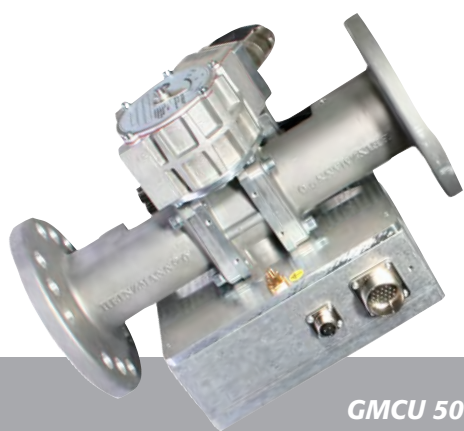


ELEKTRA

Electronic Fuel Metering and AFR Control



GMCU 50



GMCU 30



GMCU 85



GMCU 110



GMCU 160

- ✓ Integrated electronic
- ✓ Fast response
- ✓ Outstanding accuracy
- ✓ Easy to integrate
- ✓ Proven reliability

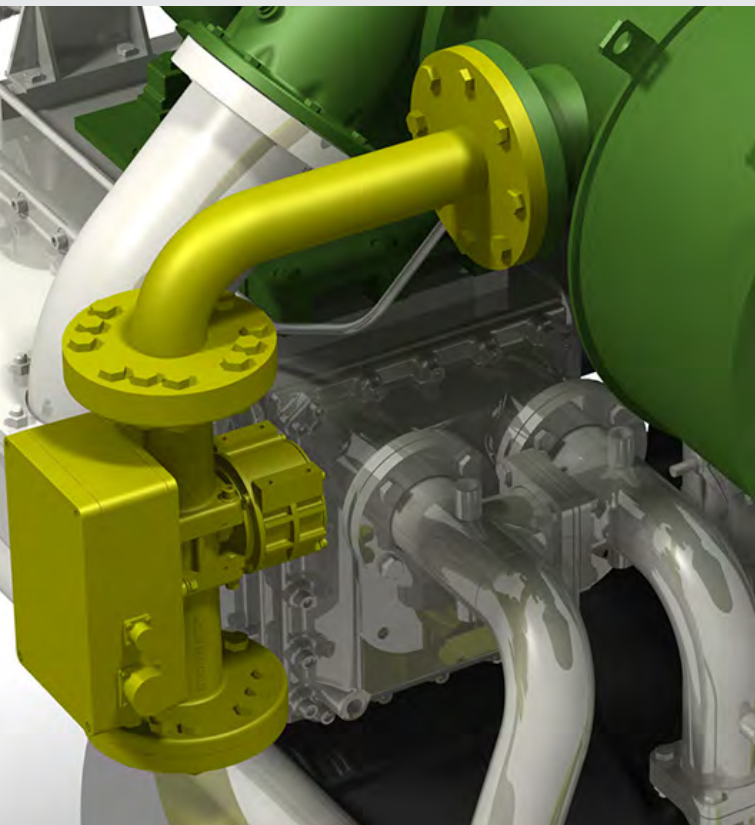
ELEKTRA

Flexible gas metering and lambda control

As a main component of the full authority engine management system KRONOS 30 the Gas Metering Control Unit ELEKTRA (GMCU-XX) can be used as a fully integrated stand-alone system for flow control and in an extended version as a lambda control device for stationary gas engines.

The gas metering system contains a very flexible control unit based on the well-proven digital controller DC 6. Freely configurable I/Os allow the user to customise the unit to almost any application. CAN bus permits the communication with other HEINZMANN devices or with external systems.

The units come along in different designs and sizes.



ELEKTRA Benefits

- ✓ ***Proven reliability***
- ✓ ***High accuracy flow control and lambda control (GMCU-XX-FC / GMCU-XX-LC)***
- ✓ ***Modular concept extendable from flow control to lambda control***
- ✓ ***Lambda control with open and closed loop mode based on power feedback***
- ✓ ***Integrated misfire detection and overspeed/overload protection (lambda control version)***
- ✓ ***CAN bus communication***
- ✓ ***Flexible I/O interfaces for customised solutions***
- ✓ ***Fast response on fuel demands and stable operation***
- ✓ ***Full compensation for variations in input pressure and ambient temperature***
- ✓ ***Wide input pressure range. No zero pressure regulator required***
- ✓ ***V-engines: bank balancing via mixture flow is possible using two ELEKTRA***
- ✓ ***Configuration and system monitoring with communication software DcDesk or hand programmer***

GMCU 30/42



GMCU 50



ELEKTRA FEATURES

Highly integrated design

The highly integrated design of the ELEKTRA system requires only little wiring, allows easy installation and avoids configuration errors. Controller and sensor box are fixed on the device to provide the best mechanical and electrical conditions.

Any gas quality

For a given gas quality the actual flow follows the flow demand very quickly and with high accuracy. For changing gas qualities the flow can be corrected by an additional density information.

The gas metering unit can be used for all gas qualities from LPG and natural gas to landfill and wood gas.

Fast response

For lambda control a calibrated Venturi gas mixer can be used as an air flow sensor. The short distance between air flow sensor and gas flow control valve ensures a very good transient behaviour resulting in stable lambda values even with large load changes.

Wide pressure range

The algorithms used, the high accuracy throttle valve-actuator device and the precise calibration of the gas metering unit provide an outstanding flow control within a wide inlet pressure range. This allows the use of the valve at higher pressure conditions with increased mass flow and eliminates the need for a zero pressure regulator. Ambient changes in pressure and temperature are fully compensated.

Internal/external lambda setpoint

The lambda control version includes an integrated speed and load dependant lambda map. Lambda control can be realised without any external equipment.

Optionally, an external lambda setpoint can be used. In closed loop mode with output power feedback the emissions are kept stable within a wide range of changing gas qualities and ambient variations.

User-friendly communication

System set up and monitoring is made with the user-friendly DcDesk tool. Powerful functions allow an easy understanding and straight forward commissioning.

ELEKTRA the ideal solution

ELEKTRA is the ideal solution for high accuracy emission control on stationary engines combining the best engineering technology for flexible gas metering and lambda control.

Application range

The Gas Metering Control Unit ELEKTRA (GMCU-XX) is applicable at stationary gas engines. It is available as a pure fuel gas dosing system by performing flow control (FC). Furthermore, it can comprise a lambda control system (LC) with external lambda setpoint or a complete stand-alone control system with integrated speed and load dependant lambda map. The GMCU system contains a very flexible digital control unit. Freely configurable I/O allow its customising to almost any application.



Specification of ELEKTRA

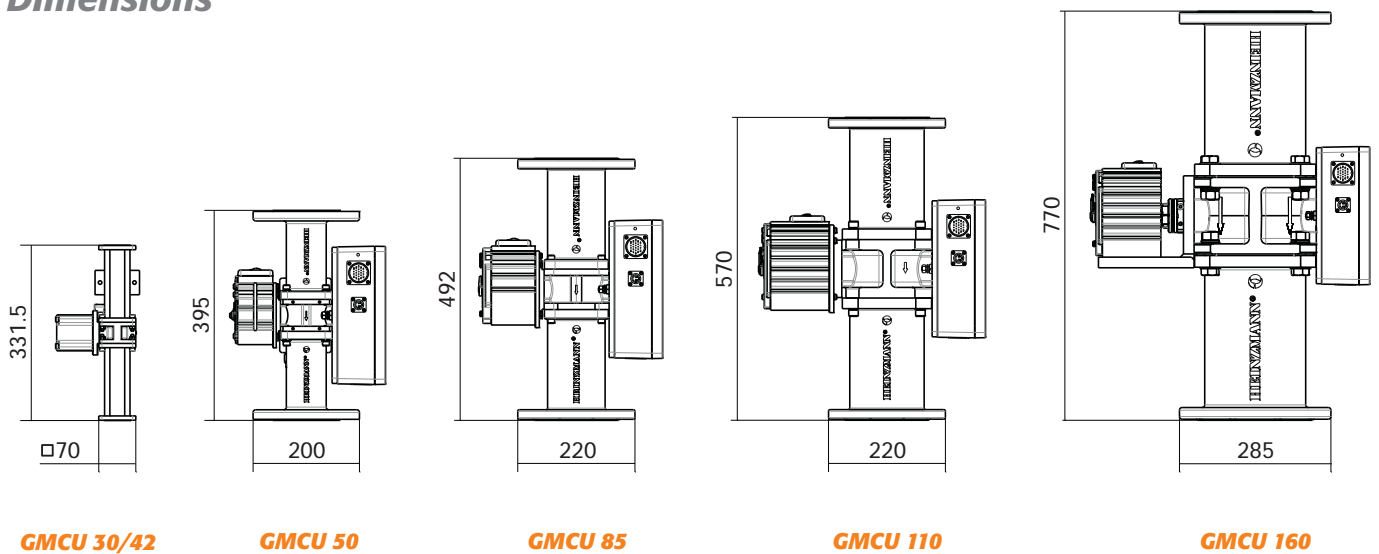
Flow accuracy	$\pm 5\%$ for the entire flow range
I/O interfaces	CAN bus Serial 1 speed pickup 1 temp. input 3 digital in 1 digital out 2 multifunction ports: 0 ... 5 V; 4 ... 20 mA; PWM
Air humidity	Up to 98 % at 55 °C
Protection grade	IP55
EMC	2014/30/EU 2004/104/EU
Weight	8.5 ... 42 kg



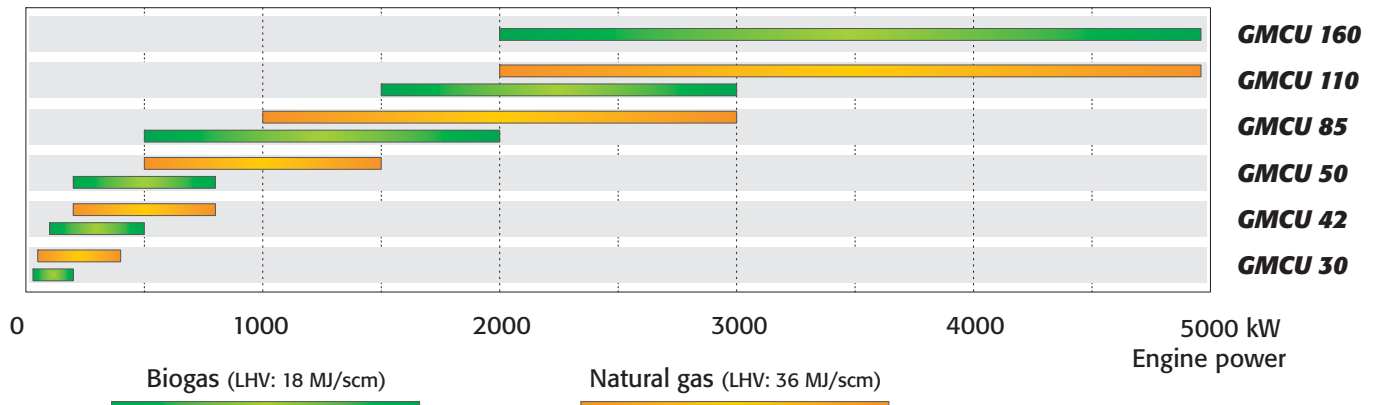
For further information please refer to the respective data sheets.



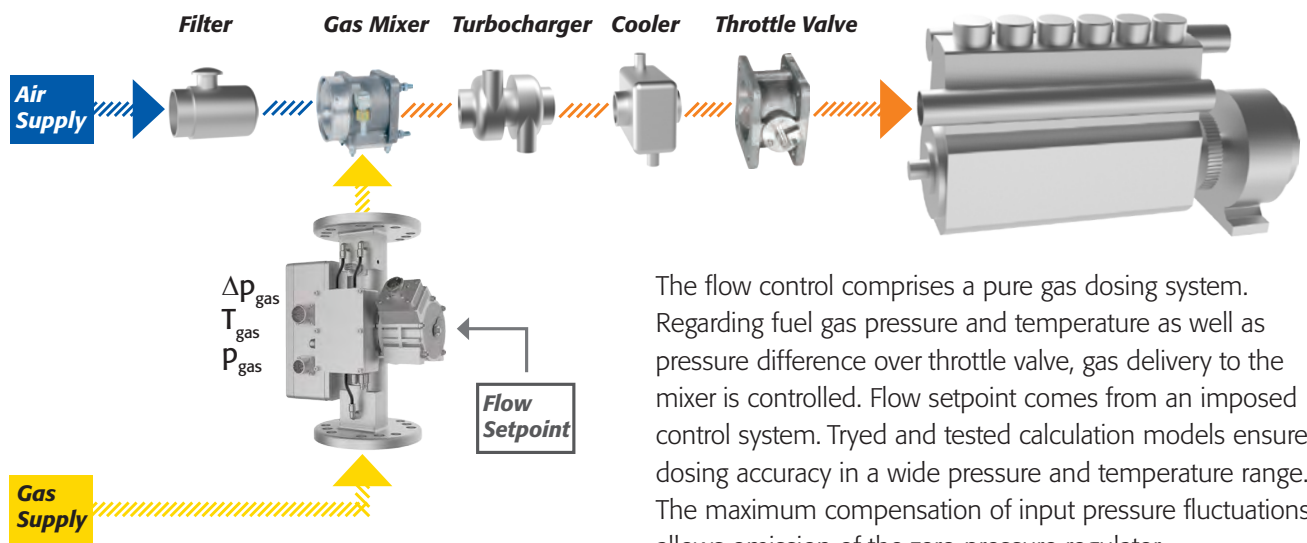
Dimensions



Power range



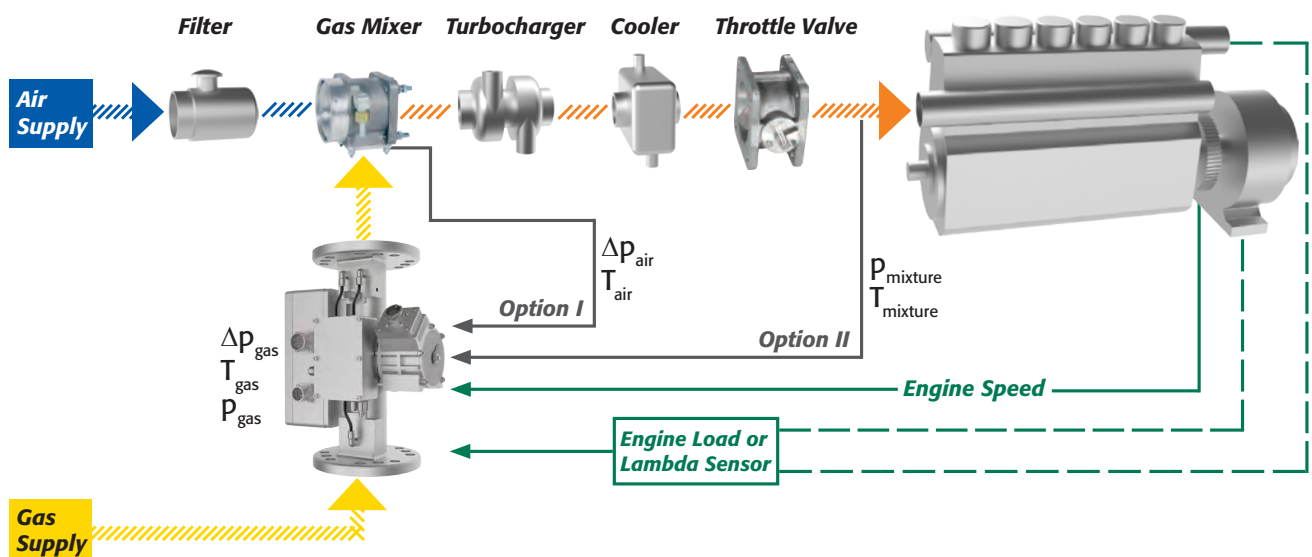
Flow Control



Lambda Control

With additional information on the air or mixture mass flows the gas dosing system can be extended to a complete lambda control system (LC). In the standard version the flow is obtained by measuring the pressure

difference over the calibrated Venturi gas mixer. A setpoint may be derived from engine load or from a lambda sensor.



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