VASCO®-R

High Precision GNSS for Machine Control

Carlson MACHINE CONTROL

BEST-IN-CLASS TRIPLE-ANTENNA RTK RECEIVER



Designed and built specifically for Machine Control applications utilizing single, dual or three antennas, VASCO provides a powerful, flexible GNSS solution for virtually any machine type.

Fully equipped GNSS box with available communications and processing power built in.

- Highly ruggedized all-in-one GNSS platform for multiple applications
- Ability to integrate with machine-specific systems
- Compact, rugged form factor for ease of installation



Learn more: **www.carlsonsw.com/mc**
or contact at: **machinecontrol@carlsonsw.com**

BREAK NEW GROUND

Carlson VASCO-R

GNSS Subsystem

Receiver Type: High Precision GNSS, triple module solution with synchronized reference clock and PPS signals
Channels: 1,340+
Protocols: RTCM3.4, CMR, CMR+, NMEA, RINEX, Proprietary Binary Format (NJS)
GNSS: GPS, GLONASS, Galileo, BeiDou, NavIC, QZSS
RTK Accuracy (RMS)*:
Horizontal: 0.6 cm + 0.5 ppm
Vertical: 1 cm + 1 ppm
Heading Accuracy (RMS)*:
0.09 deg with 1 meter antenna separation
0.02 deg with 5 meter antenna separation
Pitch and Roll Accuracy (RMS)*:
0.13 deg with 1 meter antenna separation
0.03 deg with 5 meter antenna separation

Communications

Bluetooth: Bluetooth 2.1 + EDR
Wi-Fi: 2.4 GHz, 802.11 ac/a/b/g/n
Cellular Radio: Integrated, 4G LTE Cat-12 with 3G fallback, global coverage
UHF Radio: Fully configurable, with TX and RX capability for base and rover or rover and base

Connector Ports

Ethernet 1 & 2: 4 pin, M12 connector(s), D-Code, 100/10 Mbit/s
Power: 3 pin, M12 connector, A-Code, Power input
CAN 1 & 2: CAN 1, CAN 2: 5 pin, M12 connector(s), A-Code. Supports CAN/CAN-FD and CAN 2.0B specification. Galvanically isolated up to 500 V. Switchable internal termination. Switchable power output.
Serial: 12 pin, M12 connector, A-Code. RS232, RS422, PPS output
Wi-Fi / BT: RP-SMA connector for external Wi-Fi/BT antenna
UHF: TNC connector For external UHF antenna
Cell Main: SMA connector For external main cellular antenna
Cell Aux: SMA connector For external auxiliary cellular antenna
GNSS 1: TNC connector For main external GNSS antenna
GNSS 2: TNC connector For secondary external GNSS antenna
GNSS 3: TNC connector For third external GNSS antenna

CPU System

CPU Module: ARM quad-core 1.2 GHz 64 bit Processor
OS: Linux

Physical

Weight: 1.8 Kg (without mounting fixtures)
Dimensions: 180 x 200 x 50 mm
Material: Anodized aluminum housing, nitrile rubber, stainless steel screws

Environmental

Operating Temp.: -40°C ~ +65°C
Storage Temp.: -40°C ~ +85°C
Waterproof: IP67
Vibration & Shock Resistance: BS EN 60068, sinusoidal 10-150Hz 2g, random 20-150Hz 0.02g^2/Hz, shock 50G 6ms
Impact: IK10, 20J impact energy, IEC 62262
Unprotected Drop: Drop from 1.5 m onto concrete- operational
Humidity: 95% RH, non-condensing

Power

Input Voltage: 10 to 30 V DC
Power Consump.: 65 W max, 15 W nominal
CAN: Output, 24 V DC, 1 A, galvanically insulated, shared between both CAN ports, individually switchable
Serial: Output, 5 V DC, 200 mA, switchable
GNSS: Output, 5V DC, 100 mA, Antenna Bias

Regulatory

CE, UKCA, FCC, IC, UL/CSA Safety, CB, RCM, RoHS, REACH (some approvals pending)

*Standard open-sky operating conditions (depends on baseline length, multipath environment, number of satellites in view, satellite geometry and ionospheric activity).



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