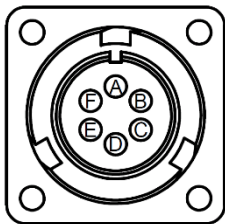
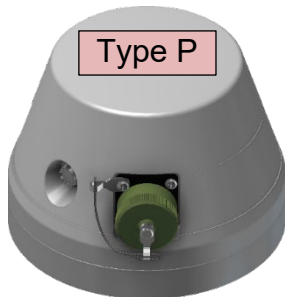


PROD1116 series NODE

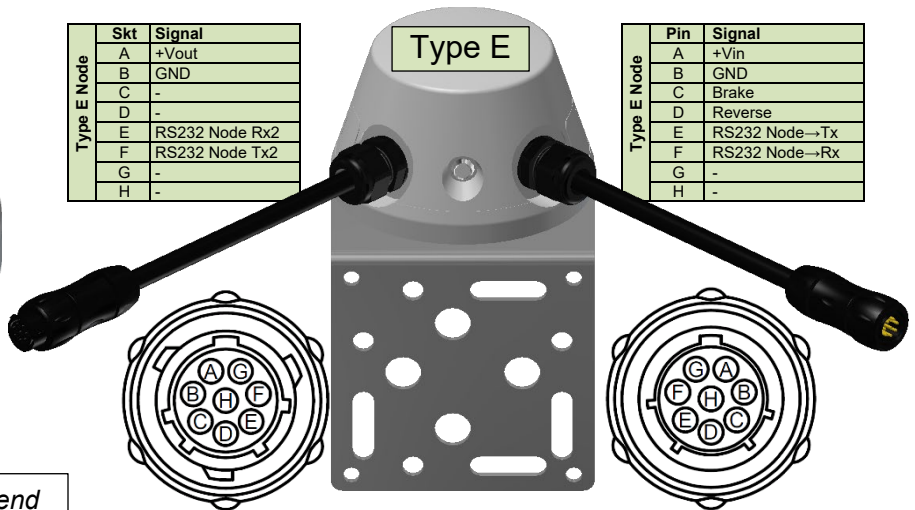
Rugged multi-purpose active antenna for collision avoidance and location applications

- High-performance multi-constellation GNSS receiver with internal antennas
- Short-Range Device (SRD) Radio - ordered for specific geographic region
- High accuracy IEEE 802.15.4a ToF equipped
- IEEE 802.15 1 WPAN equipped
- Two software configurable digital inputs
- CAN bus, RS485 and RS232 serial communication options
- Automotive grade 12/24V_{DC} power supply
- Internal Li-ion backup battery for standby operation
- Universal mounting arrangement
- When linked with a Wabtec CAS-GPS system supports self-test for real-time health monitoring & reporting
- Can operate as a stand-alone product for boom gates, stationary objects or portable CAS systems

Type P Node	Pin	Signal
	A	+Vin
	B	GND
	C	DIG in 2
	D	DIG in 1
	E	-
	F	DIG out



Type E Node	Skt	Signal
	A	+Vout
	B	GND
	C	-
	D	-
	E	RS232 Node Rx2
	F	RS232 Node Tx2
	G	-
	H	-

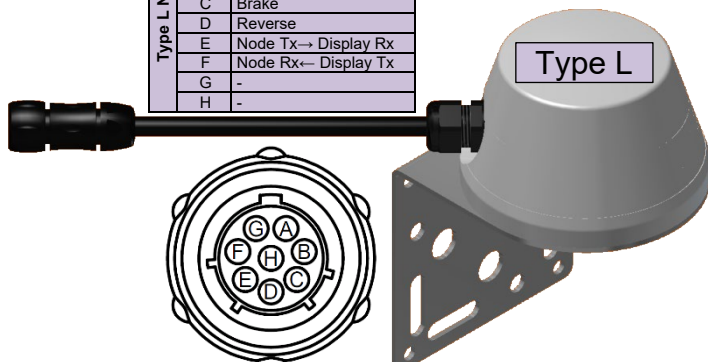


Type E Node	Pin	Signal
	A	+Vin
	B	GND
	C	Brake
	D	Reverse
	E	RS232 Node→Tx
	F	RS232 Node→Rx
	G	-
	H	-

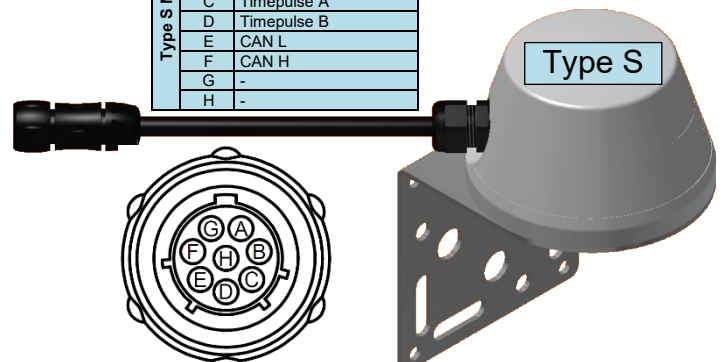


Note: all connectors viewed from mating end

Type L Node	Pin	Signal
	A	+Vin
	B	GND
	C	Brake
	D	Reverse
	E	Node Tx→ Display Rx
	F	Node Rx← Display Tx
	G	-
	H	-



Type S Node	Pin	Signal
	A	+Vin
	B	GND
	C	Timepulse A
	D	Timepulse B
	E	CAN L
	F	CAN H
	G	-
	H	-



Specifications	PROD1116 Node
System	GPS, GLONASS, Galileo, QZSS, SBAS compatible Horizontal accuracy ¹ up to CEP ₅₀ 2.5m (24 hours static, -130 dBm, > 6 Satellites Visible) 5Hz refresh rate
Available Interfaces	Type E 2 x RS232 ports, 2 x Digital Inputs Type L 1 x RS232 port, 2 x Digital Inputs Type P 2 x Digital Inputs, 1 x Digital Output Type S 1 x CAN Bus port, 1 x RS485 port
Power Supply Input Voltage	12/24 Vdc system voltage 15 W max ISO 7637-2 Level III compliant for 12/24V systems
Optional RF Sub Systems	Time of Flight (ToF) ranging 100 mW, +2dBi peak gain antenna 2.4 GHz based IEEE802.15.4a Range limited to 250 m line of sight (environment-dependent) Accuracy up to ±2 m (depends on mode) Mode 22 MHz or 80 MHz B/W
IEEE 802.15.1	2.4 GHz PAN Up to +14 dBm EIRP
Non-ranging telemetry between systems	Refer also to Region Variants table Spectrum Opportunity Detection 'listen-before-talk' mode of operation
Charge Time	5.5 hours ²
Holdup Time	24 hours ³
Charging Temp	0 to 50°C (standard); -30 to 70°C (X expanded temperature range variant)
Operating Temp	-10 to 60°C (standard); -40 to 70°C (X expanded temperature range variant)
Storage Temp	-20 to 60°C (standard); -40 to 70°C (X expanded temperature range variant)
Operating Humidity	5% to 95% RH
Weight	1.7 kg
Size (HxWxD)	214x133x145 mm (excluding cables)
IP Rating	IP66
Vibration rating	IEC Mechanical Class 5M3
Shock rating	IEC Mechanical Class 5M2
Compliance	Certified for use in Australia, RSA, Mozambique, Colombia, Brazil, Chile, PNG, USA & Canada. PENDING certification for use in Ghana, Mexico, Peru, India, Russia, Indonesia & Europe – confirm at time of order

Operating Condition (13V nominal)	PROD1116-S Type Single/Dual
Normal Mode	
Average ⁴	85/155 mA
Peak ⁵	715/1415 mA
Standby Mode	
Average ⁴	35/45 mA
Peak ⁵	665/1305 mA
Peak Charging Current	630/1260 mA

¹ CEP50 2.5m indicates that 50% of the GNSS readings will be within 2.5m of the true location

² Maximum charge time from 0% to 90% state of charge over 0°C to 35°C external ambient temperature, longer charge times apply outside this temperature range

³ At 0°C to 60°C external ambient temperature, reduces to 18 hours between -10°C and 0°C

⁴ Average current draw measured when internal batteries were fully charged. Averages will differ when using batteries of different states of charge.

⁵ Peak current draw measured when internal CAS-GPS batteries are fully discharged and connected to a vehicle battery with ignition off.

V2V Radio Reference

Region Variants	Region 1	Region 2	Region 4	Region 5	Region 7
Countries	RSA Europe Ghana Mozambique	Brazil, USA Canada, PNG Australia Mexico Peru, Chile Colombia	India	Russia	Indonesia, Mongolia
Digital Radio Centre Freq.	869.525 MHz	920 MHz	866MHz	864.5MHz	921/922 MHz
Transmit Power	100mW	100mW	100mW	25mW	100mW

Part Number Reference

Item #	Description
PROD1116-Ev	Type E node region v
PROD1116-Lv	Type L node region v
PROD1116-Pv	Type P node region v
PROD1116-Sv	Type S node region v
PROD1116-EvX	Type E node region v (expanded temperature)
PROD1116-LvX	Type L node region v (expanded temperature)
PROD1116-PvX	Type P node region v (expanded temperature)
PROD1116-SvX	Type S node region v (expanded temperature)
PROD1116-EvNT	Type E node region v (excludes TOF capability)
PROD1116-LvNT	Type L node region v (excludes TOF capability)
PROD1116-PvNT	Type P node region v (excludes TOF capability)
PROD1116-SvNT	Type S node region v (excludes TOF capability)

Accessories

Item #	Description	Comment
PROD0653	12V Charger Unit (Dual Socket)	Suitable for charging Type P nodes
PROD0677	CAS Battery Charge Cable	Suitable for charging Type P nodes
ASMB0864	Node bracket support assembly	Enhanced bracket with rubber mount suitable for high vibration environments
KITSCL41	CAS GPS Node Mounting Kit Basic	Mounting U-bolts and fasteners suitable for various installation types
KITSCL55	CAS GPS Node Mounting Kit HV	
KITSCL56	CAS GPS Node Mounting Kit Shovel	
PROD1054-3	CAS GPS Node Extension Cable 3m	Extension cables suitable for E, L and S type nodes
PROD1054-5	CAS GPS Node Extension Cable 5m	
PROD1054-10	CAS GPS Node Extension Cable 10m	
PROD1054-15	CAS GPS Node Extension Cable 15m	
PROD1054-25	CAS GPS Node Extension Cable 25m	

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