

1. ENR.G40048 - E-400 LPG OBD 4 CYLINDER (INDIRECT SQI)

a. ENR.E40048-E-400 OBD 4 CYLINDER ECU SET



Designed for all types of 2-3-4 Cylinder vehicles. Very lightweight, shock resistance, waterproofs plastic housing, intelligent with OBD option, auto calibration and auto map correction, Gas injector heating and diagnostic, valve protection, real time diagnostic of components, best calibration result with OBD connection.

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 CA0315
- ☒ 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)

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:	0..5V - 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-pole AMP on wiring for USB or proprietary Bluetooth interface
Standard OBD protocols supported:	CAN H/L & ISO KL

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 fitting Ø 12 mm
Engine power	Up to 125 kW

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

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	

Minimum injection pulse	ms	2,7	3,1	tested with 2 mm nozzle diameter at 14V $\Delta p=1$ bar 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 female connector with tab contacts	About connecting wire, refer to our drawing, code 114.01.AMP.001	
Inlet gas fitting for rubber hose	mm	$\varnothing 10$ mm / $\varnothing 12$ mm / $\varnothing 14$ mm / $\varnothing 16$ mm		
Outlet gas fitting		Calibrated nozzles M8x1 for rubber hose $\varnothing 4$ mm - $\varnothing 5$ mm - $\varnothing 6$ mm		
Calibrated hole \varnothing range (for nozzles)	\varnothing	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		