

Short Description

Engine Control Unit – ECU3



As an optimized control unit for 6-cylinder diesel engines and mobile gas engines, the ECU3 is ideally suited for on- and off-road applications. An interface for direct activation of the SCR or of the SCRFilter system allows a combined regulation of engine and exhaust gas treatment with only one ECU3. The engine control unit enables the fulfillment of various emission regulations, e.g. EU Stage IV/V, Euro V/VI and EPA Tier 4f. The control unit is certified according to vehicle regulation ECE-R10. Due to the compact casing, the ECU3 requires little installation space. Integrated liquid cooling of the control unit ensures reliable and safe operation, even in restricted space with low airflow and strong heat generation. The control unit fulfills the functional safety requirements of function chains according to international safety standards. The ECU3 distinguishes itself by long product availability and is well-proven as a control unit of numerous Liebherr engines worldwide.

Features

- Platform for EU Stage IV/V, Euro V/VI and EPA Tier 4f
- Combined control of engine and exhaust gas treatment
- 6 power outputs for injector activation
- Integrated knock control for stationary gas engines
- Multifunctional input and outputs
- Compact casing with optimal air cooling
- Suitable for direct mount on the engine
- High functionality of self-diagnostic for a safe operation
- Standardized communication interfaces: J1939, UDS
- ECE-R10 certified
- Functional safety according to EN ISO 26262 and EN ISO 13849
- Temperature range from -40 °C to +110 °C
- Robust and reliable in harsh conditions

Technical Data

Engine Control Unit – ECU3

Technical Data

| | |
|-----------------------------|---|
| Microcontroller | Freescale SPC56xx Family |
| Frequency | 256 MHz |
| Memory | 3 MB Flash 192 kB RAM internal 128 kB EEPROM external |
| Digital inputs | 12 x thereof three frequency inputs (two 0–10 kHz and one 0–5 kHz) |
| Analogue inputs | 29 x configurable 0–5 V/0–33 V; resistor 0–50 kΩ and partly 0–25 mA |
| Knock sensor inputs | 3 |
| Constant voltage outputs | 12 x 5 V 2 x 12 V |
| PWM outputs | 10 x half bridge configuration with current measurement (Two half bridge outputs can be configured as one full bridge) |
| Digital outputs | 14 x high-side 1 x low-side |
| Controlled analogue outputs | 1 |
| Power outputs for injectors | 6 x split into two stages |
| Communication interfaces | 3 x CAN according to ISO 11898-2 |
| Plug | MOLEX CMC 154 Pins (53/53/48) |
| Dimensions | 244 x 220 x 54 mm |
| Weight | 2.5 kg |
| Housing | Die-cast aluminium |
| Rated voltage | +12 V/ +24 V |
| Operating temperature | -40 °C to + 85 °C with air cooling -40 °C to +110 °C with liquid cooling |
| Flammability | UL 94 HB |
| IP rating | IP6K9K with connected cable harness |