Regulators - Pressure Reducing

D2011XX10121XEN2

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Type of Gas
CNG (Compressed Natural Gas)
Maximum Inlet Pressure
3600 psig / 248 bar
Outlet Pressure Range
49-145 psig / 3.4-10.0 bar
Design Proof Pressure
150% of maximum rated
Leakage
Bubble-tight
Operating Temperature
-40°F to 221°F / -40°C to 105°C
Nominal Flow Rate
Up to 75 kg/h / 1.25 kg/min, 1543 l/min (density CNG 0.81g/dm^3)
Flow Capacity
C_V = 0.8
Integral filter
Filter rate 40 µm, one piece, 2 layer sintered mesh
Solenoid Shut-off Valve
Supply: 24 V DC ± 15% or 12 V DC ± 15%
Electrical Connection: AMP Connector
Pressure Relief Valve
125-275 psig / 8.6-19.0 bar
Pressure Sensor
Supply: 5 V DC ± 0.25 V DC
Output Signal: 0.5 V, 4.5 V proportional
Electrical Connection: Packard Connector
Metering Range: 0-102, 145, 290, or 3626 psig / 0-7.0, 10.0, 20.0, or 250 bar

MEDIA CONTACT MATERIALS

Body, Sensor
Aluminum EN AW-6082 T6 (hard-anode oxidized)
Seat
Polyimide (Vespel® SP21)
O-Rings
HNBR, FKM
Fittings
316 Stainless Steel
Remaining Parts
Stainless Steel, Aluminum, Brass, or PTFE
Filter
316 Stainless Steel
Heat Exchanger
Body: Aluminum EN AW-6082 T6 and 6061 T6
Fittings: Brass
O-Ring: EDPM
Solenoid Shut-off Valve
Body: Stainless Steel
Seat: PA 6.6
Pressure Relief Valve
Body: Brass
O-Ring: NBR
Pressure Sensor/Plug
Body: Brass/Steel with surface coating
O-Ring: Fluorosilicone/NBR

OTHER

Connections
Wide range of fittings
Weight
3.5 lbs / 1.6 kg

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TESCOM 20-1100 Series regulator is designed with lightweight aluminum construction for onboard compressed natural gas (CNG) vehicles 7 liter engines and larger. This regulator offers higher flow capacity than the 20-1000 Series and accessory options such as solenoid valve and pressure sensors.

Main Application

- Compressed natural gas vehicles

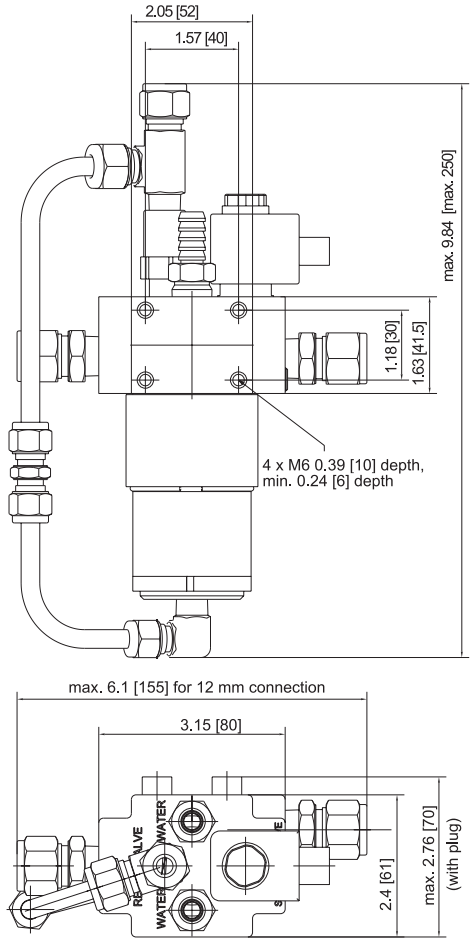
Application Details

The CNG pressure regulator system was specifically developed for the engine injection system of CNG vehicles. The main function is the reduction of the tank pressure to a preset outlet pressure. The system contains a pressure regulator with filter and heat exchanger, a solenoid shut-off valve (high pressure), a pressure relief valve and up to two optional pressure sensors (high pressure and/or low pressure). The pressure regulator is based on the TESCOM 20-1000 Series CNG regulator which has been used in this market for more than 10 years. The pressure regulator is a single-stage, spring loaded pressure regulator with a balanced main valve. The regulator is piston sensed providing enhanced safety and long service life. It's simple to install with screws included.

20-1100 Series Regulator Features and Benefits

- Compact aluminum body (hard-anode oxidized) for light weight and optimized thermal conductivity
- Provides a highly stable outlet pressure and low droop over a wide range of inlet pressures as well as high flow rates
- 40 µm filter, layer sintered mesh
- Very efficient heat exchanger
- Integrated high pressure solenoid shut-off valve
- Integrated pressure relief valve
- Optional high pressure and/or low pressure sensor
- Fail-safe system, relief connection for potential gas leakage
- Wide range of fittings for gas inlet, outlet and heat exchanger connections
- ECE-R 110 approval

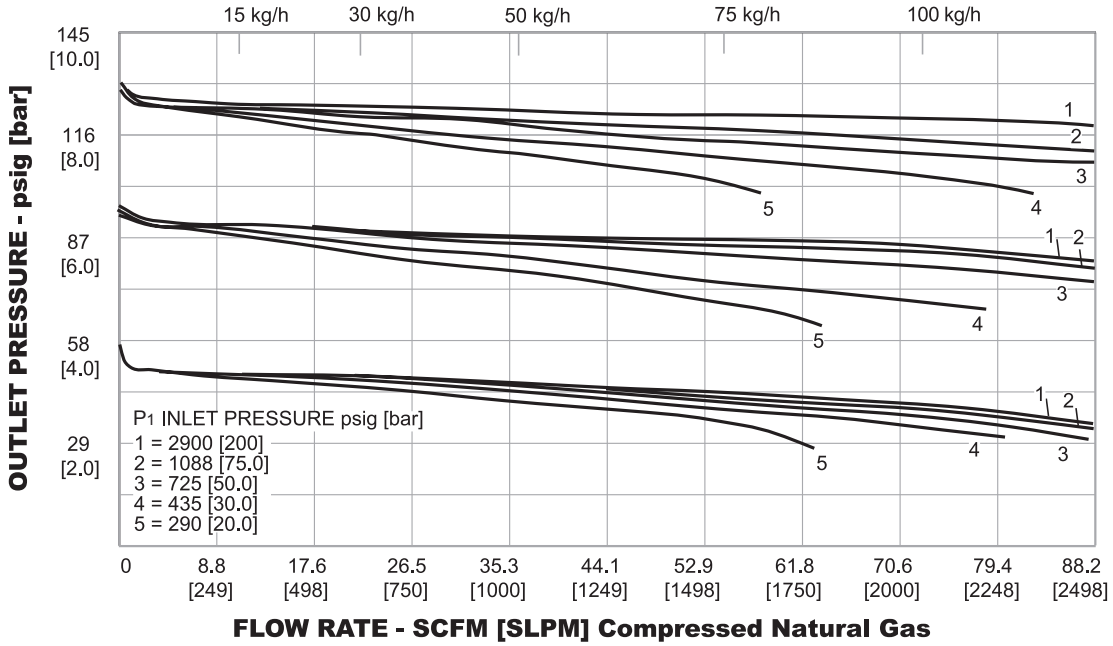
20-1100 Series Regulator Drawing



All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

20-1100 Series Regulator Flow Chart

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.tescom.com.



20-1100 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

20-11	9	085	0	0	3	3	-	2	M
BASIC SERIES	**MATERIAL FAIL-SAFE SYSTEM**	**OUTLET PRESSURE RANGE[1]**	**HIGH PRESSURE SENSOR**	**LOW PRESSURE SENSOR**	**INLET CONNECTION**	**OUTLET CONNECTION**	**HEAT EXCHANGER CONNECTION**	**WINDING POWER SUPPLY**	**PRESSURE RELIEF VALVE**
20-11	**0** – Without safe relief connection **6** – Safe relief Stainless Steel **9** – Safe Relief Brass / Copper	**085** – 49-145 psig 3.4-10.0 bar	**0** – Plug **1** – 3626 psig 250 bar	**0** – Plug **1** – 102 psig 7.0 bar **2** – 145 psig 10.0 bar **3** – 290 psig 20.0 bar	**0** – Without **1** – 8 mm **2** – 10 mm **3** – 12 mm **4** – 5/16" **5** – 3/8" **6** – 1/2"	**0** – Without **1** – 8 mm **2** – 10 mm **3** – 12 mm **4** – 5/16" **5** – 3/8" **6** – 1/2"	– 3/8" / 10 mm	**1** – 12 V DC **2** – 24 V DC	**L** – 145 psig 10.0 bar **M** – 150 psig 10.3 bar **N** – 160 psig 11.0 bar **0** – 175 psig 12.1 bar **P** – 200 psig 13.8 bar **R** – 230 psig 15.9 bar

1. - designation in MPa
e.g 085 for 0.85 MPa / 8.5 bar
- adjustment dynamically
(P1 = 1450 psig / 100 bar, Q = 40 l/min, ≈ 2 kg/h) > idling