

WiFi-enabled computing platform for transportation applications

Description

The Gateway 100 is a lightweight and affordable computing platform with local-area networking (WiFi) and controller-area networking (CAN).

The Gateway 100 is built with a rugged enclosure for use outdoors and for mounting on heavy machinery. A full-featured software development kit (SDK) is available for simplified application development.



Features

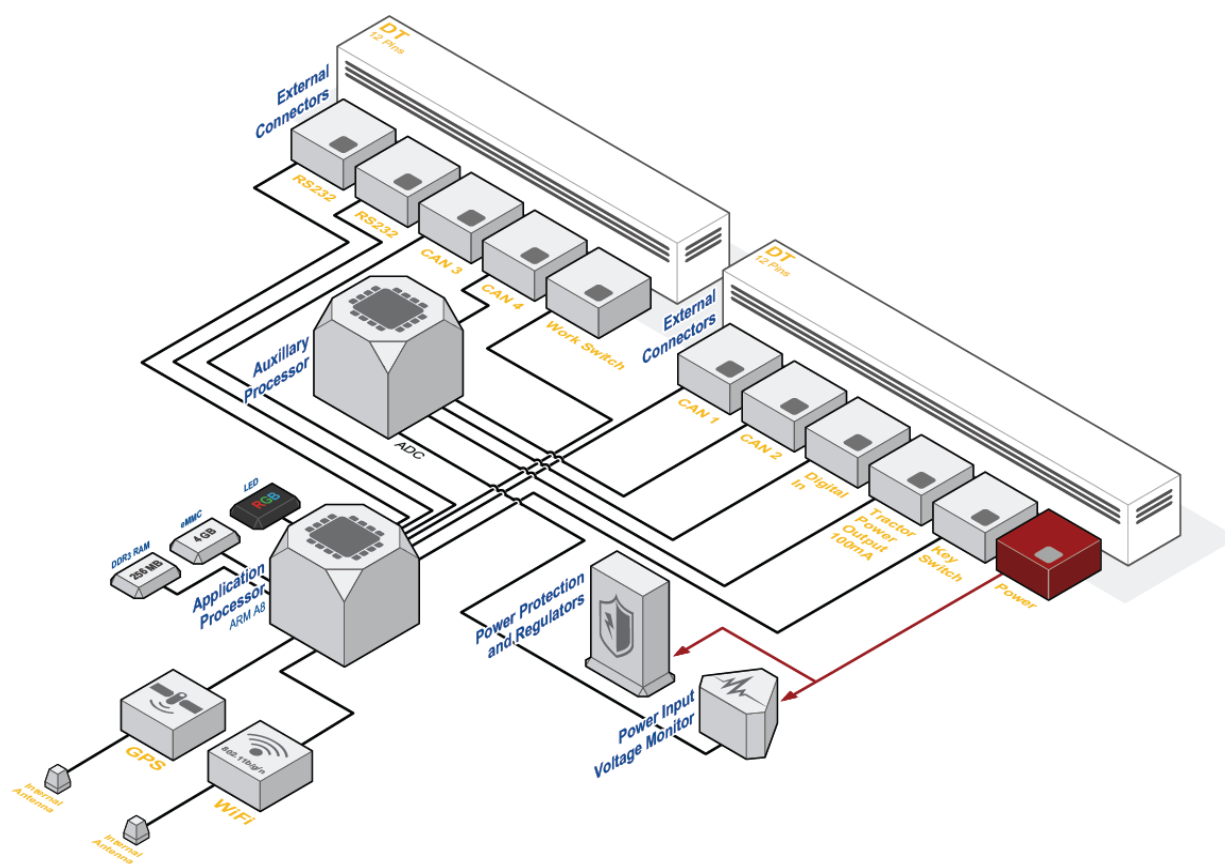
- 4x CAN bus
- 4 GB eMMC standard storage
- RS232 serial
- 256 MB DDR3 RAM
- 802.11 B/G/N, Access Point, Standard, or Ad-hoc
- GPS
- Digital I/O
- 500 MHz ARM Cortex A8
- Embedded Linux
- SDK for custom applications

Applications

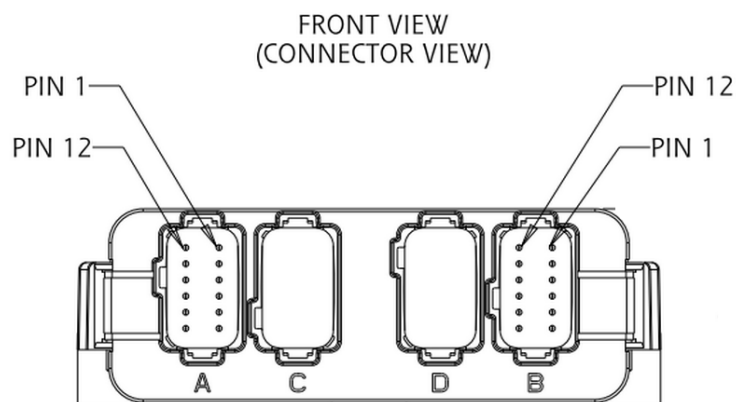
- Machine control
- Telematics
- Virtual terminal support

NOTE: Not recommended for new designs due to planned product obsolescence.

Block Diagram



Input/Output



Connector: Pin	I/O	Function
A:1	VIN	Supply voltage
A:2	GND	Power Ground
A:3	DI	Digital Input Signal
A:4	SGND	Digital In Ground
A:5	CAN2+	CANBus 2 High
A:6	CAN1+	CANBus 1 High
A:7	CAN1-	CANBus 1 Low
A:8	CAN2-	CANBus 2 Low
A:9	SGND	Digital Out Ground
A:10	DO	Digital Out
A:11	N/C	No Connect
A:12	SWKEY	Switch Key
B:1	CAN3+	CANBus 3 High
B:2	SWWORK+	Work Switch +
B:3	SGND	Signal Ground
B:4	RS2321TX	RS232 1 TX
B:5	RS2321RX	RS232 1 RX
B:6	CAN4+	CANBus 4 High
B:7	CAN4-	CANBus 4 Low
B:8	RS2322RX	RS232 2 RX
B:9	RS2322TX	RS232 2 TX
B:10	SGND	Signal Ground
B:11	SWWORK-	Work Switch -
B:12	CAN3-	CANBus 3 Low

Absolute Maximum Ratings

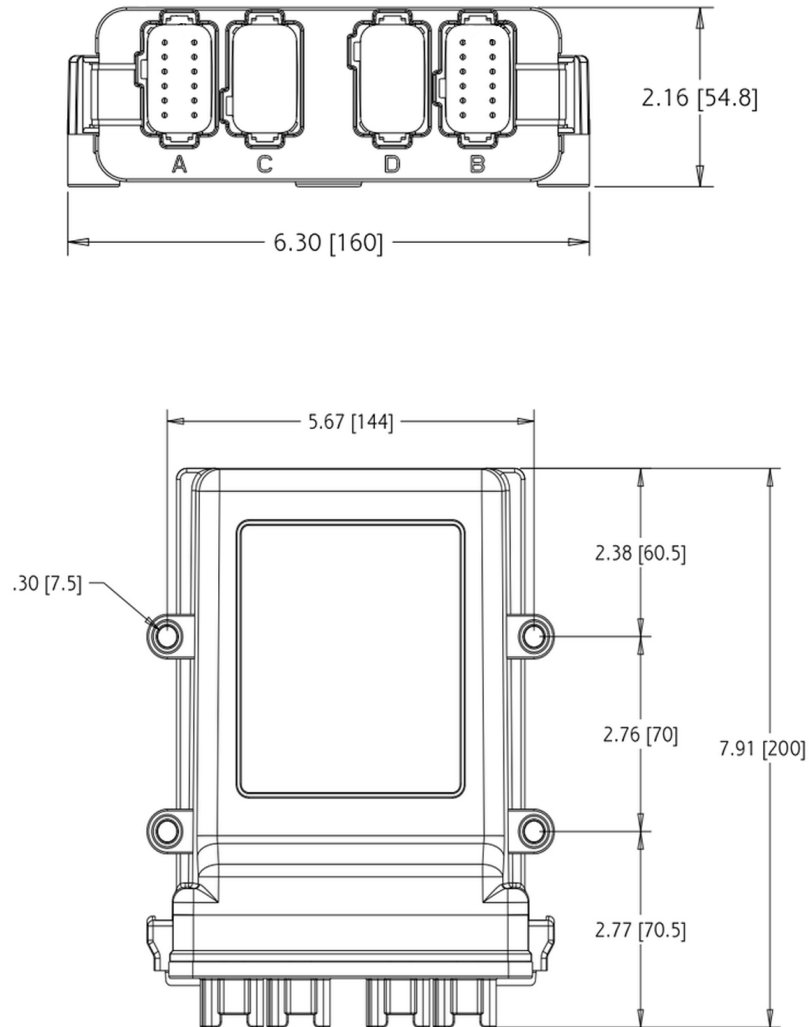
Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating conditions for extended periods may affect device reliability and lifetime.

Parameter	Value	Unit
VIN to GND	-13.6 to 26.5	V
SWKEY to GND	- 0.3 to 16.5	V
CANx+, CANx- to SGND	- 0.3 to 16.5	V
CANx+, CANx- to VIN	- 0.3 to 16.5	V
CANx+ to CANx-	- 0.3 to 16.5	V
DI to SGND	- 0.3 to 16.5	V
DO to SGND	- 0.3 to 16.5	V
RS232xTX to SGND	- 0.3 to 16.5	V
RS232xRX to SGND	- 0.3 to 16.5	V
SWWORK+ to WS-	- 0.3 to 16.5	V
SWWORK+, WS-, to SGND	- 0.3 to 16.5	V
Storage Temperature	-55 to 105	°C
Operating Temperature	-40 to 75	°C

Electrical Specifications

Symbol	Parameter	Min	Typ	Max	Unit
Power Supply					
P_{IN}	Input power			11.5	W
V_{IN}	Input voltage	9	12.5	16	V
$t_{startup}$	Start-up time from power-on			20	s
CAN Bus					
$V_{IH, CAN}$	Input high voltage	5			V
$V_{IL, CAN}$	Input low voltage			0.8	V
f_{CAN}	CAN BAUD Rate	125		500	kbps
RS232					
f_{RS232}	RS232 BAUD Rate			115.2	kbps
WiFi					
$n_{connections}$	Simultaneous Connections			32	clients
Work Switch					
$V_{IH, WS}$	Input high voltage	2.0			V
$V_{IL, WS}$	Input low voltage			0.8	V
Digital Input					
$V_{IN, rising}$	Digital input, low to high transition		0.8	1.0	V
$V_{IN, falling}$	Digital input, high to low transition	0.5	0.55		V
Digital Output					
$V_{OUT, high}$	Output voltage, high			V_{IN}	V
I_{OUT}	Output current			100	mA
Z_{OUT}	Output impedance		0.75		Ohm
Key Switch					
$V_{KS, RISING}$	Key switch, low to high transition	3	3.35	4	V
$V_{KS, FALLING}$	Key switch, high to low transition	3	3.27	4	V
Battery Sensor					
$V_{Batt, precision}$	Battery sensor precision			0.1	V
$V_{Batt, range}$	Battery sensor operating range	8		16	V

Mechanical



Measurement Units: Inches [mm]

Weight: 1.25 lbs

Recommended Mating Connectors:

Connector A: Deutsch DT06-12SA-CE01

Connector B: Deutsch DT06-12SB-CE01

Mounting:

For best GPS reception, mount gateway horizontally with "A, C, D, B" appearing below the connectors, as shown in the image at the top of the page. Do not mount gateway with connectors facing up. Gateway must be within range of WiFi device (if applicable).

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