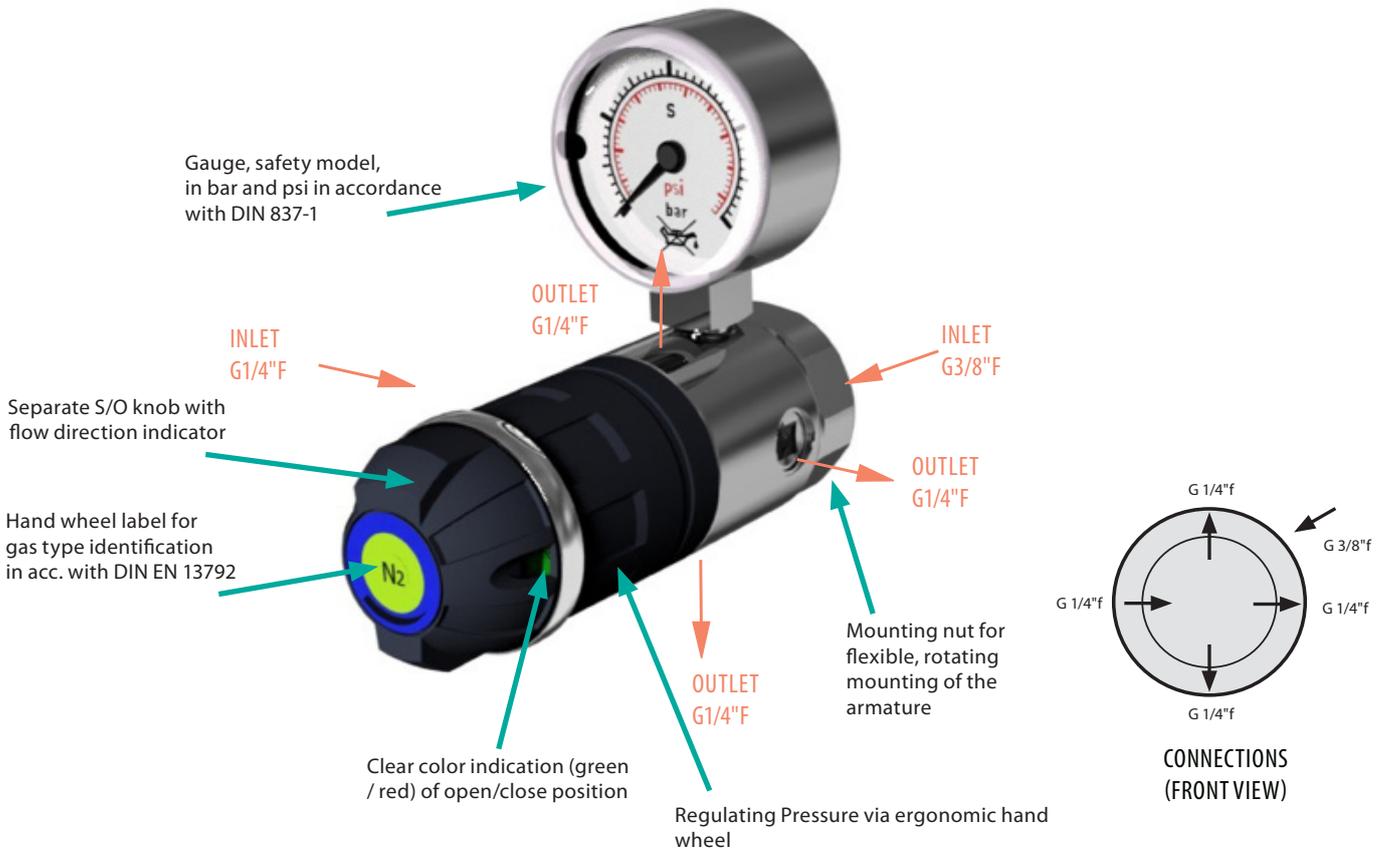


LAB SERIES EMD 3100

LOW PRESSURE - POINT OF-USE EQUIPMENT

LABORATORY PRESSURE REGULATOR EMD 3100



PRESSURE REGULATOR WITH SHUT-OFF FUNCTION

This highly compact version of a pressure regulator combines, in a very small space, pressure regulation and shut-off function of gas flow. This is achieved through a successful combination of the pressure regulator parts with few extra shut-off components. Thereby reducing the pressure regulator and shut-off valve, normally as separate components, to a minimum. The structural size achieves the minimum dimensions. With this construction the inlet and outlet can be attached and interchanged with the greatest flexibility. The use of perfected, core components of the Series 400, available since decades, together with a few new elements ensures the performance and high quality of this construction from the beginning.

SERIES SPECIFIC DATA*

VERSION

Single-stage pressure regulator with high performance values
 Inlet pressure 40 bar.
 Downstream pressure range 0.2 - 10.5 bar / 7 - 150 psi,
 Analysis version (EMD 3104) 0.1 - 2.2 bar / 1.5 - 33 psi.

MATERIAL

Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 CuZn39Pb3 nickel-plated and chrome-plated.

SEAL MATERIAL

Seat: FKM and FFKM with stainless steel, FKM and EPDM with brass.
 Seals: PCTFE with stainless steel and PVDF with brass in dependent upon gas used. Material is specified in each case in the "Technical Data".

INNER PARTS

Low-maintenance, easy to service, pressure regulating unit, with particle-filter in stainless steel and 50 µm mesh at inlet G3/8" f and 100µm at inlet G1/4" f.

MODULAR SYSTEM FOR MAXIMUM FLEXIBILITY OF CONFIGURATION AND SCOPE OF APPLICATION

The basic version is available in the form of flush or surface wall mounting, bench mounted or hanging version. The use of system components allows for countless variations. The combination possibilities with the configurations of inlets and outlets can be tailored to the customers wishes: with regulating valve in elbow and straight versions (DN5), with additional inlet shut-off valve (in elbow or straight form), with flow meter or with diverse wall adaptors.

In this modular form this point-of-use system is particularly compatible and suitable for all lab applications and lab furnishings.

DIAPHRAGM

Increased safety against burst and corrosion defects with the Hastelloy diaphragm.

GUARANTEED LEAKAGE RATES

< 1×10⁻⁹ mbar l/s Helium (outboard),
 < 1×10⁻⁶ mbar l/s Helium (seat)

PURITY

Purity and leakage rates comply with the requirements for applications with high gas purity ≤ 6.0.

WORKING TEMPERATURE

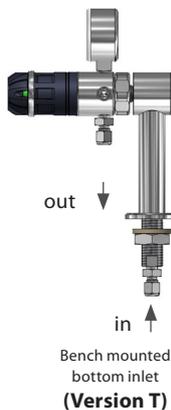
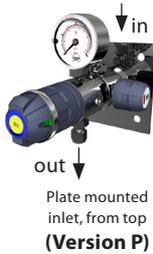
-25 °C to +70 °C / -13 to 160 °F.

INLET / OUTLET CONNECTIONS

Inlet G 3/8" f, outlet G 1/4" f adaptors and compression fittings for metric or imperial tubes available on request.

*Differing data of the individual products are listed under "Technical Data".

LABORATORY PRESSURE REGULATORS EMD 3100 - SURFACE MOUNTED



Single-stage, for inert, reactive, flammable and oxidizing gases and gas mixtures, purity max. 6.0.
EMD 3100: Inlet pressure 40 bar, downstream pressure 0.1-10 bar
EMD 3104 (analytic version): Inlet pressure 12 bar, downstream pressure 0.1-4.4 bar

SPECIAL FEATURES

- Pressure regulator with integrated shut-off function
- Coloured identification of shut-off positions
- Highly compact form
- ECD-compliant
- Ergonomic positioning of the operational elements
- User-friendly system solutions for laboratory applications
- Adjustment knob with gas type identification according to DIN EN 13792
- Analytic version optionally available

DESCRIPTION

The basic version of this pressure regulator with gauge includes an integrated quick-closing function. The gas type is indicated on the front side of the pressure regulator with the appropriate decal. The wall mounting use a wall adapter or a wall mounting plate; the gas supply is brought in through the wall. Further installation versions (on mounting plates) allow for the gas supply to come from the top or the bottom. The bench mounting or the wallmounted version is simply and flexibly accomplished with the help of the same adaptor. Numerous other variations are possible.

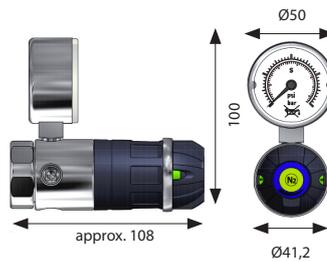
APPLICATION

This highly compact, space saving designed laboratory point-of-use regulator is suitable for surface wall mounting, for installation on tables or a wallmounted version as well as the installation in diverse supply channels. The systems versatile configuration options cover all the customary lab applications and fit to all laboratory furnishings. An analytic version (LAB 3104) is specially designed for low pressure applications in the automotive industry and offers extremely fine adjustment possibilities for pressure and flow rate.

TECHNICAL DATA

| | |
|-----------------------|--|
| Body: | Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated |
| Gauge: | Safety gauge according to EN 837-1 Nominal width 50 mm, class of accuracy 2.5 |
| Pressure gauge range: | 0 - 2.5 / 6 / 16 bar, 0 - 3 / 6 bar (Type 3104) |
| Dimensions (w×h×d): | Approx. 50×100×108 mm |
| Weight: | Approx. 0.64 kg (Basic body) |
| Inlet - Outlet: | G 3/8" f or G 1/4" f, G 1/4" m (depending on version) NPT1/4" f (available for version with rear wall adapter) |
| Temperature range: | -25 °C to +70 °C / -13 to 160 °F |

DIMENSIONS



ORDER CODE

| Type | Periphery | Material | Upstream pressure | Downstream pressure | Surface mounted versions | Inlet | Outlet | Gas type |
|------------------------------------|--|---------------------------------|--|--|---|-------------------------------------|------------------------------------|----------------|
| EMD 3100 | -01 | BC | E | 4 | 0 | CL6 | CL6 | GAS |
| EMD 3100 = Standard | -01= Pressure regulator (MD) | BC= Brass SS=Stainless steel | E= 40 bar D=12 bar (only for EMD 3104) | 1.5= 0.2-1.5 bar 4= 0.2-4 bar 10= 0.5-10.5 bar | 0= Basic module P= Plate Mounting W= Wall Mounting T= Bench mount standard TA= Bench mount 30° angle H= Hanging version standard HW= Hanging version wall adapter | 0= w/o* CL6** CL8** CL10** | 0=w/o* CL6** CL8** CL10** | Please specify |
| EMD 3104 = Analysis version | -06= MD + Pre-shut-off valve -07= MD +LP-flame arrester -08= MD +LP-MVAR -10= MD + Pre-shut-off valve + LP-MVAR | | A= 1.5 bar*** | | | | | |

*G1/4" F, G3/8" F or NPT1/4" F (depending on version).

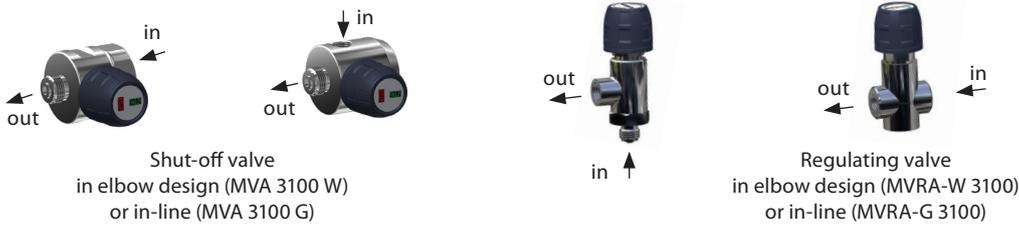
** CL = compression fitting for tube; standard: 6 mm. Other compression fittings for imperial or metric tubes available on request.

*** Type A is available for Acetylene only.

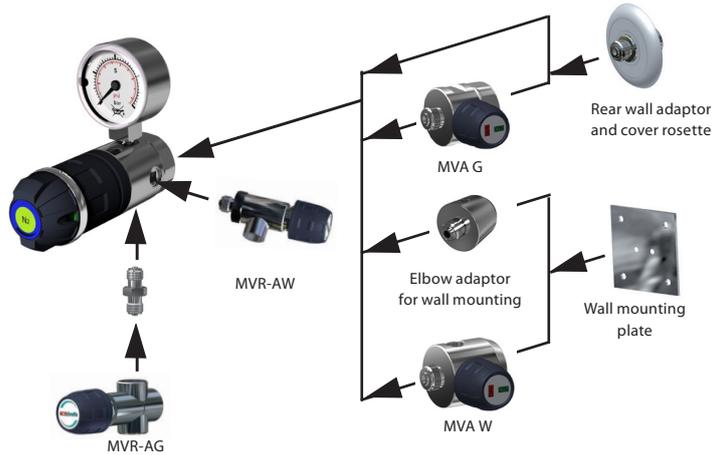
Subject to change without notice

LABORATORY PRESS REGULATORS EMD 3100 - VARIATIONS

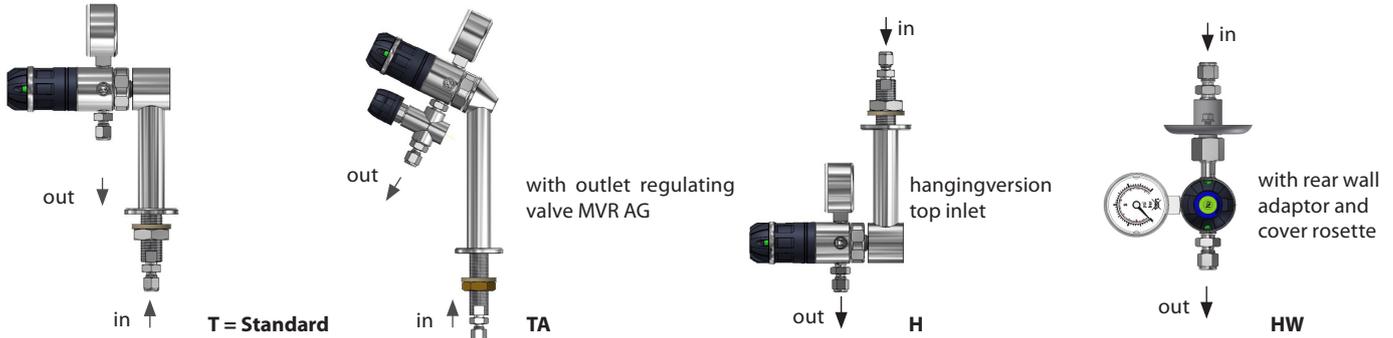
COMBINABLE WITH EMD 3100 - SHUT-OFF VALVES AND REGULATING VALVES WITH SHUT-OFF FUNCTION



EMD 3100 COMBINATION POSSIBILITIES



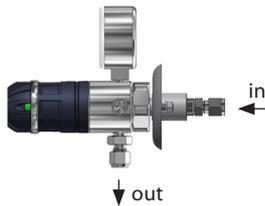
EMD 3100 AS BENCH MOUNT (VERSION T) AND HANGING VERSION (VERSION H)



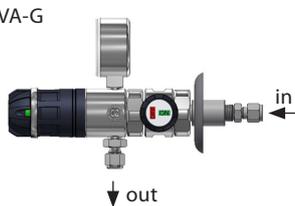
EMD 3100 WALL MOUNTED WITH REAR WALL ADAPTOR (VERSION W)

STANDARD: STRAIGHT INLET FITTING; AVAILABLE WITH ELBOW FITTING AS WELL

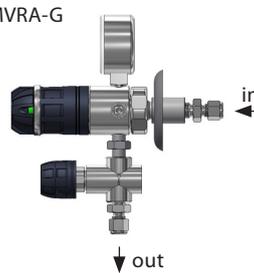
01 = basic version (MD)



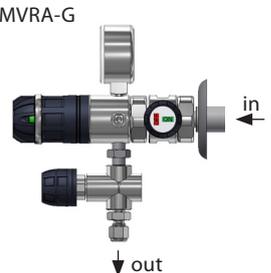
06 = with pre-shut-off valve MVA-G



08 = with valve MVRA-G

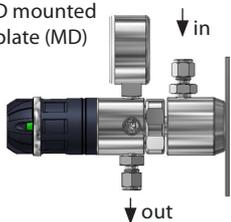


10 = with pre shut-off valve + MVRA-G

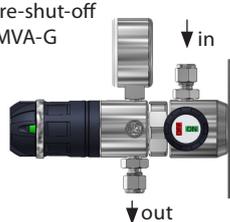


EMD 3100 PLATE MOUNTED (VERSION P)

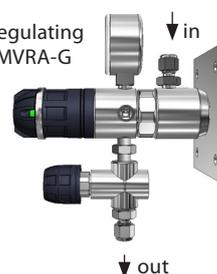
01= EMD mounted on plate (MD)



06= with pre-shut-off valve MVA-G



08= with regulating valve MVRA-G

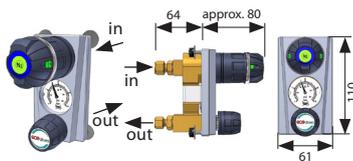


10= with MVA G and MVRA-G

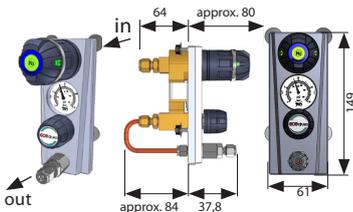


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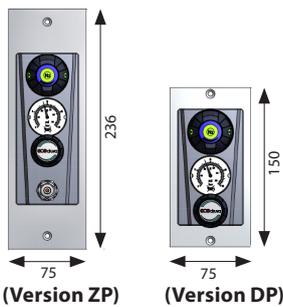
FUMEHOOD PRESSURE REGULATOR EMD 3100 - BUILT-IN VERSIONS D AND Z



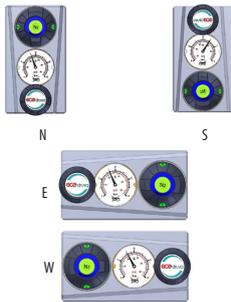
Wall mounted with cover plate inlet and outlet from behind
(Version D)



Wall mounted with cover plate, inlet behind outlet in front
(Version Z)



EMD 3100 BUILT-IN VERSION ADJUSTMENT KNOB ORIENTATION



Single-stage, for inert, reactive, flammable and oxidizing gases and gas mixtures, purity max. 6.0.
EMD 3100: Inlet pressure 40 bar, downstream pressure 0.1-10 bar
EMD 3104 (analytic version): Inlet pressure 12 bar, downstream pressure 0.1-4.4 bar

SPECIAL FEATURES

- Pressure regulator with integrated shut-off function
- Coloured identification of shut-off positions
- Highly compact form
- ECD-compliant
- Ergonomic positioning of the operational elements
- User-friendly system solutions for laboratory applications components
- Adjustment knob with gastype identification according to DIN EN 13792
- Analytic version optionally available
- Easy to install

DESCRIPTION

The built-in version is made of a single body mounted on a metal plate. It includes an integrated quick-closing function (shut-off), a regulating valve and a gauge that are all covered by a panel. Four different mounting orientation variants are available (gauge position rotated by 90° for better readability). With the most compact "Version D" the gas is supplied (inlet and outlet) from behind the cover plate. Version Z allows for Gas supply from behind as well, while the outlet is at the front and integrated in the cover panel.

APPLICATION

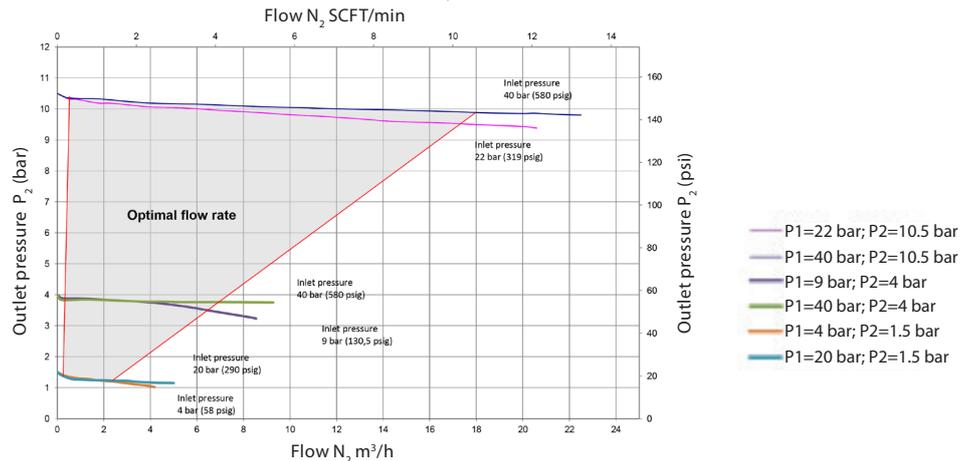
This highly compact, space saving built-in version of the EMD3100 point-of-use regulator is designed to fit into walls, gas channels, fume hoods and all laboratory furniture systems. The analytic version (LAB 3104) is specially designed for low pressure applications in the automotive industry and offers extremely fine adjustment possibilities for pressure and flow rate.

TECHNICAL DATA

BASICS: PAGE 3 - DIVERGENT DATA:

| | |
|-----------------------|---|
| Pressure gauge range: | 0 - 2.5 / 6 / 16 bar, 0 - 3 / 6 bar (Type 3104) |
| Dimensions (w×h×d): | Version Z (D): 61×149 (110)× max. 164 (144) mm |
| | Version ZP (DP): 75×236 (150)× max 164 (variable) mm |
| Weight: | Version D(Z): 1,3 kg (1,4 kg) |
| | Version DP(ZP): 1,4 kg (1,5 kg) |
| Inlet - Outlet: | G 1/4" f |

LAB SYSTEM 3100 - FLOW CHARTS FOR P2 = 1.5 BAR, 4.0 BAR AND 10.5 BAR



ORDER CODE

| Type | Periphery | Material | Upstream pressure | Downstream pressure | Built-in versions | Mounting orientation | Inlet | Outlet | Gas type |
|---------------------------------------|------------------------------|----------------------------------|-------------------------------------|--|---|--|---|------------------------------------|--|
| EMD 3100 | -01 | BC | E | 4 | D | N P | CL6 | CL6 | GAS |
| EMD 3100 = Standard | -01= Pressure regulator (MD) | BC= Brass SS= Stainless steel | E= 40 bar D= 12 bar | 1.5= 0.2-1.5 bar 4= 0.2-4 bar 10= 0.5-10.5 bar | D= Inlet and outlet from behind Z= Inlet from behind, outlet front | N= North E= East S= South W= West | ./.= w/o P=Additional mounting plate | 0=G1/4" f CL6* CL8* CL10* | 0=G1/4" f CL6* CL8* CL10* Please specify when ordering |
| EMD 3104 = Analysis version | -08= MD +MVAR | | (only for EMD 3104) A= 1.5 bar** | | | | | | |

Subject to change without notice

* CL = compression fitting for tube 6 mm - standard. Other compression fittings for imperial or metric tubes available on request.
 ** Type A is available for Acetylene only.

SHUT-OFF VALVES MVA 3100 G/W



MVA 3100 G

In-line or elbow form

For inert, reactive, flammable and oxidizing gases and gas mixtures

Purity max. 6.0

Inlet pressure 40 bar / 600 psi

SPECIAL FEATURES

- Open/close with only one quarter turn, clicks into position
- Clearly visible open/closed position
- Wide range of applications as a modular component
- Diaphragm shut-off valve

DESCRIPTION

The MVA 3100 G is a straight in-line version with G3/8" inlet and outlet. The integrated connecting nut allows for mounting the valve in any position with only one gasket.

The MVA 3100 W is the elbow version with inlet from the side G1/4"f and outlet straight G3/8"m. The MVA 400 W is mounted with 2 M6 mounting screws, 25 mm apart on the backside.

APPLICATION

These valves can be combined in many ways with the components of the lab system.

TECHNICAL DATA

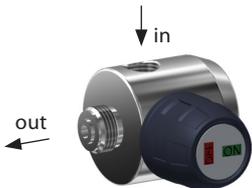
| | |
|----------------|---|
| Body: | Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass |
| | 2.0401.26 pecially cleaned, nickel-plated and chrome-plated |
| Diaphragm: | Hastelloy |
| Nominal width: | DN 5 |
| Leakage rate: | < 1×10 ⁻⁹ mbar l/s Helium (outboard), |
| | < 1×10 ⁻⁶ mbar l/s Helium (seat) |

MVA 3100 G

| | |
|---------------|-----------------|
| Kv-value: | 0.2 |
| Seat seals: | PCTFE |
| Weight: | Approx. 600 g |
| Inlet/Outlet: | G 3/8"f/G 3/8"m |

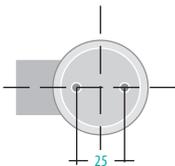
MVA 3100 W

| | |
|-----------------|-------------------|
| Kv-value: | 0.25 |
| Seat seals: | PCTFE |
| Weight: | Approx. 500 g |
| Inlet / Outlet: | G 1/4"f / G 3/8"m |



MVA 3100 W

MOUNTING



2 bore holes M6 are provided on the MVA 3100 W for mounting.

ORDER CODE

| Type | Material | Gas type |
|-------------------|----------------------|------------|
| MVA 3100 G | BC | GAS |
| MVA 3100 G | BC = brass | Please |
| MVA 3100 W | chrome-plated | specify |
| | SS = stainless steel | |

REGULATING MVR-A 3100 G/W



For inert, reactive, flammable and oxidizing gases and gas mixtures
Purity max. 6.0
Inlet pressure 40 bar / 600 psi

SPECIAL FEATURES

- Very fine flow rate adjustment
- Regulating function
- Diaphragm shut-off valve

APPLICATION

These valves can be combined in many ways with the numerous components of the lab system in particular with the pressure regulator EMD 400 and EMD 3100. Unique in this range is the patented shut-off function which is integrated into this regulating valve. Without using an additional component it allows for safe, reliable and permanent interruption of the gas flow.

DESCRIPTION

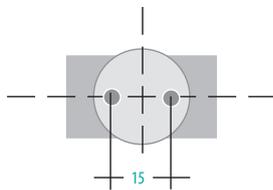
These regulating valves are characterized by their outstanding operational reliability and extreme leak-tightness. They have very good regulating characteristics and allow for exact delivery for both, very small and very large amounts of gas.



TECHNICAL DATA

| | |
|----------------------|--|
| Body: | Stainless steel 1.4301 specially cleaned and electro-polished or brass 2.0401.26 specially cleaned, nickel-plated and chrome-plated |
| Diaphragm: | Hastelloy |
| Body seals: | Hardened stainless steel cone |
| Seat seals: | PCTFE |
| Leakage rate: | < 1×10 ⁻⁴ mbar l/s Helium (seat) < 1×10 ⁻⁷ mbar l/s Helium (outboard) |
| Vacuum capable: | Yes |
| Fine metering: | Adjustment knob approx. 10 turns |
| Nominal width: | DN 2 |
| Kv-value: | < 0.02 |
| Working temperature: | -25 °C to 70 °C / -13 °F to 158 °F |
| Weight: | Approx. 280 g |
| Inlet - Outlet: | MVR-A 3100 W: G1/4"m - G1/4"f MVR-A 3100 G: G1/4"f - G1/4"f |

MOUNTING



2 bore holes M6 are provided on the MVR-A 3100 G for mounting.

ORDER CODE

| Type | Material | Gas type |
|---------------------|----------------------|----------------|
| MVR-A 3100 W | BC | GAS |
| MVR-A 3100 W | BC = brass | Please specify |
| MVR-A 3100 G | chrome-plated | |
| | SS = stainless steel | |

GCE Group is one of the world's leading companies in the field of gas control equipment. The headquarters are in Malmö, Sweden, and the two major supply units are located in Europe and Asia.

The company operates 15 subsidiaries around the world and employs more than 850 people. GCE Group includes four business areas – Cutting & Welding, Process Applications, Medical and High Purity. Today's product portfolio corresponds to a large variety of applications, from single pressure regulators and blowpipes for cutting and welding to sophisticated gas supply systems for medical and electronics industry applications.



Gas Control Equipment

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