HiQ® REDLINE® S 21. Single source manifold with internal purging.

Application

HiQ REDLINE manifolds are suitable for all applications in analysis, as well as research and development, where high demands in gas purity, accuracy and reliability are required.

Description

S 21 is a wall-mounted manifold designed for one single gas source and with internal purging. The gas source might be one or more gas cylinders/bundles with inert, oxidising or flammable gases and their mixtures up to gas purity 6.0 (99.9999%). The manifold reduces a cylinder pressure of up to 200 bar to a distribution pressure. The house of the manifold is made of chrome-plated brass.

Gas purging of the high-pressure side is performed with the process gas itself after a cylinder change to get rid of impurities like air and moisture.

The standard configuration is equipped with a CE marked safety valve and a shut-off valve on the low-pressure side. In the basic configuration, the pressure protection consists of a relief valve and there is no low-pressure shut-off valve. A contact gauge, mounted on the high-pressure side, intended for connection to a low-level gas alarm system, is optional.

Quality assurance

Pressure regulators are designed and approved according to EN ISO 7291 (including the oxygen ignition test and the life cycle test). Valves are designed and approved according to relevant sections of EN ISO 10297 (including the oxygen pressure surge test). The equipment meets the electrostatic chargeability requirements of EN ISO 80079-36, IEC TS 60079-32-1 and the German TRGS 727. The manifolds can therefore be used in the EX zones 1 and 2 for gases with the explosion risk groups I, IIA, IIB or IIC. Each regulator and valve is seat leakage tested, atmosphere leakage tested and pressure tested with helium.

Versions

HiQ REDLINE S 21

Product name	Material	Outlet pressure, bar(g)	Outlet pressure, psi(g)	Art. No.
Basic version with relief valve:				
S 21 B	Chrome-plated brass	1–14	15–203	342049
S 21 CO_2*	Chrome-plated brass	1–14	15–203	342060
Basic version with contact pressure gauge and relief valve:				
S 21 B C	Chrome-plated brass	0.5–6	7–87	342048
S 21 B C	Chrome-plated brass	1–14	15–203	342050
S 21 B CO_2 C*	Chrome-plated brass	1–14	15–203	342061
S 21 B C	Chrome-plated brass	2.5–50	36–725	342063
Standard version with safety valve and low pressure shut-off valve:				
S 21 B SV SOV	Chrome-plated brass	1–14	15–203	342064
S 21 B CO_2 SV SOV*	Chrome-plated brass	1–14	15–203	342066
Standard version with contact pressure gauge, safety valve and low pressure shut-off valve:				
S 21 B C SV SOV	Chrome-plated brass	1–14	15–203	342065
S 21 B CO_2 C SV SOV*	Chrome-plated brass	1–14	15–203	342067

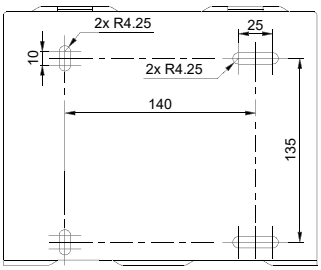
* Manifold, intended for the gases CO_2 or N_2O, with a relief/safety valve seat made of EPDM. The nominal inlet pressure is 60 bar(g).

Technical data

Pressures	bar(g)	psi(g)
Maximum inlet pressure	230	3 336
Outlet pressure ranges	0.5–6	7–87
	1–14	15–203
	2.5–50	36–725
Relief/safety valve opening pressures	9.2/9	134/131
	21.6/21	313/305
	65/n.a.	943/n.a.
Outlet gauge ranges	−1 to 10	−15 to 145
	−1 to 25	−15 to 363
	0 to 80	0 to 1 160
Nominal flow	20 m^3/h (nitrogen) acc. to ISO 7291	
Flow coefficients	Cv	
Shut-off valve	0.25	
Operating temperature	−20° C to +60° C	−4° F to +140° F
Gas purity	≤6.0 (99.9999 %)	
Leakage rates		
to the atmosphere	≤1x10^{-9} mbar l/s (helium)	
through the seat	≤5x10^{-6} mbar l/s (helium)	
Particle filters		
Shut-off valve	100 µm (each inlet)	100 µm (each outlet)
Pressure regulator	10 µm (inlet)	100 µm (each outlet)
Materials		
Shut-off valve, house	Chrome-plated brass	
Shut-off valve, diaphragms	Hastelloy and/or Elgiloy	
Shut-off valve, seat	PCTFE	
Shut-off valve, poppet	Chrome-plated brass	
Pressure regulator, house	Chrome-plated brass	
Pressure regulator, diaphragm	Hastelloy	
Pressure regulator, seat	PCTFE	
Pressure regulator, poppet	Chrome-plated brass	
Relief/safety valve seat	FKM (standard) or EPDM (for CO_2 or N_2O)	
Connections		
Process gas inlet	NPT ¼" female	
Process gas outlet	NPT ¼" female	
Relief/safety valve outlet	12 mm tube fitting in stainless steel	
Purge outlet	6 mm tube fitting in stainless steel	
Weight	≤5.1 kg	≤11.2 lbs

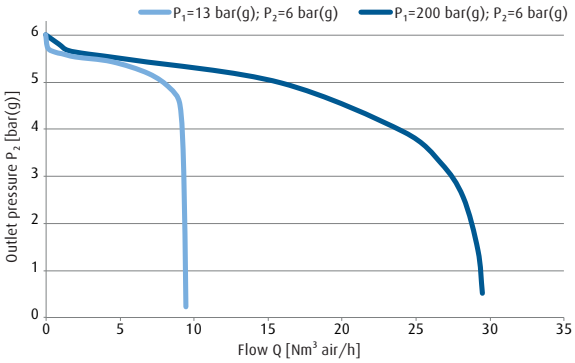
Installation

The manifold is easily installed due to separate mounting plates in polished stainless steel. A base plate is first mounted on the wall. The manifold, mounted on a front plate, is then simply hooked onto the base plate, and fixed with a screw. A safety wire of the high-pressure hose with a carabiner hook, can be attached to a hole in the base plate. Further, there is a grounding bolt in the base plate. Due to the cut-outs in the front plate, a faulty pressure gauge can be replaced without dismantling the manifold.

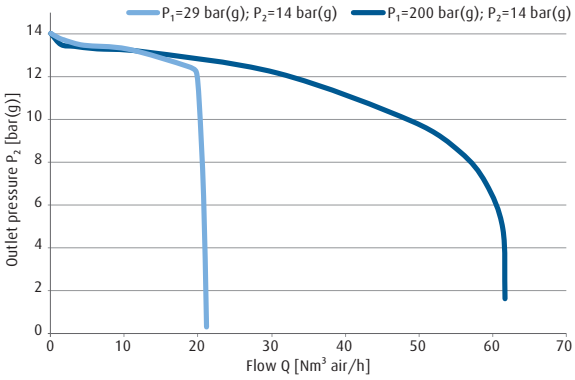


Flow curves

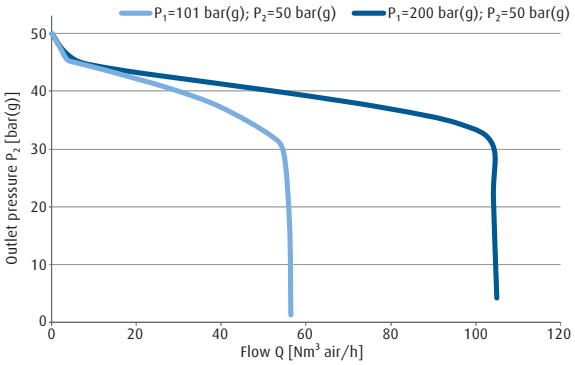
Outlet pressure 6 bar(g)



Outlet pressure 14 bar(g)



Outlet pressure 50 bar(g)

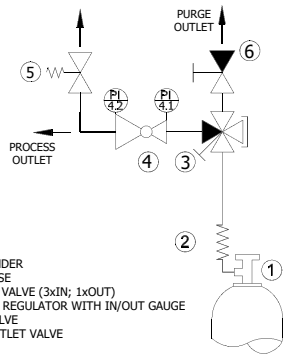


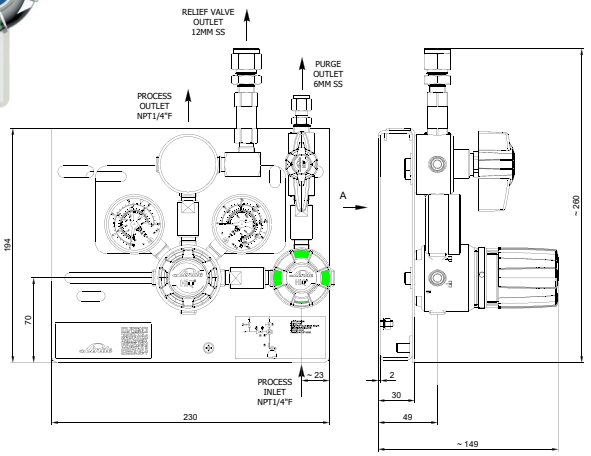
Accessories

High-pressures hoses, coils and/or extension header rails for connection to the gas cylinder(s)/bundle(s) are ordered separately. Note that a tube fitting outlet connection is not included in the manifold.

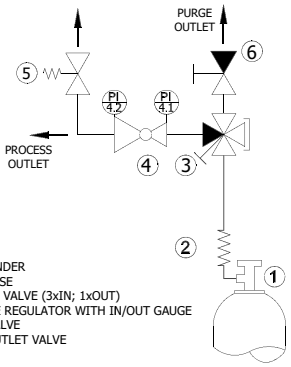
Images, P&IDs and drawings

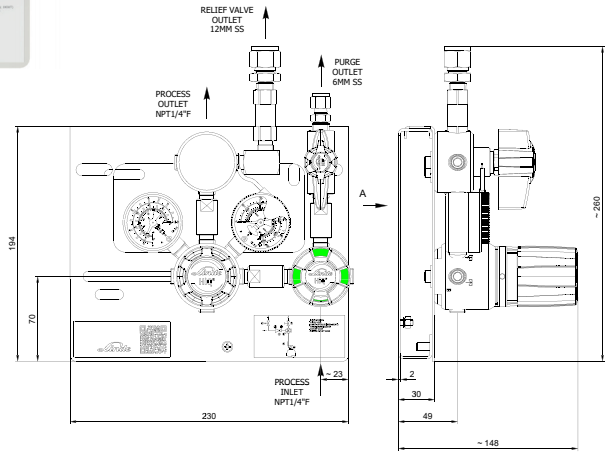
Basic version with relief valve





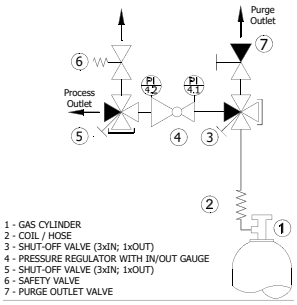
Basic version with contact pressure gauge and relief valve

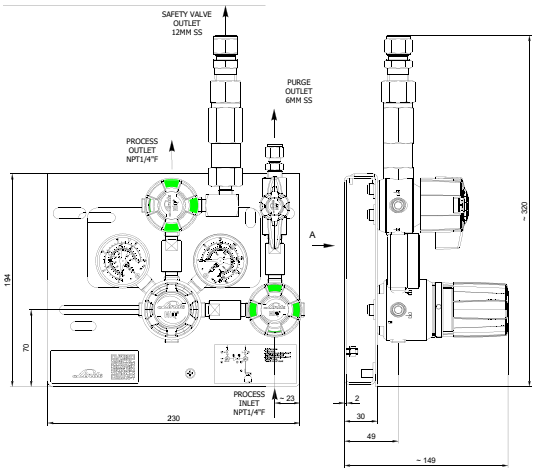




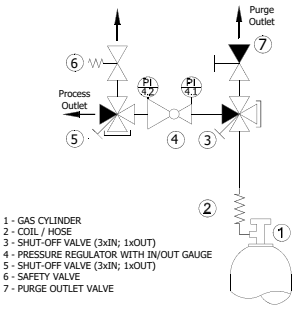
Images, P&IDs and drawings

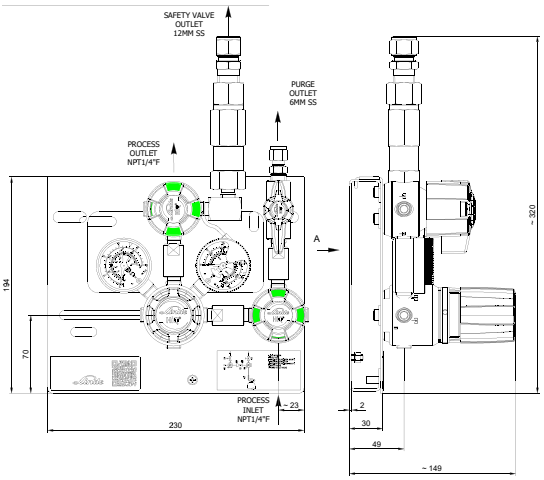
Standard version with safety valve and low pressure shut-off valve





Standard version with contact pressure gauge, safety valve and low pressure shut-off valve





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