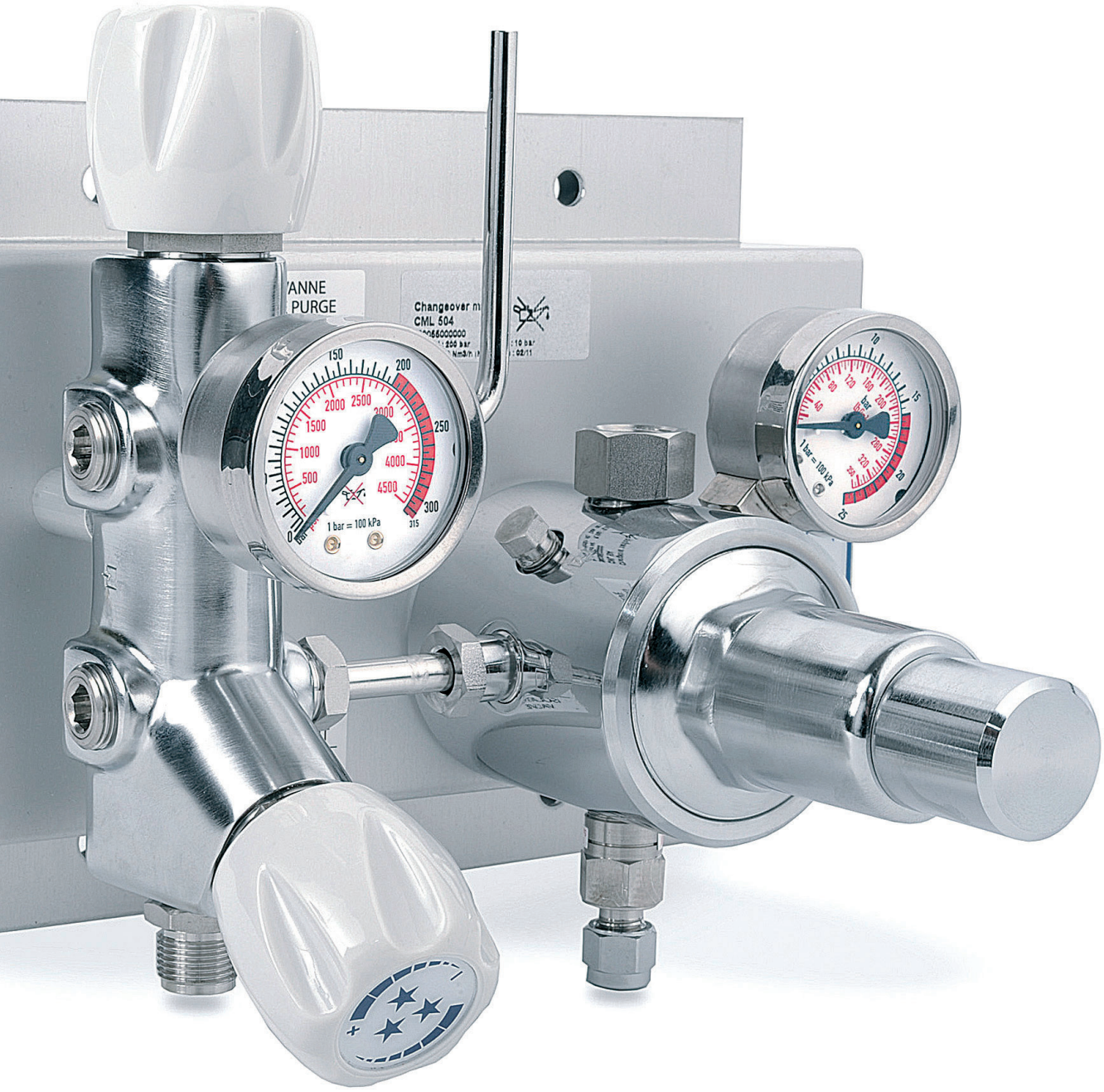
ROTAREX
EQUIPMENT




# SUPPLY AND SWITCH OVER BOARDS

# TABLE OF CONTENTS



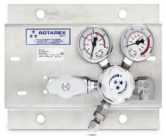
ISO 9001 QUALITY ASSURANCE

All Rotarex regulators are produced in Europe in accordance with international standards (ISO; CGA....) and are guaranteed to provide safe and reliable performance in operation. All locations are ISO 9001.

# SUPPLY BOARDS

| | SERIES MOD P. 016 |
|---|---|
| **Technology** | Diaphragm + Balanced Valve |
| **Inlet Pressure** | 200/300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 10/16/30/50 bar<br>145/232/435/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 200 bar: 70/110/150/180<br>300 bar: 50/70/100/130 |
| **Material** | Raw Brass<br>Chrome Plated Brass |

| | CM 280 - CM 380 P. 018 |
|---|---|
| **Technology** | Diaphragm + Cartridge |
| **Inlet Pressure** | 200/300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 10/16/35 bar<br>145/232/508 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/20/30 |
| **Material** | Chrome-plated brass<br>Stainless steel |



| | CMC 280 - CMC 380 P. 018 |
|---|---|
| **Technology** | Diaphragm + Cartridge |
| **Inlet Pressure** | 200/300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 10/16/35 bar<br>145/232/508 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/20/30 |
| **Material** | Chrome-plated brass<br>Stainless steel |

| | SERIES CM 104 P. 022 |
|---|---|
| **Technology** | Diaphragm |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 10/25/50 bar<br>145/363/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/10/50 |
| **Material** | Stainless steel |

| | SERIES CM 104 UC P. 024 |
|---|---|
| **Technology** | Diaphragm |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 15 bar<br>218 psig |
| **Flow Rate Nm³/h ($N_2$)** | 25 |
| **Material** | Stainless steel |

| | SERIES CM 254/454 P. 026 |
|---|---|
| **Technology** | Piston |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 60/160 bar<br>870/2320 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/30 |
| **Material** | Chrome plated brass |

| | SERIES CM 504 P. 028 |
|---|---|
| **Technology** | Diaphragm + Balanced Valve |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 10/25/50 bar<br>145/363/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 50/50/100 |
| **Material** | Chrome plated brass<br>Stainless steel |

# SWITCH OVER BOARDS

| | SERIES CEN P. 030 |
|---|---|
| **Technology** | Diaphragm + Balanced Valve |
| **Inlet Pressure** | 200/300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 10/16/30/50 bar<br>145/232/435/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 200 bar: 70/110/150/180<br>300 bar: 50/70/100/130 |
| **Material** | Raw Brass<br>Chrome Plated Brass |
| **Change Over** | Semi-Automatic and Automatic |

| | SERIES TD 100 P. 032 |
|---|---|
| **Technology** | Diaphragm |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 10/25/50 bar<br>145/363/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/10/50 |
| **Material** | Stainless steel |
| **Change Over** | Manual and Semi-Automatic |

| | SERIES TD 102 UC P. 034 |
|---|---|
| **Technology** | Diaphragm |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 10/25/50 bar<br>145/363/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/10/10 |
| **Material** | Stainless steel |
| **Change Over** | Semi-Automatic |

| | SERIES TD 200 P. 036 |
|---|---|
| **Technology** | Diaphragm |
| **Inlet Pressure** | 200/300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 10/16 bar<br>145/232 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10/10 |
| **Material** | Chrome plated brass<br>Stainless steel |
| **Change Over** | Manual, Semi-Automatic, Automatic |

| | SERIES TD 500 P. 040 |
|---|---|
| **Technology** | Diaphragm + Balanced Valve |
| **Inlet Pressure** | 200 bar<br>2900 psig |
| **Outlet Pressure** | 10/25/50<br>145/363/725 psig |
| **Flow Rate Nm³/h ($N_2$)** | 50/50/50 |
| **Material** | Chrome Plated Brass<br>Stainless steel |
| **Change Over** | Manual, Semi-Automatic, Automatic |

| | SERIES CC 285/385 P. 044 |
|---|---|
| **Technology** | Diaphragm + cartridge |
| **Inlet Pressure** | 200 / 300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 4 / 10 / 16 / 35 bar<br>58 / 145 / 232 / 508 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10 Nm³/h ($N_2$) |
| **Material** | Raw brass<br>Chrome plated brass<br>Stainless steel |
| **Change Over** | Semi-Automatic |

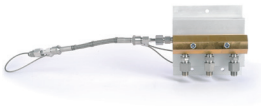
| | SERIES CC 284/384 P. 046 |
|---|---|
| **Technology** | Diaphragm + cartridge |
| **Inlet Pressure** | 200 / 300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 4 / 10 / 16 / 35 bar<br>58 / 145 / 232 / 508 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10 Nm³/h ($N_2$) |
| **Material** | Raw brass<br>Chrome plated brass<br>Stainless steel |
| **Change Over** | Automatic |

| | SERIES CC 283/383 P. 048 |
|---|---|
| **Technology** | Diaphragm + cartridge |
| **Inlet Pressure** | 200 / 300 bar<br>2900/4350 psig |
| **Outlet Pressure** | 4 / 10 / 16 / 35 bar<br>58 / 145 / 232 / 508 psig |
| **Flow Rate Nm³/h ($N_2$)** | 10 Nm³/h ($N_2$) |
| **Material** | Raw brass<br>Chrome plated brass<br>Stainless steel |
| **Change Over** | Manual |

# ACCESSORIES

**BA 12 ALARM BOX** P. 050

**PRESSURE GAUGES** P. 052



**EXTENSIONS** P. 058

**PIGTAILS** P. 060

**FLEXIBLE HOSES** P. 061

**DUOBLOC** P. 062

**SV 10 RELIEF VALVE** P. 064

**SERIES VD** P. 067

**GAS CYLINDER HOLDER** P. 068

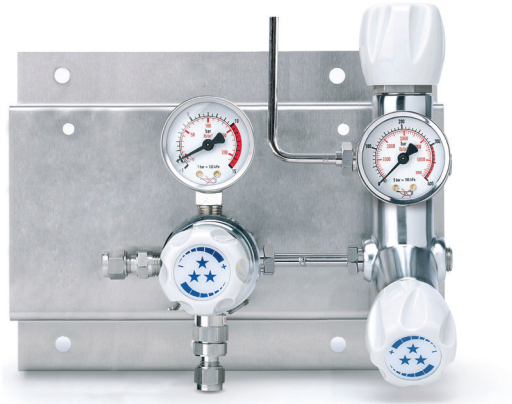
# TECHNOLOGY OVERVIEW

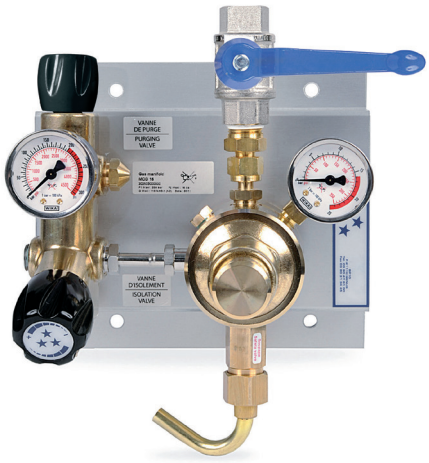
## SUPPLY BOARDS

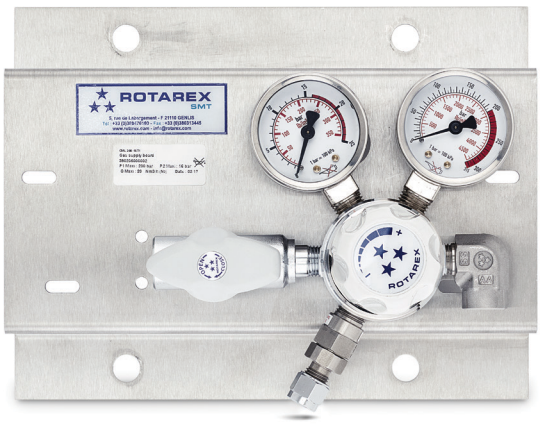
A **supply board** is used in a central gas supply system in order to reduce the cylinder pressure to an appointed secondary pressure. The supply board will then supply a stable pressure to line regulators or points of use.

A supply board can be considered like a simplified switch over board (without the continuous gas supply from several high-pressure sources).

Most of our supply boards have 3 common inlets available. This avoids installation of extensions and increases safety of the installation.
Our products exist in raw brass, chrome plated or stainless steel. The installed regulators are coming from our standard product range.





# TECHNOLOGY OVERVIEW (continued)

## SWITCH OVER BOARDS

Rotarex switch over boards can make your source management easier. Our first target is to make your installation safer, easier-to-control and to help you improve cost productivity.

**SAFETY:**

- DUOBLOC: 4-6 cylinder connections possible w/o extension - to improve the global system tightness of the process and reduce leakage points. Also, with the DUOBLOC concept you can purge independently each side. The purge can also be collected.
- RELIEF VALVE: all supply and switch over boards are standardly equipped with a relief valve (one on semi-automatic version, 2 on fully automatic version).
- INVERTER (full automatic)/BYPASS DESIGN (semi automatic): Its design avoids gas flow into the other side.
- Dedicated pressure gauges (HP and LP). Contact gauges could also be mounted in order to connect to an alarm box.
- With installation of a gas monitoring system, you can easily check your gas consumption from your desk.

**EASE OF HANDLING:**

- Easy access of purging and isolation valve.
- Easy installation with all components pre-mounted on an Omega plate.
- All components for service are easily accessible.

**LOWER OPERATING COSTS:**

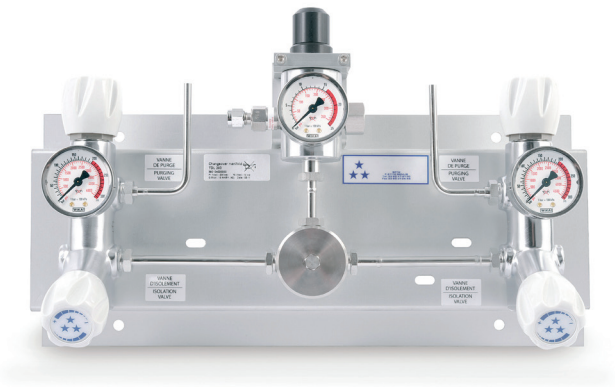
- A continuous gas supply to the process means less production interruptions or unplanned disruption to change gas cylinders.
- Larger cylinders together = fewer cylinders = lower rental charge, less transportation charge, better cylinder management.
- Grouping all cylinders in one location means also space saving in production area or in lab which are very expensive surfaces.

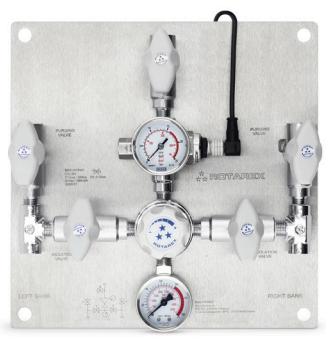
## MANUAL SWITCH OVER BOARDS

A **manual switch over board** reduces the cylinder pressure to an appointed secondary pressure and insures gas supply from different high-pressure sources. It ensures a safe cylinder replacement.

When one high-pressure supply source is in service, the other is in reserve.

When the service source is empty, the operator must change the service side to the reserve side manually when changing the empty cylinder





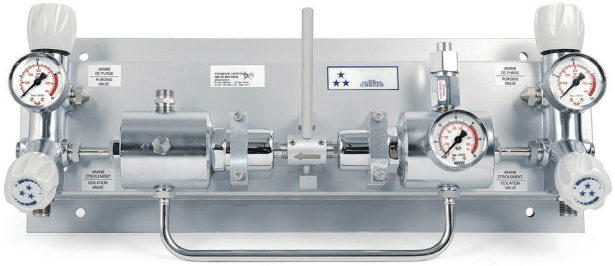
# TECHNOLOGY OVERVIEW

## SEMI-AUTOMATIC SWITCH OVER BOARDS

A **semi-automatic switch over board** is a system which provides a continuous gas supply to the piping system. One source of gas is used as the primary source, while a second source is held in reserve.

When the primary source reaches a predetermined pressure, the reserve supply automatically begins to supply gas to the system.

Once the switch over occurs and primary source is replaced, the switch over board is reset, such that the reserve supply supplying gas is now designated as primary source and the secondary source is now held in reserve. The empty cylinder can be replaced without interrupting the gas flow.



## AUTOMATIC SWITCH OVER BOARDS

An **automatic switch over board** switches automatically, when the service source is empty, to the reserve source and does not need to be reset to allow reversal of the cycle. A switch over board will reduce the cylinder pressure to an appointed secondary pressure and will insure continuous gas supply from several high-pressure sources.

This reduces the need for continuous operator monitoring and ensures a safe cylinder replacement. When one high-pressure supply source is in service, the others are in reserve. When the service source is empty, the switch over board switches automatically to the reserve source for a continuous gas supply to the process at the same pressure. The empty cylinder can be replaced without interrupting the gas flow.

## HOW TO CHOOSE BETWEEN SEMI-AUTOMATIC AND FULL AUTOMATIC

WHEN SEMI-AUTOMATIC :

- For small installations  with low gas consumption
- When the process is not sensible to pressure drop after the switch.
- When you want to change the cylinders at each switch.

WHEN AUTOMATIC :

- When the process needs stable delivery of outlet pressure (P2).
- When the installation has a huge gas consumption.
- When using bundles.
- When safety is paramount > reduction of operator presence.
- When less external intervention is desired for better productivity.
- For supply installations far away from the process.

# TECHNOLOGY OVERVIEW (continued)

## PREMIUM QUALITY FOR BETTER PERFORMANCE

All our regulators are designed respecting the EN ISO 2503. The production of the regulator is certified according to ISO 9001. Also external audits from customers help us to improve continually our products. This strategy is also applied on our supplier base which is working very closely with us in order to reach new standards and new performance.

In order to fulfil the customer expectations regarding quality, Rotarex implements state-of-the-art quality management practices used in the automotive industry in order to stay Best In Class.

During the production of your regulator we have several control steps in order to provide you the best quality:

- Supplier Audit in order to control that they fullfill our standards
- 100% cleaning of all parts to $O_2$ standards
- Steaming of some specific components
- Measurement control of parts coming from the production
- 100% Helium leak test
- 100% functional test

Most of the supply and switch over boards produced by Rotarex are designed for applications with gas purity up to 6.0 with a leak rate of $10^{-8}$ mbar l/s of helium.

## FLOW MEASUREMENTS

Flow curves are based on the ISO EN 2503 Norm. The nominal flow are specified for the nominal inlet pressure with the regulator set at the nominal outlet pressure. The outlet flow will then decrease when the regulator is set at a lower outlet pressure than the nominal one.

For specific applications, do not hesitate to contact us to get the exact flow at the designed values.

## SERVICE

In order to prevent possible contamination, we recommend that the operator performs a purging after the cylinder change. This maintenance step will help remove moisture, air and other impurities from the system before introduction of gas into the process. This maintains a constant purity in the circuit.

For some products like our supply/ switch over boards, it is recommended to perform an annual maintenance in order to prevent wearing of some components. Our customer service team remains at your disposal to supply special spare parts.

## SAFETY

All products are tested under pressure and also leak-tested before shipment. Our high pressure regulators are also equipped with relief valves in order to prevent any damage of the regulator.

**Important notice**: the relief valve fitted on our regulators will only protect the regulator in case of accident and cannot be used to protect the down stream process. When it is needed to protect the down stream process, use a CE relief valve on the pipe work.

It is also possible to collect the purge on our equipment in order to avoid any gas dispersion in the atmosphere when using toxic gas.

# TECHNOLOGY OVERVIEW (continued)

## PRESSURE REGULATOR TECHNOLOGIES

Rotarex Supply Panels and Switch over Panels use 3 main pressure regulator technologies to achieve a stable and reliable pressure regulation:

### BALANCED VALVE

- Best-in-class pressure stability
- Minimizes the effect of inlet pressure fluctuations on outlet pressure
- Increases regulator lifetime and reduces cost of ownership by reducing seat effort
- Diaphragm technology only

### DIAPHRAGM

- Our most-used technology (cylinder regulation, line, supply panel...)
- Compact design
- Good precision

### PISTON

- Stable outlet flow
- Used for regulator where the pressure outlet is close to the inlet pressure

## BALANCED VALVE TECHNOLOGY

Our **Balanced-Valve Technology regulator** gives you dual stage regulator performance in a single stage design. Due to its proprietary design, it is able to balance the internal forces within the regulator and compensates for the pressure fluctuation on the inlet. It provides a constant outlet pressure like a dual stage regulator but with a lower total ownership cost.

Switch over boards equipped with this technology don't need any line regulator afterwards and can be connected directly to the application.

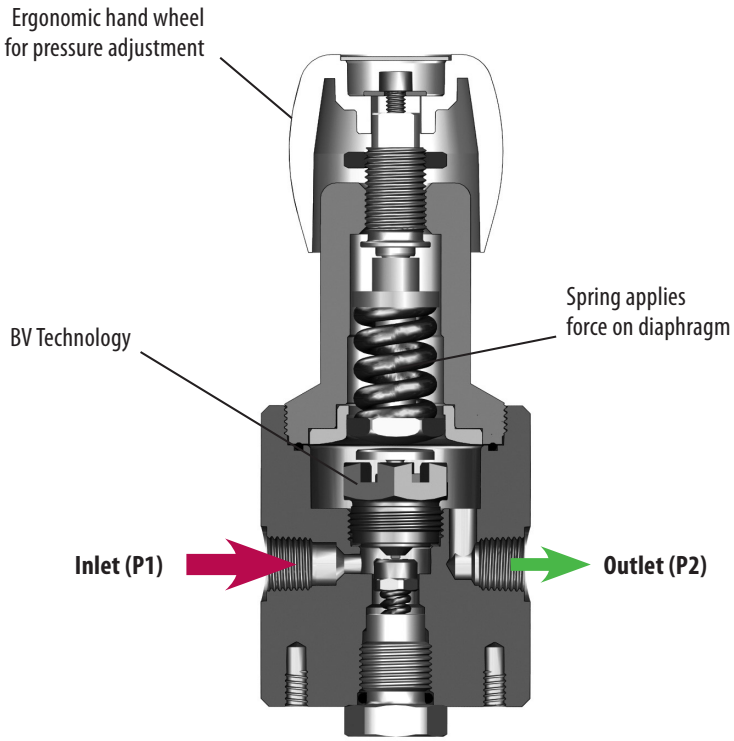
PRODUCT FINDER

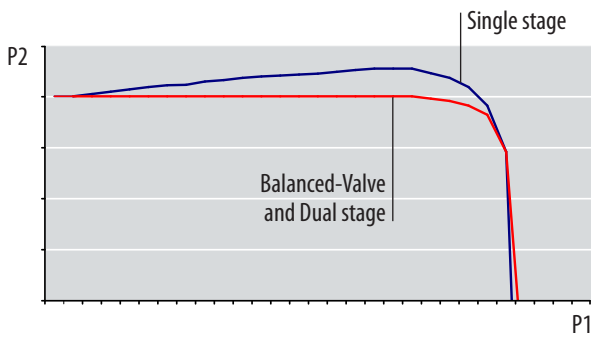
**ROTAREX supply boards using BV technology**

| | |
|---|---|
| **Series MOD** | P. 020 |
| **Series CM 504** | P. 028 |

**ROTAREX switch over boards using BV technology**

| | |
|---|---|
| **Series CEN** | P. 030 |
| **Series TD 500** | P. 040 |

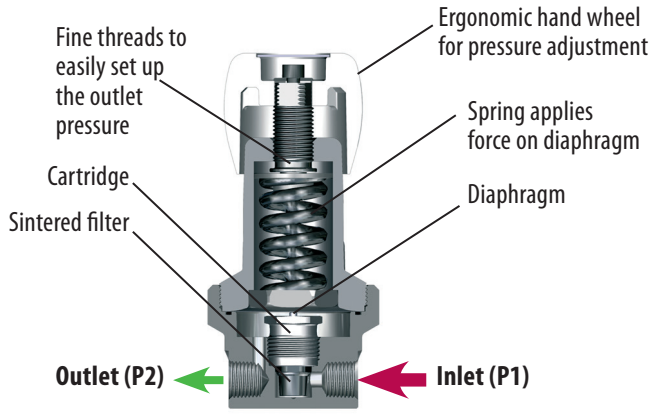



# TECHNOLOGY OVERVIEW (continued)

## CARTRIDGE REGULATOR

**Superior technical performance with cartridge technology:**
- Better outlet pressure stability due to the cartridge design. Outlet pressure remains stable despite any fluctuation of inlet pressure.
- Longer product life due to less impingement on the diaphragm.
- Compact design with reduction of dead volume (minimal purge requirements)
- Sintered inlet filter provides better filtration without restricting flow.

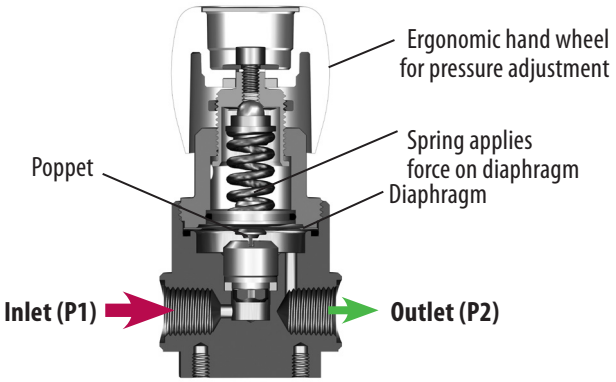



PRODUCT FINDER

**ROTAREX supply boards using cartridge technology**

| | |
|---|---|
| **Series CM 280/380** | P. 018 |

## DIAPHRAGM REGULATOR




PRODUCT FINDER

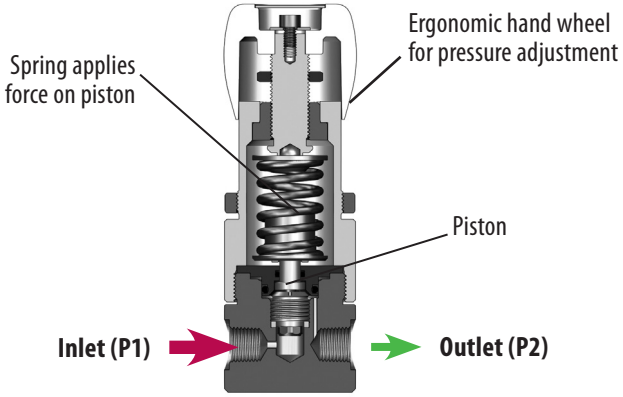
**ROTAREX supply boards using diaphragm technology**

| | |
|---|---|
| **Series CM 104** | P. 022 |
| **Series CM 104 UC** | P. 024 |

**ROTAREX switch over boards using diaphragm technology**

| | |
|---|---|
| **Series TD 100** | P. 032 |
| **Series TD 102 UC** | P. 034 |
| **Series TD 200** | P. 036 |

## PISTON REGULATOR




PRODUCT FINDER

**ROTAREX supply boards using piston technology**

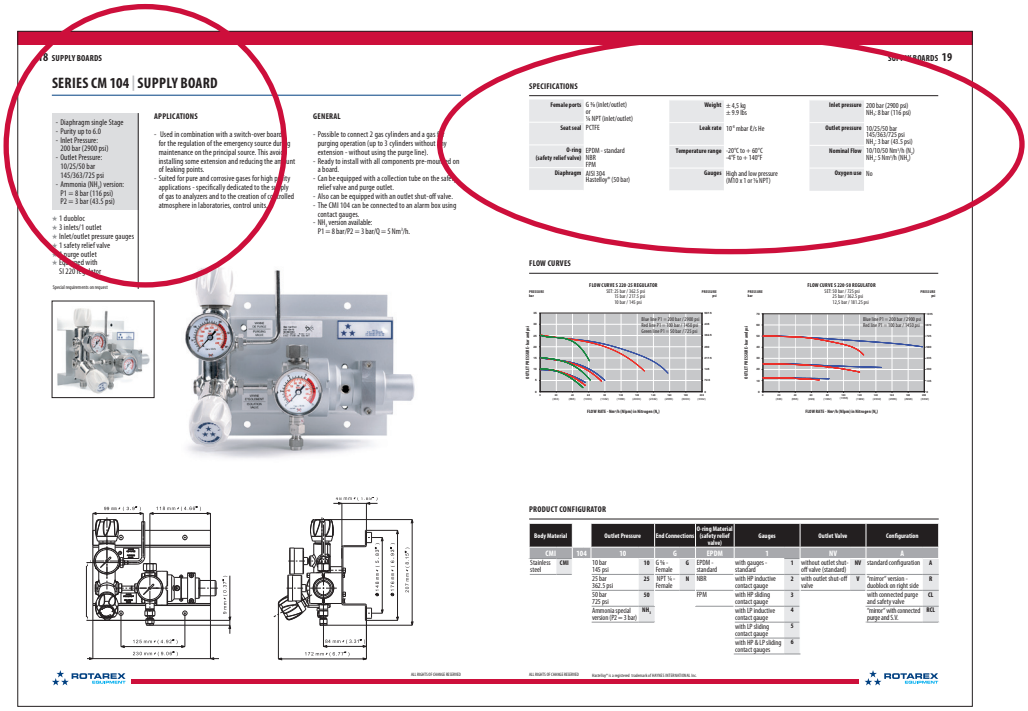
| | |
|---|---|
| **Series CM 245/454** | P. 026 |

# SELECTING THE RIGHT SUPPLY SYSTEM

To choose the right supply solution for your application and get the best results, you should identify the following technical parameters:

| TECHNICAL PARAMETER | EXAMPLE |
|---|---|
| Gas | Inert, flammable, oxidizing, corrosive, toxic |
| Purity | UHP, HP, industrial, medical, diving |
| Nominal inlet pressure | Bar or psig |
| Nominal outlet pressure | Bar or psig |
| Nominal flow ($N_2$) | $Nm^3/h$, Nlpm, Slpm or SCFM |
| Single stage or dual stage ? | Dual stage or BV Technology are needed where pressure stability is essential |
| Product | Regulator, point of use, supply board, switch over board |
| Material | Brass, chrome plated brass, stainless steel |
| Inlet connection | Country of use, standard, connection |
| Outlet connection | G ⅜, ¼ NPT, male, female, special |
| Gauges | Low pressure, high pressure, sliding, inductive |
| Safety device | Yes/no |
| Vacuum | Yes/no |
| Application | Food, electronic, medical, welding, industrial, diving… |
| Outdoor or indoor use | Environment |
| Temperature range | -20°C to +60°C / -4° F to +140°F |
| Atex use | Yes/no |
| Preset outlet pressure | If yes, which pressure ? |
| Marking | CE, TPED, PI |

Each product page is designed to provide you the essential technical information at a glance:



# SELECTING THE RIGHT SUPPLY SYSTEM (continued)

## BODY MATERIALS

Most Rotarex Supply and Switch over Boards are available in stainless steel 316L or chrome plated brass, and on some models, raw brass or aluminium. Which material is best for your installation?

**Stainless steel 316L:** The recommended option for corrosive gases and high-purity applications due to its superior resistence, non-reactivity, exceptional durability and high-surface finish properties. It is compatible with most gas types and low-velocity oxygen applications.

Rotarex uses stainless steel type 316L, an austentic chromium nickel stainless steel containing Molybdenum. It offers:

- Exceptional corrosion resistance - particularly against sulfuric, hydrochloric; acetic, formic and tartaric acids, acid sulfates and alkaline chlorides
- resistance to pitting from chloride-ion solutions
- outstanding strength even at elevated temperatures

**Chrome plated or Raw Brass:** The most commonly used material for industrial and high velocity oxygen applications due to its cost effectiveness versus stainless steel, good strength, resistence and low-friction flow properties.

Need more information? You can find more detail about optional, materials on our website. Additionally, one of our material engineers would be happy to discuss the pros and cons of each option to help you choose the best solution.

**www.rotarex.com**

Gas Compatibility: Make sure the body material is compatible with the gas type you will be using. Consult the gas compatibility reference chart on page 62.

## O-RING MATERIALS

For many regulators, a choice of O-ring materials is available:

EPDM: Ethylene Propylene Rubber
NBR: Nitrile Butadiene Rubber
FPM: Fluorocarbon Rubber
PTFE: Polytetrafluoroethylene (cartridge)

Gas Compatibility: Make sure the O-ring material is compatible with the gas type you will be using. Consult the gas compatibility reference chart on page 62.

## INLET/OUTLET PRESSURES

Different models are designed for different inlet and outlet pressure performance. The available options are clearly indicated on each product page. Please specify which inlet and outlet pressure when ordering. We can also accommodate special requests.

## PRESSURE GAUGES

Most Rotarex supply and switch over boards are equipped with a choice of pressure gauges. High Pressure and/or Low Pressure - and sliding or induction versions. Check the product configurator table on each product page.

# SELECTING THE RIGHT SUPPLY SYSTEM (continued)

## RELIEF VALVE

Relief valves are standard on most Rotarex supply and switch over boards as a safety best practice.

## SEAL MATERIAL

For all cartridge regulators the seat seal is PCTFE which provides a wide chemical compatibility, good temperature resistance, and better dimensional stability than traditional seals.

## DIAPHRAGM MATERIAL

All cartridge regulators are equipped with a Hastelloy® diaphragm, which is ideally adapted to high purity applications and is compatible with all types of gases , and has exceptional elasticity and high corrosion resistance. Consequently, this diaphragm outperforms traditional stainless steel diaphragms in terms of pressure stability and long cycle lifetime.

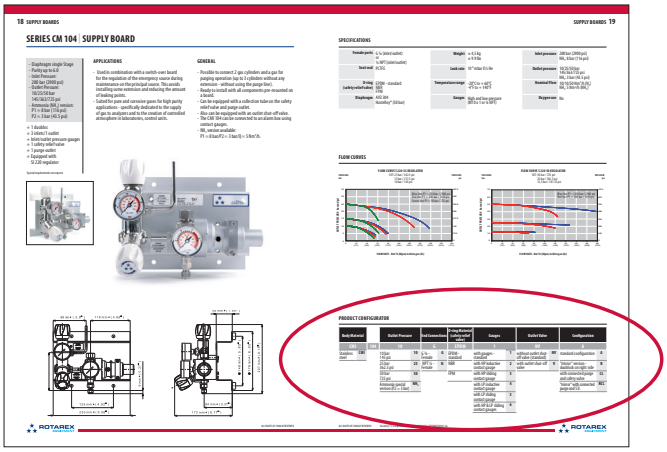
## FILTER MATERIAL

Rotarex cartridge regulators employ a Sintered Filter in 316L for the stainless steel and bronze for brass version.

- The function of this filter is to protect the regulator against foreign particle coming from the gas or during installation. In any case a filter has to be installed on the line based on your cleanliness requirements.

## OTHER PRODUCT OPTIONS

Some product solutions have additional options specific to their unique application, such as contact gauges, outlet valves, configuration… etc. These options are clearly indicated on the product configuration table on each product page .




## CLEANING

All products, regardless of gas application, are cleaned to remove all traces of residue and grease using the same procedures as for $O_2$ use. There is no need to specify special cleaning when ordering.

**Important notice**: the safety relief valve fitted on our regulators will only protect the regulator in case of accident and cannot be used to protect the down stream process. When it is needed to protect the down stream process, use a CE relief valve on the pipe work.

# NOTES

# SERIES MOD | SUPPLY BOARD

- Diaphragm single stage
- Balanced-Valve Technology
- Purity up to 5.5 (6.0 without the ball valve)
- Inlet pressure: 200 bar (2900 psig) or 300 bar (4350 psig)
- Outlet pressure: 10/16/30/50 bar 145/232/435/725 psig

★ 1 duobloc
★ 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 1 purge outlet
★ $O_2$ application compatible (see technical data)
★ Acetylene version available
★ Propane version available

Special requirements on request

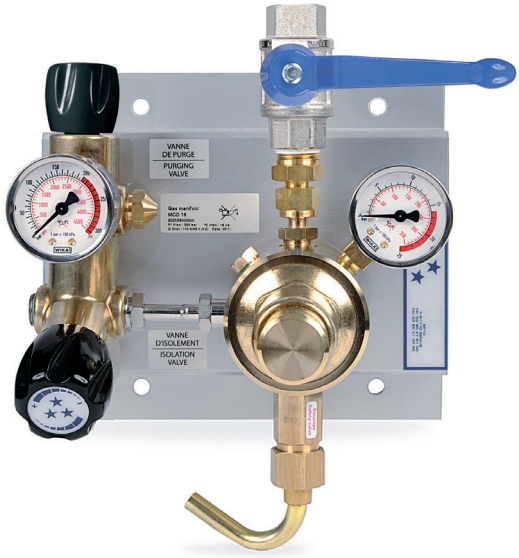
## APPLICATIONS

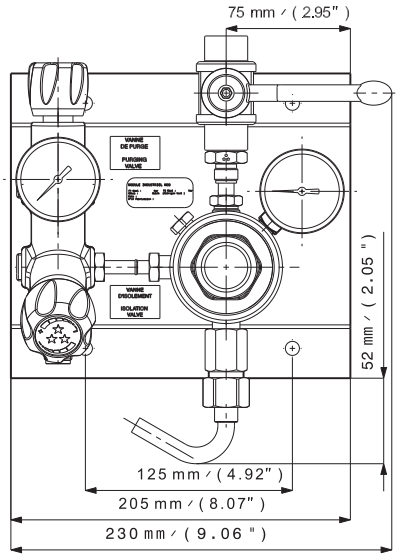
- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing extensions and reduces the amount of leaking points.
- Suitable for the high flow supply of industrial gases except toxic and corrosive gases.

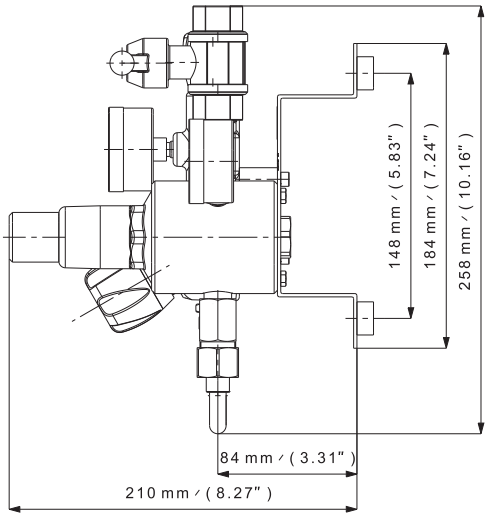
## KEY FEATURES

- Possible to connect 2 gas cylinders and a gas for purging operation (up to 3 cylinders without any extension - without using the purge line).
- Ready to install: all components are pre-mounted on a board.
- Best-of-class pressure stability with Balanced-Valve Technology: the effect of inlet pressure fluctuations on outlet pressure are minimized. Balanced-Valve Technology enables the delivery of a very stable outlet pressure and flow even with high flow line regulators.
- Non-whipping filter improves safety of the operator during the cylinder replacement.
- Can be equipped with an outlet ¼ turn shut-off valve (Multi-turn valve with 30 bar or 50 bar version for oxygen use).
- Can be connected to an alarm box using contact gauges.
- Acetylene version available: P1 = 25 bar / P2 = 1 bar/Q = 6,5 $Nm^3/h$.
- For use with acetylene this product must be installed with a flash back arrestor complying with the standard EN 730 located downstream.
- Propane version available: P1 = 25 bar/P2 = 4 bar/Q = 10 $Nm^3/h$.

3 inlet ports



## SPECIFICATIONS

| | |
|---|---|
| **Female ports** | In: G ⅜ - Out: G ½<br>In: ⅜ NPT - Out: G ½ |
| **Seat seal** | PCTFE |
| **O-ring** | EPDM - Standard<br>NBR<br>FPM |
| **Diaphragm (regulator)** | AISI 304<br>or Hastelloy® |
| **Weight** | ± 6,0 kg<br>± 13.0 lbs |

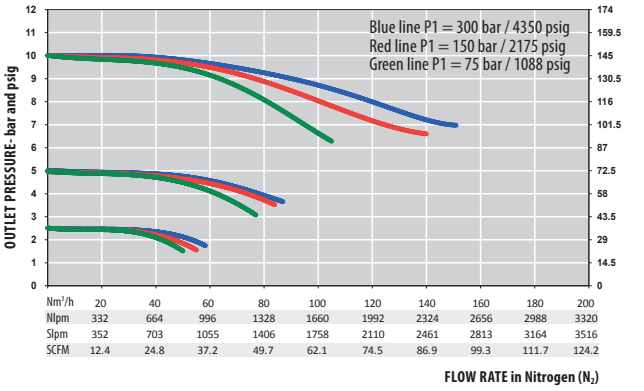
| | |
|---|---|
| **Leak rate** | w/outlet valve: $1.10^{-4}$ mbar ℓ/s He<br>w/o outlet valve: $1.10^{-8}$ mbar ℓ/s He |
| **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F |
| **Gauges** | High and low pressure<br>(M10 x 1 or G ¼) |

| | |
|---|---|
| **Inlet pressure** | 200 bar / 300 bar<br>2900 psig / 4350 psig<br>AD and PR4: 25 bar (362.5 psig) |
| **Outlet pressure** | 10/16/30/50 bar<br>145/232/435/725 psig<br>AD: 1 bar (14.5 psig)<br>PR4: 4 bar (58 psig) |
| **Nominal Flow 200 bar version** | 70/110/150/180 $Nm^3/h$ ($N_2$) |
| **Nominal Flow 300 bar version** | 50/70/100/130 $Nm^3/h$ ($N_2$) |
| **Nominal Flow AD and PR4** | AD: 6,5 $Nm^3/h$<br>PR4: 10 $Nm^3/h$ |
| **Oxygen use** | OK with inlet pressure<br>200 and 300 bar |

## FLOW CURVES

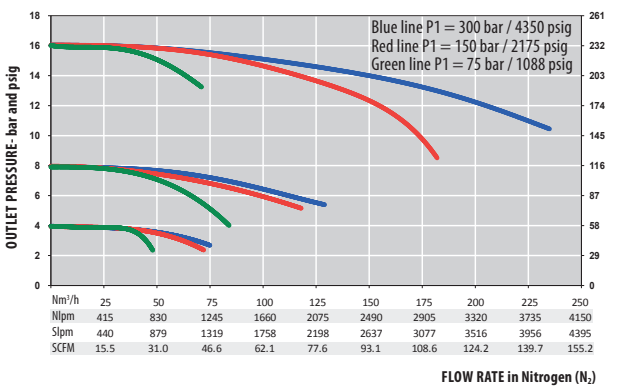
**FLOW CURVE MOD-10 REGULATOR**

SET: 10 bar / 145 psig
5 bar / 72.5 psig
2,5 bar / 36.35 psig




**FLOW CURVE MOD-16 REGULATOR**

SET: 16 bar / 232 psig
8 bar / 116 psig
4 bar / 58 psig




## PRODUCT CONFIGURATOR

| Inlet pressure | | Outlet | | Body Material | | End Connections | | O-ring Material | Gauges | | Fix or adjustable Outlet Pressure | | Oulet valve | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOD300 | | 16 | | L | | G | | EPDM | 1 | | FX | | V | | A | |
| 200 bar 2900 psig | 200 | 10 bar 145 psig | 10 | Raw brass | LB | In: G ⅜ Out: G ½ Female | G | EPDM - Standard | With gauges - standard | 1 | With fixed P2 (standard) | FX | With outlet shut-off valve | V | Standard configuration | A |
| 300 bar 4350 psig | 300 | 16 bar 232 psig | 16 | Chrome plated brass | L | In: ⅜ NPT Out: G ½ Female | N | NBR | With HP inductive contact gauge | 2 | With adjustable P2 (handwheel) | ADJ | Without outlet shut-off valve | NV | "Mirror" version - duobloc on right side | R |
| | | 30 bar 435 psig | 30 | | | | | FPM | With LP inductive contact gauge | 4 | | | | | With connected purge | CL |
| | | 30 bar 435 psig oxygen use | 30 OX | | | | | | With HP & LP inductive contact gauges | 6 | | | | | "Mirror" with connected purge | RCL |
| | | 50 bar 725 psig | 50 | | | | | | | | | | | | | |
| | | 50 bar 725 psig oxygen use | 50 OX | | | | | | | | | | | | | |
| | | Acetylene special version (P2 = 1 bar) | AD | | | | | | | | | | | | | |
| | | Propane special version (P2 = 4 bar) | PR4 | | | | | | | | | | | | | |

# SERIES CM 280 - CM 380 | SUPPLY BOARD

- Cartridge single stage
- Purity up to 6.0
- Inlet pressure:
  200 bar (2900 psig)
  or 300 bar (4350 psig)
- Outlet pressure:
  10/16/35 bar
  145/232/508 psig

★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 1 purge outlet
(type 2 and 3)
★ $0_2$ compatible
(see technical data)
★ Regulator with
cartridge technoloy

Special requirements on request

## APPLICATIONS

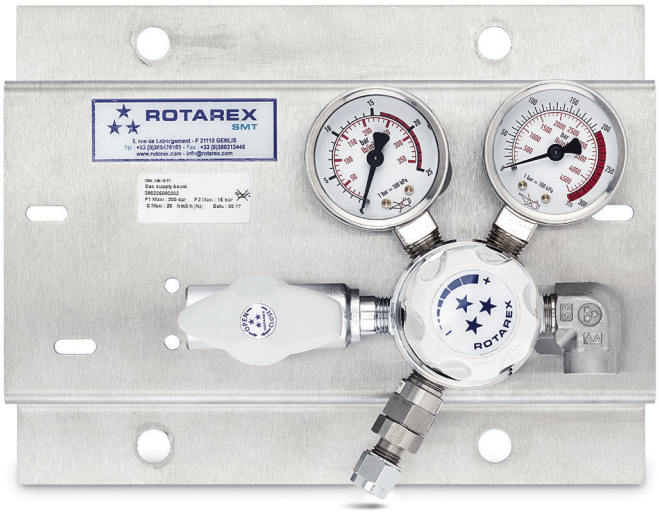
- Ideally suited for pure and corrosive gases for high purity applications dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications where high flows are required
- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing some extension and reducing the amount of leaking points

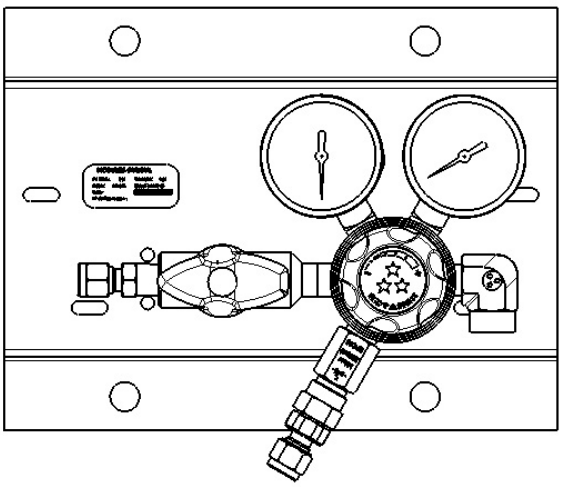
## KEY FEATURES

- Ready to install with all components pre-mounted on a board.
- Best-in-class pressure stability with Cartridge Technology: the effect of inlet pressure fluctuations on outlet pressure are minimized. Cartridge Technology enables the delivery of a very stable outlet pressure and flow even with high flow line regulators.
- Cartridge technology increases regulator life and reduces ownership costs.
- Can be equipped with a collection tube on the relief valve and purge outlet.
- Can also be equipped with an outlet shut-off valve.
- The CM 280 – CM 380 can be connected to an alarm box using contact gauges.
- Can be equiped with diaphragm ¼ turn valve (CMC version) or with duobloc (CM version)

## VERSION TYPE 1

Supply board with ¼ turn valve

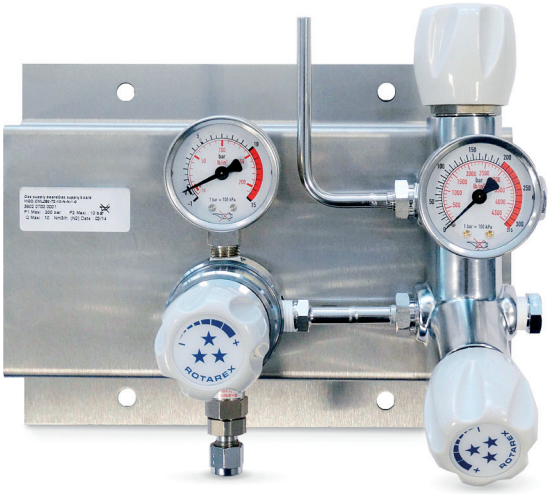


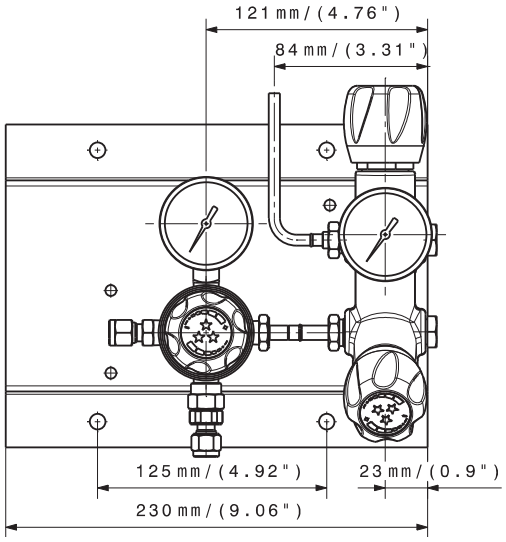



# SERIES CM 280 - CM 380 | SUPPLY BOARD

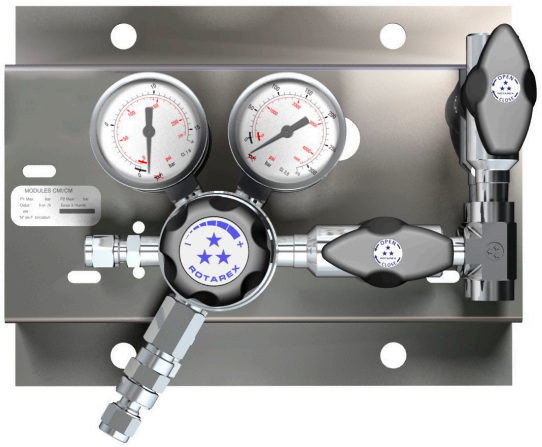
## VERSION TYPE 2

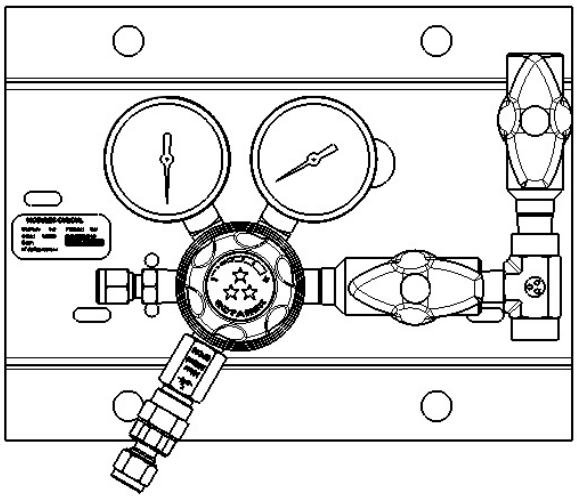
Supply board with duobloc






Supply board with ¼ turn valve

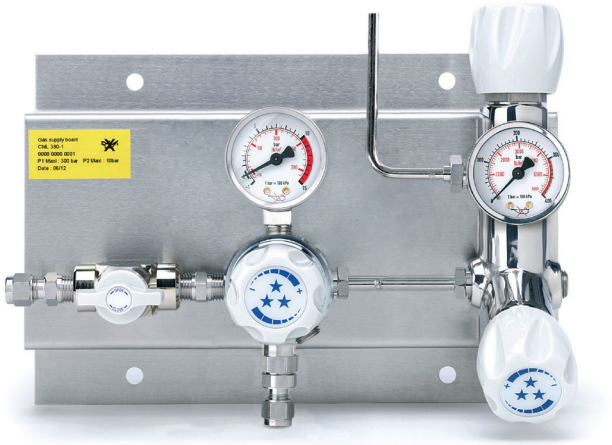


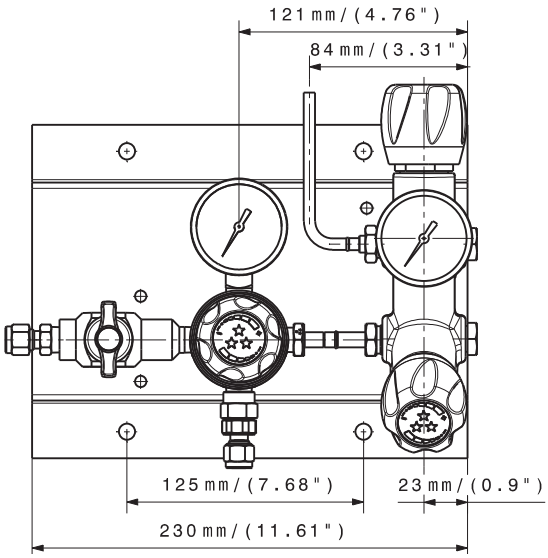


# SERIES CM 280 - CM 380 | SUPPLY BOARD

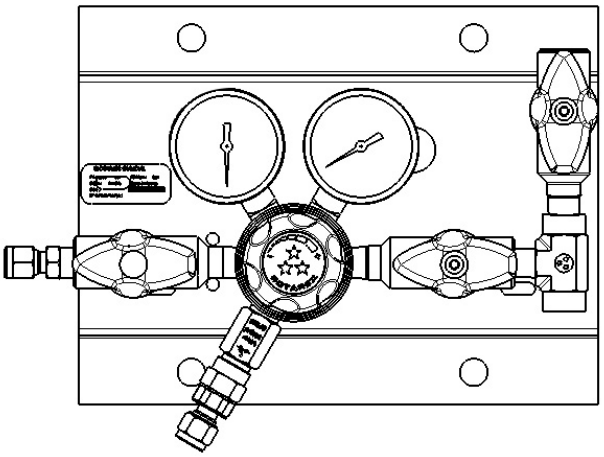
## VERSION TYPE 3

Supply board with duobloc






Supply board with ¼ turn valve



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | ¼" NPT (Inlet/Outlet) | **Weight** | ± 2,9 kg (CM-1) / 4,5 kg (CM-2) / 4,8 kg (CM-3)<br>± 6.3 lbs / 9.9 lbs / 10.5 lbs | **Intle pressure** | 200/300 bar<br>2900/4350 psig |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/16/35 bar<br>145/232/507.5 psig |
| **Seal material** | PTFE | **Temperature range** | 20°C to + 60°C<br>4°F to + 140°F | **Nominal Flow CV** | 10/20/30 $Nm^3/h$ ($N_2$)<br>0.1 |
| **Diaphragm** | Hastelloy® | **Gauges** | High and low pressure<br>(¼" NPT) | **Oxygen use** | Ok with Brass and Stainless Steel |

## PRODUCT CONFIGURATOR - WITH DUOBLOC

| | Body Material | Inlet Pressure | Version type | Outlet Pressure | Inlet Connection | Outlet Connection | Gauges | Purge | Gas Type |
|---|---|---|---|---|---|---|---|---|---|
| CM | L | 280 | T2 | 10 | N | 6 | 1 | 0 | N2 |
| | Chrome plated brass L | 200 bar 2900 psig 280 | Type 2 T2 | 10 bar 145 psig 10 | ¼ NPT N | ¼ NPT N | With standard gauges 1 | Without 0 | |
| | Stainless Steel I | 300 bar 4350 psig 380 | Type 3 T3 | 16 bar 232 psig 16 | | Compression tube fitting UMSI6 6 | HP inductive contact gauge 2 | With connected purge and relief valve* CL | |
| | | | | 35 bar 507.5 psig 35 | | Compression tube fitting UMSI8 8 | LP inductive contact gauge 3 | | |
| | | | | | | Compression tube fitting UMSI10 10 | HP/LP inductive contact gauge 4 | | |
| | | | | | | Compression tube fitting UMSI⅛" ⅛" | | | |
| | | | | | | Compression tube fitting UMSI¼" ¼" | | | |
| | | | | | | Compression tube fitting UMSI⅜" ⅜" | | | |
| | | | | | | Compression tube fitting UMSI½" ½" | | | |

## PRODUCT CONFIGURATOR - WITH VD VALVE SERIES

| | Body Material | Inlet Pressure | Outlet Pressure | Inlet Connection | Outlet Connection | Gauges | Purge | Configuration | Gas Type |
|---|---|---|---|---|---|---|---|---|---|
| CMC | CB | 280 | 10 | N | 6 | 1 | 0 | S | N2 |
| | Chrome plated brass CB | 200 bar 2900 psig 280 | 10 bar 145 psig 10 | ¼ NPT N | ¼ NPT (without outlet valve) N | With standard gauges 1 | With 1 | Standard S | |
| | Stainless Steel SS | 300 bar 4350 psig 380 | 16 bar 232 psig 16 | | Outlet valve (Standard ¼NPT) OVN | HP inductive contact gauge 2 | Without 0 | With Collected purge and relief valve CL | |
| | | | 35 bar 507.5 psig 35 | | Outlet valve G ⅜ F OVG3 | LP inductive contact gauge 3 | | | |
| | | | | | Outlet valve G ¼ F (with adapter) OVG1 | HP/LP inductive contact gauge 4 | | | |

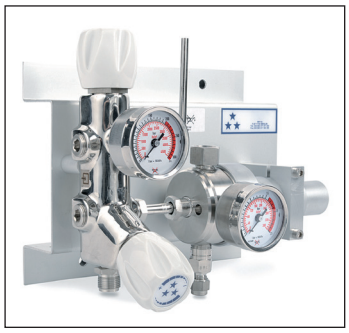
*Not available for T1 (type 1)

# SERIES CM 104 | SUPPLY BOARD

- Diaphragm single Stage
- Purity up to 6.0
- Inlet Pressure:
  200 bar (2900 psig)
- Outlet Pressure:
  10/25/50 bar
  145/363/725 psig
- Ammonia ($NH_3$) version:
  P1 = 8 bar (116 psig)
  P2 = 3 bar (43.5 psig)

★ 1 duobloc
★ 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 1 purge outlet
★ Equipped with
SI 220 regulator
★ Only in stainless steel

Special requirements on request



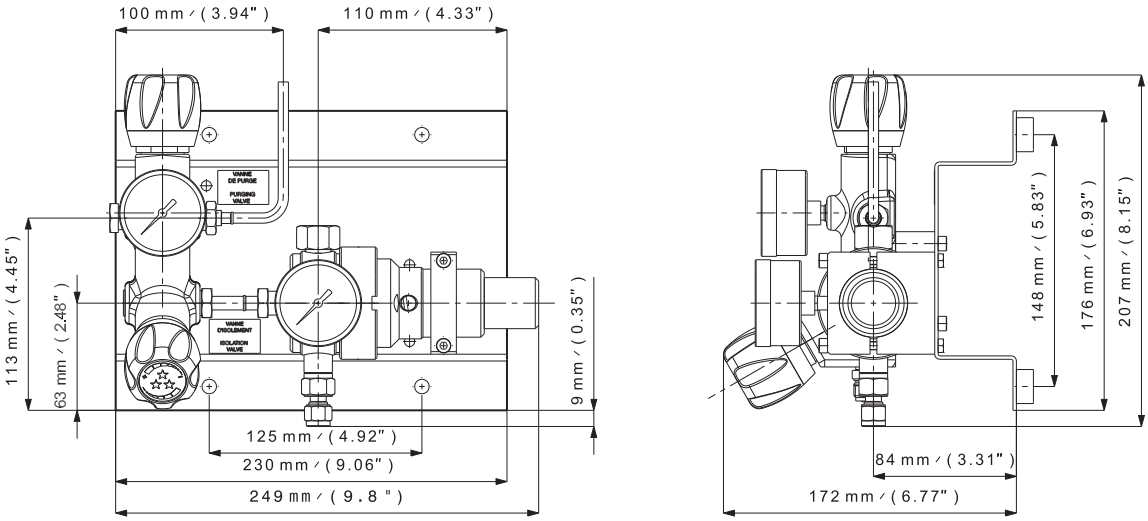
3 inlet ports

## APPLICATIONS

- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing some extension and reducing the amount of leaking points.
- Suited for pure and corrosive gases for high purity applications
- Specifically dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units.

## KEY FEATURES

- Possible to connect 2 gas cylinders and a gas for purging operation (up to 3 cylinders without any extension - without using the purge line).
- Ready to install with all components pre-mounted on a board.
- Can be equipped with a collection tube on the relief valve and purge outlet.
- Also can be equipped with an outlet shut-off valve.
- The CMI 104 can be connected to an alarm box using contact gauges.
- $NH_3$ version available:
  P1 = 8 bar/P2 = 3 bar/Q = 5 $Nm^3/h$.

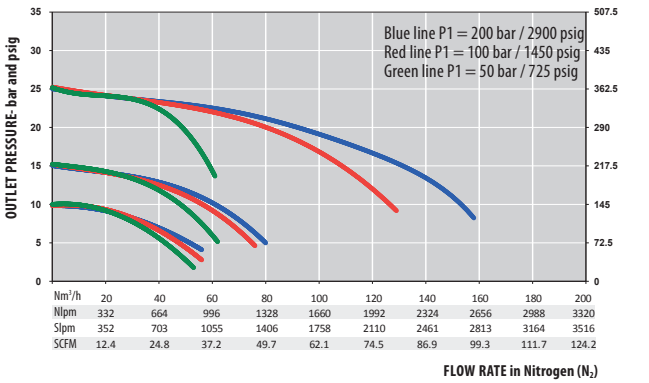
## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet)<br>or<br>¼ NPT (inlet/outlet) | **Weight** | ± 4,5 kg<br>± 9.9 lbs | **Inlet pressure** | 200 bar (2900 psig)<br>$NH_3$: 8 bar (116 psig) |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/25/50 bar<br>145/363/725 psig<br>$NH_3$: 3 bar (43.5 psig) |
| **O-ring (relief valve)** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 10/10/50 $Nm^3/h$ ($N_2$)<br>$NH_3$: 5 $Nm^3/h$ ($NH_3$) |
| **Diaphragm** | AISI 304<br>Hastelloy® (50 bar) | **Gauges** | High and low pressure<br>(M10 x 1 or ⅛ NPT) | **Oxygen use** | No |

## FLOW CURVES

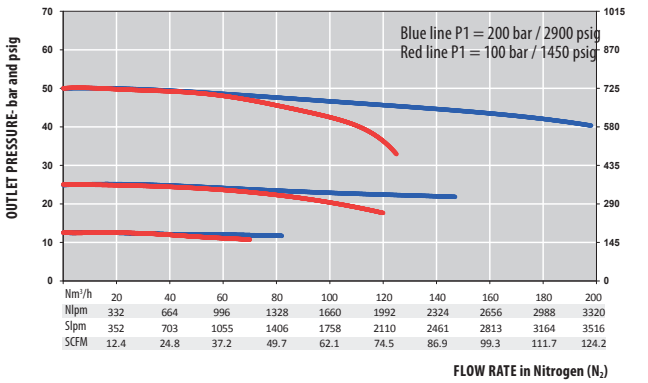
**FLOW CURVE CM 104-25 REGULATOR**

SET: 25 bar / 362.5 psig
15 bar / 217.5 psig
10 bar / 145 psig




**FLOW CURVE CM 104-50 REGULATOR**

SET: 50 bar / 725 psig
25 bar / 362.5 psig
12,5 bar / 181.25 psig




## PRODUCT CONFIGURATOR

| Body Material | | | Outlet Pressure | | End Connections | | O-ring Material (relief valve) | Gauges | | Outlet Valve | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CMI | | 104 | 10 | | G | | EPDM | 1 | | NV | | A | |
| Stainless steel | CMI | | 10 bar<br>145 psig | 10 | G ⅜ - Female | G | EPDM - standard | with gauges - standard | 1 | without outlet shut-off valve (standard) | NV | standard configuration | A |
| | | | 25 bar<br>362.5 psig | 25 | ¼ NPT - Female | N | NBR | with HP inductive contact gauge | 2 | with outlet shut-off valve | V | "mirror" version - duoblock on right side | R |
| | | | 50 bar<br>725 psig | 50 | | | FPM | with LP inductive contact gauge | 4 | | | with connected purge and safety valve | CL |
| | | | Ammonia special version (P2 = 3 bar) | $NH_3$ | | | | with HP & LP inductive contact gauges | 6 | | | "mirror" with connected purge and S.V. | RCL |

# SERIES CM 104 UC | ULTRA CLEAN SUPPLY BOARD

- Diaphragm single stage
- UHP applications
- Inlet pressure: 200 bar (2900 psig)
- Outlet pressure: 15 bar (218 psig)

★ 1 straight duobloc Ultra Clean
★ 2 inlets/1 outlet
★ 1 outlet face seal ¼ turn shut-off valve
★ Inlet/outlet pressure gauges
★ 1 purge outlet
★ 1 burst disc
★ Regulation done by a SI 220 Ultra Clean regulator

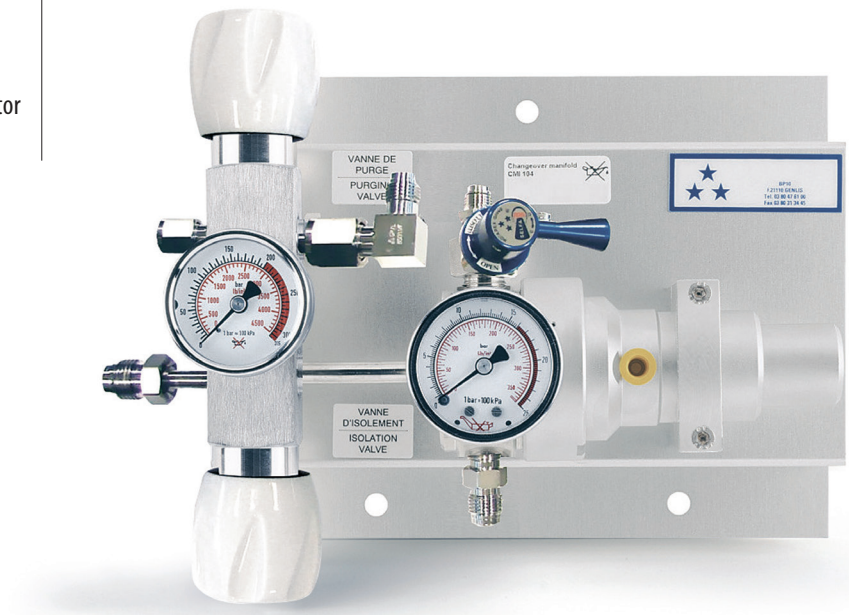
Special requirements on request

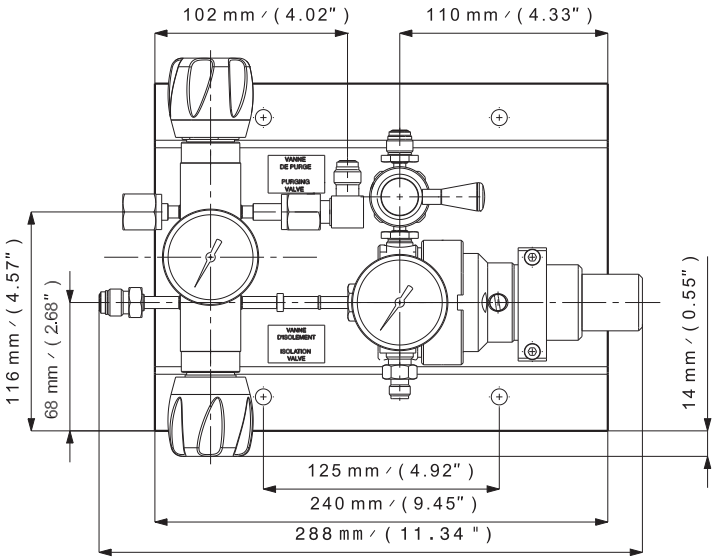
## APPLICATIONS

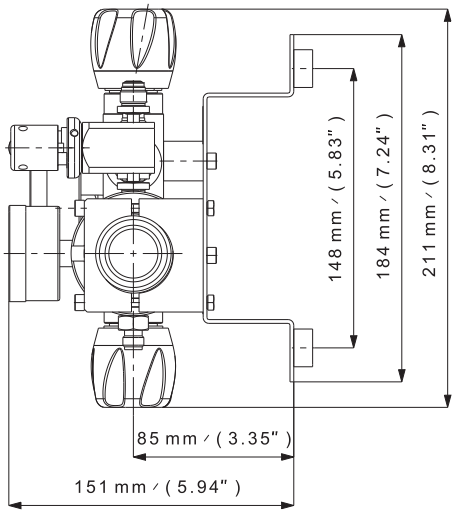
- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing some extension and reducing the amount of leaking points.
- Ideally suited for pure and corrosive gases for high purity applications - primarily dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units.

## KEY FEATURES

- Possible to connect 1 gas cylinder and a gas for purging operation.
- Ready to install with all components pre-mounted on a board.
- The CMI 104 can be connected to an alarm box using a contact gauge.



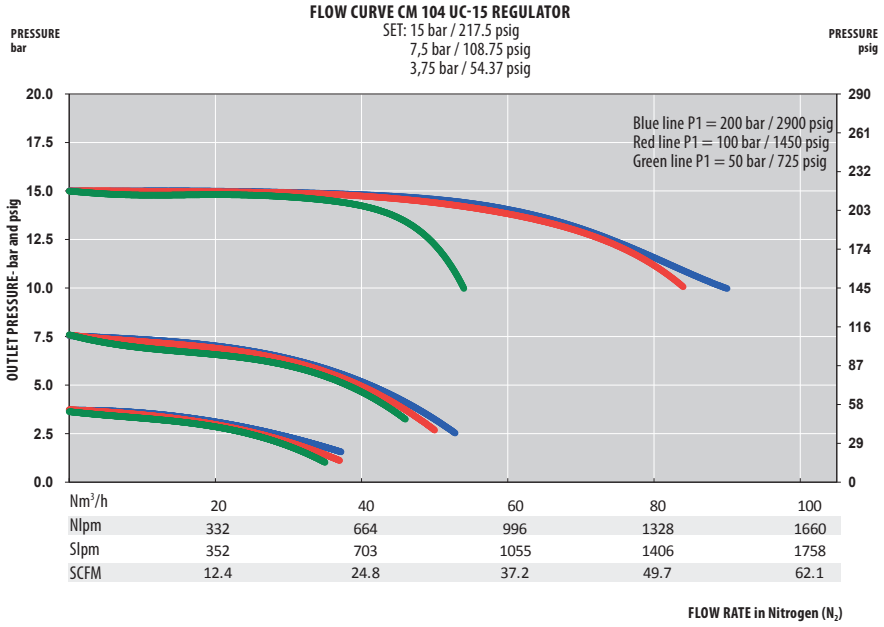



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | ¼ face seal (inlet/outlet) | **Weight** | ± 4,5 kg<br>± 9.9 lbs | **Inlet pressure** | 200 bar<br>2900 psig |
| **Surface finish** | < 0.4 µm Ra (15 µin Ra) | **Leak rate** | $10^{-9}$ mbar ℓ/s He | **Outlet pressure** | 15 bar<br>218 psig |
| **Seat seal** | PCTFE | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 25 $Nm^3/h$ ($N_2$) |
| **Diaphragm** | Hastelloy® | **Gauges** | High and low pressure (¼ face seal) | **Oxygen use** | No |

## FLOW CURVES




## PRODUCT CONFIGURATOR

| Body Material | | | | | Gauges | |
|---|---|---|---|---|---|---|
| CMI | | 104 | UC | 15 | 1 | |
| Stainless steel | CMI | | | | with gauges - standard | 1 |
| | | | | | with HP inductive contact gauge | 2 |
| | | | | | with LP inductive contact gauge | 4 |
| | | | | | with HP & LP inductive contact gauges | 6 |

# SERIES CM 254 / CM 454 | SUPPLY BOARD

- Piston single stage
- Purity up to 6.0
- Inlet Pressure:
  200 bar (2900 psig)
- Outlet Pressure:
  60 bar (870 psig)
  or 160 bar (2320 psig)

★ 1 duobloc
★ 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 purge outlet
★ $O_2$ application compatible
★ SL 250 regulator integrated (CM 254)
★ SL 400 regulator integrated (CM 454)

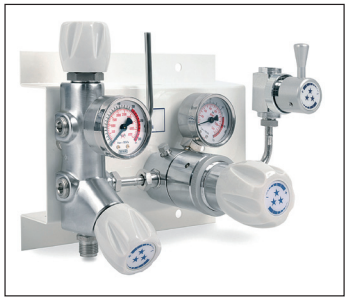
Special requirements on request

## APPLICATIONS

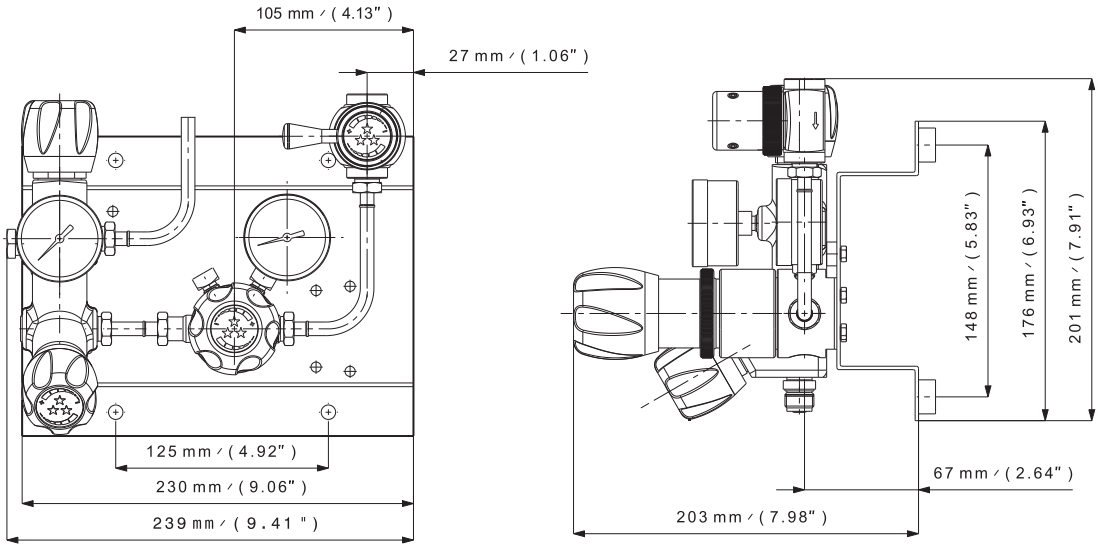
- Ideally suited for pure gases for high purity applications to put vessels under pressure and for leak detection and purge of pipe work.
- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing some extension and reducing the amount of leaking points.

## KEY FEATURES

- Adjustable outlet pressure
- Possible to connect 2 gas cylinders and a gas for purging operation (up to 3 cylinders without any extension - without using the purge line).
- Ready to install with all components pre-mounted on a board.
- Connectable to an alarm box using contact gauges.
- Equipped with a ¼ turn shut-off valve on the outlet.
- Collection tube available on the relief valve and purge outlet.
- Downstream regulation system can be decompressed by turning the hand wheel counter-clockwise.



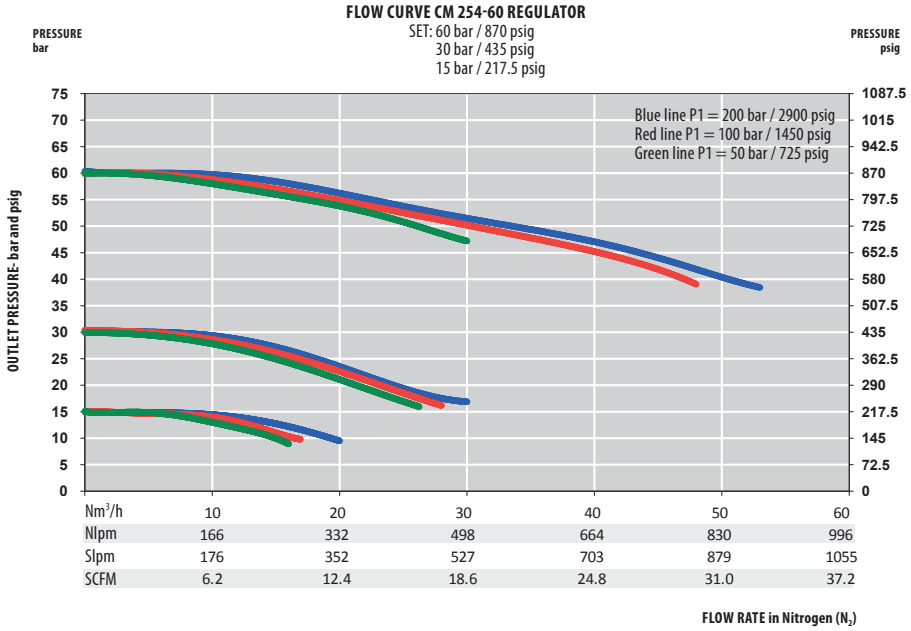
3 inlet ports



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet) | **Weight** | ± 4,5 kg<br>± 9.9 lbs | **Inlet pressure** | 200 bar<br>2900 psig |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 60/160 bar<br>870/2320 psig |
| **O-ring** | NBR - standard<br>EPDM<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 10/30 $Nm^3/h$ ($N_2$) |
| **Piston** | AISI 316L | **Gauges** | High and low pressure<br>(M10 x 1) | **Oxygen use** | OK for brass with 200 bar inlet pressure |

## FLOW CURVES




## PRODUCT CONFIGURATOR

| Body Material | | Outlet Pressure | | End Connections | | O-ring Material | Gauges | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|
| CML | | 454 | | G | | NBR | 1 | | A | |
| Chrome Plated Brass | CML | 60 bar 870 psig | 254 | G ⅜ - Female | G | NBR - standard | with gauges - standard | 1 | Standard Configuration | A |
| | | 160 bar 2320 psig | 454 | | | EPDM | with HP inductive contact gauge | 2 | with connected purge and relief valve | CL |
| | | | | | | FPM | with LP inductive contact gauge | 4 | | |
| | | | | | | | with HP & LP inductive contact gauges | 6 | | |

# SERIES CM 504 | SUPPLY BOARD

- Diaphragm single stage
- Balanced-Valve Technology
- Purity up to 6.0
- Inlet pressure:
  200 bar (2900 psig)
- Outlet pressure:
  10/25/50 bar
  145/363/725 psig

★ 1 duobloc
★ 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 1 purge outlet
★ $O_2$ application compatible (brass only)
★ Regulator with Balanced-Valve Technology

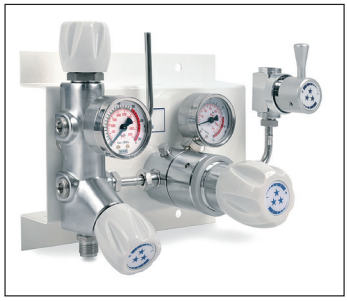
Special requirements on request

## APPLICATIONS

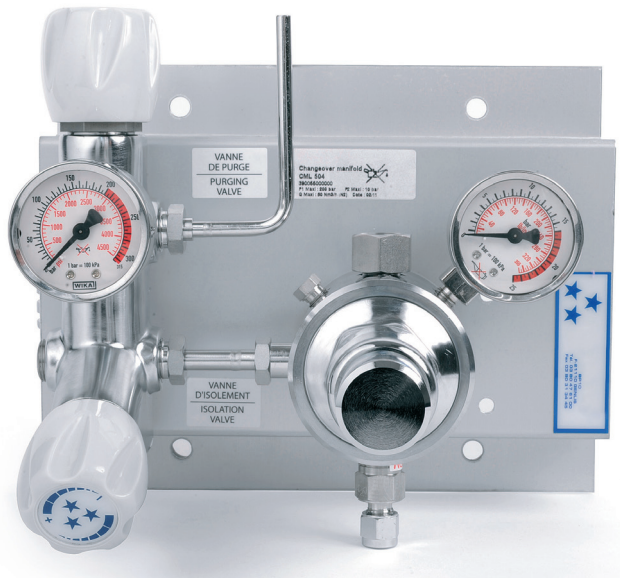
- Ideally suited for pure and corrosive gases for high purity applications dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications where high flows are required.
- Used in combination with a switch over board for the regulation of the emergency source during maintenance on the principal source. This avoids installing some extension and reducing the amount of leaking points.

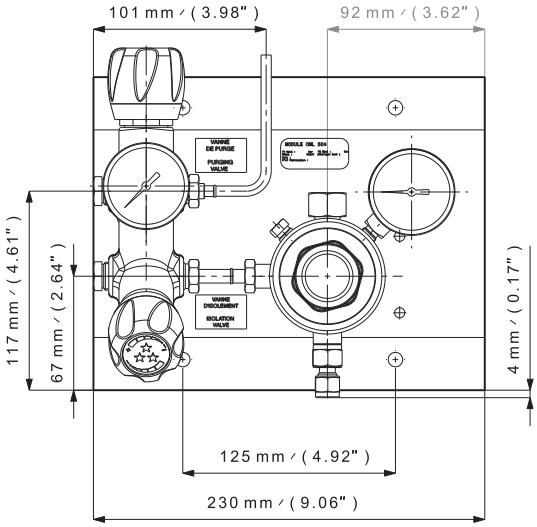
## KEY FEATURES

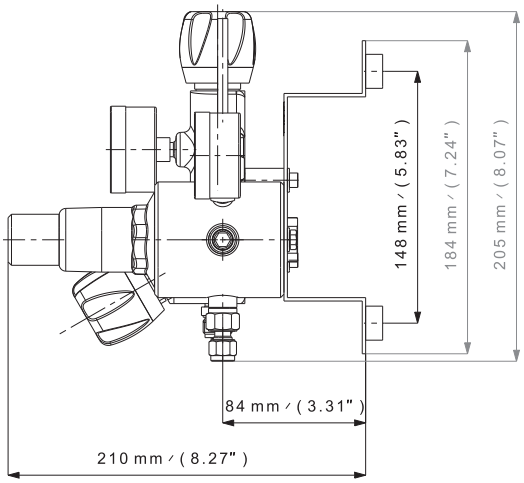
- Possible to connect 2 gas cylinders and a gas for purging operation (up to 3 cylinders without any extension - without using the purge line).
- Ready to install with all components pre-mounted on a board.
- Best-in-class pressure stability with Balanced-Valve Technology: the effect of inlet pressure fluctuations on outlet pressure are minimized. Balanced-Valve Technology enables the delivery of a very stable outlet pressure and flow even with high flow line regulators.
- Increased regulator life and reduced ownership costs.
- Can be equipped with a collection tube on the relief valve and purge outlet.
- The CM 504 can be connected to an alarm box using contact gauges.



3 inlet ports



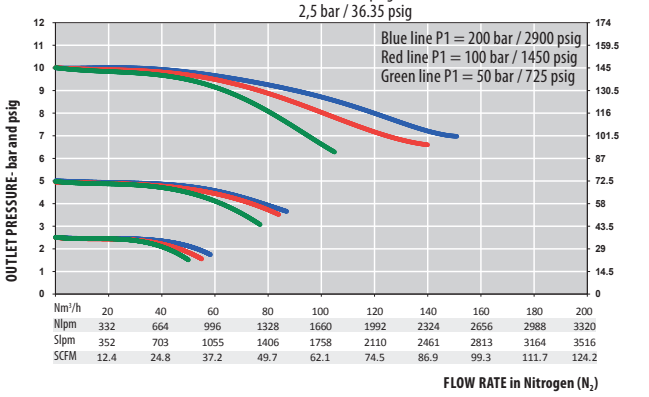



## SPECIFICATIONS

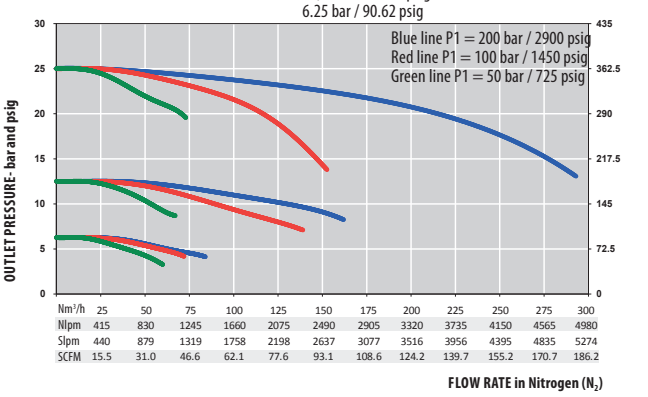
| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet)<br>or<br>¼ NPT (inlet/outlet) | **Weight** | ± 5,4 kg<br>± 11.8 lbs | **Inlet pressure** | 200 bar<br>2900 psig |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/25/50 bar<br>145/363/725 psig |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 50/50/100 $Nm^3/h$ ($N_2$) |
| **Diaphragm** | AISI 304 (chrome plated version)<br>Hastelloy® (stainless steel version) | **Gauges** | High and low pressure<br>(M10 x 1 or ⅛ NPT) | **Oxygen use** | OK for brass with 200 bar inlet pressure |

## FLOW CURVES

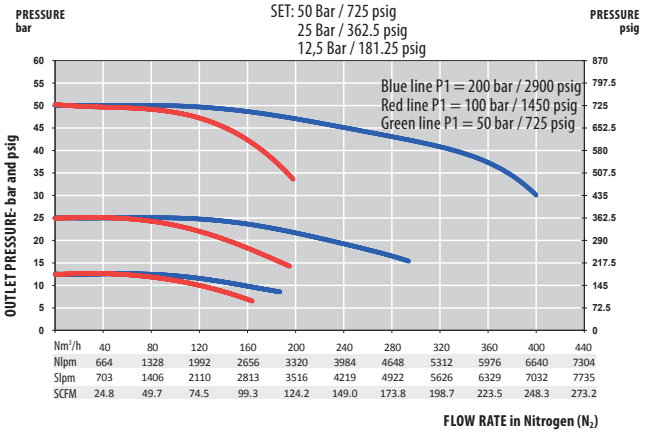
**FLOW CURVE CM 504-10 REGULATOR**
SET: 10 bar / 145 psig
5 bar / 72.5 psig
2,5 bar / 36.35 psig




**FLOW CURVE CM 504-25 REGULATOR**
SET: 25 bar / 362.5 psig
12,5 bar / 181.25 psig
6.25 bar / 90.62 psig




**FLOW CURVE CM 504-50 REGULATOR**
SET: 50 Bar / 725 psig
25 Bar / 362.5 psig
12,5 Bar / 181.25 psig




## PRODUCT CONFIGURATOR

| Body Material | | | Outlet Pressure | | End Connections | | O-ring Material | Gauges | | Fix or adjustable Outlet Pressure | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CML | | 504 | 10 | | G | | EPDM | 1 | | FX | | A | |
| Chrome Plated Brass | CML | | 10 bar 145 psig | 10 | G ⅜ - Female | G | EPDM - standard | with gauges - standard | 1 | with fixed P2 (standard) | FX | standard configuration | A |
| Stainless steel | CMI | | 25 bar 362.5 psig | 25 | ¼ NPT - Female | N | NBR | with HP inductive contact gauge | 2 | with adjustable P2 (handwheel) | ADJ | "mirror" version - duoblock on right side | R |
| | | | 50 bar 725 psig | 50 | | | FPM | with LP inductive contact gauge | 4 | | | with connected purge and relief valve | CL |
| | | | | | | | | with HP & LP inductive contact gauges | 6 | | | "mirror" with connected purge and S.V. | RCL |

# SERIES CEN | SWITCH OVER BOARD

- Diaphragm single stage
- Balanced-Valve Technology
- Purity up to 5.5 (6.0 without the ball valve)
- Inlet pressure: 200 bar (2900 psig) or 300 bar (4350 psig)
- Outlet pressure: 10/16/30/50 bar 145/232/435/725 psig
- Acetylene version: P1 = 25 bar (362.5 psig) P2 = 1 bar (14.5 psig)
- Propane version: P1 = 25 bar (362.5 psig) P2 = 4 bar (58 psig)

★ 2 duoblocs
★ 2 x 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 2 purge outlets
★ $O_2$ application compatible

Special requirements on request

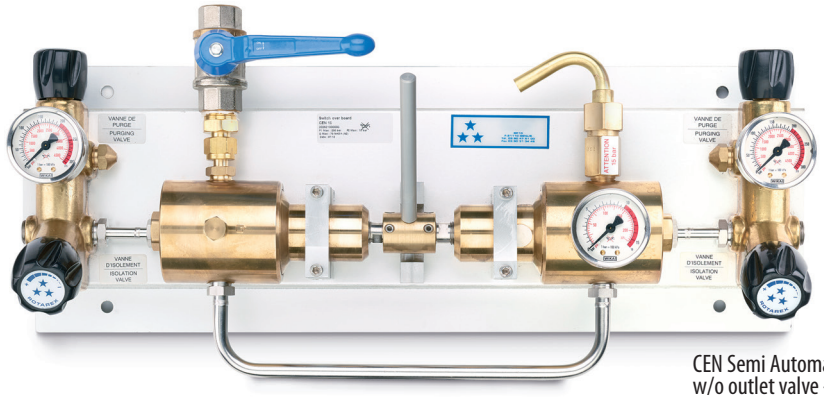
## APPLICATIONS

- Suitable for the high flow supply of non-corrosive industrial gases when high flow are required like for plasma TIG and MIG cutting and welding applications.

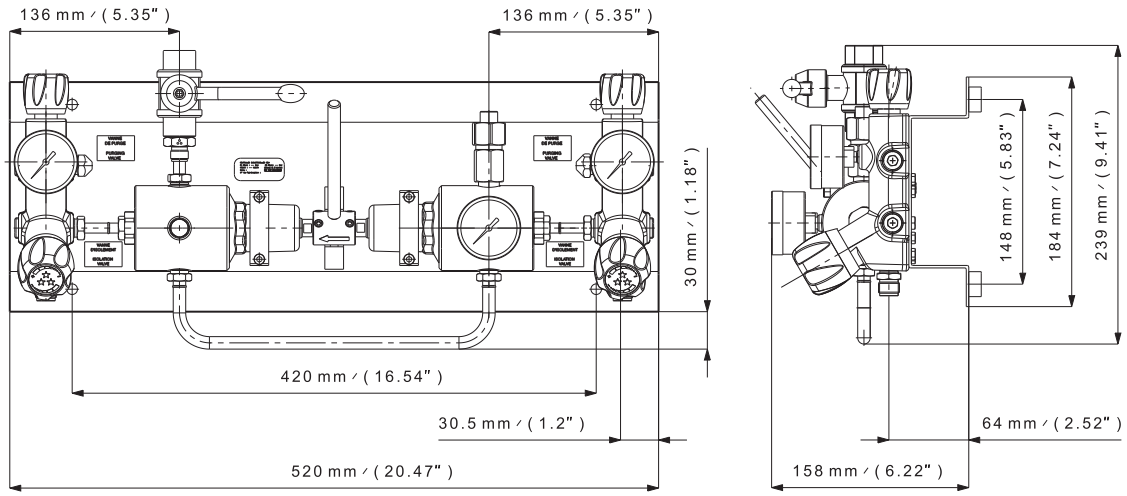
## KEY FEATURES

- Possible to connect 4 gas cylinders without any extension and a gas for purging operation (up to 6 cylinders without any extension - without using the purge line).
- No risk that a source flows into the other one.
- Exists also in an AUTOMATIC version (with 10 and 16 bar outlet pressure). This automatic switch over board does not need to be reset to allow reversal of the cycle.
- Ready to install with all components pre-mounted on a board.
- Best-of-class pressure stability with Balanced-Valve Technology: the effect of inlet pressure fluctuations on outlet pressure are minimized. Balanced-Valve Technology enables the delivery of a very stable outlet pressure and flow.
- Reduced seat effort increases life of the regulator and reduces the ownership cost.
- Non-whipping filter on bottom inlet improves safety of the operator during the cylinder replacement.
- Can be equipped with an outlet ¼ turn shut-off valve (Multi-turn valve with 30 bar or 50 bar version for oxygen use).
- Can also be equipped with a collection tube on the relief valve and purge outlet.
- Using contact gauges, the switch over board can also be equipped with an alarm box to indicate the source status.
- Special carbon dioxide $CO_2$ version available (inlet pressure 200 bar or 300 bar with maximal flow = 80m³/h)
- Special FDA compatible version available on demand
- Acetylene version available: P1 = 25 bar/P2 = 1 bar/Q = 6,5 Nm³/h
- Used with acetylene, this product must be installed with a flash back arrestor complying with the standard EN 730 located downstream.
- Propane version also available: P1 = 25 bar/P2 = 4 bar/Q = 10 Nm³/h

CEN Automatic version



CEN Semi Automatic version
w/o outlet valve - chrome plated



## SPECIFICATIONS

| | |
|---|---|
| **Female ports** | G ⅜ (inlet) - G ½ (outlet)<br>or<br>⅜ NPT (inlet) - G ½ (outlet) |
| **Seat seal** | PCTFE |
| **O-ring** | EPDM - standard<br>NBR<br>FPM |
| **Diaphragm** | AISI 304 or Hastelloy® |
| **Weight** | ± 13,8 kg<br>± 27.0 lbs |

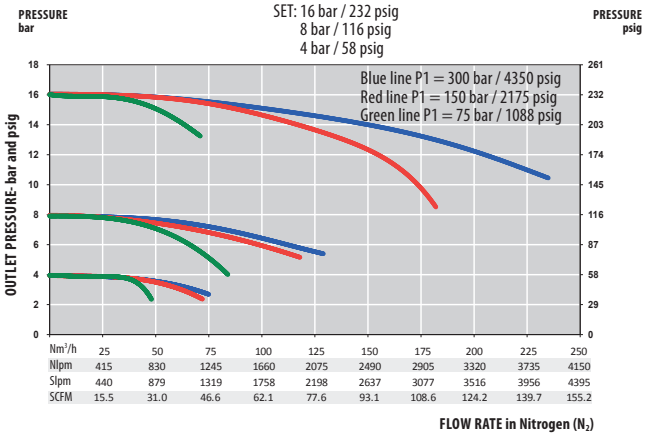
| | |
|---|---|
| **Leak rate** | w/outlet valve: $1.10^{-4}$ mbar ℓ/s He<br>w/o outlet valve: $1.10^{-8}$ mbar ℓ/s He |
| **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F |
| **Gauges** | High and low pressure<br>(M10 x 1 or G 1/4) |

| | |
|---|---|
| **Inlet pressure** | 200 bar / 300 bar<br>2900 psig / 4350 psig<br>AD and PR4: 25 bar / 362.5 psig |
| **Outlet pressure** | 10/16/30/50 bar<br>145/232/435/725 psig<br>AD: 1 bar (14,5 psig)<br>PR4: 4 bar (58 psig) |
| **Nominal Flow 200 bar version** | 70/110/150/180 $Nm^3/h$ ($N_2$) |
| **Nominal Flow 300 bar version** | 50/70/100/130 $Nm^3/h$ ($N_2$) |
| **Nominal Flow AD and PR4** | AD: 6,5 $Nm^3/h$<br>PR4: 10 $Nm^3/h$ |
| **Oxygen use** | OK with inlet pressure 200 and 300 bar |

## FLOW CURVES

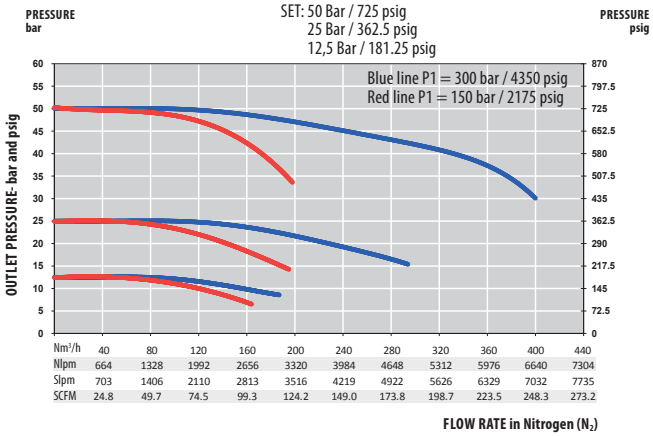
**FLOW CURVE CEN-16 REGULATOR**

SET: 16 bar / 232 psig
8 bar / 116 psig
4 bar / 58 psig




**FLOW CURVE CEN-50 REGULATOR**

SET: 50 Bar / 725 psig
25 Bar / 362.5 psig
12,5 Bar / 181.25 psig




## PRODUCT CONFIGURATOR

| | Inlet Pressure | Version type | Outlet Pressure | Body Material | End Connections | O-ring Material | Gauges | Outlet Valve | Configurations |
|---|---|---|---|---|---|---|---|---|---|
| CEN | 300 | AUTO | 16 | L | G | EPDM | 1 | V | A |
| | 200 bar 2900 psig **200** | Automatic* **AUTO** | 10 bar 145 psig **10** | Raw Brass **LB** | In: G ⅜ Out: G ½ - Female **G** | EPDM - standard | with gauges - standard **1** | without outlet shut-off valve (standard) **NV** | Standard configuration **A** |
| | 300 bar 4350 psig **300** | Semi-automatic **SEMI** | 16 bar 232 psig **16** | Chrome Plated Brass **L** | In: ⅜ NPT Out: G ½ - Female **N** | NBR | with HP inductive contact gauge **2** | with outlet shut-off valve **V** | with connected purge **CL** |
| | | *only in 10 bar | 30 bar 435 psig **30** | | | FPM | with LP inductive contact gauge **4** | | |
| | | | 30 OX bar (435 psig) oxygen use **30 OX** | | | | with HP & LP inductive contact gauges **6** | | |
| | | | 50 bar 725 psig **50** | | | | | | |
| | | | 50 OX bar (725 psig) oxygen use **50 OX** | | | | | | |
| | | | Acetylene special version (P2 = 1 bar) **AD** | | | | | | |
| | | | Propane special version (P2 = 4 bar) **PR4** | | | | | | |

# SERIES TD 100 | SWITCH OVER BOARD

- Diaphragm single stage
- Purity up to 6.0
- Inlet pressure:
  200 bar (2900 psig)
- Outlet pressure:
  10/25/50 bar
  145/363/725 psig
- $NH_3$ version:
  P1 = 8 bar (116 psig)
  P2 = 3 bar (43.5 psig)

★ 2 duoblocs
★ 2 x 3 inlets/1 outlet
★ 2 inlets/1 outlet pressure gauges
★ 1 relief valve
★ 2 purge outlets
★ Semi-automatic and Manual Version available
★ Regulation done by 2 x S 220 regulators
★ Only in stainless steel

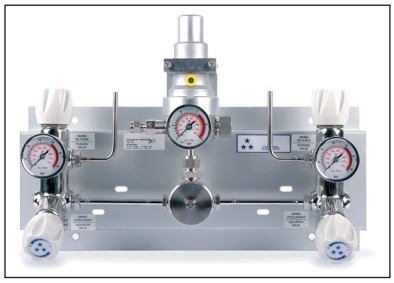
Special requirements on request

## APPLICATIONS

- Ideally suited for corrosive gases and high purity applications for low flow applications.
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units.

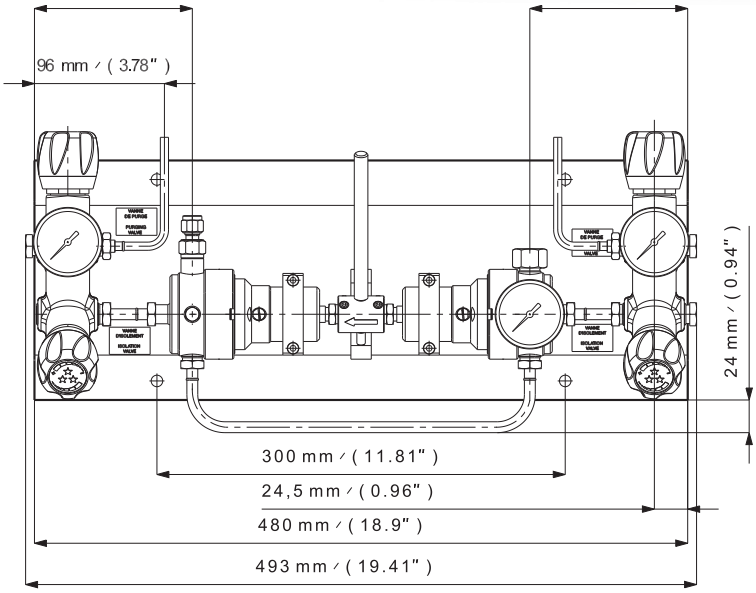
## KEY FEATURES

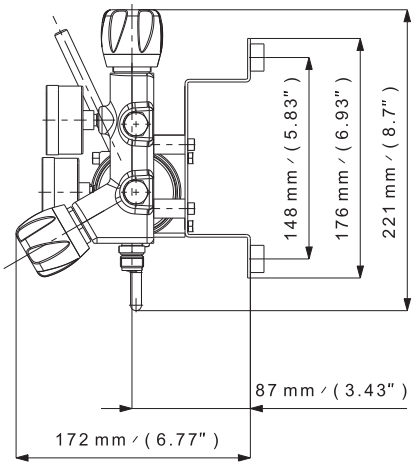
- Possible to manage 4 gas cylinders without any extension and a gas for purging operation (up to 6 cylinders without any extension - without using the purge line).
- No risk that a source flows into the other one.
- Exists in Manual and Semi-automatic versions.
- Ready to install with all components are mounted on a board.
- Can be equipped with a collectable tube on the relief valve and purge outlet.
- Can also be equipped with an outlet shut-off valve.
- Using contact gauges, the switch over board can also be equipped with an alarm box to indicate the source status.
- $NH_3$ version available:
  P1 = 8 bar/P2 = 3 bar/Q = 5 $Nm^3/h$.



TDI 103 Manual version


TDI 102 Semi-automatic version



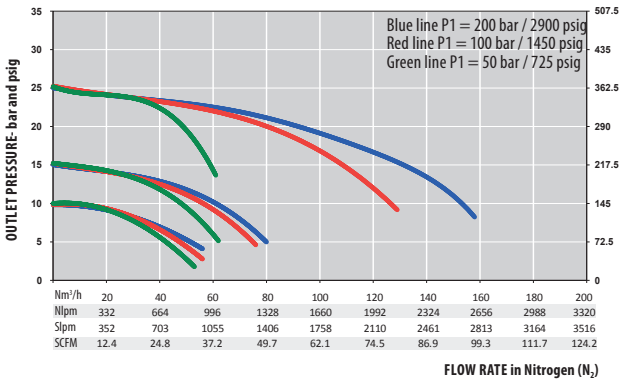
## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet)<br>or<br>¼ NPT (inlet/outlet) | **Weight** | ± 15,0 kg<br>± 33.0 lbs | **Inlet pressure** | 200 bar (2900 psig)<br>$NH_3$: 8 bar (116 psig) |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/25/50 bar<br>145/363/725 psig<br>$NH_3$: 3 bar (43.5 psig) |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 10/10/50 $Nm^3/h$ ($N_2$)<br>$NH_3$: 5 $Nm^3/h$ ($NH_3$) |
| **Diaphragm** | Hastelloy® | **Gauges** | High and low pressure<br>(M10 x 1 or ⅛ NPT) | **Oxygen use** | No |

## FLOW CURVES

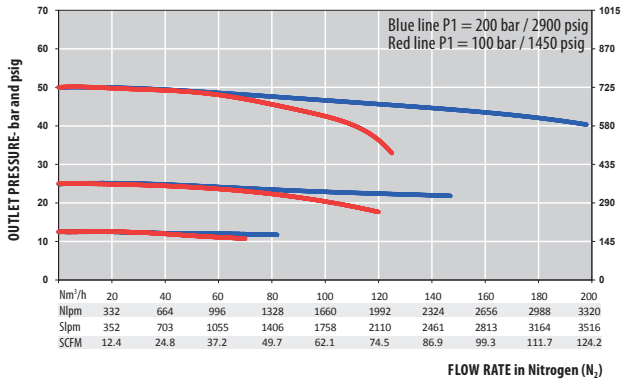
**FLOW CURVE TD 100-25 REGULATOR**

SET: 25 bar / 362.5 psig
15 bar / 217.5 psig
10 bar / 145 psig




**FLOW CURVE TD 100-50 REGULATOR**

SET: 50 bar / 725 psig
25 bar / 362.5 psig
12,5 bar / 181.25 psig




## PRODUCT CONFIGURATOR

| Body Material | | Version Type | | Outlet Pressure | | End Connections | | O-ring Material | Gauges | | Outlet Valve | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TDI | | 102 | | 10 | | G | | EPDM | 1 | | V | | A | |
| Stainless steel | TDI | Semi-automatic | 102 | 10 bar<br>145 psig | 10 | G ⅜ - Female | G | EPDM - standard | with gauges - standard | 1 | without outlet shut-off valve (standard) | NV | Standard configuration | A |
| | | manual * | 103 | 25 bar<br>362.5 psig | 25 | ¼ NPT - Female | N | NBR | with HP inductive contact gauge | 2 | with outlet shut-off valve | V | with connected purge and relief valve | CL |
| | | *Only in10 bar | | 50 bar<br>725 psig | 50 | | | FPM | with LP inductive contact gauge | 4 | | | | |
| | | | | Ammonia special version (P2 = 3 bar) | NH3 | | | | with HP & LP inductive contact gauges | 6 | | | | |

# SERIES TD 102 UC | ULTRA HIGH PURITY SWITCH OVER BOARD

- Diaphragm single stage
- UHP applications
- Inlet pressure:
  200 bar (2900 psig)
- Outlet pressure:
  10 /25/50 bar
  145/363/725 psig

★ 2 straights duoblocs Ultra Clean
★ 2 x 2 inlets /1 outlet
★ 1 outlet face seal ¼ turn shut-off valve
★ 2 inlets/1 outlet pressure gauges
★ 2 purge outlets
★ 1 burst disc
★ Semi-automatic Version
★ Regulation done by 2 x S 220 UHP regulators
★ Only in stainless steel

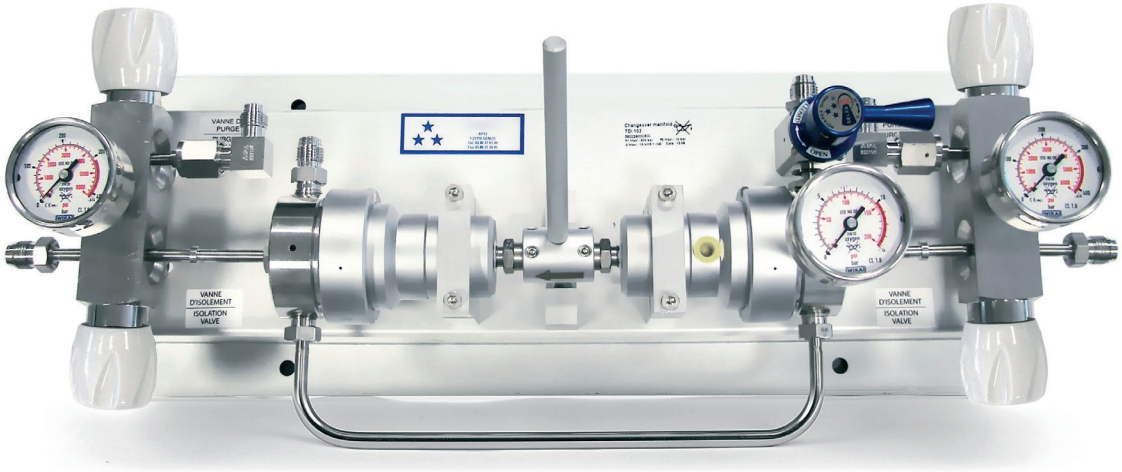
Special requirements on request

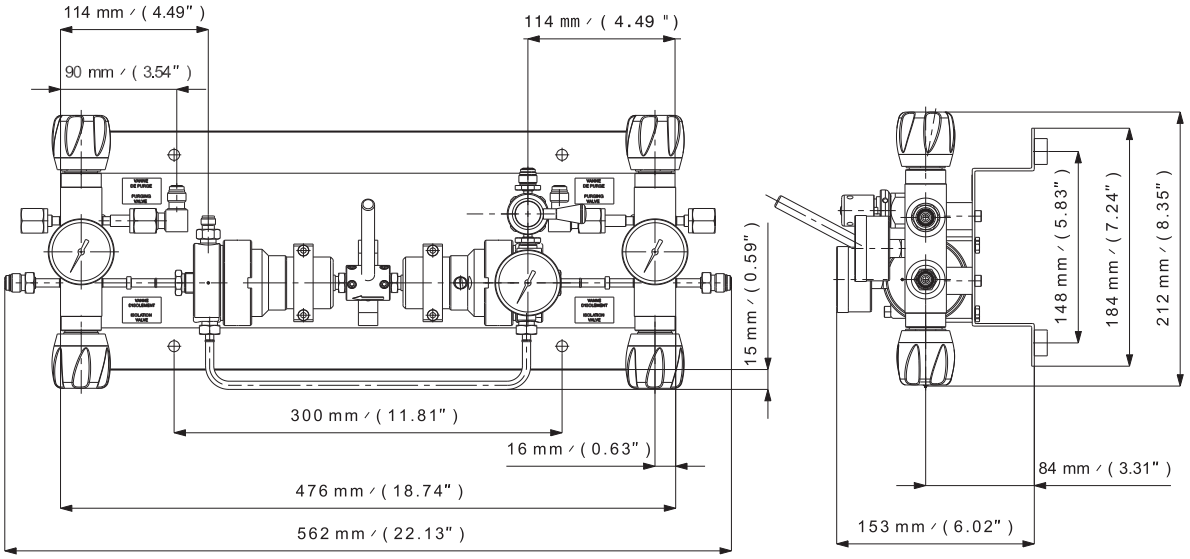
## APPLICATIONS

- This switch over board is ideally suited for pure and corrosive gases for ultra high purity applications
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units and semi conductor plants

## KEY FEATURES

- Semi-automatic.
- Possible to manage 2 gas cylinders without any extension and a gas for purging operation.
- No risk that a source flows into the other one.
- Ready to install with all components pre-mounted on a board.
- Using contact gauges, the switch over board can also be equipped with an alarm box to indicate the source status.



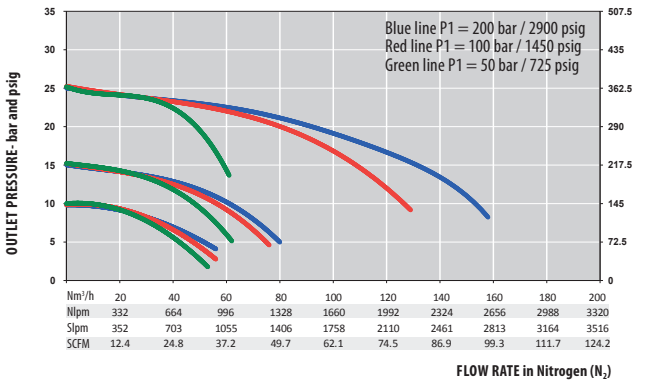


## SPECIFICATIONS

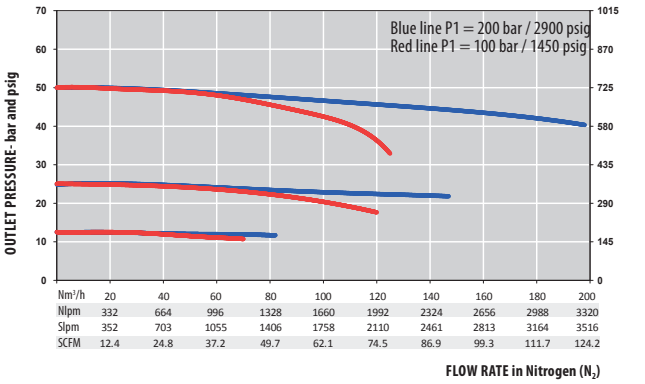
| | | | | | |
|---|---|---|---|---|---|
| **Male ports** | face seal ¼ (inlet/outlet) | **Weight** | ± 15,0 kg ± 33.0 lbs | **Inlet pressure** | 200 bar 2900 psig |
| **Surface finish** | < 0.4 µm Ra (15 µin Ra) | **Leak rate** | $10^{-9}$ mbar ℓ/s He | **Outlet pressure** | 10/25/50 bar 145/363/725 psig |
| **Seat seal** | PCTFE | **Temperature range** | -20°C to + 60°C -4°F to + 140°F | **Nominal Flow** | 10/10/10 $Nm^3/h$ ($N_2$) |
| **Diaphragm** | Hastelloy® | **Gauges** | High and low pressure (¼ face seal) | **Oxygen use** | No |

## FLOW CURVES

**FLOW CURVE TD 102 UC-25 REGULATOR**
SET: 25 bar / 362.5 psig
15 bar / 217.5 psig
10 bar / 145 psig




**FLOW CURVE TD 102 UC-50 REGULATOR**
SET: 50 bar / 725 psig
25 bar / 362.5 psig
12,5 bar / 181.25 psig




## PRODUCT CONFIGURATOR

| Body Material | | | | Outlet Pressure | | Gauges | |
|---|---|---|---|---|---|---|---|
| TDI | | 102 | UC | 10 | | 1 | |
| Stainless steel | **TDI** | | | 10 bar 145 psig | **10** | with gauges - standard | **1** |
| | | | | 25 bar 362.5 psig | **25** | with HP inductive contact gauge | **2** |
| | | | | 50 bar 725 psig | **50** | with LP inductive contact gauge | **4** |
| | | | | | | with HP & LP inductive contact gauges | **6** |

# SERIES TD 200 | SWITCH OVER BOARD

- Diaphragm single stage
- Purity up to 6.0
- Inlet pressure:
  200 bar (2900 psig)
  or 300 bar (4350 psig)
- Outlet pressure:
  10 bar (145 psig)
  or 16 bar (232 psig)

★ 2 duoblocs
★ 2 x 3 inlets/1 outlet
★ 2 inlets/1 outlet pressure gauges
★ 1 relief valve
★ 2 purge outlets
★ Manual, semi-automatic and automatic version available.
★ Regulation done by 2 x S 215
★ $O_2$ application compatible (brass only 200 bar version)

Special requirements on request

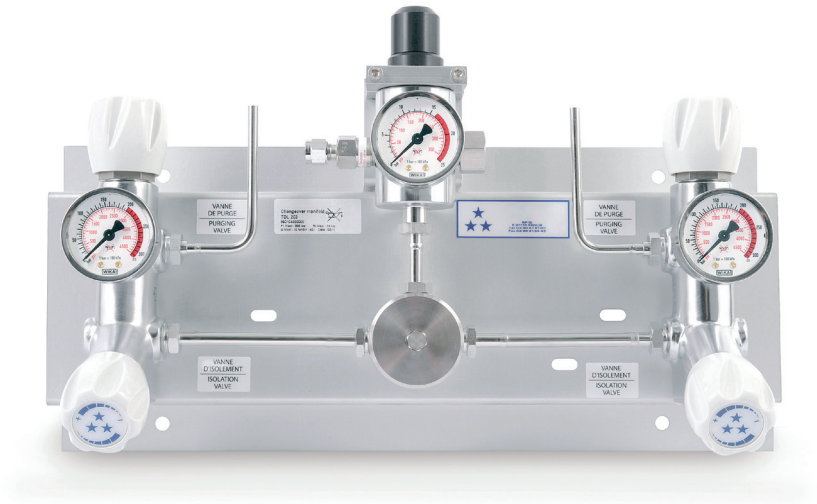
## APPLICATIONS

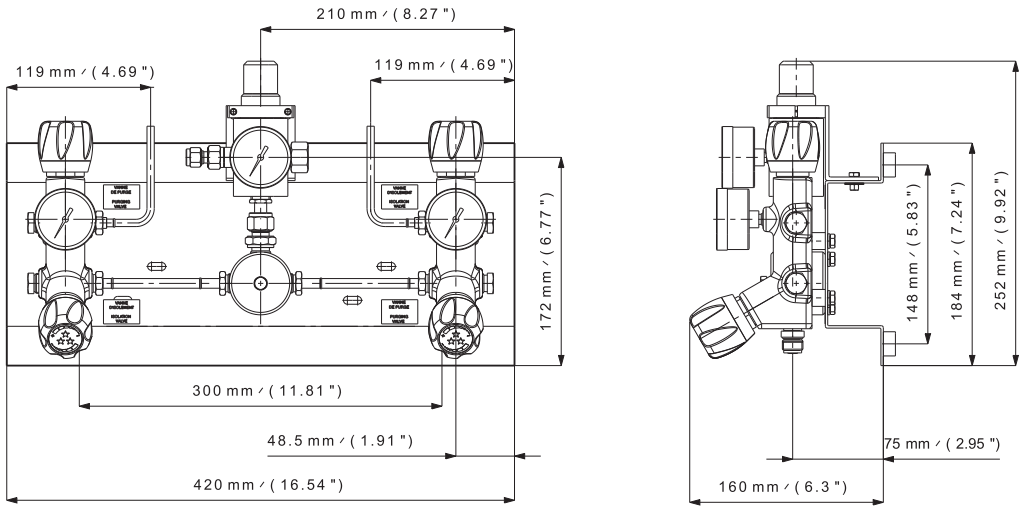
- Ideally suited to insure gas supply from many high-pressure sources of high purity non-corrosive gases with low flow
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications.

## KEY FEATURES

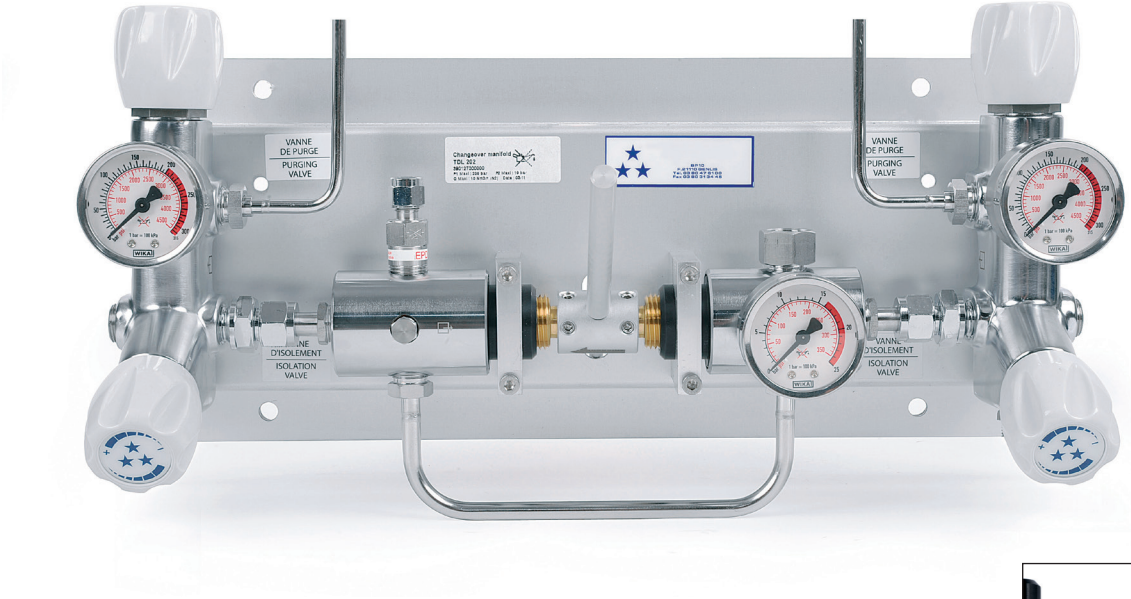
- Possible to manage 4 gas cylinders without any extension and a gas for purging operation (up to 6 cylinders without any extension - without using the purge line).
- No risk that a source flows into the other one.
- Exists in a MANUAL, SEMI-AUTOMATIC and AUTOMATIC version.
- The automatic switch over board does not need to be reset to allow reversal of the cycle.
- Ready to install due with all components pre-mounted on a board.
- Can be equipped with a collection tube on the relief valve and purge outlet.
- Can be equipped with an outlet shut-off valve.
- Using contact gauges, the switch over board can also be equipped with an alarm box to indicate the source status.

## MANUAL VERSION

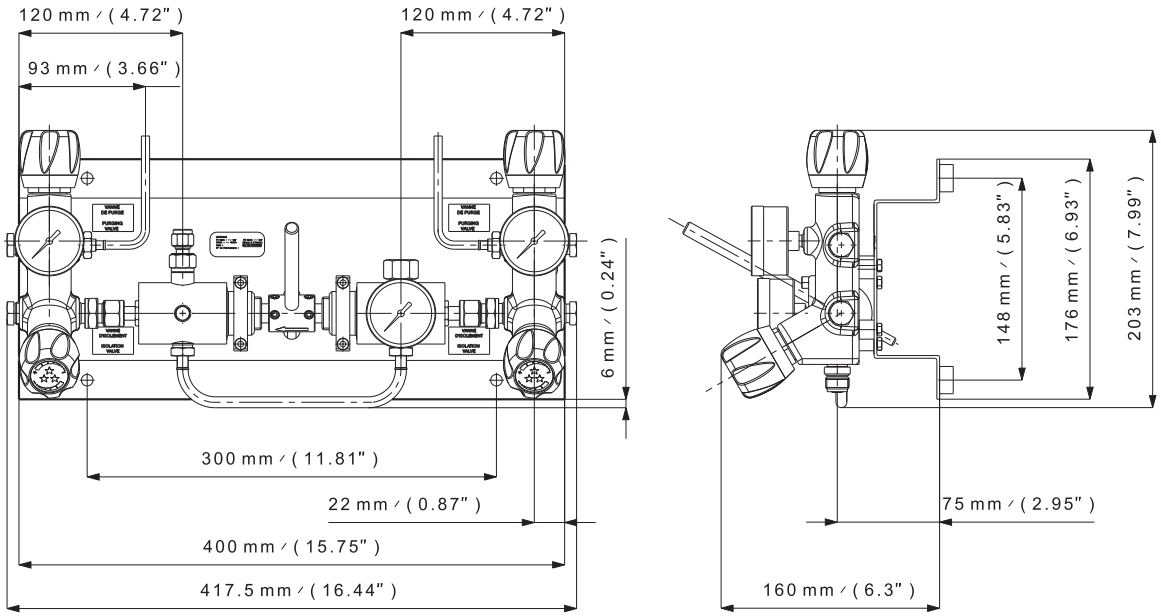




## SEMI-AUTOMATIC VERSION

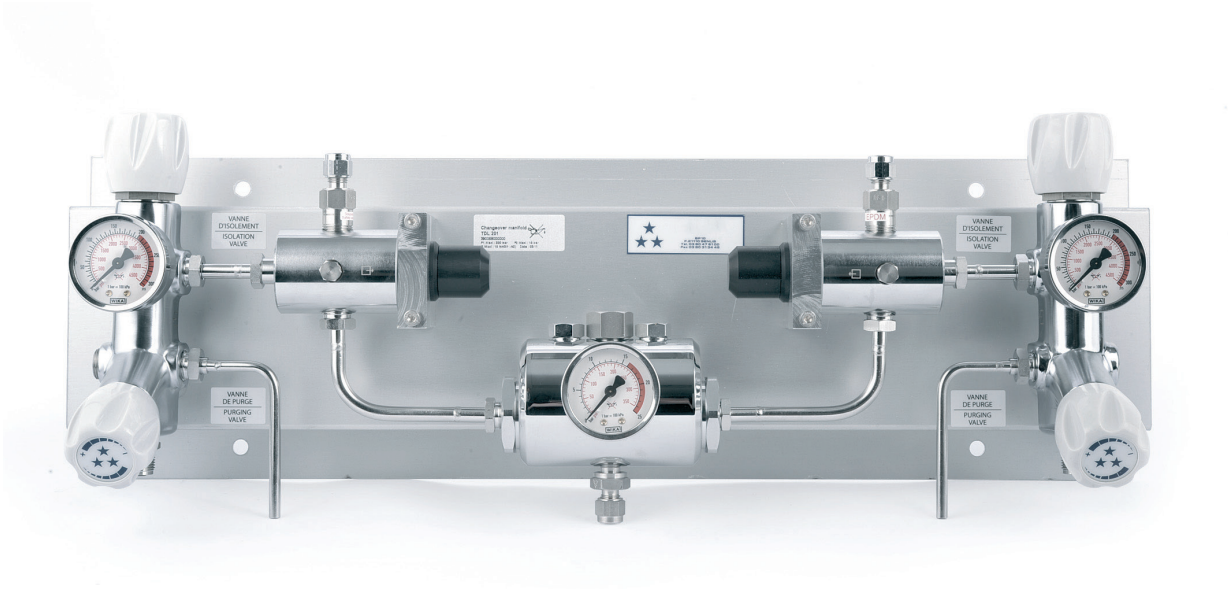


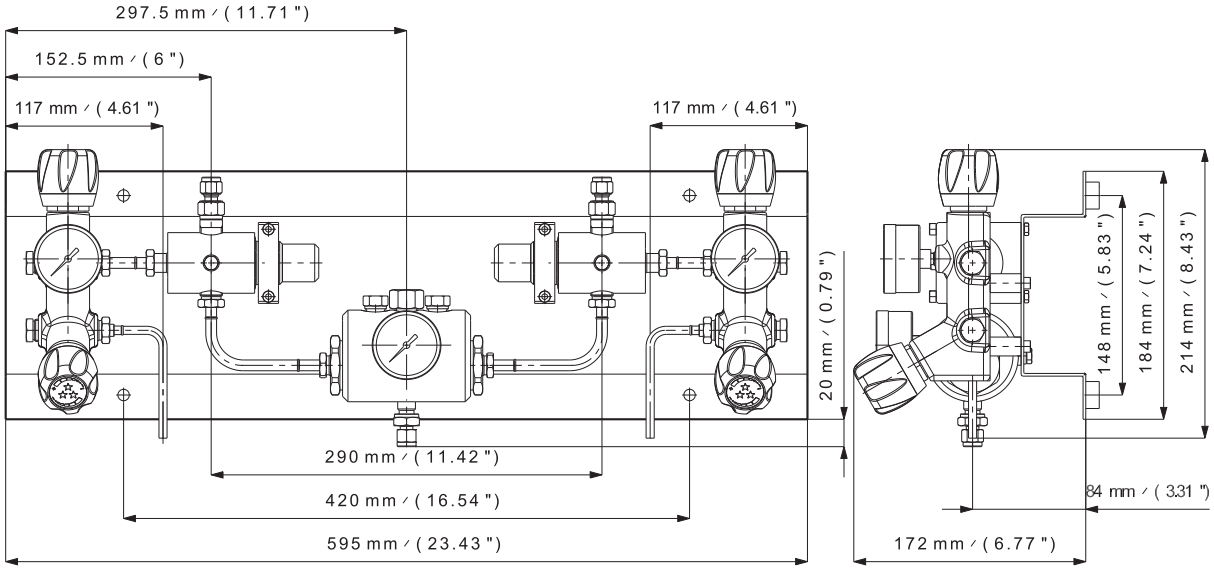

3 inlet ports



# SERIES TD 200 | SWITCH OVER BOARD (continued)

## AUTOMATIC VERSION



## SPECIFICATIONS

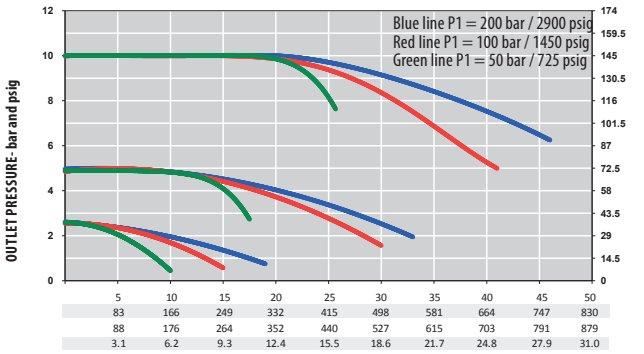
| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet) or ¼ NPT (inlet/outlet) | **Weight** | ± 13 kg<br>± 29.0 lbs | **Inlet pressure** | 200 bar / 300* bar<br>2900 psig / 4350 psig |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/16 bar<br>145/232 psig |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 10/10 $Nm^3/h$ ($N_2$) |
| **Diaphragm** | AISI 304<br>Hastelloy® | **Gauges** | High and low pressure<br>(M10 x 1 or ⅛ NPT) | **Oxygen use** | Brass only with inlet pressure<br>200 bar |

*Only in chrome plated version

## FLOW CURVES

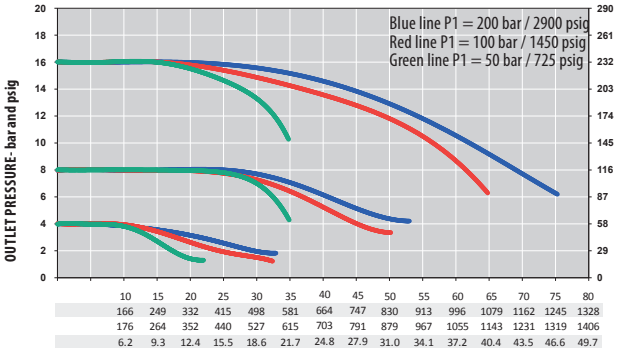
**FLOW CURVE TD 200-10 REGULATOR**

SET: 10 bar / 145 psig
5 bar / 72.5 psig
2,5 bar / 36,25 psig




**FLOW CURVE TD 200-16 REGULATOR**

SET: 16 bar / 232 psig
8 bar / 116 psig
4 bar / 58 psig




## PRODUCT CONFIGURATOR

| | Body Material | | Inlet Pressure and Version Type | | Outlet Pressure | | End Connections | | O-ring Material | Gauges | | Outlet Valve | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TD | L | | 202 | | 10 | | G | | EPDM | 1 | | NV | | A | |
| | Chrome Plated Brass | L | 200 bar (2900 psig) automatic - 10 bar version | 201 | 10 bar 145 psig | 10 | G ⅜ - Female | G | EPDM - standard | with gauges - standard | 1 | without outlet shut-off valve (standard) | NV | Standard configuration | A |
| | Stainless steel | I | 200 bar (2900 psig) semi-automatic | 202 | 16 bar 232 psig | 16 | ¼ NPT - Female | N | NBR | with HP inductive contact gauges | 2 | with outlet shut-off valve | V | with connected purge and relief valve | CL |
| | | | 200 bar (2900 psig) manual - 10 bar version | 203 | | | | | FPM | with LP inductive contact gauge | 4 | | | | |
| | | | 300 bar (4350 psig) semi-automatic | 302 | | | | | | with HP & LP inductive contact gauges | 6 | | | | |

# SERIES TD 500 | SWITCH OVER BOARD

- Diaphragm single stage
- Balanced-Valve Technology
- Purity up to 6.0
- Inlet pressure:
  200 bar (2900 psig)
- Outlet pressure:
  10/25/50 bar
  145/363/725 psig

★ 2 duoblocs
★ 2 x 3 inlets/1 outlet
★ Inlet/outlet pressure gauges
★ 1 relief valve
★ 2 purge outlets
★ $O_2$ application compatible (brass only 200 bar version)
★ Manual, semi-automatic and automatic version available

Special requirements on request

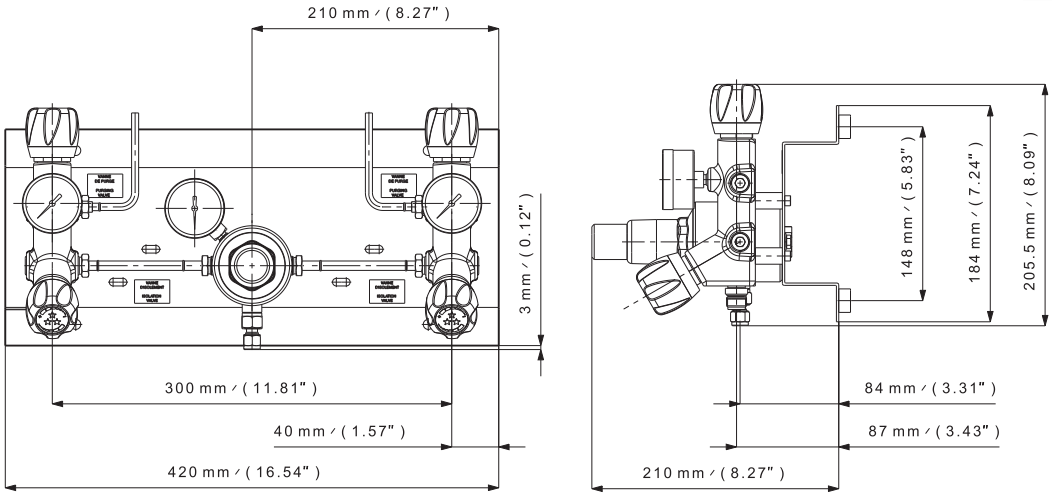
## APPLICATIONS

- Ideally suited to insure gas supply from many high-pressure sources of high purity non-corrosive gases with high flow
- Dedicated to supply of gas to analyzers and to create a controlled atmosphere in laboratories, control units, and for petrochemical applications.

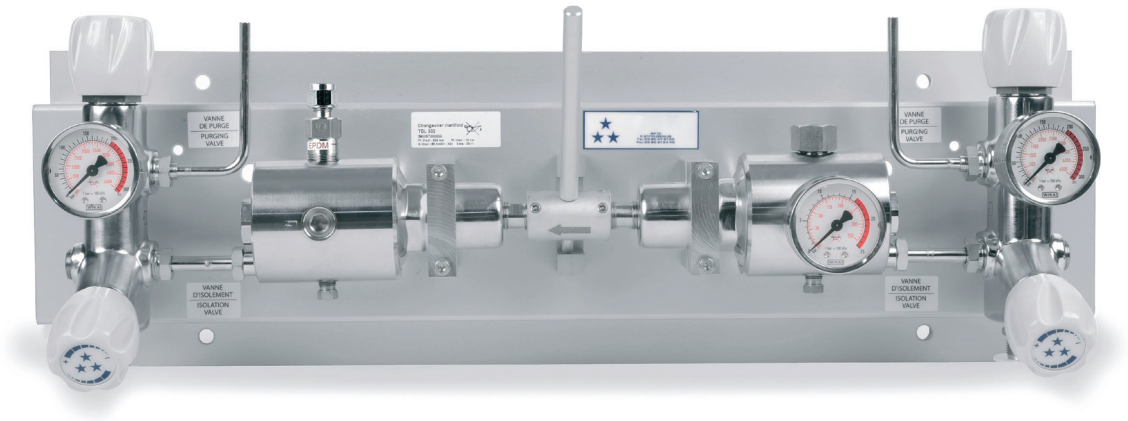
## KEY FEATURES

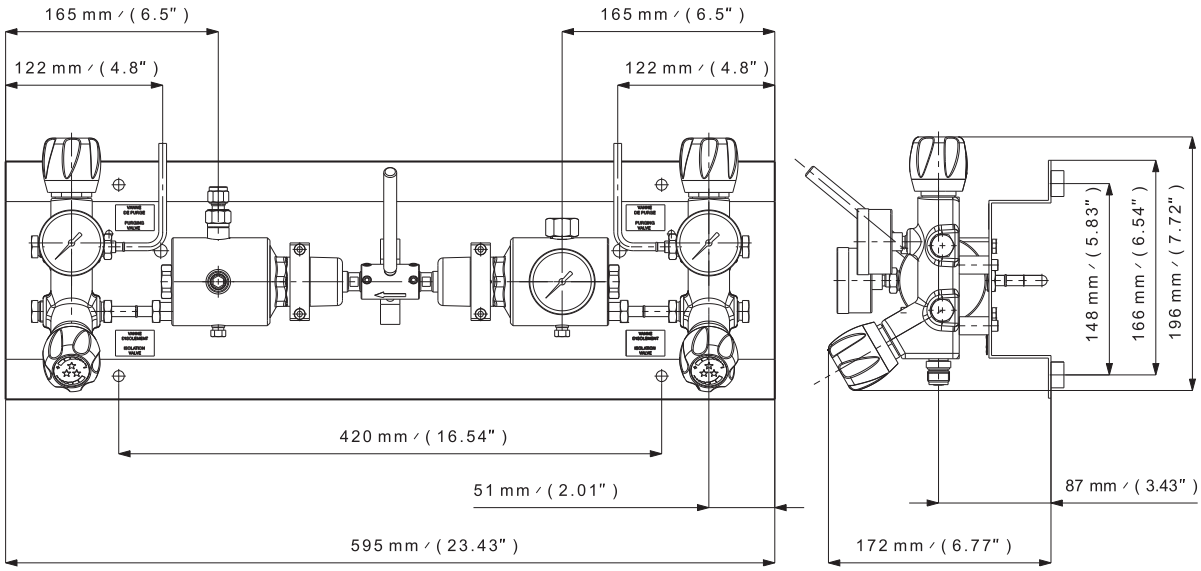
- Possible to manage 4 gas cylinders without any extension and a gas for purging operation (up to 6 cylinders without any extension - without using the purge line).
- No risk that a source flows into the other one.
- Ready to install with all components pre-mounted on a board.
- Exists in an MANUAL, SEMI-AUTOMATIC and AUTOMATIC version.
- The automatic switch over board does not need to be reset to allow reversal of the cycle.
- Best-in-class pressure stability with Balanced-Valve Technology: the effect of inlet pressure fluctuations on outlet pressure are minimized. The Balanced-Valve Technology enables the delivery of a very stable outlet pressure and flow.
- The BV Technology reduces the efforts on the seat to increase life of the regulator and reduce the ownership cost.
- Can be equipped with a collection tube on the relief valve and purge outlet.
- Can be equipped with an outlet shut-off valve.
- Using contact gauges, the switch over board can also be equipped with an alarm box to indicate the source status.

## MANUAL VERSION

## SEMI-AUTOMATIC VERSION

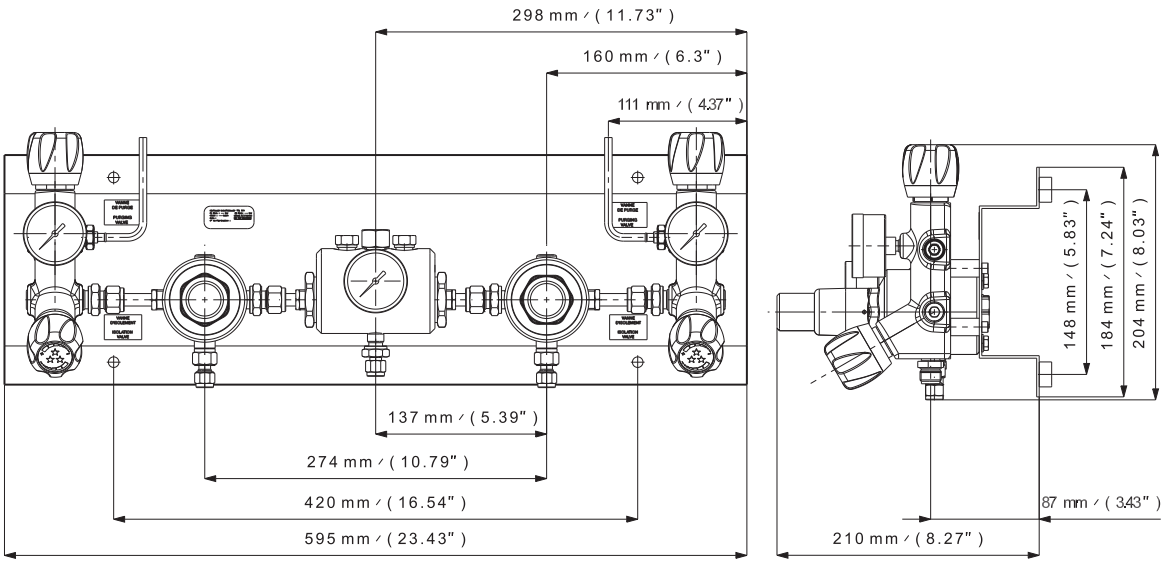




# SERIES TD 500 | SWITCH OVER BOARD (continued)

## AUTOMATIC VERSION


3 inlet ports



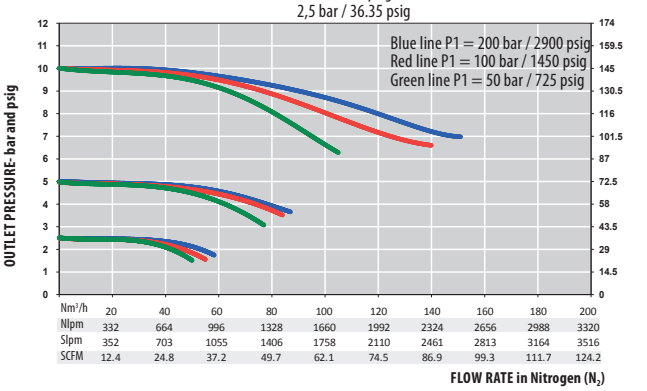
## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜ (inlet/outlet)<br>or<br>¼ NPT (inlet/outlet) | **Weight** | ± 13 kg<br>± 29.0 lbs | **Inlet pressure** | 200 bar<br>2900 psig |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Outlet pressure** | 10/25/50 bar<br>145/363/725 psig |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Nominal Flow** | 50/50/100 $Nm^3/h$ ($N_2$) |
| **Diaphragm** | AISI 304<br>Hastelloy® | **Gauges** | High and low pressure<br>(M10 x 1 or ⅛ NPT) | **Oxygen use** | Brass only with inlet pressure<br>200 bar |

## FLOW CURVES

**FLOW CURVE TD 500-10 REGULATOR**

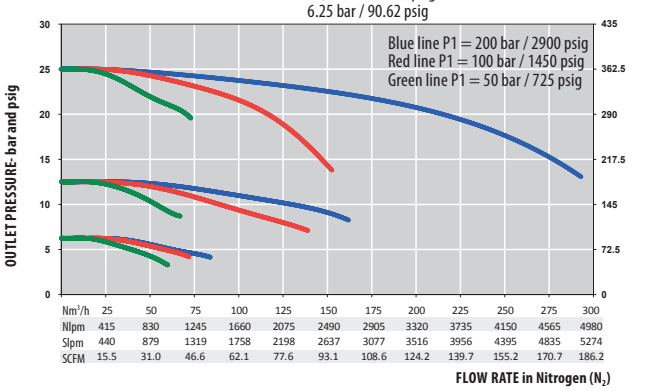
SET: 10 bar / 145 psig
5 bar / 72.5 psig
2,5 bar / 36.35 psig




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| $Nm^3/h$ | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| Nlpm | 332 | 664 | 996 | 1328 | 1660 | 1992 | 2324 | 2656 | 2988 | 3320 |
| Slpm | 352 | 703 | 1055 | 1406 | 1758 | 2110 | 2461 | 2813 | 3164 | 3516 |
| SCFM | 12.4 | 24.8 | 37.2 | 49.7 | 62.1 | 74.5 | 86.9 | 99.3 | 111.7 | 124.2 |

**FLOW CURVE TD 500-25 REGULATOR**

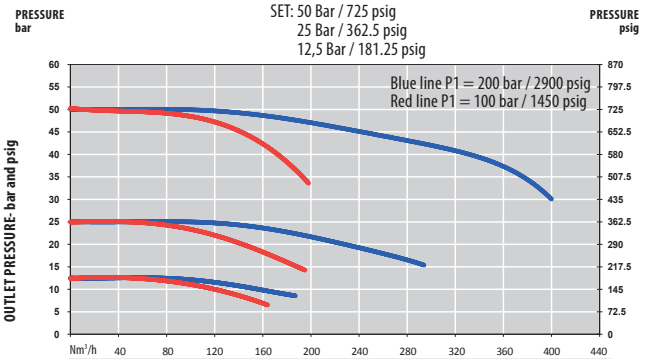
SET: 25 bar / 362.5 psig
12,5 bar / 181.25 psig
6.25 bar / 90.62 psig




| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $Nm^3/h$ | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 |
| Nlpm | 415 | 830 | 1245 | 1660 | 2075 | 2490 | 2905 | 3320 | 3735 | 4150 | 4565 | 4980 |
| Slpm | 440 | 879 | 1319 | 1758 | 2198 | 2637 | 3077 | 3516 | 3956 | 4395 | 4835 | 5274 |
| SCFM | 15.5 | 31.0 | 46.6 | 62.1 | 77.6 | 93.1 | 108.6 | 124.2 | 139.7 | 155.2 | 170.7 | 186.2 |

**FLOW CURVE TD 500-50 REGULATOR**

SET: 50 Bar / 725 psig
25 Bar / 362.5 psig
12,5 Bar / 181.25 psig




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $Nm^3/h$ | 40 | 80 | 120 | 160 | 200 | 240 | 280 | 320 | 360 | 400 | 440 |
| Nlpm | 664 | 1328 | 1992 | 2656 | 3320 | 3984 | 4648 | 5312 | 5976 | 6640 | 7304 |
| Slpm | 703 | 1406 | 2110 | 2813 | 3516 | 4219 | 4922 | 5626 | 6329 | 7032 | 7735 |
| SCFM | 24.8 | 49.7 | 74.5 | 99.3 | 124.2 | 149.0 | 173.8 | 198.7 | 223.5 | 248.3 | 273.2 |

## PRODUCT CONFIGURATOR

| | Body Material | | Inlet Pressure and Version Type | | Outlet Pressure | | End Connections | | O-ring Material | Gauges | | Outlet Valve | | Configuration | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TD | L | | 502 | | 10 | | G | | EPDM | 1 | | NV | | A | |
| | Chrome Plated Brass | L | 200 bar (2900 psig) automatic - 10 bar version | 501 | 10 bar 145 psig | 10 | G ⅜ - Female | G | EPDM - standard | with gauges - standard | 1 | without outlet shut-off valve (standard) | NV | Standard configuration | A |
| | Stainless steel | I | 200 bar (2900 psig) semi-automatic | 502 | 25 bar 362.5 psig | 25 | ¼ NPT - Female | N | NBR | with HP inductive contact gauges | 2 | with outlet shut-off valve | V | with connected purge and relief valve | CL |
| | | | 200 bar (2900 psig) manual - 10 bar version | 503 | 50 bar 725 psig | 50 | | | FPM | with LP inductive contact gauge | 4 | | | | |
| | | | | | | | | | | with HP & LP inductive contact gauges | 6 | | | | |

# SERIES CC 285/385 | SEMI-AUTOMATIC SWITCH OVER BOARD WITH INTEGRATED OUTLET PRESSURE REGULATOR

- Cartridge single stage regulators
- Diaphragm valves
- Dual stage regulator integrated

★ 2 inlets/1 outlet
★ 1 relief valve
★ 2 purge outlets (optional)
★ Semi-automatic
★ Regulation done by 2 x SC281 cartridge regulators
★ $O_2$ application compatible (brass only 200 bar version)

Special requirements on request

Optional connection with Alarm Box

## INNOVATION

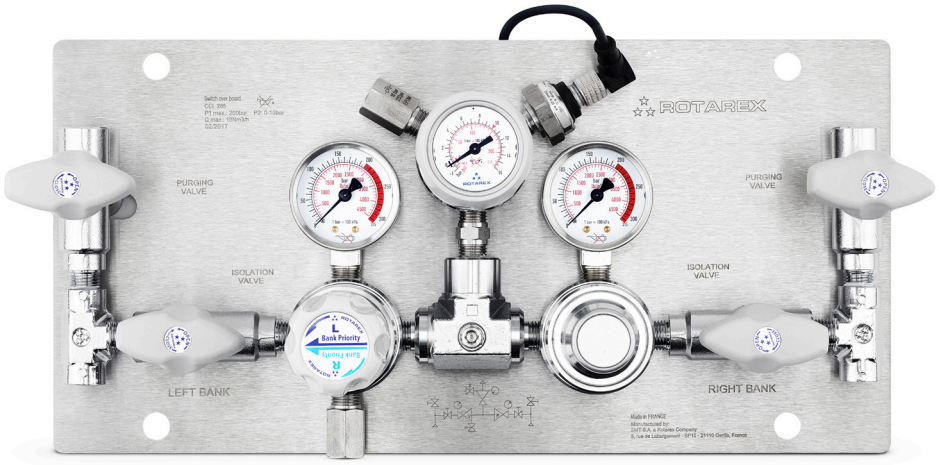
Compact outlet pressure regulator with integrated pressure gauge
- Purity up to 6.0
- Inlet pressure: 200 bar (2900 psig) or 300 bar (4350 psig)
- Switching pressure: 10 bar (145 psig) 16 bar (232 psig) or 35 bar (508 psig)
- Outlet pressure: 1.5 bar (15 psig) 5.5 bar (72 psig) or 10 bar (150 psig)

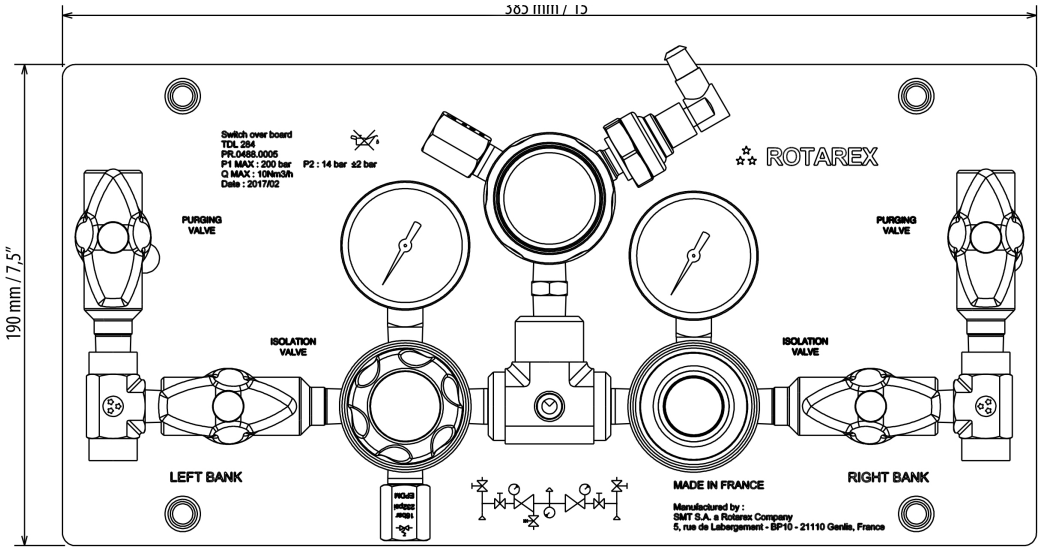
## APPLICATIONS

- Ideally suited to insure gas supply from many high pressure sources of high purity non-corrosive gases with low flow (10 $Nm^3/h$)
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications
- Thanks to the flexible and modular configuration of the switch over board: Possibility to manage inlet source, purging device, outlet regulation and shut-off functions according to user's needs

## KEY FEATURES

- The semi-automatic switch over board insures a continuous gas supply without gas interruption
- Ready to install thanks to pre-mounted components on a panel
- Can be equipped with a collection tube on the relief valve and purge outlet
- Easy handling thanks to visible technical drawings with key functionalities marked on the back plate
- Can be equipped with or without:
  - Outlet shut-off valve
  - Purging valves
- Using contact gauges or pressure sensor, the switch over board can also be connected to an alarm box to indicate the source status
- To connect up to 3 cylinders on each side you can use Rotarex extensions



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Inlet / outlet ports** | ¼ NPT<br>G⅜ | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Outlet pressure** | 1.5 / 5.5 / 10 bar<br>14 / 72 / 145 psig |
| **O-ring** | EPDM<br>NBR<br>FPM | **Nominal Flow** | 10 $Nm^3/h$ ($N_2$) | **Oxygen use** | Brass only with inlet pressure 200 bar |
| **Diaphragm** | Hastelloy | **Gauges** | (M10 x 1 or ⅛ NPT) | | |
| **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Inlet pressure** | 200 / 300 bar<br>2900 / 4350 psig | | |

## PRODUCT CONFIGURATOR

| | Body Material | | Inlet Pressure | | Version | | Switching pressure | | Outlet pressure (Line regulator) | | Inlet Connections | | SRV Seals | | Purge | | Remote monitoring devices | | Outlet Valve | | Configurations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CC | CB | | 2 | | 85 | | 10 | | 1.5 | | N | | E | | P | | 0 | | OVN | | S | |
| | Raw brass | RB | 200 bar 2900 psig | 2 | Semi-Automatic with outlet line regulator | 85 | 10 bar 145 psig | 10 | 1.5 bar 14 psig ($C_2H_2$) | 1.5 | ¼ NPT F | N | EPDM | E | With purge valves | P | None | 0 | None | 0 | Standard | S |
| | Chrome plated brass | CB | 300 bar 4351 psig | 3 | | | 16 bar 232 psig | 16 | 5.5 bar 72 psig | 5.5 | G ⅜ F | G3 | NBR | N | Without purge valves | 0 | Contact gauges HP | CGH | Outlet valve (Standard ¼NPT) | OVN | Collected safety relief valve and purge | CL |
| | Stainless steel | SS | | | | | 35 bar 508 psig | 35 | 10 bar 145 psig | 10 | G ¼ F (with adapter) | G1 | FPM | F | | | Contact gauges LP | CGL | Outlet valve G ⅜ F | OVG3 | | |
| | | | | | | | | | | | See accessories (flexhoses, manifolds, etc p.48) | | | | | | Contact gauges HP + LP | CGHL | Outlet valve G ¼ F (with adapter) | OVG1 | | |
| | | | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) | PH | | | | |
| | | | | | | | | | | | | | | | | | Pressure sensor LP | PL | | | | |
| | | | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) + LP | PHL | | | | |

Make sure that the outlet pressure is lower than the switching pressure

# SERIES CC 284/384 | SEMI-AUTOMATIC SWITCH OVER BOARD

- Cartridge single stage regulators
- Diaphragm valves
- Purity up to 6.0
- Inlet pressure: 200 bar (2900 psig) or 300 bar (4350 psig)
- Outlet pressure: 10 bar (145 psig) 16 bar (232 psig) or 35 bar (508 psig)

★ 2 inlets/1 outlet
★ 1 relief valve
★ 2 purge outlets
★ Semi-automatic
★ Regulation done by 2 x SC281 cartridge regulator
★ $O_2$ application compatible (brass only 200 bar version)

Special requirements on request

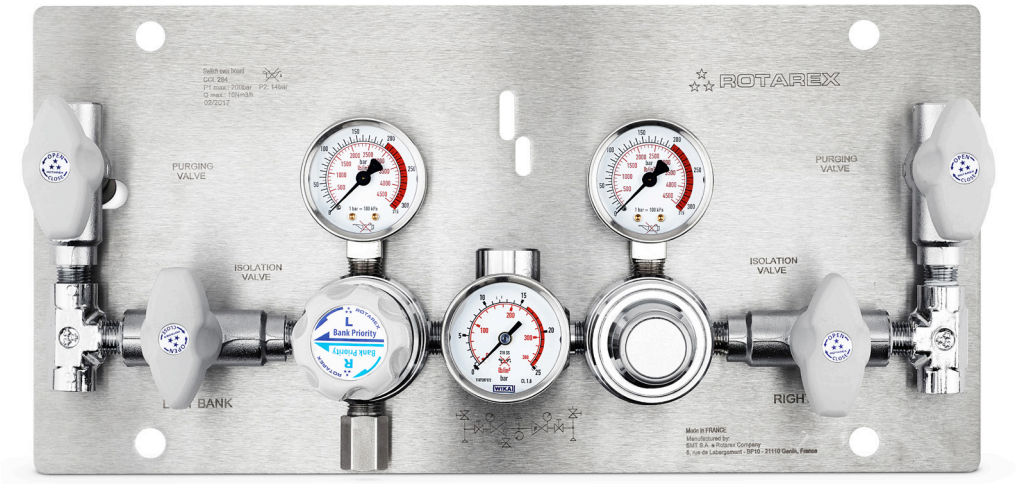
Optional connection with Alarm Box

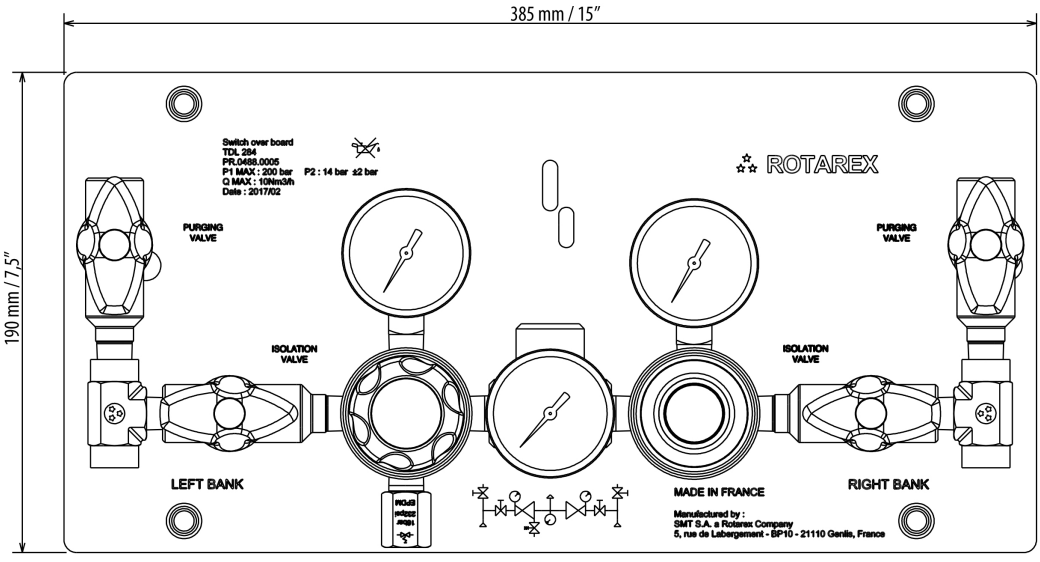
## APPLICATIONS

- Ideally suited to insure gas supply from many high pressure sources of high purity non-corrosive gases with low flow (10 $Nm^3/h$)
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications
- Thanks to the flexible and modular configuration of the switch over board: Possibility to manage inlet source, purging and outlet shut-off functions according to user's needs

## KEY FEATURES

- The semi-automatic switch over board insures a continuous gas supply
- Ready to install thanks to pre-mounted components on a panel
- Can be equipped with a collection tube on the relief valve and purge outlet
- Easy handling thanks to visible technical drawings with key functionalities marked on the back plate
- Can be equipped with or without:
  - · Outlet shut-off valve
  - · Purging valve
- Using contact gauges or pressure sensor, the switch over board can also be connected to an alarm box to indicate the source status
- To connect up to 3 cylinders on each side you can use Rotarex extensions



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Inlet / outlet ports** | ¼ NPT<br>G⅜ | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Outlet pressure** | 10 / 16 / 35 bar<br>145 / 232 / 508 psig |
| **O-ring** | EPDM<br>NBR<br>FPM | **Nominal Flow** | 10 $Nm^3/h$ ($N_2$) | **Oxygen use** | Brass only with inlet pressure 200 bar |
| **Diaphragm** | Hastelloy | **Gauges** | (M10 x 1 or ⅛ NPT) | | |
| **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Inlet pressure** | 200 / 300 bar<br>2900 / 4350 psig | | |

## PRODUCT CONFIGURATOR

| | Body Material | | Inlet Pressure | | Version | | Outlet pressure | | Inlet Connections | | Purge | | SRV Seals | | Remote monitoring devices | | Outlet Valve | | Configurations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CC | CB | | 2 | | 84 | | 10 | | N | | P | | E | | 0 | | OVN | | S | |
| | Raw brass | RB | 200 bar 2900 psig | 2 | Semi-Automatic | 84 | 10 bar 145 psig | 10 | ¼ NPT F | N | With purge valve | P | EPDM | E | None | 0 | None | 0 | Standard | S |
| | Chrome plated brass | CB | 300 bar 4351 psig | 3 | | | 16 bar 232 psig | 16 | G ⅜ F | G3 | Without purge valve | 0 | NBR | N | Contact gauges HP | CGH | Outlet valve (Standard ¼NPT) | OVN | Collected safety relief valve and purge | CL |
| | Stainless steel | SS | | | | | 35 bar 508 psig | 35 | G ¼ F (with adapter) | G1 | | | FPM | F | Contact gauges LP | CGL | Outlet valve G ⅜ F | OVG3 | | |
| | | | | | | | | | See accessories (flexhoses, manifolds, etc p.48) | | | | | | Contact gauges HP + LP | CGHL | Outlet valve G ¼ F (with adapter) | OVG1 | | |
| | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) | PH | | | | |
| | | | | | | | | | | | | | | | Pressure sensor LP | PL | | | | |
| | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) + LP | PHL | | | | |

# SERIES CC 283/383 | MANUAL SWITCH OVER BOARD

- Cartridge single stage regulators
- Diaphragm valves
- Purity up to 6.0
- Inlet pressure: 200 bar (2900 psig) or 300 bar (4350 psig)
- Outlet pressure: 10 bar (145 psig) 16 bar (232 psig) or 35 bar (508 psig)

★ 2 inlets/1 outlet
★ 1 relief valve
★ 2 purge outlets
★ Semi-automatic
★ Regulation done by 1 x SC281 cartridge regulator
★ $O_2$ application compatible (brass only 200 bar version)

Special requirements on request

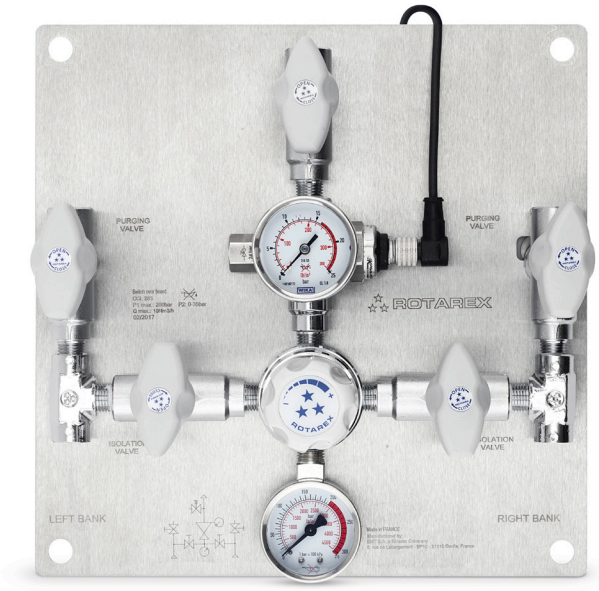
Optional connection with Alarm Box

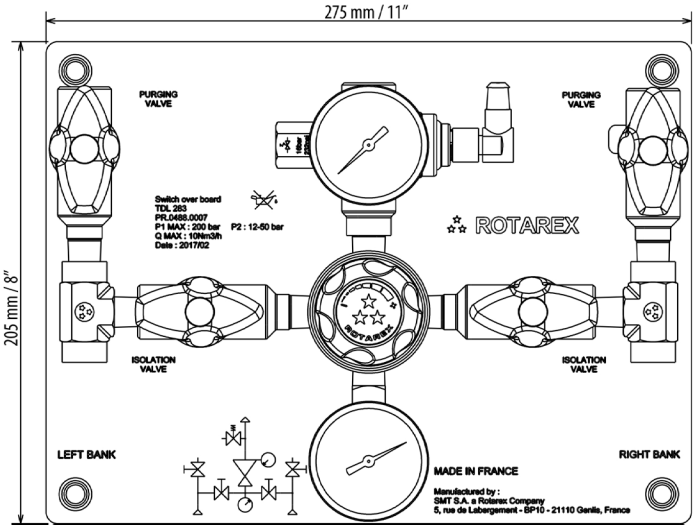
## APPLICATIONS

- Ideally suited to insure gas supply from many high pressure sources of high purity non-corrosive gases with low flow (10 $Nm^3/h$)
- Dedicated to the supply of gas to analyzers and to the creation of controlled atmosphere in laboratories, control units, and for petrochemical applications
- Thanks to the flexible and modular configuration of the switch over board: Possibility to manage inlet source, purging and outlet shut-off functions according to user's needs

## KEY FEATURES

- The manual switch over board insures a regular and accurate gas supply with possibility to manually switch on a second source with the highest safety level
- Ready to install thanks to pre-mounted components on a panel
- Can be equipped with a collection tube on the relief valve and purge outlet
- Easy handling thanks to visible technical drawings with key functionalities marked on the back plate
- Can be equipped with or without:
  - · Outlet shut-off valve
  - · Purging valve
- Using contact gauges or pressure sensor, the switch over board can also be connected to an alarm box to indicate the source status
- To connect up to 3 cylinders on each side you can use Rotarex extensions



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Inlet / outlet ports** | ¼ NPT<br>G⅜ | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Outlet pressure** | 10 / 16 / 35 bar<br>145 / 232 / 508 psig |
| **O-ring** | EPDM<br>NBR<br>FPM | **Nominal Flow** | Up to 30 $Nm^3/h$ | **Oxygen use** | Brass only with inlet pressure 200 bar |
| **Diaphragm** | Hastelloy | **Gauges** | (M10 x 1 or ⅛ NPT) | | |
| **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Inlet pressure** | 200 / 300 bar<br>2900 / 4350 psig | | |

## PRODUCT CONFIGURATOR

| | Body Material | | Inlet Pressure | | Version | | Outlet pressure | | Inlet-Outlet Connections | | Purge | | SRV Seals | | Remote monitoring devices | | Outlet Valve | | Configurations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CC | CB | | 2 | | 83 | | 10 | | N | | P | | E | | 0 | | OVN | | S | |
| | Raw brass | RB | 200 bar 2900 psig | 2 | Manual | 83 | 10 bar 145 psig | 10 | ¼ NPT F | N | With purge valve | P | EPDM | E | None | 0 | None | 0 | Standard | S |
| | Chrome plated brass | CB | 300 bar 4351 psig | 3 | | | 16 bar 232 psig | 16 | G ⅜ F | G3 | Without purge valve | 0 | NBR | N | Contact gauges HP | CGH | Outlet valve (Standard ¼NPT) | OVN | Collected safety relief valve and purge | CL |
| | Stainless steel | SS | | | | | 35 bar 508 psig | 35 | G ¼ F (with adapter) | G1 | | | FPM | F | Contact gauges LP | CGL | Outlet valve G ⅜ F | OVG3 | | |
| | | | | | | | | | See accessories (flexhoses, manifolds, etc p.48) | | | | | | Contact gauges HP + LP | CGHL | Outlet valve G ¼ F (with adapter) | OVG1 | | |
| | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) | PH | | | | |
| | | | | | | | | | | | | | | | Pressure sensor LP | PL | | | | |
| | | | | | | | | | | | | | | | Pressure sensor HP (x2 sides) + LP | PHL | | | | |

# BA 12 | ALARM BOX

- Signal sent automatically for notifying gas shortage. The message is visual and acoustic
- Optional EX protection (installation outside Ex-area)
- Devices available in three versions: For 2, 6 and 10 pressure gauge

## ALARM BOXES

★ 2/6/10 contacts
★ Ex Version

Special requirements on request

## KEY FEATURES

- Detecting a drop in pressure when the gas bottle is empty
- Messages are displayed visually by LEDs and audibly buzzer
- Remote message with potential free contacts possible
- Inputs for magnetic spring contact and inductive contact pressure gauge are suitable. Only NC contacts for safety!
- Plastic case with IP65 seal for wall and panel mounting
- Cage clamp connection and pluggable
- Easy to configure when the device is closed

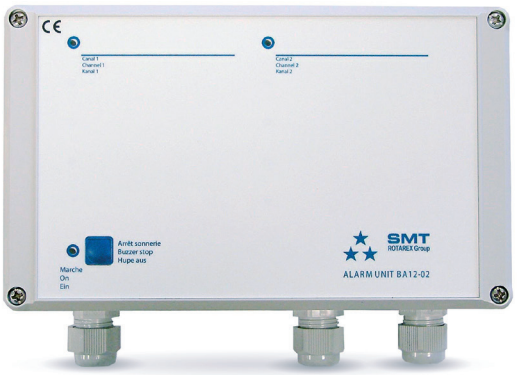
## OPTIONS

- Intrinsically safe barrier for Ex environment (Isolating switching amplifier)
- 230V AC or 115V AC power supply

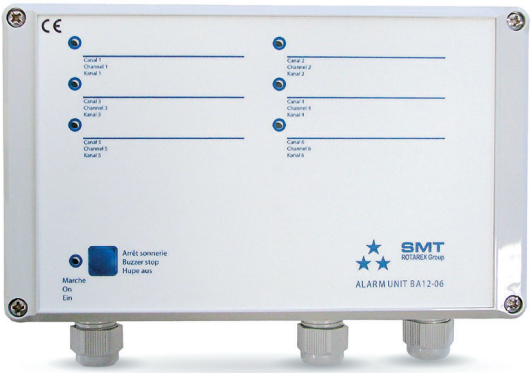
## KEY ADVANTAGES

- Product flexibility : three versions available according to your process( 2, 6 or 10 contacts )
- Potential-free output as change-over contact
- Group message and New value message
- Integrated LED allow visual information
- Integrated Buzzer for acoustic alarm

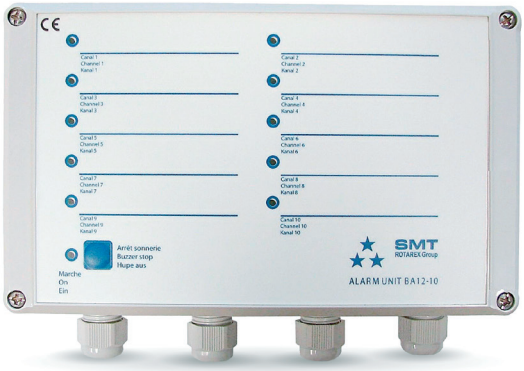
**BA 12-02**




**BA 12-06**




**BA 12-10**



## SPECIFICATIONS

| | |
|---|---|
| **Voltage** | 230 VAC/50 Hz<br>115 VAC/60 Hz |
| **Power** | < 3VA |

| | |
|---|---|
| **Type 1** | Potential free relay contact |
| **Rating** | 8A/230 VAC<br>w/ resistive load |
| **Function** | Group Message |
| **Type 2** | For external horn or lamp |
| **Rating** | 8A/230 VAC<br>w/ resistive load |

| | |
|---|---|
| **Connection** | 2-storey cage clamps |
| **Terminal voltage** | 10VDC/10mA (unstabilized)<br>0.9 |
| **Material** | ABS |
| **Protection** | IP 65 |
| **Dimension (W x H x D)** | 200 x 120 x 75 (mm) |
| **Temperature range** | 0° C to 55°C<br>32°F to 131°F |

## PRODUCT CONFIGURATOR

| | Contacts | | Voltage | | Ex protection | |
|---|---|---|---|---|---|---|
| **BA12** | **02** | | **230** | | **0** | |
| | 2 contacts | **02** | 230 VAC | **230** | Without | **0** |
| | 6 contacts | **06** | 115 VAC | **115** | With | **EX** |
| | 10 contacts | **10** | | | | |

Others versions and possibilities available upon request

# PRESSURE GAUGES

Spare part pressure gauges for ROTAREX regulators, points of use, supply boards or switch over boards

**PRESSURE GAUGES**

★ Standard or contact versions available
★ Vertical or rear mounting connections

Special requirements on request

**KEY FEATURES**

- Radial (6 o'clock) or back mounting
- Connection :
  M10 x 1 male, ¼NPT male or G ¼ male
- Many pressure ranges available
- Material: cuprous alloy or stainless steel
- Standard or contact gauge
- Accuracy class: 1,6 (standard gauge)
- Nominal diameter: Ø 63/50/40/36 mm

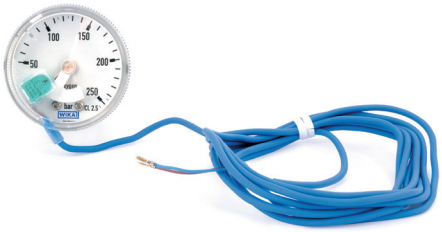
**OPTIONS**

- Different connections
- Different diameters

**Inductive contact gauge**

- Normally Open (NO)
- Accuracy class: 2,5
- Adjustment by twisting of contact hood
- Contact-free "contact release" without wear
- Cable length 2 m, cable outlet right-hand
- Compatible with explosive or combustive gases

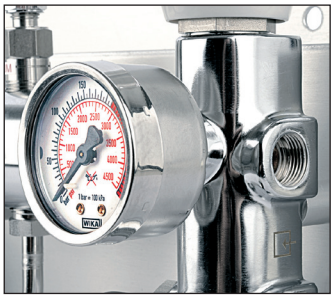
**CONTACT VERSION**



Available with vertical or rear mounting connections (normally open)

**VERTICAL MOUNTING CONNECTION (6 o'clock)**

**REAR MOUNTING CONNECTION**



# STANDARD PRESSURE GAUGES

## Ø63

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø63 | 0 + 1,5 + 2,5 bar | Cuprous alloy | Vertical | M10 x 1 | No | 333333333756 |
| Ø63 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | M10 x 1 | No | 290002990001 |
| Ø63 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | M10 x 1 | No | 333333333757 |
| Ø63 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | M10 x 1 | No | On demand |
| Ø63 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | M10 x 1 | No | 290002990000 |
| Ø63 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | M10 x 1 | No | On demand |
| Ø63 | 0 + 0,6 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 1,5 + 2,5 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 4,2 + 6 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 4,2 + 6 bar | Cuprous alloy | Vertical | G ¼ | No | 292800990003 |
| Ø63 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G ¼ | No | 292822990000 |
| Ø63 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G ¼ | No | 290204990001 |
| Ø63 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | M10 x 1 | No | On demand |
| Ø63 | 0 + 10 + 16 bar | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø63 | 0 + 0,4 bar | Stainless steel | Vertical | G ¼ | No | On demand |
| Ø63 | 0 + 0,14 + 0,20 bar | Stainless steel | Vertical | ¼ NPT | No | 333333334547 |

## Ø50 M10 X 1 MALE VERTICAL FOR BRASS REGULATOR

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 0,1 + 0,16 bar | Cuprous alloy | Vertical | M10 x 1 | No | 360025990000 |
| Ø50 | -1 + 1 + 1,5 bar | Cuprous alloy | Vertical | M10 x 1 | No | 320000990020 |
| Ø50 | -1 + 1,5 + 2,5 bar | Cuprous alloy | Vertical | M10 x 1 | No | 360026990000 |
| Ø50 | -1 + 3 + 5 bar | Cuprous alloy | Vertical | M10 x 1 | No | 360003990002 |
| Ø50 | -1 + 4 + 6 bar | Cuprous alloy | Vertical | M10 x 1 | No | 333333334879 |
| Ø50 | -1 + 8 + 12 bar | Cuprous alloy | Vertical | M10 x 1 | No | 299121990000 |
| Ø50 | -1 + 10 + 15 bar | Cuprous alloy | Vertical | M10 x 1 | No | 299108990002 |
| Ø50 | 0 + 16 + 25 bar | Cuprous alloy | Vertical | M10 x 1 | No | 299091990001 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Vertical | M10 x 1 | No | 320203990000 |
| Ø50 | 0 + 40 + 60 bar | Cuprous alloy | Vertical | M10 x 1 | No | 301200990002 |
| Ø50 | 0 + 70 + 100 bar | Cuprous alloy | Vertical | M10 x 1 | No | 300602990003 |
| Ø50 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | M10 x 1 | No | 360000990007 |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | M10 x 1 | No | 350000990004 |

## Ø50 M10 X 1 MALE VERTICAL FOR STAINLESS STEEL REGULATOR

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | -1 + 1 + 1,5 bar | Stainless steel | Vertical | M10 x 1 | No | 360031990000 |
| Ø50 | -1 + 2 + 3 bar | Stainless steel | Vertical | M10 x 1 | No | 333333332860 |
| Ø50 | -1 + 3 + 5 bar | Stainless steel | Vertical | M10 x 1 | No | 320200990004 |
| Ø50 | -1 + 4 + 6 bar | Stainless steel | Vertical | M10 x 1 | No | 300800990004 |
| Ø50 | -1 + 6 + 9 bar | Stainless steel | Vertical | M10 x 1 | No | 333333332665 |
| Ø50 | -1 + 8 + 12 bar | Stainless steel | Vertical | M10 x 1 | No | 360029990000 |
| Ø50 | -1 + 10 + 15 bar | Stainless steel | Vertical | M10 x 1 | No | 299174990002 |
| Ø50 | 0 + 16 + 25 bar | Stainless steel | Vertical | M10 x 1 | No | 360030990000 |
| Ø50 | 0 + 30 + 40 bar | Stainless steel | Vertical | M10 x 1 | No | 299108990000 |
| Ø50 | 0 + 40 + 60 bar | Stainless steel | Vertical | M10 x 1 | No | 333333333637 |
| Ø50 | 0 + 70 + 100 bar | Stainless steel | Vertical | M10 x 1 | No | 300600990012 |
| Ø50 | 0 + 200 + 315 bar | Stainless steel | Vertical | M10 x 1 | No | 300600990005 |
| Ø50 | 0 + 300 + 400 bar | Stainless steel | Vertical | M10 x 1 | No | 300600990011 |

# STANDARD PRESSURE GAUGES (continued)

### Ø50 M10 X 1 MALE WITH REAR CONNECTION FOR BRASS PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 0,1 + 0,16 bar | Cuprous alloy | Rear | M10 x 1 | No | On demand |
| Ø50 | -1 + 1 + 1,5 bar | Cuprous alloy | Rear | M10 x 1 | No | 333333334018 |
| Ø50 | -1 + 1,5 + 2,5 bar | Cuprous alloy | Rear | M10 x 1 | No | On demand |
| Ø50 | -1 + 3 + 5 bar | Cuprous alloy | Rear | M10 x 1 | No | 320200990006 |
| Ø50 | -1 + 10 + 15 bar | Cuprous alloy | Rear | M10 x 1 | No | 390000990030 |
| Ø50 | 0 + 16 + 25 bar | Cuprous alloy | Rear | M10 x 1 | No | 360015990001 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Rear | M10 x 1 | No | 299178990025 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Rear | M10 x 1 | No | 390093990001 |
| Ø50 | 0 + 70 + 100 bar | Cuprous alloy | Rear | M10 x 1 | No | 360015990000 |
| Ø50 | 0 + 200 + 315 bar | Cuprous alloy | Rear | M10 x 1 | No | 299178990024 |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Rear | M10 x 1 | No | 299216990005 |

### Ø50 M10 X 1 MALE WITH REAR CONNECTION FOR STAINLESS STEEL PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | -1 + 1 + 1,5 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø50 | -1 + 3 + 5 bar | Stainless steel | Rear | M10 x 1 | No | 333333332251 |
| Ø50 | -1 + 8 + 12 bar | Stainless steel | Rear | M10 x 1 | No | 299182990003 |
| Ø50 | -1 + 10 + 15 bar | Stainless steel | Rear | M10 x 1 | No | 390000990031 |
| Ø50 | 0 + 16 + 25 bar | Stainless steel | Rear | M10 x 1 | No | 390000990019 |
| Ø50 | 0 + 30 + 40 bar | Stainless steel | Rear | M10 x 1 | No | 299111990002 |
| Ø50 | 0 + 70 + 100 bar | Stainless steel | Rear | M10 x 1 | No | 333333334599 |
| Ø50 | 0 + 200 + 315 bar | Stainless steel | Rear | M10 x 1 | No | 390000990020 |

### Ø50 ¼ NPT MALE VERTICAL FOR BRASS REGULATOR

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 0,10 + 0,16 bar | Cuprous alloy | Vertical | ¼ NPT | No | On demand |
| Ø50 | 0 + 0,14 + 0,20 bar | Cuprous alloy | Vertical | ¼ NPT | No | On demand |
| Ø50 | -1 + 1 + 1,5 bar | Cuprous alloy | Vertical | ¼ NPT | No | 320000990023 |
| Ø50 | -1 + 1,5 + 2,5 bar | Cuprous alloy | Vertical | ¼ NPT | No | On demand |
| Ø50 | -1 + 3 + 5 bar | Cuprous alloy | Vertical | ¼ NPT | No | 320401990000 |
| Ø50 | -1 + 8 + 15 bar | Cuprous alloy | Vertical | ¼ NPT | No | 320401990000 |
| Ø50 | -1 + 10 + 15 bar | Cuprous alloy | Vertical | ¼ NPT | No | 333333333279 |
| Ø50 | 0 + 16 + 25 bar | Cuprous alloy | Vertical | ¼ NPT | No | 333333333469 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Vertical | ¼ NPT | No | 333333333513 |
| Ø50 | 0 + 40 + 60 bar | Cuprous alloy | Vertical | ¼ NPT | No | 293500990001 |
| Ø50 | 0 + 70 + 100 bar | Cuprous alloy | Vertical | ¼ NPT | No | 333333333514 |
| Ø50 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | ¼ NPT | No | 360001990003 |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | ¼ NPT | No | 350002990001 |

### Ø50 ¼ NPT MALE VERTICAL FOR STAINLESS STEEL REGULATOR

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 1 + 1 + 1,5 bar | Stainless steel | Vertical | ¼ NPT | No | 333333334261 |
| Ø50 | -1 + 3 + 5 bar | Stainless steel | Vertical | ¼ NPT | No | 320301990000 |
| Ø50 | -1 + 8 + 15 bar | Stainless steel | Vertical | ¼ NPT | No | 320501990001 |
| Ø50 | -1 + 10 + 15 bar | Stainless steel | Vertical | ¼ NPT | No | 333333334160 |
| Ø50 | 0 + 16 + 25 bar | Stainless steel | Vertical | ¼ NPT | No | 330011990000 |
| Ø50 | 0 + 30 + 40 bar | Stainless steel | Vertical | ¼ NPT | No | 330012990000 |
| Ø50 | 0 + 40 + 60 bar | Stainless steel | Vertical | ¼ NPT | No | On demand |
| Ø50 | 0 + 70 + 100 bar | Stainless steel | Vertical | ¼ NPT | No | 330013990001 |
| Ø50 | 0 + 200 + 315 bar | Stainless steel | Vertical | ¼ NPT | No | 330013990000 |
| Ø50 | 0 + 300 + 400 bar | Stainless steel | Vertical | ¼ NPT | No | On demand |

# STANDARD PRESSURE GAUGES (continued)

### Ø50 G¼ MALE VERTICAL FOR BRASS REGULATOR

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 1,5 + 2,5 bar | Cuprous alloy | Vertical | G¼ | No | 292900990010 |
| Ø50 | 0 + 1,6 + 2,5 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 6 + 10 bar | Cuprous alloy | Vertical | G¼ | No | 333333333447 |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G¼ | No | 292800990015 |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 16 + 25 bar | Cuprous alloy | Vertical | G¼ | No | 333333334343 |
| Ø50 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 27 + 40 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 40 + 60 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 70 + 100 bar | Cuprous alloy | Vertical | G¼ | No | 333333334344 |
| Ø50 | 0 + 240 + 315 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | G¼ | No | On demand |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | G¼ | No | 299174990008 |

### Ø50 G¼ MALE WITH REAR CONNECTION FOR BRASS PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 1,5 + 2,5 bar | Cuprous alloy | Rear | G¼ | No | On demand |
| Ø50 | 0 + 1,6 + 2,5 bar | Cuprous alloy | Rear | G¼ | No | 299178990032 |
| Ø50 | 0 + 4 + 6 bar | Cuprous alloy | Rear | G¼ | No | On demand |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Rear | G¼ | No | On demand |
| Ø50 | 0 + 10 + 16 bar | Cuprous alloy | Rear | G¼ | No | 299157990012 |
| Ø50 | 0 + 16 + 25 bar | Cuprous alloy | Rear | G¼ | No | 202511990002 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Rear | G¼ | No | 333333332373 |
| Ø50 | 0 + 30 + 40 bar | Cuprous alloy | Rear | G¼ | No | On demand |
| Ø50 | 0 + 40 + 60 bar | Cuprous alloy | Rear | G¼ | No | 333333333804 |
| Ø50 | 0 + 70 + 100 bar | Cuprous alloy | Rear | G¼ | No | 299170990006 |
| Ø50 | 0 + 200 + 315 bar | Cuprous alloy | Rear | G¼ | No | 202520990028 |
| Ø50 | 0 + 240 + 315 bar | Cuprous alloy | Rear | G¼ | No | On demand |

### Ø50 ¼ FEMALE METAL FACE SEAL VERTICAL FOR STAINLESS STEEL REGULATOR

| Diameter | Scale | Material | Connection | Female thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | -1 + 11 + 15 bar | Stainless steel | Vertical | ¼ face seal | No | On demand |
| Ø50 | 0 + 187 + 250 bar | Stainless steel | Vertical | ¼ face seal | No | 333333333875 |

### Ø50 ¼ MALE METAL FACE SEAL REAR CONNECTION FOR STAINLESS STEEL PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 10 + 14 bar | Stainless steel | Rear | ¼ face seal | No | On demand |
| Ø50 | 0 + 16 + 25 bar | Stainless steel | Rear | ¼ face seal | No | On demand |
| Ø50 | 0 + 310 + 414 bar | Stainless steel | Rear | ¼ face seal | No | On demand |

### Ø50 ⅛ NPT MALE REAR CONNECTION FOR BRASS PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 800 psig | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø50 | 0 + 27 + 36 psig | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø50 | 0 + 440 + 580 psig | Cuprous alloy | Rear | ⅛ NPT | No | 333333333499 |
| Ø50 | 0 + 3400 + 4568 psig | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø50 | 0 + 200 + 315 bar | Cuprous alloy | Rear | ⅛ NPT | No | 390087990005 |

# STANDARD PRESSURE GAUGES (continued)

### Ø50 ⅛ NPT MALE REAR CONNECTION FOR STAINLESS STEEL PANEL

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 200 + 315 bar | Stainless steel | Rear | ⅛ NPT | No | 333333333434 |

### Ø40

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø40 | 0 + 240 + 315 bar | Cuprous alloy | Vertical | G ¼ | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | G ⅛ | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | G ⅛ | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | G ⅛ | No | 333333333881 |
| Ø40 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | G ⅛ | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | M10 x 1 | No | 299090820903 |
| Ø40 | 0 + 10 + 15 bar | Cuprous alloy | Vertical | M10 x 1 | No | 299001990005 |
| Ø40 | 0 + 16 + 25 bar | Cuprous alloy | Vertical | M10 x 1 | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Vertical | M10 x 1 | No | On demand |
| Ø40 | 0 + 175 bar | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø40 | 0 + 240 + 315 bar | Cuprous alloy | Rear | G ¼ | No | On demand |
| Ø40 | 0 + 240 + 315 bar | Cuprous alloy | Rear | G ¼ | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Cuprous alloy | Rear | G ⅛ | No | On demand |
| Ø40 | 0 + 300 + 400 bar | Cuprous alloy | Rear | G ⅛ | No | On demand |
| Ø40 | 0 + 300 + 400 bar | Cuprous alloy | Rear | G ⅛ | No | On demand |
| Ø40 | -1 + 1 + 1,5 bar | Cuprous alloy | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 1,5 + 2,5 bar | Cuprous alloy | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 2,5 + 5 bar | Cuprous alloy | Rear | M10 x 1 | No | 333333334833 |
| Ø40 | -1 + 3 + 5 bar | Cuprous alloy | Rear | M10 x 1 | No | 390000990032 |
| Ø40 | -1 + 4 + 6 bar | Cuprous alloy | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 8 + 12 bar | Cuprous alloy | Rear | M10 x 1 | No | 333333333000 |
| Ø40 | -1 + 10 + 15 bar | Cuprous alloy | Rear | M10 x 1 | No | 390000990037 |
| Ø40 | -1 + 1 + 1,5 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 1,5 + 2,5 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 2,5 + 5 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 3 + 5 bar | Stainless steel | Rear | M10 x 1 | No | 299303990000 |
| Ø40 | -1 + 4 + 6 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 5 + 8 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | -1 + 8 + 12 bar | Stainless steel | Rear | M10 x 1 | No | 333333333906 |
| Ø40 | -1 + 10 + 15 bar | Stainless steel | Rear | M10 x 1 | No | 333333334834 |
| Ø40 | 1 + 12 + 16 bar | Stainless steel | Rear | M10 x 1 | No | 333333333944 |
| Ø40 | 0 + 40 + 60 bar | Stainless steel | Rear | M10 x 1 | No | On demand |
| Ø40 | 0 + 50 + 70 bar | Stainless steel | Rear | ⅛ NPT | No | 333333333145 |
| Ø40 | 0 + 160 + 205 bar | Stainless steel | Rear | ⅛ NPT | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Stainless steel | Rear | ⅛ NPT | No | On demand |
| Ø40 | 0 + 200 + 315 bar | Stainless steel | Rear | G ⅛ | No | On demand |

### Ø36

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø36 | 0 + 750 + 1000 psig | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø36 | 0 + 2250 + 3000 psig | Cuprous alloy | Rear | ⅛ NPT | No | On demand |
| Ø36 | 0 + 207 + 275 bar | Stainless steel | Rear | M10 x 1 | No | On demand |

# CONTACT PRESSURE GAUGES

### NORMALLY OPEN CONTACT PRESSURE GAUGE, Ø50 M10 X 1 MALE VERTICAL CONNECTION

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 16 bar | Cuprous alloy | Vertical | M10 x 1 | Inductive | On demand |
| Ø50 | 0 + 300 + 400 bar | Cuprous alloy | Vertical | M10 x 1 | Inductive | 360021990001 |
| Ø50 | 0 + 400 bar | Cuprous alloy | Vertical | M10 x 1 | Sliding | 390000990013 |

### NORMALLY OPEN CONTACT PRESSURE GAUGE, Ø50 M10 X 1 MALE REAR CONNECTION

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 16 bar | Cuprous alloy | Rear | M10 x 1 | Inductive | 390001990004 |
| Ø50 | 0 + 40 bar | Cuprous alloy | Rear | M10 x 1 | Inductive | 299178990028 |
| Ø50 | 0 + 100 bar | Cuprous alloy | Rear | M10 x 1 | Inductive | On demand |
| Ø50 | 0 + 100 bar | Cuprous alloy | Rear | M10 x 1 | Sliding | On demand |
| Ø50 | 0 + 250 bar | Cuprous alloy | Rear | M10 x 1 | Sliding | 390000990011 |
| Ø50 | 0 + 250 bar | Cuprous alloy | Rear | M10 x 1 | Inductive | 390000990012 |
| Ø50 | 0 + 400 bar | Cuprous alloy | Rear | M10 x 1 | Inductive | 390003990002 |
| Ø50 | 0 + 400 bar | Cuprous alloy | Rear | M10 x 1 | Sliding | On demand |
| Ø50 | 0 + 250 bar | Cuprous alloy | Rear | M10 x 1 | Sliding | On demand |
| Ø50 | 0 + 16 bar | Stainless steel | Rear | M10 x 1 | Inductive | On demand |
| Ø50 | 0 + 40 bar | Stainless steel | Rear | M10 x 1 | Inductive | 333333334560 |
| Ø50 | 0 + 100 bar | Stainless steel | Rear | M10 x 1 | Sliding | On demand |
| Ø50 | 0 + 100 bar | Stainless steel | Rear | M10 x 1 | Inductive | On demand |
| Ø50 | 0 + 250 bar | Stainless steel | Rear | M10 x 1 | Sliding | 390014990002 |
| Ø50 | 0 + 250 bar | Stainless steel | Rear | M10 x 1 | Inductive | 390014990003 |
| Ø50 | 0 + 400 bar | Stainless steel | Rear | M10 x 1 | Sliding | On demand |
| Ø50 | 0 + 400 bar | Stainless steel | Rear | M10 x 1 | Inductive | 333333334568 |

### NORMALLY OPEN CONTACT PRESSURE GAUGE, Ø50 ¼ FEMALE METAL FACE SEAL VERTICAL CONNECTION

| Diameter | Scale | Material | Connection | Female thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | -1 + 9 bar | Stainless steel | Vertical | ¼ face seal | Inductive | On demand |
| Ø50 | 0 + 16 bar | Stainless steel | Vertical | ¼ face seal | Inductive | On demand |
| Ø50 | 0 + 40 bar | Stainless steel | Vertical | ¼ face seal | Inductive | On demand |
| Ø50 | 0 + 100 bar | Stainless steel | Vertical | ¼ face seal | Sliding | On demand |
| Ø50 | 0 + 250 bar | Stainless steel | Vertical | ¼ face seal | Sliding | On demand |

### NORMALLY OPEN CONTACT PRESSURE GAUGE, Ø50 M: ¼ METAL FACE SEAL REAR CONNECTION

| Diameter | Scale | Material | Connection | Male thread | Contact | KIT part number |
|---|---|---|---|---|---|---|
| Ø50 | 0 + 40 bar | Stainless steel | Rear | ¼ face seal | Sliding | On demand |
| Ø50 | 0 + 250 bar | Stainless steel | Rear | ¼ face seal | Sliding | On demand |
| Ø50 | 0 + 250 bar | Stainless steel | Rear | ¼ face seal | Inductive | On demand |

# CEN EXT/TD EXT | EXTENSIONS

Left or right, 2 or 3 cylinders extension for supply board (CM or MOD series) and switch over board (TD or CEN series)

## EXTENSIONS

★ For supply boards and switch over boards
★ 2 or 3 cylinders version

Special requirements on request

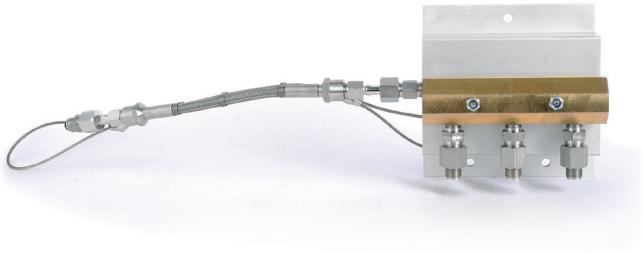
## KEY FEATURES

- High pressure header to connect cylinder batteries available for various gases
- 2 or 3 cylinder version
- Standard inlet: G ⅜ - Male
- Standard outlet: G ⅜ - Female
- With plate for TD, CM series (option for CEN & MOD series)

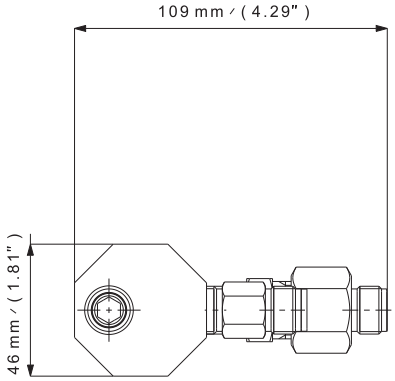
## OPTIONS

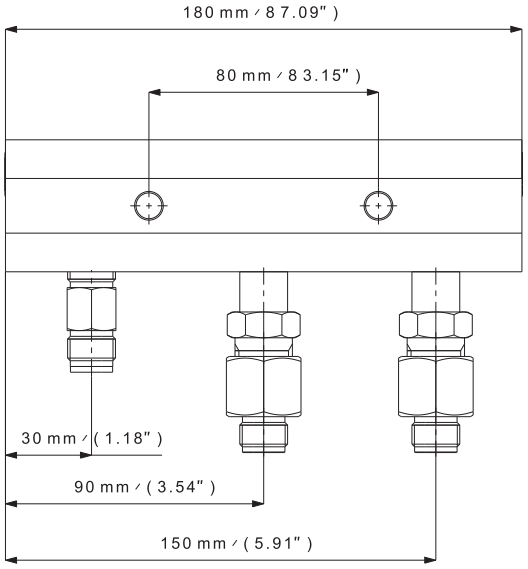
- ¼ NPT inlet connection adaptor
- Plate for CEN & MOD extension
- Shut off valves
- Non-return valve (type C or E)
- Flexible hose for connection with cylinders

### CEN & MOD EXTENSION



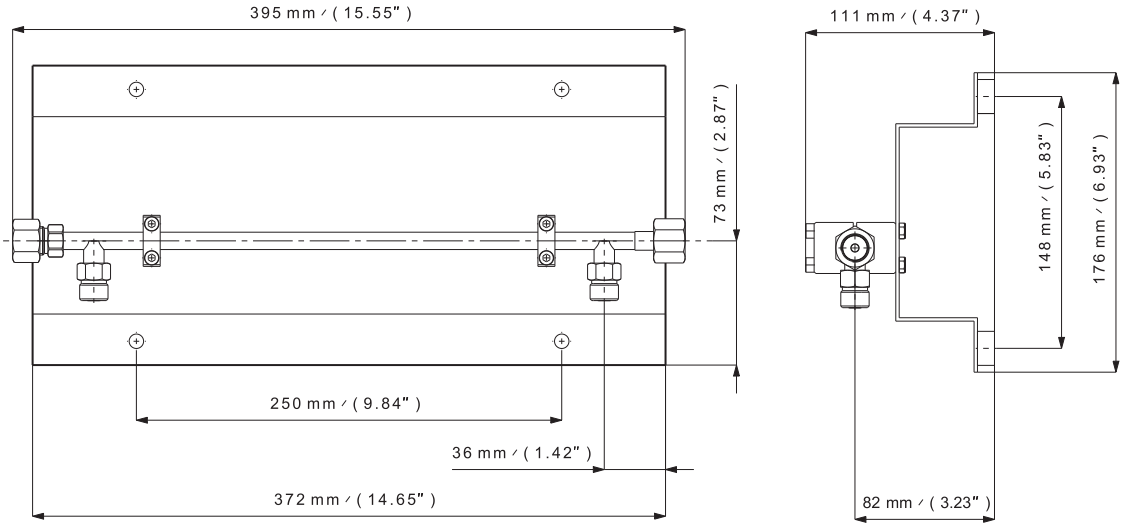
### TD & CM SERIES EXTENSION



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Material** | Raw brass (CEN & MOD)<br>or Stainless steel (TD & CM) | **Temperature range** | -20°C to + 60°C<br>-4°F to + 140°F | **Ports (outlet)** | G ⅜ - Female |
| **Gasket** | PA 6.6 (CEN & MOD versions) | **Inlet pressure max.** | 300 bar<br>4350 psig | **Shut-off valves** | Option |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Seat orifice size** | Ø 4 mm<br>(TDL version) | **Oxygen use** | OK |
| **Plate** | Option (CEN & MOD versions)<br>Standard (TD & CM versions) | **Connections** | 2 or 3 cylinders | | |
| **Leak rate** | $10^{-8}$ mbar ℓ/s He | **Ports (inlet)** | G ⅜ - Male,<br>AFNOR - type C or type E | | |




## PRODUCT CONFIGURATOR

| | Product | | Number of cylinder | | Extension Side | | O-ring Material | End Connections | | Plate | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EXTENSION | TD 200 | | 3C | | L | | EPDM | G | | P | |
| | MOD - supply board | **MOD** | Extension for 2 cylinders | **2C** | Left extension | **L** | EPDM - standard | In: G ⅜ - Male<br>Out: G ⅜ - Female | **G** | Without Plate (CEN & MOD only) | **N** |
| | CEN - switch over board | **CEN** | Extension for 3 cylinders | **3C** | Right extension | **R** | NBR | In: AFNOR C type<br>Out: G ⅜ - Female | **C** | With plate | **P** |
| | CM 200 - supply board | **CM 200** | | | | | FPM | In: AFNOR E type<br>Out: G ⅜ - Female | **E** | | |
| | TD 200 - switch over board | **TD 200** | | | | | | | | | |
| | CM 500 - supply board | **CM 500** | | | | | | | | | |
| | TD 500 - switch over board | **TD 500** | | | | | | | | | |

# PIGTAILS

Straight or elbow pigtail ideally suited to connect CM series supply boards or TD series switch over boards to gas cylinders

### PIGTAILS

★ high pressure
★ straight or elbow
★ stainless steel, electro polished

Special requirements on request

### KEY FEATURES

- Cylinder connector according the following standard:
- AFNOR, DIN, NEN, UNI...
- Other connections: on demand
- Outlet connections: G ⅜ - Female
- Material: stainless steel, electro polished

### OPTIONS

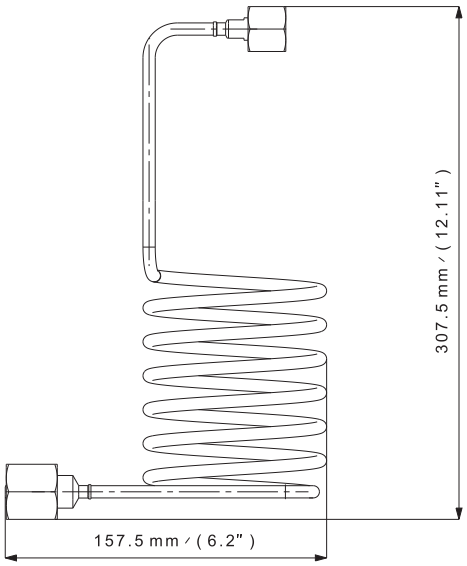
- Different outlet connection
- Shut off valve

### STRAIGHT VERSION

### ELBOW VERSION

### PRODUCT CONFIGURATOR

| | STANDARD | | GAS | VERSION | |
|---|---|---|---|---|---|
| PIGTAIL | AFNOR | | 02 | S | |
| | French standard | AFNOR | Please indicate gas type | Straight version | S |
| | German standard | DIN | | Elbow version | E |
| | British standard | BS | | | |
| | American standard | CGA | | | |
| | Italian standard | UNI | | | |
| | Dutch standard | NEN | | | |
| | G ⅜ - Female inlet connection | G | | | |



# FX 01 / FX 02 | FLEXIBLE HOSES

Flexible hoses for various pressures used for connecting supply boards, switch over boards and other equipment at the source of gas supply

## FLEXIBLE HOSES

★ high pressure
★ PTFE + stainless steel (FX 01)
★ stainless steel (FX 02)

Special requirements on request

## KEY FEATURES

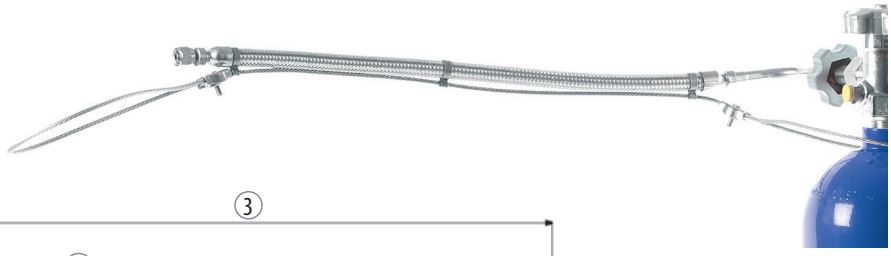
- Stainless steel hose (FX 02)
- Stainless steel + PTFE hose (FX 01)
- Compatible with neutral and corrosive gases according to the hose type.
- The hose is composed of a stainless steel double braid, a stainless steel or PTFE inside, and end connections.
- The hose is standardly equipped with a stainless steel safety cable as a safety best practice.

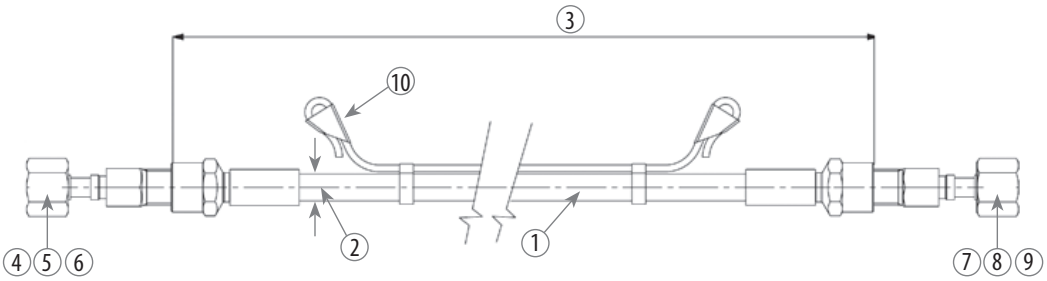
## OPTIONS

- Without safety cable version
- Elbow version

## MAX. OPERATING PRESSURE

| Tube int. diam. | PTFE stainless steel | | Stainless steel | |
|---|---|---|---|---|
| DN 6 | 300 bar | 4531 psig | 360 bar | 5221 psig |
| DN 10 | 200 bar | 2900 psig | 240 bar | 3480 psig |
| DN 16 | 125 bar | 1812 psig | 85 bar | 1232 psig |
| DN 20 | 100 bar | 1450 psig | 80 bar | 1160 psig |
| DN 25 | 80 bar | 1160 psig | 70 bar | 1015 psig |






## PRODUCT CONFIGURATOR

| 1 | | 2 | | 3 | | 4-7 | | 5-8 | | 6-9 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | Inner Diameter | | Length | | Type of connection | | Size of connection or cylinder connection | | Thread | | Options | |
| FX01 | | DN6 | | 0350 | | RB | | 6 | | N | | C | |
| PTFE/stainless steel 304 | FX01 | 6 mm | DN6 | 350 mm | 0350 | tube fitting | RB | 6 mm | 6 | NPT | N | Safety cable (recommended) | C |
| Stainless steel 316L / 304 | FX02 | 10 mm | DN10 | 500 mm | 0500 | female pipe adapter | UF | 8 mm | 8 | BSPP-RP | G | Elbow on cylinder side | B |
| | | 16 mm | DN16 | 1000 mm | 1000 | male pipe adapter | UM | 10 mm | 10 | BSPT | T | Elbow on rotating nut side | S |
| | | 20 mm | DN20 | 1500 mm | 1500 | butt weld | BW | 12 mm | 12 | 16 x 1,336 | 16 | Elbow on both sides | SB |
| | | 25 mm | DN25 | 2000 mm | 2000 | tube adapter | AD | 16 mm | 16 | G ⅜ - Female w/ rotating nut | G6 | No safety cable, no elbow | A |
| | | | | 2500 mm | 2500 | female face seal fitting | RVF | 20 mm | 20 | | | | |
| | | | | 3000 mm | 3000 | male face seal fitting | RVM | 25 mm | 25 | | | | |
| | | | | 12 inches | 12" | French Standard cylinder connection | NF | ¼ inch | ¼" | | | | |
| | | | | 24 inches | 24" | German cylinder connection | DIN | ⅜ inch | ⅜" | | | | |
| | | | | 36 inches | 36" | British Standard cylinder connection | BS | ½ inch | ½" | | | | |
| | | | | 48 inches | 48" | American Standard cylinder connection | CGA | ¾ inch | ¾" | | | | |
| | | | | 60 inches | 60" | Italian Standard cylinder connection | UNI | 1 inch | 1" | | | | |
| | | | | | | 300 bar cylinder connection | FTSC | cylinder connection | | | | | |

# DUOBLOC | 3 INLETS/2 OUTLETS MONOBLOCK VALVES

Monoblock valves with 3 common inlets and 2 manual and multi-turn shut off valves for various pure gases

## MONOBLOCK VALVES

★ 200 bar or 300 bar
★ Multi-turn
★ 3 inlets/2 outlets

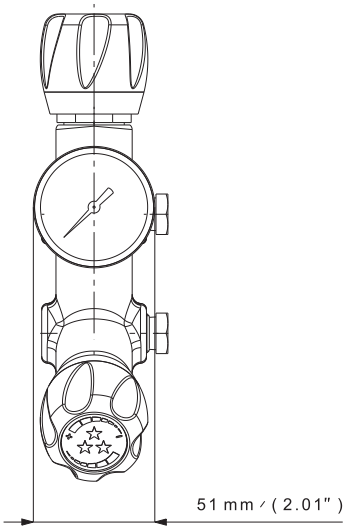
Special requirements on request

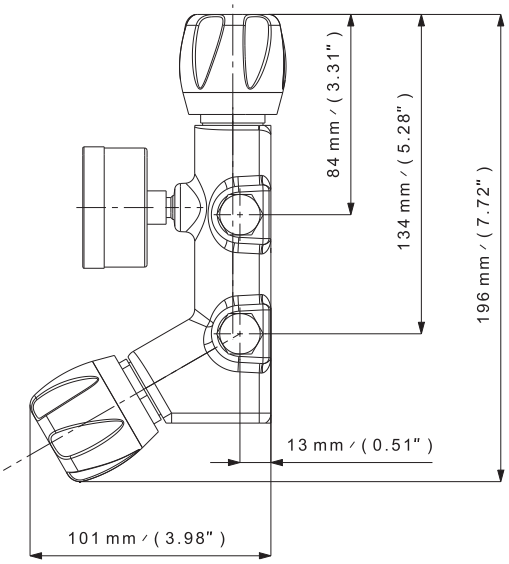
## KEY FEATURES

- Purity up to 6.0
- Multi-turn version
- Raw brass, chrome plated brass or stainless steel
- 3 common inlets
- 2 manual shut off valves with non-rotating seat disc holder (brass version), with diaphragm (stainless steel version)
- 1 high pressure gauge
- Standard inlet/outlet: G ⅜ - Female
- Rear thread for panel mounting
- Stainless steel version only available in 200 bar

## OPTIONS

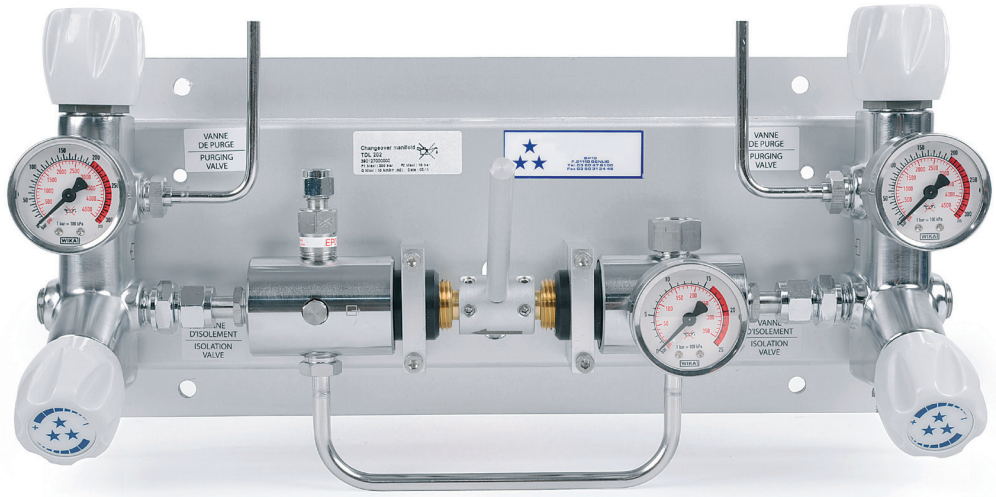
- Various inlet/outlet connections including ⅜ NPT - Male, ¼ NPT - Female
- NBR or FPM O-ring
- Many inlet/outlet fittings available



## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Female ports** | G ⅜, ¼ NPT or ⅜ NPT (inlet/outlet) | **Weight** | ± 1,3 kg<br>± 2.87 lbs | **Inlet pressure** | 200 bar / 300 bar<br>2900 psig / 4350 psig |
| **Seat seal** | PA 6.6 (brass version)<br>PCTFE (SS version) | **Leak rate** | $3.10^{-7}$ mbar ℓ/s He | **Flow coefficient** | Cv 0.208, Kv 0,18 (main in)<br>Cv 0.220, Kv 0,19 (lateral) |
| **O-ring** | EPDM - standard<br>NBR<br>FPM | **Temperature range** | -20°C to + 50°C<br>-4°F to + 122°F | **Multi-turn hand-wheel** | OK |
| **Bottom tapered** | OK | | | **Oxygen use** | OK (special $O_2$ version) |




Left inlets

Right inlets

## PRODUCT CONFIGURATOR

| | Inlet Pressure | | Body Material | | End Connections | | Port Orientation | | O-ring Material | Version | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DUOBLOC | 200 | | L | | G | | LF | | EPDM | STD | |
| | 200 bar<br>2900 psig | **200** | Raw Brass | **LB** | G ⅜ - Female | **G** | Left inlets | **LF** | EPDM - standard | Standard | **STD** |
| | 300 bar (brass only)<br>4350 psig | **300** | Chrome Plated Brass | **L** | ¼ NPT - Female (L&I version) | **N** | Right Inlets | **R** | NBR | Oxygen use | **$O_2$** |
| | | | Stainless steel | **I** | ⅜ NPT - Female (L&I version) | **N3** | | | FPM | | |

# SV 10 RELIEF VALVE

Equipped with a valve opening at the set up value to evacuate the over pressure build in the process

## RELIEF VALVE

★ Connectable to purging line
★ CE marked (97/23/CE)
★ AISI 303 or AISI 316L

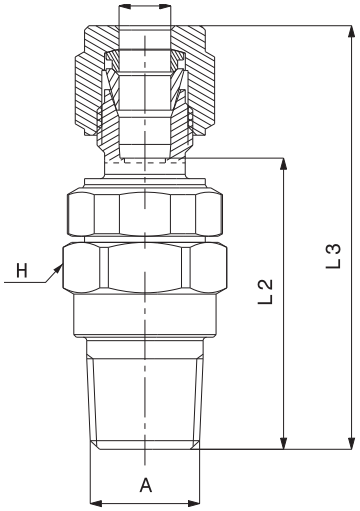
Special requirements on request

## KEY FEATURES

- CE marked according to the European Directive 97/23/CE.
- Compatible with all Rotarex regulators, supply boards and switch over boards.
- Setup value defined.
- Small dimensions.
- Compatible with many gases (see table).
- Delivered with a P.A flat seal for the chrome-plated brass version and a PCTFE flat seal for the AISI 316L version.
- Delivered with the user manual.

## OPTIONS

- The relief valve must be dimensioned in such a way that the pipe pressure will under no circumstances surpass the conception pressure of pipes, even when the relief valve is venting.
- The pressure in the pipe must not exceed the calculated value even when the device is open.




**A :** M: G ⅜, M: ¼ NPT
**B :** Ø6 mm or Ø¼"
**H :** hexagon of 17 mm on flats
**L1 :** 27 mm
**L2 :** approx. 37 mm
**L3 :** approx. 51 mm

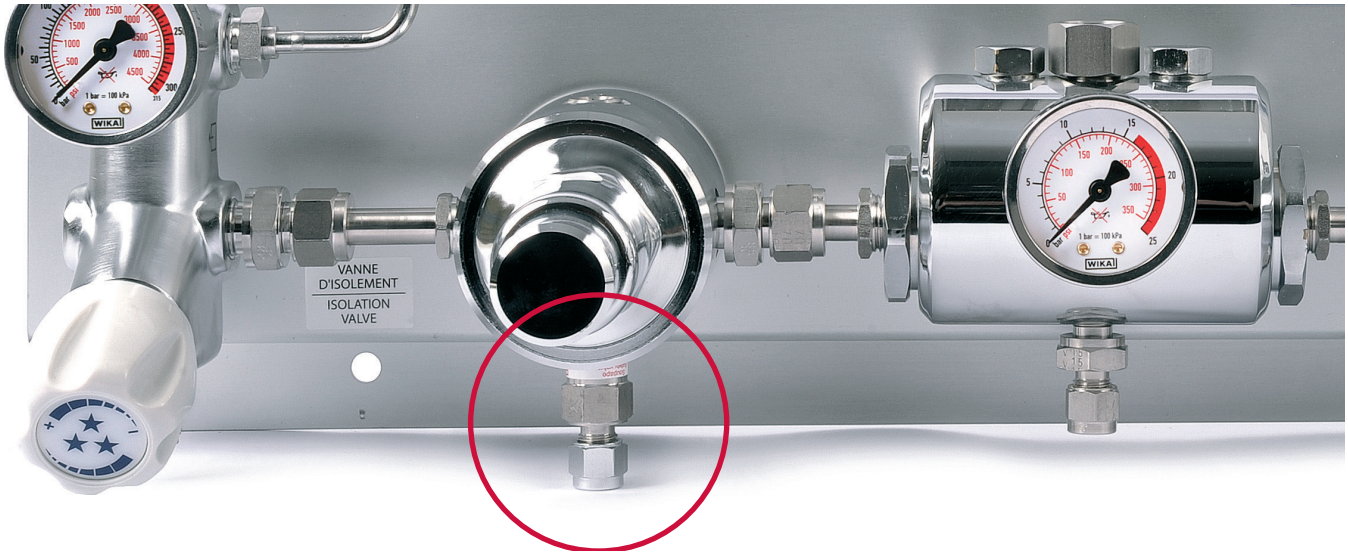

## A FEW FLOW VALUES OF THE SV 10 AT A PRESSURE 1.25 TIMES THE TIGHTNESS PRESSURE

| Tightness pressure (marked on the body) In bar | 2 bar | 4 bar | 5 bar | 9 bar | 11 bar | 12 bar | 16 bar | 22 bar | 24 bar | 35 bar | 50 bar | 62 bar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum flow for 1.25 x tightness pressure in $m^3/h$ ($N_2$) | * | 7.6 | 9.8 | 17 | 21.4 | 23 | 30.2 | 38.1 | 43.4 | 57.5 | 77.4 | 107.1 |

*Minimum flow Q = 5,2 $m^3/h$ - $N_2$ with 3 bar inlet pressure

## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Gasket** | PA 6.6 (brass/AISI 303 version)<br>PCTFE (AISI 316L version) | **Gas with EPDM and stainless steel** | $CO_2$, CO, He, $N_2$, Air, Ne, Kr, Xe, $C_2H_2$, $NH_3$, $H_2$ | **Ports (inlet)** | G ⅜ - Male or¼ NPT - Male |
| **O-ring** | EPDM<br>FPM<br>NBR | **Gas with FPM and stainless steel** | Ar, He, $N_2$, $H_2$, Air, Ne, Kr, Xe, $C_4H_{10}$, $CH_4$, $C_{12}$, $O_2$ | **Ports (outlet)** | DR 6 mm or ¼" |
| **Gas with NBR and brass** | Ar, CO, He, $N_2$, $H_2$, Air, Ne, Kr, Xe, $C_4H_{10}$, $CH_4$ | **Oxygen use** | OK | **Body** | Chrome-plated brass/AISI 303 or AISI 316L |
| **Gas with NBR and stainless steel** | Ar, CO, He, $N_2$, $H_2$, Air, Ne, Kr, Xe, $NH_3$, $C_4H_{10}$, $CH_4$ | **Tightness pressure** | 2 to 62 bar<br>(29 to 900 psig) | **Leak rate** | $10^{-7}$ mbar ℓ/s He |
| **Gas with EPDM and brass** | Ar, $CO_2$, CO, He, $N_2$, $H_2$, Air, Ne, Kr, Xe, $C_2H_2$ | **Seat orifice size** | Hexagonal Ø 2 mm | **Temperature range** | -20°C to +65°C<br>-4°F to +149°F |




Safety Best Practice

# SV10 (cont'd)

## CONNECTABLE RELIEF VALVE - CE marked (97/23/CE)

| Tighness pressure | Material | Male inlet connection | Outlet connection (tube fitting) | O-Ring | Rotarex designation | Kit part number |
|---|---|---|---|---|---|---|
| 2 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 2 bar \ G ⅜\ LT \ EPDM \ DB6 | 380001990001 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 2 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990301 |
| 4 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 4 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990003 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 4 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990302 |
| 5 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 5 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990004 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 5 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990303 |
| | | | | FPM | KIT \ SOUP \ SV10 \ 5 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990304 |
| 9 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 9 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990005 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 9 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990305 |
| | | | | FPM | KIT \ SOUP \ SV10 \ 9 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990306 |
| 11 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 11 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990059 |
| 12 bar | Stainless steel 316L | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 12 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990307 |
| 16 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990006 |
| | | | DB ¼" | | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ LT \ EPDM \ DB¼ | 380001990007 |
| | | | DB 6mm | NBR | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ LT \ NBR \ DB6 | 380001990014 |
| | Stainless steel 316L | | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990308 |
| | | | DB ¼" | | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ 316L \ EPDM \ DB¼ | 380001990358 |
| | | | DB 6mm | FPM | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990309 |
| | | | DB ¼" | | KIT \ SOUP \ SV10 \ 16 bar \ G ⅜ \ 316L \ FPM \ DB¼ | 380001990310 |
| 22 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 22 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990058 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 22 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990311 |
| | | | | FPM | KIT \ SOUP \ SV10 \ 22 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990313 |
| | | | | | KIT \ SOUP \ SV10 \ 22 bar \ G ⅜ \ 316L \ FPM \ DB6 \ ELE | 380001990312 |
| 24 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 24 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990008 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 24 bar \ ¼ NPT \ LT \ EPDM \ DB6 | 380001990013 |
| | Stainless steel 316L | G ⅜ | | | KIT \ SOUP \ SV10 \ 24 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990320 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 24 bar \ ¼ NPT \ 316L \ EPDM \ DB6 | 380001990319 |
| | | G ⅜ | | FPM | KIT \ SOUP \ SV10 \ 24 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990356 |
| 35 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 35 bar\ G ⅜ \ LT \ EPDM \ DB6 | 380001990009 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 35 bar \ ¼ NPT \ LT \ EPDM \ DB6 | 380001990011 |
| | Stainless steel 316L | G ⅜ | | | KIT \ SOUP \ SV10 \ 35 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990314 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 35 bar \ ¼ NPT \ 316L \ EPDM \ DB6 | 380001990317 |
| | | G ⅜ | | FPM | KIT \ SOUP \ SV10 \ 35 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990315 |
| 50 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 50 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990060 |
| | Stainless steel 316L | | | | KIT \ SOUP \ SV10 \ 50 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990369 |
| 62 bar | Brass + SS 303 | G ⅜ | DB 6mm | EPDM | KIT \ SOUP \ SV10 \ 62 bar \ G ⅜ \ LT \ EPDM \ DB6 | 380001990010 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 62 bar \ ¼ NPT \ LT \ EPDM \ DB6 | 380001990012 |
| | Stainless steel 316L | ¼ NPT | | FPM | KIT \ SOUP \ SV10 \ 62 bar \ ¼ NPT \ 316L \ FPM \ DB6 | 380001990318 |
| | | G ⅜ | | EPDM | KIT \ SOUP \ SV10 \ 62 bar \ G ⅜ \ 316L \ EPDM \ DB6 | 380001990357 |
| | | | | FPM | KIT \ SOUP \ SV10 \ 62 bar \ G ⅜ \ 316L \ FPM \ DB6 | 380001990316 |
| 320 psig | Stainless steel 316L | G ⅜ | DB ¼" | FPM | KIT \ SOUP \ SV10 \ 320 psig \ G ⅜ \ 316L \ FPM \ DB¼ | 380001990365 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 320 psig \ ¼ NPT \ 316 \ FPM \ DB¼ | 380001990370 |
| 507 psig | Stainless steel 316L | G ⅜ | DB ¼" | FPM | KIT \ SOUP \ SV10 \ 507 psig \ G ⅜ \ 316L \ FPM \ DB¼ | 380001990366 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 507 psig \ ¼ NPT \ 316 \ FPM \ DB¼ | 380001990371 |
| 725 psig | Stainless steel 316L | G ⅜ | DB ¼" | FPM | KIT \ SOUP \ SV10 \ 725 psig \ G ⅜ \ 316L \ FPM \ DB¼ | 380001990367 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 725 psig \ ¼ NPT \ 316 \ FPM \ DB¼ | 380001990372 |
| 900 psig | Stainless steel 316L | G ⅜ | DB ¼" | FPM | KIT \ SOUP \ SV10 \ 900 psig \ G ⅜ \ 316L \ FPM \ DB¼ | 380001990368 |
| | | ¼ NPT | | | KIT \ SOUP \ SV10 \ 900 psig \ ¼ NPT \ 316 \ FPM \ DB¼ | 380001990373 |

# SERIES VD | DIAPHRAGM LINE VALVE

- Low to high-pressure line valves for various pure gase
- High leak tightness through diaphragm sealing
- a consistent design for all versions

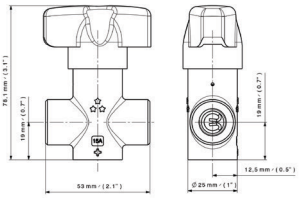
## SHUT-OFF VALVE

★ From 50 to 300 bar inlet pressure
★ Diaphragm seal
★ ¼ turn handwheel
★ $O_2$ compatible (only with Brass version)

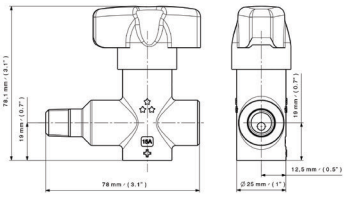
## KEY FEATURES

- For gas purity up to 6.0
- Hastelloy® diaphragm for tightness and gas compatibility
- ¼ turn ergonomic handwheel
- Chrome-plated brass or stainless steel
- 3 versions : 50, 200 and 300bar inlet working pressure
- 3 orientations : female-female, male-female, female-male
- Available with 1/4NPT or G3/8 connections
- With rear threads for panel mounting

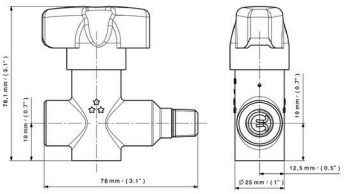
### ¼ NPT FF & G⅜" FF



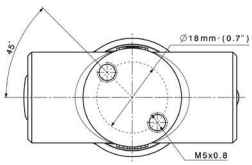
### ¼ NPT MF



### ¼ NPT FM



### REAR MOUNTING




## SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **Ports** | ¼ NPT : FF, MF or FM<br>G⅜: FF, MF or FM | **Weight** | 310g | **Inlet pressure** | 50 / 200 / 300 bar |
| **Seat seal** | PCTFE | **Leak rate** | $10^{-8}$ mbar l/s He | **Flow coefficient (Kv)** | 0,17 Kv / 0,2 Cv |
| **Diaphragm** | Hastelloy ® | **Temperature range** | -20° to +60 °C | **Oxygen use** | Ok up to 310 bar (brass version only) |
| **Bottom tapered** | OK 2x M5 at Ø18mm | **Seat orifice size** | Ø 4mm | | |

## PRODUCT CONFIGURATOR

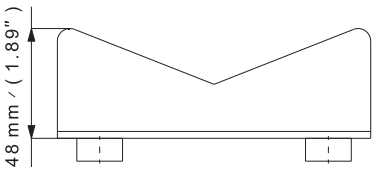
| | Body Material | | | Inlet Pressure | | Orientation | | Connection | | Handwheel | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V | B | | D | 50 | | FF | | N | | ¼T | |
| | Chrome plated brass | B | | 50 bar | 50 | Female-Female | FF | ¼NPT | N | ¼ turn | ¼T |
| | Stainless steel | S | | 200 bar | 200 | Male - Female (only with ¼NPT) | MF | G⅜ | G | | |
| | | | | 310 bar | 310 | Female - Male (only with ¼NPT) | FM | | | | |

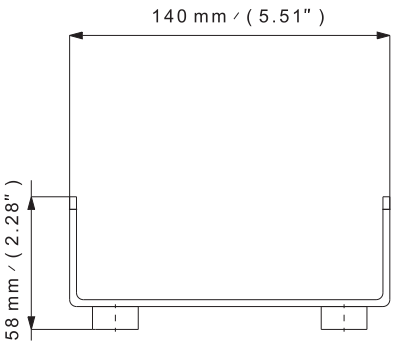
# GAS CYLINDER HOLDER

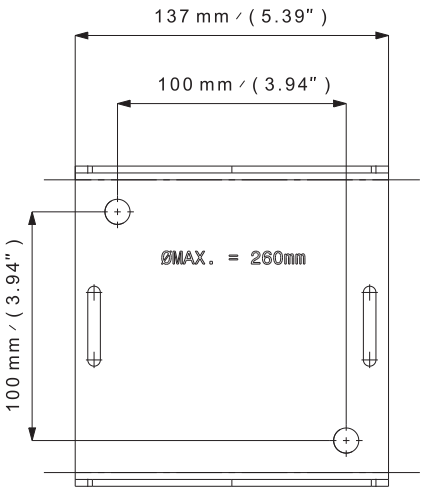
Designed for the storage of one or large number of gas cylinders in an appropriate area

- ★ Can be fixed permanently to the wall
- ★ Securely holds cylinder in place
- ★ Allows permanent designation of appropriate cylinder storage area
- ★ Delivered with a fixing belt
- ★ Many cylinder holders can be used together, side by side
- ★ Part number: 202500000007

Special requirements on request




Rear view

# GAS COMPATIBILITY

### KEY TO GAS COMPATIBILITY:

Locate your gas type in the below chart and see the gas compatibility of each standard material type. Only select materials that are compatible with your gas type.

### GAS COMPATIBILITY WITH MATERIALS (AT 20°C ROOM TEMPERATURE)

| GAS | | B or SS 316L | PA 6.6 | PTFE | PCTFE | NBR | FPM (VITON®) | EPDM |
|---|---|---|---|---|---|---|---|---|
| Acetylene | $C_2H_2$ | B | | OK | OK | | | |
| Argon | Ar | B | OK | OK | OK | OK | OK | OK |
| Butane | $C_4H_{10}$ | B | OK | OK | OK | OK | OK | |
| Carbon dioxide | $CO_2$ | B | OK | OK | OK | | | OK |
| Carbon monoxide | CO | B | OK | OK | OK | OK | | OK |
| Ethane | $C_2H_6$ | B | OK | OK | OK | OK | OK | |
| Helium | He | B | OK | | OK | OK | OK | OK |
| Hydrogen | $H_2$ | B | OK | | OK | OK | OK | OK |
| Krypton | Kr | B | OK | OK | OK | OK | OK | |
| Methane | $CH_4$ | B | OK | OK | OK | OK | OK | |
| Nitric Oxide | NO | SS 316L | | Please consult - depends on proportion of NO in the mixture | | | | |
| Nitrogen | $N_2$ | B | OK | OK | OK | OK | OK | OK |
| Nitrous Oxide | $N_2O$ | SS 316L | | Please consult - depends on proportion of $N_2O$ in the mixture | | | | |
| Oxygen | $O_2$ | B | | | | | OK | OK |
| Propane | $C_3H_8$ | B | OK | OK | OK | OK | | |
| Silane | $SiH_4$ | SS 316L | | OK | OK | | OK | |
| Ammonia | $NH_3$ | SS 316L | OK | OK | OK | | | OK |
| Ethylene | $C_2H_4$ | B | OK | OK | OK | | | |
| Hydrogen Sulfide | $H_2S$ | SS 316L | OK | OK | OK | | OK | OK |
| Sulphur Dioxide | $SO_2$ | SS 316L | | OK | OK | | | OK |
| Sulphur Hexafluoride | $SF_6$ | B | OK | OK | OK | OK | OK | OK |

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# CONVERSION CHARTS

## FLOW CONVERSION

| | $m^3/h$ | l/h | $foot^3/min$ | l/s | $cm^3/s$ |
|---|---|---|---|---|---|
| $m^3/h$ | 1 | $1 \times 10^3$ | 0.589 | 0,2778 | 277,78 |
| l/h | $1 \times 10^{-3}$ | 1 | $5.885 \times 10^{-4}$ | $2,778 \times 10^{-4}$ | 0,2778 |
| $foot^3/min$ | 1,69 | $1,699 \times 10^3$ | 1 | 0,4719 | 471,95 |
| l/s | 3,6 | $3,6 \times 10^3$ | 2.119 | 1 | $10^3$ |
| $cm^3/s$ | $3,6 \times 10^{-3}$ | 3,6 | $2.119 \times 10^{-3}$ | $10^{-3}$ | 1 |

## PRESSURE CONVERSION

| | bar | mbar | kPa | MPa | atm | psig |
|---|---|---|---|---|---|---|
| bar | 1 | $10^3$ | 100 | 0,1 | 0,987 | 14.5 |
| mbar | $10^{-3}$ | 1 | 0,1 | $10^{-4}$ | $9,869 \times 10^{-4}$ | $14.5 \times 10^{-3}$ |
| kPa | $10^{-2}$ | 10 | 1 | $10^{-3}$ | $9,869 \times 10^{-3}$ | 0.145 |
| MPa | 10 | $10^4$ | $10^3$ | 1 | 9,869 | 145 |
| atm | 1,013 | 1013 | 101,3 | $1,013 \times 10^{-1}$ | 1 | 14.69 |
| psig | $6,89 \times 10^{-2}$ | 68,9 | 6,89 | $6,89 \times 10^{-3}$ | $6,8 \times 10^{-2}$ | 1 |

## LEAK RATE

| | Atm.cc /sec | mbar.l /sec | $Atm.mm^3$ /sec | Atm.cc /min | Atm.L /min | $Atm.m^3$ /min | Atm.cu.ft /yr | torr.l /sec |
|---|---|---|---|---|---|---|---|---|
| Atm.cc/sec | 1 | 1.013 | 1000 | 60 | 0.06 | 6.00E-05 | 1116 | 0.759 |
| mbar.l/sec | 0.987 | 1 | 987 | 59.23 | 0.059 | 5.90E-05 | 1101 | 0.75 |
| $Atm.mm^3/sec$ | 0.001 | 0.001 | 1 | 0.06 | 6.00E-05 | 6.00E-08 | 1.116 | 0.0007 |
| Atm.cc/min | 0.0167 | 0.017 | 16.67 | 1 | 0.001 | 1.00E-06 | 18.6 | 0.012 |
| Litre/min | 16.67 | 16.88 | 16667 | 1000 | 1 | 0.001 | 18601 | 12.67 |
| $Atm.m^3/min$ | 16667 | 16883 | 16666667 | 1000000 | 1000 | 1 | 18601190 | 12664 |
| cu ft/yr | 0.0009 | 0.0009 | 0.896 | 0.054 | 5.37E-05 | 5.37E-08 | 1 | 0.0007 |
| torr.l/sec | 1.316 | 1.33 | 1316 | 78.96 | 0.0789 | 7.89E-05 | 1468 | 1 |

## TEMPERATURE

| C° | F° | K° | R° |
|---|---|---|---|
| -20 | -4 | 253 | 456 |
| -10 | 14 | 263 | 474 |
| 0 | 32 | 273 | 492 |
| 10 | 50 | 283 | 510 |
| 20 | 68 | 293 | 528 |
| 30 | 86 | 303 | 546 |
| 40 | 104 | 313 | 564 |
| 50 | 122 | 323 | 582 |
| 60 | 140 | 333 | 600 |
| 70 | 158 | 343 | 618 |
| 80 | 176 | 353 | 636 |
| 90 | 194 | 363 | 654 |
| 100 | 212 | 373 | 672 |
| 200 | 392 | 473 | 852 |
| 300 | 572 | 573 | 1032 |
| 400 | 752 | 673 | 1212 |
| 500 | 932 | 773 | 1392 |
| 600 | 1112 | 873 | 1572 |
| 700 | 1292 | 973 | 1752 |
| 800 | 1472 | 1073 | 1932 |
| 900 | 1652 | 1173 | 2112 |
| 1000 | 1832 | 1273 | 2292 |

## DIMENSION

| metric | inches |
|---|---|
| 3 | 0.135 |
| 6 | 0.270 |
| 8 | 0.360 |
| 10 | 0.450 |
| 12 | 0.540 |
| 14 | 0.630 |
| 16 | 0.720 |
| 18 | 0.810 |
| 20 | 0.900 |
| 22 | 0.990 |
| 25 | 1.125 |

| inch fractional | inch decimal | metric (mm) |
|---|---|---|
| 1⁄16" | 0.063 | 1,59 |
| 1⁄8" | 0.125 | 3,18 |
| 3⁄16" | 0.188 | 4,76 |
| 1⁄4" | 0.250 | 6,35 |
| 5⁄16" | 0.313 | 7,94 |
| 3⁄8" | 0.375 | 9,53 |
| 1⁄2" | 0.500 | 12,70 |
| 7⁄16" | 0.438 | 11,11 |
| 5⁄8" | 0.625 | 15,88 |
| 3⁄4" | 0.750 | 19,05 |
| 7⁄8" | 0.875 | 22,23 |
| 1" | 1.000 | 25,40 |

# NOTES

# NOTES

# NOTES

# A FULL LINE OF GAS CONTROL SOLUTIONS


## COMPLETE SOLUTIONS FROM SOURCE TO PROCESS.

ROTAREX is helping engineers worldwide to get better gas results: from ultra high purity production and medical care facilities to industrial and LPG applications, as well as alternative energy vehicles, fire suppression, diving, aerospace, cryogenics, laboratory, petro-chemical and welding. ROTAREX applies over 90 years of know-how and experience to custom design, develop and manufacture the high performance valves, regulators and fittings to suit your needs, all in one hand. Discover the difference ROTAREX can make in your world.

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ULTRA HIGH PURITY VALVES

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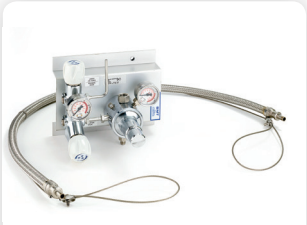

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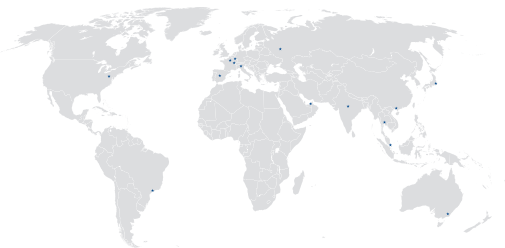

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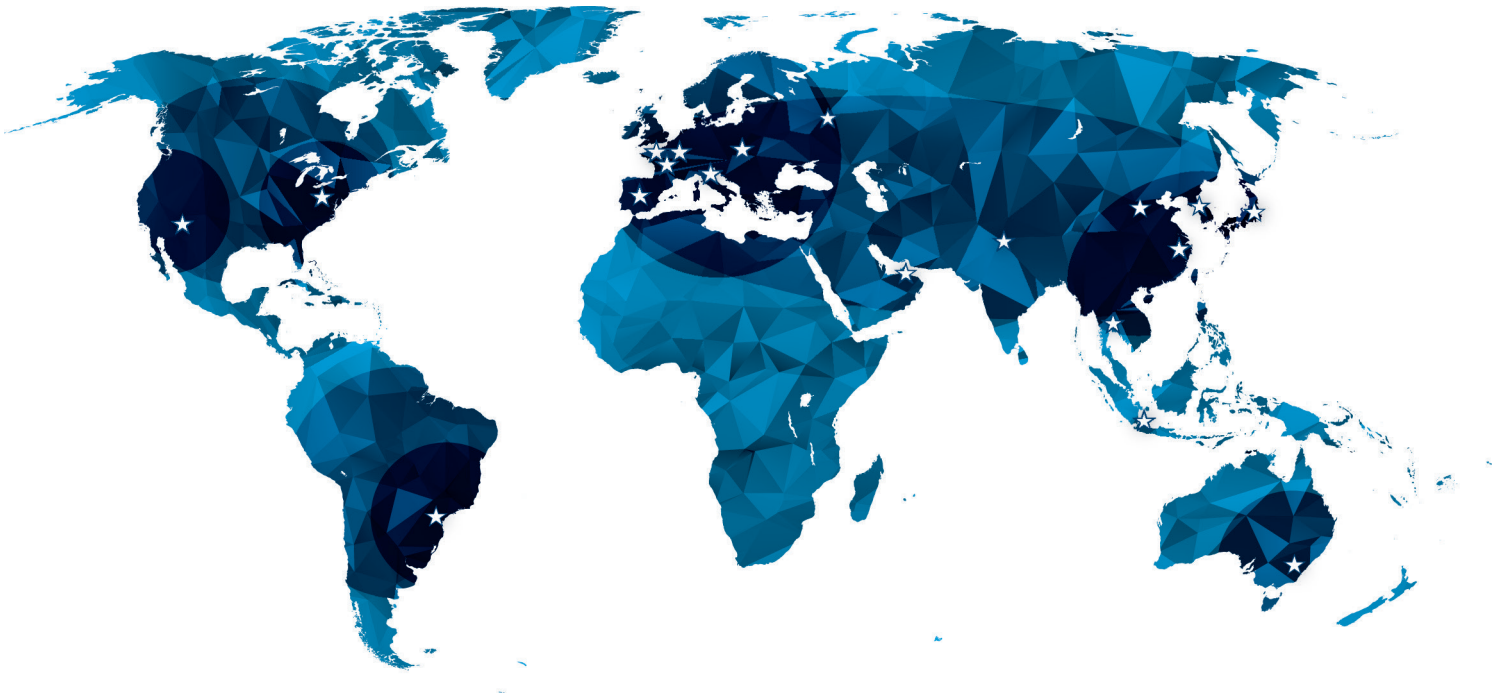

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