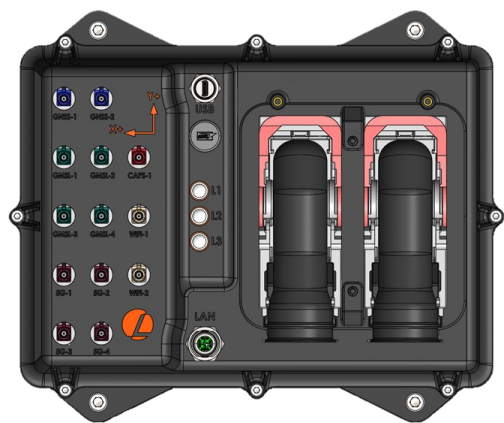




AutomatePro is an all-in-one mobile robotics and automation solution. It features NVIDIA® Jetson Orin NX™ or Nano SOMs, robust connectivity, and a rugged design. Preconfigured with ROS 2, it integrates NAV2, ROS 2 Control, and various I/Os, including precision RTK GNSS, IMU, 5G connectivity, and GMSL cameras connections. AutomatePro brings all the essential components needed for your outdoor robotics

Applications

- Agriculture Robotics
- Marine Robotics
- Off Highway Machines
- Mining Robotics
- Construction Robotics

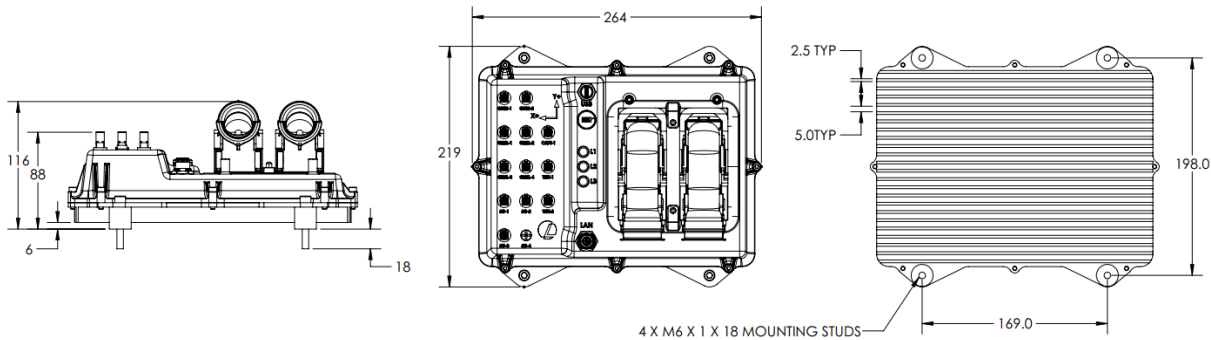


Specifications

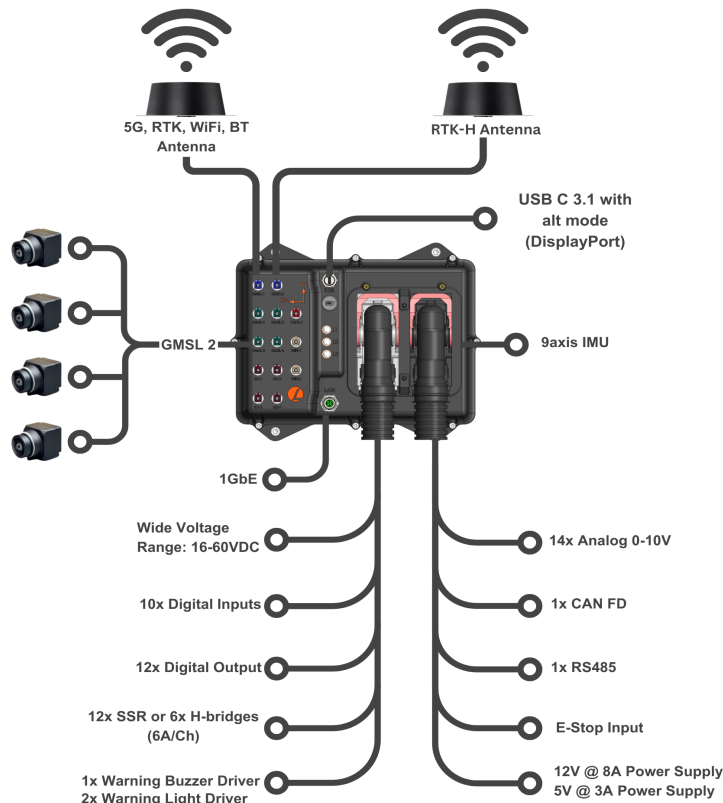
Processor Module	
Module	NVIDIA Jetson Orin Nano (8GB RAM) 1024-core NVIDIA Ampere GPU with 32 Tensor Cores 6-core NVIDIA Arm® Cor- tex A78AE 64-bit CPU
AI Performance	67 TOPs
Software	
OS	Jetpack 6.0 (rev2) / Linux Ubuntu 22.04
Middleware	ROS 2 Humble
ROS 2-based Soft- ware Package	• ROS 2 abstraction for IMU • ROS 2 abstraction for GNSS • ROS 2 abstraction for all I/O Interfaces • ROS 2 abstraction for cameras
Communication Interfaces	
USB	1x USB3.1 — 5Gbit/s (USB Type C)
Serial	1x RS485 (Main Connector)
Ethernet	1x Gbit (M12x)
CAN Bus	1x CAN FD (Main Connector)
GMSL2 Camera PoC Inputs	2x GMSL2 with Power Over Coax (FAKRA-Z)
I/O Interfaces	
Analog Input	14x Analog Input Channels (0-10V or 4- 20mA on request)
Digital Drives/SSR	12x 6A SSR Channels with external sup- ply up to 42V. Software configurable as H -Bridge— Special request for 24x Drives
Digital Output	6x 12V 500mA Digital Out Channels with 15kHz PWM 6x 500mA Digital Out Channels Low Side Drive
Digital Input	10x Digital Input Channels (12-24V)
Warning Buzzer/ Horn Driver	1x Warning Buzzer Driver (Main Connect- or), 2x LED Warning Light Driver
E-Stop	1x Input (Main Connector)
Storage	
M.2	256GB NVMe M.2 SSD <i>other options available</i>

Wireless Connectivity	
Cellular	5G with 4G/3G fallback (FAKRA-D)
Wireless LAN	WiFi IEEE 802.11a/b/g/n/ac (FAKRA-I)
Bluetooth	Bluetooth 5.0 (FAKRA-I)
On-Board Sensing	
GNSS Positioning	RTK GNSS Position 2-6cm (FAKRA-C)
GNSS Heading	RTK GNSS Differential Heading ±0.4° (FAKRA-C) - <i>Optional</i>
Satellite RTK Correction	Satellite RTK Correction Data over L-Band - <i>Optional</i>
IMU	9 axis MEMS IMU
Power	
Power Input	15.5-60VDC (<i>Overvoltage, Undervoltage, Overcurrent protection through e-fuse</i>)
Auxiliary Power Supplies	12VDC @ 8A — Allocated for offboard sensors and actuators
	5VDC @ 3A — Allocated for offboard sen- sors and actuators
Onboard Power Supply Monitoring	Voltage and Current monitoring of • Bus Power Supply • 12V Power Supply • 5V Power Supply
Mechanical	
Dimensions	264mm x 219mm x 117mm
Weight	2.1kg
Mounting	• 4x M6 Studs or Bolts • DIN Rail Mount - <i>Optional</i>
IP Rating	IP67
Environment	
Operating Temp.	-20 to 50°C
Storage Temp.	-40 to 70°C

Dimensions



General Layout



Optional Accessories

Part #	Description	Image
AP-1001	7-in-1 IP67 Antenna — 5G, WiFi and RTK GNSS (FAKRA 3m cable)	
AP-1002	1-in-1 RTK GNSS IP67 Antenna (FAKRA-C 3m cable)	
AP-1003	GMSL2 Camera, Sony ISX031, IP67 with HDR (FAKRA-Z 2m cable)	
AP-1004	Development Breakout Board	
AP-1005	DIN Rail Mount	
AP-1006	M12x to RJ45 Cable (2m)	

Order at: sales@lemvos.com or www.lemvos.com/automatepro/