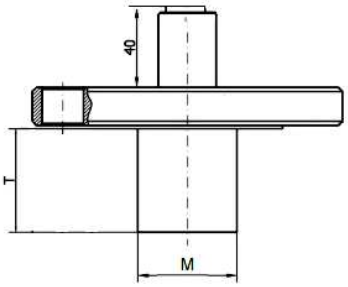
(*) the limit, represent a reference value for all AISI316L construction. For special application please contact our Sales office.

Code	Filling Fluid	Process Temperature Range	Process Extreme Temperature limits	Oxy Service + Chlorine
1	Silicon oil DC	-10 to +315°C N/A	-10to 315 °C	n/a
2	High Temperature Silicone DH	+15 to +380°C	+15 to 380 °C	n/a
3	Low Temperature oil AK	-60….+200°C	-60….+200°C	n/a
3	Food oil NEOBEE M-20	-10 to 150°C	-30 to 200°C	no
3	Oxygen service	-20 to +100°C	-20 to +100°C	yes

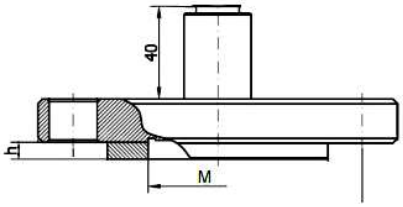
TYPE A (flush diapragm)



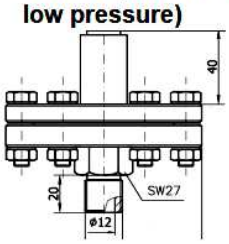
TYPE B (with extension)



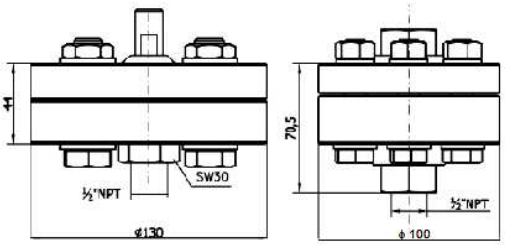
TYPE C,D,E,F,G,H,I,J (flush covered with exotic material)



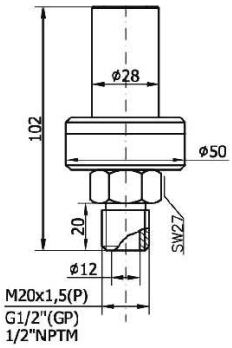
TYPE L (threaded low pressure)



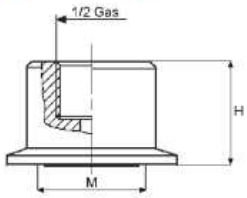
TYPE M (threaded high pressure 100/250/600bar



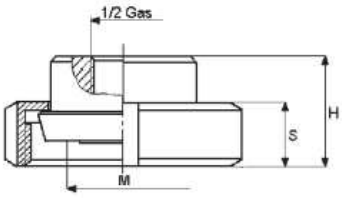
TYPE N



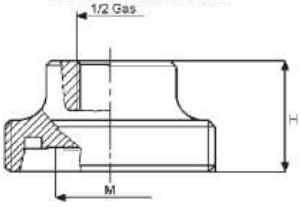
TYPE O (Clamp)



TYPE P: DIN 11851



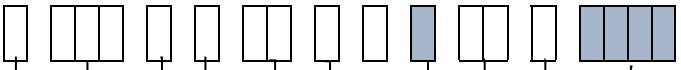
TYPE Q: SMS



How to order

Refer to the table below for the identification of the Chemical Seal as part of the product code of the instrument.

INSTRUMENT TOP PART NUMBER:



Enclosure
Table 1

Model
Table 2

Electrical Entry
Table 3

Material of Wetted Part
Table 4

Range
Table 5

Version
Table 6

Process Connection
Table 7

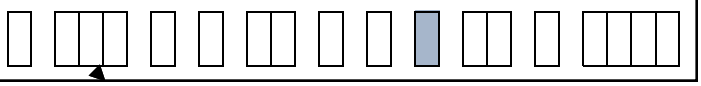
Options & Treatments
Table 8

Options & Treatments
Table 8

Special Engineering
Table 9—See below

Process Connection

TABLE 7

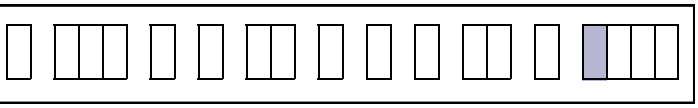


Note: Table number, refers to TABLE number of the Technical Data Sheet of the Instrument associated.

	Code
Process connection suitable for installation of chemical seal either directly or remotely mounted	9

1st digit of Special Engineering

TABLE 10



For remote mounted chemical seal with capillary lenght above 10mt, for example 15mt, select code 1 in 1st digit and code 5 in 2nd digit.

For remote mounted chemical seal with capillary length below 10mt, for example 9mt select code 0 in 1st digit and code 9 in second digit.

	Code
Direct mount or remote mount with capillary length up to 10mt	0
Remote mount with 10mt or above of St.St. armoured capillary	1

2nd digit of Special Engineering

TABLE 10

	Code
Direct mount	**0**
Remote mount with 1m of St.St armoured capillary	**1**
Remote mount with 2m of St.St armoured capillary	**2**
Remote mount with 3m of St.St armoured capillary	**3**
Remote mount with 4m of St.St armoured capillary	**4**
Remote mount with 5m of St.St armoured capillary	**5**
Remote mount with 6m of St.St armoured capillary	**6**
Remote mount with 7m of St.St armoured capillary	**7**
Remote mount with 8m of St.St armoured capillary	**8**
Remote mount with 9m of St.St armoured capillary	**9**
Special construction	**X**

Note: Data refers to all AISI316 construction.
Chemical seals with parts in exotic material (S-Ch) minimum ranges are different.

3rd digit of Special Engineering

TABLE 10

Type & Material	Flange material	Diaphragm material	Wetted parts material	Code
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	AISI316	AISI316	**A**
Flanged seals with extended diaphragm acc EN1092-1 or ANSI ASME B16.5.	AISI316	AISI316	AISI316	**B**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Monel	Monel	**C**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Hastelloy	Hastelloy	**D**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Nickel	Nickel	**E**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Tantalum	Tantalum	**F**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Tantalum	Teflon	**G**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Titanium	Titanium	**H**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Teflon	Teflon	**I**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	AISI316/Gold	AISI316/ Gold	**J**
Threaded chemical seals max 16bar male process connection	n. a.	AISI316	AISI316	**L**
Threaded chemical seals 100/250/600 bar 1/2” NPTF female process connection	n. a.	AISI316	AISI316	**M**
S-Mazut Threaded seals with large diaphragm	n. a.	AISI316	AISI316	**N**
Sanitary diaphragm seals Tri-Clamp ISO 2852.	n. a.	AISI316	AISI316	**O**
Sanitary diaphragm seals DIN 11851.	n. a.	AISI316	AISI316	**P**
Sanitary diaphragm seals SMS.	n. a.	AISI316	AISI316	**Q**
Special Construction	t.b.d	t.b.d	t.b.d	**X**

4th digit of Special Engineering

TABLE 10 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Other Process Connection type and size not listed here, could be available.

Please contact our engineering team to evaluate any request..

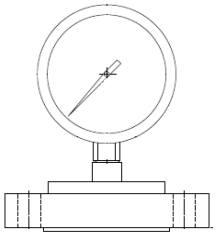
	Code
1” ANSI 150 lb RF	**1**
1-1/2” ANSI 150 lb RF	**2**
2” ANSI 150 lb RF	**3**
3” ANSI 150 lb RF	**4**
1/2” ANSI 300 lb RF	**5**
1” ANSI 300 lb RF	**6**
1-1/2” ANSI 300 lb RF	**7**
2” ANSI 300 lb RF	**8**
3” ANSI 300 lb RF	**9**
Rc 1/4”	**A**
1/2” NPT- M	**J**
1/2” NPT –F	**H**
Non Standard connection size & type	**X**

Note: refer to the table below for the dimension of the diaphragm of flanged Chemicals seals.
For threaded process connection type, the dimension of the diaphragm is included within the dimension of the upper/lower flange.
For accurate measurement with transmitters, please consider the below Zero Errors for each size/type of chemical seal.

TYPE	SIZE	DIMENSION M (mm)	DIMENSION h (mm)	DIMENSION T (mm)	Zero error /10 °C (direct)	Zero Error/10 °C (remote, 2m)
A	DN50 PN40 / 2”ANSI 150	59	n.a.	n.a.	0.5 mbar	3 mbar
	DN80 PN40 / 3”ANSI 150	89	n.a.	n.a.	0.4 mbar	1 mbar
	DN100 PN40 / 4”ANSI 150	89	n.a.	n.a.	0.4 mbar	1 mbar
B	DN50 PN40 / 2”ANSI 150	48	n.a.	50/100/150/ 200	0.1 mbar	2 mbar
	DN80 PN40 / 3”ANSI 150	75	n.a.		0.1 mbar	0.5 mbar
	DN100 PN40 / 4”ANSI 150	89	n.a.	50/100/150	0.1 mbar	0.25 mbar
C,D,E ,F,G, H, I,J	DN50 PN40 / 2”ANSI 150	59	C,D,E = 7 F = 3 G = 8 H= 6	n.a.	5 mbar	10 mbar
	DN80 PN40 / 3”ANSI 150	89	C,D,E = 7 F = 3 G = 8 H= 6	n.a.	2 mbar	4 mbar
L, M	1/2” NPTM/F	80	n.a.	n,a	0.6 mbar	2 mbar
N	1/2” NPTM/F	50	n.a.	n,a	4 mbar	5 mbar
O	DN25/ 40/ 50/ 65/ 100 1”/1.5”/2”/2.5”/3”/4”	25 / 35 / 48 / 54 / 70 / 89	n.a.	n.a.	0.8 mbar	5 mbar
P	S-DIN25/32/40/50/ 65/80	25 / 30 / 35 / 48 / 59 / 75	n.a.	n.a.	0.8 mbar	5 mabr
Q	SMS 1” / 1.5” / 2”	25 / 35 / 48	n.a	n.a	0.3 mbar	3 mbar

3. Chemical Seal for PRESSURE and DIFFERENTIAL PRESSURE GAUGES

The application of chemical seals to Pressure Gauges is limited to **Bourdon tube** type and for Differential Pressure Gauges, to **Double Diaphragm** actuated type. There displacement of the sensing elements permit the application of chemical seals with rear or flush diaphragm. A wide range of wetted parts material can be selected, having different elastic characteristics but all considered in the declared accuracy of the instrument.



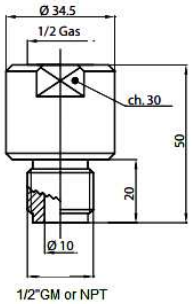
Technical Specification

Ambient Temperature:	limited to the selected filling fluid
Process Temperature:	limited to the selected filling fluid and gasket
Max pressure at –50 to 85 °C:	see codes
Top part:	AISI 316 SS
Connection to the instrument:	Direct (up to process temperature 85°C) or Remote with capillary
Sealing:	NBR or FPM on request
Screws:	Carbon steel (optional AISI 300 SS with reduced max pressure see table 1)
Process Connection:	**Material:** see table 3
	Threaded: Rc 1/4 or ¼ - 18 NPT F or 1/2 –14 NPT M or 1/2 –14 NPT F or G 1/2 B (ISO 228/1)
	Flanged: From 1/2 " to 3" see details on ES code
Minimum scale :	**all type :**
	Direct 0.4 bar
	Remote (2m) 0.5 bar
Zero drift	Included in total accuracy
Outlet capillary position from flange:	always Axial
Weight:	1.5kg / 3.3lbs approx.
Filling fluid	**See table.** For vacuum application the process temperature range can be different, contact factory

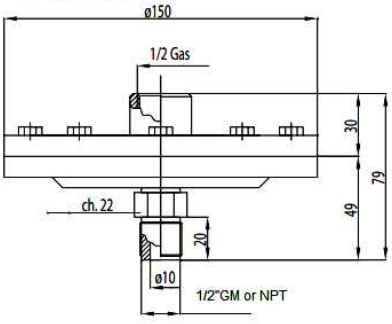
(*) the limit, represent a reference value for all AISI316L construction. For special application, please contact our Sales office.

Code	Filling Fluid	Process Temperature Range	Process Extreme Temperature limits	Oxy Service + Chlorine
1	Silicon oil DC	-30 to +200°C	-30 to +200°C	n/a
2	High Temperature Silicone DH	+200 to +400°C	+200 to +400°C	n/a
3	Low Temperature oil AK	-60….+200°C	-60….+200°C	n/a
3	Food Compliant Oil	-20 to 120°C	-30 to 200°C	no
3	Oxygen service	-30 to +150°C	-30 to +150°C	yes

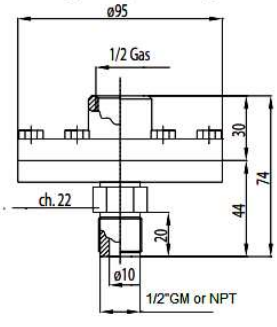
TYPE 2 and 3



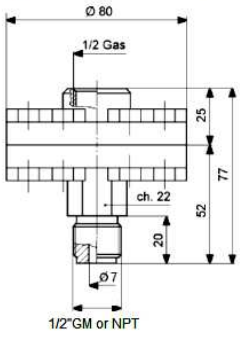
TYPE L (low ranges up to 400mbar)



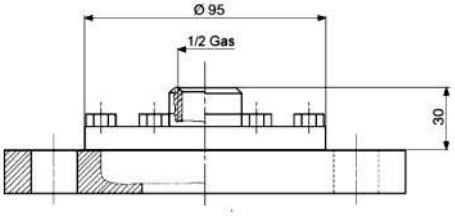
TYPE L (medium ranges up to bar)



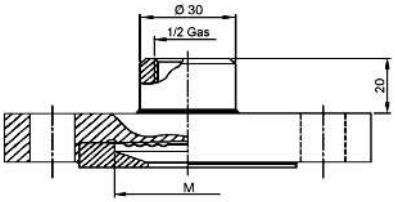
TYPE L (high pressure >100bar)



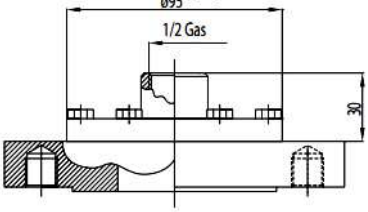
TYPE 1 (pass through holes flange)



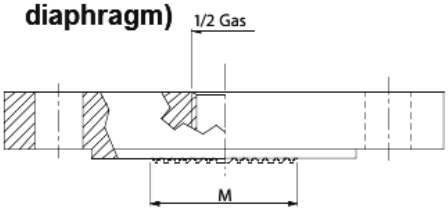
TYPE 1 (low size, pass througgh holes



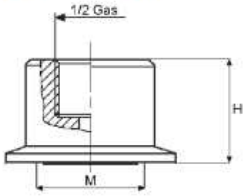
TYPE 1 (blind holes flange)



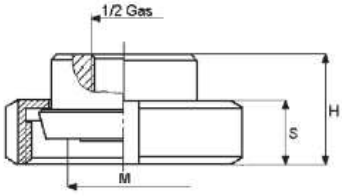
TYPE A, B,C,D,E,F,G,H, I (flush diaphragm)



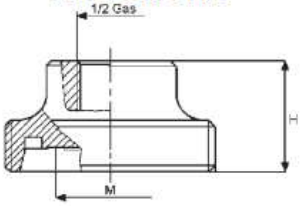
TYPE O (Clamp)



TYPE P: DIN 11851



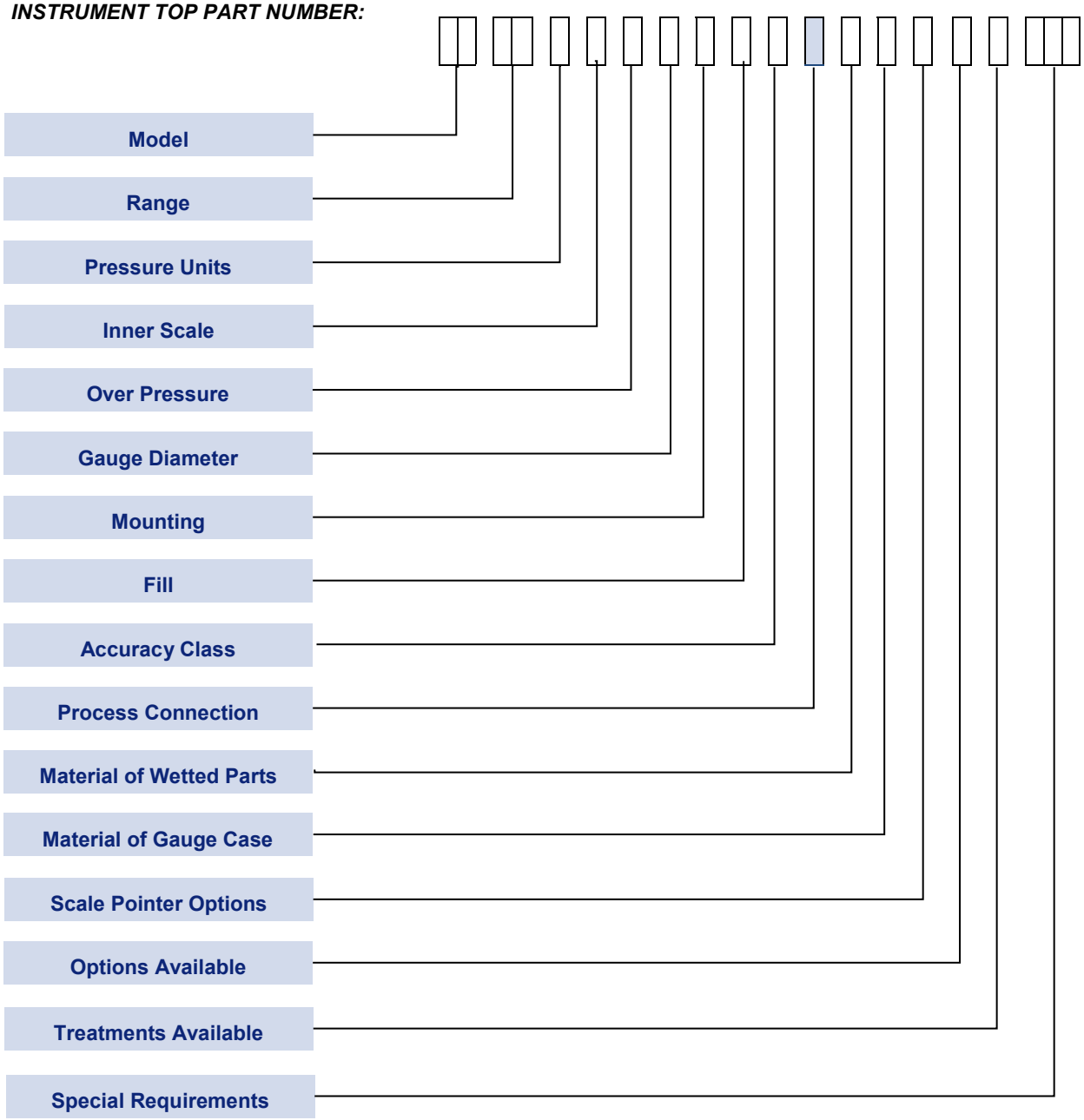
TYPE Q: SMS



How to order

Refer to the table below for the identification of the Chemical Seal as part of the product code of the instrument.

INSTRUMENT TOP PART NUMBER:



Process Connection

TABLE 10

Note: Table number, refers to TABLE number of the Technical Data Sheet of the Instrument associated.

	Code
Process connection suitable for installation of chemical seal either directly or remotely mounted	9

1st digit of Special Engineering

TABLE 16

Type of mounting

Note: Data refers to all AISI316 construction.
Chemical seals with parts in exotic material (S-Ch) minimum ranges are different.

	Code
Direct mount	**0**
Remote mount with 1m of St.St armoured capillary	**1**
Remote mount with 2m of St.St armoured capillary	**2**
Remote mount with 3m of St.St armoured capillary	**3**
Remote mount with 4m of St.St armoured capillary	**4**
Remote mount with 5m of St.St armoured capillary	**5**
Remote mount with 6m of St.St armoured capillary	**6**
Remote mount with 7m of St.St armoured capillary	**7**
Remote mount with 8m of St.St armoured capillary	**8**
Remote mount with 9m of St.St armoured capillary	**9**
Special construction	**X**

2nd digit of Special Engineering

TABLE 16

Type & Material	Flange or upper part material	Diaphragm material	Wetted parts material	Code
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	AISI316	AISI316	**A**
Flanged seals with back diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	AISI316	AISI316	**1**
Flanged seals with extended diaphragm acc EN1092-1 or ANSI ASME B16.5.	AISI316	AISI316	AISI316	**B**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Monel	AISI316	**C**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Hastelloy	Hastelloy	**D**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Nickel	Nickel	**E**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Tantalum	Tantalum	**F**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Tantalum	Teflon	**G**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Titanium	Titanium	**H**
Flanged seals with flush diaphragm acc EN1092-1,or ANSI ASME B16.5	AISI316	Teflon	Teflon	**I**
Standard Threaded chemical seals, male process connection	AISI316	AISI316	AISI316	**L**
Standard Threaded chemical seals, male process connection PTFE covered	AISI316	AISI316 + PTFE	AISI316 + PTFE	**4**
All welded Mini-Chemical seal with threaded connection	AISI316	AISI316	AISI316	**2**
All welded Mini-Chemical seal with threaded connection	AISI316	Hastelloy	Hastelloy	**3**
Sanitary diaphragm seals Tri-Clamp ISO 2852.	n. a.	AISI316	AISI316	**O**
Sanitary diaphragm seals DIN 11851.	n. a.	AISI316	AISI316	**P**
Sanitary diaphragm seals SMS.	n. a.	AISI316	AISI316	**Q**
Special Construction	t.b.d	t.b.d	t.b.d	**X**

3nd digit of Special Engineering

TABLE 16 | | | | | | | | | | | | | | | | | | |

Other Process Connection type and size not listed here, could be available.

Please contact our engineering team to evaluate any request..

	Code
1/2” ANSI 150 lb RF	**0**
1” ANSI 150 lb RF	**1**
1-1/2” ANSI 150 lb RF	**2**
2” ANSI 150 lb RF	**3**
3” ANSI 150 lb RF	**4**
1/2” ANSI 300 lb RF	**5**
1” ANSI 300 lb RF	**6**
1-1/2” ANSI 300 lb RF	**7**
2” ANSI 300 lb RF	**8**
3” ANSI 300 lb RF	**9**
Rc 1/4”	**A**
1/2” NPT- M	**J**
1/2” NPT –F	**H**
Non Standard connection size & type	**X**

Note: refer to the table below for the dimension of the diaphragm of flanged Chemicals seals.
For threaded process connection type, the dimension of the diaphragm is included within the dimension of the upper/lower flange.
Zero temperature drift is included in the total accuracy of the instrument.

TYPE	SIZE	DIMENSION M (mm)	DIMENSION h (mm)	DIMENSION T (mm)
A,C, D,E, F,G, H,I,J	DN40 PN 40 / 1.5” ANSI 150	36		
	DN50 PN40 / 2”ANSI 150	48	n.a.	n.a.
	DN65 PN40 / 2.5”ANSI 150	58	n.a.	n.a.
	DN80 PN40 / 3”ANSI 150	75	n.a.	n.a.
B	DN40 PN 40 / 1.5” ANSI 150	36		50/100/150/ 200
	DN50 PN40 / 2”ANSI 150	48	n.a.	
	DN65 PN40 / 2.5”ANSI 150	58	n.a.	
	DN80 PN40 / 3”ANSI 150	75	n.a.	
O	DN 40/ 50/ DN65 1.5”/2”/2.5”	30 / 36 / 48	n.a.	n.a.
P	S-DIN 32/40/50	30 / 36 / 48	n.a.	n.a.
Q	SMS 1.5” / 2”	36 / 48	n.a	n.a

TO ALLOW US TO DIMENSION ACCURATELY THE ASSEMBLY INSTRUMENT + CHEMICAL SEAL AND FIT IN YOUR APPLICATION, PLEASE, PRINT & FILL THE BELOW SUMMARY AND SEND TO OUR SALES DEPARTMENT

SPECIFICATIONS FOR CHEMICAL FILLED SYSTEMS

General	Type of Instrument:	☐ For switch ☐ For transmitter: ☐ For gauge:	Thread:	☐ Yes:	☐ No
			Flange:	☐ Yes:	☐ No
			Extension:	☐ Yes:	☐ No
			Adaptor:	☐ Yes	☐ No
			Flushing Conn. Size:	☐ Yes	☐ Integral Flush: 1 x ¾ NPT ☐ Ring:
				☐ No	

Wetted Parts Materials:	NACE wetted parts:	☐ Yes	☐ No		
	Diaphragm				
	☐ St/St 316L	☐ Monel (NA13)	☐ Hastelloy C	☐ Tantalum	☐ Other:
	Diaphragm Overlays ☐ Yes ☐ No				
	☐ PTFE Overlay	☐ Other:			
	Flange				
	☐ St/St 316L	☐ Monel (NA13)	☐ Hastelloy C	☐ Other:	
	Flange Inserts ☐ Yes ☐ No				
	☐ PTFE Insert	☐ Other:			

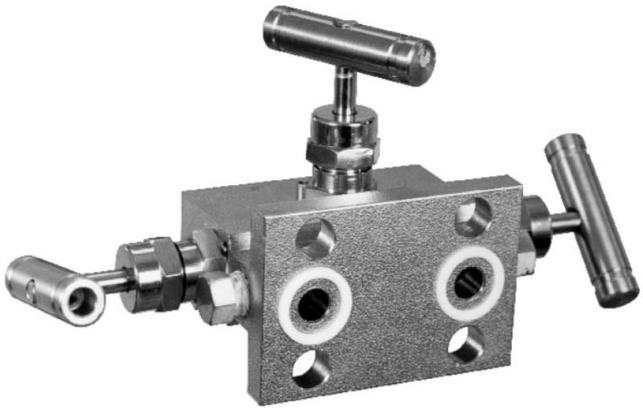
Process Details / Operating Conditions:					
Process Operating limits:	Temperature:		Ambient	Temperature:	
	Pressure:			Normal Pressure:	
Unit Range:			Set point for switches or calibrated range for transmitters:		
				☐ Rise	☐ Fall
Process Medium	☐ Oxygen	☐ Chlorine	☐ Food	☐ Other:	
Mounting Method	☐ Direct	level measurement		Vertical spacing:	
	☐ Remote	Capillary Length:			
		PVC Cover:		☐ Yes	☐ No

Technical **Datasheet**

delta-mobrey

Valves & **Manifolds for direct or remote mount**

- **Metal to metal body bonnet seal for high pressure and high temperature sealing.**
- **Unique non-rotating hardened tips – field interchangeable.**
- **316 stainless steel trim.**
- **A 316 stainless steel pin eliminates unauthorised removal of bonnet assy.**
- **Materials of construction can be supplied to meet the requirements of NACE MR-01-75.**
- **Bubble tight metal to metal seat for positive shut off.**
- **Full material traceability of major components.**
- **Positive no slack stem action.**
- **Models V1,V2,V3 and V5 are designed for REMOTE MOUNT for Pressure and Differential Pressure GAUGES, TRANSMITTERS AND SWICTHES**
- **Models V2R, AM and VM are designed for DIRECT MOUNT on Differential Pressure GAUGES and TRANSMITTERS**



Product **applications**

The Valves & Manifolds are suitable for a wide range of applications in many Industry sectors:

- Oil & Gas
- Chemical
- Power Generation
- Pharmaceutical
- Food & Beverage

The choice of models available ensures that the Valves & Manifolds are suitable for use in:

- Corrosive atmospheres
- Resistant to chemical attack

How can we **help you?**

Delta Mobrey's range of reliable pressure and temperature measurement instruments can be customised to meet individual requirements. For technical advice or to discuss your application please contact us on +44 (0)1252 729 140

V1 Models for DIRECT or REMOTE MOUNT

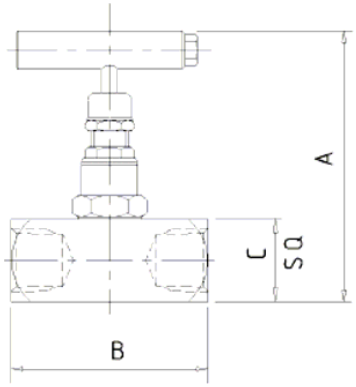
Picture for reference only. Actual model may differ from model shown.

Needle Valves 6,000 psi & 10,000 psi

The precision made 'V1' model, single isolation hand valve utilising metal to metal seat and body to bonnet connection for superior, bubble tight sealing capabilities at both extreme pressures and temperatures. The "V1" model also offers non rotating hardened tip for extended service life. The unique anti vibration locking pin at the body bonnet connection is for extra safety. Working pressures are 6,000 psi and 10,000 psi. Maximum working temperature up to 240°C and up to 540°C with 004 option at reduced pressure.

Design Features

- For **Pressure Gauges, Switches, Transmitters**
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- Maximum working temp 240°C (540°C with Graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.



Part Numbers

St / St Part No	Connections size	A	B	C	Weight (kgs)
V1R1A1S	1/4" NPT	3.6	2.1	1.1	0.5
V1R2A1S	3/8" NPT	3.6	2.4	1.1	0.5
V1R3A1S	1/2" NPT	3.6	2.6	1.1	0.5
V1R4A1S	3/4" NPT	3.6	2.9	1.5	0.8
V1R5A1S	1" NPT	3.6	3.2	2.0	1.4

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

V2A model for REMOTE MOUNT

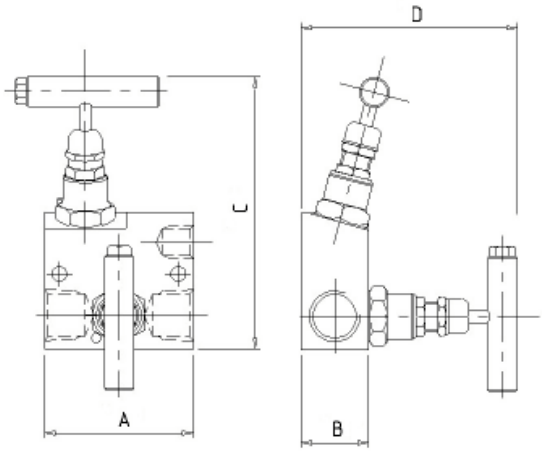
Picture for reference only. Actual model may differ from model shown.

2 Valve Manifold 6,000 psi and 10,000 psi rated

The two-valve isolating and venting manifold used mainly in gauge and static instrument applications such as pressure switches, pressure transmitters and manometers. The angled heads allow for panel mounting. The manifold will isolate instrumentation from the process and allow venting of the instrument for calibration / removal from the circuit without effecting the process / application and or recovery of a sample etc.
Incorporated are all the standard long service life features of the standard 'V1' model needle valve with multi-ring piston style packings. Safe anti-rotational pin locking device.

Design Features

- For **Pressure Gauges, Switches, Transmitters**
- Angled heads allow panel mounting.
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- ¼" NPT vent connection.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.
- 2 x 9/32" diameter mounting holes included.



Part Numbers

St / St Part No	Connections Size	A	B	C	D	Weight (kgs)
V2A3A1S	1/2" NPT female x female	2.5	1.1	4.6	3.6	1.0

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

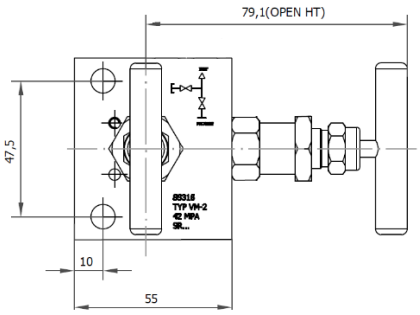
VM2 Models for DIRET or REMOTE MOUNT

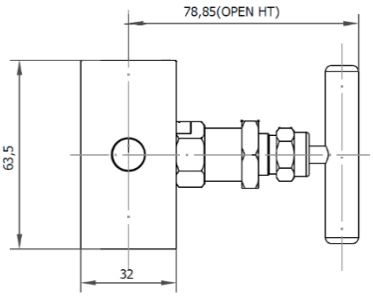
Low cost 2 Valve Manifold 6,000 psi rated max.

Robust and reliable construction with all the main characteristics of the V2A series, but with limited in P max. with simplified construction with valves at 90º. Can be used with gauges, switches & transmitters where the maximum pressure does not exceed 400 Bar at ambient temperature. Rating will fall according to the below diagram if temperature increase. The manifold will isolate instrumentation from the process and allow venting of the instrument for calibration / removal from the circuit without effecting the process / application and or recovery of a sample etc. The ¼ "NPT-F vent is supplied not plugged.
Only NPTF connections are available as standard
Safe anti-rotational pin locking device.

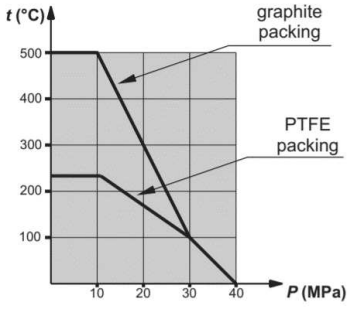
Design Features

- For **Pressure Gauges, Switches, Transmitters**
- Angled heads allow panel mounting.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long servicelife.
- Bonnet locking pin. No accidental removal ofhead unit, or loosening due to vibration.
- IN/OUT indicated on the body
- Available NPT as standard BSPP/BSPT on request
- ¼" NPT vent connection
- Teflon packing for Tmax 200 ºC, graphite up to 500 ºC
- Secure seal-precision machined to give leak freeoperation for the life of the valve. Available in either PTFE or Graphite
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meetthe requirements of NACE MR-01-75





Operating pressure range as a function of temperature



Dimensions in mm

Part Numbers

St / St Part No	Connections Size	Weight (kgs)
VM2 R/R	1/2" NPT F x F	1.0
VM2 R/R/NACE	1/2" NPT F x F	1.0

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

V2R Models for DIRECT MOUNT

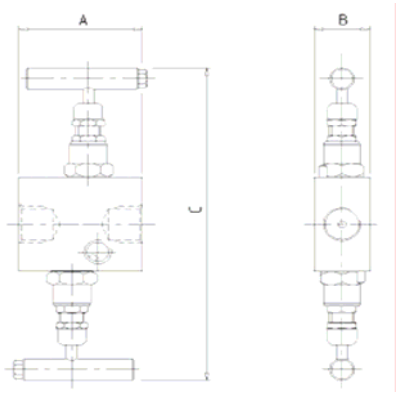
In-line 2 Valve Manifold 6,000 psi and 10,000 psi rated

The “V2R” model 2 valve gauge manifold offering single process isolation and controlled venting. Unlike the ‘V2A’ model, the ‘V2R’ model can be offered with male inlet and female outlet connections. Available 6,000 psi and 10,000 psi versions, a slim-line and compact 2 valve manifold (vent port plugged as standard). The ‘V2R’ model, utilises metal to metal seat and body to bonnet connection for superior, bubble tight sealing capabilities at both extreme pressures and temperatures. The “V2R” model also offers non-rotating hardened tip for extended service life. The unique anti-vibration pin locking safety device at the body bonnet connection is for extra safety. Maximum working temperature up to 240°C and up to 540°C with 004 option at reduced pressure. Many options available including hand wheels and locking devices.

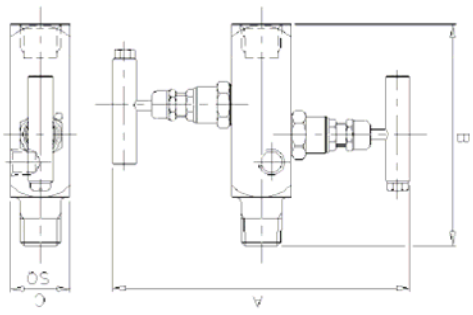
Design Features

- For **Pressure Gauges, Switches, Transmitters**
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- ¼” NPT vent connection.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.

V2R3A1S



V2R3A2S



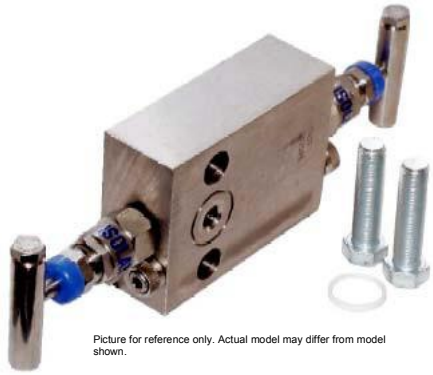
Part Numbers

St / St Part No	Connections Size	A	B	C	Weight (kgs)
V2R3A1S	1/2” NPT female inlet x 1/2” NPT female outlet	2.5	1.1	7.1	0.9
V2R3A2S	1/2” NPT male inlet x 1/2” NPT female outlet	6.3	4.7	1.3	0.9
V2R3A3S	1/2” NPT female inlet x 1/2” NPT male outlet	6.3	4.7	1.3	0.9

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

V2D Model for DIRECT MOUNT



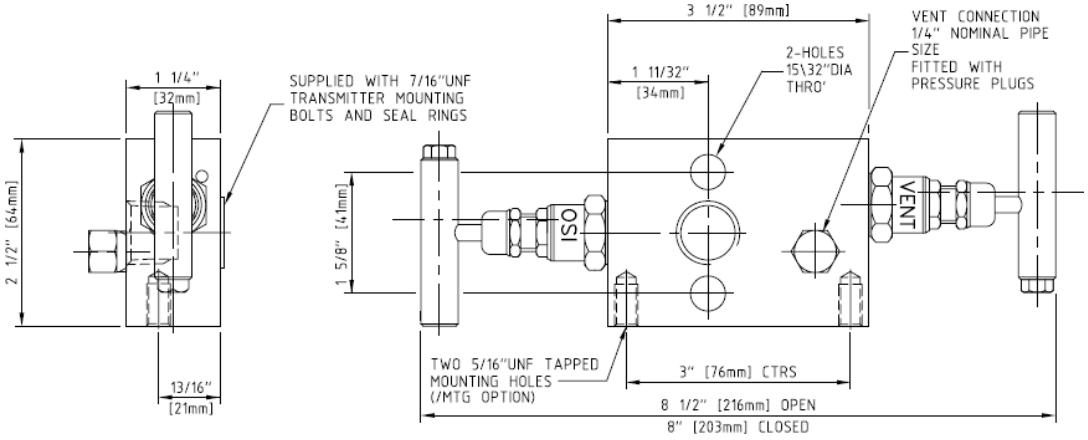
Picture for reference only. Actual model may differ from model shown.

Direct Mount 2 Valve Manifold 6,000 psi rated

Two valve direct mount manifold, designed for use with pressure transmitters. The manifold will isolate instrumentation from the process and allow venting of the instrument for calibration / removal from the circuit without effecting the process / application and or recovery of a sample etc. This compact unit offers single isolation, and vent / test facility. Vent port 1/4" NPT (vent port plugged as standard for safety). Supplied with bolt pack and seal as standard. The V2D can be supplied with additional tapped holes in it's base for mounting purposes. Other options apply such as anti-tamper, lockable vent valve.

Design Features

- For **Pressure Transmitters**
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- ¼" NPT vent connection.
- 2 x 5/16" UNF tapped mounting holes.
- Supplied with 7/16" UNF transmitter mounting bolts and seal rings.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.



Part Numbers

St / St Part No	Connections Size	Weight (kgs)
V2D3A5S	1/2" NPT Female x flanged	1.4

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

V3R Model for REMOTE MOUNT

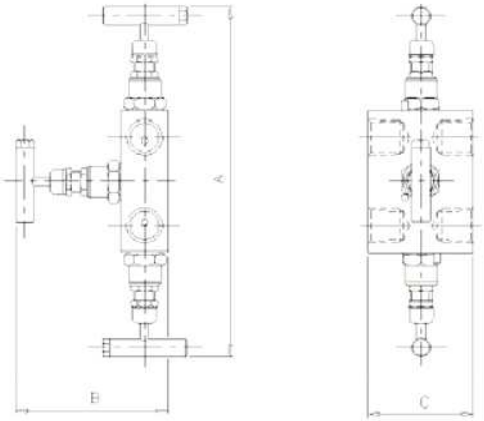
Picture for reference only. Actual model may differ from model shown.

Remote Mount 3 Valve Manifold 6,000 psi and 10,000 psi Rated

The three-valve isolation manifold remote mounted (pipe to pipe). Used mainly in differential pressure transmitters and static instrument applications. The V3R has two process isolation valves and one equalisation valve to equalise the two sides. Standard 1/2" inlet x 1/2" outlet. Incorporated all the standard long service life features of the standard "V1" model needle valve with multi-ring piston style packings. Safe anti-rotational pin locking device. Most standard options such as locking devices are available. Process and instrument sides are both on 54mm (2 1/8") centres to correspond with transmitter connections.

Design Features

- For **Differential Gauges, Switches, Transmitters**
- 2 x isolation and 1 equalising valve for instrument balancing applications.
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.
- 2 x mounting holes as option



Part Numbers

St / St Part No	Connections Size	A	B	C	Weight (kgs)
V3R3A1S	2 x 1/2" NPT female x female	8.4	3.0	2.5	1.5

Dimensions in inches

This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

V3D Model for DIRECT MOUNT

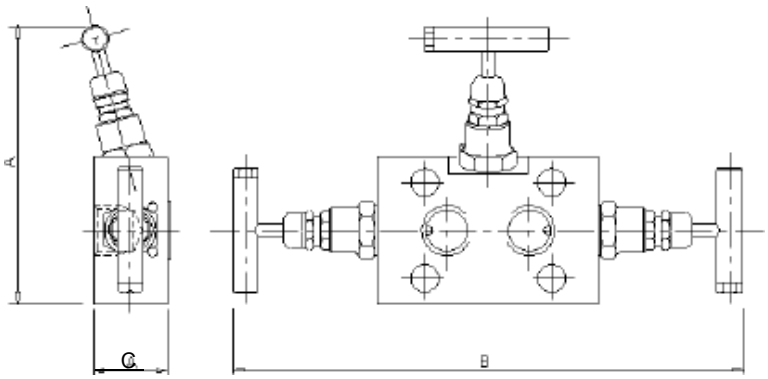
Picture for reference only. Actual model may differ from model shown.

Direct Mount 3 Valve Manifold 6,000 psi rated

Direct mounted three-valve manifold, instrument mount to pipe connection. Offering two isolation valves, and one equalising valve for differential pressure transmitter or static instrument applications. This slim, compact 3-valve manifold offers all the features of the V1's high integrity needle valve head design incorporated in one common instrument manifold block that mounts directly to an instrument.

Design Features

- For **Differential Pressure Switches and Transmitters**
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- 4 x 7/16" UNF bolts for mounting to transmitter.
- 2 x PTFE/Graphoil seal rings for transmitter flange.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.
- ¼" NPT plugged vent connection option.



Dimensions in inches

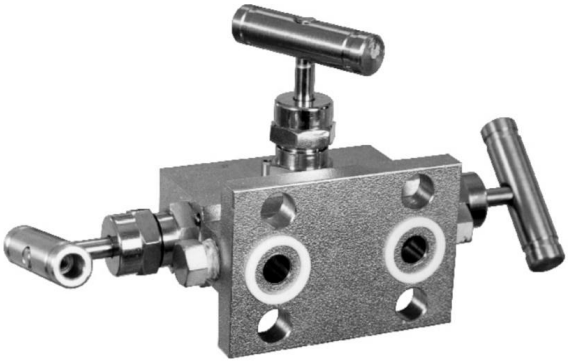
Part Numbers

St / St Part No	Connections Size	A	B	C	Weight (kgs)
V3D3A5S	2 x ½" NPT female x direct mount	4.7	8.6	1.2	1.5

Dimensions in inches

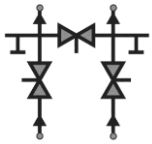
This is not a comprehensive guide to all valves and manifolds available. If an option you require is not shown please contact Delta sales.

VM-3 Models for DIRECT MOUNT



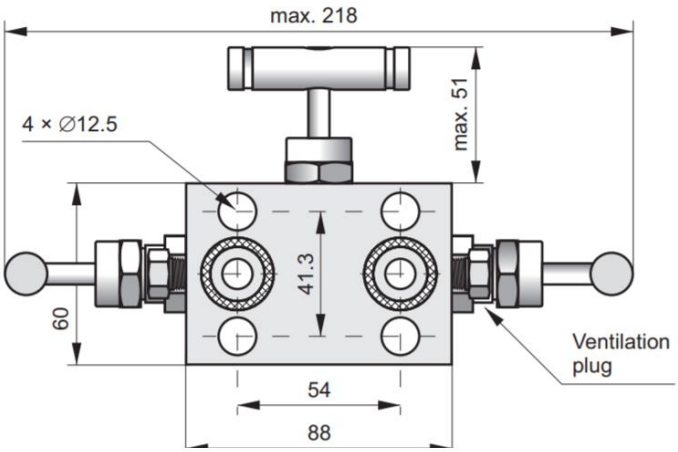
Direct mount 3 valve manifold, flanged type 6,000psi rated max

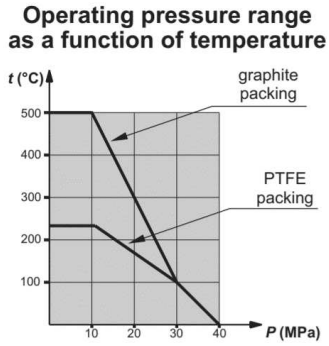
Direct mounted three-valve manifold, flanged instrument side, threaded process side. Offering two isolation valves, and one equalizing valve. Used in differential pressure transmitters.
Standard 2 x 1/2" inlet x direct mount with 2 x 1/4" not plugged vent port supplied for free use by the customer.
Safe anti-rotational pin locking device. Most standard options such as locking devices are available



Design Features

- For **Differential Pressure Transmitters**
- Self centering and Non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Available NPT. BSPP/BSPT as special construction in request.
- Standard 4xM10 for limited pressure up to 250bar (code /A) or optional 4 x 7/16" UNF bolts for mounting to transmitter (code /B) .
- 2 x PTFE seal rings for transmitter flange.
- Maximum working temp 200°C (500°C with graphite packing)
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphite.
- Full material traceability of major components.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.





Dimensions in mm

Part Numbers

St / St Part No	Connections Size	Weight (kgs)
VM-3/A	2 x ½" NPT female x direct mount 2 x ¼" NPT vents +4xM10 bolts + Teflon seals	1.8
VM-3/NACE/A	2 x ½" NPT female x direct mount 2 x ¼" NPT vents +4xM10 bolts + Teflon seals	1.8

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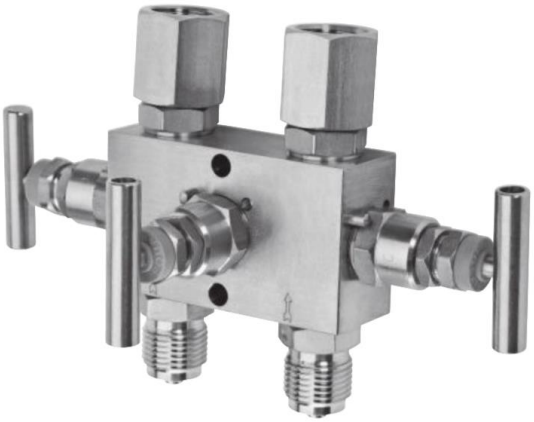
AM-413 Models for DIRECT MOUNT

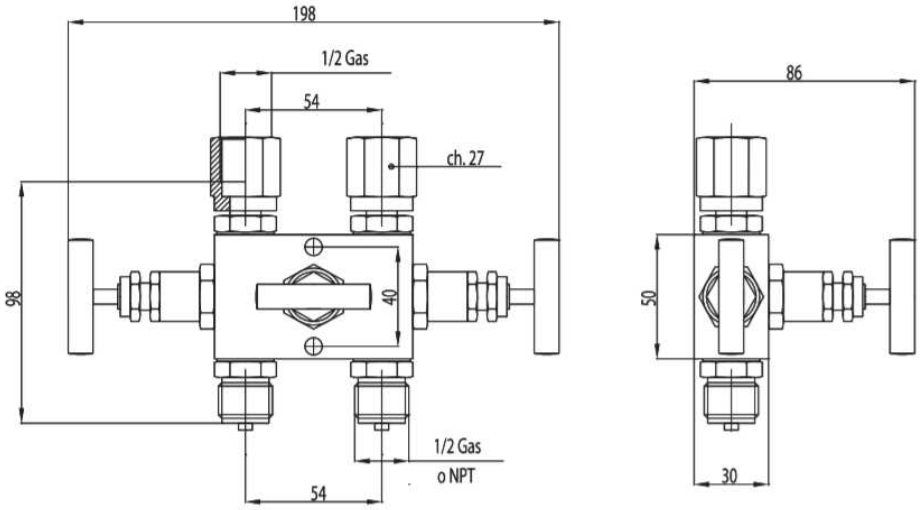


Direct mount 3 valve manifold specific for DIFFERENTIAL PRESSURE GAUGES series DG/DA, flanged type 6,000psi rated max

Direct mounted three-valve manifold, complete of swivel connection instrument side, threaded process side. Offering two isolation valves, and one equalizing valve. Used in differential pressure gauges.
Standard 2 x 1/2" NPTM inlet x 2 x 1/2" GF swivel.
The ½"G female thread on instrument side, offers the best alignment instrument/manifold. Foresee ½"GM process connection on the Differential pressure Gauge.
Safe anti-rotational pin locking device.

Design Features

- For **Differential Pressure Gauges**
- Hardened tip for first time seal and long service life.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Available NPT. BSPP/BSPT on request.
- Body in 316LSS, handle in 304SS
- Maximum working temp 210°C (500°C with graphite packing)
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphite.
- Full material traceability of major components.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.



Dimensions in mm

Part Numbers

St / St Part No	Connections Size	Weight (kgs)
AM-413	2 x ½" NPT male x 2x ½" GF Swivel	1.7

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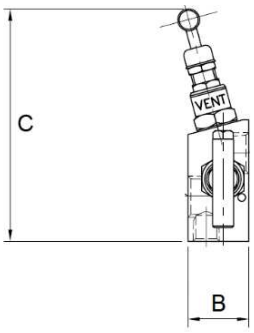
V5R Model for REMOTE MOUNT

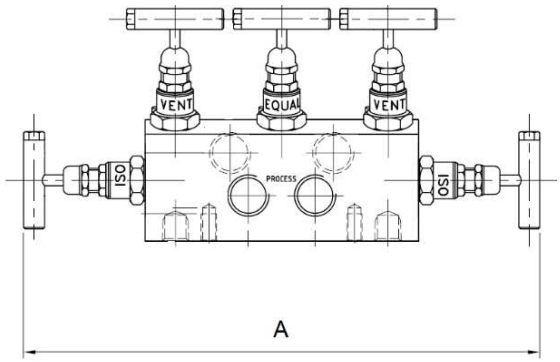
Remote Mount 5 Valve Manifold 6,000 psi and 10,000 psi Rated

The five-valve isolation manifold remote mounted (pipe to pipe) is used mainly in differential pressure transmitters and static instrument applications. The V5R has Offering two isolation valves, two vent valves and one equalising valve. Standard 1/2" inlet x 1/2" outlet. Incorporated all the standard long service life features of the standard "V1" model needle valve with multi- ring piston style packings. Safe anti-rotational pin locking device. Most standard options such as locking devices are available.
Process and instrument sides are both on 54mm (2 1/8") centres to correspond with transmitter connections.

Design Features

- For **Differential Gauges, Switches, Transmitters**
- 2 x isolation, 2 x vent and 1 equalising valve for instrument balancing applications.
- Bubble tight metal to metal seat for positive shut off.
- Self-centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.
- 2 x mounting holes as option





Part Numbers

St / St Part No	Connections Size	A	B	C	Weight (kgs)
V5R3A1S	2 x 1/2" NPT female x female	10.6	1.3	4.8	2.3

Dimensions in inches

V5D Model for DIRECT MOUNT

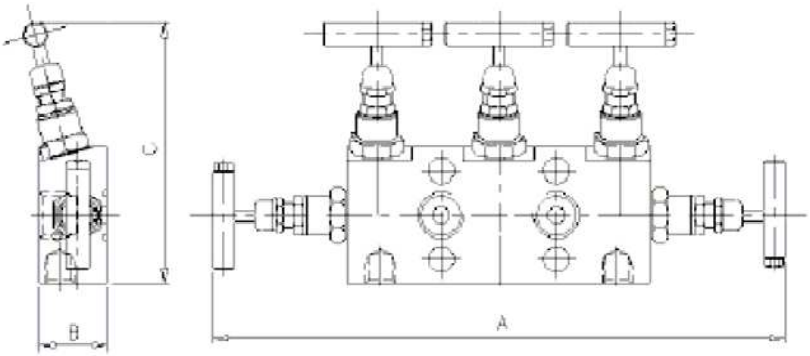
Picture for reference only. Actual model may differ from model shown.

Direct mount 5 valve manifold 6,000 psi rated

Direct style block mounted five-valve manifold, instrument mount to pipe connection. Offering two isolation valves, two vent valves and one equalising valve. Used in differential pressure transmitters and static instrument applications. Standard 2 x 1/2" inlet x direct mount with 2 x 1/4" plugged vent port supplied plugged. This slim, compact valve incorporates all the standard long service life features of the standard "V1" model needle valve with multi-ring piston style packings. Safe anti-rotational pin locking device. Most standard options such as locking devices are available. All additional ports supplied plugged as standard.

Design Features

- For **Differential Pressure switches and Transmitter**
- Bubble tight metal to metal seat for positive shut off.
- Self centering & anti-galling non-rotating hardened tip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Bi-directional flow.
- Available NPT, BSPP, BSPT threaded and Socket weld.
- 4 x 7/16" UNF bolts for mounting to transmitter.
- 2 x PTFE/Graphoil seal rings for transmitter flange.
- Maximum working temp 240°C (540°C with graphoil packing option 004)
- Anti-blow out spindle – a major safety feature.
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphoil.
- Full material traceability of major components.
- 100 % Hydrostatic testing.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.
- ¼" NPT plugged vent connection option.



Part Numbers

St / St Part No	Connections Size	A	B	C	Weight (kgs)
V5D3A5S	2 x ½" NPT female x direct mount 2 x ¼" NPT vents	10.6	1.3	4.8	2.3

Dimensions in inches

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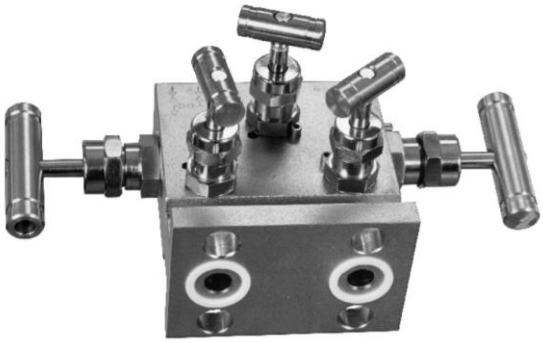
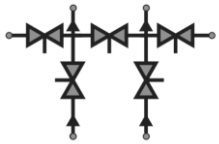
VM-5 Models for DIRECT MOUNT



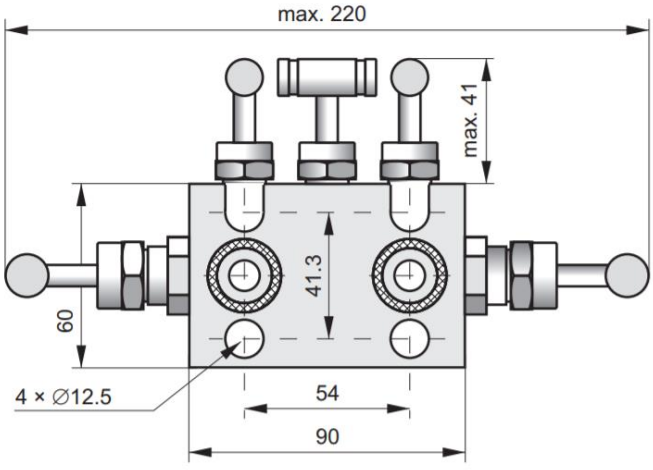
Direct mount 5 valve manifold, flanged type 6,000psi rated max

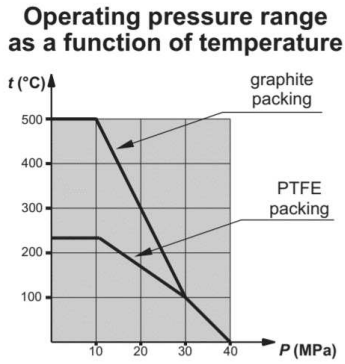
Direct mounted five-valve manifold, flanged instrument side, threaded process side. Offering two isolation valves, two vent valves and one equalizing valve. Used in differential pressure transmitters.
Standard 2 x 1/2" inlet x direct mount with 2 x 1/4" not plugged vent port supplied for free use by the customer.
Safe anti-rotational pin locking device. Most standard options such as locking devices are available



Design Features

- For **Differential Pressure Transmitter**
- Self centering & anti-galling non-rotating hardenedtip for first time seal and long service life.
- Piston ring gives dynamic adjustable gland seal in response to pressure change.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Available NPT. BSPP/BSPT as special construction in request.
- Standard 4xM10 for limited pressure up to 250bar (code /A) or optional 4 x 7/16" UNF bolts for mounting to transmitter (code /B) .
- 2 x PTFE seal rings for transmitter flange.
- Maximum working temp 200°C (500°C with graphite packing)
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphite.
- Full material traceability of major components.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.





Dimensions in mm

Part Numbers

St / St Part No	Connections Size	Weight (kgs)
VM-5/A	2 x ½" NPT female x direct mount 2 x ¼" NPT vents +4xM10 bolts + Teflon seals	2.54
VM-5/NACE/A	2 x ½" NPT female x direct mount 2 x ¼" NPT vents +4xM10 bolts + Teflon seals	2.54

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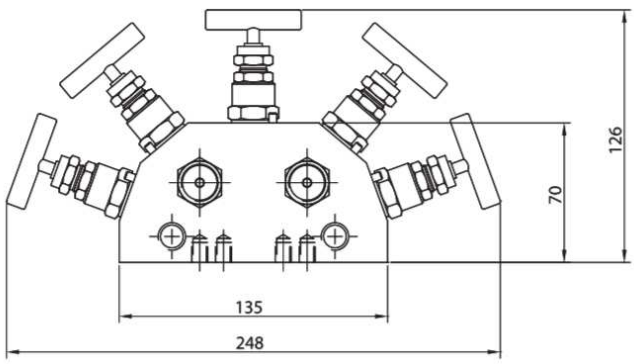
AM-417 Models for DIRECT MOUNT

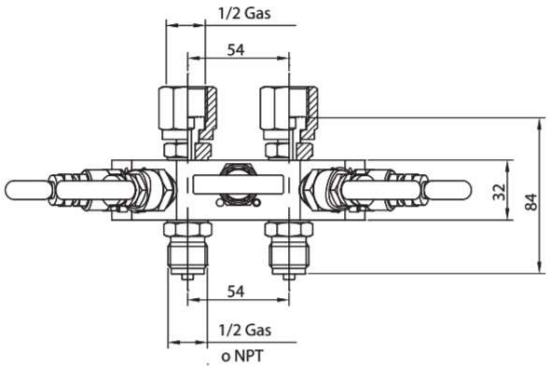
Direct mount 5 valve manifold specific for DIFFERENTIAL PRESSURE GAUGES series DG/DA, flanged type 6,000psi rated max

Direct mounted five-valve manifold, complete of swivel connection instrument side, threaded process side. Offering two isolation valves, two vent valves and one equalizing valve. Used in differential pressure gauges.
Standard 2 x 1/2" NPTM inlet x 2 x 1/2" GF swivel.
The ½"G female thread on instrument side, offers the best alignment instrument/manifold. Foresee ½"GM process connection on the Differential pressure Gauge.
Safe anti-rotational pin locking device.

Design Features

- For **Differential Pressure Gauges**
- Hardened tip for first time seal and long service life.
- Metal to metal body bonnet seal for high pressure and high temperature sealing.
- Bonnet locking pin. No accidental removal of head unit, or loosening due to vibration.
- Available NPT. BSPP/BSPT on request.
- Body in 316LSS, handle in 304SS
- Maximum working temp 210°C (500°C with graphite packing)
- Secure seal-precision machined to give leak free operation for the life of the valve. Available in either PTFE or Graphite.
- Full material traceability of major components.
- Materials of construction can be supplied to meet the requirements of NACE MR-01-75 latest revision.





Dimensions in mm

Part Numbers

St / St Part No	Connections Size	Weight (kgs)
AM-417	2 x ½" NPT male x 2x ½" GF Swivel	2.8

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Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
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Киров (8332)68-02-04
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Кострома (4942)77-07-48
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