

Introduction

The HLEC-C Series VCU is functional safety controller for mobile construction machinery, conforming to EN ISO 13849 standards. It offers a compact design, flexible I/O configuration, compatibility with multiple programming platforms, and includes multiple features as short-circuit protection, status indicator LEDs and port diagnostics.



HLEC-C3-7053



HLEC-C2-3532

Applications



Excavator



Empty container handler



Reach stacker



Heavy-duty forklift



Boom lift



Cotton picker



Tractor



Input power supply specifications

Operating voltage	8~36V (MAX 40A)
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Output power supply specifications

Output power supply	Output voltage range	Output current
5V reference	$2 \times 5V \pm 250mV$	250mA
10V reference	$10V \pm 500mV$	1000mA

IO specifications

Input port	No. port	Specifications
VI(0~36V)/DIH	2	0~36V Analog signal input, Configurable to Active-high digital input
CI/VI/DIH	10	4~20mA Analog signal input, Configurable to 0~10V Analog signal input OR Active-high digital input
VI/DIH	24	0~10V Analog signal input, Configurable to Active-high digital input
VI/DIH/DIL	18	0~10V Analog signal input, Configurable to Active-high OR Active-low digital input
RI/DIL	4	0~50k Ω Analog signal input, Configurable to Active-high OR Active-low digital input
DIL	4	Active-low digital input
PI/DIL/DIH	4	Pulse signal input (Can be used as rotational sensor input), Configurable to Active-high OR Active-low digital input
PI/DIH	6	Pulse signal input (Can be used as rotational sensor input), Configurable to Active-high digital input
Output port	No. port	Specifications
AO	2	0 % Vbat to 90 % Vbat voltage analog output
AO/IO	2	4~20mA current analog output, Configurable to 0.5~5V analog output
PWMi 2.5A/DOH	16	PWM High-side output (MAX: 2.5 A), Configurable to High-side switch output
PWMi 4A/DOH	4	PWM High-side output (MAX: 4 A), Configurable to High-side switch output
PWMi 3A/DOL	7	PWM Low-side output (MAX: 3 A), Configurable to Low-side switch output
PWMi 4A/DOL	3	PWM Low-side output (MAX: 4 A), Configurable to Low-side switch output
DOH 3.5A	12	High-side switch output (MAX: 3.5 A)
DOH 4A	4	High-side switch output (MAX: 4 A)



Input power supply specifications

Operating voltage	8~36V (MAX 30A)
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Output power supply specifications

Output power supply	Output voltage range	Output current
5V/10V configurable reference × 2	5V±150mV 10V±500mV	5V@400mA 10V@500mA

IO specifications

Input port	No. port	Specifications
CI (4-20mA)/VI (0-10V)/ VI (0-36V)/DIH	12	4~20mA Analog signal input, Configurable to 0~10V Analog signal input OR Active-high digital input
RI (0-15KΩ)/DIL	4	0~15kΩ Analog signal input, Configurable to Active-low digital input
PI (15kHz)/DIH	4	0-15kHz PNP Pulse signal input, Configurable to Active-high digital input
VI (0-10V)/DIH/DIL	12	0~10V Analog signal input, Configurable to Active-high OR Active-low digital input
DIH	1	Active-high digital input
Output port	No. port	Specifications
PWMI 2.5A/DOH	16	PWM High-side output with current feedback (MAX: 2.5 A), Configurable to High-side switch output
PWM 2.5A/DOH	8	PWM High-side output w/o current feedback (MAX: 2.5 A), Configurable to High-side switch output
PWM 4A/DOH	4	PWM High-side output w/o current feedback (MAX: 4 A), Configurable to High-side switch output
AO(0-5V)/IO(4-20mA)	2	4~20mA current analog output, Configurable to 0~5V analog output