

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. The ECU3 controls all engine functions as well as the Liebherr SCRonly or SCRFilter system, including AdBlue dosing. The ECU3 can also be used as stand-alone dosing control unit. The engine control unit enables the fulfillment of various emission regulations, e.g. EU Stage IV/V, Euro V and EPA Tier 4f. The control unit is certified according to vehicle regulation ECE-R10 (E1). 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 and EPA Tier 4f
- Combined control of engine and exhaust gas treatment
- 6 power outputs for injector control and monitoring
- Integrated knock control for mobile 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 (E1) certified
- Marine part type approval from DNV-GL and CCS
- Functional safety according to ISO 26262, ISO 13849 and IEC 61508
- Temperature range from -40°C to +110°C
- Robust and reliable in harsh conditions

Technical Data

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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
Ambient 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