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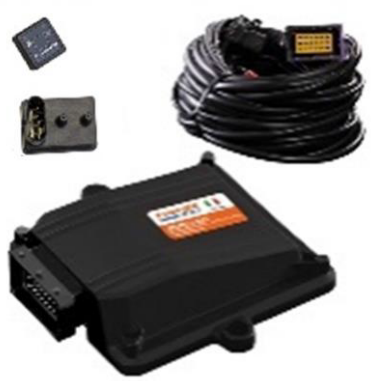
# 1. ENR.G40032 - E-300 LPG 4 CYLINDER (INDIRECT SQI)

## a. ENR.E40032-E-300 4 CYLINDER ECU SET



Designed especially for mid-range cars, suitable for a vast variety of vehicles. Lightweight, shock-resistant, plastic housing, many extra tuning options, auto calibration, injector heating, diagnostic, waterproof, 32 pins, suitable for 2-3-4 Cylinders.

### CERTIFICATIONS

- ECE 67R-01
- ECE 110R-00
- ECE 10R-03

### KIT CONTENT

- 1 x ECU Unit with standard plastic box + back cover in aluminium
- 1 x "Intelligent" change-over switch
- 1 x pressure sensor type 4+2,5 Absolute
- 1 x standard loom CA0316
- 1 x fuse (7,5 A) and fuseholder bag
- 1 x shrink tube bag (4 cyl)
- 1 x Wiring diagram
- Packing: 1 box per kit, 120 box in a carton, 2 cartons per pallet (extra cost will be charged if 1 pallet per carton is needed.

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# TECHNICAL DATA

| | |
|---|---|
| **Supply Voltage:** | 10 - 16 Volts CC |
| **Working temperature:** | -20 / + 105 °C |
| **Power consumption: - stand-by (key Off):** | < 20 mA |
| **No load ready to change (key on):** | < 160 mA |
| **Gas Injectors supported:** | 2, 3, 4 |
| **Injectors Impedance:** | from 2 to 16 ohms |
| **Lock-off load on single input:** | 2 (Imax = 4A cad.) |
| **Inputs for lock-off / Services:** | 2 |
| **Water temper. sensors supported:** | 4,7 - 10 kohm |
| **Gas temper. sensors supported:** | 4,7 - 10 kohm |
| **Pressure sensors supported:** | 4+2,5 bar Absolute |
| **Level sensors supported:** | 1050 & 806 compatibles, 0-90 ohm(others on demand) |
| **Lambda sensors managed:** | 0-0,8 / 0-5 / 5-0 / 0,8-1,6 2,5-3,5 / UEGO |
| **Lambda emulation** | possible for all managed types |
| **Change-over Switch:** | Push button, gas level shown, operating led, ready-to-change blinking, diagnostics, Buzzer |
| **Interface:** | 4 poles AMP on the loom for custom USB or Bluetooth interface |

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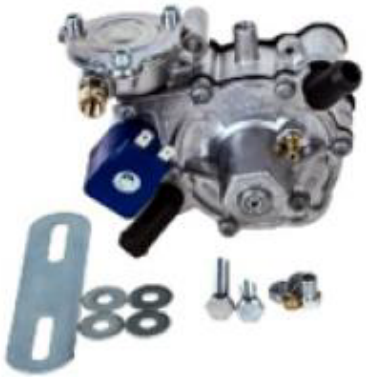
## b. ENR.15004x - ENERGIA LPG REDUCER 09XP



The **EN09N** reducers, the latest evolution of the EN09 sequential reducers family, has been designed with the aim of further improving the performance compared to the other reducers of the EN09 family, thanks to the improved heating circuit and the higher support engines power, up to 125kW.
This reducer differs on the integral body, the complete separation of the water and gas circuits, the improved gas circuit and the deeper water circuit, which allows a better heat exchange.

| | |
|---|---|
| **Type of product** | LPG sequential reducer |
| **Material** | Die cast aluminium body |
| **Weight** | 1.30 kg |
| **Dimensions (mm)** | 125x125x105 mm |
| **Max inlet pressure** | 3 MPa (30 bar) |
| **Outlet pressure *** | adjustable from 90 to 180 kPa |
| **Coil voltage** | 12 V DC |
| **Coil power** | 11 W |
| **Coil connection** | Fast-on (AMP upon request) |
| **Inlet connection** | M10x1 pipe Ø 6 mm |
| **Outlet connection** | Fixed fiting Ø 12 mm |
| **Engine power** | Up to 125 kW |

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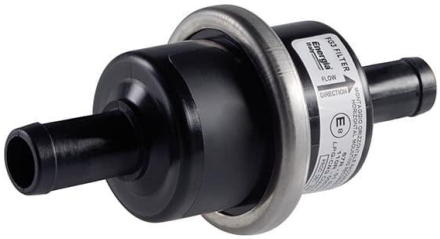
## d. ENR.30004 - ENERGIA FG Filter



Use for in-line gaseous state, disposable, body made of plastic. Filter cartridge made of resonated paper. Available for rubber hose internal Ø 10-12-14-16 mm.

| | |
|---|---|
| **Housing material** | Plastic |
| **Filter efficacy** | 85 |
| **Max pore diameter** | from 36 to 44 |
| **Medium pore diameter** | from 6 to 8 |
| **Substance number** | from 121 to 131 |
| **Thickness** | from 0,30 to 0,36 |
| **Resin** | from 15 to 19 |
| **Stiffness** | from 1500 to 3000 |
| **Mullen test** | from 2,0 to 3,0 |

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## c. ENR.25001- ENERGIA 4 RAIL INJECTOR

The fourth generation 4 cylinders Injector Rail for LPG/CNG.

Energia Repair Kit can be purchased to fix old injector rail.

Compatible with all Energia Italy products.

| Characteristic | Unit | Value | | Note |
|---|---|---|---|---|
| Injector Version | N° of cylinders | 2, 3, 4 | | |
| Material body and treatment | | Aluminium black anodized | | |
| Relative Pressure | Bar (Psi) | From 0,5 to 2,0 (7 to 29) | | Working pressure |
| | | 3,0 (43) | | Max pressure |
| Rated voltage (at coil) | Volt | 10,8 - 14,4 | | |
| Minimum copper wire section for coil connection | $mm^2$ | 0,75 | | |
| Coil type | by encoding | A2 | A3 | |
| Resistance | Ω | 2 | 3 | ± 5% at T= 25° |
| Suggested peak current time (duration) | ms | 4 | 4,2 | |
| Suggested peak current value | A | | | |
| Suggested holding current (±10%) | A | 1 | | |
| Cold Starting Requirements | | Increase up to 20% the "peak current time" for first cycles when gas temperature is < 10°C | | |
| Complete OPENING Response Time | ms | 2,6 | 3 | (±10% - total injection time 5 ms) ± 5% tested without nozzle at 14V Dp=1 bar T= 25°C |
| Complete CLOSING Response Time | ms | 2,8 | 2,8 | |

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| | | | | |
|---|---|---|---|---|
| **Minimum injection pulse** | **ms** | **2,7** | **3,1** | **tested with 2 mm nozzle diameter at 14V △p=1bar T= 25°C** |
| **Stroke** | **Micron** | **450** | | |
| **Seat Diameter** | **mm** | **3,3** | | |
| **Static flow rate (with max nozzle Φ) for 1 single injector at 20°C (with air)** | **SLPM (sL/min)** | **105** | | **at 1 bar inlet pressure** |
| **Calculated max flow rate(with max nozzle Φ) for 1 single injector CNG at 20°C (G20 CNG fluid)** | **gr/sec** | **1,62** | | **at 1 bar inlet pressure** |
| | **Kg/h** | **5,84** | | **at 1 bar inlet pressure** |
| **Calculated max flow rate(with max nozzle Φ) for 1 single injector LPG at 20°C** | **gr/sec** | **2,8** | | **at 1 bar inlet pressure** |
| | **Kg/h** | **10** | | **at 1 bar inlet pressure** |
| **Leakage (tested with air)** | **cc/h** | **≤ 15** | | |
| **Noise level** | **dB** | **64** | | **±1 dB Rail Test Condition** |
| **Compatibility with gas** | | **LPG, CNG** | | |
| **Driver Stage** | | **Peak and Hold (PWM)** | | |
| **Coil Connector type** | | **2 way Amp/Delphi super seal fermale connector with tab contacts** | | **About connecting wire, refer to our drawing, code 114.01.AMP.001** |
| **Inlet gas fitting for rubber hose** | **mm** | **⊠ 10 mm / ⊠ 12 mm / ⊠ 14 mm / ⊠ 16 mm** | | |
| **Outlet gas fitting** | | **Calibrated nozzles M8x1 for rubber hose ⊠ 4 mm - ⊠ 5 mm - ⊠ 6 mm** | | |
| **Calibrated hole ⌀ range (for nozzles)** | **⊠** | **From 1,00 to 2,75 mm (0,25 mm step)** | | |
| **Approvals** | | **110R-00 67R-01 (-40°C / +120°C) ISO 15500-2:2016 ISO 15500-7:2015** | | |
| **Principle of operation** | | **Solenoid valve - Normally closed - Mobile Plunger** | | |
| **Power handling capability LPG** | | **1 bar up to 40 HP/cyl** | | |
| **Power handling capability CNG** | **HP/cyl** | **2 bar up to 35 HP/cyl** | | |
| **Coil IP Rating** | | **IP67** | | |