E-LES 30/50/80 LC

DATA SHEET

E-LES 30 LC

E-LES 50 LC

E-LES 80 LC

Features

Integrated AFR control for rich burn gas engines

Suitable for different gas types and qualities

Precise adjustment of gas dosing over a wide range of gas flow due to its optimised V-shape design

Reliable, high resolution stepper motor

Special coating for smooth operation and improved chemical resistance

Description

HEINZMANNs electronic gas control valves E-LES LC with integrated lambda 1 control for rich burn gas engines.

Situated in the gas line after the zero pressure regulator and connected to the inlet of the gas mixer, the E-LES LC gas valves provide a compact solution for closed-loop AFR control.

All sensors needed for AFR control will be read directly by the control unit of the E-LES LC. Those measurement values and further engine and gas specific data are used for physical calculations of the actual gas requirement. In closed-loop mode the software regulates the voltage of the lambda probe, thus ensuring a long-term stable engine operation within the lambda window.

The use of a speed sensor is obsolete, as the control unit only requires a digital "engine running" signal.
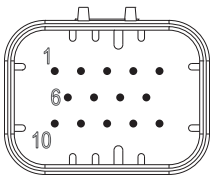
Application range

➡ **E-LES 30 LC**
   5 up to 60 kW

➡ **E-LES 50 LC**
   60 up to 300 kW

➡ **E-LES 80 LC**
   300 up to 1000 kW

These values refer to a mechanical efficiency of 37 %, lambda 1 and a manifold pressure of 1.0 bar abs. and are for guidance only. Assumed is a lower heating value (LHV) of 36 MJ/Nm³ for natural gas.

For proper statement a calculation based on actual engine data is necessary.

Technical data

Power supply	nom. 24 VDC ±30 %
Current consumption	max. 1.5 A
Residual ripple	max. 10 % at 100 Hz
Admissible voltage drop	max. 10 % at max. power consumption
Fuse (required externally)	6 A
Frequency stepper motor	500 Hz
Ambient temperature	-20 … +75 °C
Storage temperature	-40 … +85 °C
Admissible humidity	up to 98 % at 55 °C
Admissible pressure of fuel supply	max. 0.1 bar (g)
Admissible concentration of hydrogen sulphide (H_2S) in fuel	max. 0.1 %
Vibration	max. 2 m/s at 10 … 20 Hz max. 0.24 m/s at 21 … 63 Hz max. 9 g at 64 … 2000 Hz
Shock	50g, 11 ms, half sine
Degree of protection	IP23

E-LES 30 LC	
Valve resolution	1400 steps / 7 revolutions
Response time 0 … 100 %	1.7 s
Weight	approx. 2 kg

E-LES 50 LC	
Valve resolution	2000 steps / 10 revolutions
Response time 0 … 100 %	2.5 s
Weight	approx. 5 kg

E-LES 80 LC	
Valve resolution	3800 steps / 19 revolutions
Response time 0 … 100 %	5.5 s
Weight	approx. 12 kg

TYCO 14 pin
view on plug side

Pin	Description	
1	P5	Manifold temperature
2	CAN-Low	CAN-Low
3	CAN-High	CAN-High
4	–	Battery –; 0 V power supply
5	+	Battery +; 24 VDC power supply
6	RXD	DcDesk comm. HEINZMANN diagnostic interface
7	TXD	DcDesk comm. HEINZMANN diagnostic interface
8	P2	DI (low side) engine running
9	P6	Signal lambda sensor
10	GND	GND
11	P1	Manifold pressure
12	+5V_Ref	+5 V reference
13	DO	DO (low side) Error
14	GND	GND

12 VDC power supply for lambda sensor via separate cable and power source
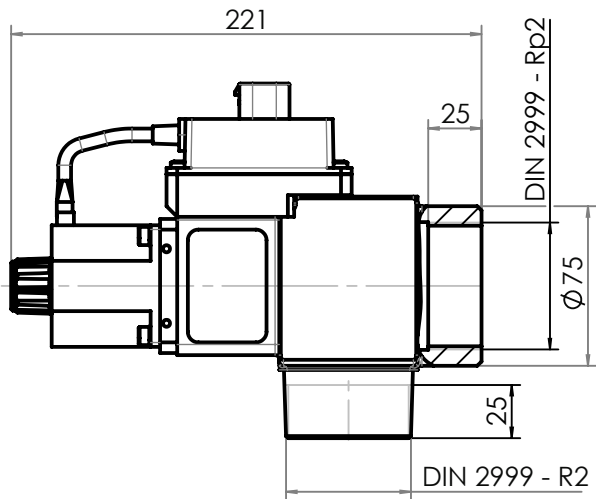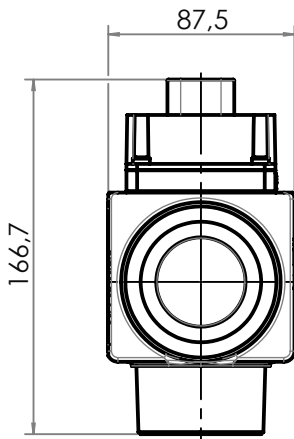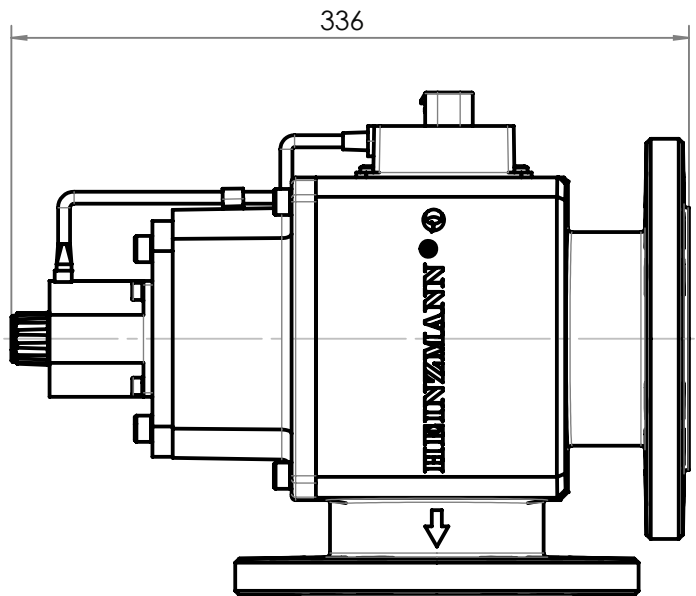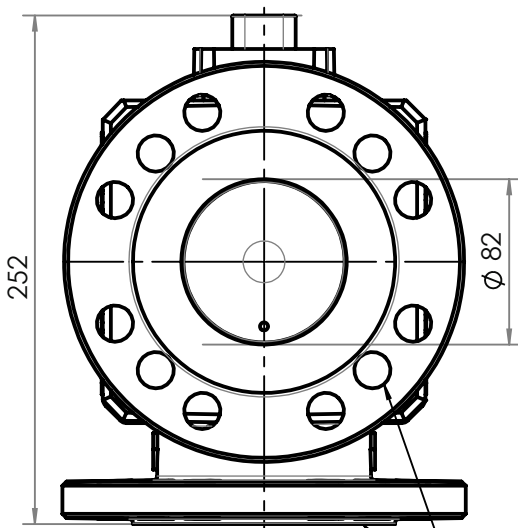
Certificates

On request

Dimensions E-LES 30 LC
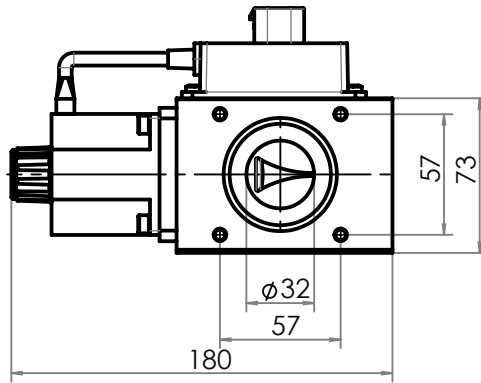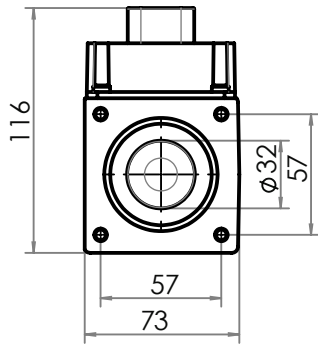
Mounting plates available with ¾", 1", 1¼" and 1½"

Dimensions E-LES 50 LC

Dimensions E-LES 80 LC

Flange according to
DIN 2633 PN16 DN80

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ECU-SMC

Power supply

24VDC
- +

HZM-Communication
7 6

CAN H 3
CAN L 2
-Shld

Lambda-sensor (P6)
9
GND 10

AI/AO/DI (P2)
8

Temperature (P5)
1
GND 14

REF 5V 12
Boost pressure (P1) 11

Error message (P7)
13

Power supply
5
GND 4

Power supply

12VDC
+ -

-P1 ⊗ Common Alarm
x1
x2

-S1
13
14

-F1
6A
1
2

-XB1
2 1 3 4

-B1.1
A B
-B1.2
1 2 3

Sub-D 9pol
Female pin

H L H L

CAN communication

Lambda-Signal

Heater
for lambda-sensor

Engine running

Temperature

Boost Pressure

Subject to alterations. ©HEINZMANN GmbH & Co. KG, 2018