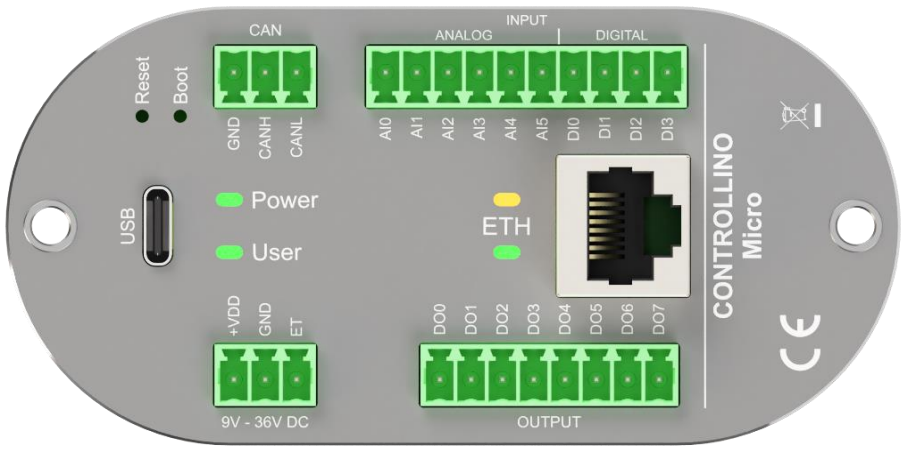
Controllino MICRO

Supply Voltage 12V / 24V
6 analog inputs (24bit)
4 analog/digital inputs (12bit)
8 digital outputs (3A / channel)

USB-C (USB 1.1)
Ethernet (W5500)
CAN (MCP2515) or RS485 interface



GENERAL		
Dimensions (W × H × D)	mm	100 x 50 x 19,5
Weight in g	g	80
Mounting		screw holes (rail mount with adapter)
Housing		aluminium
ENVIRONMENTAL CONDITIONS		
Operating ambient temperature	°C	-10° .. 55°
Relative humidity – non-condensing		80 % for temp. up to 31 °C,
		decreasing linearly to 50 %
		relative humidity at 55 °C
Pollution Degree		PD2
Altitude		up to 2000m AMSL
Vibration (5 ≤ f ≤ 9 Hz)		1,75 mm amplitude sinus
		3,5 mm amplitude random
Vibration (9 ≤ f ≤ 150 Hz)		0,5 g acceleration sinus
		1,0 g acceleration random
Transport and Storage		-20°C – +70°C
		10 to 90% no condensation
		Altitude 3000m AMSL
Shock response		15g, 11ms half sinus all 3 axes
ELECTRICAL CHARACTERISTICS		
Nominal Voltage	V DC	12-24
Absolute Maximum	V DC	36
Power consumptions	W	0,8 .. 1,0
I/O		
USB (Power for programming only)		USB-C for RP2040 core
Ethernet		RJ45, 10/100Mbps
Analog inputs AI0 .. AI5	V	0 .. 28 @Amplifier Gain 2 (by default)
Resolution	bit	24
Sampling Rate	kHz	up to 1,15
Amplifier Gain		0.33, 1, 2 (default), 4, 8, 16, 32, 64 @64 measure range = 0 .. 0,85V @24bit
Analog/Digital inputs ADI0 .. ADI3		0 .. 25,8V
Analog Sampling Rate	kHz	up to 66
Resolution	bit	12
Digital Outputs, no galvanic insulation		8x Half-Bridge Driver up to 3A per channel
		8x | PWM 16 Bit (8bit by default)
		Adjustable output current limit from 0.5A to 3A
		Built-in Current Sensor for output current monitoring

PIN Header, no galvanic insulation		
Logic level I/Os	2x GPIO 3,3V	ready for UART, I2C, 1-wire, …
Communication	USB-C, CAN or RS485, ETH	
COMPUTE CAPAPILITIES		
Chip Type	RPI RP2040	
On Chip SRAM	264KB	
Flash Memory (external over QSPI)	16 Megabyte	
Chip Frequency	133Mhz	
Secure Element	ECC608 Cryptochip	
PROTECTION		
ESD HBM Class 0	Contact discharge: ±4kV	
	Air discharge: ±8kV	
Supply input over current protection	-	
Supply input reverse polarity protection	yes	
Digital Output	Overload, short circuit, ESD	
Signal Input	Overvoltage, ESD	
Pin header connector	ESD	
Current +3,3V	total 500mA, resettable fuse	
PHYSICAL DIMENSIONS