

# 20-1100 Series Regulators - Pressure Reducing

D2011XX10121XEN2

## Specifications

For other materials or modifications, please consult TESCOM.

### OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

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

### MEDIA CONTACT MATERIALS

<b>Body, Sensor</b>	Aluminum EN AW-6082 T6 (hard-anode oxidized)
<b>Seat</b>	Vespel SP-1®
<b>O-Rings</b>	HNBR, FKM
<b>Fittings</b>	316 Stainless Steel
<b>Remaining Parts</b>	Stainless Steel, Aluminum, Brass, or Teflon®
<b>Filter</b>	316 Stainless Steel
<b>Heat Exchanger</b>	
<b>Body:</b>	Aluminum EN AW-6082 T6 and 6061 T6
<b>Fittings:</b>	Brass
<b>O-Ring:</b>	EDPM
<b>Solenoid Shut-off Valve</b>	
<b>Body:</b>	Stainless Steel
<b>Seat:</b>	PA 6.6
<b>Pressure Relief Valve</b>	
<b>Body:</b>	Brass
<b>O-Ring:</b>	NBR
<b>Pressure Sensor/Plug</b>	
<b>Body:</b>	Brass/Steel with surface coating
<b>O-Ring:</b>	Fluorosilicone/NBR

### OTHER

<b>Connections</b>	Wide range of fittings
<b>Weight</b>	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

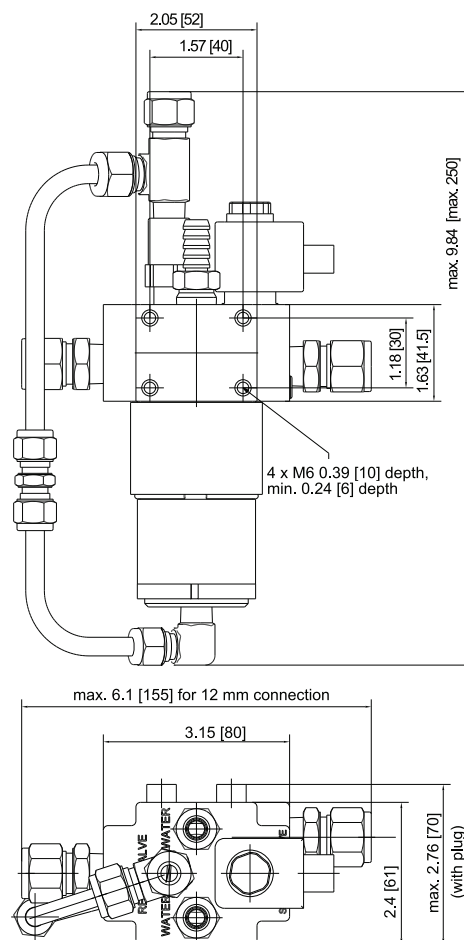
## Application Details

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  $\mu\text{m}$  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

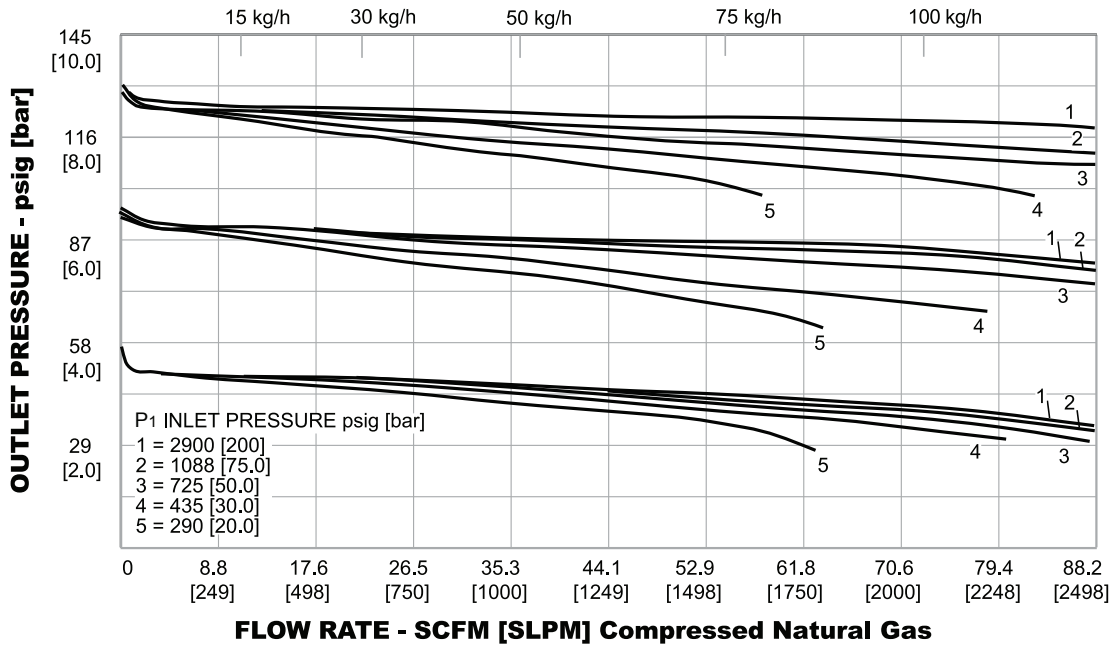
## 20-1100 Series Regulator Drawing



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](http://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 <sup>1</sup>	HIGH PRESSURE SENSOR	LOW PRESSURE SENSOR	INLET CONNECTION	OUTLET CONNECTION	HEAT EXCHANGER CONNECTION	WINDING POWER SUPPLY	PRESSURE RELIEF VALVE
20-11	<b>0</b> – Without safe relief connection <b>6</b> – Safe relief Stainless Steel <b>9</b> – Safe Relief Brass / Copper	<b>085</b> – 49-145 psig 3.4-10.0 bar	<b>0</b> – Plug <b>1</b> – 3626 psig 250 bar	<b>0</b> – Plug <b>1</b> – 102 psig 7.0 bar <b>2</b> – 145 psig 10.0 bar <b>3</b> – 290 psig 20.0 bar	<b>0</b> – Without <b>1</b> – 8 mm <b>2</b> – 10 mm <b>3</b> – 12 mm <b>4</b> – 5/16" <b>5</b> – 3/8" <b>6</b> – 1/2"	<b>0</b> – Without <b>1</b> – 8 mm <b>2</b> – 10 mm <b>3</b> – 12 mm <b>4</b> – 5/16" <b>5</b> – 3/8" <b>6</b> – 1/2"	– 3/8" / 10 mm	<b>1</b> – 12 VDC <b>2</b> – 24 VDC	<b>L</b> – 145 psig 10.0 bar <b>M</b> – 150 psig 10.3 bar <b>N</b> – 160 psig 11.0 bar <b>O</b> – 175 psig 12.1 bar <b>P</b> – 200 psig 13.8 bar <b>R</b> – 230 psig 15.9 bar
<p><sup>1</sup>. - 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) &gt; idling</p>									