

# HONEYWELL ELSTER M2R 6-50c

Two Stage Regulator  
Inlet pressure 5 bar

## Applications:

Pressure reduction for:

- Domestic use
- Small industrial applications

## Brief information:

The two-stage pressure regulator M2R is available in various capacity stages, extending from 6, 10 and 25 m<sup>3</sup>/h on the version with integrated low-pressure cut-off up to 50 m<sup>3</sup>/h without this feature.

It means that the unit is suitable for a broad range of domestic and small commercial applications.

The modular concept of the M2R allows a wide range of different connection and equipment variants to match the particular customer requirements. The inline variant is available besides the angled variant. A broad selection of connectors for both inlet and outlet allows the M2R to be adapted with outstanding flexibility to the particular installation requirements.

The resetting and the adjustment of the SSV have a very user-friendly design. This also makes it resistant against manipulations.

The 2<sup>nd</sup> stage has an integrated low pressure cut off valve, which is also used as an excess flow valve.

For combined low-pressure cut-off/excess flow is an automatic reset feature available, besides manual reset.

## Technical Data:

- Inlet pressure range  $p_u$ : 0.1 bar to 5 (6) bar
- Outlet pressure range  $p_{ds}$ : 18 mbar to 100 mbar  
 $P_{ds}$ : 100mbar to 400 mbar
- Maximum capacity  $Q$  25 m<sup>3</sup>/h, 40 m<sup>3</sup>/h, 50 m<sup>3</sup>/h



## Main Features

- Modular concept
- Integrated safety shut-off valve (SSV) for over pressure
- High accuracy, good lock up
- Integrated filter
- Temperature range -20 °C to +60 °C
- Inlet pressure resistant up to 16 bar
- Regulator body is tamper resistant locked
- A big variety of different connection types:
  - angled
  - in line

## Options

- Integrated Low Pressure Cut Off (LPCO) / Excess Flow Cut Off, automatic or manual reset
- Test plug available (outlet)
- Limited capacity Relief Valve
- Safety diaphragm
- UV stabilised plastic parts for open installation
- Thermal Cut Off valve (TCO)

## Pressure ranges & accuracy classes for outlet pressure & safety devices

Regulator			Safety shut-off valve		Relief valve	
Set range	Accuracy class	Lock-up pressure class	Over pressure set range	Over pressure accuracy group	Set range	Accuracy group
mbar	%	%	mbar	%	mbar	%
$p_{ds}$ 20 – 50 $p_{ds}$ 100 – 400	AC 10 (AC 5)	SG 20 (SG 10)	$p_{dso}$ 50 – 450	AG <sub>o</sub> 10	12 – 50 above outlet pressure $p_{ds}$	10

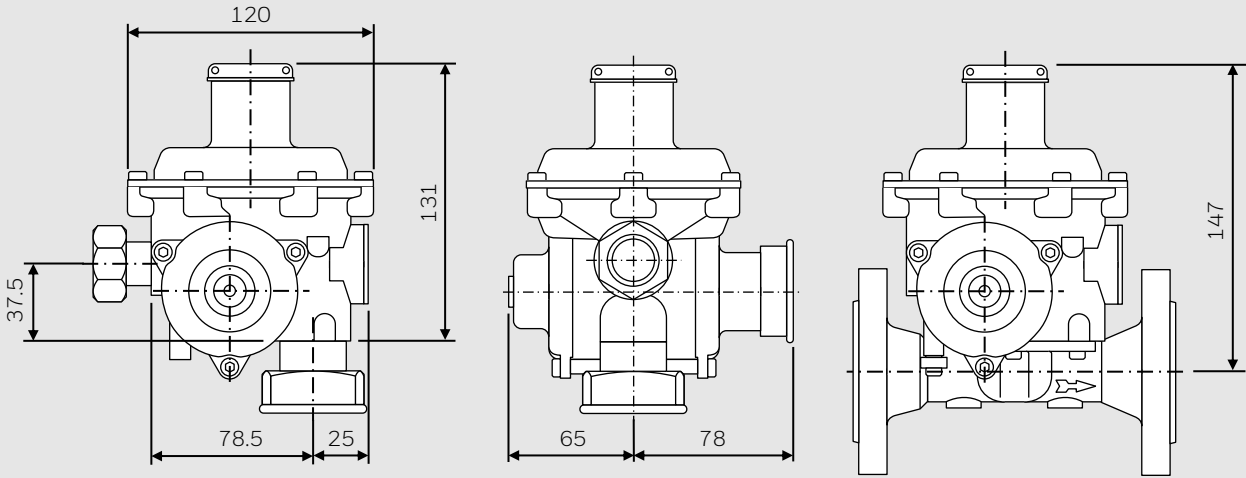
## Materials:

Body, cover	Precision die cast aluminium
Springs	Steel, zinc plated
Orifices	Brass
Valve disks, diaphragms	Nitrile rubber
Internal parts	Acetal resin, zinc alloy
Connecting pieces	Brass or cast iron

# M2R 6-50c: Two Stage Regulator

Inlet pressure 5 bar

## Dimensions and Weights



Type

M2R 25 A/L

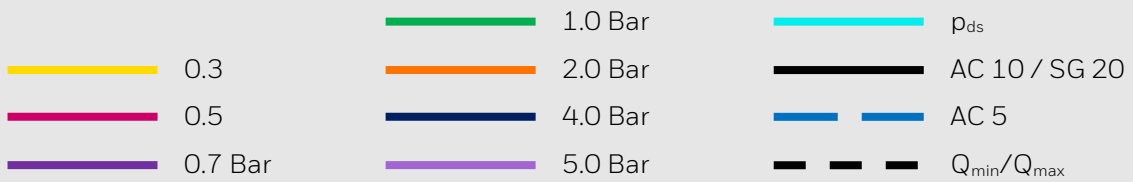
M2R 25 F

Weight [kg]

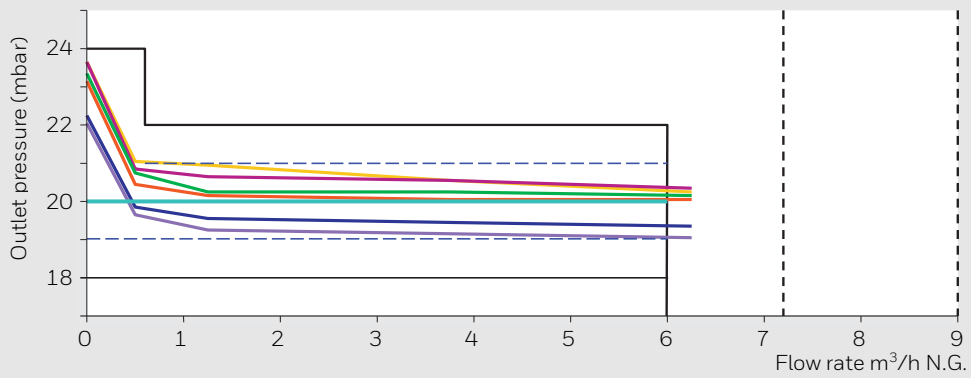
~ 1.5

3.7

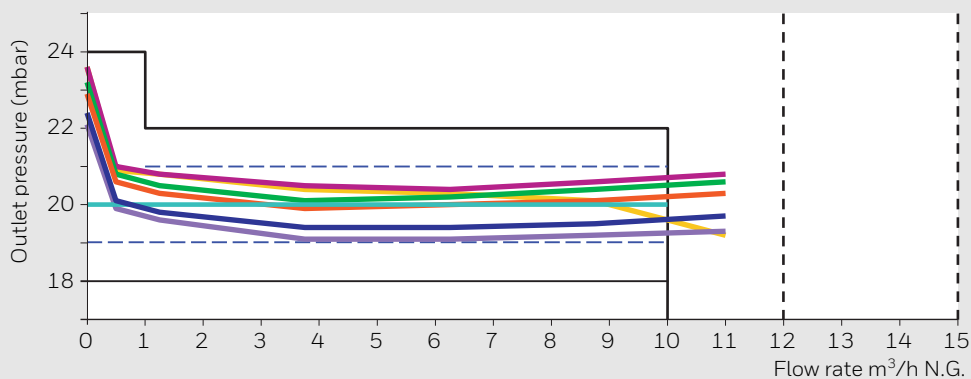
## Flow capacity: Inlet pressures



## M2R 6 Flow Capacity



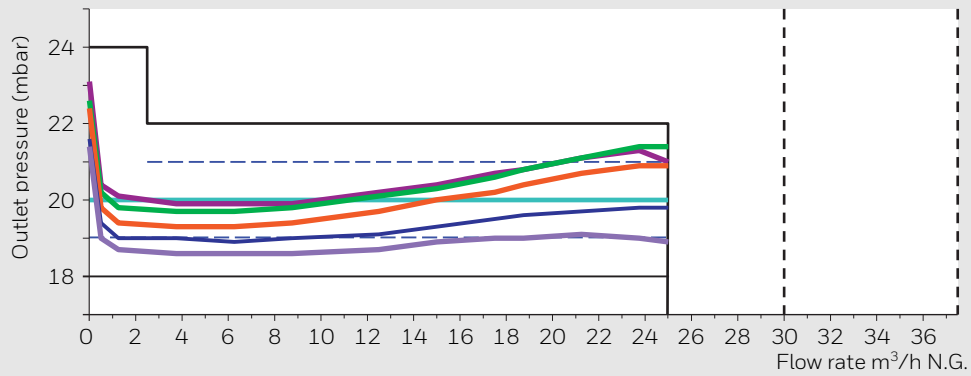
## M2R 10 Flow Capacity



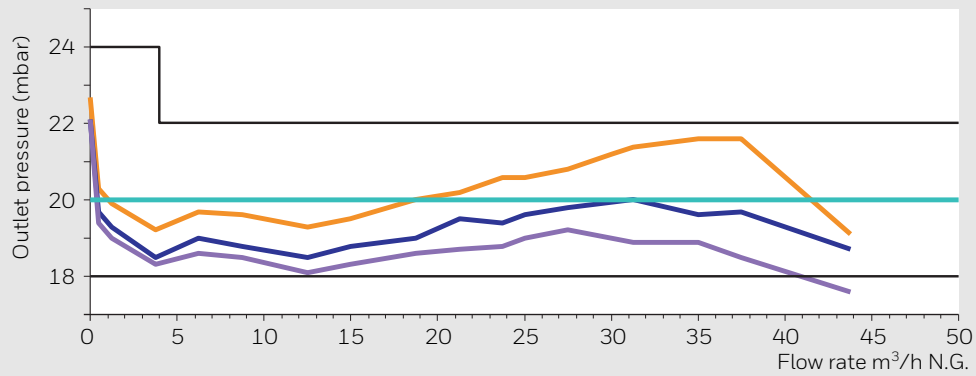
## M2R 6-50c: Two Stage Regulator

Inlet pressure 5 bar

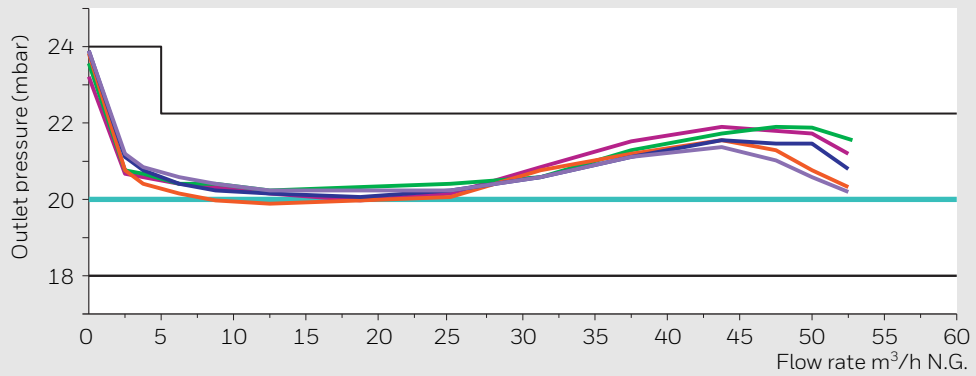
### M2R 25 Flow Capacity



### M2R 40 Flow Capacity (without UPCO)



### M2R 50c Flow Capacity (without UPCO)



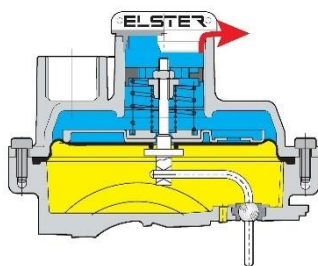
### Pressure Ranges

Type	Nominal flow rate Qn natural gas [stm <sup>3</sup> /h]	Minimum inlet pressure [bar] with LPCO	Minimum inlet pressure [bar] without LPCO
M2R 6	6	0.3	0.3
M2R 10	10	0.3	0.3
M2R 25	25	0.7	0.7
M2R 25 (pa400)	25	0.7	0.7
M2R 40	40	-	2
M2R 50c	50	-	0.7

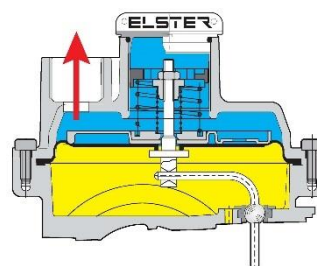
# M2R 6-50c: Two Stage Regulator

Inlet pressure 5 bar

## Configuration



RV - L



RV - F

Main configuration		Inlet connection*)			
A	Angled L	G 3/4" SC ISO 228/1			
In Line		G 3/4" Sct ISO 228/1			
F	Flange	G 3/4" CF ISO 228/1			
G	Thread	G 1" CF ISO 228/1			
F-G	Flange - Thread	G 1/2" F ISO 228/1			
E	Coaxial	G 3/4" F ISO 228/1			
GZ	Coax-Meter	G 1 1/4" M ISO 228/1			
		other connections on request			

Type	Q	Main configuration	Dimensions*)	Inlet connection	Outlet connection
M2R					
M2R	25	A	103/60	G 3/4" SC ISO 228/1	G 1 1/4" CF ISO 228/1

Dimensions*)	
A: Angled	B / A
L: In Line	B + C

Outlet connection*)	
G 1" CF ISO 228/1	
G 1" CF BS 746	
DN 20 CF GDF	
G 1 1/4" CF ISO 228/1	
G 3/4" F ISO 228/1	
G 1" F ISO 228/1	
G 1 1/4" M ISO 228/1	
other connections on request	

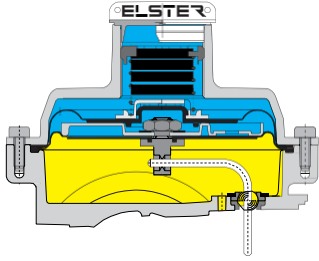
  

Q (m <sup>3</sup> )
6
10
16
25
40
50c

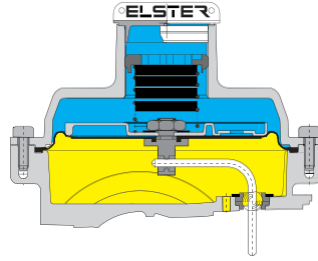
\*) Dimensions A, B, C and connection configurations please see page 6

# M2R 6-50c: Two Stage Regulator

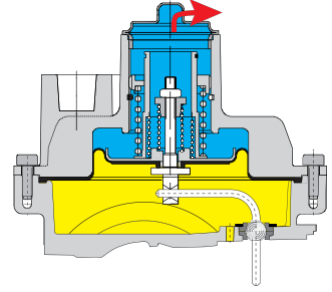
Inlet pressure 5 bar



SD



oSD

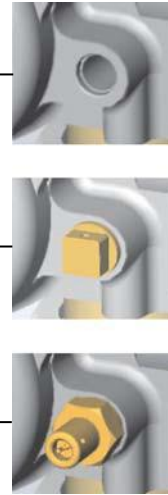


$p_{ds}$  100 – 400 mbar (RV-L)

2nd stage	
RV-L	Relief Valve - Limited Capacity
RV-F	Relief Valve - Lim. Cap. Full width 1/2"
SD	Safety Diaphragm
oSD	Without SD and RV

Test point Configuration	
oTP	Without Test Plug
TP	Test Plug
TN	Test Nipple

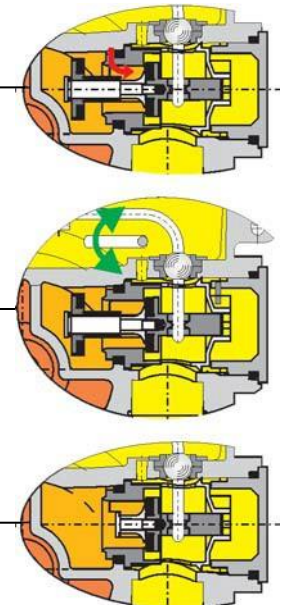
Gas
NG
LPG
others



2nd Stage	LPCO/EF	Test point	$p_{ds}$	$p_{RV}$	$p_{dso}$	Gas	Remark
RV-L	mLPCO	oTP	20	75	90	NG	Example

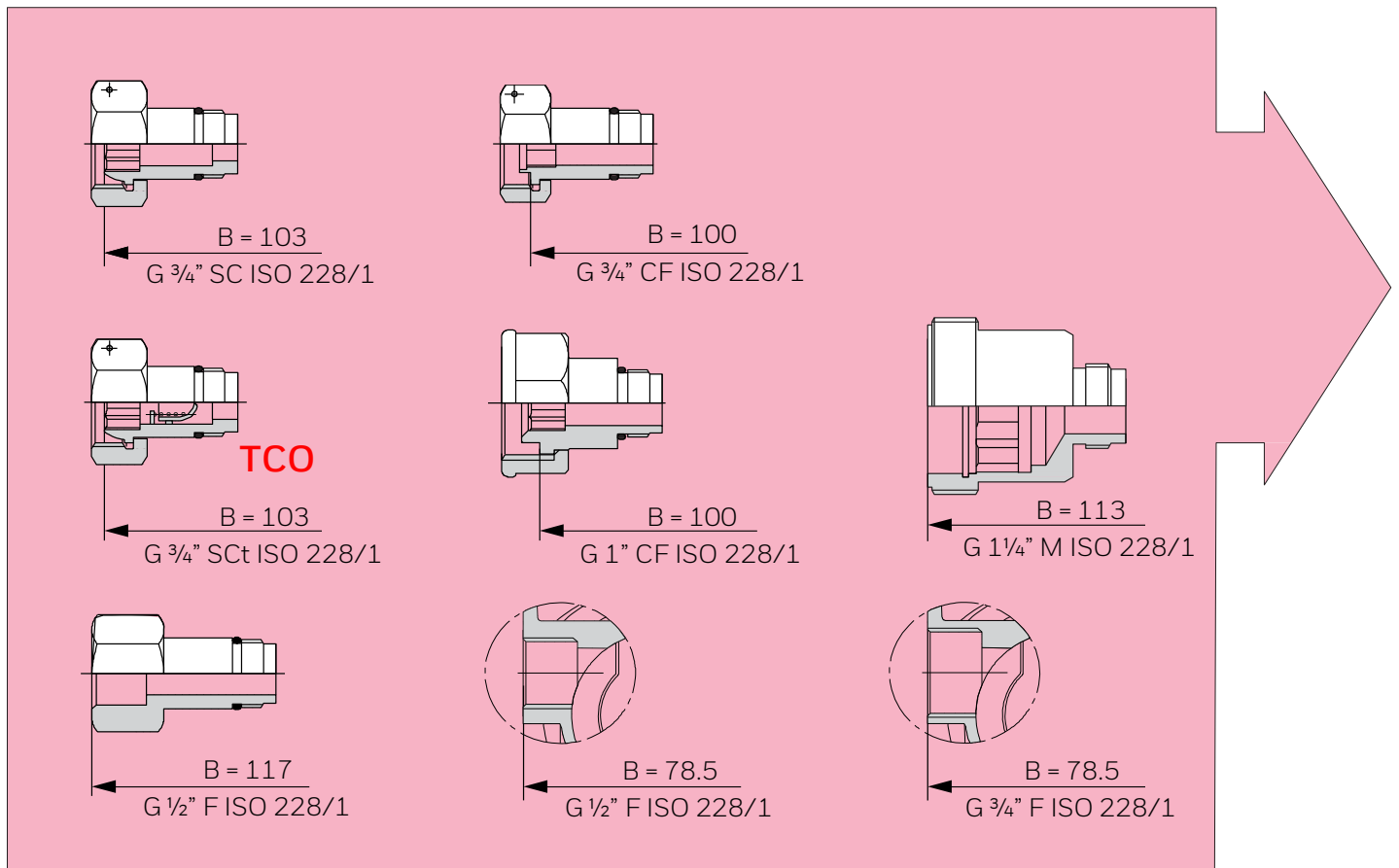
Set pressures (mbar)	
$p_{ds}$	outlet pressure
$p_{RV}$	set point Relief Valve
$p_{dso}$	set point SSV

Low Pressure Cut-Off configuration	
aLPCO	automatic reset Low Pressure Cut Off
mLPCO	manual reset Low Pressure Cut Off
fmLPCO	fixed manual Low Pressure Cut Off
oLPCO	without Low Pressure Cut Off



# M2R 6-50c: Two Stage Regulator

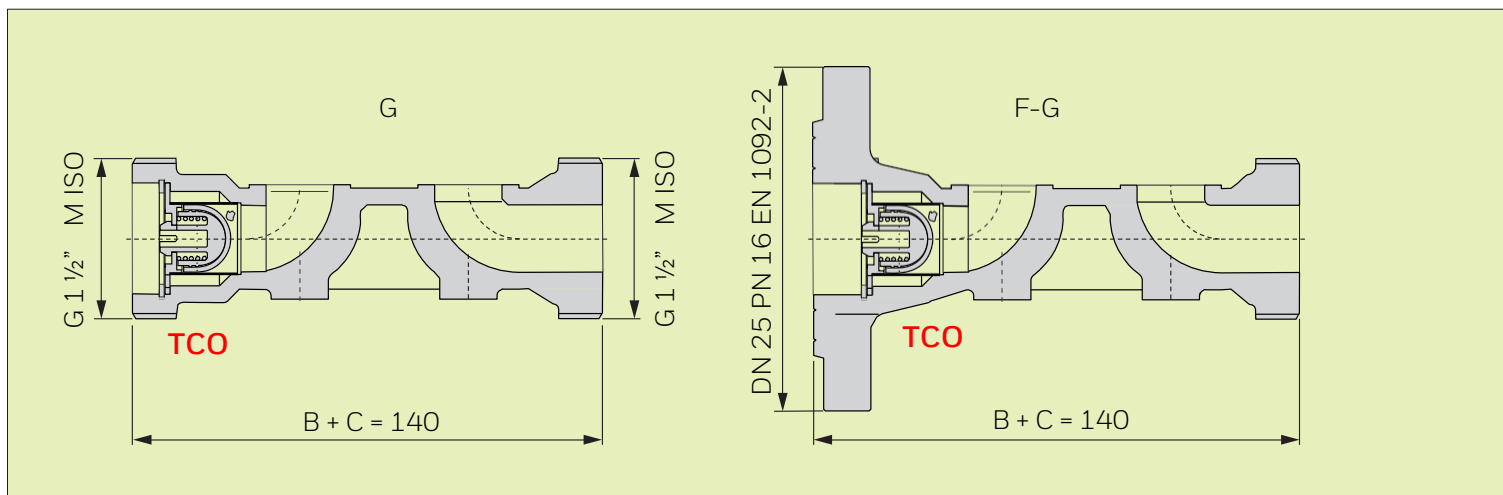
Inlet pressure 5 bar

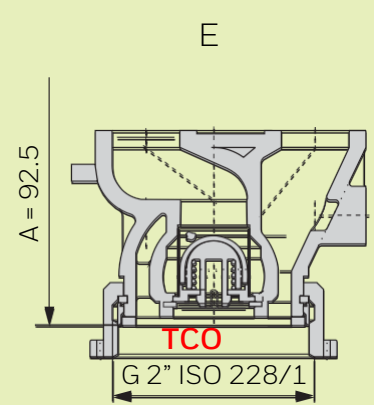
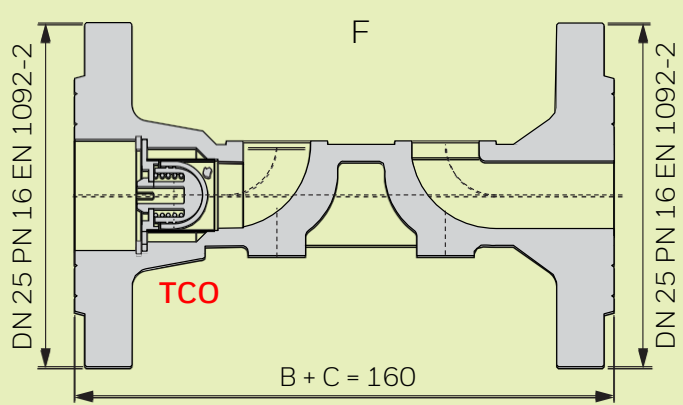
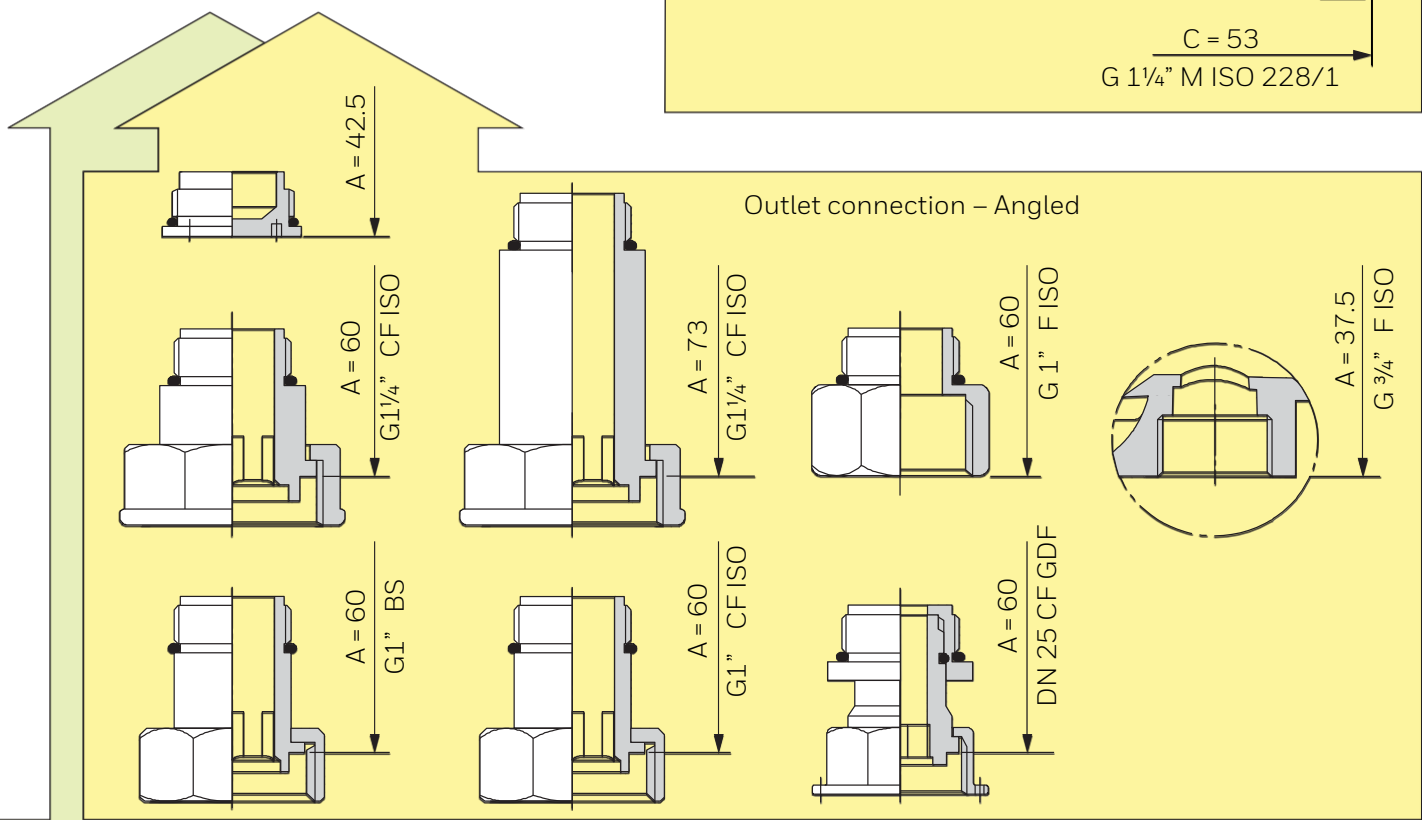
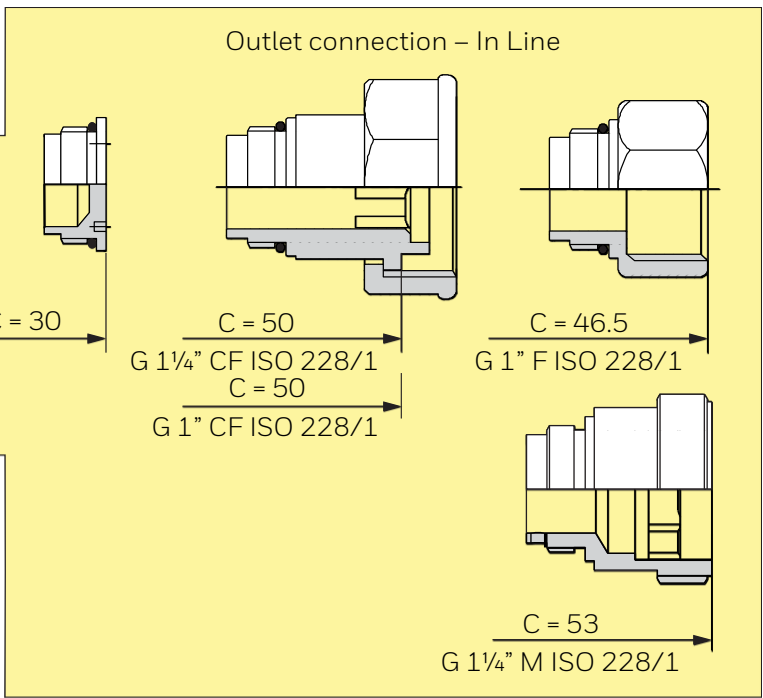
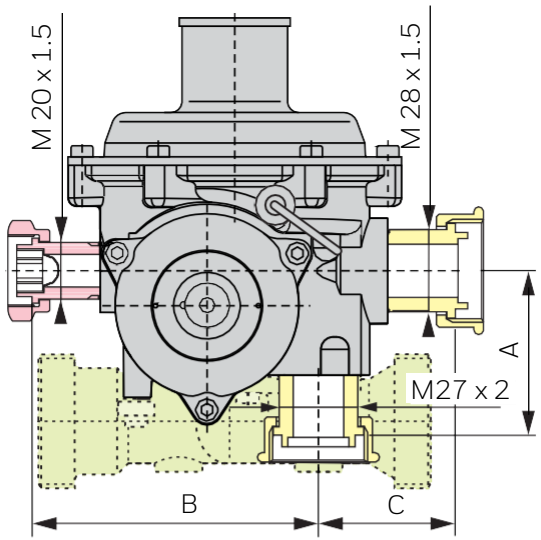


## Caption

SC	Sphero Conic
SCt	Sphero Conic & TCO
CF	Coupling Flat
CP	Coupling Plan
F	Female
M	Male

Other connections on request



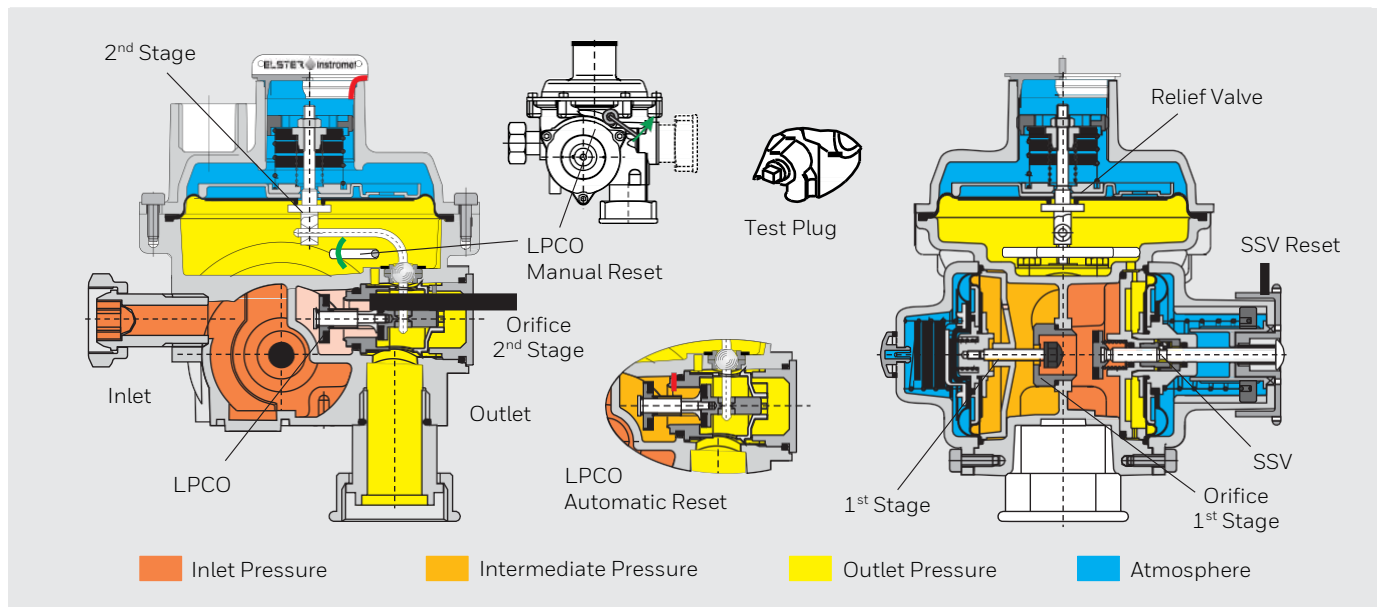


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Inlet pressure 5 bar

## Safety devices and accessories

- Integrated filter placed in the inlet connection to retain solid impurities of the gas.
  - Safety Shut-off Valve SSV monitors the outlet pressure and closes the inlet when the outlet pressure exceeds the given set point. The set point of the SSV can be adjusted with a special adjusting tool. Reset is manual.
  - Low Pressure Cut Off LPCO stops the flow in case the downstream pressure falls below a value of about 40 % to 60 % of the outlet pressure.
  - Excess Flow Cut Off EF interrupts the flow in case of exceeding flow.
  - Limited Capacity Relief Valve RV vents small gas flows in case of over- pressure downstream the regulator (e.g. because of temperature increase in the closed downstream pipework).
  - Safety Diaphragm SD to cover the working diaphragm to prevent a gas leakage in case of a destruction. Restricts the leak flow to the atmosphere to less than 30 dm<sup>3</sup>/h.
  - Reset of LPCO/EF can be operated both automatically or manually (option).
- Automatic reset: a small bypass (30 dm<sup>3</sup>/h) in the LPCO/EF device enables to increase the outlet pressure until lock up. Downstream pipework has to be closed. Then the LPCO/EF device opens automatically.
- Manual reset: operate lever for manually opening of the bypass to start reset procedure as described above.
- Thermal Cut-Off valve TCO closes the inlet in case of fire at a temperature of around 90 °C. The device will safely close the inlet.
  - Test plug/nipple for measuring the outlet pressure: 1/8", plugged or with special test nipple.
  - p<sub>ds</sub> 100 – 400 mbar special design of the 2nd stage for outlet pressures between 100 and 400 mbar.



### For more information

[www.smartenergy.honeywell.com](http://www.smartenergy.honeywell.com)

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